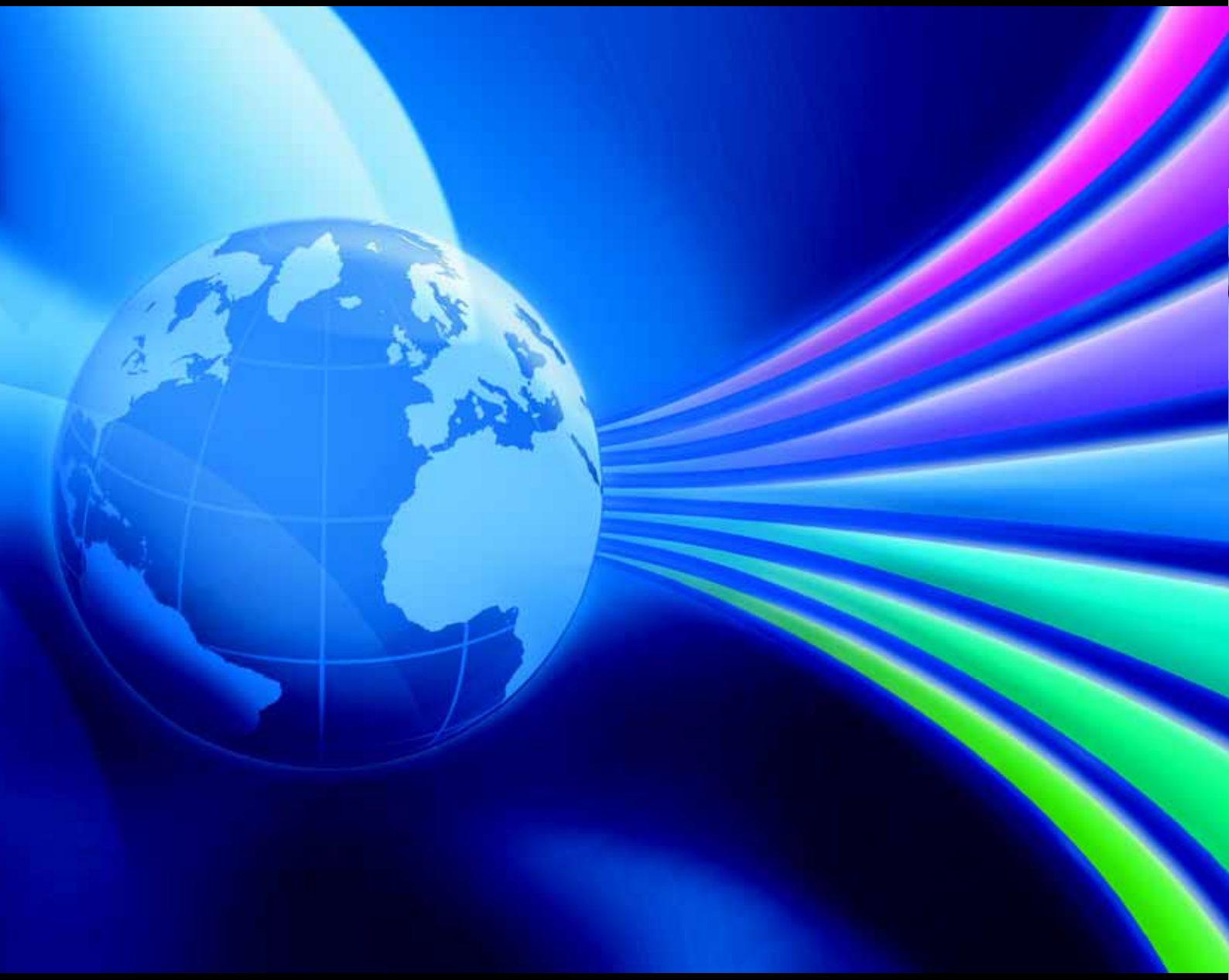
Catalogue 32



Global = Faster, better, more efficient.

FRIEDHELM LOH GROUP

RITTAL®

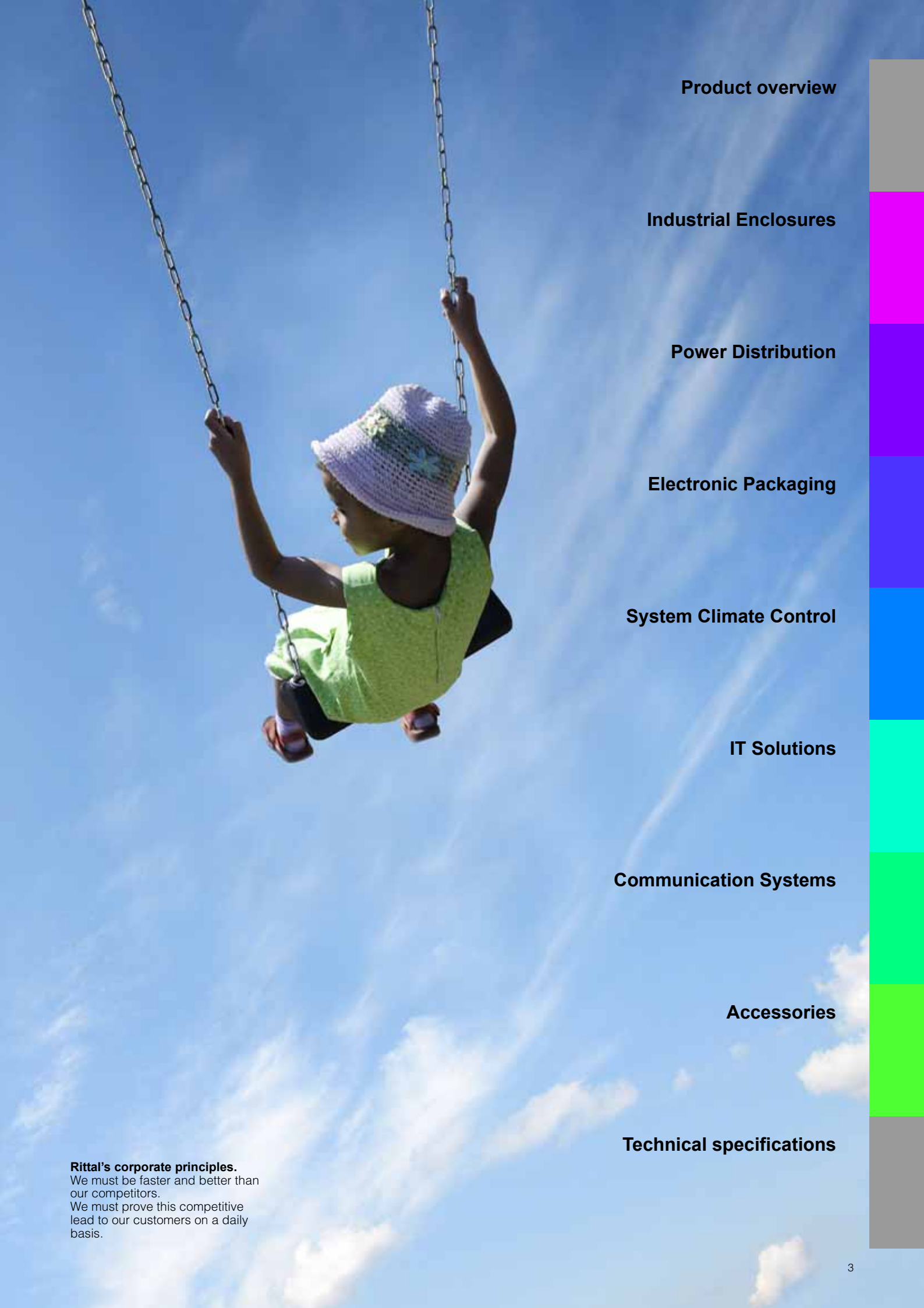
Power for your future





The future is a shared future, and a task we must tackle together.
We must meet this challenge with verve and zest, by paving the way for dynamic and positive development worldwide. We must also ensure that we utilise the planet's resources without overexploiting them. This Rittal Catalogue 32 clearly outlines the way ahead to a promising future:
The combination of global success and innovations has opened up new paths, and will continue to do so in future!

Global = Faster, better, more efficient.



Product overview

Industrial Enclosures

Power Distribution

Electronic Packaging

System Climate Control

IT Solutions

Communication Systems

Accessories

Technical specifications

Rittal's corporate principles.
We must be faster and better than our competitors.
We must prove this competitive lead to our customers on a daily basis.



Scaling new heights together





We believe that close collaboration with our customers is a key source of **Power for the future.** Our successful formula for scaling new heights is:

Rittal 5 x i

1. **Information –** Faster, because we are always up-to-date
2. **Identification –** Your requirements are at the heart of everything we do
3. **Internationalism –** Wherever in the world you happen to be, our products and services are nearby
4. **Innovations –** Focussing on opportunities and developments that will benefit our customers
5. **Investment –** Unsurpassed quality translates into maximum benefits. Global = faster, better, and more efficient – thanks to state-of-the-art production techniques and optimised logistical processes.

5 x i equals success.
Rittal defines your level of success with a new formula:
TBU – Total Benefit of Usership.

Rittal's corporate principles.
Our aim is to build up a long-term relationship with our suppliers, based on partnership. The essential precondition is a competitive attitude towards quality, delivery, price and efficient problem solving.

Information – Faster, because we are always up-to-date

Share knowledge, achieve more





Knowledge is more than just information. Knowledge is know-how and expertise. Knowledge must be made available for universal use, since it is the only resource which multiplies as it is shared. In order to utilise knowledge productively, however, we must be attuned to the customer's way of thinking. Understanding the customer's requirements is vital. Only in this way does knowledge become a productive factor. And only in this way are we able to offer customers our pioneering solutions.

Using knowledge to achieve more.

Rittal's corporate principles.
Targeted cooperation between all our staff is one of our principal assets.



Identification – Better through partnership

Your challenges are our challenges





Connections and solutions – two terms which are closely interlinked. Our principal ally in any business relationship is you, the customer. With this in mind, we work not just for you, but with you, to find joint solutions. Our philosophy is based on **partnerships, rather than customer/ supplier relationships.** Winning trust and forging close alliances help us to find the best solutions.

Close alliances for far-reaching solutions.



Rittal's corporate principles.
We view our customers as partners who determine the success of our company:

- We must find solutions to our customers' requests and problems, because our customers are our livelihood and our safeguard for the future!
- Our products must offer clear advantages and benefits for the customers, particular with regard to quality, engineering, range and availability.

Internationalism – Faster through proximity

Your location, our hub





For us, customer orientation is not enough. We place the customer at the heart of everything we do. This means being close at hand for our customers, with short response and delivery times from all Rittal locations. It also means quality in the form of fast service. But for us, customer proximity is more than just a local presence: We see it as a continuous exchange with our customers, working as partners to identify common objectives leading to joint solutions.

Putting customers in context –
and at the heart of everything we do.

Rittal's corporate principles.
We are aware of the correlation between qualification, motivation and company success; in other words, we encourage our employees to participate in training, and involve them in our overall success.



Innovations – Fresh opportunities for our customers

Fascinating future, innovations today





A passion for technology is one of our distinguishing features. It accounts for the enthusiasm we devote to improving even the most minor technical details. We take our lead from some of the astonishing ideas found in nature. The trick is to recognise them. Finding the right solutions for a fascinating future is our passion, and the force that drives us. Not least, it enables us to demonstrate genuine enthusiasm to our customers, time and time again.

Ideas from Mother Nature's treasure trove.

Rittal's corporate principles.
Our ideas and creativity safeguard our competitive lead; we must constantly search for new inspiration and ideas, and implement these in a consistent and professional manner!



Rittal's corporate principles.
We are aware of our responsibility to the environment and the world in which we live. We want to help structure and improve them.

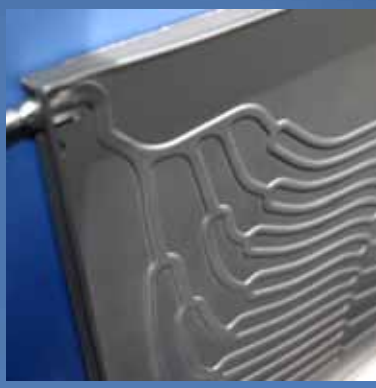


Innovations – viewed through the eyes of our customers

Sustainable energy use







We channel a great deal of energy into the development of energy-saving systems.
Today, sustainability is the guiding principle of our corporate actions.
Bionics teaches us that the most efficient energy source is to be sparing in the use of all available resources. In other words, saving energy without any loss of performance. Let's make the best possible use of our resources so that together, we can keep things "green".

Energy from the infinite power of nature.

Investment – Maximising Total Benefit of Usership (TBU) with a holistic approach

Results that count





As we see it, the bottom line is more than just the end result. We have developed our own special formula: the TBU factor – or Total Benefit of Usership. This enables us to offer customers a brand new dimension in holistic thinking and action. The buzzwords are: Complex system solutions, process acceleration, and value-added service. All the one-stop benefits and advantages available worldwide are visible at a glance, thanks to the new Rittal Catalogue.

The solution lies in the principle.



Rittal's corporate principles.
We concentrate all our energies towards perfect and economic production, professional marketing and reliable delivery.

A top team under the heading of Rittal International



Success does not happen by itself. It is the result of perfect and intelligent interactions, coupled with a focus on decisive synergy effects. This is what makes a winner. You too can share in the vast benefits of Rittal International, with its unique spectrum of expertise, and outstanding market achievements in IT and industry. Be part of this success. Reap the rewards of an established top team.

- Rittal – State-of-the-art packaging for controllers and IT in the fields of industry, transport technology, medical technology and communication
- Litcos – Business continuity management, analysis, advice and planning of data centres
- Lampertz – Physical IT protection, modular IT protection rooms
- Eplan – Computer Aided Engineering, software and service
- Mind8 – Software and consultancy firm for cross-disciplinary, mechatronic, modular-based engineering processes

The result – Synergies which complete a solution.

Be it the services of individual companies, or integrated holistic solutions from the entire group, our **maxim is always the same: Holistic concepts, comprehensive service, and maximum cost-effectiveness.**

Rittal's corporate principles.
Perfect mastery of our daily business secures our existence and enables us to meet the challenges of the future.

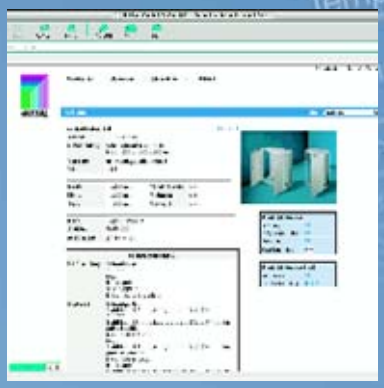


Everything under control – Everything immediately

Targeted information – For rapid success







Rittal offers product selection support from a number of information platforms which systematically complement one another: Our comprehensive Catalogue, the compact CD-ROM with useful links, and the Rittal website, which is always up-to-date. This enables you to compile your own individual system solution very easily, selectively and quickly. Navigation through the Catalogue is now even easier, because it is structured into three parts: **Product overview (A), order information (B), and technical specifications (C).**

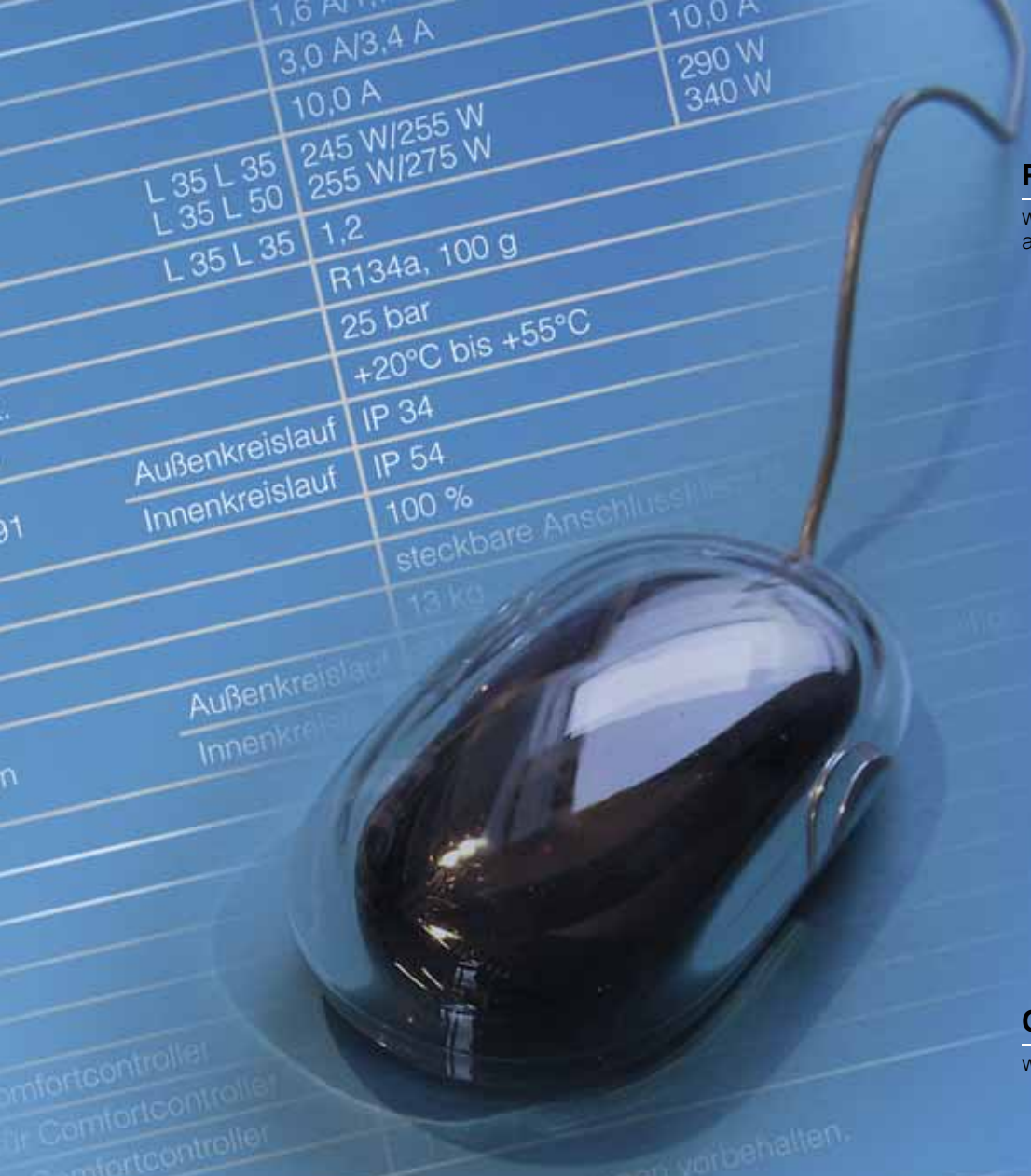
The CD-ROM features cross-references to take you, for example, straight to the matching system accessories at the click of a mouse, while Model Numbers offer direct Internet links for standardised CAD files, precise assembly instructions, and up-to-date approvals.

This clear structure is a typical Rittal feature. It is also one of the key strengths of the Rittal product range. Choose from more than 10,000 standard products available for immediate worldwide delivery.

Each product has its own individual benefits when viewed in isolation. But that's not all: By combining individual components to create your individual solution, the great power of **Total Benefit of Usership** really comes into its own. These are unique holistic concepts offering multiple benefits for our customers.

Your individual solution is just a mouse click away:

A range of configurators may be found at www.rittal.com under "services & support".



Product overview

with each product group at a glance

Order information

with the full facts and figures

Technical specifications

with detailed drawings

A

B

C



For experts and beginners alike, the product overview facilitates **fast selection of individual product groups within the range.**

For example, the appropriate dimensions of an enclosure or the correct cooling output of a climate control component are easily ascertained.

For all Rittal components of technology packaging, power supply, climate control and monitoring technology, comprehensive pre-selection is provided.

Product overview

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Industrial Enclosures



Industrial enclosures – reap the benefits of the extensive Rittal enclosure range:
Perfect, cost-effective solutions to suit every application. All in all, the wide range of sizes, the application-oriented choice of materials, the tailoring to specific application areas, the modular range of system accessories and compatibility with all other Rittal lines gives Rittal customers a competitive lead from a single source.

Holistic solutions to perfection:
- Small enclosures
- Compact enclosures
- Compact system enclosures
- Large enclosures
- Console systems
- PC enclosure systems
- Industrial Workstations
- Command Panel systems
- Hygienic Design
- Stainless steel
- Ex
- EMC

Detailed information may be found on Catalogue pages 106 – 331 and on our website at www.rittal.com





1.1 Polycarbonate enclosures PK

Dimensions in mm			Model No. PK		Page
Width	Height	Depth	Cover grey	Cover transp.	
50	52	35	**9530.000**[1]	–	110
50	65	35	**9531.000**[1]	–	110
65	65	57	**9500.000**	–	110
65	65	57	**9500.050**[2]	–	112
65	65	81	**9501.000**	–	110
94	65	57	**9502.000**	–	110
94	65	81	**9503.000**	–	110
94	94	57	**9504.000**	**9504.100**	110
94	94	81	**9505.000**	–	110
110	110	66	**9506.000**	**9506.100**	110
110	110	90	**9507.000**	**9507.100**	110
130	94	57	**9508.000**	**9508.100**	110
130	94	57	**9508.050**[2]	–	112
130	94	81	**9509.000**	**9509.100**	110
130	130	75	**9510.000**	**9510.100**	110
130	130	99	**9511.000**	**9511.100**	110

Dimensions in mm			Model No. PK		Page
Width	Height	Depth	Cover grey	Cover transp.	
180	94	57	**9512.000**	**9512.100**	110
180	94	81	**9513.000**	**9513.100**	110
180	110	90	**9514.000**	**9514.100**	111
180	110	90	**9514.050**[2]	–	112
180	110	111	**9515.000**	**9515.100**	111
180	110	165	**9516.000**	**9516.100**	111
182	180	90	**9517.000**	**9517.100**	111
182	180	111	**9518.000**	**9518.100**	111
182	180	165	**9519.000**	**9519.100**	111
254	180	90	**9520.000**	**9520.100**	111
254	180	111	**9521.000**	**9521.100**	111
254	180	111	**9521.050**[2]	–	112
254	180	165	**9522.000**	**9522.100**	111
360	254	111	**9523.000**	**9523.100**	111
360	254	165	**9524.000**	**9524.100**	111

[1] With cable gland.
[2] With metric knockouts.

Approvals:
- Bureau Veritas



1.1 Cast aluminium enclosures GA

Dimensions in mm			Model No. GA	Page
Width	Height	Depth		
50	45	30	**9100.210**	114
58	64	36	**9101.210**	114
75	80	57	**9104.210**	114
98	64	36	**9102.210**	114
125	80	57	**9105.210**	114
122	120	80	**9108.210**	114
150	64	36	**9103.210**	114
160	160	90	**9112.210**	114
175	80	57	**9106.210**	114
200	230	110	**9116.210**	114

Dimensions in mm			Model No. GA	Page
Width	Height	Depth		
220	120	90	**9110.210**	114
250	80	57	**9107.210**	114
260	160	90	**9113.210**	114
280	230	110	**9117.210**	114
330	230	110	**9118.210**	114
330	230	180	**9119.210**	114
360	122	80	**9111.210**	114
360	160	90	**9114.210**	114





1.1 Terminal boxes KL

Dimensions in mm			Model No. KL				Model No. KL			
			Sheet steel				Stainless steel 1.4301 (AISI 304)		Stainless steel 1.4404 (AISI 316L)	
Width	Height	Depth	**with gland plate**	Page	**without gland plate**	Page	**without gland plate**	Page	**without gland plate**	Page
150	150	80	–		**1514.510**	116	**1521.010**	305	**1521.510**[1)]	305
150	150	80	–		–		**1521.020**[1)2)]	305	**1521.520**[1)2)]	305
150	150	120	–		**1500.510**	117	–		–	
200	150	80	–		**1528.510**	116	–		–	
200	150	120	–		**1529.510**	117	–		–	
200	200	80	–		**1516.510**	116	**1523.010**	305	**1523.510**[1)]	305
200	200	80	–		–		**1523.020**[1)2)]	305	**1523.520**[1)2)]	305
200	200	120	–		**1502.510**	117	–		–	
300	150	80	–		**1515.510**	116	**1522.010**	305	**1522.510**[1)]	305
300	150	80	–		–		**1522.020**[1)2)]	305	**1522.520**[1)2)]	305
300	150	120	**1530.510**	118	**1501.510**	117	–		–	
300	200	80	–		**1517.510**	116	**1524.010**	305	**1524.510**[1)]	305
300	200	80	–		–		**1524.020**[1)2)]	305	**1524.520**[1)2)]	305
300	200	120	**1531.510**	118	**1503.510**	117	–		–	
300	300	120	**1535.510**	118	**1507.510**	117	**1526.010**	305	**1526.510**[1)]	305
300	300	120	–		–		**1526.020**[1)2)]	305	**1526.520**[1)2)]	305
400	150	120	–		**1589.510**	117	–		–	
400	200	80	–		**1518.510**	116	–		–	
400	200	120	**1532.510**	118	**1504.510**	117	**1525.010**	305	**1525.510**[1)]	305
400	200	120	–		–		**1525.020**[1)2)]	305	**1525.520**[1)2)]	305
400	300	120	**1536.510**	118	**1508.510**	117	–		–	
400	400	120	**1539.510**	118	**1511.510**	117	–		–	
500	200	120	**1533.510**	118	**1505.510**	117	–		–	
500	300	120	**1537.510**	118	**1509.510**	117	–		–	
600	200	80	–		**1519.510**	116	–		–	
600	200	120	**1534.510**	118	**1506.510**	117	–		–	
600	300	120	**1538.510**	118	**1510.510**	117	–		–	
600	400	120	**1540.510**	118	**1512.510**	117	–		–	
800	200	120	**1542.510**	118	**1527.510**	117	–		–	
800	400	120	**1541.510**	118	**1513.510**	117	–		–	

[1)] Delivery times available on request. [2)] With silicone seal.

Approvals (except enclosures with silicone seal):
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- Bureau Veritas
- VDE



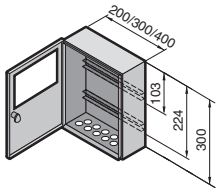
1.1 E-Box EB

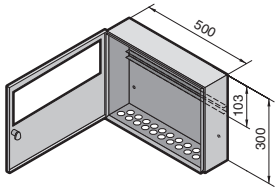
Dimensions in mm			Model No. EB	Page
Width	Height	Depth		
150	150	80	**1551.500**	119
150	150	120	**1553.500**	119
150	300	80	**1545.500**	119
150	300	120	**1548.500**	119
200	200	80	**1546.500**	119
200	200	120	**1549.500**	119
200	300	80	**1552.500**	119
200	300	120	**1554.500**	119

Dimensions in mm			Model No. EB	Page
Width	Height	Depth		
200	400	80	**1547.500**	119
200	400	120	**1550.500**	119
200	500	120	**1557.500**	119
300	300	120	**1555.500**	119
300	400	120	**1556.500**	119
300	400	155	**1577.500**	119
300	600	155	**1578.500**	119
300	800	155	**1579.500**	119

Approvals:
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Norske Veritas
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- Bureau Veritas
- VDE

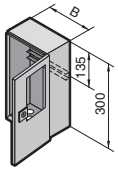
1.1 Bus enclosure BG





Dimensions in mm			PG version		Metric version	
Width	Height	Depth	**Model No. BG**	Page	**Model No. BG**	Page
200	300	80	**1583.510**	120	**1583.520**	120
300	300	80	**1584.510**	120	**1584.520**	120
400	300	80	**1585.510**	120	**1585.520**	120
500	300	80	**1586.510**	120	**1586.520**	120

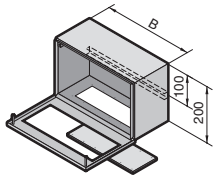
Approvals:
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL



B = Width

Dimensions in mm			Number of metric holes				**Model No. BG**	Page
Width	Height	Depth	M12	M20	M32	M50		
200	300	120	2	–	5	–	**1605.520**	121
400	300	120	–	2	9	1	**1606.520**	121

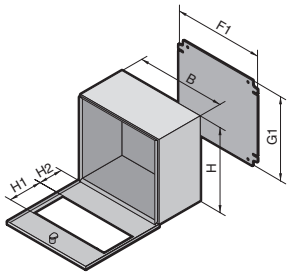
Approvals:
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL



B = Width

Dimensions in mm			**Model No. BG**	Page
Width	Height	Depth		
400	200	125	**1558.510**	121
600	200	125	**1559.510**	121

Approvals:
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL

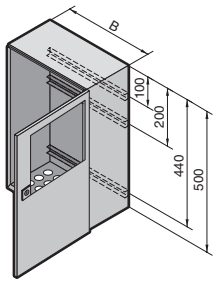


B = Width

Dimensions in mm			**Model No. EB**	Page
Width	Height	Depth		
400	300	155	**1577.500**	122
600	300	155	**1578.500**	122
800	300	155	**1579.500**	122

Approvals:
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL

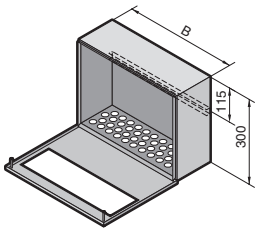
1.1 Bus enclosure BG



B = Width

Dimensions in mm			Model No. BG	Page
Width	Height	Depth		
400	500	160	**1611.510**	122

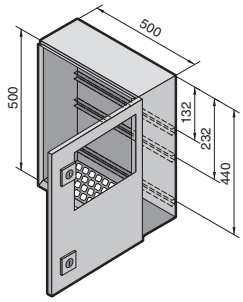
Approvals:
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL



B = Width

Dimensions in mm			Model No. BG	Page
Width	Height	Depth		
500	300	120	**1609.510**	123

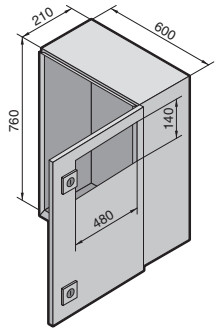
Approvals:
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL

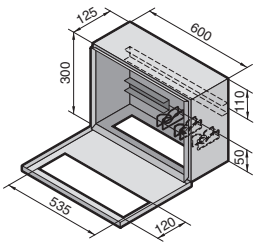


Dimensions in mm			Model No. BG	Page
Width	Height	Depth		
500	500	210	**1050.900**	123

Approvals:
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL

1.1 RiLAN Industrial





Dimensions in mm			Model No. IN	Page
Width	Height	Depth		
600	760	210	**1076.290**[1)]	125
600	300	125	**1510.280**	125

[1)] Stainless steel and plastic versions available on request.





1.2 Compact enclosures AE

Dimensions in mm			Model No. AE	Page	Model No. AE[2]	Page	Model No. AE[2]	Page
Width	Height	Depth	Sheet steel		Stainless steel 1.4301 (AISI 304)		Stainless steel 1.4404 (AISI 316L)	
Single-door								
200	300	120	**1032.500**	128	**1001.600**	308	**1001.500[1]**	308
200	300	155	**1035.500**	128	**1002.600**	308	**1002.500**	308
300	300	155	**1036.500**	128	–		–	
300	300	210	**1033.500**	128	**1003.600**	308	**1003.500[1]**	308
300	380	210	–		**1005.600**	308	**1005.500**	308
300	400	210	**1034.500**	128	–		–	
380	300	155	**1030.500**	128	**1004.600**	308	**1004.500[1]**	308
380	300	210	**1031.500**	128	**1011.600**	308	**1011.500[1]**	308
380	380	210	**1380.500**	128	**1006.600**	308	**1006.500**	308
380	600	210	**1038.500**	129	**1008.600**	309	**1008.500[1]**	309
380	600	350	**1338.500**	129	–		–	
400	500	210	**1045.500**	129	**1015.600**	308	**1015.500[1]**	308
500	500	210	**1050.500**	129	**1007.600**	309	**1007.500[1]**	309
500	500	300	**1350.500**	129	**1013.600**	309	**1013.500[1]**	309
400	800	300	**1037.500**	129	–		–	
500	700	250	**1057.500**	129	–		–	
600	380	210	**1039.500**	128	**1009.600**	308	**1009.500[1]**	308
600	380	350	**1339.500**	128	–		–	
600	600	210	**1060.500**	129	**1010.600**	309	**1010.500**	309
600	600	250	**1054.500**	129	–		–	
600	600	350	**1360.500**	129	–		–	
600	760	210	**1076.500**	129	**1012.600**	309	**1012.500[1]**	309
600	760	350	**1376.500**	129	–		–	
600	800	250	**1058.500**	129	–		–	
600	1000	250	**1090.500**	129	–		–	
600	1200	300	**1260.500**	130	–		–	
760	760	210	**1077.500**	129	–		–	
760	760	300	**1073.500**	129	**1014.600**	309	**1014.500[1]**	309
800	600	300	**1055.500**	129	–		–	
800	1000	300	**1180.500**	129	**1016.600**	309	**1016.500[1]**	309
800	1200	300	**1280.500**	130	**1017.600**	309	**1017.500[1]**	309
Double-door								
1000	760	210	**1100.500**	130	–		–	
1000	760	300	**1130.500**	130	–		–	
1000	1000	300	**1110.500**	130	**1018.600**	309	**1018.500[1]**	309
1000	1200	300	**1213.500**	130	**1019.600**	309	**1019.500**	309
1000	1400	300	**1114.500**	130	–		–	

[1] Delivery times available on request.
[2] Single-door enclosure may be ordered in a silicone seal variant by adding the extension .620 (1.4301) or .520 (1.4404) to the Model No.
Delivery times available on request.

Approvals (except enclosures with silicone seal):
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- Bureau Veritas
- VDE





1.2 Compact enclosures AE, protection category IP 69K[2)]

Dimensions in mm			Model No. AE	Page	Model No. AE	Page
Width	Height[1)]	Depth	Sheet steel		Stainless steel	
Single-door						
230	330 (352)	155	**1101.010**	131	**1101.110**	310
400	400 (439)	250	**1101.020**	131	**1101.120**	310
400	650 (689)	250	**1101.030**	131	**1101.130**	310
650	650 (689)	250	**1101.040**	131	**1101.140**	310

[1)] Figures in brackets indicate the height (rear) for stainless steel enclosures.
[2)] IP 69K to DIN 40 050-9



1.2 Compact system enclosures Rittal CM

Dimensions in mm			Model No. CM	Page
Width	Height	Depth		
Single-door				
600	800	400	**5110.500**	132
600	1000	400	**5111.500**	132
600	1200	300	**5112.500**	132
600	1200	400	**5113.500**	132
800	1000	300	**5114.500**	132
800	1000	400	**5115.500**	132
800	1200	300	**5116.500**	132
800	1200	400	**5117.500**	132

Dimensions in mm			Model No. CM	Page
Width	Height	Depth		
Double-door				
1000	1000	300	**5118.500**	133
1000	1200	300	**5119.500**	133
1000	1200	400	**5120.500**	133
1000	1400	300	**5121.500**	133
1000	1400	400	**5122.500**	133
1200	1200	400	**5123.500**	133

Approvals:
- UL
- CSA
- TÜV
- Lloyds Register of Shipping



1.2 Plastic enclosures KS

Dimensions in mm			Door(s)	Model No. KS		Page
Width	Height	Depth		Viewing window		
				without	with	
200	300	150	1	**1423.500**	–	134
250	350	150	1	**1432.500**	–	134
300	400	200	1	**1434.500**	–	134
400	400	200	1	**1444.500**	**1448.500**	134
400	600	200	1	**1446.500**	**1449.500**	134
500	500	300	1	**1453.500**	**1454.500**	134
600	600	200	1	**1466.500**	**1467.500**	134
600	800	300	1	**1468.500**	**1469.500**	135
800	1000	300	1	**1480.500**	**1479.500**	135
1000	1000	300	2	**1400.500**	–	135

Approvals:
- UL (without viewing window)
- CSA (without viewing window)
- TÜV
- Germanischer Lloyd
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- Bureau Veritas
- VDE





1.3 Baying system TS 8

Dimensions in mm			Model No. TS	Page	Model No. TS	Page	Model No. TS	Page
Width	Height	Depth	Sheet steel		Stainless steel 1.4301 (AISI 304)		Stainless steel 1.4404 (AISI 316L)	
Single-door								
400	1800	500	**8485.510**[1)]	141	–		–	
400	1800	600	**8486.510**[1)]	142	–		–	
400	2000	500	**8405.510**[1)]	144	–		–	
400	2000	600	**8406.510**[1)]	145	–		–	
600	1200	500	**8615.500**	138	–		–	
600	1400	500	**8645.500**	138	–		–	
600	1600	500	**8665.500**	139	–		–	
600	1800	400	**8684.500**	140	–		–	
600	1800	500	**8685.500**	141	**8457.600**	322	**8457.500**[2)]	322
600	1800	600	**8686.500**	142	–		–	
600	2000	400	**8604.500**	143	–		–	
600	2000	500	**8605.500**	144	–		–	
600	2000	600	**8606.500**	145	**8452.600**	322	**8452.500**[2)]	322
600	2000	800	**8608.500**	146	–		–	
600	2200	600	**8626.500**	147	–		–	
800	1200	500	**8815.500**	138	–		–	
800	1400	500	**8845.500**	138	–		–	
800	1600	500	**8865.500**	139	–		–	
800	1800	400	**8884.500**	140	**8454.600**	322	**8454.500**[2)]	322
800	1800	500	**8885.500**	141	**8455.600**	322	**8455.500**[2)]	322
800	1800	600	**8886.500**	142	–		–	
800	2000	400	**8804.500**	143	–		–	
800	2000	500	**8805.500**	144	–		–	
800	2000	600	**8806.500**	145	**8450.600**	322	**8450.500**[2)]	322
800	2000	800	**8808.500**	146	–		–	
800	2200	600	**8826.500**	147	–		–	
1000	1800	400	**8084.500**	140	–		–	
Double-door								
800	1800	500	**8880.500**	141	–		–	
800	1800	600	**8881.500**	142	–		–	
1000	1800	400	**8080.500**	140	–		–	
1000	2000	400	**8004.500**	143	–		–	
1000	2000	500	**8005.500**	144	–		–	
1000	2000	600	**8006.500**	145	–		–	
1200	1200	500	**8215.500**	138	–		–	
1200	1400	500	**8245.500**	138	–		–	
1200	1600	500	**8265.500**	139	–		–	
1200	1800	400	**8284.500**	140	**8456.600**	322	**8456.500**[2)]	322
1200	1800	500	**8285.500**	141	**8453.600**	322	**8453.500**[2)]	322
1200	1800	600	**8286.500**	142	–		–	
1200	2000	400	**8204.500**	143	–		–	
1200	2000	500	**8205.500**	144	–		–	
1200	2000	600	**8206.500**	145	**8451.600**	322	**8451.500**[2)]	322
1200	2000	800	**8208.500**	146	–		–	
1200	2200	600	**8226.500**	147	–		–	

[1)] Without tubular door frame, mounting plate and gland plates.
[2)] Delivery times available on request.

Approvals:
- UL
- CSA
- TÜV
- Russian Maritime Register of Shipping
- TÜV Mark
- Lloyds Register of Shipping
- Bureau Veritas
- VDE
- Germanischer Lloyd



1.3 Baying system TS 8

Electronic enclosure

Dimensions in mm			Model No. TS	Page
Width	Height	Depth	Enclosure	
600	1600	600	**8410.510**	148
600	1600	800	**8418.510**	148
600	2000	600	**8430.510**	148
600	2000	800	**8438.510**	148

Approvals:
- UL
- C-UL



For modular front design

Dimensions in mm			Model No. TS	Page
Width	Height	Depth	Enclosure	
600	2000	600	**8606.512**	149
800	2000	600	**8806.512**	149



For isolator door locking

Dimensions in mm			Model No. TS	Page
Width	Height	Depth	Enclosure	
800	1800	400	**8984.500**	150
800	1800	500	**8985.500**	150
800	2000	500	**8905.500**	150
800	2000	600	**8906.500**	150

Delivery times available on request.

Approvals:
- UL
- C-UL



IP 66/NEMA 4x, NEMA 4

Dimensions in mm			Model No. TS	Page
Width	Height	Depth	Enclosure	
NEMA 4x, stainless steel				
600	1800	600	**8458.640**	151
800	1800	600	**8459.640**	151
600	2000	600	**8452.640**	151
800	2000	600	**8450.640**	151
NEMA 4, sheet steel				
600	1800	600	**8686.540**	151
800	1800	600	**8886.540**	151
600	2000	600	**8606.540**	151
800	2000	600	**8806.540**	151

Delivery times available on request.

Approvals:
- UL
- C-UL





1.3 Baying system TS 8

Prepared for Ex pressurisation see page 152.

For areas at risk from earthquakes see page 153.





1.3 Free-standing enclosure ES 5000

Dimensions in mm			Model No. ES	Page	Model No. ES	Page	Model No. ES	Page
Width	Height	Depth	Sheet steel		Stainless steel 1.4301 (AISI 304)		Stainless steel 1.4404 (AISI 316L)	
Single-door								
600	1600	400	–		**5450.600**	323	**5450.500**[1)]	323
600	1600	500	**5665.500**	154	–		–	
600	1800	400	**5684.500**	154	–		–	
600	1800	500	–		**5451.600**	323	**5451.500**[1)]	323
600	2000	500	**5605.500**	154	–		–	
800	1600	500	**5865.500**	154	–		–	
800	1800	400	**5884.500**	154	–		–	
800	1800	500	–		**5452.600**	323	**5452.500**[1)]	323
800	2000	500	**5805.500**	154	–		–	
800	2000	600	–		**5453.600**	323	**5453.500**[1)]	323
1000	1800	400	**5084.500**	154	**5454.600**	323	**5454.500**[1)]	323
Double-door								
1000	1800	400	**5080.500**	154	–		–	
1200	1600	500	**5265.500**	155	–		–	
1200	1800	400	**5284.500**	155	–		–	
1200	2000	500	**5205.500**	155	**5455.600**	323	**5455.500**[1)]	323
1600	1800	400	**5784.500**	155	–		–	
1800	2000	500	**5905.500**	155	–		–	

[1)] Delivery times available on request.

Approvals:
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- Bureau Veritas
- VDE



1.4 TopConsole systems TP

Combination options of the modules

see page 158.

Property rights:
German registered design
no. DE 407 01 834.4



1.4 Consoles

Dimensions in mm			Model No. TP	Page
Width	Height	Depth		
600	650	240	**6724.500**	160
600	750	240	**6720.500**	160
800	650	240	**6725.500**	160
800	750	240	**6721.500**	160
1200	650	240	**6726.500**	160
1200	750	240	**6722.500**	160
1600	650	240	**6727.500**	160
1600	750	240	**6723.500**	160



1.4 Desk units

Dimensions in mm			Model No. TP	Page
Width	Height	Depth		
Prepared for console				
600	235	750	**6714.500**	161
800	235	750	**6715.500**	161
1200	235	750	**6716.500**	161
1600	235	750	**6717.500**	161

Dimensions in mm			Model No. TP	Page
Width	Height	Depth		
Rear, with hinged lid				
600	235	750	**6710.500**	161
800	235	750	**6711.500**	161
1200	235	750	**6712.500**	161
1600	235	750	**6713.500**	161



1.4 Pedestals

Dimensions in mm			Model No. TP	Page
Width	Height	Depth		
Door(s) front				
600	675	400	**6700.500**	162
800	675	400	**6701.500**	162
1200	675	400	**6702.500**	162
1600	675	400	**6703.500**	162

Dimensions in mm			Model No. TP	Page
Width	Height	Depth		
Door(s) front and rear				
600	675	500	**6704.500**	162
800	675	500	**6705.500**	162
1200	675	500	**6706.500**	162
1600	675	500	**6707.500**	162



1.4 Trim panel

for pedestal

To fit		Model No. TP	Page
Width mm	Depth mm		
600	400	**6730.000**	163
800	400	**6730.010**	163
1200	400	**6730.020**	163
1600	400	**6730.030**	163
600	500	**6730.100**	163
800	500	**6730.110**	163
1200	500	**6730.120**	163
1600	500	**6730.130**	163



1.4 Trim panel

for console/desk unit

For console Width mm	Model No. TP	Page
600	**6730.200**	163
800	**6730.210**	163
1200	**6730.220**	163
1600	**6730.230**	163





1.4 One-piece consoles AP

Dimensions in mm			Model No. AP	Page	Model No. AP		Page
Width	Height	Depth	Sheet steel		Stainless steel 1.4301 (AISI 304)	Stainless steel 1.4404 (AISI 316L)	
Single-door							
600	960	400/480	**2666.500**	165	**2683.600**	**2683.500**[1)]	320
800	960	400/480	**2668.500**	165	**2684.600**	**2684.500**[1)]	320
Double-door							
1000	960	400/480	**2670.500**	165	**2685.600**	**2685.500**[1)]	320
1200	960	400/480	**2672.500**	165	**2686.600**	**2686.500**[1)]	320

[1)] Delivery times available on request.

Approvals:
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- VDE



1.4 Universal consoles AP

Dimensions in mm			Model No. AP	Page
Width	Height	Depth		
With short front door				
600	1300	500	**2694.500**	166
With tall front door				
600	1300	500	**2695.500**	166

Approvals:
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- VDE





1.4 PC enclosure systems

Dimensions in mm			Model No. PC	Page	Model No. PC	Page	Model No. PC	Page	Model No. PC	Page	Model No. PC	Page
Width	Height	Depth	with keyboard drawer, glazed door, top		with keyboard drawer, glazed door, top, mounting compartment, small		with keyboard drawer, mounting compartment, large		with folding keyboard, glazed door, top		with desk section, glazed door, top	
Based on TS 8												
600	1600	636	**8366.000**	168	**8366.300**	168	**8366.400**	168	**8366.100**	169	**8366.200**	169
600	1600	836	**8368.000**	168	–		–		**8368.100**	169	–	
Based on ES												
600	1600	650	**4603.703**	170	**4603.913**	170	**4603.603**	170	**4603.920**	171	**4603.704**	171
600	1600	850	**4609.703**	170	–		–		–		–	
Stainless steel 1.4301 (AISI 304)												
600	1600	620	**4650.000**	321	–		–		–		–	
Stainless steel 1.4404 (AISI 316L)												
600	1600	620	**4650.500**[1)]	321	–		–		–		–	

[1)] Delivery times available on request.

Approvals:
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- VDE



1.4 Industrial Workstations

Fast selection see page 174.

Stainless steel IW see page 318.

Approvals,
may be found on our website: www.rittal.com



1.4 Comfort Panel

Selection of operating/keyboard housings see page 197.



1.4 Comfort Panel operating housing

Standard sizes

Dimensions in mm			To fit front panels mm		Instal-lation depth mm	Support arm connection CP-L			Page
						Model No. CP			
Width	Height	Depth	Width	Height		Top or bottom, by rotating the enclosure	Top, with cable tube cut-out at the bottom[1]	Bottom, with cable tube cut-out at the bottom[1]	
591	419	92	482.6 (19″)	310.3 (7 U)	74	**6371.000**[2]	**6371.010**[2]	**6371.020**[2]	194
591	419	131	482.6 (19″)	310.3 (7 U)	113	**6371.220**[2]	**6371.230**[2]	**6371.240**[2]	194
591	419	170	482.6 (19″)	310.3 (7 U)	152	**6371.030**[3]	**6371.040**[3]	**6371.050**[3]	194
591	419	209	482.6 (19″)	310.3 (7 U)	191	**6371.060**[3]	**6371.070**[3]	**6371.080**[3]	194
591	419	326	482.6 (19″)	310.3 (7 U)	308	**6371.090**[3][6]	**6371.100**[3][6]	**6371.110**[3][6]	194
538	452	92	430	343	74	**6371.120**[2][4]	**6371.130**[2][4]	**6371.140**[2][4]	194
591	464	92	482.6 (19″)	354.8 (8 U)	74	**6371.150**[2][5]	**6371.160**[2][5]	**6371.170**[2][5]	194

[1] Extended delivery times.
[2] ▭ 120 x 65 mm
[3] Ø 130 mm
[4] To fit TFT monitor 15″, SM 6450.010/SM 6450.030/SM 6450.070/SM 6450.120/SM 6450.150
[5] To fit TFT monitor 17″, SM 6450.020/SM 6450.040/SM 6450.080/SM 6450.130/SM 6450.160
[6] Enclosure with fins at the side to enhance the dissipation of heat loss



1.4 Comfort Panel keyboard housing

Standard sizes

Dimensions in mm			To fit front panels mm		Installa-tion depth mm	Model No. CP		Page
Width	Height	Depth	Width	Height		Without cable cut-out	With cable cut-out	
591	264	92	482.6 (19″)	155 (3.5 U)	74	**6371.180**	**6371.190**[1]	195
591	286	92	482.6 (19″)	177 (4 U)	74	**6371.200**	**6371.210**[1]	195
591	264	131	482.6 (19″)	155 (3.5 U)	113	**6371.250**	**6371.260**[1]	195
591	286	131	482.6 (19″)	177 (4 U)	113	**6371.270**	**6371.280**[1]	195

[1] Extended delivery times.



1.4 Optipanel

For front panel size up to 550 x 800 mm.

Selection of operating/keyboard housings see page 204 – 212.

Approvals:
- UL
- C-UL



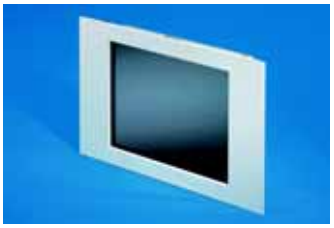
1.4 Optipanel operating housing

Standard sizes

Dimensions in mm			To fit front panels mm		Instal-lation depth mm	Rear panel, hinged		Support arm connection	Model No. CP	Page
Width	Height	Depth	Width	Height		Quick-release fastener for screwdriver	Cam with double-bit insert			
314	278	60	270	234	50	■	–	Rear	**6380.100**	205
527	354	110	482.6 (19″)	310.3 (7 U)	100	–	■	CP-L[1)]	**6380.000**	205
475	387	60	430	343	50	■	–	CP-L[1)], rear	**6380.010[2)]**	205
475	387	110	430	343	100	–	■	CP-L[1)]	**6380.020[2)]**	205
527	399	60	482.6 (19″)	354.8 (8 U)	50	■	–	CP-L[1)], rear	**6380.030[3)]**	205
527	399	110	482.6 (19″)	354.8 (8 U)	100	–	■	CP-L[1)]	**6380.040[3)]**	205

[1)] Support arm connection CP-L ▭ 120 x 65 mm
[2)] To fit TFT monitor 15″, SM 6450.010/SM 6450.030
[3)] To fit TFT monitor 17″, SM 6450.020/SM 6450.040

Approvals:
- UL
- C-UL



For desktop TFT up to 20.1″

Dimensions in mm			To fit front panels mm		Instal-lation depth mm	Rear panel, hinged		Support arm connection	Model No. CP	Page
Width	Height	Depth	Width	Height		Quick-release fastener for screwdriver	Cam with double-bit insert			
574.5	484.5	160	–	–	–	–	■	CP-L Ø 130 mm	**6380.050**	205



1.4 VIP 6000

Selection of operating/keyboard housings

see page 213 – 226.

Approvals:
- UL
- CSA
- TÜV
- Lloyds Register of Shipping
- BV
- VDE



1.4 Compact Panel

Dimensions in mm			To fit		Model No. CP			Page
Width	Height	Depth	front panel width mm	front panel height mm	with support arm connection CP-S	with support arm connection CP-L[1)2)]	without support arm connection[2)]	
241	238	87	178	200	**6340.000**	**6340.010**	**6340.020**	231
241	388	87	178	350	**6340.100**	**6340.110**	**6340.120**	231
241	521	87	178/4 U	482.6/19″	**6340.200[2)]**	**6340.210**	**6340.220**	231
315	238	87	252	200	**6340.300**	**6340.310**	**6340.320**	231
315	388	87	252	350	**6340.400**	**6340.410**	**6340.420**	231

[1)] ▭ 120 x 65 mm
[2)] Extended delivery times.



1.4 Quickline Panel

Dimensions in mm			To fit		Model No. CP	Page
Width	Height	Depth	For installation panel	Cut-out size		
575	383	191	482.6 mm (19″) x 310 mm (7 U)	450 mm x 290 mm	**6690.500**	232
575	538	191	482.6 mm (19″) x 310 mm (7 U) + 482.6 mm (19″) x 155 mm (3.5 U)	450 mm x 290 mm + 450 mm x 137.5 mm	**6691.500**	232





1.4 Command Panel housing with door

based on AE

Dimensions in mm			Model No. CP	Page	Model No. CP		Page
Width	Height	Depth	Sheet steel		Stainless steel 1.4301 (AISI 304)	Stainless steel 1.4404 (AISI 316L)	
300	200	180	**6534.000**	233	–	–	
300	300	150	–		**6535.010**	**6535.510[1)]**	312
300	300	180	**6535.000**	233	–	–	
300	400	180	**6537.000**	233	–	–	
400	300	150	–		**6536.010**	**6536.510[1)]**	312
400	300	180	**6536.000**	233	–	–	
400	400	150	–		**6538.010**	**6538.510[1)]**	312
400	400	180	**6538.000**	233	–	–	
500	500	180	**6544.000**	233	–	–	
600	400	150	–		**6539.010**	**6539.510[1)]**	312

[1)] Delivery times available on request.

Approvals:
- UL
- C-UL



1.4 Command Panel

based on AE

Dimensions in mm			Model No. CP	Page
Width	Height	Depth		
300	200	155	**6540.200**	234
380	300	210	**6531.200**	234
380	380	210	**6530.200**	234
500	500	210	**6532.200**	234
600	380	210	**6533.200**	234

Approvals:
- UL
- C-UL



1.4 Command Panel

based on AE with display panel front

Dimensions in mm			Model No. CP	Page
Width	Height	Depth		
380	380	249	**6442.500**	235
380	600	249	**6462.500**	235
500	500	249	**6552.500**	235
600	600	249	**6662.500**	235

Command Panel based on AE with wide VIP 6000 frame

see page 236.

Approvals:
- UL
- C-UL



1.4 Support arm systems

Fast selection of CP-S see page 241.

Fast selection of CP-L see page 250.

Fast selection of CP-XL see page 268.

Fast selection of CP-Q see page 280.

Support arm system CP-S, stainless steel see page 313.



1.4 Stand systems

Selection see from page 286.



1.5 Compact enclosures HD

Stainless steel

Dimensions in mm				Model No. HD		Page
Width, single-door	Height, front	Height, rear	Depth	Stainless steel 1.4301 (AISI 304)	Stainless steel 1.4404 (AISI 316L)	
220	350	437	155	**1302.600**	**1302.500**[1)]	299
390	430	549	210	**1306.600**	**1306.500**[1)]	299
390	650	769	210	**1308.600**	**1308.500**[1)]	299
510	550	669	210	**1307.600**	**1307.500**[1)]	299
610	430	601	300	**1320.600**	**1320.500**[1)]	299
610	650	769	210	**1310.600**	**1310.500**[1)]	299
810	1050	1221	300	**1316.600**	**1316.500**[1)]	299
810	1250	1421	300	**1317.600**	**1317.500**[1)]	299

[1)] Delivery times available on request.





1.6 Stainless steel

Terminal boxes KL see page 25
Compact enclosures AE see page 28
Compact enclosure AE, protection category IP 69K[1)] see page 310
Command Panel housing with door see page 38
Support arm system CP-S see page 313
Stand systems see page 317
One-piece consoles AP see page 34
PC enclosure systems see page 35
Baying systems TS 8 see page 30
Free-standing enclosure ES 5000 see page 32

[1)] IP 69K to DIN 40 050-9



1.6 Keyboard housing, stainless steel

Dimensions in mm			No. of switch cut-outs	Model No. SM		Page
Width	Height	Depth		Stainless steel 1.4301 (AISI 304)	Stainless steel 1.4404 (AISI 316L)	
100	100	90	1	**2384.010**	**2384.510[1)]**	304
160	100	90	2	**2384.020**	**2384.520[1)]**	304
220	100	90	3	**2384.030**	**2384.530[1)]**	304
280	100	90	4	**2384.040**	**2384.540[1)]**	304

[1)] Delivery times available on request.



1.6 Premium Line KL, protection category IP 69K[2)], stainless steel

Dimensions in mm			Model No. KL		Page
Width	Height	Depth	Stainless steel 1.4301 (AISI 304)	Stainless steel 1.4404 (AISI 316L)	
150	150	80	**1024.010**	**1024.510[1)]**	306
150	150	120	**1024.020**	**1024.520[1)]**	306
300	200	120	**1024.030**	**1024.530[1)]**	306
400	300	120	**1024.040**	**1024.540[1)]**	306

[1)] Delivery times available on request. [2)] IP 69K to DIN 40 050-9



1.6 Bus enclosures BG, stainless steel

Dimensions in mm			Model No. BG		Page
Width	Height	Depth	Stainless steel 1.4301 (AISI 304)	Stainless steel 1.4404 (AISI 316L)	
200	300	80	**1583.010**	**1583.500[1)]**	307
200	300	80	**1583.020[1)2)]**	**1583.530[1)2)]**	307
300	300	80	**1584.010**	**1584.500[1)]**	307
300	300	80	**1584.020[1)2)]**	**1584.530[1)2)]**	307
400	300	80	**1585.010**	**1585.500[1)]**	307
400	300	80	**1585.020[1)2)]**	**1585.530[1)2)]**	307
400	200	123	**1558.010**	**1558.500[1)]**	307
400	200	123	**1558.020[1)2)]**	**1558.530[1)2)]**	307
600	200	123	**1559.010**	**1559.500[1)]**	307
600	200	123	**1559.020[1)2)]**	**1559.530[1)2)]**	307

[1)] Delivery times available on request.
[2)] With silicone seal.

Approvals (except enclosures with silicone seal):
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL



1.6 Premium Panel, protection category IP 69K[2)], stainless steel

Dimensions in mm								Support arm connection	Model No. CP		Page
Width	Height		Depth	For installation panel W x H		Installation depth			Stainless steel 1.4301 (AISI 304)	Stainless steel 1.4404 (AISI 316L)	
	Operating housing	Keyboard housing	Operating housing	Operating housing	Keyboard housing	Operating housing	Keyboard housing				
With keyboard housing											
530	460	200	120	482.6 mm (19″) x 354.8 mm (8 U)	482.6 mm (19″) x 177 mm (4 U)	115	front 58 rear 63	Top	**6680.000**	**6650.000[1)]**	311
530	460	200	120			115	front 58 rear 63	Bottom	**6680.010**	**6650.010[1)]**	311
530	460	200	220			215	front 58 rear 63	Top	**6680.100**	**6650.100[1)]**	311
530	460	200	220			215	front 58 rear 63	Bottom	**6680.110**	**6650.110[1)]**	311
Without keyboard housing											
530	360	–	120	482.6 mm (19″) x 310 mm (7 U)	–	115	–	Top, or bottom by rotating the enclosure	**6681.000**	**6651.000[1)]**	311
530	360	–	220			215	–		**6681.100**	**6651.100[1)]**	311

[1)] Delivery times available on request.
[2)] IP 69K to DIN 40 050-9



1.7 Ex enclosures, stainless steel

with screw-fastened lid

Dimensions in mm			Model No. KEL	Page
Width	Height	Depth		
150	150	80	**9301.000**	325
200	200	80	**9303.000**	325
300	150	80	**9302.000**	325
300	200	80	**9304.000**	325
300	300	120	**9306.000**	325
400	200	120	**9305.000**	325

with hinged door

Dimensions in mm			Number of fasteners	Model No. KEL	Page
Width	Height	Depth			
200	300	155	1	**9401.600**	325
300	380	210	1	**9409.600**	325
380	300	155	1	**9402.600**	325
380	380	210	1	**9403.600**	325
380	600	210	2	**9404.600**	325
600	600	210	2	**9405.600**	325
600	760	210	2	**9406.600**	325
760	760	300	2	**9407.600**	325
800	1000	300	2	**9408.600**	325

Approvals:
- PTB/ATEX



1.7 Ex enclosures, plastic

Dimensions in mm			Model No. KEL	Page
Width	Height	Depth		
200	300	150	**9201.600**	326
250	350	150	**9202.600**	326
300	400	200	**9203.600**	326
400	400	200	**9204.600**	326
400	600	200	**9205.600**	326
500	500	300	**9207.600**	326
600	600	200	**9206.600**	326
600	800	300	**9208.600**	326
800	1000	300	**9209.600**	326

Approvals:
- PTB/ATEX

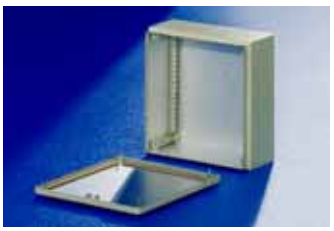


1.8 EMC enclosures

EMC baying systems TS 8 see page 329

EMC E-Box EB see page 328

EMC free-standing enclosure ES 5000 see page 329



1.8 EMC terminal boxes KL

Dimensions in mm			Model No. KL	Page
Width	Height	Depth		
300	300	120	**1507.750**	328

Approvals:
- UL
- CSA
- TÜV
- Lloyds Register of Shipping
- VDE



1.8 EMC compact enclosures AE

Dimensions in mm			Model No. AE	Page
Width	Height	Depth		
380	380	210	**1380.750**	328
600	380	210	**1039.750**	328
600	600	210	**1060.750**	328
800	1000	300	**1180.750**	328

Approvals:
- UL
- CSA
- TÜV
- Lloyds Register of Shipping
- VDE



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Modern power distribution systems are becoming ever more powerful. For this reason, users demand the security of internationally recognised and approved power distribution components. Rittal provides the switchgear designer with innovative systems which comply with the relevant regulations.
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- Ri4Power Form 1 – ISV
- Ri4Power Form 2-4

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2.1 Busbar systems up to 250 A (40 mm)

Rittal Mini-PLS

Description	Length mm	Packs of	**Model No. SV**	Page
Mini-PLS busbar support, 3-pole, 40 mm bar centre distance	–	4	**9600.000**	336
Mini-PLS end cover	–	2	**9610.000**	336
Mini-PLS special busbars E-Cu 120 mm²	500	3	**9601.000**	336
	700	3	**9602.000**	336
	1100	3	**9603.000**	336
	1500	3	**9624.000**	336
Mini-PLS busbar connectors	–	3	**9611.000**	336
Mini-PLS base tray sections	250	1	**9604.000**	336
	500	1	**9605.000**	336
	700	1	**9606.000**	336
	1100	1	**9607.000**	336
Mini-PLS cover sections	250	1	**9608.000**	336
	500	1	**9609.000**	336



Mini-PLS busbar connection adaptor

Design	Packs of	**Model No. SV**	Page
63 A, 690 V~, connection top/bottom for round conductors 1.5 to 35 mm² and laminated copper bars, clamping area 10 x 8 mm	1	**9613.000**	337
250 A, 690 V~, connection top/bottom for round conductors 10 to 120 mm² and laminated copper bars, clamping area 17 x 15 mm	1	**9612.000**	337





2.1 Busbar systems up to 250 A (40 mm)

Mini-PLS component adaptor
Cable outlet at the top

Construction width mm	Rated current up to	Rated operating voltage	Connection cables[1)]	Support rails		Packs of	Model No. SV	Page
				Height mm	No. of			
45	12 A	690 V~	AWG 14	7.5	1	1	**9614.110**	338
45	25 A	690 V~	AWG 12	7.5	1	1	**9614.100**	338
45	25 A	690 V~	AWG 12	15	1	1	**9615.100**	338
54	25 A	690 V~	AWG 12	7.5	1	1	**9614.000**	338
54	25 A	690 V~	AWG 12	15	1	1	**9615.000**	338
72	25 A	690 V~	AWG 12	7.5	1	1	**9625.000**	338
72	25 A	690 V~	AWG 12	15	1	1	**9626.000**	338
90	25 A	690 V~	AWG 12	7.5	1	1	**9629.010**	338
99	25 A	690 V~	AWG 12	15	1	1	**9629.020**	338
108	25 A	690 V~	AWG 12	7.5	1	1	**9629.030**	338
54	40 A	690 V~	AWG 10	7.5	1	1	**9616.000**	340
54	40 A	690 V~	AWG 10	15	1	1	**9617.000**	340
72	40 A	690 V~	AWG 10	7.5	1	1	**9627.000**	340
72	40 A	690 V~	AWG 10	15	1	1	**9628.000**	340
90	100 A	690 V~	35 mm²	Mounting plate		1	**9629.000**	340

[1)] AWG = American Wire Gauges
AWG 14 = 2.08 mm² ≙ 2.5 mm²
AWG 12 = 3.31 mm² ≙ 4 mm²
AWG 10 = 5.26 mm² ≙ 6 mm²

Note:
Overview of standard commercially available switchgear with allocation of the relevant adaptor, see page 1236/1237.



Mini-PLS quick-fit component adaptor

Construction width mm	Rated current up to[1)]	Rated operating voltage	For power circuit-breakers	Packs of	Model No. SV	Page
54	25 A (32 A)	690 V~	AEG, General Electric, Schiele	1	**9618.000**	339
54	25 A (32 A)	690 V~	Moeller Electric	1	**9619.000**	339
54	25 A (32 A)	690 V~	Allen Bradley, Moeller	1	**9620.000**	339
54	25 A (32 A)	690 V~	Telemecanique	1	**9621.000**	339
54	25 A (32 A)	690 V~	ABB, Siemens, Telemecanique	1	**9622.000**	339

[1)] Rated current 25 A at 35°C and 32 A at 25°C ambient temperature

Note:
Overview of standard commercially available switchgear with allocation of the relevant adaptor, see page 1236.



Mini-PLS bus-mounting fuse base

Design	Packs of	Model No. SV	Page
D 02-E 18, 63 A, 400 V~, terminal for round conductor 1.5 – 16 mm²	1	**9630.000**	341

NH on-load isolators

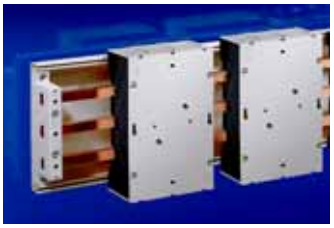
Design	Packs of	Model No. SV	Page
Size 000, 100 A, 690 V~, cable outlet top/bottom, terminal up to 50 mm²	1	**3431.000**	341
Mini-PLS busbar adaptor for SV 3431.000	1	**9629.100**	341



2.1 Busbar systems up to 360 A (40 mm)

System components

Description		Dimensions in mm	Length mm	Packs of	Model No. SV	Page
Busbar support, 3-pole, 40 mm bar centre distance, for busbars E-Cu 12 x 5 up to 15 x 10 mm		–	–	4	**9350.000**	342
End covers		–	–	2	**9610.000**	342
Busbars E-Cu		12 x 5	2400	6	**3580.000**	342
		12 x 10	2400	6	**3580.100**	342
		15 x 5	2400	6	**3581.000**	342
		15 x 10	2400	6	**3581.100**	342
Base tray sections		–	250	1	**9604.000**	343
		–	500	1	**9605.000**	343
		–	700	1	**9606.000**	343
		–	1100	1	**9607.000**	343
Cover sections		–	250	1	**9608.000**	343
		–	500	1	**9609.000**	343
Busbar cover sections for busbars	12/15 x 5 mm	–	1000	4	**9350.010**	343
	12/15 x 10 mm	–	1000	4	**9350.060**	343
Busbar connectors		–	–	3	**9350.075**	410



Busbar connection adaptor

Design	For busbars mm	Packs of	Model No. SV	Page
360 A, 690 V~, for round conductors 10 – 120 mm² (max. 250 A) and laminated copper bars (max. 360 A), clamping area 17 x 15 mm	12 x 5/10	1	**9350.020**	344
	15 x 5/10	1	**9350.030**	344



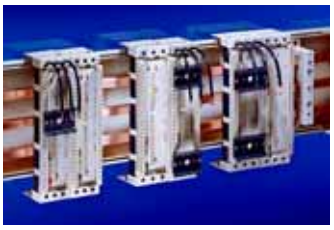
Bus-mounting fuse base

Design	For busbars mm	Packs of	Model No. SV	Page
D 02-E 18, 63 A, 400 V~, terminal for round conductor 1.5 – 16 mm²	12 x 5/10	1	**9350.050**	345
	15 x 5/10	1	**9350.500**	345

NH on-load isolators

Design	For busbars mm	Packs of	Model No. SV	Page
Size 000, 100 A, 690 V~, cable outlet top/bottom, terminal up to 50 mm²	–	1	**3431.000**	341
Busbar adaptor for SV 3431.000	12 x 5/10	1	**9350.400**	345
	15 x 5/10	1	**9350.410**	345





2.1 Busbar systems up to 360 A (40 mm)

Multi-functional component adaptor

Con-struc-tion width mm	Rated current up to	Rated operating voltage	Connec-tion cables[1)]	Connec-tion of round conduc-tors up to	Cable outlet	Support rails		For bar thickness mm	Packs of	**Model No. SV**	Page
						Height mm	No. of				
45	12 A	690 V~	AWG 14	–	top	10	1	5	1	**9350.080**	346
45	12 A	690 V~	AWG 14	–	top	10	1	10	1	**9350.090**	346
45	25 A	690 V~	AWG 12	–	top	10	1	5	1	**9350.100**	346
45	25 A	690 V~	AWG 12	–	top	10	1	10	1	**9350.110**	346
45	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9350.120**	346
45	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9350.130**	346
45	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9350.260**	346
45	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9350.270**	346
45	25 A	690 V~	AWG 12	–	top	10	2 (1 var.)	5	1	**9350.140**	346
45	25 A	690 V~	AWG 12	–	top	10	2 (1 var.)	10	1	**9350.150**	346
90	25 A	690 V~	AWG 12	–	top	10	1	5	1	**9350.280**	347
90	25 A	690 V~	AWG 12	–	top	10	1	10	1	**9350.290**	347
99	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9350.300**	347
99	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9350.310**	347
108	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9350.320**	347
108	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9350.330**	347
45	25 A	690 V~	–	16 mm²	top	10	2 (1 var.)	5	1	**9350.160**	348
45	25 A	690 V~	–	16 mm²	top	10	2 (1 var.)	10	1	**9350.170**	348
45	25 A	690 V~	–	16 mm²	top/bottom	10	2	5	1	**9350.180**	348
45	25 A	690 V~	–	16 mm²	top/bottom	10	2	10	1	**9350.190**	348
54	40 A	690 V~	–	16 mm²	top	10	2	5	1	**9350.220**	348
54	40 A	690 V~	–	16 mm²	top	10	2	10	1	**9350.230**	348
54	40 A	690 V~	–	16 mm²	top/bottom	10	2	5	1	**9350.240**	348
54	40 A	690 V~	–	16 mm²	top/bottom	10	2	10	1	**9350.250**	348
54	40 A	690 V~	AWG 10	–	top	10	2	5	1	**9350.200**	349
54	40 A	690 V~	AWG 10	–	top	10	2	10	1	**9350.210**	349
54	40 A	690 V~	AWG 10	–	top	15	1	5	1	**9350.340**	349
54	40 A	690 V~	AWG 10	–	top	15	1	10	1	**9350.350**	349

[1)] AWG = American Wire Gauges
AWG 14 = 2.08 mm² ≙ 2.5 mm²
AWG 12 = 3.31 mm² ≙ 4 mm²
AWG 10 = 5.26 mm² ≙ 6 mm²

Note:
Overview of standard commercially available switchgear with allocation of the relevant adaptor, see page 1238.



Component adaptor

Design	For busbars mm	Packs of	**Model No. SV**	Page
100 A, 690 V~, construction width 90 mm, connection cables 35 mm², cable outlet at the top	12 x 5/10	1	**9350.420**	349
	15 x 5/10	1	**9350.430**	349

Note:
Overview of standard commercially available switchgear with allocation of the relevant adaptor, see page 1238.





2.2 RiLine60 busbar systems up to 800 A (60 mm)

System components

Description	Number of poles	Bar centre distance mm	For busbars mm	Packs of	Model No. SV	Page
Busbar support with external attachment	3-pole	60	12 x 5/10[1)], 15 x 5 – 30 x 10	4	**9340.010**	350
Busbar support with internal attachment	3-pole	60	12 x 5/10[1)], 15 x 5 – 30 x 10	4	**9340.000**	350
Busbar support UL 508 with internal attachment	3-pole	60	15 x 5 – 30 x 10	4	**9340.050**	354
End covers				2	**9340.070**	350
Spacers for SV 9340.000/.010				12	**9340.090**	350
Busbars E-Cu						350
Busbar cover section (length 1 m/each)						408

[1)] If 12 x 5/10 mm busbars are used, the spacer SV 9340.090 is additionally required

Description	Length mm	Packs of	Model No. SV	Page
Base tray	500	2	**9340.100**	351
	700	2	**9340.110**	351
	900	2	**9340.120**	351
	1100	2	**9340.130**	351
	2400	1	**9340.170**	351
Cover section	700	2	**9340.200**	351
	1100	2	**9340.210**	351
Base tray reinforcement	500	2	**9340.150**	351
	1000	2	**9340.160**	351
Support panel for cover section	–	5	**9340.220**	351

Note:
The following RiLine60 components (3-pole) are suitable for UL applications:
- Busbar connection adaptor
- OM and OT adaptors with connection cables
- OM and OT supports
- Circuit-breaker component adaptors.

The data given in the tables may vary for UL applications, see page 1235.





2.2 RiLine60 busbar systems up to 800 A/1600 A (60 mm)

Rittal PLS

Description	Number of poles	Bar centre distance mm	Packs of	Model No. SV		Page
				PLS 800	PLS 1600	
PLS busbar supports	3-pole	60	4	**9341.000**	**9342.000**	352
PLS busbar supports UL 508	3-pole	60	4	**9341.050**	**9342.050**	355
End covers			2	**9341.070**	**9342.070**	352/355
PLS special busbars						352/355

Description	Length mm	Height mm	Packs of	Model No. SV		Page
				PLS 800	PLS 1600	
Base tray	500	–	2	**9341.100**	**9342.100**	353
	700	–	2	**9341.110**	**9342.110**	353
	900	–	2	**9341.120**	**9342.120**	353
	1100	–	2	**9341.130**	**9342.130**	353
	2400	–	1	**9341.170**	**9342.170**	353
Cover section	700	–	2	**9340.200**		353
	1100	–	2	**9340.210**		353
Base tray reinforcement	500	–	2	**9341.150**	**9342.150**	353
	1000	–	2	**9341.160**	**9342.160**	353
Support panel for cover section	–	–	5	**9340.220**		353

Note:
The following RiLine60 components (3-pole) are suitable for UL applications:
- Busbar connection adaptor
- OM and OT adaptors with connection cables
- OM and OT supports
- Circuit-breaker component adaptors.

The data given in the tables may vary for UL applications, see page 1235.



2.2 RiLine60 busbar systems up to 800 A/1600 A (60 mm)

Busbar connection adaptor

Rated current up to	Rated operating voltage	Connection of round conductors			Clamping area for laminated copper bars mm	Packs of	Model No. SV			Page
		Fine wire with wire end ferrule mm^2	Multi-wire mm^2	Solid mm^2			Outlet top/bottom	Outlet at top	Outlet at bottom	
63 A	690 V~	2.5 – 10	2.5 – 16	2.5 – 16	–	1	**–**	**9342.200**	**9342.210**	356
125 A	690 V~	10 – 25	16 – 35	–	10 x 7.8	1	**9342.220**[1)]	**9342.230**	**9342.240**	356
250 A	690 V~	35 – 120	35 – 120	–	18.5 x 15.5	1	**9342.250**	**9342.260**	**9342.270**	356
800 A	690 V~	95 – 185	95 – 300	–	33 x 20	1	**9342.280**[1)]	**9342.290**	**9342.300**	356

[1)] Not suitable for UL applications



Rated current up to	Rated operating voltage	Connection of round conductors		Clamping area for laminated copper bars mm		Packs of	Model No. SV	Page
		Fine wire with wire end ferrule mm^2	Multi-wire mm^2	For 5 mm bar thickness	For 10 mm bar thickness		Outlet top/bottom	
600 A	690 V~	35 – 240	35 – 240	24 x 21	24 x 21	1 set (of 3)	**3439.010**[1)]	357
800 A	690 V~	95 – 185	95 – 300	33 x 27	33 x 22	1 set (of 3)	**9342.310**	357
1600 A	690 V~	–	–	65 x 27	65 x 22	1 set (of 3)	**9342.320**	357

[1)] Not suitable for UL applications



Connection clamps/system covers

Description	Page
Conductor connection clamps	358
Plate clamp	358
System covers	358





2.2 RiLine60 busbar systems up to 800 A/1600 A (60 mm)

Multi-functional component adaptor

Construction width mm	Rated current up to	Rated operating voltage	Connection cables[1)]	Connection of round conductors up to	Cable outlet	Support rails: Height mm	Support rails: No. of	For bar thickness mm	Packs of	**Model No. SV**	Page
45	12 A	690 V~	AWG 14	–	top	10	1	5	1	**9320.160**	359
45	12 A	690 V~	AWG 14	–	top	10	1	10	1	**9320.170**	359
45	25 A	690 V~	AWG 12	–	top	10	1	5	1	**9320.180**	359
45	25 A	690 V~	AWG 12	–	top	10	1	10	1	**9320.190**	359
45	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9320.200**	359
45	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9320.210**	359
45	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9320.440**	359
45	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9320.450**	359
45	25 A	690 V~	AWG 12	–	top	10	2 (1 var.)	5	1	**9320.220**	359
45	25 A	690 V~	AWG 12	–	top	10	2 (1 var.)	10	1	**9320.230**	359
45	25 A	690 V~	AWG 12	–	bottom	10	2	5	1	**9320.240**	359
45	25 A	690 V~	AWG 12	–	bottom	10	2	10	1	**9320.250**	359
90	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9320.380**	360
90	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9320.390**	360
99	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9320.400**	360
99	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9320.410**	360
108	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9320.420**	360
108	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9320.430**	360
45	25 A	690 V~	–	16 mm²	top	10	2 (1 var.)	5	1	**9320.260**	360
45	25 A	690 V~	–	16 mm²	top	10	2 (1 var.)	10	1	**9320.270**	360
45	25 A	690 V~	–	16 mm²	top/bottom	10	2	5	1	**9320.280**	360
45	25 A	690 V~	–	16 mm²	top/bottom	10	2	10	1	**9320.290**	360
54	40 A	690 V~	AWG 10	–	top	10	2	5	1	**9320.300**	361
54	40 A	690 V~	AWG 10	–	top	10	2	10	1	**9320.310**	361
54	40 A	690 V~	AWG 10	–	top	15	1	5	1	**9320.460**	361
54	40 A	690 V~	AWG 10	–	top	15	1	10	1	**9320.470**	361
54	40 A	690 V~	AWG 10	–	bottom	10	2	5	1	**9320.320**	361
54	40 A	690 V~	AWG 10	–	bottom	10	2	10	1	**9320.330**	361
54	40 A	690 V~	–	16 mm²	top	10	2	5	1	**9320.340**	361
54	40 A	690 V~	–	16 mm²	top	10	2	10	1	**9320.350**	361
54	40 A	690 V~	–	16 mm²	top/bottom	10	2	5	1	**9320.360**	361
54	40 A	690 V~	–	16 mm²	top/bottom	10	2	10	1	**9320.370**	361

[1)] AWG = American Wire Gauges
AWG 14 = 2.08 mm² ≙ 2.5 mm²
AWG 12 = 3.31 mm² ≙ 4 mm²
AWG 10 = 5.26 mm² ≙ 6 mm²

Note:
Overview of standard commercially available switchgear with allocation of the relevant adaptor, see page 1239.





2.2 RiLine60 busbar systems up to 800 A/1600 A (60 mm)

OM and OT adaptors

Design	Construction width mm	Rated current up to	Rated operating voltage	Connection cables[1]	Connection of round conductors mm²	Support rails: Height mm	Support rails: No. of	Packs of	Model No. SV	Page
OM	45	25 A	690 V~	AWG 12	–	10	1	1	**9340.310[2]**	364
	45	25 A	690 V~	AWG 12	–	10	1	1	**9340.340**	364
	45	25 A	690 V~	AWG 12	–	10	1	1	**9340.370[3]**	364
	45	32 A	690 V~	AWG 10	–	10	1	1	**9340.350**	364
	45	32 A	690 V~	AWG 10	–	10	2	1	**9340.380**	364
	55	32 A	690 V~	AWG 10	–	10	1	1	**9340.460**	364
	55	32 A	690 V~	AWG 10	–	10	2	1	**9340.470**	364
	75	40 A	690 V~	AWG 8	–	7.5	2	1	**9340.710[4]**	365
	55	65 A	690 V~	AWG 6	–	10	1	1	**9340.410[2]**	365
	55	65 A	690 V~	AWG 6	–	10	1	1	**9340.430**	365
	55	65 A	690 V~	AWG 6	–	10	2	1	**9340.450**	365
	75	65 A	690 V~	AWG 6	–	7.5	1	1	**9340.700[4]**	365
	45	32 A	690 V~	–	1.5 – 6	10	1	1	**9340.510[2]**	362
	45	32 A	690 V~	–	1.5 – 6	10	1	1	**9340.530**	362
	45	32 A	690 V~	–	1.5 – 6	10	1	1	**9340.550[3]**	362
	55	32 A	690 V~	–	1.5 – 6	10	1	1	**9340.660**	362
	55	65 A	690 V~	–	2.5 – 16	10	1	1	**9340.610[2]**	363
	55	65 A	690 V~	–	2.5 – 16	10	1	1	**9340.630**	363
	55	65 A	690 V~	–	2.5 – 16	10		1	**9340.650**	363
OM Premium	45	25 A	690 V~	–	1.5 – 4	10	1	1	**9340.900[5]**	362
	45	25 A	690 V~	–	1.5 – 4	10	2	1	**9340.910[6]**	362
	55	25 A	690 V~	–	1.5 – 4	10	2	1	**9340.930[6]**	362
OT	45	25 A	690 V~	AWG 12	–	10	1	1	**9341.310[2]**	367
	45	25 A	690 V~	AWG 12	–	10	1	1	**9341.340**	367
	45	25 A	690 V~	AWG 12	–	10	1	1	**9341.370[3]**	367
	55	32 A	690 V~	AWG 10	–	10	1	1	**9341.460**	367
	55	65 A	690 V~	AWG 6	–	10	1	1	**9341.410[2]**	367
	55	65 A	690 V~	AWG 6	–	10	1	1	**9341.430**	367
	55	65 A	690 V~	AWG 6	–	10	2	1	**9341.450**	367
	45	32 A	690 V~	–	1.5 – 6	10	1	1	**9341.510[2]**	366
	45	32 A	690 V~	–	1.5 – 6	10	1	1	**9341.530**	366
	45	32 A	690 V~	–	1.5 – 6	10	1	1	**9341.550[3]**	366
	55	32 A	690 V~	–	1.5 – 6	10	1	1	**9341.660**	366
	55	65 A	690 V~	–	2.5 – 16	10	1	1	**9341.610[2]**	366
	55	65 A	690 V~	–	2.5 – 16	10	1	1	**9341.630**	366
	55	65 A	690 V~	–	2.5 – 16	10	2	1	**9341.650**	366
OT Premium	45	25 A	690 V~	–	1.5 – 4	10	1	1	**9341.900[5]**	366

[1] AWG = American Wire Gauges
AWG 12 = 3.31 mm² ≙ 4 mm²
AWG 10 = 5.26 mm² ≙ 6 mm²
AWG 8 = 8.37 mm² ≙ 10 mm²
AWG 6 = 13.3 mm² ≙ 16 mm²
[2] Without support frame
[3] With pin block
[4] Without support frame, with insert strips
[5] With sub-unit and pin block
[6] With connector

Note:
Overview of standard commercially available switchgear with allocation of the relevant adaptor, see page 1240 – 1243.

OT adaptors/supports may only be used with 10 mm thick busbars or Rittal PLS 800/1600 A.
Max. distance between supports: 300 mm.

Also required:

Base tray and base tray reinforcement,
see page 351.



2.2 RiLine60 busbar systems up to 800 A/1600 A (60 mm)

OM and OT supports without contact system

Design	Construction width mm	Support rails		Packs of	Model No. SV	Page
		Height mm	No. of			
OM	45	10	–	1	**9340.260**[1]	368
OM	55	10	1[1]	1	**9340.270**	368
OT	45	10	–	1	**9341.260**[1]	369
OT	55	10	1[1]	1	**9341.270**	369

[1] With pin block



Component adaptor/Circuit-breaker component adaptor

Construction width mm	Rated current up to	Rated operating voltage	Connection of round conductors mm²	Packs of	Model No. SV		Page
					Cable outlet at the top[1]	Cable outlet at the bottom[1]	
72	100 A	690 V~	10 – 35	1	**9342.400**	**9342.410**	370
90	125 A	690 V~	35 – 120	1	**9342.540**	**9342.550**	370
90	160 A	690 V~	35 – 120	1	**9342.500**[4]	**9342.510**[4]	370
105	250 A	690 V~	35 – 120	1	**9342.600**	**9342.610**	371
140	630 A[2]	690 V~	max. 150[3]	1	**9342.700**	**9342.710**	371

[1] Switch outlet or outgoing cable
[2] Derating may be necessary, depending on the application
[3] With ring terminal
[4] Not suitable for UL applications



Bus-mounting fuse bases

Type	Rated current	Rated operating voltage	For bar thickness mm	Packs of	Model No. SV				Page
					Bus-mounting fuse base	Contact hazard protection cover	End caps[4]	Side cover	
for clamping screw attachment									
D 02-E 18[1]	63 A	400 V~	5/10	10	**3418.000**	**3419.000**	**3420.010**	**3093.000**	372
D II-E 27[2]	25 A	500 V~	5/10	10	**3427.000**	**3428.000**	**3429.010**	**3093.000**	372
D III-E 33[2]	63 A	690 V~	5/10	10	**3433.000**	**3434.000**	**3435.010**	**3093.000**	372
for snap-on mounting									
D 02-E 18[1]	63 A	400 V~	5	10	**3422.000**	**3424.000**	**3425.010**	**3093.000**	373
D 02-E 18[1]	63 A	400 V~	10	10	**3423.000**	**3424.000**	**3425.010**	**3093.000**	373
D II-E 27[3]	25 A	500 V~	5	10	**3520.000**	**3428.000**	**3429.010**	**3093.000**	373
D II-E 27[3]	25 A	500 V~	10	10	**3521.000**	**3428.000**	**3429.010**	**3093.000**	373
D III-E 33[3]	63 A	690 V~	5	10	**3530.000**	**3434.000**	**3435.010**	**3093.000**	373
D III-E 33[3]	63 A	690 V~	10	10	**3531.000**	**3434.000**	**3435.010**	**3093.000**	373

[1] Adaptor sleeve
[2] Adaptor screw
[3] Gauge ring
[4] For system with base tray. For system without base tray, please use extension no. .000





NH fused isolators/NH on-load isolators

Description	Cable outlet	Type of connection	For bar thickness mm	Packs of	Model No. SV	Page
NH fused isolators, size 00, 160 A, 690 V~	top	screw M8	5/10	1	**3591.020**	374
	bottom	screw M8	5/10	1	**3591.030**	374
NH on-load isolator, size 000, 100 A, 690 V~	top/bottom	terminal up to 50 mm²	–	1	**3431.000**	375
Busbar adaptor for SV 3431.000	–	–	5	1	**9320.040**	375
	–	–	10	1	**9320.050**	375



2.2 RiLine60 busbar systems up to 800 A/1600 A (60 mm)

NH bus-mounting on-load isolator

Cable outlet top/bottom

Design	Type of connection	Clamping area for laminated copper bars mm	Packs of	Model No. SV	With fuse monitoring		Page
					Model No. SV[2)]	Model No. SV[3)]	
Size 00, 160 A, 690 V~/500 V~[1)]	Box terminal 4 – 95 mm²	13 x 13	1	**9343.000**	**9343.020**	**9343.040**	376
Size 00, 160 A, 690 V~/500 V~[1)]	Screw M8 up to 95 mm²	20 x 5	1	**9343.010**	**9343.030**	**9343.050**	376
Size 1, 250 A, 690 V~/500 V~[1)]	Box terminal 35 – 150 mm²	20 x 14	1	**9343.100**	**9343.120**	**9343.140**	377
Size 1, 250 A, 690 V~/500 V~[1)]	Screw M10 up to 150 mm²	32 x 10	1	**9343.110**	**9343.130**	**9343.150**	377
Size 2, 400 A, 690 V~/500 V~[1)]	Box terminal 95 – 300 mm²	32 x 20	1	**9343.200**	**9343.220**	**9343.240**	378
Size 2, 400 A, 690 V~/500 V~[1)]	Screw M10 up to 240 mm²	50 x 10	1	**9343.210**	**9343.230**	**9343.250**	378
Size 3, 630 A, 690 V~/500 V~[1)]	Box terminal 95 – 300 mm²	32 x 20	1	**9343.300**	**9343.320**	**9343.340**	379
Size 3, 630 A, 690 V~/500 V~[1)]	Screw M10 up to 300 mm²	50 x 10	1	**9343.310**	**9343.330**	**9343.350**	379

[1)] Rated operating voltage 400 V~ to 500 V~ for NH isolators with electronic fuse monitoring
[2)] Electronic fuse monitoring
[3)] Electromechanical fuse monitoring



2.2 RiLine60 busbar systems up to 800 A (60 mm)

System components, 4-pole

Description	Length mm	Packs of	Model No. SV	Page
Busbar support, 4-pole, 60 mm bar centre distance, for busbars E-Cu 12 x 5/10 mm[1)], 15 x 5 – 30 x 10 mm	–	4	**9340.004**	380
Spacers for SV 9340.004	–	12	**9340.090**	380
End covers	–	2	**9340.074**	380
Base tray	1100	2	**9340.134**	381
Cover section	1100	2	**9340.214**	381
Support panel for SV 9340.214	–	5	**9340.224**	381
Busbars E-Cu				380
Busbar cover section				408

[1)] If 12 x 5/10 mm busbars are used, the spacer SV 9340.090 is additionally required





2.2 RiLine60 busbar systems up to 800 A/1600 A (60 mm)

System components PLUS (4-pole)

Description	Bar centre distance mm	For busbars		Packs of	Model No. SV	Page
		E-Cu 30 x 10 mm	PLS 1600			
Busbar support 30 x 10 PLUS	60	■	–	4	**9342.014**	382
Busbar support PLS 1600 PLUS	60	–	■	4	**9342.004**	382
End covers for side contact hazard protection				2	**9342.074**	382
Busbars E-Cu for SV 9342.014						382
PLS special busbars for SV 9342.004						382

Description	Length mm	Packs of	Model No. SV	Page
Base tray	1100	2	**9342.134**	383
Cover section	1100	2	**9340.214**	383
Support panel for SV 9340.214	–	5	**9340.224**	383



Busbar connection adaptor (4-pole)

Rated current up to	Rated operating voltage	Connection of round conductors		Clamping area for laminated copper bars mm	Packs of	Model No. SV			Page
		Fine wire with wire end ferrule mm^2	Multi-wire mm^2			Outlet top/bottom	Outlet at top	Outlet at bottom	
125 A	690 V~	10 – 25	16 – 35	10 x 7.8	1	**9342.224**	**9342.234**	**9342.244**	384
250 A	690 V~	35 – 120	35 – 120	18.5 x 15.5	1	**9342.254**	**9342.264**	**9342.274**	384



Rated current up to	Rated operating voltage	Connection of round conductors		Clamping area for laminated copper bars mm		Packs of	Model No. SV		Page
		Fine wire with wire end ferrule mm^2	Multi-wire mm^2	For 5 mm bar thickness	For 10 mm bar thickness		Busbar connection adaptor (3 x 1-pole)	Busbar connection adaptor (extra set for 4-pole configuration)	
800 A	690 V~	95 – 185	95 – 300	33 x 27	33 x 22	1 set (of 3)	**9342.310**	**9342.314**	385
1600 A	690 V~	–	–	65 x 27	65 x 22	1 set (of 3)	**9342.320**	**9342.324**	385





Circuit-breaker component adaptor (4-pole)

Rated current up to	Rated operating voltage	Connection clamp	Connection of round conductors mm^2	Clamping area for laminated copper bars mm	Packs of	Model No. SV		Page
						Cable outlet top[1)]	Cable outlet bottom[1)]	
160 A	690 V~	Box terminal	35 – 120	18.5 x 15.5 mm	1	**9342.504**	**9342.514**	386
250 A	690 V~	Box terminal	35 – 120	18.5 x 15.5 mm	1	**9342.604**	**9342.614**	386

[1)] Switch outlet or outgoing cable



2.3 Busbar systems up to 1250 A (100 mm)

System components

Description	For busbars mm	Packs of	Model No. SV	Page
Busbar support, 3-pole, 100 mm bar centre distance	–	4	**3073.000**	387
Inserts for SV 3073.000	30 x 10	24	**3074.000**	387
	40 x 10	24	**3075.000**	387
	50 x 10	24	**3076.000**	387
End covers	–	10	**3083.000**	387
Busbars E-Cu				387
Busbar cover sections				408



Connection clamps/system covers

Description	Page
Plate clamps	388
Conductor connection clamps	388
System covers	388



NH on-load isolator

Cable outlet top/bottom

Design	Type of connection	Clamping area for laminated copper bars mm	Packs of	Model No. SV	With fuse monitoring		Page
					Model No. SV[2]	Model No. SV[3]	
Size 1, 250 A, 690 V~/500 V~[1]	Screw M10 up to 150 mm²	32 x 10	1	**9344.110**	**9344.130**	**9344.150**	390
Size 2, 400 A, 690 V~/500 V~[1]	Screw M10 up to 240 mm²	50 x 10	1	**9344.210**	**9344.230**	**9344.250**	390
Size 3, 630 A, 690 V~/500 V~[1]	Screw M10 up to 300 mm²	50 x 10	1	**9344.310**	**9344.330**	**9344.350**	390
Busbar adaptor for NH on-load isolators		Size 1	1	**9344.810**			390
		Size 2	1	**9344.820**			390
		Size 3	1	**9344.830**			390

[1] Rated operating voltage 400 V~ to 500 V~ for NH isolators with electronic fuse monitoring
[2] Electronic fuse monitoring
[3] Electromechanical fuse monitoring

NH fused isolator

Design	Cable outlet	Type of connection	Packs of	Model No. SV	Page
Size 00, 160 A, 690 V~	top/bottom	Screw M8	1	**3591.010**	389

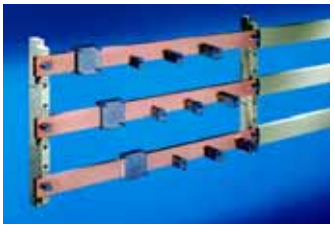


2.4 Busbar systems up to 1600 A (185 mm)

System components

Description	For busbars mm	Packs of	Model No. SV	Page
Busbar support, 3-pole, 185 mm bar centre distance	50 – 80 x 10[1]	2	**3052.000**	391
Inserts for SV 3052.000	50 x 10	24	**3074.000**	391
	60 x 10	24	**3075.000**	391
Busbars E-Cu				391
Busbar cover section				408

[1] Max. busbar accommodation without inserts 80 x 10 mm.
The base component of the busbar support may also be used as a single-pole support



2.4 Busbar systems up to 1600 A (185 mm)

Connection clamps

Description	Page
Plate clamps	392
Conductor connection clamps	392



NH fused isolators

Design	Cable outlet	Type of connection	Packs of	**Model No. SV**	Page
Size 00, 160 A, 690 V~	top/bottom	Screw M8	1	**3591.040**[1)]	393
			2	**3591.050**[2)]	393
Size 1, 250 A, 690 V~	top/bottom	Screw M12	1	**3485.000**	393
Size 2, 400 A, 690 V~	top/bottom	Screw M12	1	**3486.000**	393
Size 3, 630 A, 690 V~	top/bottom	Screw M12	1	**3487.000**	393

[1)] Including busbar adaptor
[2)] Including busbar adaptor (double adaptor)



2.5 Busbar systems up to 2500 A/3000 A (150 mm)

System components

Description	Rated current up to	Max. bar accommodation without spacing pieces mm	Packs of	**Model No. SV**	Page
Busbar support, 3-pole, 150 mm bar centre distance	2500 A	2 x 80 x 10	2	**3055.000**	394
	3000 A	2 x 100 x 10	2	**3057.000**	394
Spacing pieces			12	**3056.000**	394
Busbars E-Cu					394
Connection plates					395
Bar insulation					395





2.6 RiLine NH (mounting plate assembly)

NH on-load isolators

Design	Cable outlet	Type of connection	Clamping area for laminated copper bars mm	Packs of	**Model No. SV**	With fuse monitoring		Page
						Model No. SV[3)]	**Model No. SV**[4)]	
Size 000, 100 A (160 A)[1)], 690 V~	top/ bottom	Terminal up to 50 mm²	–	1	**3431.000**	**–**	**–**	396
Size 00, 160 A, 690 V~/500 V~[2)]	top/ bottom	Box terminal 4 – 70 mm²	13 x 13	1	**9344.000**	**9344.020**	**9344.040**	396
Size 00, 160 A, 690 V~/500 V~[2)]	top/ bottom	Screw M8 up to 95 mm²	20 x 5	1	**9344.010**	**9344.030**	**9344.050**	396
Size 1, 250 A, 690 V~/500 V~[2)]	top/ bottom	Box terminal 35 – 150 mm²	20 x 14	1	**9344.100**	**9344.120**	**9344.140**	397
Size 1, 250 A, 690 V~/500 V~[2)]	top/ bottom	Screw M10 up to 150 mm²	32 x 10	1	**9344.110**	**9344.130**	**9344.150**	397
Size 2, 400 A, 690 V~/500 V~[2)]	top/ bottom	Box terminal 95 – 300 mm²	32 x 20	1	**9344.200**	**9344.220**	**9344.240**	398
Size 2, 400 A, 690 V~/500 V~[2)]	top/ bottom	Screw M10 up to 240 mm²	50 x 10	1	**9344.210**	**9344.230**	**9344.250**	398
Size 3, 630 A, 690 V~/500 V~[2)]	top/ bottom	Box terminal 95 – 300 mm²	32 x 20	1	**9344.300**	**9344.320**	**9344.340**	399
Size 3, 630 A, 690 V~	top/ bottom	Screw M10 up to 300 mm²	50 x 10	1	**9344.310**	**9344.330**	**9344.350**	399

[1)] 160 A at 95 mm² connection cross-section (95 mm² connector pieces available on request)
[2)] Rated operating voltage 400 V~ to 500 V~ for NH isolator with electronic fuse monitoring
[3)] Electronic fuse monitoring
[4)] Electromechanical fuse monitoring



2.8 Rittal Ri4Power Form 1 with Maxi-PLS up to 2000 A/3200 A

Description	up to 2000 A Page	up to 3200 A Page
Connection kits (3-pole)	414 – 415	424 – 427
Connection kits for coupling sets (3-pole)	416 – 417	428 – 429
Connection kits for rear section (3-pole)	418 – 419	430 – 433
Connection kits for coupling sets – rear section (3-pole)	420 – 421	434 – 435
System components		
Busbar support	422	436
Busbar support, suitable for top mounting	422	436
End supports	422	436
System attachment	422	436
Maxi-PLS busbars, E-Cu	422	436
Cover section	422	436
Longitudinal connector E-Cu	422	436
End covers	422	436
Stabiliser	–	436
Connection components		
Connection bracket E-Cu	423	437
Isolator chassis	423	437
U contact maker E-Cu	423	437
Connection clamp	423	437
Connection plates	423	437
Terminal studs	423	437
Sliding block	423	437
Sliding nuts	423	437
Threaded bolts	423	437



SV-TS 8 enclosures for incoming/outgoing circuit

Dimensions in mm			Model No. SV		Model No. TS					Page
						Base/plinth Packs of 1 set				
						Components front and rear		Trim panels (sides)		
Width	Height	Depth	For Maxi-PLS up to	Enclosure	Side panels Packs of 2	100 mm	200 mm	100 mm	200 mm	
3-pole										
600	2000	600	3200 A	**9660.665**[1)]	8106.235	8601.600	8602.600	8601.060	8602.060	438
600	2000	600	3200 A	**9660.675**[2)]	8106.512	8601.600	8602.600	8601.060	8602.060	438
800	2000	600	3200 A	**9660.865**[1)]	8106.235	8601.800	8602.800	8601.060	8602.060	438
800	2000	600	3200 A	**9660.875**[2)]	8106.512	8601.800	8602.800	8601.060	8602.060	438
4-pole										
800	2000	600	2000 A	**9649.625**[1)]	8106.235	8601.800	8602.800	8601.060	8602.060	439
800	2000	600	2000 A	**9649.635**[2)]	8106.512	8601.800	8602.800	8601.060	8602.060	439
800	2000	800	3200 A	**9659.625**[1)]	8108.235	8601.800	8602.800	8601.080	8602.080	439
800	2000	800	3200 A	**9659.635**[2)]	8108.512	8601.800	8602.800	8601.080	8602.080	439

[1)] 1-door
[2)] 3-door



2.8 Rittal Ri4Power Form 1

SV-TS 8 enclosures for Rittal NH fused isolators

Dimensions in mm			Model No. TS						Page
Width	Height	Depth	Enclosure	Side panels Packs of 2	Base/plinth Packs of 1 set				
					Components front and rear		Trim panels (sides)		
					100 mm	200 mm	100 mm	200 mm	
3-pole/4-pole (1600 A/2000 A/3200 A)									
600	2000	500	**9660.505**[1)]	8105.235	8601.600	8602.600	8601.050	8602.050	440
600	2000	600	**9660.605**[1)]	8106.235	8601.600	8602.600	8601.060	8602.060	440
600	2000	800	**9660.805**[1)]	8108.235	8601.600	8602.600	8601.080	8602.080	440
800	2000	500	**9660.535**[1)]	8105.235	8601.800	8602.800	8601.050	8602.050	440
800	2000	600	**9660.635**[1)]	8106.235	8601.800	8602.800	8601.060	8602.060	440
800	2000	800	**9660.835**[1)]	8108.235	8601.800	8602.800	8601.080	8602.080	440
1000	2000	500	**9660.595**[2)]	8105.235	8601.000	8602.000	8601.050	8602.050	441
1000	2000	600	**9660.695**[2)]	8106.235	8601.000	8602.000	8601.060	8602.060	441
1200	2000	500	**9660.555**[2)]	8105.235	8601.200	8602.200	8601.050	8602.050	441
1200	2000	600	**9660.655**[2)]	8106.235	8601.200	8602.200	8601.060	8602.060	441
1200	2000	800	**9660.855**[2)]	8108.235	8601.200	8602.200	8601.080	8602.080	441

[1)] 1-door
[2)] 2-door



For NH fused isolators

Dimensions in mm			Model No. SV	Model No. TS					Page
Width	Height	Depth	Enclosure, 1-door	Side panels Packs of 2	Base/plinth Packs of 1 set				
					Components front and rear		Trim panels (sides)		
					100 mm	200 mm	100 mm	200 mm	
3-pole (1600 A/2000 A/3200 A)									
1000	2000	600	**9660.515**[1)]	8106.512	8601.000	8602.000	8601.060	8602.060	442
1200	2000	600	**9660.545**[1)]	8106.512	8601.200	8602.200	8601.060	8602.060	442
1000	2000	600	**9660.415**[2)]	8106.512	8601.000	8602.000	8601.060	8602.060	442
1200	2000	600	**9660.445**[2)]	8106.512	8601.200	8602.200	8601.060	8602.060	442
4-pole (1600 A/2000 A)									
1000	2000	600	**9649.665**[1)]	8106.512	8601.000	8602.000	8601.060	8602.060	443
1200	2000	600	**9649.675**[1)]	8106.512	8601.200	8602.200	8601.060	8602.060	443
1000	2000	600	**9649.645**[2)]	8106.512	8601.000	8602.000	8601.060	8602.060	443
1200	2000	600	**9649.655**[2)]	8106.512	8601.200	8602.200	8601.060	8602.060	443
4-pole (3200 A)									
1000	2000	800	**9659.665**[1)]	8108.512	8601.000	8602.000	8601.080	8602.080	443
1200	2000	800	**9659.675**[1)]	8108.512	8601.200	8602.200	8601.080	8602.080	443
1000	2000	800	**9659.645**[2)]	8108.512	8601.000	8602.000	8601.080	8602.080	443
1200	2000	800	**9659.655**[2)]	8108.512	8601.200	8602.200	8601.080	8602.080	443

[1)] For NH fused isolators, brand ABB SlimLine
[2)] For NH fused isolators, brand Jean Müller SASIL



System components for NH fused isolator panels

for NH fused isolator brands ABB SlimLine/Jean Müller SASIL

Description	Page
T-bar support 800 A/1600 A	444
T-busbars E-Cu 800 A/1600 A	444
T-connector kits 800 A/1600 A	444



2.8 Rittal Ri4Power Form 1

SV-TS 8 enclosures for coupling sets

Dimensions in mm			Model No. SV		Model No. TS					Page
						Base/plinth Packs of 1 set				
						Components front and rear		Trim panels (sides)		
Width	Height	Depth	For Maxi-PLS up to	Enclosure	Side panels Packs of 2	100 mm	200 mm	100 mm	200 mm	
3-pole										
800	2000	600	3200 A	**9660.305**	8106.235	8601.800	8602.800	8601.060	8602.060	445
1000	2000	600	3200 A	**9660.355**	8106.235	8601.000	8602.000	8601.060	8602.060	445
4-pole										
1000	2000	600	2000 A	**9649.685**	8106.235	8601.000	8602.000	8601.060	8602.060	445
1000	2000	800	3200 A	**9659.695**	8108.235	8601.000	8602.000	8601.080	8602.080	445



System components for coupling sets

Description	Page
Coupling sets, vertical	446
System attachment for vertical coupling set	446



2.9 ISV wall-mounted distributor

Wall-mounted distributors based on compact enclosures AE

Dimensions in mm			Model No. SV	Page
Width	Height	Depth	Enclosure	
380	600	210	**9665.805**	458
500	700	250	**9665.815**	458
600	760	210	**9665.825**	458
600	1000	250	**9665.835**	458
600	1200	300	**9665.845**	458
1000	1200	300	**9665.855**	458



2.9 Rittal Ri4Power Form 1 – ISV distribution enclosure

ISV-TS 8 enclosures for distribution enclosures up to 630 A

Dimensions in mm			Model No. SV	Model No. TS					Page
					Base/plinth Packs of 1 set				
					Components front and rear		Trim panels (sides)		
Width	Height	Depth	Enclosure	Side panels Packs of 2	100 mm	200 mm	100 mm	200 mm	
600	2000	400	**9665.945**[1]	8104.235	8601.600	8602.600	8601.040	8602.040	459
600	2000	600	**9665.905**[1]	8106.235	8601.600	8602.600	8601.060	8602.060	459
850	2000	400	**9665.955**[1]	8104.235	8601.850	8602.850	8601.040	8602.040	459
850	2000	600	**9665.915**[1]	8106.235	8601.850	8602.850	8601.060	8602.060	459
1100	2000	400	**9665.965**[2]	8104.235	8601.300	8602.100	8601.040	8602.040	459
1100	2000	600	**9665.925**[2]	8106.235	8601.300	8602.100	8601.060	8602.060	459

[1] 1-door
[2] 2-door



ISV-TS 8 enclosures for distribution enclosures up to 1600 A

Dimensions in mm			Model No. SV	Model No. TS					Page
					Base/plinth Packs of 1 set				
					Components front and rear		Trim panels (sides)		
Width	Height	Depth	Enclosure	Side panels Packs of 2	100 mm	200 mm	100 mm	200 mm	
600	2000	600	**9665.975**[1]	8106.235	8601.600	8602.600	8601.060	8602.060	460
850	2000	600	**9665.985**[1]	8106.235	8601.850	8602.850	8601.060	8602.060	460

[1] 1-door



Installation modules

Description	Page
Contact hazard protection modules	461
Mounting plate modules	461
Support rail modules	462
Support modules	462
Connection modules	463
Serial installation device modules	463
NH on-load isolator modules	464
Power circuit-breaker modules	464
Busbar support	465
Contact hazard protection cover for conductor connection clamps and plate clamps	466/468
Contact hazard protection covers for bus-mounting fuse bases	466
Contact hazard protection covers for NH bus-mounting on-load isolator size 00	466
NH fused isolator modules	467
Contact hazard protection covers for NH fused isolator size 00	467
Busbar modules, 2-pole	468
Meter mounting board module	468



2.10 Rittal Ri4Power Form 2-4

SV-TS 8 modular enclosures

Dimensions in mm			Model No. SV	Model No. TS				Page
				Base/plinth Packs of 1 set				
				Components front and rear		Trim panels (sides)		
Width	Height	Depth	Enclosure	100 mm	200 mm	100 mm	200 mm	
400	1800	600	**9670.486**	8601.400	8602.400	8601.060	8602.060	472
600	1800	600	**9670.686**	8601.600	8602.600	8601.060	8602.060	472
400	2000	600	**9670.406**	8601.400	8602.400	8601.060	8602.060	472
600	2000	600	**9670.606**	8601.600	8602.600	8601.060	8602.060	472
400	2200	600	**9670.426**	8601.400	8602.400	8601.060	8602.060	472
600	2200	600	**9670.626**	8601.600	8602.600	8601.060	8602.060	472
800	1800	600	**9670.886**	8601.800	8602.800	8601.060	8602.060	473
800	2000	600	**9670.806**	8601.800	8602.800	8601.060	8602.060	473
800	2200	600	**9670.826**	8601.800	8602.800	8601.060	8602.060	473
Side panels								477
Roof plates								477
Front trim panels								477
Partial doors								476



SV-TS 8 cable chamber enclosures

Dimensions in mm			Model No. SV	Model No. TS				Page
				Base/plinth Packs of 1 set				
				Components front and rear		Trim panels (sides)		
Width	Height	Depth	Enclosure[1)]	100 mm	200 mm	100 mm	200 mm	
300	1800	600	**9670.396**	8601.915	8602.915	8601.060	8602.060	474
400	1800	600	**9670.496**	8601.400	8602.400	8601.060	8602.060	474
300	2000	600	**9670.316**	8601.915	8602.915	8601.060	8602.060	474
400	2000	600	**9670.416**	8601.400	8602.400	8601.060	8602.060	474
300	2200	600	**9670.336**	8601.915	8602.915	8601.060	8602.060	474
400	2200	600	**9670.436**	8601.400	8602.400	8601.060	8602.060	474
600	1800	600	**9670.696**	8601.600	8602.600	8601.060	8602.060	475
600	2000	600	**9670.616**	8601.600	8602.600	8601.060	8602.060	475
600	2200	600	**9670.636**	8601.600	8602.600	8601.060	8602.060	475
Side panels								477
Roof plates								477

[1)] 1-door



Components for Rittal Ri4Power Form 2-4

External installation	476
Interior installation	479



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3.1 ATCA

Standard AdvancedTCA Shelf HS1, AC version (available off-the-shelf)

Shelf	U	Slots	Backplane	IPMI	ShMC	Switch slots	PSU	Model No. RP	Page
HS1	5	6	Dual Star	Bus topology	Pigeon Point 500	1 + 2	AC/DC, 1000 W	**9910.732**	488
HS1	5	6	Full Mesh	Bus topology	Pigeon Point 500	1 + 2	AC/DC, 1000 W	**9911.713**	488
HS1	5	6	Dual Star	Bus topology	Intel WT	1 + 2	AC/DC, 1000 W	**9911.712**	488
HS1	5	6	Full Mesh	Bus topology	Intel WT	1 + 2	AC/DC, 1000 W	**9911.714**	488

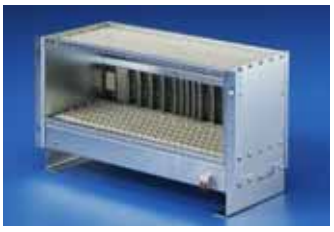


Standard AdvancedTCA Shelf HS1, DC version (available off-the-shelf)

Shelf	U	Slots	Backplane	IPMI	ShMC	Switch slots	PEM	Model No. RP	Page
HS1	5	6	Dual Star	Bus topology	Pigeon Point 500	1 + 2	2 x 50 A	**9911.715**	489
HS1	5	6	Full Mesh	Bus topology	Pigeon Point 500	1 + 2	2 x 50 A	**9911.717**	489
HS1	5	6	Dual Star	Bus topology	Intel WT	1 + 2	2 x 50 A	**9911.716**	489
HS1	5	6	Full Mesh	Bus topology	Intel WT	1 + 2	2 x 50 A	**9911.718**	489

Standard AdvancedTCA Shelf VS1 (available off-the-shelf)

Shelf	U	Slots	Backplane	IPMI	ShMC	Switch slots	PEM	PEM-Amp	RiCool-2	Model No. RP	Page
VS1	13	14	Dual Star	Bus topology	Pigeon Point 500	1 + 2	4 x	50 A	4 x 48 V-IPMI	**9910.932**	490
VS1	13	14	Full Mesh	Bus topology	Pigeon Point 500	1 + 2	4 x	50 A	4 x 48 V-IPMI	**9910.933**	490
VS1	13	14	Dual Star	Bus topology	Intel WT	1 + 2	4 x	50 A	4 x 48 V-IPMI	**9910.940**	490
VS1	13	14	Full Mesh	Bus topology	Intel WT	1 + 2	4 x	50 A	4 x 48 V-IPMI	**9910.941**	490



3.1 MicroTCA

MicroTCA development systems

MTCA system	U	Slots	MCH slots	Power adaptor	Model No. RP	Page
VP 1	3	12	2	1	**9911.297**	496
VP 1	5	12	2	1	**9911.298**	496



MicroTCA rack-mount systems

MTCA system	U	Slots	MCH slots	Model No. RP	Page
VP 1	2	12	2	Available on request	496
VP 1	2 + 10 mm	12	2	**9911.758**	496
VP 1	4	12	2	**9911.760**	496

PicoTCA rack-mount systems

PTCA system	U	Width	Height mm	Depth mm	Model No. RP	Page
	2	19″	89.4	254	**9911.803**	497



3.2 CPCI

Rack-mount systems, Slim-Box

U	For rear I/O boards	Model No. RP	Page
1	■	**9909.580**	504
1	■	**9909.582**	504
2	■	**9909.586**	504
2	■	**9909.588**	504
3	■	**9912.355**	505
3	■	**9912.356**	505
4	■	**9912.357**	505
4	■	**9912.358**	505



Rack-mount systems, Ripac

Slots (version)	U	Depth mm	Wiring space depth mm	For PCB	Model No. RP MPS system	Page
5 (horizontal)	3	405	210	6 U x 160 mm	**9910.944**	506
7 (horizontal)	4	405	210	6 U x 160 mm	**9910.945**	506
8	4 (3 + 1)	405	210	3 U x 160 mm	**9910.946**	507
8	7 (6 + 1)	405	210	6 U x 160 mm	**9910.948**	507
8	7 (6 + 2 x 1/2)	405	210	6 U x 160 mm	**9910.947**	508
8 (with radial fan)	9 (6 + 2 x 1 1/2)	290.5	85.5	6 U x 160 mm	**9909.483**	509



Backplanes 3 U for low profile bridge

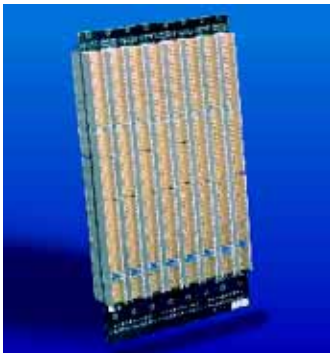
Slots	Design	Model No. RP 32-bit	Model No. RP 64-bit	Page
2	S	**3689.300**	**3689.307**	512
3	SE	**3689.301**	**3689.308**	512
4	SBM	**3689.302**	**3689.309**	512
5	SBME	**3689.303**	**3689.310**	512
6	SBME	**3689.304**	**3689.311**	512
7	SBE	**3689.305**	**3689.312**	512
8	S	**3689.306**	**3689.313**	512

S = Stand alone
B = Beginning segment
M = Middle segment
E = Ending segment

Backplanes 3.5 U

Slots	Design	Model No. RP 32-bit	Model No. RP 64-bit	Page
2	SBE	**–**	**3687.864**	512
3	SE	**3687.865**	**3686.578**	512
4	SE	**3687.863**	**3686.576**	512
5	SE	**3687.862**	**3686.575**	512
6	SBME	**3687.861**	**3686.548**	512
7	SBE	**3687.860**	**3686.547**	512
8	S	**3687.859**	**3686.546**	512

S = Stand alone
B = Beginning segment
M = Middle segment
E = Ending segment



3.2 CPCI

Backplanes 6 U, 6.5 U

Slots	Design	Model No. RP		Page
		32-bit	64-bit	
Backplanes 6 U for low profile bridge				
2	S	**3689.314**	**3689.321**	512
3	SE	**3689.315**	**3689.322**	512
4	SBME	**3689.316**	**3689.323**	512
5	SBME	**3689.317**	**3689.324**	512
6	SBME	**3689.318**	**3689.325**	512
7	SBE	**3689.319**	**3689.326**	512
8	S	**3689.320**	**3689.327**	512
Backplanes 6.5 U for low profile bridge				
3	SE	**–**	**3689.209**	512
4	SE	**–**	**3689.208**	512
5	SE	**–**	**3689.207**	512
6	SBME	**–**	**3689.206**	512
7	SBE	**–**	**3689.205**	512

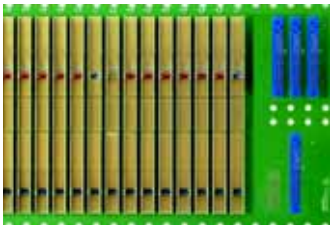
S = Stand alone
B = Beginning segment
M = Middle segment
E = Ending segment



Backplanes 7 U with H.110

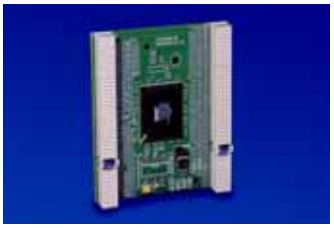
Slots	H.110 connected to system slot			H.110 not connected to system slot			Page
	CPCI design	H.110 design	**Model No. RP**	CPCI design	H.110 design	**Model No. RP**	
3	SE	SE	**3688.508**	S	S	**3688.427**	513
4	SE	SBME	**3688.709**	S	SB	**3688.426**	513
5	SE	SBME	**3687.875**	S	SB	**3688.506**	513
6	SBME	SBME	**3687.874**	SB	SB	**3688.505**	513
7	SBE	SBME	**3687.873**	SBE	SB	**3688.504**	513
8	S	SBME	**3687.877**	S	SB	**9805.494**	513

S = Stand alone
B = Beginning segment
M = Middle segment
E = Ending segment



Backplanes 7 U, Switch Fabric to PICMG 2.16

Width	Number of slots	Description of slots	**Model No. RP**	Page
32 HP	8	1 fabric slot 6 node slots with CPCI and H.110 1 host slot	**3689.188**	514
32 HP	8	see RP 3689.188, but without H.110	**3686.414**	514
64 HP	16	1 fabric slot 6 node slots with CPCI and H.110 1 host slot 1 fabric slot 6 node slots with CPCI and H.110 1 host slot 3 slots for power supplies	**3686.396**	514
84 HP	16	see RP 3686.396, but without H.110	**3689.186**	514
84 HP	21	7 node slots with CPCI and H.110 1 host slot 1 node slot with H.110, without CPCI 1 fabric slot 7 node slots with CPCI and H.110 1 host slot 1 node slot with H.110, without CPCI 1 fabric slot 1 alarm slot	**3686.397**	514
84 HP	21	see RP 3686.397, but without H.110	**3689.190**	514
84 HP	21	see RP 3686.397, but without CPCI	**3689.191**	514



3.2 CPCI

Modular CPCI bridge

Description	Model No. RP	Page
64-bit CPCI bridge	**3686.571**	515



Modular low profile bridge

Design	Bits	Model No. RP	Page
left-right	32	**3689.210**	515
right-left	32	**3689.211**	515
left-right	64	**9810.637**	515
right-left	64	**9812.625**	515

Only suitable for use in conjunction with low profile backplanes.



Power supply backplane

Description	Model No. RP	Page
3 U/3.5 U, 16 HP		
Board for 2 x plug-in power supplies with Positronic connector, 47-pin	**3688.603**	516
ATX (12″) cable harness	**9810.337**	516
ATX (16″) cable harness	**3686.570**	516
ATX (20″) cable harness	**9810.338**	516
6 U/6.5 U, 8 HP[1)]		
Board for plug-in power supply with Positronic connector, 47-pin	**3688.607**	517
ATX (12″) cable harness	**9810.337**	517
ATX (16″) cable harness	**3686.570**	517
ATX (20″) cable harness	**9810.338**	517
6 U/6.5 U, 16 HP[1)]		
Board for 2 x plug-in power supplies with Positronic connector, 47-pin	**3688.608**	518
ATX (12″) cable harness	**9810.337**	518
ATX (16″) cable harness	**3686.570**	518
ATX (20″) cable harness	**9810.338**	518

[1)] Extended delivery times.



3.2 VME64x

Rack-mount systems, Slim-Box

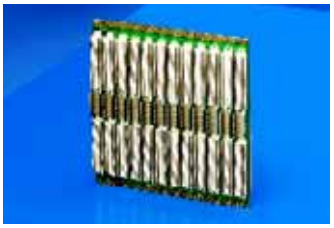
U	Depth mm	Installation space for boards mm	Model No. RP		Page
			with backplane and power supply 200 W	without backplane, with power supply 300 W	
2	300	160	**9912.354**	**–**	519
4	300	160	**–**	**9912.484**	519



3.2 VME/VME64x

Rack-mount systems, Ripac

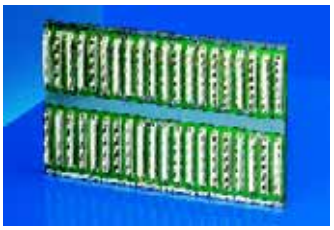
Slots (version)	U	For	Depth mm	Wiring space depth mm	For PCB	Model No. RP MPS system	Page
5 (horizontal)	3	VME	405	210	6 U x 160 mm	**9910.949**	520
5 (horizontal)	3	VME64x	405	210	6 U x 160 mm	**9910.950**	520
7 (horizontal)	4	VME	405	210	6 U x 160 mm	**9910.954**	520
7 (horizontal)	4	VME64x	405	210	6 U x 160 mm	**9910.955**	520
12	4 (3 + 1)	VME	405	210	3 U x 160 mm	**9909.484**	521
12	7 (6 + 1)	VME	405	210	6 U x 160 mm	**9910.956**	521
12	7 (6 + 1)	VME64x	405	210	6 U x 160 mm	**9910.957**	521
12	7 (6 + 2 x 1/2)	VME	405	210	6 U x 160 mm	**9910.958**	522
12	7 (6 + 2 x 1/2)	VME64x	405	210	6 U x 160 mm	**9910.959**	522
12 (with radial fan)	9 (6 + 2 x 1 1/2)	VME64x	290.5	85.5	6 U x 160 mm	**9910.960**	523



3.2 VME

Backplanes VME64x

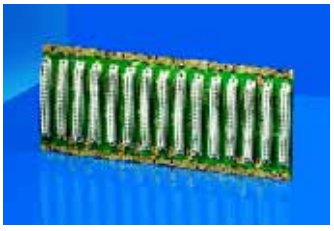
Slots	Dimensions in mm		Model No. RP		Page
	Width	Height	without P0 connector	with P0 connector	
6 U					
2	39.5	261.7	**9912.423**	**9912.410**	526
3	59.5	261.7	**9912.424**	**9912.411**	526
4	80	261.7	**9912.425**	**9912.362**	526
5	100	261.7	**3687.608**	**3687.609**	526
6	120.5	261.7	**9912.426**	**9912.412**	526
7	141	261.7	**3687.610**	**3687.611**	526
8	161.5	261.7	**9912.427**	**9912.413**	526
9	181.5	261.7	**9904.930**	**9904.932**	526
10	202	261.7	**9904.931**	**9904.933**	526
11	222.5	261.7	**9912.428**	**9912.414**	526
12	242.5	261.7	**3686.634**	**3686.473**	526
13	263	261.7	**9912.429**	**9912.415**	526
14	283	261.7	**9912.430**	**9912.416**	526
15	303.5	261.7	**9912.431**	**9912.417**	526
16	324	261.7	**9912.432**	**9912.418**	526
17	344	261.7	**9912.433**	**9912.419**	526
18	364.5	261.7	**9912.434**	**9912.420**	526
19	385	261.7	**9912.435**	**9912.421**	526
20	405	261.7	**9912.436**	**9912.422**	526
21	425.5	261.7	**3686.635**	**3686.474**	526
6.5 U					
5	100	283.7	**9910.012**	**9910.007**	526
7	141	283.7	**9910.013**	**9910.008**	526
9	181.5	283.7	**9910.014**	**9910.009**	526
10	202	283.7	**9904.928**	**9904.929**	526
12	242.5	283.7	**9910.015**	**9910.010**	526
21	425.5	283.7	**9910.016**	**9910.011**	526



Backplanes VME J1/J2 Monolithic

Slots	Dimensions in mm		Model No. RP	Page
	Width	Height		
2	39.5	261.7	**3686.495**	527
3	59.5	261.7	**3686.496**	527
4	80	261.7	**3686.497**	527
5	100	261.7	**3686.498**	527
6	120.5	261.7	**3686.499**	527
7	141	261.7	**3686.500**	527
8	161.5	261.7	**3686.501**	527
9	181.5	261.7	**3686.502**	527
10	202	261.7	**3686.503**	527
11	222.5	261.7	**3686.504**	527

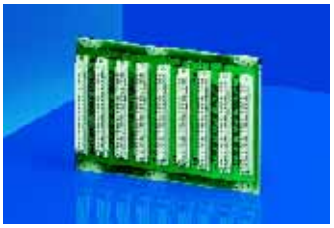
Slots	Dimensions in mm		Model No. RP	Page
	Width	Height		
12	242.5	261.7	**3686.505**	527
13	263	261.7	**3686.506**	527
14	283	261.7	**3686.507**	527
15	303.5	261.7	**3686.508**	527
16	324	261.7	**3686.509**	527
17	344	261.7	**3686.510**	527
18	364.5	261.7	**3686.511**	527
19	385	261.7	**3686.512**	527
20	405	261.7	**3686.513**	527
21	425.5	261.7	**3686.514**	527



Backplanes VME J1 system bus

Slots	Dimensions in mm		Model No. RP	Page
	Width	Height		
3	59.5	128.4	**3686.555**	528
4	80	128.4	**3686.556**	528
5	100	128.4	**3686.557**	528
6	120.5	128.4	**3686.558**	528
7	141	128.4	**3686.559**	528
8	161.5	128.4	**3686.560**	528
9	181.5	128.4	**3686.561**	528
10	202	128.4	**3686.562**	528

Slots	Dimensions in mm		Model No. RP	Page
	Width	Height		
12	242.5	128.4	**3686.563**	528
13	263	128.4	**3686.564**	528
14	283	128.4	**3686.565**	528
15	303.5	128.4	**3686.566**	528
18	364.5	128.4	**3686.567**	528
20	405	128.4	**3686.568**	528
21	425.5	128.4	**3686.569**	528



3.2 VME

Backplanes VME J2 expansion bus

Slots	Dimensions in mm		Model No. RP	Page
	Width	Height		
3	59.5	128.4	**3686.585**	528
4	80	128.4	**3686.586**	528
5	100	128.4	**3686.587**	528
6	120.5	128.4	**3686.588**	528
7	141	128.4	**3686.589**	528
8	161.5	128.4	**3686.590**	528
9	181.5	128.4	**3686.591**	528
10	202	128.4	**3686.592**	528

Slots	Dimensions in mm		Model No. RP	Page
	Width	Height		
12	242.5	128.4	**3686.593**	528
13	263	128.4	**3686.594**	528
14	283	128.4	**3686.595**	528
15	303.5	128.4	**3686.596**	528
18	364.5	128.4	**3686.597**	528
20	405	128.4	**3686.598**	528
21	425.5	128.4	**3686.599**	528





3.3 Rack-mount systems for industrial PCs

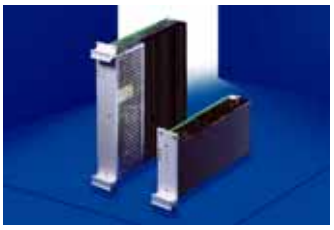
U	Dimensions in mm			Packs of	Model No. RP	Page
	Width	Height of flanges/ side panels	Depth			
ATX Ripac 4 U, aluminium						
4	482.6 (19″)	177	440	1	**3659.000**	532
ATX 4 U, sheet steel						
4	482.6 (19″)	177/174	442.5/440	1	**3659.900**	533
ATX Economy with front door 4 U, sheet steel						
4	482.6 (19″)	177/174	430/415	1	**3659.100**	534
Modular system AT/ATX Vario Economy with front door, 4 U, sheet steel Expansion for AT/ATX power pack (PS/2) or redundant power pack (PS/2), ATX/AT 8 + 4 slots/AT 14 slots. Basic enclosure individually upgradable for AT or ATX applications.						
4	482.6 (19″)	177/174	430	1	**3659.400**	535
ATX with front connections for 482.6 mm (19″) installation, 4 U						
4	482.6 (19″)	177/174	442.5/440	1	**3659.700**	536
ATX with front connections for wall mounting						
	380	330	292.5/290	1	**3659.710**	537



3.4 Power supplies

Ripac power supplies – Open Frame

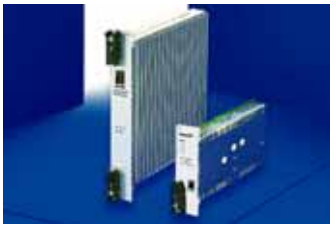
Watts	Output voltage/output current			Model No. RP				Page
	Output 1	Output 2	Output 3	35 A	60 A	85 A	110 A	
250	5 V/35 A	+12 V/8 A	–12 V/8 A	**3686.622**	**–**	**–**	**–**	541
400	5 V/60 A, 85 A	+12 V/8 A	–12 V/8 A	**–**	**3686.623**	**3686.629**	**–**	541
600	5 V/85 A	+12 V/8 A	–12 V/8 A	**–**	**–**	**3686.624**	**–**	541
1000	5 V/110 A	+12 V/16 A	–12 V/8 A	**–**	**–**	**–**	**3686.625**	541



3.4 Power supplies

Ripac power supplies, plug-in

Watts	Width (HP)	Height (U)	Output voltage/output current			Model No. RP		Page
			Output 1	Output 2	Output 3	Power supply	Font panel	
130	10	3	5 V/14 A	+12 V/5 A	–12 V/2 A	**3686.469**	**3685.304**	542
160	12	3	5 V/20 A	+12 V/5 A	–12 V/2 A	**3686.470**	**3685.305**	542
160	8	6	5 V/20 A	+12 V/5 A	–12 V/2 A	**3686.471**	**3686.472**	542
270	12	6	5 V/35 A	+12 V/6 A	–12 V/2 A	**3685.306**	**3685.307**	542



Ripac power supplies for CPCI, plug-in

Watts	Width (HP)	Height (U)	Output voltage/output current				Output current Output 1 + 2	Model No. RP		Page
			Output 1	Output 2	Output 3	Output 4		Power supply AC	Power supply DC	
175	8	3	5 V/25 A	3.3 V/20 A	12 V/5 A	–12 V/0.5 A	30 A max.	**3688.534**	**3688.537**	543
200	8	3	5 V/30 A	3.3 V/25 A	12 V/5 A	–12 V/0.5 A	38 A max.	**3688.694**	**3688.655**	543
250	8	3	5 V/33 A	3.3 V/33 A	12 V/6 A	–12 V/1.5 A	38 A max.	**3688.695**	**3688.696**	543
350	8	6	5 V/40 A	3.3 V/40 A	12 V/9 A	–12 V/1 A	80 A max.	**3688.528**	**3688.530**	543



CPCI open frame power supply

Watts	Dimensions in mm			Model No. RP	Page
	Height	Width	Depth		
400	126	63	279	**3687.695**	544



CPCI power supply, plug-in

Watts	Height (U)	Width (HP)	Model No. RP		Page
			Power supply	Front panel for power supply	
180	3	12	**3686.682**	**3685.330**	544



3.4 Power supplies

AT/ATX power supply

Design	Watts	PFC	Packs of	Model No. RP	Page
ATX power supply for external switch					
ATX	300	passive	1	**3687.793**	545
AT/ATX power supply					
AT	300	passive	1	**3688.118**	545
AT for RAID	300	passive	1	**3688.119**	545
ATX	300	passive	1	**3688.121**	545
ATX	250	active	1	**3688.127**	545
ATX	300	active	1	**3688.129**	545
ATX	400	active	1	**3688.128**	545
ATX power supply unit 1 U					
ATX	200	active	1	**3688.130**	546



Front panel for ATX power supply

U	HP	Model No. RP		Page
		EMC	Non-EMC	
3	42	**3685.331**	**3685.328**	545
6	21	**3685.332**	**3685.329**	545



Redundant power supply

Design	Watts	PFC	Packs of	Model No. RP	Page
For ATX					
ATX version (1 connector)	2 x 300	active	1	**3688.123**	546
ATX version (2 connectors)	2 x 300	active	1	**3688.120**	546
Power pack module (spare)			1	**3688.122**	546



Uninterruptible power supply

Power	Input/output voltage	Input frequency	Output frequency	Model No. RP	Page
300 VA/180 W	220, 230, 240 V AC ± 15 %	50 Hz ± 5 %	50 Hz ± 1 %	**3659.080**	544

Mounting base for power supplies

Width (B) mm	Depth (T) mm	Model No. RP	Page
431.8	100	**3684.323**	547
431.8	130	**3684.324**	547

Female connector M24/8, IEC 60 603-2

Type of connection	Packs of	Model No. RP	Page
Soldering	1	**3687.665**	547
Crimping	1	**3687.666**	547



3.5 Subracks

Ripac ECO 3 U, 6 U, sheet steel

Side panel depth mm	Maximum board depth	Model No. RP		Page
		3 U	6 U	
175	160	**3688.114**	**3688.116**	550
235	220	**3688.115**	**3688.117**	550



3.5 Subrack

Ripac Vario

3 U, 6 U, 9 U (EMC-upgradable)

Side panel depth mm	Maximum board depth	Model No. RP						Page
		3 U		6 U		9 U		
		For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2	
185	160	**3684.020**	**3684.034**	**3684.043**	**3684.056**	**–**	**–**	551
225	160	**3684.021**	**3684.035**	**3684.044**	**3684.057**	**–**	**–**	551
245	220	**3684.022**	**3684.036**	**3684.045**	**3684.058**	**–**	**–**	551
285	220	**3684.023**	**3685.281**	**3684.046**	**–**	**–**	**–**	551
305	280	**3685.231**	**3685.233**	**3685.238**	**3685.240**	**–**	**–**	551
345	280	**3684.024**	**–**	**3684.047**	**–**	**3684.051**	**3684.059**	551
365	340	**3685.232**	**3685.234**	**3685.239**	**–**	**–**	**–**	551
405	340	**3684.025**	**–**	**3684.048**	**–**	**3684.052**	**3684.060**	551
465	400	**3684.026**	**–**	**3684.049**	**–**	**3684.053**	**3684.061**	551
525	400	**3684.027**	**–**	**3684.050**	**–**	**3684.054**	**–**	551
585	400	**–**	**–**	**–**	**–**	**3684.055**	**–**	551

4 U, 7 U (EMC-upgradable)

Side panel depth mm	Maximum board depth	Model No. RP						Page
		4 U (3 + 1)		4 U (3 + 2 x 1/2)		7 U (6 + 1)	7 U (6 + 2 x 1/2)	
		For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2	For backplane	For backplane	
245	220	**3685.235**	**–**	**–**	**–**	**–**	**–**	552
285	220	**3684.028**	**3684.037**	**3684.031**	**3684.040**	**–**	**–**	552
305	280	**3685.236**	**–**	**–**	**–**	**–**	**–**	552
345	280	**3684.029**	**3684.038**	**3684.032**	**3684.041**	**–**	**–**	552
365	340	**3685.237**	**–**	**–**	**–**	**–**	**–**	552
405	340	**3684.030**	**3684.039**	**3684.033**	**3684.042**	**3684.064**	**3684.062**	552
465	400	**–**	**–**	**–**	**–**	**3684.065**	**3684.063**	552



Ripac Vario EMC

3 U, 6 U, 9 U

Side panel depth mm	Maximum board depth	Model No. RP						Page
		3 U		6 U		9 U		
		For backplane	For backplane[1)]	For backplane	For backplane[1)]	For backplane	For backplane[1)]	
245	160	**3684.128**	**3684.142**	**3684.156**	**3684.169**	**–**	**–**	553
285	220	**3684.129**	**3684.143**	**3684.157**	**3684.170**	**–**	**–**	553
305	220	**3685.241**	**3685.243**	**3685.242**	**3685.244**	**–**	**–**	553
345	280	**3684.130**	**3684.144**	**3684.158**	**3684.171**	**3684.162**	**3684.175**	553
405	340	**3684.131**	**3684.145**	**3684.159**	**3684.172**	**3684.163**	**3684.176**	553
465	400	**3684.132**	**3684.146**	**3684.160**	**3684.173**	**3684.164**	**3684.177**	553
525	400	**3684.133**	**3684.147**	**3684.161**	**3684.174**	**3684.165**	**3684.178**	553
585	400	**–**	**–**	**–**	**–**	**3684.166**	**3684.179**	553

4 U

Side panel depth mm	Maximum board depth	Model No. RP				Page
		4 U (3 + 1)		4 U (3 + 2 x 1/2)		
		For backplane	For backplane[1)]	For backplane	For backplane[1)]	
285	220	**3684.134**	**3684.148**	**3684.137**	**3684.151**	554
345	280	**3684.135**	**3684.149**	**3684.138**	**3684.152**	554
405	340	**3684.136**	**3684.150**	**3684.139**	**3684.153**	554

7 U

Side panel depth mm	Maximum board depth	Model No. RP				Page
		7 U (6 + 1)		7 U (6 + 2 x 1/2)		
		For backplane	For backplane[1)]	For backplane	For backplane[1)]	
285	220	**3684.187**	**3684.192**	**–**	**–**	554
345	280	**3684.188**	**3684.193**	**3684.189**	**3684.196**	554
405	340	**3684.180**	**3684.194**	**3684.190**	**3684.197**	554
465	400	**3684.181**	**3684.195**	**3684.191**	**3684.198**	554

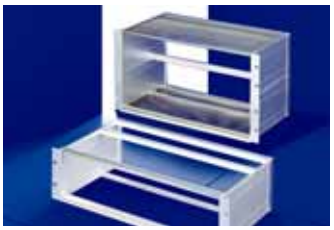
[1)] Front horizontal rails with 10 mm extension for injector/extractor handles.



3.5 Subrack

Ripac Compact 3 U, 6 U

Side panel depth mm	Max. board depth mm	Model No. RP					Page
		3 U				6 U	
		21 HP		42 HP		42 HP	
		Top hat rail	Mounting plate	Top hat rail	Mounting plate	Mounting plate	
For backplane							
225	160	**3687.667**	**3687.669**	**3687.671**	**3687.673**	**3687.680**	555
285	220	**3687.668**	**3687.670**	**3687.672**	**3687.674**	**3687.681**	555
For backplane – EMC version							
225	160	**3687.682**	**3687.684**	**3687.686**	**3687.688**	**3687.690**	555
285	220	**3687.683**	**3687.685**	**3687.687**	**3687.689**	**3687.691**	555



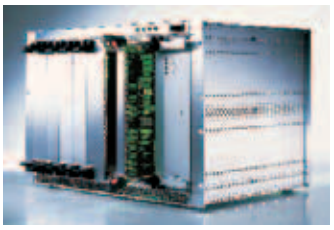
Ripac Vario Mobil 3 U, 6 U, for mobile use

Side panel depth mm	Maximum board depth	Model No. RP						Page
		3 U			6 U			
		For backplane	For connector IEC 60 603-2	For backplane – EMC version	For backplane	For connector IEC 60 603-2	For backplane – EMC version	
245	220	**3687.782**	**3687.780**	**3687.784**	**3687.783**	**3687.781**	**3687.785**	556



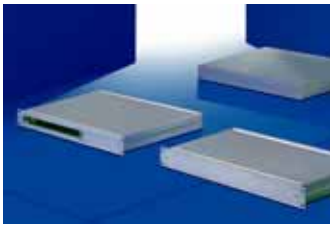
Ripac Solid 3 U, 6 U, for extreme loads (EMC-upgradable)

Side panel depth mm	Maximum board depth	Model No. RP				Page
		3 U		6 U		
		Front rail with short lip	Front rail with 10 mm extension	Front rail with short lip	Front rail with 10 mm extension	
245	220	**9908.517**	**9908.518**	**9908.521**	**9908.520**	557



Accessories for subracks

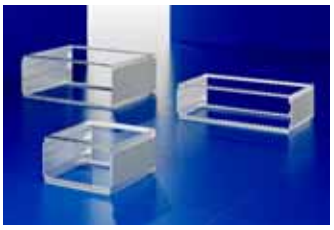
	Page
Subracks, individual components	from 558
Side panels and flanges	560 – 562
Horizontal rails	558, 563 – 571
Subrack climate control	584 – 589
Accessories for subracks	from 591
Components for EMC installation	572 – 573
Internal mounting kits	574 – 575
Guide rails	575 – 579
Keying/PCB ejectors	580
Covers	581 – 583
Front panels, handles	591 – 606
Ripac box type plug-in units – individual components	607 – 609
Assembly parts	610 – 611



3.6 Instrument cases/system enclosures

RiBox system enclosures 1 U

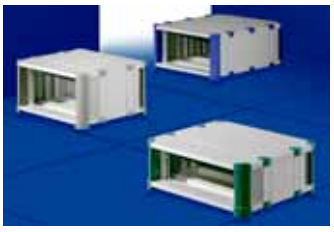
Dimensions in mm		Model No. RP	Page
Width	Depth		
Rack-mounted			
19″ (482.6)	150	**3687.814**	613
19″ (482.6)	200	**3687.815**	613
19″ (482.6)	250	**3687.816**	613
19″ (482.6)	300	**3687.817**	613
19″ (482.6)	350	**3687.818**	613
Rack-mount including assembly kit for double Euroboards			
19″ (482.6)	250	**3684.072**	613
19″ (482.6)	350	**3684.073**	613
Instrument cases			
447	150	**3687.819**	613
447	200	**3687.820**	613
447	250	**3687.821**	613
447	300	**3687.822**	613
447	350	**3687.823**	613



Ripac Vario-Module, system enclosures

U	Installation width (HP)	Depth mm	Packs of	Model No. VM			
				Basic enclosure	Page	EMC basic enclosure	Page
3	42	250.4	1	**3982.040**	614	**3983.040**	615
3	42	310.4	1	**3982.070**	614	**3983.070**	615
3	63	250.4	1	**3982.050**	614	**3983.050**	615
3	63	310.4	1	**3982.080**	614	**3983.080**	615
3	84	250.4	1	**3982.060**	614	**3983.060**	615
3	84	310.4	1	**3982.090**	614	**3983.090**	615
3	84	370.4	1	**3982.100**	614	**3983.100**	615
4 (3 + 1)	84	250.4	1	**3982.110**	614	**3983.110**	615
4 (3 + 1)	84	310.4	1	**3982.120**	614	**3983.120**	615
4 (3 + 1)	84	370.4	1	**3982.130**	614	**3983.130**	615
6	84	310.4	1	**3982.140**	616	**3983.140**	617
6	84	370.4	1	**3982.150**	616	**3983.150**	617
6	84	430.4	1	**3982.160**	616	**3983.160**	617
7 (6 + 1)	84	310.4	1	**3982.170**	616	**3983.170**	617
7 (6 + 1)	84	430.4	1	**3982.190**	616	**3983.190**	617

Top and bottom covers must be ordered separately, see page 581 – 583.

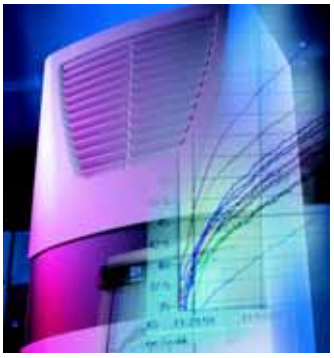




Rittal RiCase, instrument case

U	Depth mm		Model No. RC						Page
	Vented	Unvented	Vented RAL 5018	Unvented RAL 5018	Vented RAL 5012	Unvented RAL 5012	Vented RAL 7030	Unvented RAL 7030	
Rittal RiCase 269.2 mm (1/2 19″)									
1	420	300	**3750.110**	**3750.100**	**3750.112**	**3750.102**	**3750.114**	**3750.104**	621
2	540	300	**3750.220**	**3750.200**	**3750.222**	**3750.202**	**3750.224**	**3750.204**	621
3	420	300	**3750.350**	**3750.210**	**3750.352**	**3750.212**	**3750.354**	**3750.214**	621
3	540	420	**3750.360**	**3750.300**	**3750.362**	**3750.302**	**3750.364**	**3750.304**	621
4	540	420	**3750.450**	**3750.400**	**3750.452**	**3750.402**	**3750.454**	**3750.404**	621
Rittal RiCase 482.6 mm (19″)									
3	300	300	**3750.330**	**3750.310**	**3750.332**	**3750.312**	**3750.334**	**3750.314**	622
3	420	420	**3750.340**	**3750.320**	**3750.342**	**3750.322**	**3750.344**	**3750.324**	622
4	300	300	**3750.430**	**3750.410**	**3750.432**	**3750.412**	**3750.434**	**3750.414**	622
4	420	420	**3750.440**	**3750.420**	**3750.442**	**3750.422**	**3750.444**	**3750.424**	622
6	300	300	**3750.630**	**3750.600**	**3750.632**	**3750.602**	**3750.634**	**3750.604**	622
6	420	420	**3750.640**	**3750.610**	**3750.642**	**3750.612**	**3750.644**	**3750.614**	622
6	540	540	**3750.650**	**3750.620**	**3750.652**	**3750.622**	**3750.654**	**3750.624**	622
7	420	420	**3750.720**	**3750.700**	**3750.722**	**3750.702**	**3750.724**	**3750.704**	622
7	540	540	**3750.730**	**3750.710**	**3750.732**	**3750.712**	**3750.734**	**3750.714**	622
9	420	420	**3750.920**	**3750.900**	**3750.922**	**3750.902**	**3750.924**	**3750.904**	622
9	540	540	**3750.930**	**3750.910**	**3750.932**	**3750.912**	**3750.934**	**3750.914**	622
12	540	540	**3750.030**	**3750.000**	**3750.032**	**3750.002**	**3750.034**	**3750.004**	622

Packs of 1



System climate control creates the correct ambient conditions for every application, particularly for sensitive electronics.
A broad selection of cooling units, recooling systems, heat exchangers, fan-and-filter units and enclosure heaters protects against adverse physical and thermal influences. This is supplemented by versatile accessory components.

With a full advisory service and its PC software package Rittal Therm, Rittal will help you to select the correct climate control unit to optimally suit your requirements.

Enhanced operational reliability and a longer service life for electronics

- Modular climate control concept
- Cooling units
- Recooling systems
- Heat exchangers
- Fan-and-filter units
- Roof-mounted fan
- Rack-mounted climate control
- Enclosure heaters
- Cooling

Detailed information may be found on Catalogue pages 628 – 735 and on our website at www.rittal.com

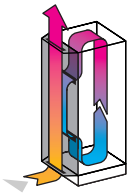
The latest status of approvals may be found on our website at www.rittal.com



4.1 Cooling module

Useful cooling output	Voltage V, Hz	Model No. SK	Approvals				Page
			UL	CUL	DIN	GS	
1500 W	230, 1~, 50/60	**3307.700**					633
	115, 1~, 50/60	**3307.710**					633
	400/460, 3~, 50/60	**3307.740**					633
2500 W	230, 1~, 50/60	**3310.700**					633
	115, 1~, 50/60	**3310.710**					633
	400/460, 3~, 50/60	**3310.740**					633

Delivery times available on request.



4.1 Section doors

for installing cooling modules

For enclosure dimensions W x H mm	Model No. SK	Approvals				Page
		UL	CUL	DIN	GS	
600 x 1800	**3300.040**					634
600 x 2000	**3300.050**					634
800 x 1800	**3300.060**					634
800 x 2000	**3300.070**					634
1200[1] x 1800	**3300.080**					634
1200[1] x 2000	**3300.090**					634
1200[2] x 1800	**3300.110**					634
1200[2] x 2000	**3300.120**					634

[1] Unit positioned on the left [2] Unit positioned on the right

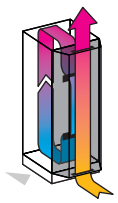


4.1 Climate control side panels

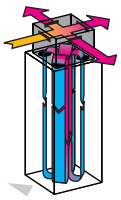
for TS 8 enclosures

Useful cooling output	For enclosure dimensions W x H mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
1100 W	1800 x 600	230, 50/60	**3331.116**					635
	2000 x 600		**3331.316**					635
	1800 x 600	400, 2~, 50/60	**3331.140[1]**					635
	2000 x 600		**3331.340[1]**					635
1400 W	1800 x 600	230, 50/60	**3331.216[1]**					635
	2000 x 600		**3331.416**					635
	1800 x 600	400, 2~, 50/60	**3331.240[1]**					635
	2000 x 600		**3331.440[1]**					635

[1] Delivery times available on request.





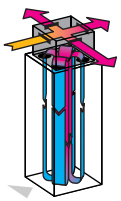


4.1 TopTherm roof-mounted cooling units

Useful cooling output	For enclosure dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals					Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	CSA	
500 W	597 x 415 x 375	230, 50/60	**3382.100**	**3382.500**	■	■		■	■	636
		115, 50/60	**3382.110**	**3382.510**	■	■		■	■	636
750 W	597 x 415 x 375	230, 50/60	**3359.100**	**3359.500**						636
		115, 50/60	**3359.110**	**3359.510**						636
		400, 2~, 50/60	**3359.140**	**3359.540**						636
1000 W	597 x 415 x 475	230, 50/60	**3383.100**	**3383.500**	■	■		■	■	637
		115, 50/60	**3383.110**	**3383.510**	■	■		■	■	637
		400, 2~, 50/60	**3383.140**	**3383.540**	■	■		■	■	637
1500 W	597 x 415 x 475	230, 50/60	**3384.100**	**3384.500**	■	■		■	■	639
		115, 50/60	**3384.110**	**3384.510**	■	■		■	■	639
		400, 2~, 50/60	**3384.140**	**3384.540**	■	■		■	■	639
2000 W	597 x 415 x 475	230, 50/60	**3385.100**	**3385.500**	■	■		■	■	639
		115, 50/60	**3385.110**	**3385.510**	■	■		■	■	639
		400, 2~, 50/60	**3385.140**	**3385.540**	■	■		■	■	639
3000 W	796 x 470 x 580	400, 3~, 50 460, 3~, 60	**3386.140**	**3386.540**	■	■		■	■	640
4000 W	796 x 470 x 580	400, 3~, 50 460, 3~, 60	**3387.140**	**3387.540**	■	■		■	■	640

Roof-mounted cooling units in stainless steel version, see page 74.
Delivery times available on request.



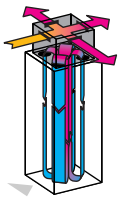


For the office sector

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
1100 W	597 x 415 x 510	115, 50/60	**3273.515**[1)]					638
		230, 50/60	**3273.500**					638
3000 W	514 x 400 x 990	230, 50/60	**3301.800**					638

[1)] Delivery times available on request.





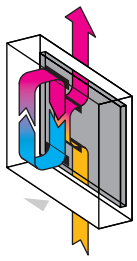
4.1 TopTherm roof-mounted cooling units

Stainless steel

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals					Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	CSA	
500 W	597 x 415 x 375	230, 50/60	**3382.200**	**3382.600**					■	636
		115, 50/60	**3382.210**	**3382.610**					■	636
750 W	597 x 415 x 375	230, 50/60	**3359.200**	**3359.600**						636
		115, 50/60	**3359.210**	**3359.610**						636
		400, 2~, 50/60	**3359.240**	**3359.640**						636
1000 W	597 x 415 x 475	230, 50/60	**3383.200**	**3383.600**	■	■			■	637
		115, 50/60	**3383.210**	**3383.610**	■	■			■	637
		400, 2~, 50/60	**3383.240**	**3383.640**	■	■			■	637
1500 W	597 x 415 x 475	230, 50/60	**3384.200**	**3384.600**	■	■			■	639
		115, 50/60	**3384.210**	**3384.610**	■	■			■	639
		400, 2~, 50/60	**3384.240**	**3384.640**	■	■			■	639
2000 W	597 x 415 x 475	230, 50/60	**3385.200**	**3385.600**	■	■			■	639
		115, 50/60	**3385.210**	**3385.610**	■	■			■	639
		400, 2~, 50/60	**3385.240**	**3385.640**	■	■			■	639
3000 W	796 x 470 x 580	400, 3~, 50 460, 3~, 60	**3386.240**	**3386.640**	■	■			■	640
4000 W	796 x 470 x 580	400, 3~, 50 460, 3~, 60	**3387.240**	**3387.640**	■	■			■	640

Delivery times available on request.





4.1 Wall-mounted cooling units

VIP small cooling units

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Condenser version	Model No. SK	Approvals				Page
					UL	CUL	DIN	GS	
225 W	526 x 353.5 x 105	230, 50/60	Left	**3201.100**	■	■			641
			Right	**3202.100**	■	■			641

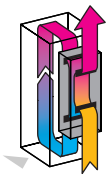


4.1 TopTherm wall-mounted cooling units

Mini cooling unit, in horizontal format

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals					Page
				UL	CUL	DIN	GS	CSA	
300 W	525 x 340 x 153	230, 50/60	**3302.300**	■	■			■	642
		115, 60	**3302.310**	■	■				642

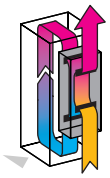




4.1 TopTherm wall-mounted cooling units

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals					Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	CSA	
300 W	280 x 550 x 140	230, 50/60	**3302.100**	–	■	■		■	■	643
		115, 60	**3302.110**	–	■	■		■	■	643
500 W	280 x 550 x 200	230, 50/60	**3303.100**	**3303.500**	■	■		■	■	643
		115, 60	**3303.110**	**3303.510**	■	■		■	■	643
750 W	280 x 550 x 280	230, 50/60	**3361.100**	**3361.500**	■	■			■	644
		115, 60	**3361.110**	**3361.510**	■	■			■	644
		400, 2~, 50/60	**3361.140**	**3361.540**	■	■			■	644
1000 W	400 x 950 x 260	230, 50/60	**3304.100**	**3304.500**	■	■		■	■	645
		115, 50/60	**3304.110**	**3304.510**	■	■		■	■	645
		400, 3~, 50 460, 3~, 60	**3304.140**	**3304.540**	■	■		■	■	645
1500 W	400 x 950 x 260	230, 50/60	**3305.100**	**3305.500**	■	■		■	■	645
		115, 50/60	**3305.110**	**3305.510**	■	■		■	■	645
		400, 3~, 50 460, 3~, 60	**3305.140**	**3305.540**	■	■		■	■	645
2000 W	400 x 1580 x 290	230, 50/60	**3328.100**	**3328.500**	■	■		■	■	647
		115, 50/60	**3328.110**	**3328.510**	■	■		■	■	647
		400, 3~, 50 460, 3~, 60	**3328.140**	**3328.540**	■	■		■	■	647
2500 W	400 x 1580 x 290	230, 50/60	**3329.100**	**3329.500**	■	■		■	■	647
		115, 50/60	**3329.110**	**3329.510**	■	■		■	■	647
		400, 3~, 50 460, 3~, 60	**3329.140**	**3329.540**	■	■		■	■	647
4000 W	500 x 1580 x 340	400, 3~, 50 460, 3~, 60	**3332.140**	**3332.540**	■	■		■	■	648





Stainless steel

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals					Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	CSA	
300 W	280 x 550 x 140	230, 50/60	**3302.200**	–	■	■			■	643
		115, 60	**3302.210**	–	■	■			■	643
500 W	280 x 550 x 200	230, 50/60	**3303.200**	**3303.600**	■	■			■	643
		115, 60	**3303.210**	**3303.610**	■	■			■	643
750 W	280 x 550 x 280	230, 50/60	**3361.200**	**3361.600**	■	■			■	644
		115, 60	**3361.210**	**3361.610**	■	■			■	644
		400, 2~, 50/60	**3361.240**	**3361.640**	■	■			■	644
1000 W	400 x 950 x 260	230, 50/60	**3304.200**	**3304.600**	■	■			■	645
		115, 50/60	**3304.210**	**3304.610**	■	■			■	645
		400, 3~, 50 460, 3~, 60	**3304.240**	**3304.640**	■	■			■	645
1500 W	400 x 950 x 260	230, 50/60	**3305.200**	**3305.600**	■	■			■	645
		115, 50/60	**3305.210**	**3305.610**	■	■			■	645
		400, 3~, 50 460, 3~, 60	**3305.240**	**3305.640**	■	■			■	645
2000 W	400 x 1580 x 290	230, 50/60	**3328.200**	**3328.600**	■	■			■	647
		115, 50/60	**3328.210**	**3328.610**	■	■			■	647
		400, 3~, 50 460, 3~, 60	**3328.240**	**3328.640**	■	■			■	647
2500 W	400 x 1580 x 290	230, 50/60	**3329.200**	**3329.600**	■	■			■	647
		115, 50/60	**3329.210**	**3329.610**	■	■			■	647
		400, 3~, 50 460, 3~, 60	**3329.240**	**3329.640**	■	■			■	647
4000 W	500 x 1580 x 340	400, 3~, 50 460, 3~, 60	**3332.240**	**3332.640**	■	■			■	648

Delivery times available on request.

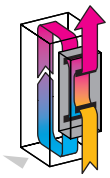


4.1 TopTherm wall-mounted cooling units

for machine tools

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals				Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	
1000 W	400 x 950 x 260	400, 3~, 50 460, 3~, 60	**3304.142**	**3304.542**					651
1500 W	400 x 950 x 260	400, 3~, 50 460, 3~, 60	**3305.142**	**3305.542**					651

Delivery times available on request.

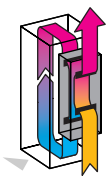




Zone 22 explosion-proof cooling units

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals				Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	
1000 W	400 x 950 x 260	230, 50/60	**3304.130**	**3304.530**					652
		400, 3~, 50/60	**3304.160**	**3304.560**					652
1500 W	400 x 950 x 260	230, 50/60	**3305.130**	**3305.530**					652
		400, 3~, 50/60	**3305.160**	**3305.560**					652

Delivery times available on request.

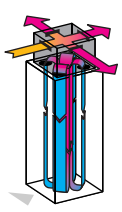


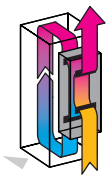


With CO_2 as the coolant

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals				Page
			with Basic controller						
			Roof-mounted units	Wall mounting	UL	CUL	DIN	GS	
1000 W	597 x 415 x 475	230, 50/60	**3383.740**	–					653
	460 x 950 x 260		–	**3304.740**					653

Delivery times available on request.







4.1 TopTherm wall-mounted cooling units

Slimline

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals					Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	CSA	
1500 W	450 x 1590 x 165	230, 50/60	**3377.100**[1)]	**3377.500**[1)]	■	■			■	646
		115, 50/60	**3377.110**[1)]	**3377.510**[1)]	■	■			■	646
		400/460, 3~, 50/60	**3377.140**[1)]	**3377.540**[1)]					■	646
1500 W	450 x 1590 x 195	230, 50/60	**3366.100**	**3366.500**	■	■			■	646
		115, 50/60	**3366.110**	**3366.510**	■	■			■	646
		400/460, 3~, 50/60	**3366.140**	**3366.540**					■	646

[1)] Delivery times available on request.

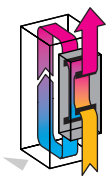


Slimline, stainless steel

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals					Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	CSA	
1500 W	450 x 1590 x 165	230, 50/60	**3377.200**	**3377.600**	■	■			■	646
		115, 50/60	**3377.210**	**3377.610**	■	■			■	646
		400/460, 3~, 50/60	**3377.240**	**3377.640**					■	646
1500 W	450 x 1590 x 195	230, 50/60	**3366.200**	**3366.600**	■	■			■	646
		115, 50/60	**3366.210**	**3366.610**	■	■			■	646
		400/460, 3~, 50/60	**3366.240**	**3366.640**					■	646

Delivery times available on request.



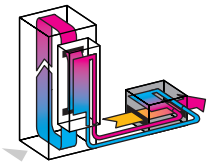


NEMA 4x design

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals					Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	CSA	
500 W	285 x 620 x 298	230, 50/60	**3303.104**	**3303.504**	■	■			■	649
		115, 50/60	**3303.114**	**3303.514**	■	■			■	649
1000 W	405 x 1020 x 358	230, 50/60	**3304.104**	**3304.504**	■	■			■	649
		115, 50/60	**3304.114**	**3304.514**	■	■			■	649
		400, 3~, 50 460, 3~, 60	**3304.144**	**3304.544**	■	■			■	649
1500 W	405 x 1020 x 358	230, 50/60	**3305.104**	**3305.504**	■	■			■	649
		115, 50/60	**3305.114**	**3305.514**	■	■			■	649
		400, 3~, 50 460, 3~, 60	**3305.144**	**3305.544**	■	■			■	649
2000 W	405 x 1650 x 368	230, 50/60	**3328.104**	**3328.504**	■	■			■	650
		115, 50/60	**3328.114**	**3328.514**	■	■			■	650
		400, 3~, 50 460, 3~, 60	**3328.144**	**3328.544**	■	■			■	650
2500 W	405 x 1650 x 368	230, 50/60	**3329.104**	**3329.504**	■	■			■	650
		115, 50/60	**3329.114**	**3329.514**	■	■			■	650
		400, 3~, 50 460, 3~, 60	**3329.144**	**3329.544**	■	■			■	650

Delivery times available on request.

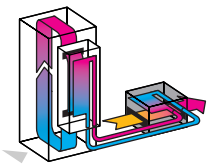




4.2 TopTherm recooling systems

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals				Page
			Mini	Wall mounting	UL	CUL	DIN	GS	
1000 W	400 x 950 x 310	400, 3~, 50/60/ 460, 3~, 60	–	**3360.100**					659
2500 W	400 x 1580 x 290	400, 3~, 50/60/ 460, 3~, 60	–	**3360.250**					659
4000 W	500 x 1580 x 340	400, 3~, 50/60/ 460, 3~, 60	–	**3360.470**					659
960 W	600 x 400 x 430	230, 50/60	**3318.600**	–				■	656
			3318.610	–				■	656
1490 W	600 x 400 x 430	230, 50/60	**3319.600**	–				■	656
			3319.610	–				■	656
3000 W	602 x 676 x 645	400, 3~, 50/60/ 460, 3~, 60	**3320.600**	–				■	657
4500 W	602 x 676 x 645	400, 3~, 50/60/ 460, 3~, 60	**3334.600**	–				■	657
6000 W	602 x 1050 x 645	400, 3~, 50/60/ 460, 3~, 60	**3334.660**						658





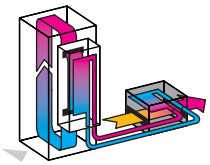
4.2 Recooling systems

In a floor standing enclosure

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals					Page
				UL	CUL	DIN	GS	TÜV	
2100 W	470 x 725 x 540	400, 3~, 50	**3336.100**					■	660
2580 W	485 x 965 x 650	400, 3~, 50	**3336.200**					■	660
3360 W	485 x 965 x 650	400, 3~, 50	**3336.300**					■	660
5040 W	595 x 1180 x 800	400, 3~, 50	**3336.500**					■	660
6160 W	595 x 1180 x 800	400, 3~, 50	**3336.600**					■	660
7700 W	595 x 1180 x 800	400, 3~, 50	**3336.650**					■	660
10000 W	615 x 1178 x 1160	400, 3~, 50	**3336.700**					■	661
14350 W	615 x 1178 x 1160	400, 3~, 50	**3336.710**					■	661
16300 W	615 x 1178 x 1160	400, 3~, 50	**3336.720**					■	661
18500 W	715 x 1178 x 1360	400, 3~, 50	**3336.730**					■	661
20900 W	715 x 1178 x 1360	400, 3~, 50	**3336.740**					■	661
25200 W	715 x 1178 x 1360	400, 3~, 50	**3336.750**					■	661

Delivery times available on request.





4.2 Recooling systems

In a floor standing enclosure for oil

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
2550 W	485 x 965 x 650	400, 3~, 50	**3337.200**					662
3400 W	485 x 965 x 650	400, 3~, 50	**3337.300**					662
5150 W	595 x 1180 x 800	400, 3~, 50	**3337.500**					662
6700 W	595 x 1180 x 800	400, 3~, 50	**3337.600**					662
7900 W	595 x 1180 x 800	400, 3~, 50	**3337.650**					662
10600 W	615 x 1178 x 1160	400, 3~, 50	**3337.700**					663
15150 W	615 x 1178 x 1160	400, 3~, 50	**3337.710**					663
17200 W	615 x 1178 x 1160	400, 3~, 50	**3337.720**					663
19250 W	715 x 1178 x 1360	400, 3~, 50	**3337.730**					663
21600 W	715 x 1178 x 1360	400, 3~, 50	**3337.740**					663
26100 W	715 x 1178 x 1360	400, 3~, 50	**3337.750**					663

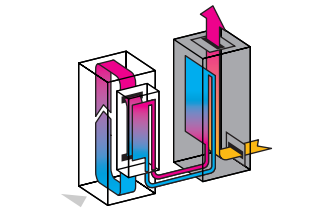
Delivery times available on request.



In the TS 8 Top enclosure system

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
6000 W	600 x 2000 x 600	400, 3~, 50	**3335.060**					664
7500 W	600 x 2000 x 600	400, 3~, 50	**3335.075**					664
10000 W	800 x 2000 x 600	400, 3~, 50	**3335.100**					665
12000 W	800 x 2000 x 600	400, 3~, 50	**3335.120**					665
15000 W	800 x 2000 x 600	400, 3~, 50	**3335.150**					665
20000 W	1200 x 2000 x 600	400, 3~, 50	**3335.200**					665
25000 W	1200 x 2000 x 600	400, 3~, 50	**3335.250**					665

Delivery times available on request.



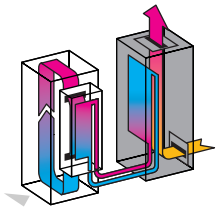


4.2 Recooling systems

In an industrial enclosure

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
32025 W	815 x 1400 x 1560	400, 3~, 50	**3339.100**					666
36225 W	815 x 1400 x 1560	400, 3~, 50	**3339.200**					666
46750 W	1000 x 1800 x 2000	400, 3~, 50	**3339.250**					666
59000 W	1000 x 1800 x 2000	400, 3~, 50	**3339.280**					666
66700 W	1550 x 2000 x 2500	400, 3~, 50	**3339.300**					666
75900 W	1550 x 2000 x 2500	400, 3~, 50	**3339.400**					666
110000 W	1550 x 2000 x 3400	400, 3~, 50	**3339.450**					666
172200 W	1630 x 2200 x 3400	400, 3~, 50	**3339.500**					666

Delivery times available on request.

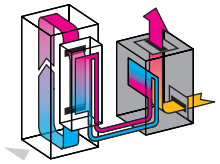




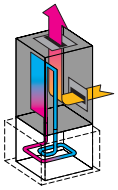
Recooling systems for IT cooling

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
4000 W	670 x 1220 x 720	400, 3~, 50	**3300.900**					667
8000 W	750 x 1600 x 880	400, 3~, 50	**3300.901**					667
12000 W	750 x 1600 x 880	400, 3~, 50	**3300.902**					667
24000 W	900 x 1970 x 1450	400, 3~, 50	**3300.905**					667
36000 W	900 x 1970 x 1450	400, 3~, 50	**3300.910**					667
48000 W	900 x 2000 x 2400	400, 3~, 50	**3300.912**					668
60000 W	900 x 2000 x 2400	400, 3~, 50	**3300.915**					668
84000 W	900 x 2000 x 2800	400, 3~, 50	**3300.920**					668
120000 W	1000 x 2400 x 3300	400, 3~, 50	**3300.925**					668
150000 W	1000 x 2400 x 3300	400, 3~, 50	**3300.930**					668

Delivery times available on request.







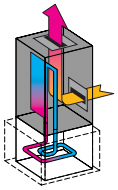
4.2 Immersible recooling systems

for oil

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	**Model No. SK**	Approvals				Page
				UL	CUL	DIN	GS	
2400 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.020**					669
3200 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.040**					669
4600 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.060**					669
5600 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.080**					669
8500 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.100**					670
10500 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.120**					670
12000 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.140**					670
13600 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.160**					670
15300 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.180**					670
17300 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.200**					670
20700 W	785 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.220**					671
30800 W	785 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.240**					671
34900 W	785 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.260**					671
44500 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.280**					671
48600 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.300**					671
60600 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.320**					671
72600 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.340**					671
77900 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.360**					671

Delivery times available on request.





4.2 Immersible recooling systems

for emulsion

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
2400 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.500**					672
3200 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.520**					672
4600 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.540**					672
5600 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.560**					672
8500 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.580**					673
10500 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.600**					673
12000 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.620**					673
13600 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.640**					673
15300 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.660**					673
17300 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.680**					673
20700 W	785 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.700**					674
30800 W	785 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.720**					674
34900 W	785 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.740**					674
44500 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.760**					674
48600 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.780**					674
60600 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.800**					674
72600 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.820**					674
77900 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.840**					674

Delivery times available on request.



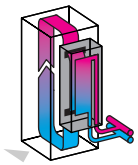
4.3 Air/water heat exchangers

Micro, for wall mounting

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
300 W	150 x 300 x 85	230, 50/60	**3212.230**					676
		115, 50/60	**3212.115**[1)]					676
		24 V (DC)	**3212.024**					676

[1)] Delivery times available on request.





4.3 Air/water heat exchangers

Wall mounting with thermostat-controlled magnetic valve

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
			Wall mounting	UL	CUL	DIN	GS	
600 W	200 x 500 x 100	230, 50/60	**3214.100**	■	■			677
1250 W	200 x 950 x 100	230, 50/60	**3215.100**					677
7000 W	450 x 1800 x 300	400, 3~, 50/60 480, 3~, 60	**3216.480**[1)]					681

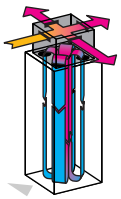
[1)] Delivery times available on request.

Wall mounting with Basic/Comfort controller

Useful cooling output	Water-carrying parts		Dimensions W x H x D mm	Rated operating voltage V, Hz	Model No. SK		Approvals				Page
	V4A (1.4571)	CuAL			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	
375 W	■		280 x 550 x 92	230, 1~, 50/60	**3363.104**[1)]	**3363.504**[1)]					678
				115, 1~, 50/60	**3363.114**[1)]	**3363.514**[1)]					678
				400, 2~, 50/60	**3363.144**[1)]	**3363.544**[1)]					678
500 W		■	280 x 550 x 92	230, 1~, 50/60	**3363.100**	**3363.500**	■	■			678
				115, 1~, 50/60	**3363.110**[1)]	**3363.510**[1)]					678
				400, 2~, 50/60	**3363.140**[1)]	**3363.540**[1)]					678
750 W	■		280 x 550 x 142	230, 1~, 50/60	**3364.104**[1)]	**3364.504**[1)]					678
				115, 1~, 50/60	**3364.114**[1)]	**3364.514**[1)]					678
				400, 2~, 50/60	**3364.144**[1)]	**3364.544**[1)]					678
1000 W		■	280 x 550 x 142	230, 1~, 50/60	**3364.100**	**3364.500**	■	■			678
				115, 1~, 50/60	**3364.110**[1)]	**3364.510**[1)]					678
				400, 2~, 50/60	**3364.140**[1)]	**3364.540**[1)]					678
1500 W	■		400 x 950 x 142	230, 1~, 50/60	**3373.104**[1)]	**3373.504**[1)]					679
				115, 1~, 50/60	**3373.114**[1)]	**3373.514**[1)]					679
				400, 2~, 50/60	**3373.144**[1)]	**3373.544**[1)]					679
2000 W		■	400 x 950 x 142	230, 1~, 50/60	**3373.100**	**3373.500**	■	■			679
				115, 1~, 50/60	**3373.110**[1)]	**3373.510**[1)]					679
				400, 2~, 50/60	**3373.140**[1)]	**3373.540**[1)]					679
2250 W	■		400 x 950 x 142	230, 1~, 50/60	**3374.104**[1)]	**3374.504**[1)]					679
				115, 1~, 50/60	**3374.114**[1)]	**3374.514**[1)]					679
				400, 2~, 50/60	**3374.144**[1)]	**3374.544**[1)]					679
3000 W		■	400 x 950 x 142	230, 1~, 50/60	**3374.100**	**3374.500**	■	■			679
				115, 1~, 50/60	**3374.110**[1)]	**3374.510**[1)]					679
				400, 2~, 50/60	**3374.140**[1)]	**3374.540**[1)]					679
3750 W	■		450 x 1400 x 250	230, 1~, 50/60	**3375.104**[1)]	**3375.504**[1)]					680
				115, 1~, 50/60	**3375.114**[1)]	**3375.514**[1)]					680
				400, 2~, 50/60	**3375.144**[1)]	**3375.544**[1)]					680
5000 W		■	450 x 1400 x 250	230, 1~, 50/60	**3375.100**	**3375.500**					680
				115, 1~, 50/60	**3375.110**[1)]	**3375.510**[1)]					680
				400, 2~, 50/60	**3375.140**[1)]	**3375.540**[1)]					680

[1)] Delivery times available on request.





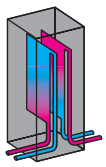
4.3 TopTherm air/water heat exchangers

Wall mounting with Basic/Comfort controller

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals				Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	
1875 W[2]	597 x 415 x 475	230, 50/60	**3209.104[1]**	**3209.504[1]**					682
		115, 50/60	**3209.114[1]**	**3209.514[1]**					682
		400, 2~, 50/60	**3209.144[1]**	**3209.544[1]**					682
2500 W[3]	597 x 415 x 475	230, 50/60	**3209.100**	**3209.500**	■	■			682
		115, 50/60	**3209.110**	**3209.510**					682
		400, 2~, 50/60	**3209.140[1]**	**3209.540[1]**					682
3000 W[2]	597 x 415 x 475	230, 50/60	**3210.104[1]**	**3210.504[1]**					683
		115, 50/60	**3210.114[1]**	**3210.514[1]**					683
		400, 2~, 50/60	**3210.144[1]**	**3210.544[1]**					683
4000 W[3]	597 x 415 x 475	230, 50/60	**3210.100**	**3210.500**	■	■			683
		115, 50/60	**3210.110**	**3210.510**					683
		400, 2~, 50/60	**3210.140[1]**	**3210.540[1]**					683

[1] Delivery times available on request
[2] All water-carrying parts made from stainless steel V4A (1.4571)
[3] All water-carrying parts made from CuAl





4.3 Water/water heat exchangers

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
25000 W	1000 x 2000 x 800	400, 3~, 50	**3232.900**					–
50000 W	1000 x 2000 x 800	400, 3~, 50	**3232.910**					685
75000 W	1000 x 2000 x 800	400, 3~, 50	**3232.920**					685
100000 W	1600 x 2000 x 800	400, 3~, 50	**3232.930**					685
150000 W	1600 x 2000 x 800	400, 3~, 50	**3232.940**					685
200000 W	2000 x 2000 x 800	400, 3~, 50	**3232.950**					685
250000 W	2000 x 2000 x 800	400, 3~, 50	**3232.960**					685



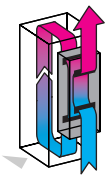
4.3 TopTherm air/air heat exchangers

Wall mounting

Specific thermal output	Dimensions W x H x D mm	Voltage V, Hz	**Model No. SK**	Approvals				Page
				UL	CUL	DIN	GS	
17.5 W/K	280 x 550 x 150	230, 50/60	**3126.100**	■	■			688
30.0 W/K	400 x 950 x 205	230, 50/60	**3127.100**	■	■			688
45.0 W/K	400 x 950 x 225	230, 50/60	**3128.100**	■	■			688
60.0 W/K	400 x 950 x 225	230, 50/60	**3129.100**	■	■			688
90.0 W/K	400 x 1580 x 215	230, 50/60	**3130.100**	■	■			688

4.3 Air/air heat exchangers

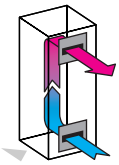
Wall mounting



Specific thermal output	Dimensions W x H x D mm	Voltage V, Hz	**Model No. SK**	Approvals				Page
				UL	CUL	DIN	GS	
12.0 W/K	200 x 400 x 146	230, 50/60	**3125.800**					687
62.0 W/K	400 x 1360 x 110	230, 50/60	**3129.800**					687



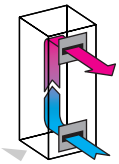
4.4 Fan-and-filter units



Air throughput, unimpeded air flow	Voltage V, Hz	**Model No. SK** RAL 7035	Approvals					Page
			UL	CUL	DIN	GS	CSA	
20/25 m³/h	230, 50/60	**3321.107**	■	■				690
	115, 50/60	**3321.117**	■	■				690
20 m³/h	24 (DC)	**3321.027**	■	■				690
	48 (DC)	**3321.047**[1)]	■	■				690
55/66 m³/h	230, 50/60	**3322.107**	■	■			■	690
	115, 50/60	**3322.117**	■	■			■	690
55 m³/h	24 (DC)	**3322.027**	■	■			■	690
	48 (DC)	**3322.047**[1)]	■	■				690
105/120 m³/h	230, 50/60	**3323.107**	■	■			■	691
	115, 50/60	**3323.117**	■	■			■	691
105 m³/h	24 (DC)	**3323.027**	■	■			■	691
	48 (DC)	**3323.047**[1)]	■	■				691
180/160 m³/h	230, 50/60	**3324.107**	■	■			■	691
	115, 50/60	**3324.117**	■	■			■	691
180 m³/h	24 (DC)	**3324.027**	■	■			■	691
	48 (DC)	**3324.047**[1)]	■	■				691
230/265 m³/h	230, 50/60	**3325.107**	■	■			■	692
	115, 50/60	**3325.117**	■	■			■	692
230 m³/h	24 (DC)	**3325.027**	■	■			■	692
	48 (DC)	**3325.047**[1)]	■	■				692
550/600 m³/h	230, 50/60	**3326.107**	■	■			■	693
	115, 50/60	**3326.117**	■	■			■	693
700/720 m³/h	230, 50/60	**3327.107**	■	■				693
	115, 50/60	**3327.117**	■	■				693
	400/460, 3~, 50/60	**3327.147**	■	■				693

[1)] Delivery times available on request.



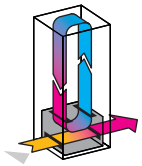


4.4 Fan-and-filter units – EMC

Air throughput, unimpeded air flow	Voltage V, Hz	**Model No. SK** RAL 7035	Approvals					Page
			UL	CUL	DIN	GS	CSA	
20/25 m³/h	230, 50/60	**3321.607**	■	■				694
	115, 50/60	**3321.617**[1)]	■	■				694
55/66 m³/h	230, 50/60	**3322.607**	■	■				694
	115, 50/60	**3322.617**[1)]	■	■				694
105/120 m³/h	230, 50/60	**3323.607**	■	■			■	694
	115, 50/60	**3323.617**[1)]	■	■			■	694
180/160 m³/h	230, 50/60	**3324.607**	■	■			■	695
	115, 50/60	**3324.617**[1)]	■	■			■	695
230/265 m³/h	230, 50/60	**3325.607**	■	■			■	695
	115, 50/60	**3325.617**	■	■			■	695
550/600 m³/h	230, 50/60	**3326.607**	■	■				695
	115, 50/60	**3326.617**[1)]	■	■				695
700/720 m³/h	230, 50/60	**3327.607**	■	■				695
	115, 50/60	**3327.617**[1)]	■	■				695

[1)] Delivery times available on request.



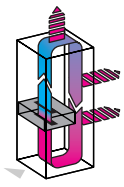


4.5 Rack-mounted cooling units

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	**Model No. SK**	Approvals				Page
				UL	CUL	DIN	GS	
1000 W	445 x 265.9 x 542	115, 50/60	**3278.134**[1)]					698
		230, 50/60	**3292.134**					698

[1)] Delivery times available on request.



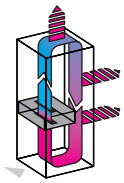


4.5 Rack-mounted fan

Air throughput, unimpeded air flow	No. of fans	Distance between axes mm	Voltage V, Hz	**Model No. SK**	Approvals					Page
					UL	CUL	DIN	GS	VDE	
250 m³/h	3	85	36 (DC) – 72 (DC)	**9769.002**[1)]						699
320 m³/h	2	85	24 (DC)	**3340.024**[1)]	■	■			■	699
	2	85	115 (AC), 50/60	**3340.115**[1)]	■	■			■	699
	2	85	230 (AC), 50/60	**3340.230**	■	■			■	699
480 m³/h	3	85	24 (DC)	**3341.024**[1)]	■	■			■	699
	3	105	24 (DC)	**3342.024**	■	■			■	699
	3	85	115 (AC), 50/60	**3341.115**	■	■			■	699
	3	105	115 (AC), 50/60	**3342.115**[1)]	■	■			■	699
	3	85	230 (AC), 50/60	**3341.230**	■	■			■	699
	3	105	230 (AC), 50/60	**3342.230**	■	■			■	699
	3	105	24 (DC) 115 – 230 (AC), 50/60	**3342.500**	■	■			■	699

[1)] Delivery times available on request.



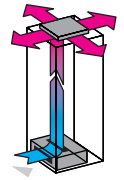


4.5 Vario rack-mounted fan

Air throughput, unimpeded air flow	No. of fans	Distance between axes mm	Voltage V, Hz	Model No. SK	Approvals					Page
					UL	CUL	DIN	GS	VDE	
320 m³/h	2	85	24 (DC)	**3350.024**[1)]	■	■			■	699
	2	85	115 (AC), 50/60	**3350.115**[1)]	■	■			■	699
	2	85	230 (AC), 50/60	**3350.230**	■	■			■	699
480 m³/h	3	85	24 (DC)	**3351.024**[1)]	■	■			■	699
	3	105	24 (DC)	**3352.024**[1)]	■	■			■	699
	3	85	115 (AC), 50/60	**3351.115**[1)]	■	■			■	699
	3	105	115 (AC), 50/60	**3352.115**[1)]	■	■			■	699
	3	85	230 (AC), 50/60	**3351.230**	■	■			■	699
	3	105	230 (AC), 50/60	**3352.230**	■	■			■	699
	3	105	24 (DC) 115 – 230 (AC), 50/60	**3352.500**[1)]	■	■			■	699

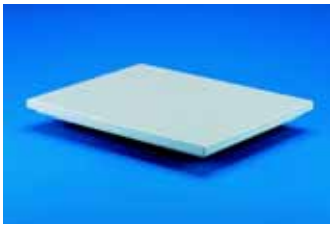
[1)] Delivery times available on request.





4.5 Centrifugal fan

Air throughput, unimpeded air flow	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
320 m³/h	482.6 x 87.2 x 158	115, 50/60	**3145.000**					700
		230, 50/60	**3144.000**					700



4.5 Roof-mounted fan and vent attachment

for TS 8

Air throughput, unimpeded air flow	Voltage V, Hz	Required mounting cut-out W x D mm	Model No. SK	Approvals					Page
				UL	CUL	DIN	GS	CSA	
400 m³/h	115, 50/60	475 x 260	**3149.410**						701
	230, 50/60	475 x 260	**3149.420**						701
	400, 3~, 50/60 460, 3~, 60	475 x 260	**3149.440**						701
800 m³/h	115, 50/60	475 x 260	**3149.810**						701
	230, 50/60	475 x 260	**3149.820**						701
	400, 3~, 50/60 460, 3~, 60	475 x 260	**3149.840**						701
Without motor		490 x 390	**8801.380**						701



4.5 Roof-mounted fan

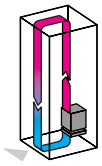
Air throughput, unimpeded air flow	Voltage V, Hz	Required mounting cut-out W x D mm	Model No. SK	Approvals					Page
				UL	CUL	DIN	GS	CSA	
360 m³/h	230, 50/60	345 x 265	**3149.007**						701
	115, 50/60	345 x 265	**3169.007**						701
Without fan motor		345 x 265	**3148.007**						701



For TS/FR(i) for the office sector

Air throughput, unimpeded air flow	Voltage V, Hz	Design		Dimensions W x H x D mm	Model No. SK	Approvals					Page
		with roof plate	without roof plate			UL	CUL	DIN	GS	CSA	
1500 m³/h	115, 50/60	■		800 x 240 x 800	**3164.610**						702
	230, 50/60	■		800 x 240 x 800	**3164.620**						702
1500 m³/h	115, 50/60	■		800 x 240 x 900	**3164.810**						702
	230, 50/60	■		800 x 240 x 900	**3164.820**						702
1500 m³/h	115, 50/60		■	511 x 227 x 511	**3164.115**						702
	230, 50/60		■	511 x 227 x 511	**3164.230**						702





4.6 Enclosure heaters

Continuous thermal output for T_u = 20°C	Voltage V, Hz	Model No. SK	Approvals					Page
			UL	CUL	DIN	GS	VDE	
10 W	110 – 240 (AC/DC)	**3105.000**	■	■			■	709
20 W	110 – 240 (AC/DC)	**3106.000**	■	■			■	709
30 W	110 – 240 (AC/DC)	**3115.000**	■	■			■	709
50 W	110 – 240 (AC/DC)	**3116.000**	■	■			■	709
130 W	110 – 240 (AC/DC)	**3107.000**	■	■			■	709
200 W	110 – 240 (AC/DC)	**3107.000 + 3108.000**	■	■			■	709
300 W	115, 50/60	**3102.115 (incl. fan)**						709
300 W	230, 50/60	**3102.000 (incl. fan)**	■	■			■	709



For CS outdoor enclosures

Continuous thermal output for T_u = 20°C	Voltage V, Hz	Dimensions W x H x D mm	Model No. CS	Approvals					Page
				UL	CUL	DIN	GS	VDE	
800 W	230, 50/60	82 x 150 x 110	**9769.080**						709



4.8 Direct Cooling Plate

Cold Plate

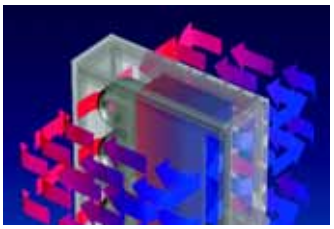
Cooling output[1]	For installation in: Enclosure width mm	For installation in: Enclosure depth (side) mm	Dimensions W x H x D mm	Model No. DCP: without T-slot	Model No. DCP: with T-slot	Approvals: UL	CUL	DIN	GS	TÜV	Page
2500 W	600	600	499 x 399 x 25	**8616.610**	**8616.600**					■	732
2500 W	800	600	499 x 399 x 25	**8616.630**	**8616.620**					■	732
3000 W	800	800	699 x 399 x 25	**8616.810**	**8616.800**					■	732
3000 W	800	800	699 x 399 x 25	**8616.830**	**8616.820**					■	732
5000 W	1000	1000	899 x 399 x 25	**8616.010**	**8616.000**						732
5000 W	1000	1000	899 x 399 x 25	**8616.030**	**8616.020**						732
6000 W	1200	–	1099 x 399 x 25	**8616.210**	**8616.200**						732
6000 W	1200	–	1099 x 399 x 25	**8616.230**	**8616.220**						732

[1] With 25°C fluid inlet temperature, T_u = 40°C and DCP surface temperature = 40°C.



Cold Plate for frequency converters, manufacturer-specific

For installation in: Enclosure width mm	For installation in: Enclosure depth mm	Dimensions W x H x D mm	Model No. DCP	Approvals: UL	CUL	DIN	GS	TÜV	Page
Suitable for Siemens SINAMICS S210									
600	600	499 x 449 x 20	**8616.640**					■	733
800	600	499 x 449 x 20	**8616.641**					■	733
800	800	699 x 449 x 20	**8616.840**					■	733
800	800	699 x 449 x 20	**8616.841**					■	733
Suitable for Danfoss VLT® Automation Drive FC300									
600	600	499 x 299 x 20	**8616.650**						733
800	600	499 x 299 x 20	**8616.651**						733
800	800	699 x 299 x 20	**8616.850**						733
800	800	699 x 299 x 20	**8616.851**						733



4.8 Liquid Cooling Package

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals: UL	CUL	DIN	GS	Page
LCP Extend								
12 kW	520 x 1910 x 160	230, 50/60	**3301.490**[1]					728
LCP Standard								
Up to 20 kW	300 x 2000 x 1000	230, 50/60	**3301.230**	■	■		■	728
Up to 20 kW	300 x 2000 x 1000	115, 50/60	**3301.210**	■	■		■	728
Up to 20 kW	300 x 2000 x 1200	230, 50/60	**3301.420**					728
LCP Plus								
Up to 30 kW	300 x 2000 x 1200	230, 50/60	**3301.480**[1]	■	■		■	728
Up to 40 kW	300 x 2400 x 1200	230, 50/60	**on request**					728
Additional module[2]								
max. 6.6 kW	250 x 550 x 950	230, 50/60	**3301.250**					728

[1] Delivery times available on request.
[2] To fit SK 3301.230/.210/.420



IT solutions – the perfect, customised solution
Emerging technologies place ever increasing demands on the infrastructure at the "information hub", and hence on competent system suppliers. Whether you require a small corridor distributor for a fibre-optic network or a combined distribution and component enclosure, the Rittal range has the optimum, practical system solution for every task and every application.

- Networking
- Server racks
- Power
- Security
- Monitoring
- Telecom/distributor racks/mobile workstations

Detailed information may be found on pages 736 – 869 of this Catalogue and on our website at www.rittal.com. The current status of approvals may be found on our website at www.rittal.com



5.1 Networking

Network enclosures, based on Rittal TE 7000, pre-configured

Dimensions in mm				U	Model No. TE		Page
Width	Height	Depth	Distance between 19″ levels		Side panels		
					with	without	
800	1200	800	495	24	**7000.840**	–	740
800	2000	800	495	42	**7000.850**	–	740
800	2000	800	495	42	–	**7000.852**	740



Network enclosures, based on Rittal TE 7000

Dimensions in mm				U	Model No. TE			Page
Width	Height	Depth	Depth distance between 19″ levels as delivered		RAL 9005	RAL 7035		
					Side panels			
					with	with	without	
600	600	600	495	11	–	**7000.390**	–	741
600	600	800	495	11	–	**7000.410**	–	741
600	1200	600	495	24	–	**7000.430**	–	741
600	1200	800	495	24	–	**7000.440**	–	741
600	2000	600	495	42	**7000.505**	**7000.500**	**7000.502**	741
600	2000	800	495	42	**7000.515**	**7000.510**	–	741
600	2200	600	495	47	–	**7000.560**	**7000.562**	741
600	2200	800	495	47	–	**7000.570**	–	741
800	1200	600	495	24	–	**7000.450**	–	742
800	1200	800	495	24	–	**7000.460**	–	742
800	2000	600	495	42	**7000.525**	**7000.520**	–	742
800	2000	800	495	42	**7000.535**	**7000.530**	**7000.532**	742
800	2200	600	495	47	–	**7000.580**	–	742
800	2200	800	495	47	–	**7000.590**	**7000.592**	742



Network enclosures, based on Rittal TE 7000, metric attachment levels

Dimensions in mm					Model No. TE		Page
Width	Height	Depth	Distance between metric levels		Side panels		
			as delivered	SU	with	without	
600	2000	600	495	76	**7000.508**	**7000.504**	743
600	2200	600	495	82	**7000.568**	**7000.564**	743



5.1 Networking

TE 7000 open

Dimensions in mm				U/SU	Model No. TE		Page
Width	Height[1)]	Depth	Distance between levels as delivered		with 482.6 mm (19″) attachment level	with metric (535 mm) attachment level	
600	2000	1000	745	42/76	**7000.940**	**7000.960**	744
600	2200	1000	745	47/82	**7000.942**	**7000.962**	744
800	2000	1000	745	42/–	**7000.944**	**–**	744
800	2200	1000	745	47/–	**7000.946**	**–**	744

[1)] Plus 100 mm roof-mounting/cable-routing trays.



Network enclosures, based on Rittal TS 8, pre-configured

Dimensions in mm			U	Model No. DK		Page
Width	Height	Depth		Side panels with	Side panels without	
Enclosure type V1						
600	1200 + 100	600	24	**7930.100**	**–**	745
Enclolsure type V2						
800	1800 + 100	800	38	**7930.800**	**7930.850**	745
800	2000 + 100	800	42	**7930.200**	**7930.250**	745
800	2200 + 100	800	47	**7930.220**	**7930.270**	745
Enclosure type V3						
800	1200 + 100	900	24	**7830.120**	**–**	746
800	2000 + 100	900	42	**7830.300**	**7830.350**	746
800	2000 + 100	1000	42	**7830.330**	**7830.335**	746
800	2200 + 100	900	47	**7830.320**	**7830.370**	746
800	2200 + 100	1000	47	**7830.340**	**7830.380**	746
Enclosure type V4						
800	2000 + 100	800	42	**7930.400**	**–**	747
Enclosure type V5						
800	2000 + 100 + 25	800	42	**7930.500**	**7930.550**	747
Enclosure type V6						
800	2000 + 100 + 25	800	40	**7930.660**	**7930.670**	747
Enclosure type V7						
800	2000 + 100	800	42	**–**	**7830.260**	748



5.1 Networking

Network enclosures, based on Rittal TS 8, types 1 and 2

Dimensions in mm			U	Model No. DK		Page
Width	Height	Depth		Type 1 with designer door	Type 2 with sheet steel door	
600	800	600	15	**7920.100**	**7821.100**	749
600	1000	600	20	**7920.200**	**7821.200**	749
800	1000	600	20	**7920.240**	**7821.240**	749
600	1200	600	24	**7920.300**	**7821.300**	749
800	1200	600	24	**7920.340**	**7821.340**	749
800	1200	800	24	**7920.350**	**–**	749
800	1200	900	24	**7920.355**	**7821.355**	749
800	1200	1000	24	**7920.360**	**–**	749
600	1400	600	29	**7920.400**	**7821.400**	749
600	1400	800	29	**7920.410**	**7821.410**	749
800	1400	600	29	**7920.440**	**7821.440**	749
600	1600	600	33	**7920.500**	**7821.500**	749
600	1600	800	33	**7920.510**	**7821.510**	749
800	1600	600	33	**7920.540**	**7821.540**	749
600	1800	600	38	**7920.600**	**7821.600**	749
600	1800	800	38	**7920.610**	**7821.610**	749
600	1800	900	38	**7920.620**	**7821.620**	750
800	1800	600	38	**7920.640**	**7821.640**	750
800	1800	800	38	**7920.650**	**7821.650**	750
800	1800	1000	38	**7920.670**	**7821.670**	750
600	2000	600	42	**7920.700**	**7821.700**	750
600	2000	800	42	**7920.710**	**7821.710**	750
600	2000	900	42	**7920.720**	**7821.720**	750
600	2000	1000	42	**7920.730**	**7821.730**	750
800	2000	600	42	**7920.740**	**7821.740**	750
800	2000	800	42	**7920.750**	**7821.750**	750
800	2000	900	42	**7920.760**	**7821.760**	750
800	2000	1000	42	**7920.770**	**7821.770**	750
600	2200	600	47	**7920.800**	**7821.800**	750
600	2200	800	47	**7920.810**	**7821.810**	750
800	2200	600	47	**7920.840**	**7821.840**	750
800	2200	800	47	**7920.850**	**7821.850**	750
800	2200	900	47	**7920.860**	**7821.860**	750
800	2200	1000	47	**7920.870**	**7821.870**	750

Approvals:
- UL
- C-UL



Network enclosures based on Rittal flexRack(i)

Dimensions in mm			U	Model No. FR(i)	Page
Width	Height	Depth[1)]			
600	600	605	11	**7855.610**	751
600	600	1005	11	**7855.620**	751
600	1200	605	24	**7855.630**	751
600	1200	1005	24	**7855.640**	751
600	1800	605	38	**7855.650**	751
600	2000	605	42	**7855.660**	751
600	2000	1005	42	**7855.670**	751
600	2200	1005	47	**7855.680**	751
800	1200	805	24	**7855.690**	751
800	1800	805	38	**7855.700**	751
800	2000	805	42	**7855.710**	751
800	2000	1005	42	**7855.720**	751
800	2200	805	47	**7855.730**	751
800	2200	1005	47	**7855.740**	751

[1)] Nominal size excluding lock systems.



5.1 Networking

Network enclosures based on Rittal flexRack(i), pre-configured

Dimensions mm			U	Model No. FR(i)		Page
Width	Height	Depth[1)]		Side panels with	Side panels without	
600	600	805	11	**7855.480**	–	752
600	600	1005	11	**7855.500**	–	752
600	1200	1005	25	**7855.510**	–	752
800	2000 + 100	805	42	**7855.550**	**7855.540**	752
800	2000 + 100	1005	42	**7855.570**	**7855.560**	752

[1)] Nominal size excluding lock system.



5.2 Networking

Wall-mounted and floor-standing enclosures, based on Rittal FlatBox, 6 – 21 U

Dimensions in mm			U	Model No. DK	Page
Width	Height	Depth			
With 482.6 mm (19″) mounting angles at the front and glazed door					
600	358	400	6	**7507.000**	756
600	492	400	9	**7507.010**	756
600	358	600	6	**7507.100**	756
600	492	600	9	**7507.110**	756
With 482.6 mm (19″) mounting frame at the front and glazed door					
600	625	400	12	**7507.020**	756
600	758	400	15	**7507.030**	756
600	625	600	12	**7507.120**	756
700	758	700	15	**7507.200**	756
700	892	700	18	**7507.210**	756
700	1025	700	21	**7507.220**	756



Wall-mounted enclosure, based on Rittal QuickBox, 6 – 21 U

Dimensions in mm			U/SU	Model No. DK		Page
Width	Height	Depth		with glazed door	with sheet steel door	
600	362	300	6/10	**7502.013**	–	757
600	362	400	6/10	**7502.014**	**7502.114**	757
600	362	600	6/10	**7502.016**	–	757
600	495	400	9/15	**7502.024**	**7502.124**	757
600	495	600	9/15	**7502.026**	**7502.126**	757
600	628	400	12/20	**7502.034**	–	757
600	628	500	12/20	**7502.035**	–	757
600	628	600	12/20	**7502.036**	**7502.136**	757
600	762	400	15/26	**7502.044**	**7502.144**	758
600	762	500	15/26	**7502.045**	–	758
600	762	600	15/26	**7502.046**	**7502.146**	758
600	895	400	18/31	**7502.054**	–	758
600	895	600	18/31	**7502.056**	–	758
600	1028	400	21/36	**7502.064**	–	758
600	1028	600	21/36	**7502.066**	**7502.166**	758



5.2 Networking

Wall-mounted enclosure, based on Rittal QuickBox with vertical 482.6 mm (19″) level

Dimensions in mm			U vertical	Model No. DK	Page
Width	Height	Depth			
600	631	210	3	**7502.630**	759
600	631	360	6	**7502.660**	759



Wall-mounted enclosure, based on Rittal EL, 3-part, pre-configured, depth 573/673

Dimensions in mm			U	Model No. DK	Page
Width	Height	Depth		with glazed door[1)]	
600	478	573	9	**7709.735**	760
600	746	573	15	**7715.735**	760
600	1012	573	21	**7721.735**	760
600	478	673	9	**7709.535**	760
600	746	673	15	**7715.535**	760
600	1012	673	21	**7721.535**	760

[1)] With slotted metal door on request.
Additional features of the pre-configured wall-mounted enclosure:
Earth rail with star earthing, one outlet filter on both the left and right, 4 wall mounting brackets.

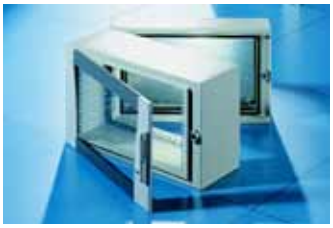
Approvals (for glazed doors only)
- UL
- C-UL



Wall-mounted enclosure, based on Rittal EL, 3-part, with punched rails, depth 473

Dimensions in mm			U	Model No. DK	Page
Width	Height	Depth			
600	345	472.5	6	**7706.135**	761
600	478	472.5	9	**7709.135**	761
600	612	472.5	12	**7712.135**	761
600	746	472.5	15	**7715.135**	761
600	878	472.5	18	**7718.135**	761
600	1012	472.5	21	**7721.135**	761

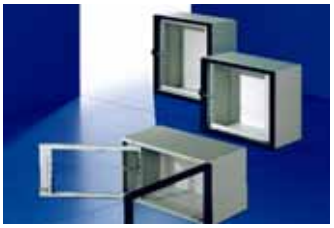
Approvals:
- UL
- C-UL



Wall-mounted enclosure, based on Rittal EL, 3-part, with mounting plate, depth 373 and 473

Dimensions in mm		U	Model No. DK	Page	Model No. DK	Page
Width	Height		Depth 373 mm		Depth 473 mm	
600	212	3	**2243.605**	762	**2253.605**	763
600	345	6	**2246.605**	762	**2256.605**	763
600	478	9	**2249.605**	762	**2259.605**	763
600	612	12	**2252.605**	762	**2262.605**	763
600	746	15	**2255.605**	762	**2265.605**	763
600	878	18	**2258.605**	762	**2268.605**	763
600	1012	21	**2261.605**	762	**2271.605**	763

Approvals:
- UL
- C-UL

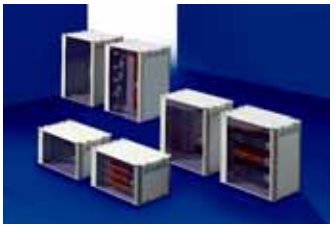


5.2 Networking

Wall-mounted enclosure, based on Rittal EL, 2-part, with swing frame, depth 369

Dimensions in mm			U	Model No. EL	Page
Width	Height	Depth			
600	380	369	6	**1919.500**	764
600	600	369	11	**1920.500**	764
600	760	369	14	**1926.500**	764

Approvals:
- TÜV
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- VDE
- UL/C-UL



RNC enclosure

Dimensions in mm			U ½ 19″	U 19″	Installation position	Model No. DK	Page
Width	Height	Depth					
342	255	280	4	–	horizontal	**7870.100**	765
342	390	280	8	–	horizontal	**7870.200**	765
342	490	400	–	6	vertical	**7870.300**	765



RNC universal enclosure

Dimensions in mm			U ½ 19″	U 19″	Model No. DK	Page
Width	Height	Depth				
350	500	350	10	5	**7870.350**	766



Wall-mounted enclosure, based on Rittal AE

Dimensions in mm			U	Model No. DK	Page
Width	Height	Depth			
600	380	350	8	**7641.000**	768
600	600	350	13	**7643.000**	768
600	760	350	16	**7645.000**	768

Approvals:
- UL
- CSA
- Lloyds Register of Shipping



5.2 Networking

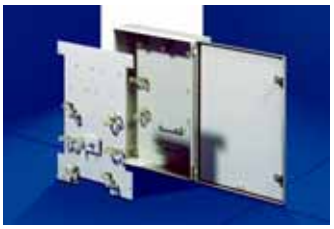
Wall-mounted enclosure, based on Rittal AE, with pull-out frame

Dimensions in mm			U side, vertical	U front	Model No. DK	Page
Width	Height	Depth				
600	600	350	4	10	**7644.000**	769



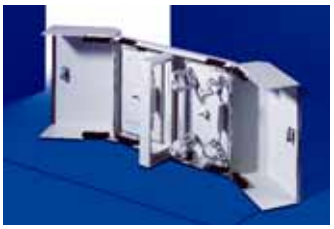
Small fibre-optic distributor

Dimensions in mm			Number of fibres	Model No. DK	Page
Width	Height	Depth			
500	500	120	1 – 48	**7452.035**	770
500	900	120	1 – 96	**7453.035**	770



Small fibre-optic distributors, based on Rittal AE

Dimensions in mm			Number of fibres	Model No. DK	Page
Width	Height	Depth			
400	500	155	1 – 48	**7454.000**	771



Fibre-optic marshalling enclosure

Dimensions in mm			Number of fibres	Model No. DK	Page
Width	Height	Depth			
400	250	120	1 – 24	**7247.000**	772



Small fibre-optic distributor, polycarbonate

Dimensions in mm			Number of fibres	Model No. DK	Page
Width	Height	Depth			
180	254	90	1 – 24	**7451.000**	773



5.3 Server racks

Based on Rittal TE 7000, 1000 mm deep

Dimensions in mm			U	Model No. TE		Page
Width	Height	Depth		RAL 7035	RAL 9005	
600	2000	1000	42	**7000.882**	**–**	776
600	2000	1000	42	**–**	**7000.885**	776
800	2000	1000	42	**7000.892**	**–**	776
800	2000	1000	42	**–**	**7000.895**	776



Based on Rittal TS 8, pre-configured

Dimensions in mm			U	Model No. DK				Page
				RAL 7035		RAL 9005		
				Side panels				
Width	Height	Depth		with	without	with	without	
600	1200	900	24	**–**	**7831.431**	**–**	**7831.432**	777
600	1200	1000	24	**–**	**7831.433**	**–**	**7831.434**	777
600	2000	900	42	**–**	**7831.436**	**–**	**7831.437**	777
600	2000	1000	42	**–**	**7831.438**	**–**	**7831.439**	777
600	2000	1200	42	**7831.491**	**7831.481**	**7831.492**	**7831.482**	777
600	2200	900	47	**–**	**7831.440**	**–**	**7831.441**	777
600	2200	1000	47	**–**	**7831.442**	**–**	**7831.443**	777
600	2200	1200	47	**7831.493**	**7831.483**	**7831.494**	**7831.484**	777
800	2000	1000	42	**–**	**7831.446**	**–**	**–**	779
800	2000	1200	42	**7831.495**	**7831.485**	**7831.496**	**7831.486**	779
800	2200	1200	47	**7831.497**	**7831.487**	**7831.498**	**7831.488**	779



Based on Rittal TS 8, pre-configured, doors divided vertically

Dimensions in mm			U	Number of front and rear doors	Model No. DK		Page
Width	Height	Depth			RAL 7035	RAL 9005	
800	2000	1200	42	2	**7831.489**	**–**	778
800	2000	1200	42	2	**7831.499**	**–**	778
800	2000	1200	42	2	**–**	**7831.580**	778
800	2000	1200	42	2	**–**	**7831.590**	778



Based on Rittal TS 8, pre-configured, doors divided horizontally

Dimensions in mm			U	SU	Number of front and rear doors	Model No. DK		Page
Width	Height	Depth				RAL 7035	RAL 9005	
600	2200	900	2 x 21	2 x 37	2	**7831.450**	**7831.451**	779
600	2200	900	4 x 10	4 x 17	4	**7831.460**	**7831.461**	779



5.3 Server racks

Based on Rittal flexRack(i), pre-configured, 1000 and 1200 mm deep

Dimensions in mm			U	Model No. FR(i)	Page
Width	Height	Depth[1)]			
600	1200	1000	24	**7855.310**	780
600	2000	1000	42	**7855.330**	780
600	1200	1200	24	**7855.312**	780
600	2000	1200	42	**7855.332**	780

[1)] Nominal size excluding lock systems.



Based on Rittal TS 8, High Performance Cooling systems HPC

Dimensions in mm						U	Model No. DK		Page
Width	Height	Depth	Clearance width	Clearance height	Clearance depth		With side panels, screw-fastened	Without side panels, without baying kit	
600	2000	1000	512	1912	912	42	–	**7931.810**	781
800	2000	1000	712	1912	912	42	–	**7931.800**	781
600	2000	1200	512	1912	1112	42	**7931.813**	**7931.812**	781
800	2000	1200	712	1912	1112	42	**7931.803**	**7931.802**	781



Smart Package – Pre-configured server racks, based on Rittal TS 8

Dimensions in mm			Version	Model No. DK		Page
Width	Height	Depth				
800	2100	1000	A1	**7337.100**	–	783
800	2340	1000	A2	**7337.200**	–	783
800	2100	1350	A3	**7337.300**	–	783
				German version, with earthing-pin plug-in module	International version, without earthing-pin plug-in module	
600	2000 + 100	1000	A4	**7337.440**	**7337.445**	785
800	2000 + 100	1000	A5	**7337.450**	**7337.455**	785
600	2000 + 100	1200	A6	**7337.460**	**7337.465**	785
800	2000 + 100	1200	A7	**7337.470**	**7337.475**	785



5.4 Power

	Page
Power Distribution Rack PDR	787
Power Distribution Module PDM	788
Power System Module PSM	789



UPS, single-phase, for 482.6 mm (19″) racks or as floor-standing enclosures

Power		Model No. DK	Model No. DK	Page
VA	Watts	UPS with integral battery	UPS control unit	
1000	700	**7857.430**	–	795
2000	1400	**7857.431**	–	795
3000	2100	**7857.432**	–	795
4500	3150	–	**7857.433**	795
6000	4200	–	**7857.434**	795



5.4 Power

UPS, Rittal Modular Power Concept – PMC 200

see page 797.





5.6 Security

Computer Multi Control Top Concept CMC-TC

CMC-TC main products	Packs of	Model No. DK	Page
CMC-TC monitoring system Master II	1	**7320.005**	810
CMC-TC monitoring system Processing Unit II	1	**7320.100**[1)]	809
CMC-TC sensor unit – I/O unit	1	**7320.210**[1)]	811
CMC-TC sensor unit – access unit	1	**7320.220**[1)]	812
CMC-TC sensor unit – climate unit	1	**7320.230**[1)]	812
CMC-TC Display Unit II	1	**7320.491**	815
CMC-TC GSM unit	1	**7320.820**	816
CMC-TC ISDN unit	1	**7320.830**	815
Fan Control System FCS	1	**7320.810**	813
RTT I/O unit	1	**3124.200**	814
Redundant power supply	1	**7320.426**	820
Extension unit 3 x AC voltage	1	**7200.520**	826

Sensor unit	I/O Unit	Access Unit	Climate Unit	Packs of	Model No. DK	Page
Sensors/actuators:						
Temperature sensor	■		■	1	**7320.500**	823
Humidity sensor	■			1	**7320.510**	823
Analog sensor input module “4 – 20 mA”	■			1	**7320.520**	825
Access sensor (max. 5 sensors in series supported)	■	■	■	2	**7320.530**	828
Vandalism sensor	■			1	**7320.540**	828
Airflow monitor	■		■	1	**7320.550**	823
Smoke alarm	■		■	1	**7320.560**	824
CMC-TC motion detector	■		■	1	**7320.570**	828
Digital sensor input module	■	■	■	1	**7320.580**	825
Digital relay output module	■			1	**7320.590**	825
Voltage monitor	■		■	1	**7320.600**	826
Voltage monitor with 10 A switch output	■			1	**7320.610**	826
Voltage monitor with 16 A switch output	■			1	**7320.611**	827
Voltage monitor 48 V DC	■		■	1	**7320.620**	827
Leak sensor	■			1	**7320.630**	823
Leak sensor, 15 m				1	**7320.631**	824
Acoustic sensor	■			1	**7320.640**	824
Latch/reader/access systems:						
Access sensor	■	■	■	2	**7320.530**	828
Electro-magnetic Ergoform-S FR/PS/TC and TE		■		1	**7320.700**	830
Electro-magnetic TS 8 handle with master key function		■		1	**7320.721**	829
Universal latch		■		1	**7320.730**	831
Relay output module for room door		■		1	**7320.740**	825
Smart card reader		■		1	**7320.750**	833
Magnetic card reader		■		1	**7320.760**	833
Coded lock		■		1	**7320.770**	833
Transponder comfort handle with Legic Unit		■		1	**7320.781**	832
Universal handle with electromagnetic locking		■		1	**7320.950**	830
Transponder handle		■		1	**7320.960/.961/ .962/.963**	831

[1)] **Approvals:**
- UL/C-UL



5.6 Security

Rack extinguisher system DET-AC Plus, 1 U

Description	Packs of	Model No. DK	Page
DET-AC Plus extinguisher system with early fire detection	1	**7338.100**	835
DET-AC Plus early fire detection	1	**7338.200**	835
DET-AC tubing kit for bayed rack	1	**7338.310**	835



5.7 Monitoring

Monitor/keyboard unit, 1 U

		15″		17″		Page
		RAL 7035/ RAL 9006	RAL 9005/ RAL 9006	RAL 7035/ RAL 9006	RAL 9005/ RAL 9006	
Touchpad	German	**9055.100**	**9055.200**	**9055.300**	**9055.400**[1)]	840
	English	**9055.102**	**9055.202**	**9055.302**[1)]	**9055.402**[1)]	840
	French	**9055.103**[1)]	**9055.203**[1)]	**9055.303**[1)]	**9055.403**[1)]	840
	International	**9055.151**[2)]	**9055.251**[2)]	**9055.351**[2)]	**9055.451**[2)]	840
Trackball	German	**9055.150**	**9055.250**	**9055.350**	**9055.450**	840

[1)] Extended delivery times.
[2)] International version:
When ordering, please specify your preferred language. Extended delivery times.
Versions: French/Spanish/Portuguese/Italian/Danish/Norwegian/Finnish/Swedish/Belgian/Russian/UK English/ US English with EURO/Swiss/German.
Other country-specific versions available on request.



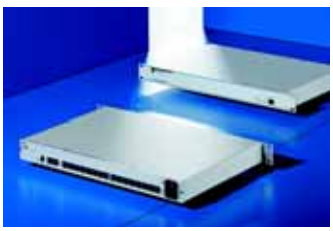
Rittal SSC view 8/32 Cat for monitor/keyboard unit, 1 U

Dimensions in mm			No. of channels	Video resolution, maximum (depending on distance)	Bandwidth	Model No. DK	Page
Width	Height	Depth					
325	1 U	85	8	1280 x 1024 @ 85 Hz	200 MHz	**7552.000**	841
325	1 U	85	32	1920 x 1440 @ 75 Hz	250 MHz	**7552.100**	841



Rittal SSC compact 8/32 Cat

Dimensions in mm			No. of channels	Video resolution, maximum	Bandwidth	Model No. DK	Page
Width	Height	Depth					
448	1 U	150	8	1280 x 1024 @ 85 Hz	200 MHz	**7552.010**	841
448	1 U	150	32	1920 x 1440 @ 75 Hz	250 MHz	**7552.110**	841



Rittal SSC premium 2/16, 4/32, 8/32

Dimensions in mm			No. of channels	Video resolution, maximum	Bandwidth	Model No. DK	Page
Width	Height	Depth					
435	1 U	286	16	1920 x 1440 @ 75 Hz	250 MHz	**7552.020**	843
435	1 U	286	32	1920 x 1440 @ 75 Hz	250 MHz	**7552.030**	843
435	1 U	286	32	1920 x 1440 @ 75 Hz	250 MHz	**7552.040**	843



5.7 Monitoring

Video technology

Rittal IP-Cam	Resolution	Video sensor (mega-pixels)	**Model No. DK**	Page
	640 x 480 pixels	0.3	**7555.100**	848



5.9 Telecom

Rack system, based on Rittal TC-Rack

Dimensions in mm			U	SU	**Model No. DK**	Page
Width	Height	Depth				
600	2200	300	46	82	**7723.035**	853
600	2200	600	46	82	**7726.035**	853



CS Indoor Racks

Dimensions in mm						Mounting angles	**Model No. DK**	Page
Width	Height	Depth	Clearance width	Clearance height	Clearance depth			
600	2200	300	500	2050	232	19″, 46 U	**9790.042**	856
600	2200	300	500	2050	232	Metric, 82 SU	**9790.043**	856



Small FM distributors

Dimensions in mm			FM systems	Paired wires	**Model No. DK**	Page
Width	Height	Depth				
300	500	120	–	100	**7052.035**	857
500	500	120	–	200	**7053.035**	857
500	700	120	–	400	**7054.035**	857
900	700	120	–	800	**7055.035**	857



5.9 Telecom

FM wall-mounted distributors, modular

Dimensions in mm			FM systems	Paired wires	Model No. DK	Page
Width	Height	Depth				
600	600	350	2 sets	max. 340	**7011.535**	858
760	760	300	2 sets	max. 500	**7012.535**	858
800	1000	300	3 sets	max. 990	**7013.535**	858
800	1200	300	3 sets	max. 1170	**7014.535**	858

Approvals:
- UL
- CSA
- TÜV
- Lloyds Register of Shipping
- VDE



FM distributor racks, modular

Dimensions in mm			FM systems	Paired wires	Model No. DK	Page
Width	Height	Depth				
600	2000	400	2 sets	max. 1300	**7834.060**	859
800	2000	400	3 sets	max. 1950	**7834.080**	859
1200	2000	400	5 sets	max. 3250	**7834.120**	859

Approvals:
- UL
- CSA
- TÜV
- Lloyds Register of Shipping
- VDE



5.9 Distributor racks

Rittal Data Rack

Dimensions in mm			U	Model No. DK	Page
Width	Height	Depth			
550	1499.5	750	31	**7391.000**	862
550	1721.8	750	36	**7396.000**	862
550	1899.5	750	40	**7400.000**	862
550	2121.8	750	45	**7445.000**	862



5.9 Mobile workstation

Rittal RiLab II

	Dimensions in mm			Model No. DK	Page
	Width	Height	Depth		
Type 1	700	796	660	**7602.100**	864
Type 2	700	1076	660	**7602.200**	864
Type 3	700	1426	660	**7602.300**	864



Communication Systems – Perfect protection for all weathers
Rittal's expertise in the fields of enclosure technology, climate control, security management and system integration is combined in standard solutions and customised outdoor systems.
The specific requirements of mobile and fixed network telecommunications, IT technology, environmental technology and power distribution are implemented on a project-specific basis.
High-quality materials such as aluminium and zinc-plated sheet steel combine corrosion resistance and protection from vandalism with UV stability and a high level of RF attenuation.

Individual complete solutions via the use of mass-produced modules:
- CS modular enclosure (twin-walled)
- Toptec CR (twin-walled)
- CS basic enclosure (single-walled)
- CS wall-mounted enclosure (enclosure within an enclosure)
- CS outdoor climate control
- CS fuel cell

Detailed information may be found on Catalogue pages 870 – 889 and on our website at www.rittal.com





6.1 CS modular enclosures

Dimensions in mm			Model No. CS	Page
Width	Height	Depth		
Pre-configured				
600	1200	600	**9751.125**	874
800	1200	500	**9751.145**	874
800	1600	600	**9751.165**	874
1200	1200	600	**9752.125**	874
Modules				
600	800	600	**9751.015**	875
600	1000	500	**9751.075**	875
600	1200	600	**9751.025**	875
600	1600	600	**9751.035**	875
800	1000	500	**9751.085**	876
800	1200	500	**9751.045**	876
800	1200	600	**9751.055**	876
800	1600	600	**9751.065**	876
1200	1200	500	**9752.015**	876
1200	1200	600	**9752.025**	876



6.1 Toptec CR

Dimensions[1] mm			Model No. CS	Page
Width	Height	Depth		
Without climate control module				
600	1200	650	**9775.100**	877
800	1200	650	**9775.200**	877
600	1600	650	**9775.300**	877
800	1600	650	**9775.400**	877

[1] All sizes given are nominal dimensions. For absolute dimensions, please refer to the page 877.





6.1 CS basic enclosures

Dimensions in mm			Model No. CS		Page
Width	Height	Depth	without centre bar	with centre bar	
Single-door					
600	800	400	**9783.040**	–	878
600	1200	400	**9783.050**	–	878
600	1400	400	**9783.060**	–	878
600	1200	500	**9783.030**	–	878
800	800	400	**9783.010**	–	879
800	1200	400	**9783.020**	–	879
800	1400	400	**9783.120**	–	879
800	1200	500	**9783.110**	–	879
Double-door					
1200	800	400	**9784.110**	**9784.010**	880
1200	1200	400	**9784.120**	**9784.020**	880
1200	1200	500	**9784.140**	**9784.040**	880
1200	1400	400	**9784.130**	**9784.030**	880



6.1 CS wall-mounted enclosures

Dimensions external/internal mm			Model No. CS	Page
Width	Height	Depth		
370/300	522.5/400	210/170	**9791.015**	881
420/350	560.5/440	210/170	**9791.025**	881
530/460	700/565	265/220	**9791.035**	881
630/580	780/580	380/333	**9791.045**	881
With rotating frame, 5 U, instead of mounting plate				
630/580	780/580	380/333	**9791.145**	881





6.2 Cooling units for CS modular enclosures

Dimensions in mm			Mounting position	Useful cooling output EN 814		Rated operating voltage	Model No. CS	Page
Width	Height	Depth		L35 L35	L35 L50			
535	390	400	Roof mounting	**900 W**	**750 W**	230 V AC, 50/60 Hz	**9762.012**	883
430	1070	210	Door mounting	**900 W**	**650 W**	230 V AC, 50/60 Hz	**9768.100**	883
515	1170	151.5	Wall mounting	**900 W**	**750 W**	230 V AC, 50/60 Hz	**9761.012**	883
695	1132	151.5	Wall mounting	**1400 W**	**1050 W**	230 V AC, 50/60 Hz	**9761.032**	883
776	1100	250	Wall mounting	**2500 W**	**2000 W**	230 V AC, 50/60 Hz	**9761.042**	883
400	1050	310	Universal built-in	**1500 W**	**1250 W**	230 V AC, 50/60 Hz	**9768.150**	883

Approvals CS 9761.032:
- UL
- C-UL





6.2 Heat exchangers for CS modular enclosures

Dimensions in mm			Installation	Specific thermal output	Heater[1)]	Rated operating voltage	Model No. CS	Page
Width	Height	Depth						
470	158	380	Roof mounting	**30 W/K**	without	48 V DC	**9764.040**	884
535	390	400	Roof mounting	**60 W/K**	400 W	48 V DC	**9764.012**	884
515	1170	151.5	Wall mounting	**60 W/K**	400 W	48 V DC	**9763.012**	884
480	1005	110	Door mounting	**40 W/K**	400 W	48 V DC	**9768.032**	885
510	1005	150	Door mounting	**60 W/K**	400 W	48 V DC	**9768.012**	885
445	1050	150	Door mounting	**85 W/K**	without	48 V DC	**9768.042**	885
575	1050	195	Door mounting	**120 W/K**	without	48 V DC	**9768.062**	885

[1)] Rated operating voltage 230 V AC, 50/60 Hz

Note:
Enclosure heaters for CS outdoor enclosures,
see page 709.



6.2 Climate control units for Toptec CR

Dimensions in mm			Installation	Useful cooling output EN 814		Specific thermal output	Rated operating voltage	Model No. CS	Page
Width	Height	Depth		L35 L35	L35 L50				
Heat exchanger									
500	1000	150	Universal built-in	–	–	**85 W/K**	48 V DC	**9776.100**	886
500	1000	200	Universal built-in	–	–	**105 W/K**	48 V DC	**9776.150**	886
Cooling units									
500	1000	150	Universal built-in	**1000 W**	**650 W**	–	230 V AC, 50/60 Hz	**9776.500**	886
500	1000	260	Universal built-in	**1600 W**	**1200 W**	–	230 V AC, 50/60 Hz	**9776.550**	886



6.3 CS fuel cell

Dimensions in mm			Output W	Model No. CS	Page
Width	Height	Depth	Scalable to		
694	1403	992	1000 – 3000	**9782.030**	889
694	1403	992	1000 – 5000	**9782.050**	889



Rittal has all the elements of **packaging technology for the factory of the future,** capable of withstanding even the toughest ambient conditions.

Current examples include:

Compact, secure technologies for **Industrial Ethernet,** enabling simple modifications to production procedures. **Modular enclosure and accessory systems** offer advantages with the rapid assembly and adaptation of controllers. At the human/machine interface, your ergonomic and technical requirements are precisely realised with the **Command Panel, TopConsole system and Industrial Workstations.** High-end products + matching accessories + modular mounting **= Perfect solutions at reasonable prices.**

Industrial Enclosures

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Small enclosures

Features



This is application-oriented range diversity:

6 enclosure types in 4 materials and more than 100 sizes.

With

- Fibreglass-reinforced polycarbonate
- Cast aluminium
- Sheet steel with high-quality coating
- Stainless steel

every aspect of your requirements is met.

It goes without saying that all this is achieved in Rittal's familiar high quality, and to suit every safety requirement.

And for special requirements:

Stainless steel enclosures, see page 302 – 307.

Ex enclosures, see page 324 – 326.

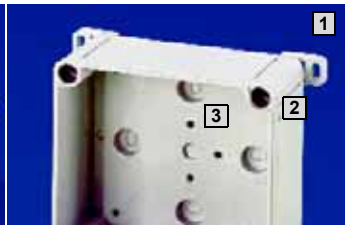
EMC enclosures, see page 327 – 328.



Polycarbonate enclosures



Hinges available as accessories. Cover screw prepared for a lead seal.



3 attachment options:

1 Wall mounting brackets
2 Below the cover screws
3 Knockouts in the enclosure



Enclosure partially equipped with metric knockouts for faster assembly of cable glands.



Cast aluminium enclosures



Some holes tapped for the attachment of support rails, mounting plates or earthing systems.



Cover with captive screws.
Wall mounting optionally
- below the cover
- via wall mounting bracket (available as an accessory).



Drilled holes and assembly of cable glands (see page 1054) available on request.

Features



Terminal boxes KL with and without gland plate



Cover may be opened and securely locked in a flash, thanks to the new quick-action screw.
$^{3}/_{4}$ turn instead of thread ensures correct contact pressure of the seal.



Support rail TS 35/7.5 for better use of the depth, optionally attached at the bottom or via the profile strips on both sides with self-tapping screws.



Nanoceramic pretreatment, electrophoretic dipcoat priming and powder coating – reliable surface protection thanks to even coating in all the corners and edges.



E-Box



The “E-Box” supplied as standard with mounting plate, 180° hinge and double-bit lock system.



Lock insert exchangeable or prepared for a lead seal with lock cover as an accessory – see page 958.



The highly elastic foamed-in PU seal guarantees perfect sealing. High protection category IP 66 to EN 60 529/09.2000.



Bus enclosure/RiLAN Industrial



Door hinged at the bottom or side. Hinges with 180° opening angle, may be unscrewed from the inside.



Viewing window made from Macrolon with recess set flush into the metal.

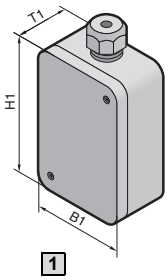


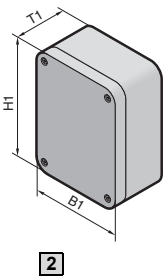
Bus modules of virtually all makes may be attached via the built-in support rails.

Polycarbonate enclosures PK









Material:
Grey enclosure and cover (version .000) from fibreglass-reinforced polycarbonate, transparent cover (version .100) from polycarbonate, cover screws from polyamide, insulating bungs from polyethylene.

Colour:
RAL 7035

Protection category:
IP 66 to EN 60 529/09.2000

Supply includes:
Enclosure and cover, cover screws, insulating bungs for wall mounting screws (not with PK 9530.000 and PK 9531.000), all-round foamed-in PU seal.

Approvals,
see page 24.

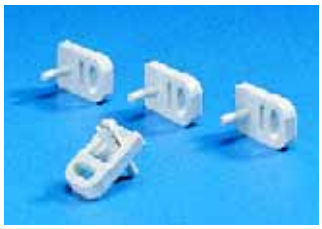
Detailed drawing,
see page 1173.

Width (B1) mm		50	50	65	65	94	94	94	94	Page
Height (H1) mm		52	65	65	65	65	65	94	94	
Depth (T1) mm		35	35	57	81	57	81	57	81	
1 **Model No. PK with cable gland for cable diameter 5 – 10 mm**		**9530.000**	**9531.000**	**–**	**–**	**–**	**–**	**–**	**–**	
2 **Model No. PK with grey cover**		**–**	**–**	**9500.000**	**9501.000**	**9502.000**	**9503.000**	**9504.000**	**9505.000**	
Model No. PK with transparent cover		**–**	**–**	**–**	**–**	**–**	**–**	**9504.100**	**–**	
Packs of		10	10	12	12	8	8	6	6	
Accessories										
Mounting plate		–	–	–		9541.000		9542.000		113
Packs of		–	–	–		12		12		
Support rail (Packs of 12)										
TS 15/5.5	Installation in the width	–	–	9560.000		–		–		113
	Installation in the height	–	–	–		9560.000		–		113
TS 35/7.5	Installation in the width	–	–	–		–		9564.000		113
	Installation in the height	–	–	–		–		9564.000		113

Width (B1) mm		110	110	130	130	130	130	180	180	Page
Height (H1) mm		110	110	94	94	130	130	94	94	
Depth (T1) mm		66	90	57	81	75	99	57	81	
2 **Model No. PK with grey cover**		**9506.000**	**9507.000**	**9508.000**	**9509.000**	**9510.000**	**9511.000**	**9512.000**	**9513.000**	
Model No. PK with transparent cover		**9506.100**	**9507.100**	**9508.100**	**9509.100**	**9510.100**	**9511.100**	**9512.100**	**9513.100**	
Packs of		6	6	4	4	4	4	2	2	
Accessories										
Mounting plate		9543.000		9544.000		9545.000		9546.000		113
Packs of		12		12		10		10		
Support rail (Packs of 12)										
TS 15/5.5	Installation in the width	9562.000		9563.000		9563.000		–		113
	Installation in the height	9562.000		9561.000		9563.000		9561.000		113
TS 35/7.5	Installation in the width	9564.000		9565.000		9565.000		9566.000		113
	Installation in the height	9564.000		9564.000		9565.000		9564.000		113

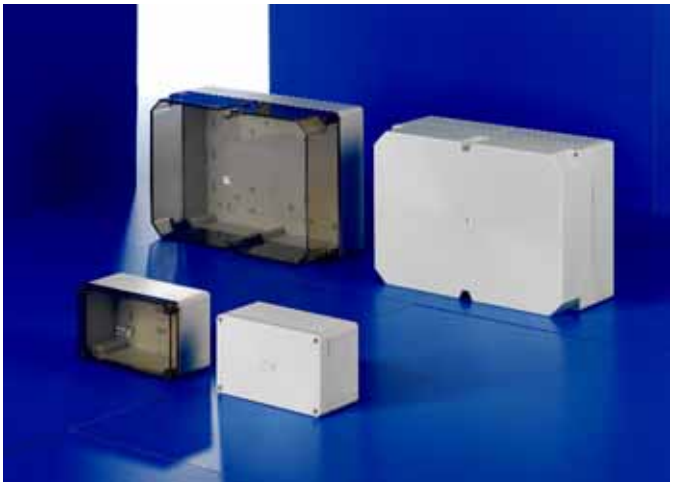


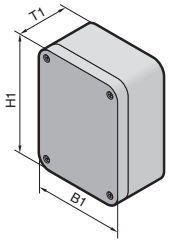
Cable gland, polyamide,
Model No. see page 1054.



Wall mounting bracket,
Model No. see page 113.

Accessories Page 890





Material:
Grey enclosure and cover (version .000) from fibreglass-reinforced polycarbonate, transparent cover (version .100) from polycarbonate, cover screws from polyamide, insulating bungs from polyethylene.

Colour:
RAL 7035

Protection category:
IP 66 to EN 60 529/09.2000

Supply includes:
Enclosure and cover, cover screws, insulating bungs for wall mounting screws, all-round foamed-in PU seal.

Approvals,
see page 24.

Detailed drawing,
see page 1173.

Width (B1) mm	180	180	180	182	182	182	Page
Height (H1) mm	110	110	110	180	180	180	
Depth (T1) mm	90	111	165	90	111	165	
Model No. PK with grey cover	**9514.000**	**9515.000**	**9516.000**	**9517.000**	**9518.000**	**9519.000**	
Model No. PK with transparent cover	**9514.100**	**9515.100**	**9516.100**	**9517.100**	**9518.100**	**9519.100**	
Packs of	2	2	2	1	1	1	
Accessories							
Mounting plate	9547.000			9548.000			113
Packs of	10			10			
Support rail TS 35/7.5 (Packs of 12)							
Installation in the width	9566.000			9566.000			113
Installation in the height	9564.000			9566.000			113

Width (B1) mm	254	254	254	360	360	Page
Height (H1) mm	180	180	180	254	254	
Depth (T1) mm	90	111	165	111	165	
Model No. PK with grey cover	**9520.000**	**9521.000**	**9522.000**	**9523.000**	**9524.000**	
Model No. PK with transparent cover	**9520.100**	**9521.100**	**9522.100**	**9523.100**	**9524.100**	
Packs of	1	1	1	1	1	
Accessories						
Mounting plate	9549.000			9550.000		113
Packs of	8			4		
Support rail TS 35/7.5 (Packs of 12)						
Installation in the width	9567.000			9568.000		113
Installation in the height	9566.000			9567.000		113



Hinges,
Model No. see page 113.



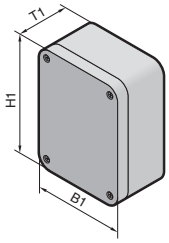
Turn-lock fastener,
Model No. see page 113.

Accessories Page 890

Polycarbonate enclosures PK

with metric knockouts





Material:
Grey enclosure and lid of fibre-glass-reinforced polycarbonate, lid screws of polyamide, insulating bungs of polythene.

Colour:
RAL 7035

Protection category:
IP 66 to EN 60 529/09.2000

Supply includes:
Enclosure and cover, cover screws, insulating bungs for wall mounting screws, all-round foamed-in PU seal.

Approvals,
see page 24.

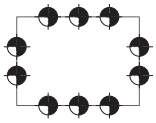
Detailed drawing,
see page 1173.

Width (B1) mm		65	130	180	254	Page
Height (H1) mm		65	94	110	180	
Depth (T1) mm		57	57	90	111	
Model No. PK		**9500.050**	**9508.050**	**9514.050**	**9521.050**	
Packs of		12	4	2	1	
Accessories						
Mounting plate		–	9544.000	9547.000	9549.000	113
Packs of		12	12	10	8	
Support rail (Packs of 12)						
TS 15/5.5	Installation in the width	9560.000	9563.000	–	–	113
	Installation in the height	–	9561.000	–	–	113
TS 35/7.5	Installation in the width	–	9565.000	9566.000	9567.000	113
	Installation in the height	–	9564.000	9564.000	9566.000	113

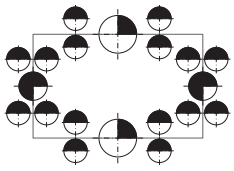
PK 9500.050



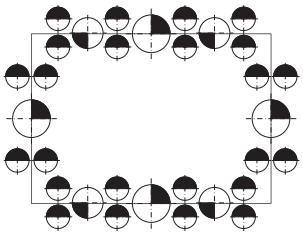
PK 9508.050

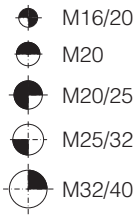


PK 9514.050



PK 9521.050





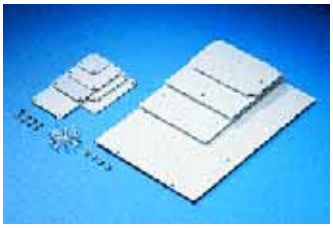


Cable gland, polyamide,
Model No. see page 1054.



Wall mounting bracket,
Model No. see page 113.

Accessories Page 890



Mounting plate

For individual configuration

Design:
Melamine phenol-coated laminated paper, 2.5 mm thick.

Colour:
RAL 7035

Supply includes:
Self-tapping assembly screws.

To fit	Width mm	Height mm	Packs of	Model No. PK
PK 9502.000, PK 9503.000	74	45	12	**9541.000[1)]**
PK 9504.000/.100, PK 9505.000	74	74	12	**9542.000[1)]**
PK 9506.000/.100, PK 9507.000/.100	90	90	12	**9543.000[1)]**
PK 9508.000/.100, PK 9508.050, PK 9509.000/.100	110	74	12	**9544.000[1)]**
PK 9510.000/.100, PK 9511.000/.100	110	110	10	**9545.000**
PK 9512.000/.100, PK 9513.000/.100	160	74	10	**9546.000**
PK 9514.000/.100, PK 9514.050, PK 9515.000/.100, PK 9516.000/.100	150	90	10	**9547.000**
PK 9517.000/.100, PK 9518.000/.100, PK 9519.000/.100	150	150	10	**9548.000**
PK 9520.000/.100, PK 9521.000/.100, PK 9521.050, PK 9522.000/.100	220	150	8	**9549.000**
PK 9523.000/.100, PK 9524.000/.100	331	220	4	**9550.000**

[1)] with spacers



Turn-lock fastener

A quick, convenient screw fastening aid is obtained by clipping into the head of the lid screw.

Material:
Polyamide

Supply includes:
1 pack

	Packs of	Model No. PK
For all enclosures	100	**9582.000**

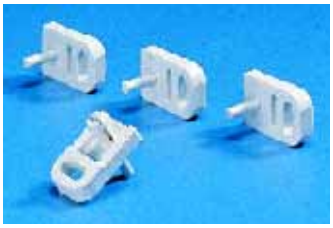


Hinges

For hinged attachment of lids.
The supplied drilling template ensures problem-free assembly.

Supply includes:
1 set =
2 hinges,
4 assembly screws,
4 polyethylene sealing bungs,
1 drilling template.

For enclosure	Material	Packs of	Model No. PK
PK 9500.000 – PK 9513.000	Polycarbonate	10 sets	**9580.000**
PK 9514.000 – PK 9524.000	Polystyrene	10 sets	**9581.000**



Wall mounting brackets

The enclosure can be screwed to the wall using four wall mounting brackets. The bracket is securely attached to the enclosure by means of pins.

Material:
Polyamide, grey

Supply includes:
1 pack

	Packs of	Model No. PK
For all enclosures	40	**9583.000**



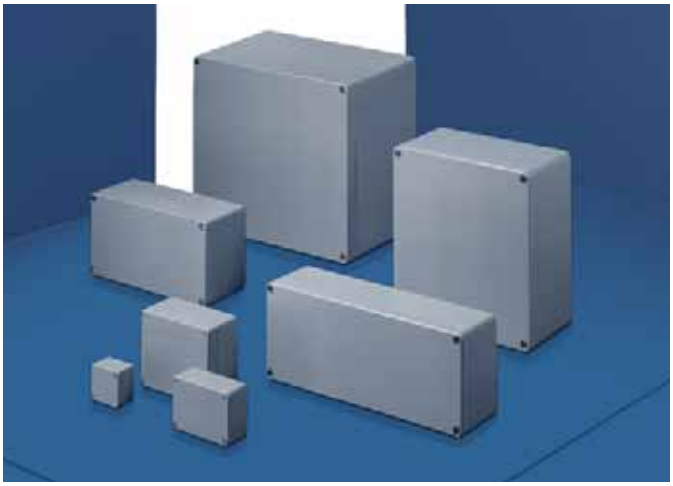
Support rail

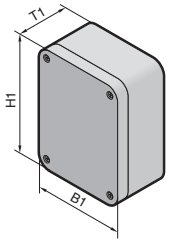
The two support rail sections provide good flexibility for accommodating terminal blocks and installed components.

Supply includes:
Two self-tapping assembly screws.

Rail	Rail length mm	Packs of	Model No. PK
TS 15/5.5	49.5	12	**9560.000**
	80	12	**9561.000**
	92	12	**9562.000**
	111	12	**9563.000**
TS 35/7.5	81	12	**9564.000**
	106	12	**9565.000**
	144	12	**9566.000**
	216	12	**9567.000**
	336	12	**9568.000**

Cast aluminium enclosures GA





Material:
Enclosure and lid made from cast aluminium, lid with neoprene cord seal.

Surface finish:
Textured enamel similar to RAL 7001

Protection category:
IP 66 to EN 60 529/09.2000, complies with NEMA 4.

Supply includes:
2 or 4 cover screws, captive mounted,
2 or 4 screws for the attachment of support rails, mounting plates etc.,
1 screw for connection of the PE conductor.

Rittal service:

Individual standard solutions for enclosures and covers
- Hole drilling
- Thread tapping
- Milling
- Screen printing
- Engraving
- Choice of RAL colours and other surface finishes available on request.

Detailed drawing,
see page 1174.

Width (B1) mm		50	58	98	150	75	125	175	250	122	Page
Height (H1) mm		45	64	64	64	80	80	80	80	120	
Depth (T1) mm		30	36	36	36	57	57	57	57	80	
Model No. GA		**9100.210**	**9101.210**	**9102.210**	**9103.210**	**9104.210**	**9105.210**	**9106.210**	**9107.210**	**9108.210**	
Packs of		6	5	3	2	1	1	1	1	1	
Accessories											
Mounting plate		–	–	–	–	–	9105.700	–	–	9108.700	115
Packs of		–	–	–	–	–	10	–	–	2	
Support rail[1)]	TS 15/5.5 (Packs of 10)	–	–	–	–	–	9105.150	–	–	–	115
	TS 35/7.5 (Packs of 5)	–	–	–	–	–	–	–	–	9108.350	115
Wall mounting brackets (Packs of 2)		–	–	–	–	–	–	–	–	9121.122	115
Exterior hinge (Packs of 2)		–	–	–	–	–	–	–	–	9123.000	115

Width (B1) mm		220	360	160	260	360	200	280	330	330	Page
Height (H1) mm		120	122	160	160	160	230	230	230	230	
Depth (T1) mm		90	80	90	90	90	110	110	110	180	
Model No. GA		**9110.210**	**9111.210**	**9112.210**	**9113.210**	**9114.210**	**9116.210**	**9117.210**	**9118.210**	**9119.210**	
Packs of		1	1	1	1	1	1	1	1	1	
Accessories											
Mounting plate		9110.700	–	9112.700	9113.700	9114.700	9116.700	9117.700	9118.700	9118.700	115
Packs of		2	–	2	2	1	1	1	1	1	
Support rail[1)]	TS 35/7.5 (Packs of 5)	9110.350	–	9112.350	–	–	–	–	–	–	115
Wall mounting brackets (Packs of 2)		9121.122	9121.122	9121.160	9121.160	9121.160	9121.230	9121.230	9121.230	9121.230	115
Exterior hinge (Packs of 2)		9123.000	9123.000	9123.000	9123.000	9123.000	9123.000	9123.000	9123.000	9123.000	115

[1)] Installation in the width

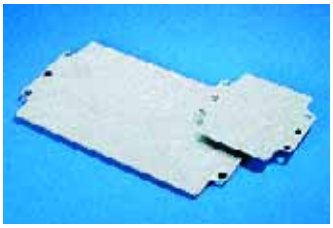


Cable gland, brass,
Model No. see page 1054.



Multi-seal inserts,
Model No. see page 1055.

Accessories Page 890

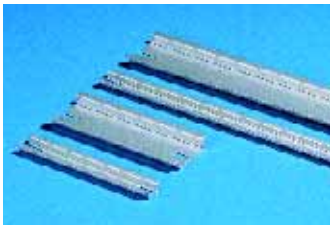


Mounting plate

for universal interior installation.

Material:
Sheet steel, zinc-plated, passivated,
with attachment holes.

Exterior dimensions mm		For enclosure	Packs of	Model No. GA
Width	Height			
114	69	GA 9105.210	10	**9105.700**
109	107	GA 9108.210	2	**9108.700**
207	107	GA 9110.210	2	**9110.700**
144	142	GA 9112.210	2	**9112.700**
245	142	GA 9113.210	2	**9113.700**
346	142	GA 9114.210	1	**9114.700**
183	214	GA 9116.210	1	**9116.700**
264	214	GA 9117.210	1	**9117.700**
314	214	GA 9118.210/GA 9119.210	1	**9118.700**



Support rail

To accommodate terminal blocks or other
installed equipment.

Material:
Sheet steel, zinc-plated, passivated.

Rail	Rail length available for population mm	For enclosure width mm	Packs of	Model No. GA
TS 15/5.5 to EN 50 045	95	125	10	**9105.150**
TS 35/7.5 to EN 50 022	80	122	5	**9108.350**
	115	160	5	**9112.350**
	180	220	5	**9110.350**



Wall mounting bracket

For external mounting to surfaces – no need to
dismantle the lid if pre-assembled.

Material:
Sheet steel, zinc-plated, passivated

For enclosure	Packs of	Model No. GA
GA 9108.210/ GA 9110.210/ GA 9111.210	2	**9121.122**
GA 9112.210/ GA 9113.210/ GA 9114.210	2	**9121.160**
GA 9116.210/ GA 9117.210/ GA 9118.210/ GA 9119.210	2	**9121.230**

Hinge, exterior

For fastening the lid to the enclosure base.

Material:
Die-cast aluminium

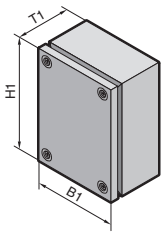
Colour:
RAL 7001

For enclosure	Packs of	Model No. GA
GA 9108.210/ GA 9110.210/ GA 9111.210/ GA 9112.210/ GA 9113.210/ GA 9114.210/ GA 9116.210/ GA 9117.210/ GA 9118.210/ GA 9119.210	2 + 8 screws	**9123.000**

Terminal boxes KL

without gland plate, depth: 80





Material:
Enclosure: Sheet steel 1.25 mm
Cover: Sheet steel 1.25 mm

Surface finish:
Enclosure and cover:
Dipcoat-primed,
powder-coated in textured
RAL 7035 on the outside

Protection category:
IP 66 to EN 60 529/09.2000,
complies with NEMA 4.

Supply includes:
Enclosure, cover with all-round
foamed-in PU seal and quick-
action screws, including plastic
bushes.

Approvals,
see page 25.

Detailed drawing,
see page 1175.

Width (B1) mm	Packs of	150	200	200	300	300	400	600	Page
Height (H1) mm		150	150	200	150	200	200	200	
Depth (T1) mm		80	80	80	80	80	80	80	
Model No. KL	1	**1514.510**	**1528.510**	**1516.510**	**1515.510**	**1517.510**	**1518.510**	**1519.510**	
Weight (kg)		1.4	1.6	1.9	2.1	2.6	3.2	4.6	
Accessories									
Mounting plate	1	1560.700	1575.700	1562.700	1561.700	1563.700	1564.700	1566.700	978
Support rail TS 35/7.5	10	2314.000	2315.000	2315.000	2316.000	2316.000	2317.000	–	1002
Support rail TS 35/15	10	–	–	–	–	–	–	2319.000	1002
Cover retainer	3 pairs	1591.000	1591.000	1591.000	1591.000	1591.000	1591.000	1591.000	962
Cover hinge	6	1592.000	1592.000	1592.000	1592.000	1592.000	1592.000	1592.000	962
Earthing set	5	2570.100	2570.100	2570.100	2570.100	2570.100	2570.100	2570.100	1036

To order terminal boxes in textured RAL 7032 please add extension .210 to the Model No., and for primed terminal boxes use extension .310.
Delivery times available on request.





Double-membrane gland, stepped collar for cable entry,
Model No. see page 1058.

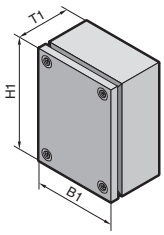


Earthing set for KL,
comprising all the parts needed
for earthing of the cover.
Model No. see page 1036.

Accessories Page 890 **KL stainless steel** Page 305 **KL Premium Line stainless steel** Page 306 **KL EMC-shielded** Page 328 **KL Ex-proof** Page 325

without gland plate, depth: 120





Material:
Enclosure: Sheet steel 1.25 mm; 1.38 mm for KL 1507.510 to KL 1513.510
Cover: Sheet steel 1.25 mm

Surface finish:
Enclosure and cover: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside

Protection category:
IP 66 to EN 60 529/09.2000, complies with NEMA 4.

Supply includes:
Enclosure, cover with all-round foamed-in PU seal and quick-action screws, including plastic bushes.

Approvals,
see page 25.

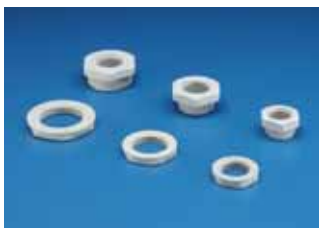
Detailed drawing,
see page 1175.

Width (B1) mm	Packs of	150	200	200	300	300	300	400	400	400	400	Page
Height (H1) mm		150	150	200	150	200	300	150	200	300	400	
Depth (T1) mm		120	120	120	120	120	120	120	120	120	120	
Model No. KL	1	**1500.510**	**1529.510**	**1502.510**	**1501.510**	**1503.510**	**1507.510**	**1589.510**	**1504.510**	**1508.510**	**1511.510**	
Weight (kg)		1.6	1.8	2.3	2.6	3.0	4.0	3.2	3.6	4.8	6.2	
Accessories												
Mounting plate	1	1560.700	1575.700	1562.700	1561.700	1563.700	1567.700	1576.700	1564.700	1568.700	1571.700	978
Support rail TS 35/7.5	10	2314.000	2315.000	2315.000	2316.000	2316.000	2316.000	2317.000	2317.000	2317.000	2317.000	1002

Width (B1) mm	Packs of	500	500	600	600	600	800	800	Page
Height (H1) mm		200	300	200	300	400	200	400	
Depth (T1) mm		120	120	120	120	120	120	120	
Model No. KL	1	**1505.510**	**1509.510**	**1506.510**	**1510.510**	**1512.510**	**1527.510**	**1513.510**	
Weight (kg)		4.4	5.8	5.7	6.8	8.4	6.8	11.0	
Accessories									
Mounting plate	1	1565.700	1569.700	1566.700	1570.700	1572.700	1574.700	1573.700	978
Support rail TS 35/15	10	2318.000	2318.000	2319.000	2319.000	2319.000	–	–	1002
Cover retainer	3 pairs	1591.000	1591.000	1591.000	1591.000	1591.000	1591.000	1591.000	962
Cover hinge	6	1592.000	1592.000	1592.000	1592.000	1592.000	1592.000	1592.000	962
Earthing set	5	2570.100	2570.100	2570.100	2570.100	2570.100	2570.100	2570.100	1036

To order terminal boxes in textured RAL 7032 please add extension .210 to the Model No., and for primed terminal boxes use extension .310.
Delivery times available on request.







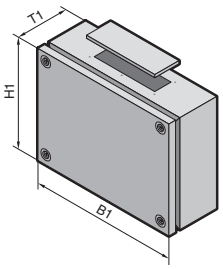
Cable glands, reducers and multi-seal inserts,
Model No. see page 1054 – 1055.

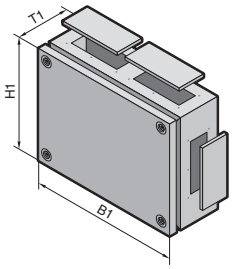
Accessories Page 890 **KL stainless steel** Page 305 **KL Premium Line stainless steel** Page 306 **KL EMC-shielded** Page 328 **KL Ex-proof** Page 325

Terminal boxes KL

with gland plate, depth: 120







Material:
Enclosure: Sheet steel 1.38 mm; 1.25 mm for KL 1530.510 to KL 1534.510 and KL 1542.510
Cover: Sheet steel 1.25 mm

Surface finish:
Enclosure and cover: Dipcoat-primed, powder-coated on the outside in textured RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes:
Enclosure with gland apertures, cover with foamed-in special seal and quick-action screws including plastic bushes, sheet steel gland plates with seals and assembly parts.

Approvals,
see page 25.

Detailed drawing,
see page 1175.

Width (B1) mm		Packs of	300	300	300	400	400	400	Page
Height (H1) mm			150	200	300	200	300	400	
Depth (T1) mm			120	120	120	120	120	120	
Model No. KL		1	**1530.510**	**1531.510**	**1535.510**	**1532.510**	**1536.510**	**1539.510**	
Weight (kg)			2.7	3.3	4.5	4.0	5.2	6.7	
Accessories									
Mounting plate		1	1561.700	1563.700	1567.700	1564.700	1568.700	1571.700	978
Gland plate (top + bottom)	Size		2	2	2	2	2	2	from 1048
	Qty.		1 + 1	1 + 1	1 + 1	1 + 1	1 + 1	1 + 1	
Gland plate (left + right)	Size		–	–	2	–	2	2	from 1048
	Qty.		–	–	1 + 1	–	1 + 1	1 + 1	
Support rail TS 35/7.5		10	2316.000	2316.000	2316.000	2317.000	2317.000	2317.000	1002

Width (B1) mm		Packs of	500	500	600	600	600	800	800	Page
Height (H1) mm			200	300	200	300	400	200	400	
Depth (T1) mm			120	120	120	120	120	120	120	
Model No. KL		1	**1533.510**	**1537.510**	**1534.510**	**1538.510**	**1540.510**	**1542.510**	**1541.510**	
Weight (kg)			4.9	5.2	5.9	7.7	9.0	7.2	12.0	
Accessories										
Mounting plate		1	1565.700	1569.700	1566.700	1570.700	1572.700	1574.700	1573.700	978
Gland plate (top + bottom)	Size		2	2	2	2	2	2	2	from 1048
	Qty.		2 + 2	2 + 2	2 + 2	2 + 2	2 + 2	3 + 3	3 + 3	
Gland plate (left + right)	Size		–	2	–	2	2	–	2	from 1048
	Qty.		–	1 + 1	–	1 + 1	1 + 1	–	1 + 1	
Support rail TS 35/15		10	2318.000	2318.000	2319.000	2319.000	2319.000	–	–	1002
Cover retainer		3 pairs	1591.000	1591.000	1591.000	1591.000	1591.000	1591.000	1591.000	962
Cover hinge		6	1592.000	1592.000	1592.000	1592.000	1592.000	1592.000	1592.000	962
Earthing set		5	2570.100	2570.100	2570.100	2570.100	2570.100	2570.100	2570.100	1036

To order terminal boxes in textured RAL 7032 please add extension .210 to the Model No., and for primed terminal boxes use extension .310.
Delivery times available on request.



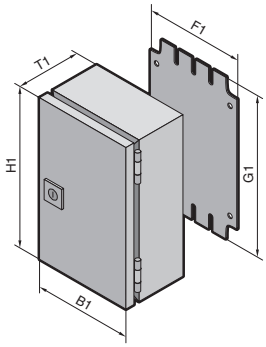
Cover hinge
The cover hinge is simply screwed to the enclosure protection channel and to the bottom edge of the cover.
Model No. see page 962.



Cover retainer
The cover retainer is easily fitted without drilling, and allows the covers to be opened upwards, even when the terminal box below is bayed.
Model No. see page 962.

Accessories Page 890 **KL stainless steel** Page 305 **KL Premium Line stainless steel** Page 306 **KL EMC-shielded** Page 328 **KL Ex-proof** Page 325





Material:
Sheet steel
Enclosure: 1.25 mm;
1.38 mm for EB 1555.500, EB 1556.500, EB 1577.500 to EB 1579.500

Surface finish:
Enclosure and door: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate: Zinc-plated

Protection category:
IP 66 to EN 60 529/09.2000, complies with NEMA 4.

Supply includes:
Enclosure with mounting plate, door including 180° hinges and cam lock with double-bit insert.

Approvals,
see page 25.

Detailed drawing,
see page 1176.

Depth 80 mm

Width (B1) mm	Packs of	150	150	200	200	200
Height (H1) mm		150	300	200	300	400
Depth (T1) mm		80	80	80	80	80
Mounting plate width (F1) mm		125	125	175	175	175
Mounting plate height (G1) mm		135	285	185	285	385
Model No. EB	1	**1551.500**	**1545.500**	**1546.500**	**1552.500**	**1547.500**
Weight (kg)		1.7	2.6	2.4	3.2	4.4

Depth 120 mm

Width (B1) mm	Packs of	150	150	200	200	200	300	300	200
Height (H1) mm		150	300	200	300	400	300	400	500
Depth (T1) mm		120	120	120	120	120	120	120	120
Mounting plate width (F1) mm		125	125	175	175	175	275	275	175
Mounting plate height (G1) mm		135	285	185	285	385	285	385	485
Model No. EB	1	**1553.500**	**1548.500**	**1549.500**	**1554.500**	**1550.500**	**1555.500**	**1556.500**	**1557.500**
Weight (kg)		2.0	3.0	2.8	3.6	5.0	5.0	6.4	6.2

Depth 155 mm

Width (B1) mm	Packs of	300	300	300
Height (H1) mm		400	600	800
Depth (T1) mm		155	155	155
Mounting plate width (F1) mm		275	275	275
Mounting plate height (G1) mm		385	585	785
Model No. EB	1	**1577.500**	**1578.500**	**1579.500**
Weight (kg)		7.1	11.0	13.2

Lock systems

Standard double-bit lock insert may be exchanged for lock inserts, type A, see page 956,
lock cylinder inserts, plastic handles and T handles, type B, see page 954 – 957.

To order terminal boxes in textured RAL 7032 please add extension .600 to the Model No., and for primed terminal boxes use extension .800.
Delivery times available on request.

Accessories Page 890 **E-Box, EMC-shielded** Page 328



Bus enclosures

Material:
Sheet steel
Enclosure: 1.38 mm
Door: 1.5 mm
Viewing window made from polycarbonate, 4 mm

Surface finish:
Enclosure and door:
Powder-coated in textured RAL 7035

Protection category:
IP 65 to EN 60 529/09.2000,
complies with NEMA 12.

Supply includes:
Door with l/h hinge,
1 cam lock with double-bit insert,
2 (1) support rail(s) TS 35/7.5 (for BG 1586.510).
Drilled holes for cable glands in the base.

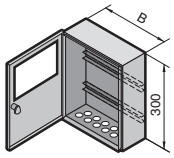
Approvals,
see page 26.

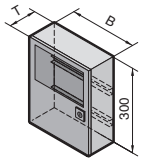
Dimensions mm			PG version						Metric version			
			Number of PG holes					Model No. BG	Number of metric holes			Model No. BG
W (B)	H	D (T)	9	11	13.5	16	21		M12	M20	M25	
200	300	80	1	8	–	1	1	**1583.510**	2	5	2	**1583.520**
300	300	80	1	14	–	1	1	**1584.510**	2	9	2	**1584.520**
400	300	80	1	18	–	1	2	**1585.510**	2	13	3	**1585.520**
500	300	80	3	–	24	–	–	**1586.510**	3	24	–	**1586.520**

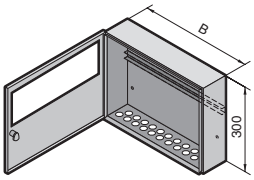
Lock systems

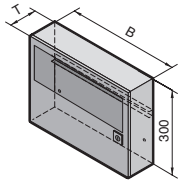
Standard double-bit lock insert may be exchanged for lock inserts, type A, see page 956
and plastic handles, type B, see page 954.

To order enclosures in RAL 7032, please add the extension .210 or .220 to the Model No.
Delivery times available on request.



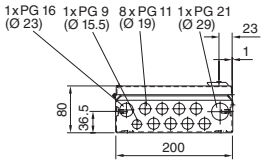




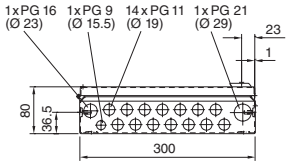


PG

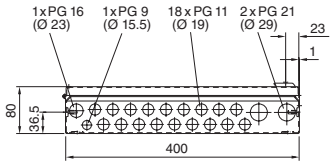
BG 1583.510



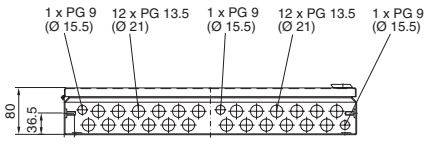
BG 1584.510



BG 1585.510

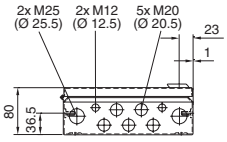


BG 1586.510

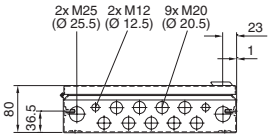


Metric

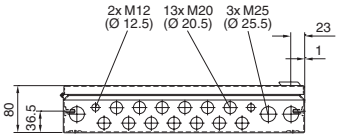
BG 1583.520



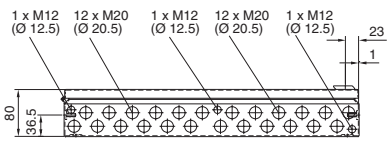
BG 1584.520

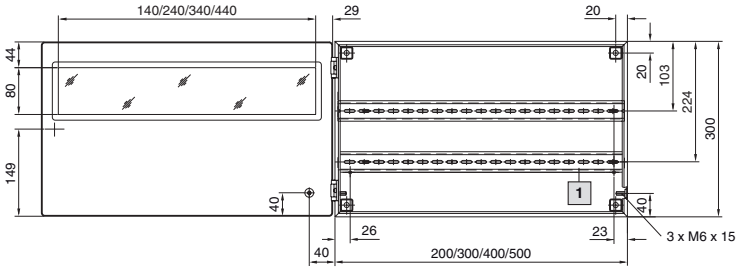


BG 1585.520



BG 1586.520





1 Not applicable to BG 1586.510



Bus enclosure

Material:
Sheet steel
Enclosure: 1.38 mm
Door: 1.5 mm
Viewing window made from polycarbonate, 4 mm

Surface finish:
Enclosure and door:
Powder-coated in textured RAL 7035

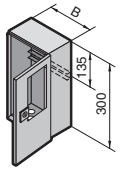
Protection category:
IP 65 to EN 60 529/09.2000,
complies with NEMA 12.

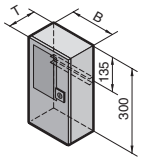
Supply includes:
Door with r/h hinge,
1 cam lock with double-bit insert,
1 support rail TS 35/7.5.
Holes for screwed cable glands in the base.

Accessories:

Cable glands made from polyamide or brass,
see page 1054.

Approvals,
see page 26.



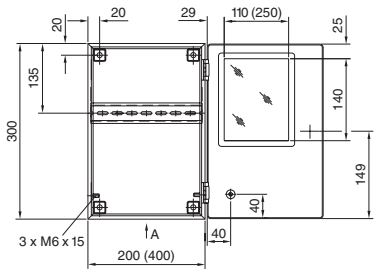


Dimensions in mm			Number of metric holes				Model No. BG
W (B)	H	D (T)	M12	M20	M32	M50	
200	300	120	2	–	5	–	**1605.520**
400	300	120	–	2	9	1	**1606.520**

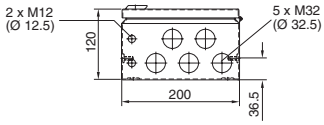
Lock systems

Standard double-bit lock insert may be exchanged for lock inserts, type A, see page 956
and plastic handles, type B, see page 954.

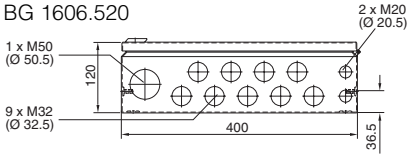
To order enclosures in RAL 7032, please add the extension .220 to the Model No.
Delivery times available on request.



BG 1605.520



BG 1606.520





Bus enclosure

Material:
Sheet steel
Enclosure: 1.38 mm
Door: 1.5 mm
Viewing window made from polycarbonate, 4 mm

Surface finish:
Enclosure and door:
Dipcoat-primed, powder-coated in
textured RAL 7035

Protection category:
IP 65 to EN 60 529/09.2000,
complies with NEMA 12.

Dimensions in mm			Model No. BG
W (B)	H	D (T)	
400	200	125	**1558.510**
600	200	125	**1559.510**

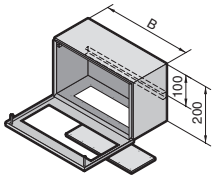
To order enclosures in RAL 7032, please add the extension .210 to the Model No.
Delivery times available on request.

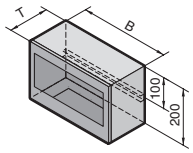
Supply includes:
Door hinged at the bottom,
2 (3) quick-release fasteners for screwdriver
(with BG 1559.510),
1 support rail TS 35/7.5,
1 gland plate at the bottom.

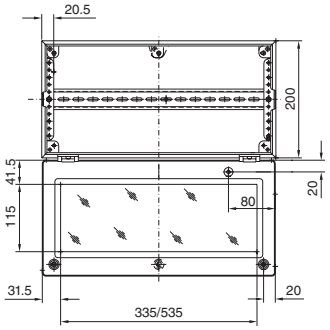
Accessories:

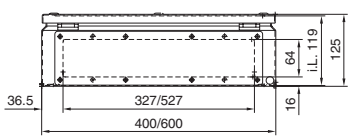
for BG 1559.150
gland plates, size 6,
see page 1050.

Approvals,
see page 26.









i.L. =
Clearance
width



Bus enclosure

Material:
Sheet steel
Enclosure: 1.38 mm
Door: 1.5 mm
Polycarbonate viewing window (not all versions)
Zinc-coated mounting plate

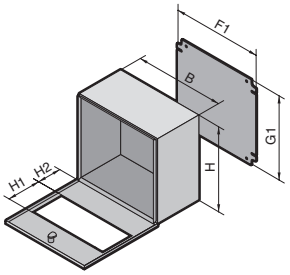
Surface finish:
Enclosure and door:
Powder-coated in textured RAL 7035

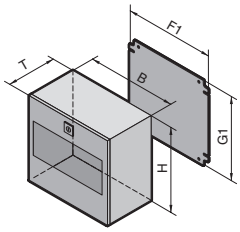
Protection category:
IP 65 to EN 60 529/09.2000,
complies with NEMA 12.

Supply includes:
Door hinged at the bottom,
cam locks with double-bit insert,
may be exchanged for type A lock inserts,
page 956 and type B plastic handles, page 954.

Modification:
Viewing window and gland plate as per selection

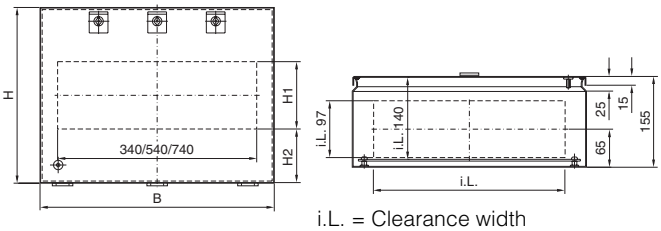
Approvals,
see page 26.



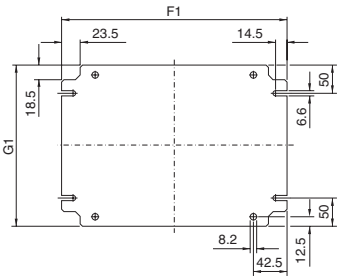


Selection	W (B)	H	D (T)	F1	G1	Cam lock	Heights of viewing windows mm H1	Heights of viewing windows mm H2	Gland plate opening clearance width x clearance width 97[2]	Model No. EB/BG Basic	Model No. EB/BG Extension
Step 1: Enclosure dimensions	400	300	155	385	275	1			327 x 97	**1577.**	
	600	300	155	585	275	2			527 x 97	**1578.**	
	800	300	155	785	275	2			327 x 97 (2 x)	**1579.**	
Step 2: Modifications							without viewing window		without		**.500**
							115	92	without		**.520**[1]
							190	42	without		**.530**[1]
							115	92	with, depending on the selected base		**.550**[1]
							190	42	with, depending on the selected base		**.560**[1]
							155	92	without		**.450**[1]

To order enclosures in RAL 7032, please add the extension .6X0 to the Model No.
Delivery times available on request.
[1] Extended delivery times. [2] Gland plates 14 mm larger all round.



i.L. = Clearance width





Bus enclosure

Material:
Sheet steel
Enclosure: 1.38 mm
Door: 1.5 mm
Viewing window made from polycarbonate, 4 mm

Surface finish:
Enclosure and door:
Powder-coated in textured RAL 7035

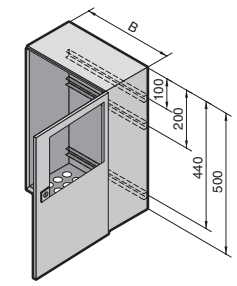
Protection category:
IP 65 to EN 60 529/09.2000,
complies with NEMA 12.

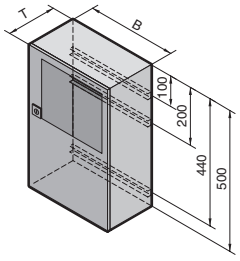
Approvals,
see page 27.

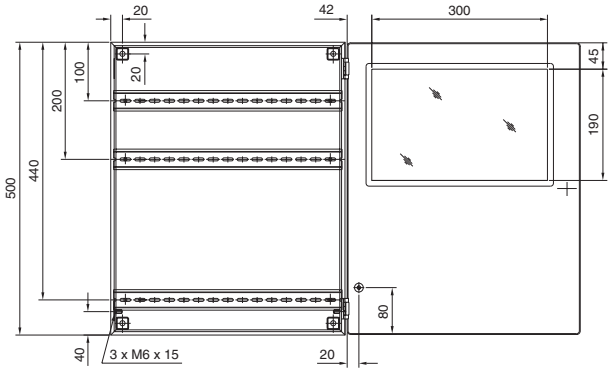
Dimensions in mm W (B)	Dimensions in mm H	Dimensions in mm D (T)	Number of drilled holes for PG 13.5 or M20	Model No. BG
400	500	160	33	**1611.510**

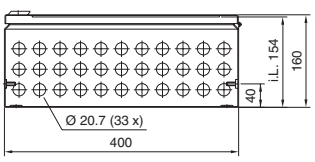
To order enclosures in RAL 7032,
please add the extension .210 to the Model No.
Delivery times available on request.

Supply includes:
Door with r/h hinge,
1 cam lock with 3 mm double-bit insert,
may be exchanged for type A lock inserts,
page 956 and type B plastic handles, page 954.
3 support rails TS 35/7.5.
Holes for screwed cable glands in the base.

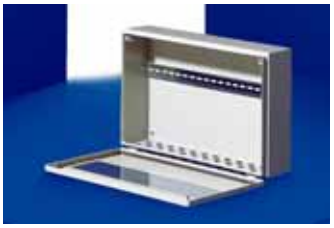








i.L. = Clearance width



Bus enclosure

Material:
Sheet steel
Enclosure: 1.38 mm
Door: 1.5 mm
Viewing window made from polycarbonate, 4 mm

Surface finish:
Enclosure and door:
Powder-coated in textured RAL 7035

Protection category:
IP 65 to EN 60 529/09.2000,
complies with NEMA 12.

Dimensions in mm			Number of drilled holes for PG 13.5 or M20	Model No. BG
W (B)	H	D (T)		
500	300	120	48	**1609.510**

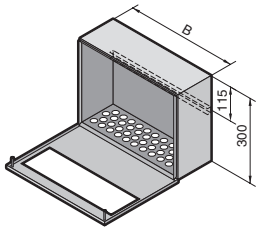
To order enclosures in RAL 7032, please add the extension .210 to the Model No.
Delivery times available on request.

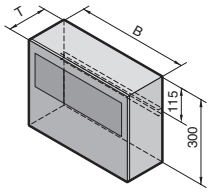
Supply includes:
Door hinged at the bottom,
2 quick-release fasteners for screwdrivers,
1 support rail TS 35/7.5.
Holes for screwed cable glands in the base.

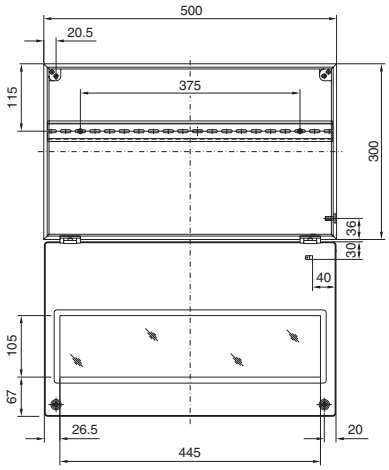
Accessories:

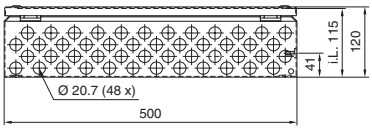
Cable glands made from polyamide or brass,
see page 1054.

Approvals,
see page 27.









i.L. = Clearance width



Bus enclosure

for modular cable entry

Material:
Sheet steel
Enclosure: 1.38 mm
Door: 1.5 mm
Viewing window made from polycarbonate, 4 mm

Surface finish:
Enclosure and door:
Powder-coated in textured RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000,
complies with NEMA 12
(in conjunction with module plates).

Width mm	Height mm	Depth (T) mm	Model No. BG
500	500	210	**1050.900**

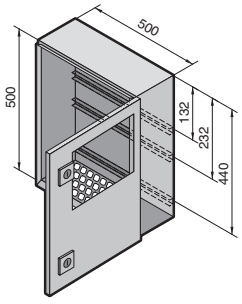
Delivery times available on request.

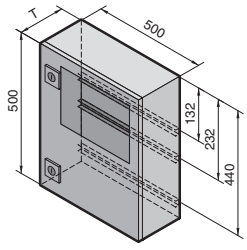
Supply includes:
18 cut-outs in the base for module plates,
pre-configured top-hat rail for bus systems
(I/O modules, motor starters) and terminal blocks.
Door with viewing panel for visual monitoring of
the installed components.

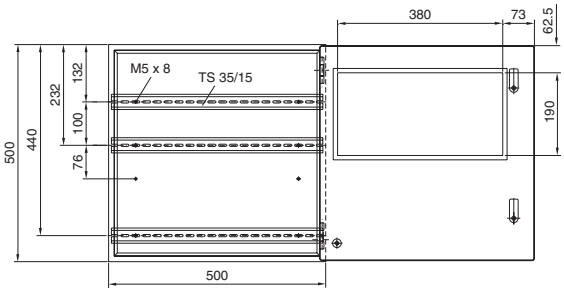
Also required:

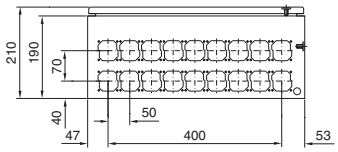
Module plates,
see page 1051.

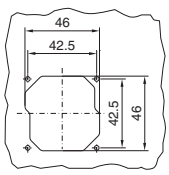
Approvals,
see page 27.

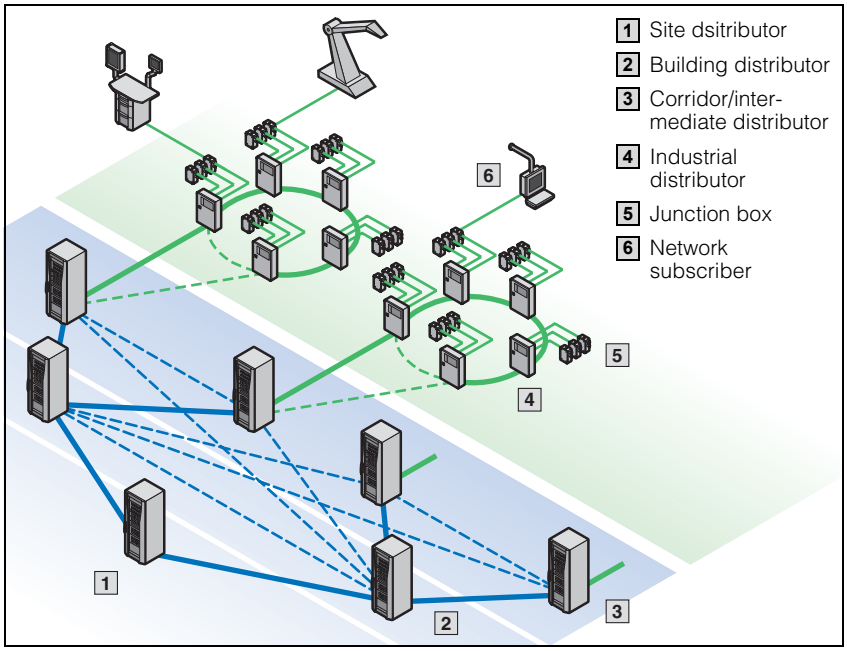












RiLAN Industrial IN –
The solution for industrial networks.

Perfect protection for industrial networks
The migration of Ethernet into the industrial sector is in full swing. In future, company-wide networks will ensure a direct link between production and the office environment. The link between IT and machine is made by the RiLAN connection sockets and industrial distributors, which may be individually adapted to local requirements with an extensive range of installation accessories. In this way, the networks are protected from stress factors such as dust, oil mist and heat.

Fast and service-friendly
In order to avoid expensive downtime, RiLAN Industrial IN is designed for speed and flexibility in every detail. All key components of the structured wiring may be accessed quickly and easily from one side.





Junction box IP 67

Plastic

The RJ 45 connector pattern of the junction box is PROFINET-compatible and authorised for industrial applications in ISO/IEC 24 702.
For use in areas with more demanding requirements in terms of protection category, such as
- Industrial plant
- Warehouses and assembly halls
- Laboratories and workshops

Design:
- Robust enclosure for surface-mounting
- 2 RJ 45 jacks for cable AWG 22 – 24 (solid/flexible), Category 6 to ISO/IEC 11801:2002 and EN 50 173-1
- Cable infeed from above or below via cable glands
- Integral cable manager for secure cable routing
- Insulation stripping aid
- Protective flaps, captive, self-closing
- Option for adding a lead seal
- Watertight label panel

Packs of	Model No. IN
1	**2203.500**

Dimensions
W x H x D: 90 x 152 x 69 mm

Material:
Polycarbonate, impact-resistant, halogen-free, UL 94-V0

Colour:
RAL 9011

Protection category:
IP 67 to EN 60 529/09.2000

Supply includes:
Enclosure with cable manager,
2 RJ 45 jacks, 2 cable glands,
1 sealing bung, assembly instructions.



Junction box IP 65

Cast aluminium

Robust junction box for use in areas with more demanding requirements in terms of protection category and impact resistance. The RJ 45 connector layout is authorised to ISO/IEC 24 702 for applications in the area of IEC 61 918.

Design:
- Robust enclosure for surface-mounting
- 2 side slots RJ 45 (right) Category 5 to ISO/IEC 11801:2002 and EN 50 173-1
- Connection via LSA connection strips on PCB
- Cable infeed via two M20 cable glands, capacity 5 – 13 mm

Packs of	Model No. IN
1	**2203.600**

Dimensions
W x H x D: 80 x 125 x 57 mm (enclosure only)

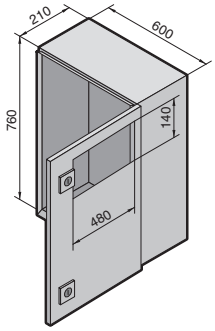
Material:
Cast aluminium

Colour:
RAL 7035

Protection category:
IP 65 EN 60 529/09.2000

Supply includes:
Enclosure with PCB and integral RJ 45 jacks,
2 cable glands M20, 1 sealing bung.





Empty enclosure for industrial distributor

W x H x D: 600 x 760 x 210 mm

Provides space for Ethernet connection of 24 subscribers with patch panel.

Material:
Sheet steel

Surface finish:
Enclosure and door:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate: Zinc-plated

Protection category:
IP 56/54 to EN 60 529/09.2000
(depending on the gland plate fitted).

Supply includes:
Enclosure, one-door, without gland plate in the enclosure base, r/h door hinge, with 2 cam locks, polycarbonate viewing panel, foamed-in door seal, mounting plate.

Packs of	Model No. IN
1	**1076.290**[1)]

[1)] Stainless steel and plastic versions available on request.

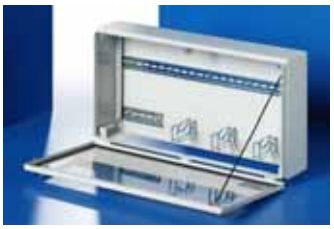
Accessories:

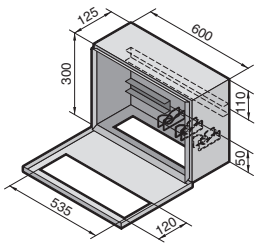
Metal gland plate, size 5	Packs of	Model No. IN	Page
Solid	1	2563.150	1050
Pre-punched	1	2203.010	1050
With cable glands	1	2203.020	1050
With grommets	1	2203.030	1050
Patch panels with 1/2/8 slots, see page 1106			
Fibre-optic splicing cassette support, see page 1114			

Rittal service:

Mounting of components available from Rittal. Cut-outs, e. g. for interface flaps, see page 1150 and signal pillars, see page 1125.

Detailed drawing,
see page 1176.





Empty enclosure for industrial distributor

W x H x D: 600 x 300 x 125 mm

Provides space for Ethernet connection of
- up to 24 users without patch panel
- up to 12 users with patch panel

Material:
Sheet steel

Surface finish:
Enclosure and cover:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside

Protection category:
IP 65/54 to EN 60 529/09.2000
(with fitted gland plate)

Supply includes:
Enclosure, without gland plate in the enclosure base, lid hinged at the bottom, opening angle of lid limited to 90° by a retaining cord, 3 quick-release fasteners for screwdrivers, polycarbonate viewing panel, foamed-in lid seal, 2 fitted support rails TS 35/7.5 (590 and 150 mm long), 3 fitted cable shunting rings DK 7112.000.

Packs of	Model No. IN
1	**1510.280**

Accessories:

Metal gland plate, size 6	Packs of	Model No. IN	Page
Solid	1	2207.010	1050
Pre-punched	1	2207.020	1050
With cable glands	1	2207.030	1050
Patch panels with 1/2 slots, see page 1106			

Rittal service:

Mounting of components available from Rittal. Cut-outs, e. g. for interface flaps, see page 1150 and signal pillars, see page 1125.

Compact enclosures

Features



Rittal compact enclosures with a host of decisive benefits: Triple surface treatment (nanoceramic pretreatment, electrophoretic dipcoat priming, powder coating); materials, sizes and designs are tailored to all major requirement profiles; superior value for money; solution diversity thanks to Rittal system accessories.

For exceptional requirements:
Stainless steel compact enclosures, see page 308.
Ex enclosures, see page 324 – 326.
EMC enclosures, see page 327 – 328.



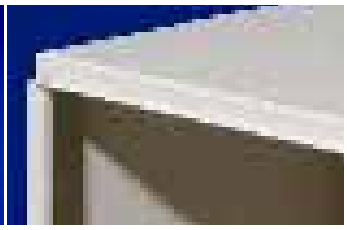
Compact enclosures AE



Perforated mounting strips in the door for fast attachment of support strips, cable conduit holders and covers.



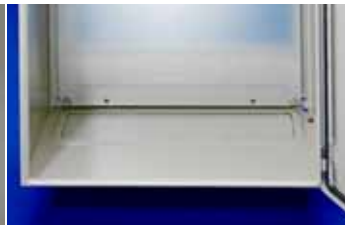
Rear panel with holes, prepared for wall mounting bracket or direct wall mounting.



Multi-folded **enclosure protection channel** prevents the ingress of dirt and water when the door is opened.



PE conductor connection facilities on the enclosure, door and mounting plate, see from page 1034.



Gland plates made from sheet steel for self-assembly may be exchanged for prepunched plates or plastic gland plates.



Door opening angle 130°, on request 180° hinges, see page 963.



Compact enclosures AE IP 69K



Ideal for **mounting on vehicles:** Lock, hinges and mounting plate are all secured in a vibration-resistant manner.



Resistant to high-pressure cleaning
The silicone seal is protected from direct hosed water by the labyrinth seal of the door and enclosure return edge.



Wall mounting directly from the outside using threaded inserts or wall mounting brackets 1594.000 and 2433.000, see page 975.



Compact system enclosures Rittal CM





Enclosure top and bottom, with stud at front for installation of a rail for fast assembly of system light or customer covers.

Potential equalisation Provided only electrical equipment is mounted on the mounting plate and there is no chance of a voltage overspill to other conductive parts of the enclosure, automatic potential equalisation (while conforming to DIN EN 60 439-1) eliminates the need for connection of an additional PE conductor.







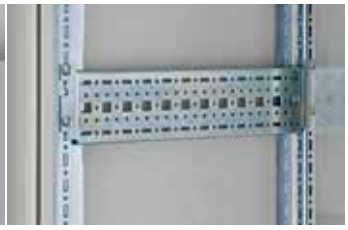


Enclosure slotted for interchangeable door hinge.

Doors right and left with spot welded perforated mounting strips (25 mm pitch pattern) for universal interior installation.

Lock insert is protected from contamination by the inserted trim panel. There is space for your company logo behind the top polycarbonate cover.







Fast attachment: The mounting plate (folded over at the side) is inserted at the bottom, and secured at the top with clips. Leaving both hands free for screw fastening.

Side panels with studs on the inside for the installation of rails for interior configuration with TS 8 accessories.

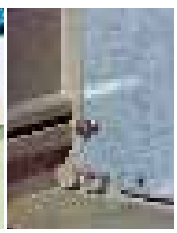
More space, greater stability, and more opportunities for cable entry, thanks to a large opening and a wide range of gland plate combinations, see page 911.



Plastic enclosures KS







C sections for infinitely variable depth adjustment of the mounting plate, and to create several mounting levels.

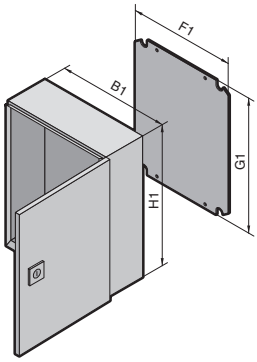
Twin seal on the top and bottom edges of the door in all enclosures, thanks to the integral rain protection strip.

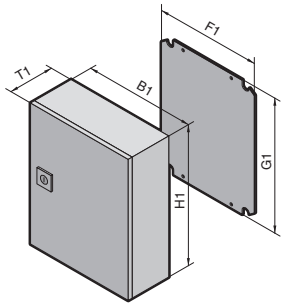
Mounting inserts for threaded inserts in the door and in the rear panel of the enclosure, for simple installation.

Compact enclosures AE

Width: 200 – 600, height: 300 – 400







Material:
Sheet steel

Surface finish:
Enclosure and door:
Dipcoat-primed,
powder-coated in textured
RAL 7035 on the outside
Mounting plate: Zinc-plated

Protection category:
IP 66 to EN 60 529/09.2000,
complies with NEMA 4.

Supply includes:
Enclosure of all-round solid construction, single-door,
1 gland plate in the enclosure base,
r/h door hinge, may be swapped to opposite side (except with AE 1032.500 and AE 1035.600),
with one cam lock,
foamed-in door seal,
mounting plate.

Approvals,
see page 28.

Detailed drawing,
see page 1177.

Width (B1) mm	Packs of	200	200	300	300	300	380	380	380	600	600	Page
Height (H1) mm		300	300	300	300	400	300	300	380	380	380	
Depth (T1) mm		120	155	155	210	210	155	210	210	210	350	
Mounting plate width (F1) mm		162	162	254	254	254	334	334	334	549	549	
Mounting plate height (G1) mm		275	275	275	275	375	275	275	355	355	355	
Mounting plate thickness mm		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	
Model No. AE	1	**1032.500**	**1035.500**	**1036.500**	**1033.500**	**1034.500**	**1030.500**	**1031.500**	**1380.500**	**1039.500**	**1339.500**	
Weight (kg)		4.0	4.5	6.1	7.0	8.8	7.4	7.5	9.8	15.4	20.0	
Accessories												
Gland plate	Size	1	1	–	–	–	3	3	3	5	5	from 1048
	Qty.	1	1	–	–	–	1	1	1	1	1	
Lock systems												
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 956, lock cylinder, plastic handles and T handles, type B, see page 954 – 957.												

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Cable glands
of polyamide or brass,
Model No. see page 1054.

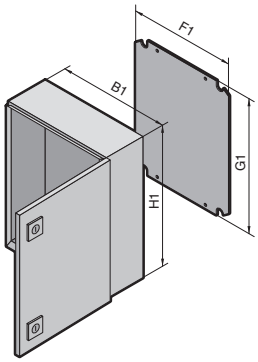


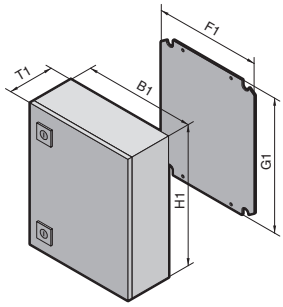
Dust guard trim
for the gap between the door and the enclosure,
Model No. see page 970.

Accessories Page 890 **AE stainless steel** Page 308 **AE IP 69K** Page 131 **AE EMC-shielded** Page 328 **AE Ex-proof** Page 325
Compact enclosures Hygienic Design Page 299

Width: 380 – 800, height: 500 – 1000







Material:
Sheet steel

Surface finish:
Enclosure and door:
Dipcoat-primed,
powder-coated in textured
RAL 7035 on the outside
Mounting plate: Zinc-plated

Protection category:
IP 66 to EN 60 529/09.2000,
complies with NEMA 4.

Supply includes:
Enclosure of all-round solid construction, single-door,
1 gland plate in the enclosure base,
r/h door hinge, may be swapped to opposite side,
with 2 cam locks,
foamed-in door seal,
zinc-plated mounting plate.

Approvals,
see page 28.

Detailed drawing,
see page 1177.

Width (B1) mm	Packs of	380	380	400	400	500	500	500	600	600	Page
Height (H1) mm		600	600	500	800	500	500	700	600	600	
Depth (T1) mm		210	350	210	300	210	300	250	210	250	
Mounting plate width (F1) mm		334	334	354	349	449	449	449	549	549	
Mounting plate height (G1) mm		570	570	475	770	470	470	670	570	570	
Mounting plate thickness mm		2.5	2.5	2.0	2.5	2.5	2.5	3.0	2.5	2.5	
Model No. AE	1	**1038.500**	**1338.500**	**1045.500**	**1037.500**	**1050.500**	**1350.500**	**1057.500**	**1060.500**	**1054.500**	
Weight (kg)		15.6	19.4	13.0	26.2	16.8	19.6	31.2	22.8	24.8	
Accessories											
Gland plate	Size	3	4	4	4	4	4	4	5	5	from 1048
	Qty.	1	1	1	1	1	1	1	1	1	

Width (B1) mm	Packs of	600	600	600	600	600	760	760	800	800	Page
Height (H1) mm		600	760	760	800	1000	760	760	600	1000	
Depth (T1) mm		350	210	350	250	250	210	300	300	300	
Mounting plate width (F1) mm		549	549	549	549	539	704	704	749	739	
Mounting plate height (G1) mm		570	730	730	770	955	730	730	570	955	
Mounting plate thickness mm		2.5	3.0	3.0	3.0	3.0	3.0	3.0	2.5	3.0	
Model No. AE	1	**1360.500**	**1076.500**	**1376.500**	**1058.500**	**1090.500**	**1077.500**	**1073.500**	**1055.500**	**1180.500**	
Weight (kg)		28.4	32.1	36.0	33.6	50.5	40.0	44.5	33.9	57.0	
Accessories											
Gland plate	Size	5	5	5	5	5	5	5	5	5	from 1048
	Qty.	1	1	1	1	1	1	1	1	1	
Lock systems											

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 956,
lock cylinder, plastic handles and T handles, type B, see page 954 – 957.

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Metal gland plates,
pre-punched,
Model No. see page 1049.



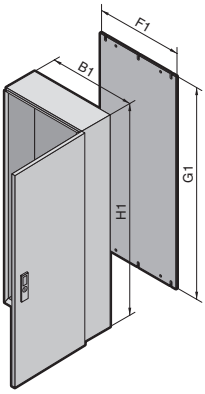
Plastic wiring plan pocket,
screw-fastened,
Model No. see page 966.

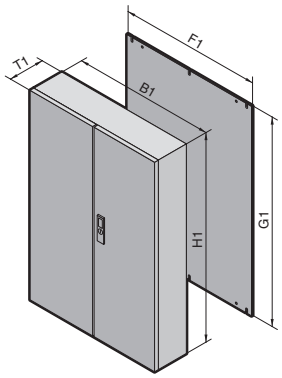
Accessories Page 890 **AE stainless steel** Page 308 **AE IP 69K** Page 131 **AE EMC-shielded** Page 328 **AE Ex-proof** Page 325
Compact enclosures Hygienic Design Page 299

Compact enclosures AE

Width: 600 – 1000, height: 760 – 1400







Material:
Sheet steel
Enclosure: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure and door:
Dipcoat-primed,
powder-coated in textured
RAL 7035 on the outside
Mounting plate: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000,
complies with NEMA 12.
IP 66 to EN 60 529/09.2000,
complies with NEMA 4 for
AE 1260.500, AE 1280.500.

Supply includes:
Enclosure of all-round solid construction,
single-door: 1 gland plate,
twin-door: 2 gland plates in the enclosure base,
3-point lock system,
prepared for use of the Ergoform-S lock system,
2 cam locks for 1100.500, 1130.500, 1110.500,
foamed-in door seal,
zinc-plated mounting plate.

Approvals,
see page 28.

Detailed drawing,
see page 1178.

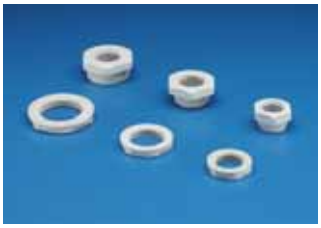
Possible alternative:

Compact system enclosures Rittal CM, see page 132 – 133.

Width (B1) mm		Packs of	600	800	1000	1000	1000	1000	1000	Page
Height (H1) mm			1200	1200	760	760	1000	1200	1400	
Depth (T1) mm			300	300	210	300	300	300	300	
Mounting plate width (F1) mm			540	740	944	944	939	940	940	
Mounting plate height (G1) mm			1155	1155	730	730	955	1155	1355	
Model No. AE		1	**1260.500**	**1280.500**	**1100.500**	**1130.500**	**1110.500**	**1213.500**	**1114.500**	
Door(s)			1	1	2	2	2	2	2	
Weight (kg)			55.0	70.0	52.0	56.0	71.0	85.0	97.0	
Accessories										
Self-tapping screws		300	2487.000							1011
Base/plinth	Height 100 mm	1	2816.200	2818.200	–	2801.200	2801.200	2801.200	2801.200	901
	Height 200 mm	1	2826.200	2828.200	–	2802.200	2802.200	2802.200	2802.200	901
Stainless steel rain canopy		1	–	2475.000	–	2363.000	2363.000	2363.000	2363.000	969
Gland plate	Size		5	5	4	4	4	4	4	from 1048
	Qty.		1	1	2	2	2	2	2	
Eyebolts		4	2509.000	2509.000	–	–	–	2509.000	2509.000	974
Lock systems										

Standard double-bit lock insert which may be exchanged for lock inserts 27 mm, type A, see page 956
and for lock system Ergoform-S (not for 1100.500, 1130.500, 1110.500), see page 953.

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Cable glands, reducers and multi-seal inserts,
Model No. see page 1054 – 1055.

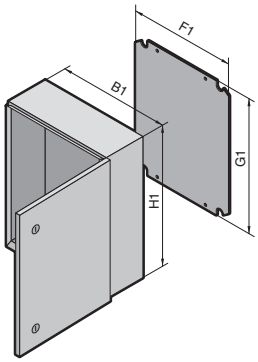


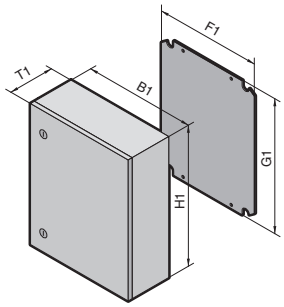
Compact light and mounting kit magnet,
Model No. see page 1027.

Accessories Page 890 **AE stainless steel** Page 308 **AE IP 69K** Page 131 **AE EMC-shielded** Page 328 **AE Ex-proof** Page 325
Compact enclosures Hygienic Design Page 299

Protection category IP 69K







Perfect protection in a tough environment
The compact enclosure AE in IP 69K is the ideal solution when a high protection category and corrosion resistance are needed.

- Resistant to high-pressure cleaning (protection category IP 69K). The interior seal is protected against direct hosed water.
- Ideal for mounting on vehicles: Lock, hinges and mounting plate are all vibration resistant.
- The enclosure and door have an aluminium zinc coating for a high level of corrosion protection.
- Foamed-in silicone seal, water-impermeable, with high resistance to temperature and chemicals.
- Prepared to accommodate the door stay 1101.800 and the interior door.
- Wall mounting.

Material:
Sheet steel

Surface finish:
Enclosure and door:
Aluminium zinc coating, powder-coated in textured RAL 7035
Mounting plate: Zinc-plated

Protection category:
IP 69K to DIN 40 050-9

Supply includes:
Enclosure of all-round solid construction, single-door,
door hinge may be swapped to opposite side by rotating the enclosure,
mounting plate,
cam lock with double-bit insert,
other inserts available on request.

Rittal service:
Other sizes available on request. Cut-outs and drilled holes to your specifications.

Detailed drawing,
see page 1180.

Width (B1) mm	Packs of	230	400	400	650	Page
Height (H1) mm		330	400	650	650	
Depth (T1) mm		155	250	250	250	
Mounting plate width (F1) mm		162	334	334	549	
Mounting plate height (G1) mm		275	355	570	570	
Mounting plate thickness mm		2	2	2.5	2.5	
Model No. AE	1	**1101.010**	**1101.020**	**1101.030**	**1101.040**	
Weight (kg)		6.6	13.8	20	29.6	
Locks		1	1	2	2	
Accessories						
Interior door	1	1101.910	1101.920	1101.930	1101.940	939
Door stay	1	1101.800	1101.800	1101.800	1101.800	967



Interior door
with 4 (2 for AE 1101.010) studs for the installation of punched rails 23 x 23 (may be cut to required length), see page 998, and universal installation accessories.



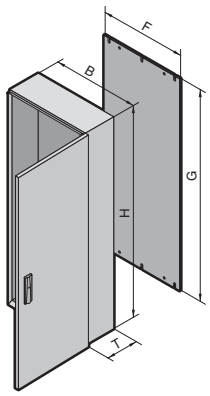
Wall mounting
directly from the rear via M8 nut or with wall mounting bracket, see page 975.

Accessories Page 890 **AE stainless steel** Page 308 **AE EMC-shielded** Page 328 **AE Ex-proof** Page 325
Compact enclosures Hygienic Design Page 299

Compact system enclosures Rittal CM

Width: 600 – 800, height: 800 – 1200





Material:
Sheet steel
Enclosure: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure and door:
Dipcoat-primed,
powder-coated in textured
RAL 7035 on the outside
Mounting plate: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000,
complies with NEMA 12
provided suitable gland plates
are selected.

Supply includes:
Enclosure with one door,
r/h door hinge, may be swapped
to opposite side, mounting plate,
base open for individual cable
entry.

Also required:
Gland plates,
see page 911 – 912,
or end plate,
see page 913.

Rittal service:
Other sizes, cut-outs and holes
available on request.

Approvals,
see page 29.

Detailed drawing/nominal dimensions,
see page 1181.

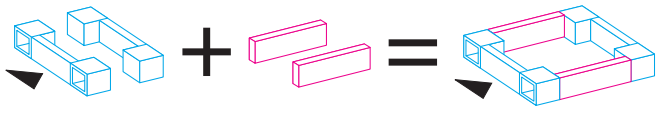
Width (B) mm		Packs of	600	600	600	600	800	800	800	800	Page
Height (H) mm			800	1000	1200	1200	1000	1000	1200	1200	
Depth (T) mm			400	400	300	400	300	400	300	400	
Mounting plate width (F) mm			540	540	540	540	740	740	740	740	
Mounting plate height (G) mm			755	955	1155	1155	955	955	1155	1155	
Model No. CM		1	**5110.500**	**5111.500**	**5112.500**	**5113.500**	**5114.500**	**5115.500**	**5116.500**	**5117.500**	
Door			1	1	1	1	1	1	1	1	
Base/plinth											
Components front and rear	Height 100 mm	1 set	8601.600	8601.600	8601.600	8601.600	8601.800	8601.800	8601.800	8601.800	893
	Height 200 mm	1 set	8602.600	8602.600	8602.600	8602.600	8602.800	8602.800	8602.800	8602.800	893
Trim panels (sides)	Height 100 mm	1 set	8601.040	8601.040	8601.030	8601.040	8601.030	8601.040	8601.030	8601.040	893
	Height 200 mm	1 set	8602.040	8602.040	8602.030	8602.040	8602.030	8602.040	8602.030	8602.040	893
Accessories											
Rail for interior installation	for height	4	5001.051	5001.052	5001.053	5001.053	5001.052	5001.052	5001.053	5001.053	992
	for width	4	5001.050	5001.050	5001.050	5001.050	5001.051	5001.051	5001.051	5001.051	992
Matching punched sections with mounting flanges	in depth	4	8612.140	8612.140	8612.130	8612.140	8612.130	8612.140	8612.130	8612.140	993
	in width	4	8612.060	8612.060	8612.060	8612.060	8612.080	8612.080	8612.080	8612.080	993
Support strips for door		20	4596.000	4596.000	4596.000	4596.000	4598.000	4598.000	4598.000	4598.000	997
Punched sections with mounting flanges for door		4	8612.050	8612.050	8612.050	8612.050	–	–	–	–	993
Cable clamp rail		1	5001.080	5001.080	5001.080	5001.080	5001.081	5001.081	5001.081	5001.081	1062
Wiring plan pocket Sheet steel, depth 35 mm		1	4116.500	4116.500	4116.500	4116.500	4118.500	4118.500	4118.500	4118.500	967
Rain canopy/vented roof		1	5001.310	5001.310	5001.300	5001.310	5001.320	5001.330	5001.320	5001.330	969
Lock systems											
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956, and folding lever handle, see page 949 – 950.											

To order primed enclosures, please add extension .800 to the Model No. Delivery times available on request.



Mounting plate slide block
Allows the populated mounting plate to slide in easily,
Model No. see page 982.

Base/plinth,
see page 892.



One Model No. for the **base/plinth components** front and rear.

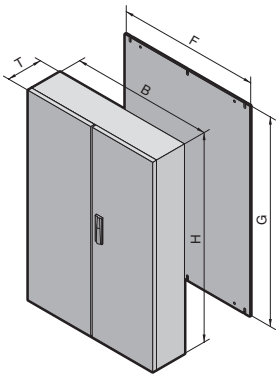
One Model No. for the **base/plinth trim,** side.

One complete **base/plinth.**

Accessories Page 890 **System lights** Page 1027 **Cable gland** Page 1054 **Signal pillars** Page 1125

Width: 1000 – 1200, height: 1000 – 1400





Material:
Sheet steel
Enclosure: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure and door:
Dipcoat-primed,
Powder-coated in textured
RAL 7035 on the outside
Mounting plate: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12 provided suitable gland plates are selected.

Supply includes:
Enclosure with two doors, lockable door, may be swapped to opposite side, mounting plate, base open for individual cable entry.

Also required:
Gland plates,
see page 911 – 912,
or end plate,
see page 913.

Rittal service:
Other sizes, cut-outs and holes available on request.

Approvals,
see page 29.

Detailed drawing/nominal dimensions,
see page 1181.

Width (B) mm		Packs of	1000	1000	1000	1000	1000	1200	Page
Height (H) mm			1000	1200	1200	1400	1400	1200	
Depth (T) mm			300	300	400	300	400	400	
Mounting plate width (F) mm			940	940	940	940	940	1140	
Mounting plate height (G) mm			955	1155	1155	1355	1355	1155	
Model No. CM		1	**5118.500**	**5119.500**	**5120.500**	**5121.500**	**5122.500**	**5123.500**	
Doors			2	2	2	2	2	2	
Base/plinth									
Components front and rear	Height 100 mm	1 set	8601.000	8601.000	8601.000	8601.000	8601.000	8601.200	893
	Height 200 mm	1 set	8602.000	8602.000	8602.000	8602.000	8602.000	8602.200	893
Trim panels (sides)	Height 100 mm	1 set	8601.030	8601.030	8601.040	8601.030	8601.040	8601.040	893
	Height 200 mm	1 set	8602.030	8602.030	8602.040	8602.030	8602.040	8602.040	893
Accessories									
Rail for interior installation	for height	4	5001.052	5001.053	5001.053	5001.054	5001.054	5001.053	992
	for width	4	5001.052	5001.052	5001.052	5001.052	5001.052	5001.053	992
Matching punched sections with mounting flanges	in depth	4	8612.130	8612.130	8612.140	8612.130	8612.140	8612.140	993
	in width	4	8612.000	8612.000	8612.000	8612.000	8612.000	8612.020	993
Support strips for door		20	4309.000	4309.000	4309.000	4309.000	4309.000	4596.000	997
Punched sections with mounting flanges for door		4	8612.040	8612.040	8612.040	8612.040	8612.040	8612.050	993
Cable clamp rail		1	5001.082	5001.082	5001.082	5001.082	5001.082	5001.083	1062
Wiring plan pocket Sheet steel, depth 35 mm		1	4115.500	4115.500	4115.500	4115.500	4115.500	4116.500	967
Rain canopy/vented roof		1	5001.340	5001.340	5001.350	5001.340	5001.350	5001.360	969
Lock systems									
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956, and folding lever handle, see page 949 – 950.									

To order primed enclosures, please add extension .800 to the Model No. Delivery times available on request.



Section for cable entry, rear,
may be integrated into the modular base plate concept,
see page 1047.



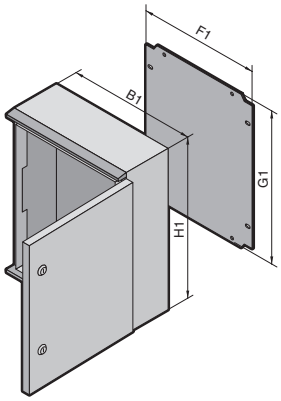
Mounting plate attachment
for high dynamic loads,
Model No. see page 983.

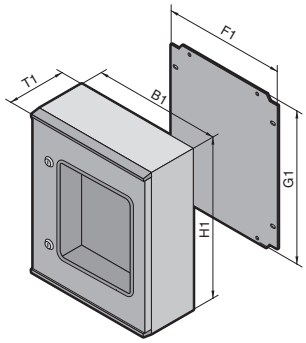
Accessories Page 890 **System lights** Page 1027 **Cable gland** Page 1054 **Signal pillars** Page 1125

Plastic enclosures KS

Width: 200 – 600, height: 300 – 600







Material:
Enclosure and door:
Fibreglass-reinforced unsaturated polyester
Mounting plate:
Sheet steel
For KS with viewing window:
Glazed acrylic,
3.0 mm with all-round rubber cable clamp strip

Surface finish:
Enclosure and door:
No after-treatment,
dyed plastic,
similar to RAL 7035
Mounting plate: Zinc-plated

Protection category:
KS without viewing window:
IP 66 to EN 60 529/09.2000, complies with NEMA 4x.
KS with viewing window:
IP 56 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes:
Enclosure of solid all-round construction, r/h door hinge, may be swapped to opposite side by rotating the enclosure, mounting plate,
all-round foamed-in PU seal in the door,
twin seal on the top and bottom edges (integral rain protection strip), press-fitted C sections at the sides for infinitely variable mounting plate depth adjustment.

Note:
Under the influence of long-term UV radiation (sunlight) in conjunction with wind and rain, the surface finish may become visually impaired.
In other words, the fibreglass becomes visible on unprotected surfaces. This does not impair the protection of the installed electrical components in any way. All other surface finishes are likewise impaired by ultraviolet radiation.
If the enclosures cannot be protected from radiation, e.g. via a sun canopy, we recommend that they should be painted with a PUR paint. Older enclosures where the surface finish already reveals visible fibreglass can likewise be treated in this way after thorough cleaning.
Of course, all enclosures can also be supplied spray-finished in RAL colours. For outdoor siting, we recommend pale shades.
Permissible ambient temperature –30°C to +75°C.

Approvals,
see page 29.

Detailed drawing,
see page 1182.

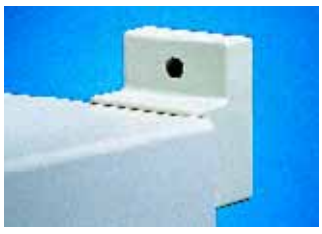
	Packs of	Without viewing window							With viewing window			
Width (B1) mm		200	250	300	400	400	500	600	400	400	500	600
Height (H1) mm		300	350	400	400	600	500	600	400	600	500	600
Depth (T1) mm		150	150	200	200	200	300	200	200	200	300	200
Mounting plate width (F1) mm		145	195	245	345	345	417	545	345	345	417	545
Mounting plate height (G1) mm		250	300	350	350	550	450	550	350	550	450	550
Mounting plate thickness mm		2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Model No. KS	1	**1423.500**	**1432.500**	**1434.500**	**1444.500**	**1446.500**	**1453.500**	**1466.500**	**1448.500**	**1449.500**	**1454.500**	**1467.500**
Door(s)		1	1	1	1	1	1	1	1	1	1	1
Weight (kg)		3.0	4.1	6.0	7.9	11.5	12.9	15.9	8.0	11.5	13.4	15.9

Lock systems

Standard double-bit lock insert may be exchanged for lock inserts, type E, see page 956, and plastic handles, type E, see page 954.



Cable gland, polyamide,
Model No. see page 1054.

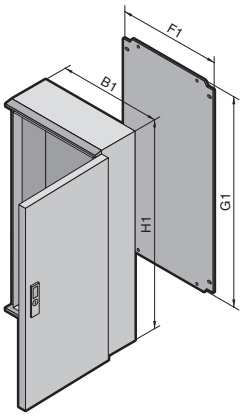


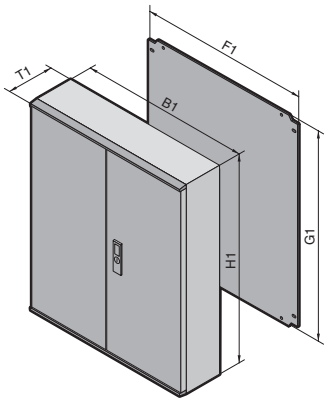
Wall mounting bracket,
Model No. see page 975.

Accessories Page 890 **KS Ex-proof** Page 326

Width: 600 – 1000, height: 800 – 1000







Material:
Enclosure and door:
Fibreglass-reinforced unsaturated polyester
Mounting plate:
Sheet steel
For KS with viewing window:
Glazed acrylic, 3.0 mm with all-round rubber cable clamp strip

Surface finish:
Enclosure and door:
No after-treatment, dyed plastic, similar to RAL 7035
Mounting plate: Zinc-plated

Protection category:
IP 56 to EN 60 529/09.2000, complies with NEMA 12.
IP 66 to EN 60 529/09.2000, complies with NEMA 4 for KS 1468.500, KS 1480.500.

Supply includes:
Enclosure of solid all-round construction, r/h door hinge, may be swapped to opposite side by rotating the enclosure (only with single-door models), mounting plate, all-round foamed-in PU seal in the door, twin seal on the top and bottom edges (integral rain protection strip), press-fitted C sections at the sides for infinitely variable mounting plate depth adjustment.
KS 1400.500 additionally with removable centre bar in the enclosure.

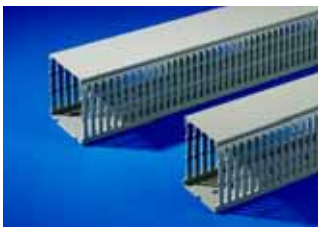
Note:
Under the influence of long-term UV radiation (sunlight) in conjunction with wind and rain, the surface finish may become visually impaired.
In other words, the fibreglass becomes visible on unprotected surfaces. This does not impair the protection of the installed electrical components in any way. All other surface finishes are likewise impaired by ultraviolet radiation.
If the enclosures cannot be protected from radiation, e. g. via a sun canopy, we recommend that they should be painted with a PUR paint. Older enclosures where the surface finish already reveals visible fibreglass can likewise be treated in this way after thorough cleaning.

Of course, all enclosures can also be supplied spray-finished in RAL colours. For outdoor siting, we recommend pale shades.
Permissible ambient temperature –30°C to +75°C.

Approvals,
see page 29.

Detailed drawing,
see page 1183.

	Packs of	Without viewing window			With viewing window	
Width (B1) mm		600	800	1000	600	800
Height (H1) mm		800	1000	1000	800	1000
Depth (T1) mm		300	300	300	300	300
Mounting plate width (F1) mm		517	717	917	517	717
Mounting plate height (G1) mm		750	950	950	750	950
Mounting plate thickness mm		3.0	3.0	3.0	3.0	3.0
Model No. KS	1	**1468.500**	**1480.500**	**1400.500**	**1469.500**	**1479.500**
Door(s)		1	1	2	1	1
Weight (kg)		26.0	39.0	50.0	25.5	33.0
Lock systems						
Standard double-bit lock insert may be exchanged for lock inserts, type E, see page 956, and Ergoform-S lock system, KS 1490.010, see page 953.						



Cable ducts,
Model No. see page 1060.



Signal pillar LED compact,
protection category IP 65,
Model No. see page 1125.

Accessories Page 890 **KS Ex-proof** Page 326

Features



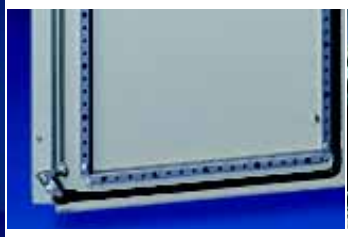
TS 8, the Top enclosure system, a system platform for just about any application.

Every enclosure, accessible from all sides, is a specialist, even for very specific tasks, and when used in conjunction with the system accessories, offers “infinite possibilities”.

ES, the free-standing enclosure with solid sides.



Baying systems TS 8



Door frame with holes on a 25 mm pitch pattern, for the attachment of ducts, utility lecterns, cable harnesses, wiring plan pockets etc.



Mounting plate, zinc-plated, folded all round, **depth-variable** on a 25 mm pitch pattern. After installation, the slide rails may be used as mounting rails for the interior installation.



Maximum space for cable entry, thanks to multi-divided gland plates and accessory modules. With a square base area, cable entry may be installed rotated through 90°.



Universal interior installation: frame sections, slotted on a 25 mm pitch pattern, two vertical mounting levels.



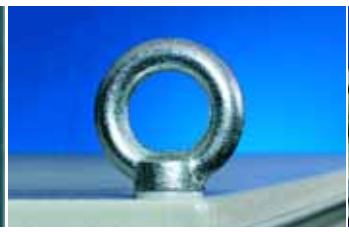
The roof plate is secured with **removable eyebolts.** The **all-round rain channel** prevents dirt and moisture from lying in contact with the seal.



Adjacent door locked into position by bars top and bottom with interconnecting rods and handle.



Potential equalisation, automatic across assembly components: In standard enclosures, all panels are conductively connected to one another.



Provided only electrical equipment is mounted on the mounting plate and there is no chance of a voltage overspill to other conductive parts of the enclosure, automatic potential equalisation (while conforming to DIN EN 60 439-1) eliminates the need for connection of an additional PE conductor.



Features



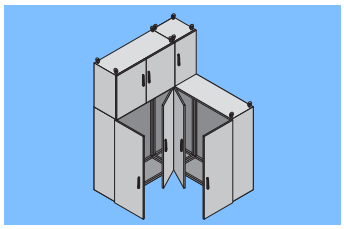
Base/plinth components (front and rear) combined with **trim panels** (side) or used to link two base/plinths.



Two symmetrical levels for **maximum space utilisation** in the width and depth.



Comfort handles
Thanks to the "folding" action, rather than a "swinging" action, the door surface can be utilised to optimum effect e.g. for control and display instruments.



Bayable on all sides
Whether around corners, forwards, backwards, to the left or right or even upwards if required, the baying possibilities are unlimited.



If the rear panel is exchanged for a door and the assembly components of the side panel are exchanged for side panel hinges, **all-round uninhibited access** to the enclosure is facilitated.



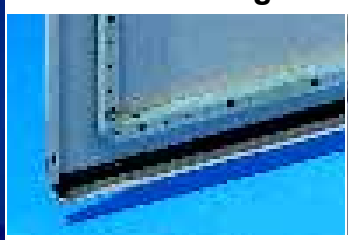
PE conductor connection points on all relevant parts. Earthing bolts with contact discs, paint-free and corrosion-proof.



The system platform for
- Electronic enclosures, see page 148.
- Modular front design, see page 149.
- Isolator door locking, see page 150.
- Corner enclosures, see page 933.
- Ex pressurisation, see page 152.
- Areas at risk from earthquakes, see page 153.
- Higher protection categories, see page 151.
- Stainless steel enclosure systems, see page 322.
- EMC enclosures, see page 329.
- ISV-TS 8 enclosures, see page 459.
- SV-TS 8 enclosures, see page 438.
- TS network enclosures, see page 745.
- TS 8 server enclosures, see page 777.



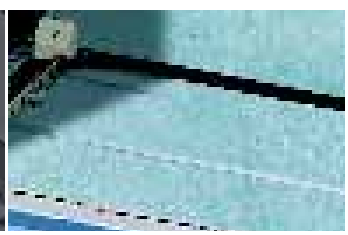
ES free-standing enclosures



Door frame with holes on a 25 mm pitch pattern, for the attachment of ducts, utility lecterns, cable harnesses, wiring plan pockets etc.



Enclosure, **with system slots** on a 25 mm pitch pattern all round, for interior installation with PS accessories.

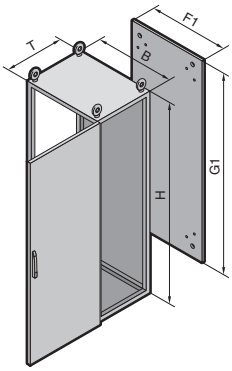


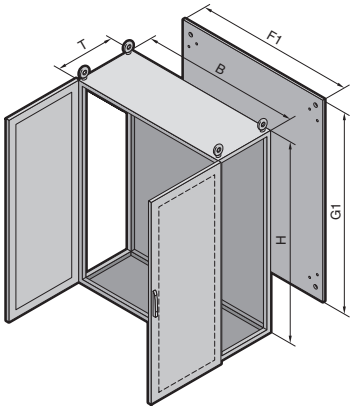
Three-piece, interchangeable, movable **gland plates** for easier cable entry and machining.

Baying systems TS 8

Height: 1200, depth: 500/height: 1400, depth: 500







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame: Dipcoat-primed
Door, roof and rear panel: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plates and gland plates: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate.

Approvals,
see page 30.

Detailed drawing/nominal dimensions,
see page 1184 – 1185.

Width (B) mm		Packs of	600	800	1200	600	800	1200	Page
Height (H) mm			1200	1200	1200	1400	1400	1400	
Depth (T) mm			500	500	500	500	500	500	
Mounting plate width (F1) mm			499	699	1099	499	699	1099	
Mounting plate height (G1) mm			1096	1096	1096	1296	1296	1296	
Model No. TS		1	**8615.500**	**8815.500**	**8215.500**	**8645.500**	**8845.500**	**8245.500**	
Door(s)			1	1	2	1	1	2	
Weight (kg)			74.5	92.1	140.0	86.0	107.5	163.5	
Walls									
Side panels		2	8115.235	8115.235	8115.235	8145.235	8145.235	8145.235	917
Divider panel		1	–	–	–	8609.450	8609.450	8609.450	921
Base/plinth									
Components front and rear	Height 100 mm	1 set	8601.600	8601.800	8601.200	8601.600	8601.800	8601.200	893
	Height 200 mm	1 set	8602.600	8602.800	8602.200	8602.600	8602.800	8602.200	893
Trim panels (sides)	Height 100 mm	1 set	8601.050	8601.050	8601.050	8601.050	8601.050	8601.050	893
	Height 200 mm	1 set	8602.050	8602.050	8602.050	8602.050	8602.050	8602.050	893
Accessories									
Cable clamp rails for cable clamps		2	4191.000	4192.000	4196.000	4191.000	4192.000	4196.000	1061
Cable clamp rails (C section) for cable clamps		6	4944.000	4945.000	4947.000	4944.000	4945.000	4947.000	999
Support strips for door		20	4596.000	4598.000	4596.000	4596.000	4598.000	4596.000	964
Wiring plan pocket, sheet steel		1	4116.000	4118.000	4116.000	4116.000	4118.000	4116.000	967
Lock systems									
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956, and comfort handle, see page 947 – 948.									

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Signal pillar LED compact,
Model No. see page 1125.

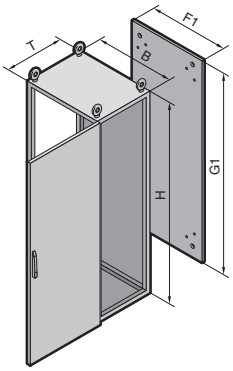


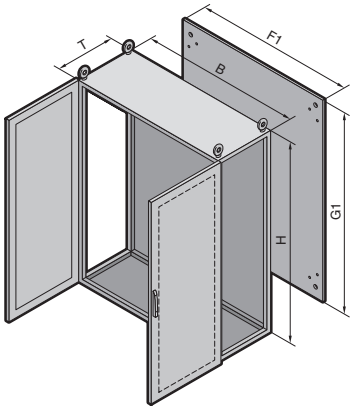
Baying cover, top,
Model No. see page 932.

Accessories Page 890 **TS 8 stainless steel** Page 322 **TS 8 EMC-shielded** Page 329

Height: 1600, depth: 500







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame: Dipcoat-primed
Door, roof and rear panel: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plates and gland plates: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate.

Approvals,
see page 30.

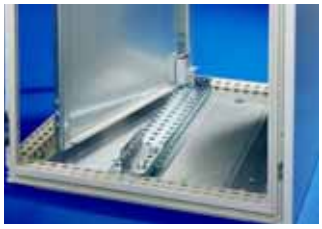
Detailed drawing/nominal dimensions,
see page 1184 – 1185.

Width (B) mm		Packs of	600	800	1200	Page
Height (H) mm			1600	1600	1600	
Depth (T) mm			500	500	500	
Mounting plate width (F1) mm			499	699	1099	
Mounting plate height (G1) mm			1496	1496	1496	
Model No. TS		1	**8665.500**	**8865.500**	**8265.500**	
Door(s)			1	1	2	
Weight (kg)			100.0	103.0	159.3	
Walls						
Side panels		2	8165.235	8165.235	8165.235	917
Divider panel		1	8609.650	8609.650	8609.650	921
Base/plinth						
Components front and rear	Height 100 mm	1 set	8601.600	8601.800	8601.200	893
	Height 200 mm	1 set	8602.600	8602.800	8602.200	893
Trim panels (sides)	Height 100 mm	1 set	8601.050	8601.050	8601.050	893
	Height 200 mm	1 set	8602.050	8602.050	8602.050	893
Accessories						
Cable clamp rails for cable clamps		2	4191.000	4192.000	4196.000	1061
Cable clamp rails (C section) for cable clamps		6	4944.000	4945.000	4947.000	999
Support strips for door		20	4596.000	4598.000	4596.000	964
Wiring plan pocket, sheet steel		1	4116.000	4118.000	4116.000	967
Lock systems						
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956, and comfort handle, see page 947 – 948.						

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Connector gland
for connecting a keyboard, mouse or scanner,
Model No. see page 1057.



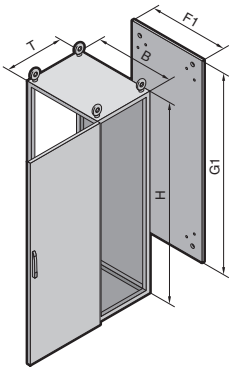
Hinge attachment
for partial mounting plates,
Model No. see page 985.

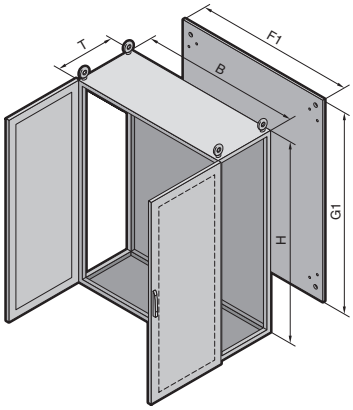
Accessories Page 890 **TS 8 stainless steel** Page 322 **TS 8 EMC-shielded** Page 329

Baying systems TS 8

Height: 1800, depth: 400







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame: Dipcoat-primed
Door, roof and rear panel: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plates and gland plates: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate.

Accessories:
Corner enclosures,
see page 933.

Possible alternative:
Instead of a door or rear panel, matching section doors with integral cooling module,
see page 633 – 634.

Approvals,
see page 30.

Detailed drawing/nominal dimensions,
see page 1184 – 1185.

Width (B) mm		Packs of	600	800	1000	1000	1200	Page
Height (H) mm			1800	1800	1800	1800	1800	
Depth (T) mm			400	400	400	400	400	
Mounting plate width (F1) mm			499	699	899	899	1099	
Mounting plate height (G1) mm			1696	1696	1696	1696	1696	
Model No. TS		1	**8684.500**	**8884.500**	**8084.500**	**8080.500**	**8284.500**	
Door(s)			1	1	1	2	2	
Weight (kg)			91.3	113.5	136.4	140.0	170.6	
Walls								
Side panels		2	8184.235	8184.235	8184.235	8184.235	8184.235	917
Divider panel		1	8609.840	8609.840	8609.840	8609.840	8609.840	921
Base/plinth								
Components front and rear	Height 100 mm	1 set	8601.600	8601.800	8601.000	8601.000	8601.200	893
	Height 200 mm	1 set	8602.600	8602.800	8602.000	8602.000	8602.200	893
Trim panels (sides)	Height 100 mm	1 set	8601.040	8601.040	8601.040	8601.040	8601.040	893
	Height 200 mm	1 set	8602.040	8602.040	8602.040	8602.040	8602.040	893
Accessories								
Cable clamp rails for cable clamps		2	4191.000	4192.000	4336.000	4336.000	4196.000	1061
Cable clamp rails (C section) for cable clamps		6	4944.000	4945.000	4946.000	4946.000	4947.000	999
Support strips for door		20	4596.000	4598.000	4599.000	4309.000	4596.000	964
Wiring plan pocket, sheet steel		1	4116.000	4118.000	4124.000	4115.000	4116.000	967
Lock systems								
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956, and comfort handle, see page 947 – 948.								

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Snap-on nut
for screw-fastening to the vertical section,
Model No. see page 1005.

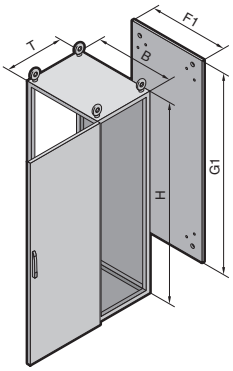


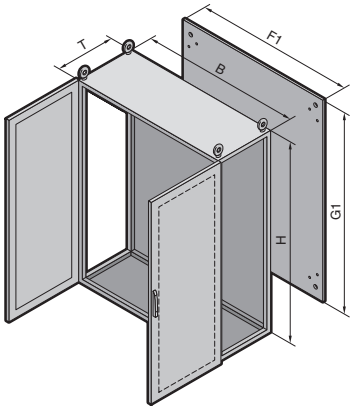
System window
to protect against unauthorised access and preserve the protection category,
Model No. see page 943.

Accessories Page 890 **TS 8 stainless steel** Page 322 **TS 8 EMC-shielded** Page 329 **Modular climate control concept** Ppage 632

Height: 1800, depth: 500







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame: Dipcoat-primed
Door, roof and rear panel: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plates and gland plates: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12 (except TS 8485.510).

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate.

Accessories:
Corner enclosures,
see page 933.

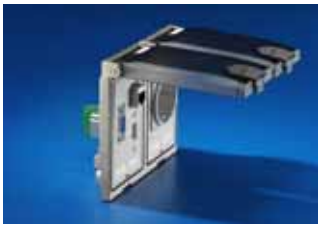
Possible alternative:
Instead of a door or rear panel, matching section doors with integral cooling module,
see page 633 – 634.

Approvals,
see page 30.

Detailed drawing/nominal dimensions,
see page 1184 – 1185.

Width (B) mm		Packs of	400	600	800	800	1200	Page
Height (H) mm			1800	1800	1800	1800	1800	
Depth (T) mm			500	500	500	500	500	
Mounting plate width (F1) mm			–	499	699	699	1099	
Mounting plate height (G1) mm			–	1696	1696	1696	1696	
Model No. TS		1	**8485.510**[1)]	**8685.500**	**8885.500**	**8880.500**	**8285.500**	
Door(s)			1	1	1	2	2	
Weight (kg)			49.2	93.8	115.8	122.5	173.3	
Walls								
Side panels		2	8185.235	8185.235	8185.235	8185.235	8185.235	917
Divider panel		1	8609.850	8609.850	8609.850	8609.850	8609.850	921
Divider panel for module plates		1	8609.100	8609.100	8609.100	8609.100	8609.100	922
Base/plinth								
Components front and rear	Height 100 mm	1 set	8601.400	8601.600	8601.800	8601.800	8601.200	893
	Height 200 mm	1 set	8602.400	8602.600	8602.800	8602.800	8602.200	893
Trim panels (sides)	Height 100 mm	1 set	8601.050	8601.050	8601.050	8601.050	8601.050	893
	Height 200 mm	1 set	8602.050	8602.050	8602.050	8602.050	8602.050	893
Accessories								
Cable clamp rails for cable clamps		2	4193.000	4191.000	4192.000	4192.000	4196.000	1061
Cable clamp rails (C section) for cable clamps		6	–	4944.000	4945.000	4945.000	4947.000	999
Support strips for door		20	–	4596.000	4598.000	4594.000	4596.000	964
Wiring plan pocket, sheet steel		1	–	4116.000	4118.000	4114.000	4116.000	967
Lock systems								
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956, and comfort handle, see page 947 – 948.								

[1)] Without tubular door frame, mounting plate and gland plates. Available to order as accessories: Mounting plate, see page 987, gland plates, see from page 911.
To order enclosures in textured RAL 7032 please add extension .600 or .610 to the Model No., and for primed enclosures use extension .800 or .810. Delivery times available on request.



Interface flap
for safe, modular accommodation of sockets and interfaces, Model No. see page 1151.



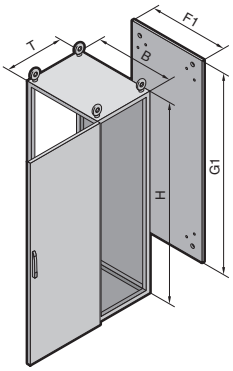
Compact light
for space-saving installation on a vertical or horizontal section, Model No. see page 1027.

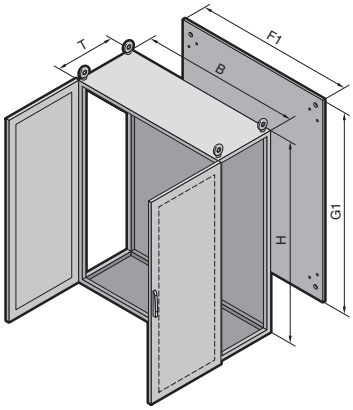
Accessories Page 890 **TS 8 stainless steel** Page 322 **TS 8 EMC-shielded** Page 329 **Modular climate control concept** Page 632

Baying systems TS 8

Height: 1800, depth: 600







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame: Dipcoat-primed
Door, roof and rear panel: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plates and gland plates: Zinc-plated

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel, roof plate and 2 support strips (TS 4696.000, see page 997), fitted in the enclosure depth.

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12 (except TS 8486.510).

Accessories:
Corner enclosures, see page 933.

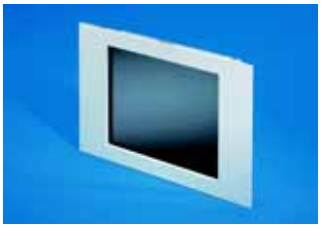
Possible alternative:
Instead of a door or rear panel, matching section doors with integral cooling module, see page 633 – 634.

Approvals,
see page 30.

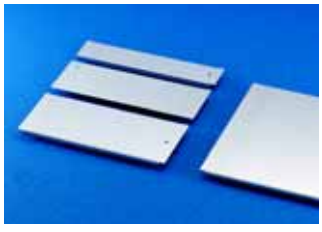
Detailed drawing/nominal dimensions,
see page 1184 – 1185.

Width (B) mm		Packs of	400	600	800	800	1200	Page
Height (H) mm			1800	1800	1800	1800	1800	
Depth (T) mm			600	600	600	600	600	
Mounting plate width (F1) mm			–	499	699	699	1099	
Mounting plate height (G1) mm			–	1696	1696	1696	1696	
Model No. TS		1	**8486.510**[1)]	**8686.500**	**8886.500**	**8881.500**	**8286.500**	
Door(s)			1	1	1	2	2	
Weight (kg)			51.7	96.8	120.3	125.8	179.9	
Walls								
Side panels		2	8186.235	8186.235	8186.235	8186.235	8186.235	917
Divider panel		1	8609.860	8609.860	8609.860	8609.860	8609.860	921
Divider panel for module plates		1	8609.110	8609.110	8609.110	8609.110	8609.110	922
Climate control side panel		1	3331.XXX	3331.XXX	3331.XXX	3331.XXX	3331.XXX	635
Base/plinth								
Components front and rear	Height 100 mm	1 set	8601.400	8601.600	8601.800	8601.800	8601.200	893
	Height 200 mm	1 set	8602.400	8602.600	8602.800	8602.800	8602.200	893
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.060	8601.060	893
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.060	8602.060	893
Accessories								
Cable clamp rails for cable clamps		2	4193.000	4191.000	4192.000	4192.000	4196.000	1061
Cable clamp rails (C section) for cable clamps		6	–	4944.000	4945.000	4945.000	4947.000	999
Support strips for door		20	–	4596.000	4598.000	4594.000	4596.000	964
Wiring plan pocket, sheet steel		1	–	4116.000	4118.000	4114.000	4116.000	967
Lock systems								
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956, and comfort handle, see page 947 – 948.								

[1)] Without tubular door frame, mounting plate and gland plates. Available to order as accessories: Mounting plate, see page 987, gland plates, see from page 913.
To order enclosures in textured RAL 7032 please add extension .600 or .610 to the Model No., and for primed enclosures use extension .800 or .810.
Delivery times available on request.



TFT monitor
for installation in doors and side panels,
Model No. see page 1133.

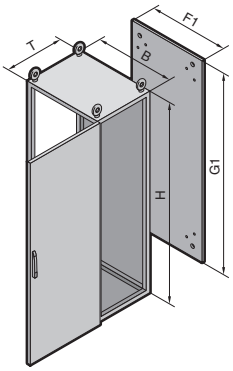


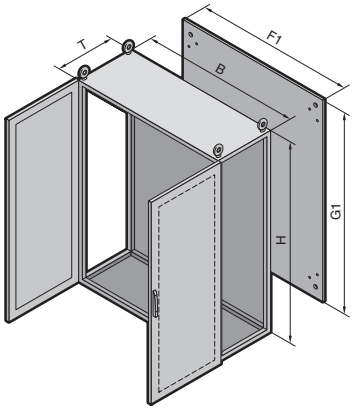
Gland plates,
Model No. see from page 911.

Accessories Page 890 **TS 8 stainless steel** Page 322 **TS 8 EMC-shielded** Page 329 **Modular climate control concept** Page 632

Height: 2000, depth: 400







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plates and gland plates: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate.

Accessories:
Corner enclosures,
see page 933.

Possible alternative:
Instead of a door or rear panel, matching section doors with integral cooling module,
see page 633 – 634.

Approvals,
see page 30.

Detailed drawing/nominal dimensions,
see page 1184 – 1185.

Width (B) mm		Packs of	600	800	1000	1200	Page
Height (H) mm			2000	2000	2000	2000	
Depth (T) mm			400	400	400	400	
Mounting plate width (F1) mm			499	699	899	1099	
Mounting plate height (G1) mm			1896	1896	1896	1896	
Model No. TS		1	**8604.500**	**8804.500**	**8004.500**	**8204.500**	
Door(s)			1	1	2	2	
Weight (kg)			99.0	124.0	152.8	184.5	
Walls							
Side panels		2	8104.235	8104.235	8104.235	8104.235	917
Divider panel		1	8609.040	8609.040	8609.040	8609.040	921
Base/plinth							
Components front and rear	Height 100 mm	1 set	8601.600	8601.800	8601.000	8601.200	893
	Height 200 mm	1 set	8602.600	8602.800	8602.000	8602.200	893
Trim panels (sides)	Height 100 mm	1 set	8601.040	8601.040	8601.040	8601.040	893
	Height 200 mm	1 set	8602.040	8602.040	8602.040	8602.040	893
Accessories							
Cable clamp rails for cable clamps		2	4191.000	4192.000	4336.000	4196.000	1061
Cable clamp rails (C section) for cable clamps		6	4944.000	4945.000	4946.000	4947.000	999
Support strips for door		20	4596.000	4598.000	4309.000	4596.000	964
Wiring plan pocket, sheet steel		1	4116.000	4118.000	4115.000	4116.000	967
Lock systems							
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956, and comfort handle, see page 947 – 948.							

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Cable trunking, vertical,
to match the section and horizontally to match the mounting plate,
Model No. see page 1059 – 1060.



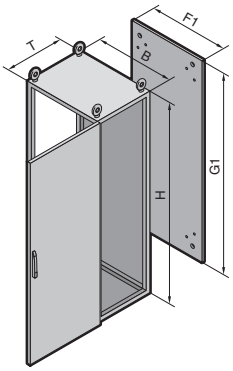
Rail
for EMC shielding brackets and cable clamps,
Model No. see page 1031.

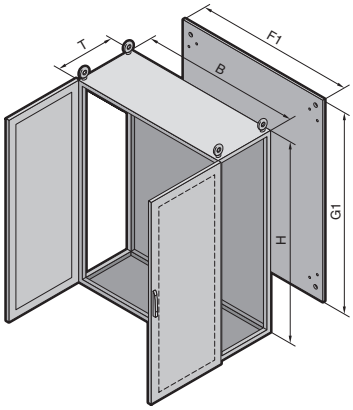
Accessories Page 890 **TS 8 stainless steel** Page 322 **TS 8 EMC-shielded** Page 329 **Modular climate control concept** Page 632

Baying systems TS 8

Height: 2000, depth: 500







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame: Dipcoat-primed
Door, roof and rear panel: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate and gland plates: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12 (except TS 8405.510).

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate.

Accessories:
Corner enclosures,
see page 933.

Possible alternative:
Instead of a door or rear panel, matching section doors with integral cooling module,
see page 633 – 634.

Approvals,
see page 30.

Detailed drawing/nominal dimensions,
see page 1184 – 1185.

Width (B) mm		Packs of	400	600	800	1000	1200	Page
Height (H) mm			2000	2000	2000	2000	2000	
Depth (T) mm			500	500	500	500	500	
Mounting plate width (F1) mm			–	499	699	899	1099	
Mounting plate height (G1) mm			–	1896	1896	1896	1896	
Model No. TS		1	**8405.510**[1)]	**8605.500**	**8805.500**	**8005.500**	**8205.500**	
Door(s)			1	1	1	2	2	
Weight (kg)			60.7	101.3	126.3	157.1	190.6	
Walls								
Side panels		2	8105.235	8105.235	8105.235	8105.235	8105.235	917
Divider panel		1	8609.050	8609.050	8609.050	8609.050	8609.050	921
Divider panel for module plates		1	8609.120	8609.120	8609.120	8609.120	8609.120	922
Base/plinth								
Components front and rear	Height 100 mm	1 set	8601.400	8601.600	8601.800	8601.000	8601.200	893
	Height 200 mm	1 set	8602.400	8602.600	8602.800	8602.000	8602.200	893
Trim panels (sides)	Height 100 mm	1 set	8601.050	8601.050	8601.050	8601.050	8601.050	893
	Height 200 mm	1 set	8602.050	8602.050	8602.050	8602.050	8602.050	893
Accessories								
Cable clamp rails for cable clamps		2	4193.000	4191.000	4192.000	4336.000	4196.000	1061
Cable clamp rails (C section) for cable clamps		6	–	4944.000	4945.000	4946.000	4947.000	999
Support strips for door		20	–	4596.000	4598.000	4309.000	4596.000	964
Wiring plan pocket, sheet steel		1	–	4116.000	4118.000	4115.000	4116.000	967
Lock systems								
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956 and comfort handle, see page 947 – 948.								

[1)] Without tubular door frame, mounting plate and gland plates. Available to order as accessories: Mounting plate, see page 987, gland plates, see from page 911.
To order enclosures in textured RAL 7032 please add extension .600 or .610 to the Model No., and for primed enclosures use extension .800 or .810.
Delivery times available on request.



Cable glands
of polyamide or brass,
Model No. see page 1054.

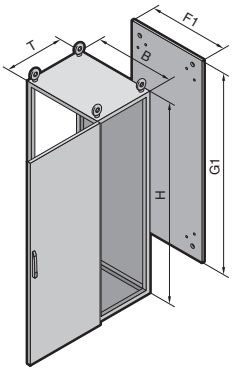


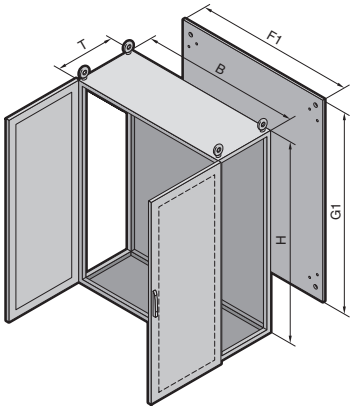
Keyboard,
pull-out with integral trackball,
Model No. see page 1137.

Accessories Page 890 **TS 8 stainless steel** Page 322 **TS 8 EMC-shielded** Page 329 **Modular climate control concept** Page 632

Height: 2000, depth: 600







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame: Dipcoat-primed
Door, roof and rear panel: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plates and gland plates: Zinc-plated

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel, roof plate and 2 support strips (TS 4696.000, see page 997), fitted in the enclosure depth.

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12 (except TS 8406.510).

Accessories:
Corner enclosures, see page 933.

Possible alternative:
Instead of a door or rear panel, matching section doors with integral cooling module, see page 633 – 634.

Approvals,
see page 30.

Detailed drawing/nominal dimensions,
see page 1184 – 1185.

Width (B) mm		Packs of	400	600	800	1000	1200	Page
Height (H) mm			2000	2000	2000	2000	2000	
Depth (T) mm			600	600	600	600	600	
Mounting plate width (F1) mm			–	499	699	899	1099	
Mounting plate height (G1) mm			–	1896	1896	1896	1896	
Model No. TS		1	**8406.510**[1)]	**8606.500**	**8806.500**	**8006.500**	**8206.500**	
Door(s)			1	1	1	2	2	
Weight (kg)			55.7	104.0	130.5	161.2	194.6	
Walls								
Side panels		2	8106.235	8106.235	8106.235	8106.235	8106.235	917
Divider panel		1	8609.060	8609.060	8609.060	8609.060	8609.060	921
Divider panel for module plates		1	8609.130	8609.130	8609.130	8609.130	8609.130	922
Climate control side panel		1	3331.XXX	3331.XXX	3331.XXX	3331.XXX	3331.XXX	635
Base/plinth								
Components front and rear	Height 100 mm	1 set	8601.400	8601.600	8601.800	8601.000	8601.200	893
	Height 200 mm	1 set	8602.400	8602.600	8602.800	8602.000	8602.200	893
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.060	8601.060	893
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.060	8602.060	893
Accessories								
Cable clamp rails for cable clamps		2	4193.000	4191.000	4192.000	4336.000	4196.000	1061
Cable clamp rails (C section) for cable clamps		6	–	4944.000	4945.000	4946.000	4947.000	999
Support strips for door		20	–	4596.000	4598.000	4309.000	4596.000	964
Wiring plan pocket, sheet steel		1	–	4116.000	4118.000	4115.000	4116.000	967
Lock systems								
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956, and comfort handle, see page 947 – 948.								

[1)] Without tubular door frame, mounting plate and gland plates. Available to order as accessories: Mounting plate, see page 987, gland plates, see from page 911.
To order enclosures in textured RAL 7032 please add extension .600 or .610 to the Model No., and for primed enclosures use extension .800 or .810. Delivery times available on request.



Section for cable entry
for top mounting on gland plates with routing of the cable clamp strip,
Model No. see page 1046.



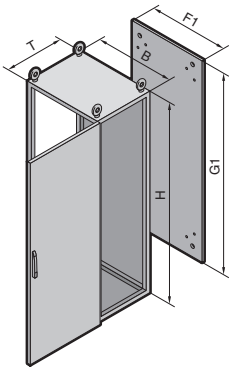
Module plate
for cable entry in the divider panel,
Model No. see page 923 – 924.

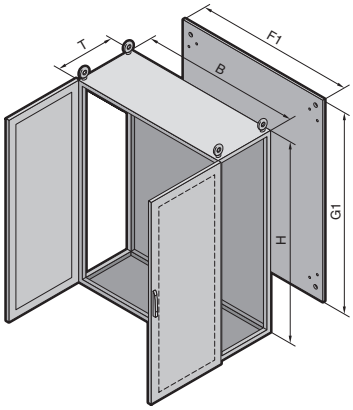
Accessories Page 890 **TS 8 stainless steel** Page 322 **TS 8 EMC-shielded** Page 329 **Modular climate control concept** Page 632

Baying systems TS 8

Height: 2000, depth: 800







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame: Dipcoat-primed
Door, roof and rear panel: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plates and gland plates: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate.

Accessories:
Corner enclosures,
see page 933.

Possible alternative:
Instead of a door or rear panel, matching section doors with integral cooling module,
see page 633 – 634.

Approvals,
see page 30.

Detailed drawing/nominal dimensions,
see page 1184 – 1185.

Width (B) mm		Packs of	600	800	1200	Page
Height (H) mm			2000	2000	2000	
Depth (T) mm			800	800	800	
Mounting plate width (F1) mm			499	699	1099	
Mounting plate height (G1) mm			1896	1896	1896	
Model No. TS		1	**8608.500**	**8808.500**	**8208.500**	
Door(s)			1	1	2	
Weight (kg)			111.3	137.0	203.0	
Walls						
Side panels		2	8108.235	8108.235	8108.235	917
Divider panel		1	8609.080	8609.080	8609.080	921
TS 8 internal fan mounting panel		1	3348.200	3348.200	3348.200	707
Base/plinth						
Components front and rear	Height 100 mm	1 set	8601.600	8601.800	8601.200	893
	Height 200 mm	1 set	8602.600	8602.800	8602.200	893
Trim panels (sides)	Height 100 mm	1 set	8601.080	8601.080	8601.080	893
	Height 200 mm	1 set	8602.080	8602.080	8602.080	893
Accessories						
Cable clamp rails for cable clamps		2	4191.000	4192.000	4196.000	1061
Cable clamp rails (C section) for cable clamps		6	4944.000	4945.000	4947.000	999
Support strips for door		20	4596.000	4598.000	4596.000	964
Wiring plan pocket, sheet steel		1	4116.000	4118.000	4116.000	967
Lock systems						
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956, and comfort handle, see page 947 – 948.						

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Punched section without mounting flange 45 x 88 mm
The universal configuration solution with 11 rows of holes for heavy equipment and screw-fastening to the frame,
Model No. see page 995.

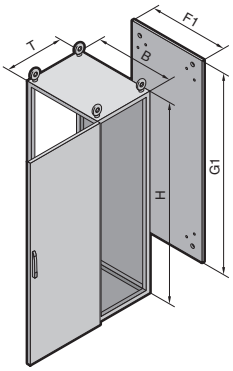


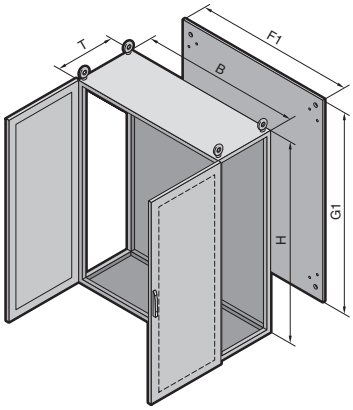
Mounting plate attachment
in conjunction with mounting plate infill,
Model No.
see page 979.

Accessories Page 890 **TS 8 stainless steel** Page 322 **TS 8 EMC-shielded** Page 329 **Modular climate control concept** Page 632

Height: 2200, depth: 600







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame: Dipcoat-primed
Door, roof and rear panel: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plates and gland plates: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate.

Accessories:

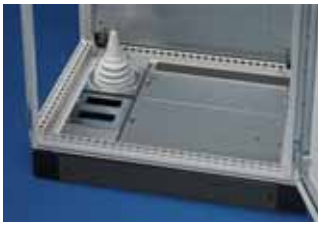
Corner enclosures,
see page 933.

Approvals,
see page 30.

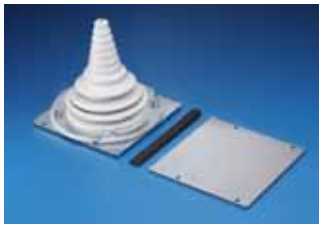
Detailed drawing/nominal dimensions,
see page 1184 – 1185.

Width (B) mm		Packs of	600	800	1200	Page
Height (H) mm			2200	2200	2200	
Depth (T) mm			600	600	600	
Mounting plate width (F1) mm			499	699	1099	
Mounting plate height (G1) mm			2096	2096	2096	
Model No. TS		1	**8626.500**	**8826.500**	**8226.500**	
Door(s)			1	1	2	
Weight (kg)			113.1	139.3	208.0	
Walls						
Side panels		2	8126.235	8126.235	8126.235	917
Divider panel		1	8609.260	8609.260	8609.260	921
Base/plinth						
Components front and rear	Height 100 mm	1 set	8601.600	8601.800	8601.200	893
	Height 200 mm	1 set	8602.600	8602.800	8602.200	893
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	893
	Height 200 mm	1 set	8602.060	8602.060	8602.060	893
Accessories						
Cable clamp rails for cable clamps		2	4191.000	4192.000	4196.000	1061
Cable clamp rails (C section) for cable clamps		6	4944.000	4945.000	4947.000	999
Support strips for door		20	4596.000	4598.000	4596.000	964
Wiring plan pocket, sheet steel		1	4116.000	4118.000	4116.000	967
Lock systems						
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956, and comfort handle, see page 947 – 948.						

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Gland plate with sealing bar
for sub-dividing the base assembly for varying cable entry,
Model No. see page 912.



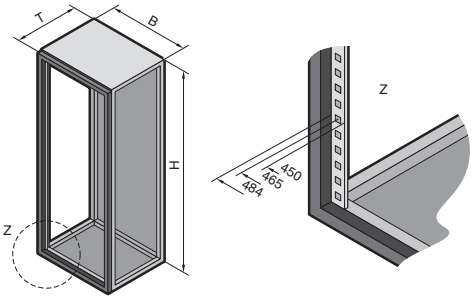
Module plate with cable sleeves
for cable diameters 10 – 65 mm,
Model No. see page 924.

Accessories Page 890 **TS 8 stainless steel** Page 322 **TS 8 EMC-shielded** Page 329 **Modular climate control concept** Page 632

Baying systems TS 8

Electronic enclosure





Material:
Enclosure frame:
Sheet steel, 1.5 mm
Front frame:
Extruded aluminium sections with die-cast corner pieces
Rear door: 2 mm sheet steel
Roof and gland plates:
1.5 mm sheet steel
Adaptor sections: Aluminium

Surface finish:
Enclosure frame:
Dipcoat-primed
Front frame, rear door and roof:
Powder-coated in RAL 7035
Gland plates: Zinc-plated

Supply includes:
Enclosure frame, front frame (r/h hinge, opening angle 130°, held via mechanical snap fasteners on left),
rear door (r/h hinge, may be swapped to opposite side), roof, adaptor sections and gland plates.

Approvals,
see page 31.

Detailed drawing/nominal dimensions,
see page 1186.

U		Packs of	33	33	42	42	Page
Width (B) mm			600	600	600	600	
Height (H) mm			1600	1600	2000	2000	
Depth (T) mm			600	800	600	800	
Model No. TS		1	**8410.510**	**8418.510**	**8430.510**	**8438.510**	
Door(s)			1	1	1	1	
Base/plinth							
Components front and rear	Height 100 mm	1 set	8601.600	8601.600	8601.600	8601.600	893
	Height 200 mm	1 set	8602.600	8602.600	8602.600	8602.600	893
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.080	8601.060	8601.080	893
	Height 200 mm	1 set	8602.060	8602.080	8602.060	8602.080	893
Accessories							
Side panels		2	8166.235	8168.235	8106.235	8108.235	917
Cable clamp rails for cable clamps		2	4191.000	4191.000	4191.000	4191.000	1061
Cable clamp rails (C section) for cable clamps		6	4944.000	4944.000	4944.000	4944.000	999
Adaptor sections for rear		2	8613.360	8613.360	8613.300	8613.300	1090
Lock systems							
Standard double-bit lock insert (in rear door) may be exchanged for lock inserts, type F, see page 956, and comfort handle, see page 947 – 948.							

For primed enclosures, please add extension .810 to the Model No. Delivery times available on request.



Slide rails,
Model No. see page 1097.

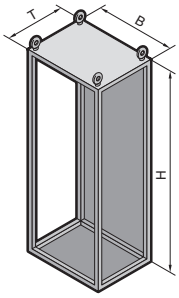


Aluminium cross rail,
for sub-division of the front,
Model No. see page 1090.

Accessories Page 890 **482.6 mm (19″) mounting accessories** From page 1079 **Subrack systems** Page 548
482.6 mm (19″) climate control Page 698 – 700

For modular front design





The basic enclosures without
- Mounting plate
  for universal interior installation with
  – Partial mounting plates
  – Component shelves and drawers
  – Punched sections and rails
- Doors
  Frame for the installation of
  – Partial doors with and without viewing panels
  – Fully glazed doors
  – Drawers and desk sections
  – Profile blanking frame
  – Vertically divided doors
  – Trim panels hinged at the top

Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door and rear panel:
Dipcoat-primed,
powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Supply includes:
Enclosure frame, roof, rear panel, gland plates, three-piece.

Detailed drawing (TS basic enclosures without door),
see page 1186.

Width (B) mm		Packs of	600	800	Page
Height (H) mm			2000	2000	
Depth (T) mm			600	600	
Model No. TS		1	**8606.512**	**8806.512**	
Weight (kg)			52.5	63.0	
Walls					
Side panels		2	8106.512	8106.512	942
Divider panel		1	8609.060	8609.060	921
Divider panel for module plates		1	8609.130	8609.130	922
Base/plinth					
Components front and rear	Height 100 mm	1 set	8601.600	8601.800	893
	Height 200 mm	1 set	8602.600	8602.800	893
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	893
	Height 200 mm	1 set	8602.060	8602.060	893

To order enclosures in textured RAL 7032 please add extension .612 to the Model No., and for primed enclosures use extension .812.
Delivery times available on request.



Trim panels TS
For height trim at the top and bottom,
Model No. see page 941.



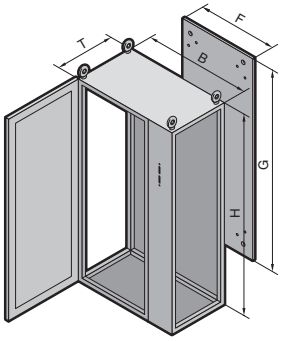
Protective bar and holder,
Model No. see page 938.

Accessories Page 890 **Partial doors** Page 941 **Partial mounting plates** Page 984

Baying systems TS 8

For isolator door locking





Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates:
1.5 mm
Door and trim panel: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, trim panel, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plates and gland plates: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000
Complies with NEMA 12
(with fitted/sealed isolator switch actuation)

Supply includes:
Enclosure frame, door (l/h hinge), trim panel (r/h hinge, with a swing lever at the top and bottom, with cut-out for isolator switch actuation), roof, rear panel, mounting plate, three-piece gland plates.

Rittal service:

Enclosures with 100 mm (instead of 200 mm) wide trim panel on request.

Approvals,
see page 31.

Detailed drawing/nominal dimensions,
see page 1187.

Width (B) mm		Packs of	800	800	800	800	Page
Height (H) mm			1800	1800	2000	2000	
Depth (T) mm			400	500	500	600	
Mounting plate width (F) mm			699	699	699	699	
Mounting plate height (G) mm			1696	1696	1896	1896	
Model No. TS		1	**8984.500**	**8985.500**	**8905.500**	**8906.500**	
Door(s)			1	1	1	1	
Weight (kg)			113.5	115.8	126.3	130.5	
Base/plinth							
Components front and rear	Height 100 mm	1 set	8601.800	8601.800	8601.800	8601.800	893
	Height 200 mm	1 set	8602.800	8602.800	8602.800	8602.800	893
Trim panels (sides)	Height 100 mm	1 set	8601.040	8601.050	8601.050	8601.060	893
	Height 200 mm	1 set	8602.040	8602.050	8602.050	8602.060	893
Also required							
Door latch for bayed suites							960
Accessories							
Isolator door locking (USA version)		1	8611.310	8611.310	8611.310	8611.310	960
Lock systems							
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956, and comfort handle, see page 947 – 948.							

To order enclosures in RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Cable gland
Cable glands made from polyamide or brass,
Model No. see page 1054.

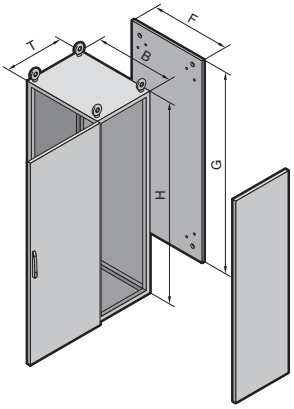


Snap-on nut
for screw-fastening to the vertical section,
Model No. see page 1005.

Accessories Page 890 **Adjacent door locking** Page 951

IP 66/NEMA 4x, NEMA 4





Material:
NEMA 4x:
Stainless steel 1.4301 (AISI 304)

NEMA 4:
Sheet steel, spray-finished

Enclosure frame, roof, base/ plinth, rear panel, side panels: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm (sheet steel)

Surface finish:
NEMA 4x:
Enclosure frame: Uncoated
Door, roof, base, rear panel, side panels: Brushed on the outside, grain size 400
Mounting plate: Zinc-plated

NEMA 4:
Enclosure frame, door, roof, base, rear panel, side panels: Dipcoat-primed and powder-coated in textured RAL 7035 on the outside
Mounting plate: Zinc-plated

Protection category:
IP 66 to EN 60 529/09.2000 (complies with NEMA 4x/ NEMA 4)

Supply includes:
NEMA 4x/NEMA 4:
Enclosure frame with door, roof/base plate, rear panel, side panels, mounting plate.

Rittal service:
Enclosures with depth 800 mm on request.

Approvals,
see page 31.

		Packs of	NEMA 4x, stainless steel				NEMA 4, sheet steel				Page
Width (B) mm			600	800	600	800	600	800	600	800	
Height (H) mm			1800	1800	2000	2000	1800	1800	2000	2000	
Depth (T) mm			600	600	600	600	600	600	600	600	
Mounting plate width (F) mm			499	699	499	699	499	699	499	699	
Mounting plate height (G) mm			1696	1696	1896	1896	1696	1696	1896	1896	
Model No. TS		1	**8458.640**	**8459.640**	**8452.640**	**8450.640**	**8686.540**	**8886.540**	**8606.540**	**8806.540**	
Door(s)			1	1	1	1	1	1	1	1	
Base/plinth											
Components front and rear	Height 100 mm	1 set	8701.600	8701.800	8701.600	8701.800	8601.600	8601.800	8601.600	8601.800	893, 899
	Height 200 mm	1 set	8702.600	8702.800	8702.600	8702.800	8602.600	8602.800	8602.600	8602.800	893, 899
Trim panels (sides)	Height 100 mm	1 set	8701.060	8701.060	8701.060	8701.060	8601.060	8601.060	8601.060	8601.060	893, 899
	Height 200 mm	1 set	8702.060	8702.060	8702.060	8702.060	8602.060	8602.060	8602.060	8602.060	893, 899
Base/plinth trim, modular SO		4	2913.000	2913.000	2913.000	2913.000	–	–	–	–	899
Accessories											
Cable clamp rails		2	4191.000	4192.000	4191.000	4192.000	4191.000	4192.000	4191.000	4192.000	1061
System support rails		2	4361.000	4362.000	4361.000	4362.000	4361.000	4362.000	4361.000	4362.000	1000
Support strips for door		20	4596.000	4598.000	4596.000	4598.000	4596.000	4598.000	4596.000	4598.000	964
Wiring plan pocket, sheet steel		1	4116.000	4118.000	4116.000	4118.000	4116.000	4118.000	4116.000	4118.000	967
Lock systems											
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956, and comfort handle, see page 947 – 948.											

Delivery times available on request.



Cable glands IP 68
Cable glands made from polyamide or brass,
Model No. see page 1054.



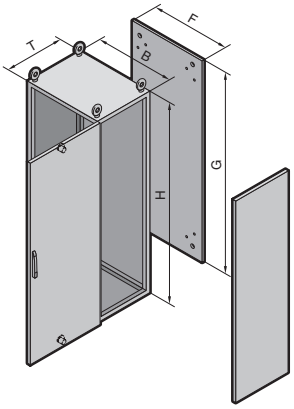
Punched rail
25 x 38 mm,
Model No. see page 996.

Accessories Page 890 **Cable entry** From page 1045

Baying systems TS 8

Prepared for EX pressurisation





With this empty enclosure and an external overpressure controller such as those offered by STAHL, Bartec or Gönnheimer, conventional operating materials may be used in explosion hazard areas. To this end, a permanent overpressure is applied to the enclosure which prevents the ingress of potentially explosive atmospheres.
Empty enclosure, prepared for pressurisation, ensures efficient operation thanks to low leakage rates of approximately 20 l/min, at 2 mbar overpressure.
Ex overpressure enclosures must be constructed and operated in conformity with standards DIN EN 60 079-0 and DIN EN 60 079-2.

For populated enclosures of protection type “p”, in accordance with Directive 94/9 EC, type testing certification from a designated office is required.

Design:
- Base as for roof
- Reinforced:
  – Rear panel
  – Side panels
  – Door with additional cams top and bottom, r/h hinge, l/h hinge on request

Surface finish:
Sheet steel:
Enclosure frame: Dipcoat-primed door, roof, base, side panels and rear panel: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate: Zinc-plated

Stainless steel:
Enclosure frame: Uncoated
Door, side panels, roof, base/plinth, and rear panel: Brushed, grain size 400
Mounting plate: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000 complies with NEMA 12

Supply includes:
Enclosure frame with door (with additional cam top and bottom), roof/base plate, rear panel, side panels, mounting plate.

Rittal service:
Enclosures for baying available on request.

Width (B) mm	600	800	600	800	600	800	1000	600	800	600	–
Height (H) mm	1400	1400	1600	1600	1800	1800	1800	1800	1800	1800	–
Depth (T) mm	500	500	500	500	400	400	400	500	500	600	–
Mounting plate width (F) mm	499	699	499	699	499	699	899	499	699	499	–
Mounting plate height (G) mm	1296	1296	1496	1496	1696	1696	1696	1696	1696	1696	–
Model No. TS sheet steel	**8645.560**	**8845.560**	**8665.560**	**8865.560**	**8684.560**	**8884.560**	**8084.560**	**8685.560**	**8885.560**	**8686.560**	–

Width (B) mm	800	600	800	600	800	600	800	600	800	600	800
Height (H) mm	1800	2000	2000	2000	2000	2000	2000	2000	2000	2200	2200
Depth (T) mm	600	400	400	500	500	600	600	800	800	600	600
Mounting plate width (F) mm	699	499	699	499	699	499	699	499	699	499	699
Mounting plate height (G) mm	1696	1896	1896	1896	1896	1896	1896	1896	1896	2096	2096
Model No. TS sheet steel	**8886.560**	**8604.560**	**8804.560**	**8605.560**	**8805.560**	**8606.560**	**8806.560**	**8608.560**	**8808.560**	**8626.560**	**8826.560**

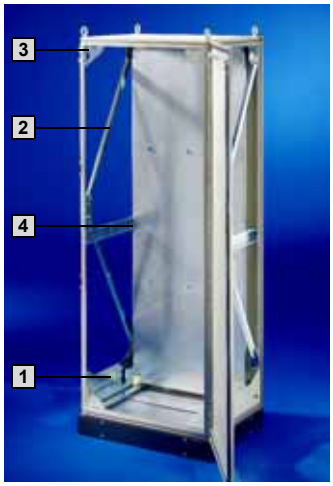
Width (B) mm	800	1000	600	800	600	600	800	800	–	–	–
Height (H) mm	1800	1800	1800	1800	1800	2000	2000	2000	–	–	–
Depth (T) mm	400	400	500	500	600	600	600	800	–	–	–
Mounting plate width (F) mm	699	899	499	699	499	499	699	699	–	–	–
Mounting plate height (G) mm	1696	1696	1696	1696	1696	1896	1896	1896	–	–	–
Model No. TS stainless steel	**8454.660**	**8461.660**	**8457.660**	**8455.660**	**8458.660**	**8452.660**	**8450.660**	**8460.660**	–	–	–

Delivery times available on request.

Accessories Page 890 **Cable entry** From page 1045

For areas at risk from earthquakes





TS 8 for earthquake zone 1, 2 and 3 to Bellcore
TS 8806.500:
W x H x D 800 x 2000 x 600 mm

With base/plinth (base/plinth components front and rear and base/plinth trim, side, see page 893), 100 mm high with a weight load of 125 kg spread evenly over the mounting plate.

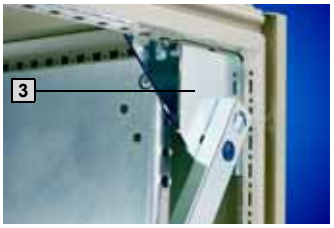
Note:
These versions have been tested and meet the requirements to Telcordia GR 63-CORE. They should be seen as a comparative variable to the customer's own plant, since the certification of empty enclosures is not possible.

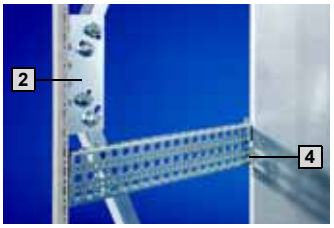
TS 8 for earthquake zone 4 to Bellcore
TS 8806.500:
W x H x D 800 x 2000 x 600 mm

Fitted with:
- Earthquake kit and
- Earthquake base/plinth, see page 153,

with weight load of 450 kg distributed evenly over the mounting plate.

Rittal service:
- Mounting on the enclosure on request.





Earthquake kit

Material:
Sheet steel

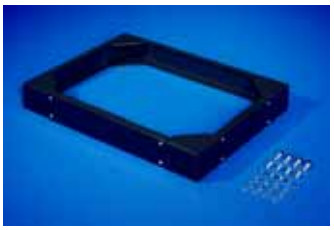
Surface finish:
Zinc-plated, passivated

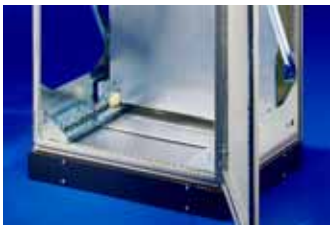
Supply includes:

1 2 side reinforcements, bottom
2 2 bracing struts each, sides
3 8 gusset plates
4 Mounting plate attachment and reinforcement including assembly parts

For enclosures W x H x D mm	Packs of	Model No. TS
800 x 2000 x 600	1	**8613.860**
600 x 2000 x 600	1	**8613.660**[1)]
600 x 2000 x 400	1	**8613.640**[1)]

[1)] Delivery times available on request.





Earthquake base/plinth

Height 100 mm

Material:
Sheet steel
Corner pieces: 5 mm
Trim panels: 2 mm

Surface finish:
Powder-coated in RAL 7022

Supply includes:
1 set =
- 4 corner pieces
- 2 depth stays
- 1 trim panel each front and rear

fully assembled.

For enclosures W x D mm	Packs of	Model No. TS
800 x 600	1	**8601.860**
600 x 600	1	**8601.660**[1)]
600 x 400	1	**8601.640**[1)]

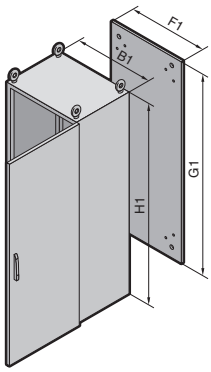
[1)] Delivery times available on request.

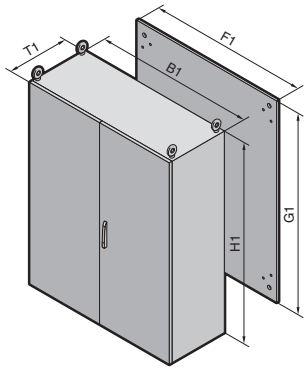
Accessories Page 890 **Base/plinth** Page 892

Free-standing enclosure ES 5000

Width: 600 – 1000







Material:
Sheet steel
Enclosure: 1.8 mm
Door: 2.0 mm
Rear panel and gland plates: 1.5 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure, door and rear panel: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plates and gland plates: Zinc-plated

Protection category:
IP 56 to EN 60 529/09.2000,
IP 55 to EN 60 529/09.2000 for ES 5080.500,
complies with NEMA 12.

Supply includes:
Enclosure with door(s), r/h door hinge, can be changed to opposite side (except 5080.500), mounting plate, gland plates and rear panel, detachable, 2 eyebolts unfitted
(ES 5080.500, ES 5084.500: 4 eyebolts, fitted).

Approvals,
see page 32.

Detailed drawing/nominal dimensions,
see page 1188 – 1189.

Width (B1) mm	Packs of	600	800	600	800	1000	1000	600	800	Page
Height (H1) mm		1600	1600	1800	1800	1800	1800	2000	2000	
Depth (T1) mm		500	500	400	400	400	400	500	500	
Mounting plate width (F1) mm		499	699	499	699	899	899	499	699	
Mounting plate height (G1) mm		1496	1496	1696	1696	1696	1696	1896	1896	
Model No. ES	1	**5665.500**	**5865.500**	**5684.500**	**5884.500**	**5084.500**	**5080.500**	**5605.500**	**5805.500**	
Door(s)		1	1	1	1	1	2	1	1	
Weight (kg)		102.5	124.5	104.5	125.0	147.0	148.0	124.0	151.5	
Accessories										
Base/plinth Height 100 mm	1	2807.200	2829.200	2804.200	2823.200	2909.200	2909.200	2807.200	2829.200	901
Base/plinth Height 200 mm	1	2808.200	2830.200	2805.200	2824.200	2910.200	2910.200	2808.200	2830.200	901
Cable clamp rails for cable clamps	2	4191.000	4192.000	4191.000	4192.000	4336.000	4336.000	4191.000	4192.000	1061
Cable clamp rail (C section) for cable clamps	6	4944.000	4945.000	4944.000	4945.000	4946.000	4946.000	4944.000	4945.000	999
Support strips for door	20	4596.000	4598.000	4596.000	4598.000	4599.000	4599.000	4596.000	4598.000	964
Wiring plan pocket, sheet steel	1	4116.X00	4118.X00	4116.X00	4118.X00	4115.X00	4115.X00	4116.X00	4118.X00	967
Lock systems										
Standard double-bit lock insert may be exchanged for lock inserts 27 mm, type A, see page 956 and for lock system Ergoform-S, see page 953.										

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Fold-out tray for keyboard and mouse,
Model No. see page 1139.



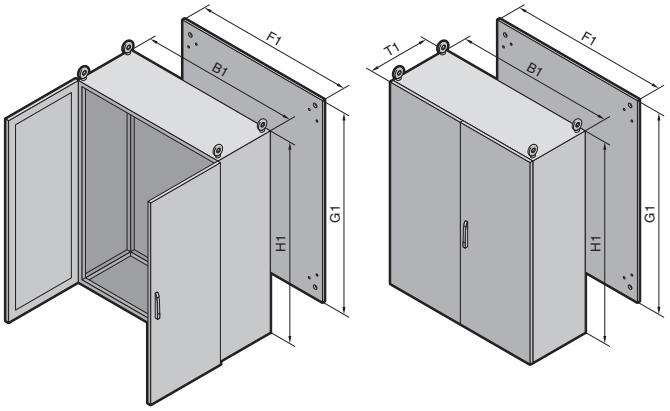
Transport handles for mounting plates and doors,
Model No. see page 983/967.

Accessories Page 890 **ES 5000 stainless steel** Page 323 **ES 5000 EMC-shielded** Page 329

Free-standing enclosure ES 5000

Width: 1200 – 1800





Material:
Sheet steel
Enclosure: 1.8 mm
Double door: 2.0 mm
Rear panel and gland plates: 1.5 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure, double door and rear panel: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plates and gland plates: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

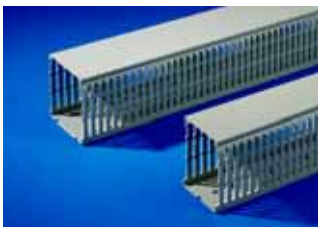
Supply includes:
Enclosure with doors, mounting plate, gland plates and rear panel (ES 5784.500, ES 5905.500 two-piece), detachable,
4 eyebolts, fitted.

Approvals,
see page 32.

Detailed drawing/nominal dimensions,
see page 1188 – 1189.

Width (B1) mm		Packs of	1200	1200	1600	1200	1800	Page
Height (H1) mm			1600	1800	1800	2000	2000	
Depth (T1) mm			500	400	400	500	500	
Mounting plate width (F1) mm			1099	1099	1499	1099	1699	
Mounting plate height (G1) mm			1496	1696	1696	1896	1896	
Model No. ES		1	**5265.500**	**5284.500**	**5784.500**	**5205.500**	**5905.500**	
Doors			2	2	2	2	2	
Weight (kg)			175.5	180.0	222.0	210.0	300.0	
Accessories								
Base/plinth	Height 100 mm	1	2839.200	2836.200	2905.200	2839.200	2903.200	901
	Height 200 mm	1	2840.200	2837.200	2906.200	2840.200	2904.200	901
Cable clamp rails for cable clamps		2	4196.000	4196.001	4338.000	4196.000	4339.000	1061
Cable clamp rail (C section) for cable clamps		6	4947.000	4947.000	–	4947.000	–	999
Support strips for door		20	4596.000	4596.000	4598.000	4596.000	4579.000	964
Wiring plan pocket, sheet steel		1	4116.X00	4116.X00	4118.X00	4116.X00	4123.X00	967
Lock systems								
Standard double-bit lock insert may be exchanged for lock inserts 27 mm, type A, see page 956 and for lock system Ergoform-S, see page 953.								

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Cable duct, horizontal,
Model No. see page 1060.



System window
to protect against unauthorised access and preserve the protection category,
Model No. see page 943.

Accessories Page 890 **ES 5000 stainless steel** Page 323 **ES 5000 EMC-shielded** Page 329

Console systems

Features



The performance capability of a machine or plant is decided at the console and operating unit.

Rittal have set new standards in ergonomics, visual appearance and functionality for the human/machine interface with the **TopConsole system.** In particular, the modularity of the interior installation and variability within the “human/machine interface” family has been significantly extended, and offers versatile flexibility thanks to its compatibility with TS 8 system accessories.



TopConsole system TP



System configuration
The numerous components from the Rittal modular system produce a host of individual solutions which you are sure to find worthwhile.



Aesthetics
The slim, stylish design and the large surface are simply perfect.



Combination diversity
The TopConsole pedestal combined with a desk unit, CP-L support arm components and a Command Panel.



One-piece consoles AP



Cover
including perforated strips for cable routing. Safety lid stay may be unlatched with two-handed operation.



Door hinge
may be swapped from right to left by simply unscrewing the hinges.



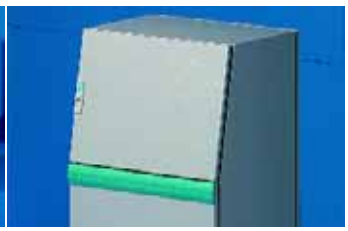
Variable installation depth in the cover section
and cable entry from the rear via a mounting plate, height-adjustable by 2 x 40 mm.



Universal consoles AP



Optionally with short or tall door.
Short door for use with free panel for mounting desk section or keyboard drawer.



High stability and protection category
thanks to a body which is manufactured more or less from a single piece.



Universal interior installation
with partial mounting plates, component shelves, punched sections and rails.



Assembly



Easy assembly
The integrated "mounting assistant" can be used as an adjustment and securing aid: Simply insert, snap into position, and screw fasten.



Simple assembly
The fitted mounting plate slides in and locks easily into position (in a 25 mm pitch pattern). This depth variable installation and securing technology saves a lot of time and money during assembly and servicing.



Practical diversity
Perforated system strips fitted to doors and covers for TS compatible installation, i. e. for mounting rails or wiring plan pockets.

System configuration



Individual interior configuration
The numerous components from the Rittal modular system produce a host of individual solutions which you are sure to find worthwhile.

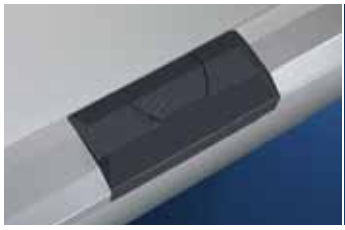


Extra advantage
All TopConsole modules are fitted with threaded studs and are therefore ready for use in TS compatible configurations (rails, partial mounting plates and many more besides).



Exemplary cable routing
TopConsole system – also stands for more combination options for cable entries, thanks to individual gland plates.

Design, safety, ergonomics



Design line
The integrated lock, which is shielded by a hinged flap, is visually aligned with the handle strip.



Single-handed operation
The desk unit lid stay locks home automatically and it can be unlocked in one operation.



Stylish ergonomics
Screens, displays and operating controls are mounted at an ergonomically favourable angle.

Combination diversity



Example 1: The pedestal of a TopConsole combined with an IW worktop.



Example 2: The TopConsole pedestal combined with a desk unit, CP-L support arm components and a Command Panel.



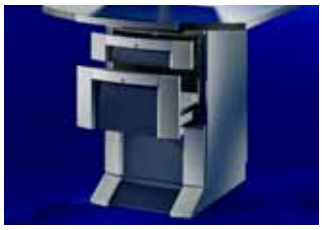
Example 3: A TopConsole desk unit combined with an IW pedestal, 600 mm deep.

Combination options

Easy selection of your desired combination
The TP TopConsole System components can be combined in many user specific versions as shown in the diagrams below. The table opposite allows you to immediately find the order number for your selection. In addition to this, the IW and Command Panel range make the new TopConsole system TP combination options virtually infinite.



Small operating units are easily integrated into separate Command Panels.

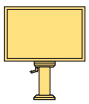


Completely new options with regard to space utilisation are available when used in conjunction with our range of IW enclosures.

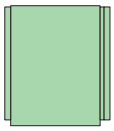


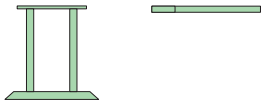
The TS modular base/plinth system also ensures more cable entry flexibility even when used with consoles.

Rittal human/machine interface family



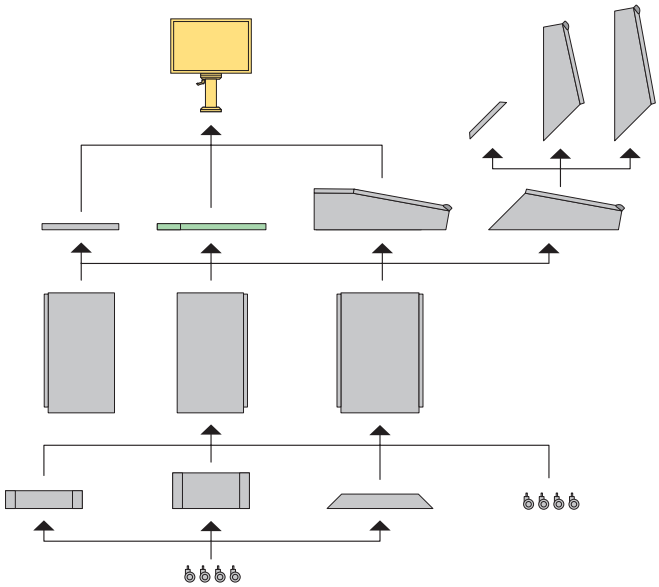
Command Panels
may be found on page 190.



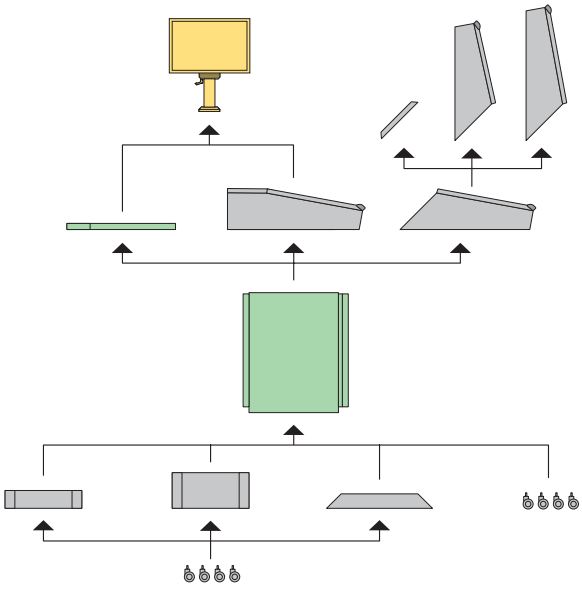


Industrial Workstations (IW)
may be found from page 172.

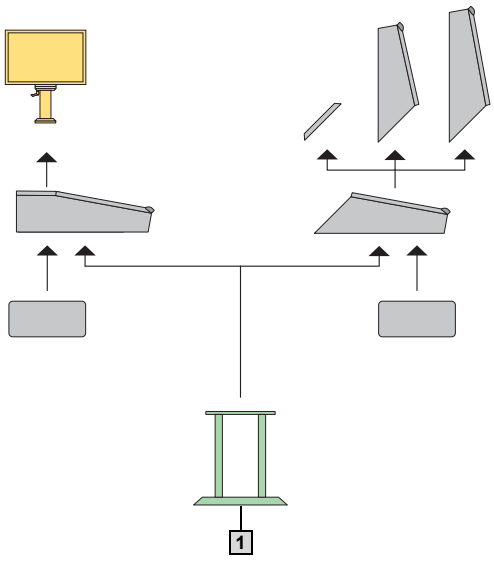
Combination with console base sections



Combination with IW enclosures

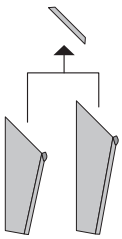


Combination with worktop base

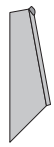
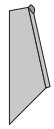
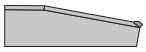
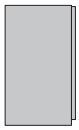


1 Worktop base for 800 mm width

Upper section used as wall enclosure

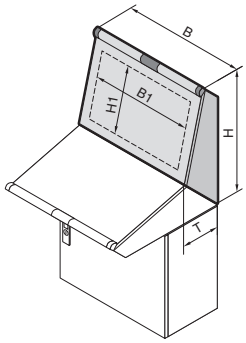


Overview table

Width mm		600		800		1200		1600	
		Model No.	**Model No.**	**Model No.**	**Model No.**	**Model No.**	**Model No.**	**Model No.**	**Model No.**
Console, upper section									
	Height 750 mm	**6720.500**		**6721.500**		**6722.500**		**6723.500**	
	Height 650 mm	**6724.500**		**6725.500**		**6726.500**		**6727.500**	
Desk unit already prepared for an upper section									
	Depth 755 mm	**6714.500**		**6715.500**		**6716.500**		**6717.500**	
Console/desk unit trim panel									
	for height 650/750 mm	**6730.200**		**6730.210**		**6730.220**		**6730.230**	
Rear of desk unit, with hinged lid									
	Depth 755 mm	**6710.500**		**6711.500**		**6712.500**		**6713.500**	
Gland plate for desk unit (from page 1048)									
	Size	4		5		4		5	
	Qty.	1		1		2		2	
Trim panel									
	D mm	400	500	400	500	400	500	400	500
		6730.000	**6730.100**	**6730.010**	**6730.110**	**6730.020**	**6730.120**	**6730.030**	**6730.130**
Pedestal									
	D mm	400	500	400	500	400	500	400	500
	Height 675 mm	**6700.500**	**6704.500**	**6701.500**	**6705.500**	**6702.500**	**6706.500**	**6703.500**	**6707.500**
Base/plinth components, front and rear									
	Height 200 mm	**8602.600**		**8602.800**		**8602.200**		**8602.920**	
	Height 100 mm	**8601.600**		**8601.800**		**8601.200**		**8601.920**	
Base/plinth trims, side									
	D mm	400	500	400	500	400	500	400	500
	Height 200 mm	**8602.040**	**8602.050**	**8602.040**	**8602.050**	**8602.040**	**8602.050**	**8602.040**	**8602.050**
	Height 100 mm	**8601.040**	**8601.050**	**8601.040**	**8601.050**	**8601.040**	**8601.050**	**8601.040**	**8601.050**
Cross member, adjustable									
	Height 75 mm	**8601.450**		**8601.450**		**8601.450**		**8601.450**	
Castors									
	Height 125 mm	**4634.500**		**4634.500**		**4634.500**		**4634.500**	

Consoles





Material:
Sheet steel
Enclosure: 1.5 mm
Cover: 2.0 mm
Design handle strip: Aluminium
Corner protectors and lock lid: Plastic, self-extinguishing

Surface finish:
Enclosure and cover: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Design handle strip: Natural-anodised
Corner protectors and lock lid: RAL 7015

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12 (when using a suitable trim panel, see page 163, or mounting on a desk unit).

Supply includes:
Enclosure with lid, hinged at the bottom, may be swapped to the top, includes lid stay, open base for individual cable entry.

Rittal service:

- Other sizes, cut-outs and holes available on request.
- Console for direct mounting on the pedestal using a trim panel.

Detailed drawing,
see page 1190.

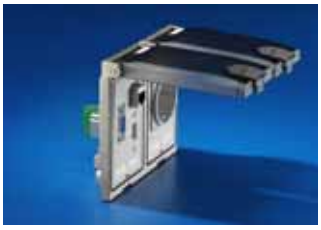
Width (B) mm		Packs of	600	800	1200	1600	600	800	1200	1600	Page
Height (H) mm			650	650	650	650	750	750	750	750	
Depth (T) mm			240	240	240	240	240	240	240	240	
Max. cut-out	**Width** (B1) mm		488	688	1088	1488	488	688	1088	1488	
	Height (H1) mm		313	313	313	313	413	413	413	413	
Model No. TP			**6724.500**	**6725.500**	**6726.500**	**6727.500**	**6720.500**	**6721.500**	**6722.500**	**6723.500**	
Accessories											
Trim panel (when used alone)		1	6730.200	6730.210	6730.220	6730.230	6730.200	6730.210	6730.220	6730.230	163
Rail for interior installation, horizontal	for width	4	5001.050	5001.051	5001.053	5001.055	5001.050	5001.051	5001.053	5001.055	992
Punched section with mounting flange 17 x 73 mm[1)]	for lid	4	8612.140	8612.140	8612.140	8612.140	8612.150	8612.150	8612.150	8612.150	993
	for enclosures	4	8612.150	8612.150	8612.150	8612.150	8612.150	8612.150	8612.150	8612.150	993
Support strip[1)]	for lid	20	4694.000	4694.000	4694.000	4694.000	4695.000	4695.000	4695.000	4695.000	997
	for enclosures	20	4695.000	4695.000	4695.000	4695.000	4695.000	4695.000	4695.000	4695.000	997
Punched rail 18 x 38 mm[1)]	for lid	4	8612.240	8612.240	8612.240	8612.240	8612.250	8612.250	8612.250	8612.250	996
	for enclosures	4	8612.250	8612.250	8612.250	8612.250	8612.250	8612.250	8612.250	8612.250	996
Partial mounting plate	200 mm width	1	6730.310	6730.310	6730.310	6730.310	6730.310	6730.310	6730.310	6730.310	986
	500 mm width	1	6730.330	6730.330	6730.330	6730.330	6730.330	6730.330	6730.330	6730.330	986
	700 mm width	1	–	6730.340	6730.340	6730.340	–	6730.340	6730.340	6730.340	986

Lock systems

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 956.

To order primed consoles please add extension .800 to the Model No. Delivery times available on request.

[1)] Can be vertically mounted in lid and rear enclosure wall.



Interface flaps
as programming interface, for maintenance access and for connecting to network structures.
Model No. see page 1151.

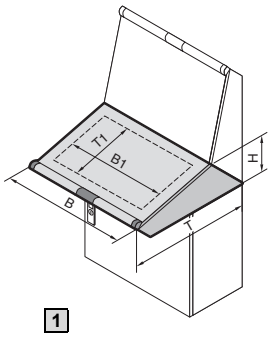


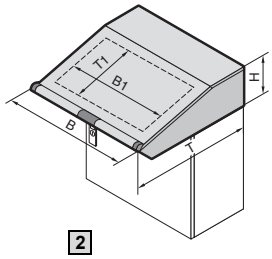
Partial mounting plate TP
200 mm, 500 mm and 700 mm wide mounting plates are available as accessories. Screw-fitting at the side enables several partial mounting plates to be bayed very quickly to form a continuous mounting area.
Model No. see page 986.

Accessories Page 890 **Monitors, keyboards** Page 1133 **Climate control** Page 628

Desk units







Material:
Sheet steel
Enclosure: 1.5 mm
Cover: 2.0 mm
Design handle strip: Aluminium
Corner protectors and lock lid: Plastic, self-extinguishing

Surface finish:
Enclosure and cover: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Design handle strip: Natural-anodised
Corner protectors and lock lid: RAL 7015

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12 in combination with console, trim panel for console/desk unit and pedestal.

Supply includes:
Enclosure with lid, hinged at rear, 2 stays with automatic locking and unlocking, gland plate opening for cable entry in the enclosure base.

Rittal service:

- Other sizes, cut-outs and holes available on request.
- Console desk unit, with rear hinged lid, with mounting cut-out and CP-L support arm system reinforcement available upon request

1 Prepared for console: rear, open at top

2 Rear, with hinged lid

Detailed drawing,
see page 1190.

		Packs of	1 Prepared for console				2 Rear, with hinged lid				Page
Width (B) mm			600	800	1200	1600	600	800	1200	1600	
Height (H) mm			235	235	235	235	235	235	235	235	
Depth (T) mm			750	750	750	750	750	750	750	750	
Max. cut-out console lid	**Width** (B1) mm		488	688	1088	1488	488	688	1088	1488	
	Depth (T1) mm		413	413	413	413	413	413	413	413	
Model No. TP			**6714.500**	**6715.500**	**6716.500**	**6717.500**	**6710.500**	**6711.500**	**6712.500**	**6713.500**	
Accessories											
Trim panel for console/desk unit		1	6730.200	6730.210	6730.220	6730.230	–	–	–	–	163
Gland plate	Size		4	5	4	5	4	5	4	5	from 1048
	Qty.		1	1	2	2	1	1	2	2	
Rail for interior installation	for width	4	5001.050	5001.051	5001.053	5001.055	5001.050	5001.051	5001.053	5001.055	992
Punched section with mounting flange 17 x 73 mm[1)]	in depth	4	8612.150	8612.150	8612.150	8612.150	8612.150	8612.150	8612.150	8612.150	993
Support strip[1)]	in depth	20	4695.000	4695.000	4695.000	4695.000	4695.000	4695.000	4695.000	4695.000	997
Punched rail 18 x 38 mm[1)]		4	8612.250	8612.250	8612.250	8612.250	8612.250	8612.250	8612.250	8612.250	996
Partial mounting plate	200 mm width	1	6730.310	6730.310	6730.310	6730.310	6730.310	6730.310	6730.310	6730.310	986
	500 mm width	1	6730.330	6730.330	6730.330	6730.330	6730.330	6730.330	6730.330	6730.330	986
	700 mm width	1	–	6730.340	6730.340	6730.340	–	6730.340	6730.340	6730.340	986

Lock systems

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 956.

To order primed desk units please add extension .800 to the Model No. Delivery times available on request.

[1)] Can be mounted in the lid and enclosure base.



Metal gland plates
For closing the cable entry opening in the base when using without a pedestal,
Model No. see page 1049.



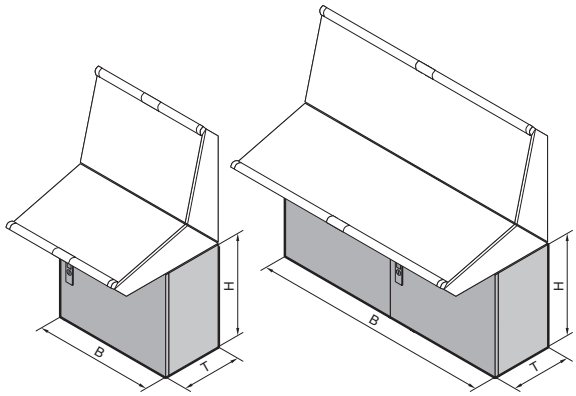
Cable glands
of polyamide or brass,
Model No. see page 1054.

Accessories Page 890 **Monitors, keyboards** Page 1133 **Climate control** Page 628

TopConsole System TP

Pedestals





Material:
Sheet steel
Enclosure: 1.5 mm
Door: 2.0 mm
Mounting plate: 2.5 mm

Surface finish:
Enclosure and door:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12 (when using a suitable trim panel, see page 163, or when mounting on a desk unit and selecting suitable gland plates, see page 911).

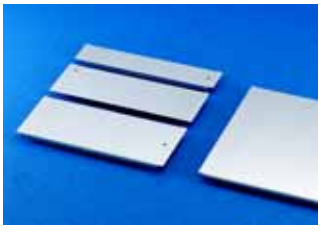
Supply includes:
Enclosure, open at the top, door or double door with locking rod (with 400 mm depth at the front, with 500 mm depth at the front and rear), depth-adjustable mounting plate, open base for individual cable entry options.

Rittal service:
Other sizes, cut-outs and holes available on request

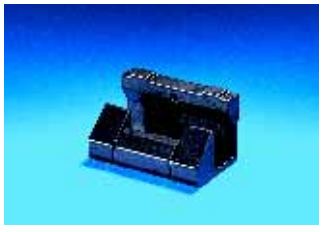
Detailed drawing,
see page 1191.

Width (B) mm		Packs of	600	800	1200	1600	600	800	1200	1600	Page
Height (H) mm			675	675	675	675	675	675	675	675	
Depth (T) mm			400	400	400	400	500	500	500	500	
Model No. TP			**6700.500**	**6701.500**	**6702.500**	**6703.500**	**6704.500**	**6705.500**	**6706.500**	**6707.500**	
Door(s)			1	1	2	2	1/1	1/1	2/2	2/2	
Base/plinth											
Components front and rear	Height 100 mm	1 set	8601.600	8601.800	8601.200	8601.920	8601.600	8601.800	8601.200	8601.920	893
	Height 200 mm	1 set	8602.600	8602.800	8602.200	8602.920	8602.600	8602.800	8602.200	8602.920	893
Trim panels (sides)	Height 100 mm	1 set	8601.040	8601.040	8601.040	8601.040	8601.050	8601.050	8601.050	8601.050	893
	Height 200 mm	1 set	8602.040	8602.040	8602.040	8602.040	8602.050	8602.050	8602.050	8602.050	893
Cross member, adjustable		2	8601.450	8601.450	8601.450	8601.450	8601.450	8601.450	8601.450	8601.450	903
Accessories											
Trim panel for pedestal		1	6730.000	6730.010	6730.020	6730.030	6730.100	6730.110	6730.120	6730.130	163
Rail for interior installation	for height	4	5001.050	5001.050	5001.050	5001.050	5001.050	5001.050	5001.050	5001.050	992
Punched sections with mounting flanges, 17 x 73 mm	in depth	4	8612.140	8612.140	8612.140	8612.140	8612.150	8612.150	8612.150	8612.150	993
Punched rail 18 x 38 mm	in depth	4	8612.240	8612.240	8612.240	8612.240	8612.250	8612.250	8612.250	8612.250	996
Mounting bars	in depth	20	4694.000	4694.000	4694.000	4694.000	4695.000	4695.000	4695.000	4695.000	997
Punched sections with mounting flanges, 17 x 73 mm	for door	4	8612.050	–	8612.050	–	8612.050	–	8612.050	–	993
Mounting bars	for door	20	4596.000	4598.000	4596.000	4598.000	4596.000	4598.000	4596.000	4598.000	997
Cable clamp rail		1	5001.080	5001.081	5001.083	5001.084	5001.080	5001.081	5001.083	5001.084	1062
Wiring plan pocket		1	4116.500	4118.500	4116.500	4118.500	4116.500	4118.500	4116.500	4118.500	967
Lock systems											
Standard double-bit lock insert, may be exchanged for 27 mm lock inserts, type A, see page 956 and for the Ergoform-S lock system, see page 953.											

To order primed pedestals please add extension .800 to the Model No. Delivery times available on request.



Gland plates
- See page 911 for gland plates with different depths.
- Sections for cable entry, see page 1046.
- Cable entry plates, see page 1045.



Hinges 180°
For retrospective conversion of standard doors with 130° hinges, including assembly parts.
Model No. see page 963.

Accessories Page 890 **Monitors, keyboards** Page 1133 **Climate control** Page 628



Trim panel

for pedestal
For covering the complete top opening when using the pedestal on its own.

Material:
Sheet steel

Colour:
Textured RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes:
Assembly parts.

For pedestal		Model No. TP
Width mm	Depth mm	
600	400	**6730.000**
800		**6730.010**
1200		**6730.020**
1600		**6730.030**
600	500	**6730.100**
800		**6730.110**
1200		**6730.120**
1600		**6730.130**



1



2

Trim panel

for console/desk unit
For covering the entire top opening when used alone.

Material:
Sheet steel

Colour:
Textured RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

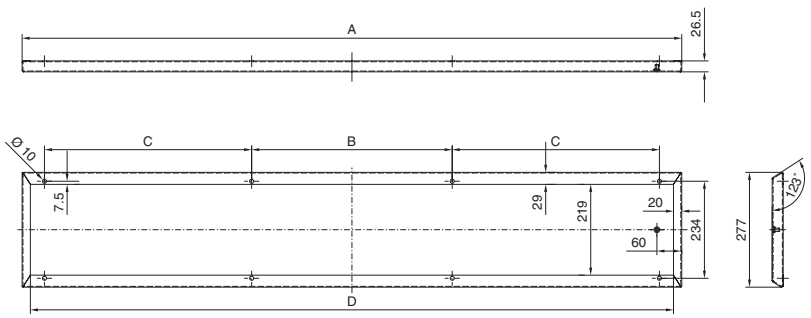
Supply includes:
Assembly parts.

1 Console used as a wall-mounted enclosure

2 Trim panel on desk section

For console width mm	Model No. TP
600	**6730.200**
800	**6730.210**
1200	**6730.220**
1600	**6730.230**

Note:
Can be used with desk unit prepared for an upright console as well.



Model No. TP	Width mm	A	B	C	D
6730.200	600	592	484	–	552
6730.210	800	792	684	–	752
6730.220	1200	1192	384	350	1152
6730.230	1600	1592	484	500	1552

Accessories





Attachment rail

For accessories such as scanner holder, shelf for printer etc.
Mounting on the existing holes in the side groove between the pedestal and console. The enclosure protection category remains unaffected by this installation. No additional reinforcements are required for the pedestal.
Holes can be drilled in the attachment rail prior to installation (e. g. for fitting screws, self-tapping screws or rivets).

To fit pedestal depth mm	Model No. TP
400	**6730.500**
500	**6730.510**

Material:
Rail: Sheet steel, zinc-plated, passivated
Cover caps: Plastic, black

Supply includes:
Assembly parts.



Baying rail

For baying the consoles at the installation site. Fitted in the side groove between the pedestal and the desk unit.

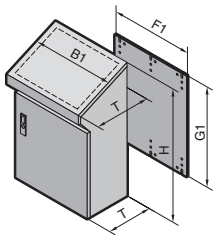
Material:
Rail: Sheet steel, zinc-plated, passivated
Cover caps: Plastic, black

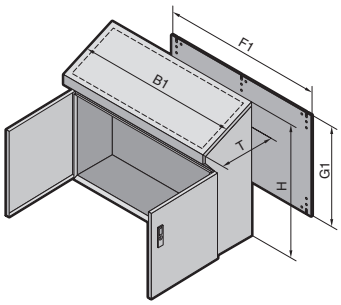
Supply includes:
Assembly parts and baying seals.

To fit pedestal depth mm	Model No. TP
400	**6730.520**
500	**6730.530**

Sheet steel







Material:
Sheet steel
Enclosure: 1.5 mm
Door and console lid: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure, door and console lid: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate and gland plates: Zinc-plated

Colour:
Textured RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes:
Enclosure, closed at the rear and sides,
door or double door at the front,
console lid with stay,
gland plate, two-piece,
mounting plate.

Detailed drawing,
see page 1192.

Approvals,
see page 34.

Width (B1) mm		Packs of	600	800	1000	1200	Page
Height (H) mm			960	960	960	960	
Depth (T) mm			400/480	400/480	400/480	400/480	
Mounting plate width (F1) mm			530	730	930	1130	
Mounting plate height (G1) mm			780	780	780	780	
Model No. AP		1	**2666.500**	**2668.500**	**2670.500**	**2672.500**	
Door(s)			1	1	2	2	
Weight (kg)			52.0	65.2	79.5	90.3	
Accessories							
Base/plinth	Height 100 mm	1	2911.200	2901.200	2891.200	2921.200	901
	Height 200 mm	1	2912.200	2902.200	2892.200	2922.200	901
Cross member, adjustable		2	2697.450	2697.450	2697.450	2697.450	903
Aluminium strips		3	2676.000	2678.000	2682.000[1)]	2682.000	1124
Swing frames		1	–	2027.200	2027.200	2027.200	1088
Lock systems							

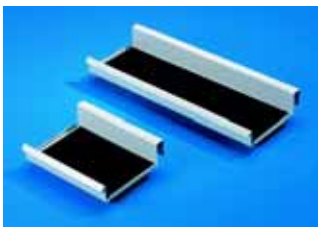
Console lid: Standard double-bit lock insert may be exchanged for 47 mm lock inserts, type D, see page 956.
Door: Standard double-bit lock insert, may be exchanged for 27 mm lock inserts, type A, see page 956, and for Ergoform-S lock system, see page 953.

[1)] To be shortened by 200 mm.

To order consoles in textured RAL 7032 please add extension .600 to the Model No., and for primed versions use extension .800.
Delivery times available on request.



Adjustable cross member
Model No. see page 903.



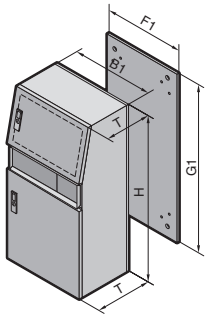
Utility shelf, screw connection
for measuring instruments, mouse or scanner.
Model No. see page 1123.

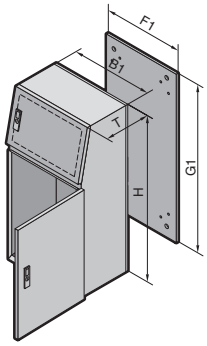
Accessories Page 890 **Monitors, keyboards** Page 1133 **Climate control** Page 628 **AP one-piece consoles, stainless steel** Page 320

Universal consoles AP

Sheet steel







Material:
Sheet steel
Enclosure, gland plates: 1.5 mm
Doors: 2.0 mm
Mounting plate: 3.0 mm
Design strips (AP 2695.500):
Aluminium section

Surface finish:
Enclosure:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate and gland plates: Zinc-plated

Colour:
Enclosure: Textured RAL 7035
Design strips (AP 2695.500):
RAL 5018

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.
With a short bottom door (AP 2694.500), the drawer or desk section (see below) should be fitted in order to preserve the protection category.

Supply includes:
Enclosure with doors,
mounting plate,
gland plates,
design strips (AP 2695.500).

Note:
Top door with studs left and right for installing vertical perforated mounting strips SZ 2310.038 and horizontal support strips SZ 2325.000 to be mounted on top (see page 964/965).
AP universal consoles are equivalent to free-standing enclosure ES 5000 in terms of interior installation – in other words, the accessory components will fit.

Detailed drawing,
see page 1192.

Approvals,
see page 34.

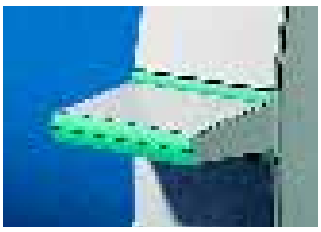
		Packs of	with short front door			with tall front door	Page
Width (B1) mm			600			600	
Height (H) mm			1300			1300	
Depth (T) mm			500/417.5			500/417.5	
Mounting plate width (F1) mm			499			499	
Mounting plate height (G1) mm			1196			1196	
Model No. AP		1	**2694.500**			**2695.500**	
Weight (kg)			77.0			80.0	
Also required							
Desk section			2696.500	2696.500	–	–	
Drawer for keyboard			–	–	4757.500[1)]	–	
Accessories							
Base/plinth	Height 100 mm	1	2807.200			2807.200	901
	Height 200 mm	1	2808.200			2808.200	901
Cross member, adjustable		2	8601.450			8601.450	903
Cable clamp rail		1	4191.000			4191.000	1061
Lock systems							
Standard double-bit lock insert, may be exchanged for 27 mm lock inserts, type A, see page 956 and for the Ergoform-S lock system, see page 953.							

[1)] Only suitable for installation without a mounting plate.
To order in textured RAL 7032, please add extension .600 to the Model No. Delivery times available on request.



Keyboard drawer for universal console AP
For a max. keyboard width of 500 mm. With mousepad in the front section.

Packs of	Model No. AP
1	**4757.500**



Desk section for AP universal console
Solid sides and front, removable plates for top and bottom.

Packs of	Model No. AP
1	**2696.500**

Accessories Page 890 **Monitors, keyboards** Page 1133 **Climate control** Page 628

Features



Housing all your computer equipment, from the monitor, computer system, printer and keyboard to the mouse, becomes child's play with Rittal's PC enclosure systems. The result: perfect protection from humidity and dirt, temperature fluctuations and unauthorised access. What is more, these systems will exceed your expectations with regard to ergonomics, design and accessory diversity.



IW enclosure for tower PC



Enclosure ready for connection to accommodate a standard tower PC in the door.



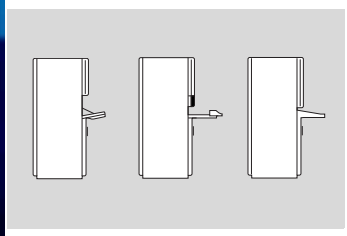
The fan-and-filter unit integrated as standard ensures optimum climate control at protection category IP 54.



The cast feet with twin castors ensure optimum stability and mobility.



PC enclosure systems based on TS 8, bayable







Operated via:
- Folding keyboard
- Keyboard drawer
- Desk section

Monitored with:
- Mounting compartment, large, or
- Glazed door, large, or
- Combination of small glazed door and small mounting compartment



PC enclosure systems based on ES





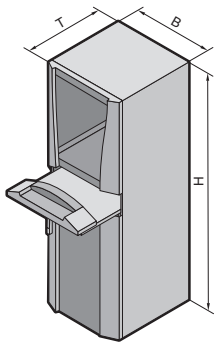
Operated via:
- Folding keyboard
- Keyboard drawer
- Desk section

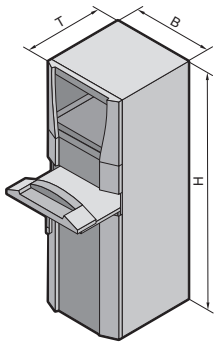
Monitored with:
- Mounting compartment, large, or
- Glazed door, large, or
- Combination of small glazed door and small mounting compartment

PC enclosure systems

Based on TS 8, with keyboard drawer







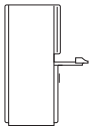
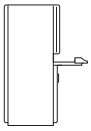
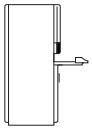
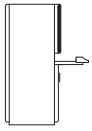
Material:
see page 1193.

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes,
see page 1193.

Detailed drawing,
see page 1193.

Approvals,
see page 35.

Design		Packs of	 with keyboard drawer, glazed door, top	 with keyboard drawer, glazed door, top	 with keyboard drawer, glazed door, top, mounting compartment, small	 with keyboard drawer, mounting compartment, large	Page
Width (B) mm			600	600	600	600	
Height (H) mm			1600	1600	1600	1600	
Depth (T) mm			636	836	636	636	
Model No. PC		1	**8366.000**	**8368.000**	**8366.300**	**8366.400**	
Max. keyboard dimensions mm	Width		480	480	480	480	
	Height		70	70	70	70	
	Depth		260	260	260	260	
Weight (kg)			118	133	118	117	
Accessories							
Base/plinth, static		1	8800.920	on request	8800.920	8800.920	898
Base/plinth components front and rear	Height 100 mm	1	8601.600	8601.600	8601.600	8601.600	893
	Height 200 mm	1	8602.600	8602.600	8602.600	8602.600	893
Base/plinth trim, front	Height 200 mm	1	8360.920	8360.920	8360.920	8360.920	897
Base/plinth trim, side	Height 100 mm	1	8601.060	8601.080	8601.060	8601.060	893
	Height 200 mm	1	8602.060	8602.080	8602.060	8602.060	893
Cross member, adjustable	Height 70 mm	2	8601.680	8601.680	8601.680	8601.680	903
Partial mounting plate	Height 775 mm	1	8614.675	8614.675	8614.675	8614.675	984
Lock systems							

Standard lock insert, may be exchanged for rear door: Lock inserts, type F, see page 956, comfort handle, see page 947.
Designer door, front: Lock inserts, type F, see page 956, comfort handle, see page 947 – 948 (via handle adaptor PC 8611.300, see page 934).
Keyboard drawer/fold-out tray: Lock inserts, 27 mm, version A, see page 956.

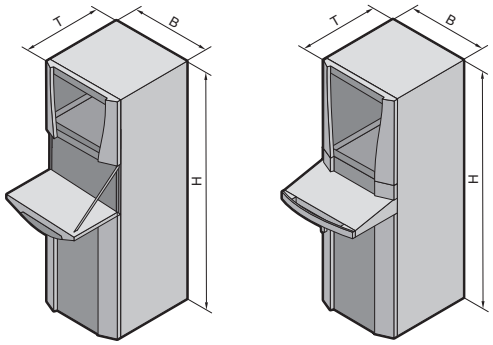


Handle set.
Model No. see page 1116.

Accessories Page 890 **Component shelves** Page 1013 **Monitors, keyboards** Page 1133 **Climate control** Page 628
PC enclosure system, stainless steel Page 321

Based on TS 8, with folding keyboard or desk section





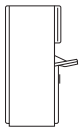
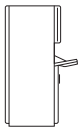
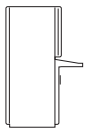
Material:
see page 1194.

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes,
see page 1194.

Detailed drawing,
see page 1194.

Approvals,
see page 35.

									
Design			Packs of	with folding keyboard, glazed door, top		with folding keyboard, glazed door, top		with desk section, glazed door, top	Page
Width (B) mm				600		600		600	
Height (H) mm				1600		1600		1600	
Depth (T) mm				636		836		636	
Model No. PC			1	**8366.100**		**8368.100**		**8366.200**	
Max. keyboard dimensions mm		Width		475		475		540	
		Height		60	50	60	50	40	
		Depth		200	250	200	250	175	
Weight (kg)				118		124		108	
Accessories									
Base/plinth, static			1	8800.920		on request		8800.920	898
Base/plinth components front and rear	Height 100 mm		1	8601.600		8601.600		8601.600	893
	Height 200 mm		1	8602.600		8602.600		8602.600	893
Base/plinth trim, front	Height 200 mm		1	8360.920		8360.920		8360.920	897
Base/plinth trim, side	Height 100 mm		1	8601.060		8601.080		8601.060	893
	Height 200 mm		1	8602.060		8602.080		8602.060	893
Cross member, adjustable	Height 70 mm		2	8601.680		8601.680		8601.680	903
Partial mounting plate	Height 775 mm		1	8614.675		8614.675		8614.675	984
Lock systems									
Standard lock insert, may be exchanged for rear door: Lock inserts, type F, see page 956, comfort handle, see page 947. Designer door, front: Lock inserts, type F, see page 956, comfort handle, see page 947 – 948 (via handle adaptor PC 8611.300, see page 934). Keyboard drawer/fold-out tray: Lock inserts, 27 mm, version A, see page 956.									



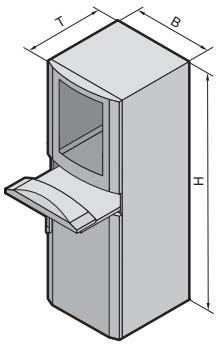
Base/plinth trim panel PC
200 mm high.
Model No. see page 897.

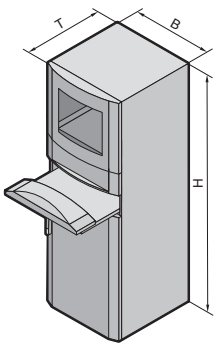
Accessories Page 890 **Component shelves** Page 1013 **Monitors, keyboards** Page 1133 **Climate control** Page 628
PC enclosure system, stainless steel Page 321

PC enclosure systems

Based on ES, with keyboard drawer







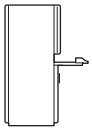
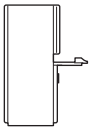
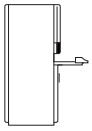
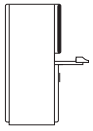
Material:
see page 1195.

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes,
see page 1195.

Detailed drawing,
see page 1195.

Approvals,
see page 35.

								
Design		Packs of	with keyboard drawer, glazed door, top	with keyboard drawer, glazed door, top	with keyboard drawer, glazed door, top, mounting compartment, small	with keyboard drawer, mounting compartment, large	Page
Width (B) mm			600	600	600	600	
Height (H) mm			1600	1600	1600	1600	
Depth (T) mm			650	850	650	650	
Model No. PC		1	**4603.703**	**4609.703**	**4603.913**	**4603.603**	
Max. keyboard dimensions mm	Width		480	480	480	480	
	Height		55[1]/40[2]	55[1]/40[2]	55[1]/40[2]	55[1]/40[2]	
	Depth		250	250	250	250	
Weight (kg)			106	121	107	106	
Accessories							
Base/plinth, complete	Height 100 mm	1	2813.200	2846.200	2813.200	2813.200	901
	Height 200 mm	1	2814.200	2847.200	2814.200	2814.200	901
Cross member, adjustable		2	8601.680	8601.680	8601.680	8601.680	903
Twin castors		1 set	4634.500	4634.500	4634.500	4634.500	907
Mousepad, passive		1	4614.000	4614.000	4614.000	4614.000	1146
Lock systems							
Standard lock insert, may be exchanged for rear door/designer door, front: Lock inserts, 27 mm, version A, see page 956. Ergoform-S lock system, see page 953. Keyboard drawer/fold-out tray: Lock inserts, 27 mm, version A, see page 956.							

[1] Without mousepad
[2] With mousepad

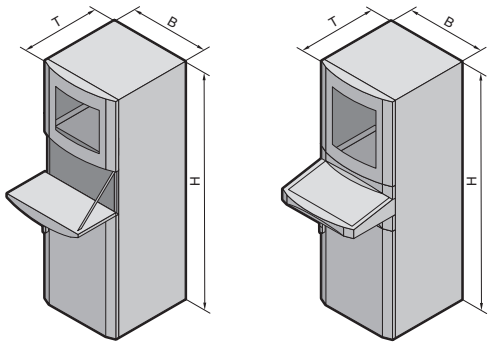


Cross member, adjustable.
Model No. see page 903.

Accessories Page 890 **Component shelves** Page 1013 **Monitors, keyboards** Page 1133 **Climate control** Page 628
PC enclosure system, stainless steel Page 323

Based on ES, with folding keyboard or desk section





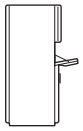
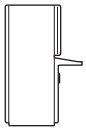
Material:
see page 1196.

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes,
see page 1196.

Detailed drawing,
see page 1196.

Approvals,
see page 35.

						
Design			Packs of	with folding keyboard, glazed door, top	with desk section, glazed door, top	Page
Width (B) mm				600	600	
Height (H) mm				1600	1600	
Depth (T) mm				650	650	
Model No. PC			1	**4603.920**	**4603.704**	
Max. keyboard dimensions mm		Width		480	462	
		Height		69[1]/62[2]	40	
		Depth		230	208	
Weight (kg)				101	102	
Accessories						
Base/plinth, complete		Height 100 mm	1	2813.200	2813.200	901
		Height 200 mm	1	2814.200	2814.200	901
Cross member, adjustable			2	8601.680	8601.680	903
Twin castors			1 set	4634.500	4634.500	907
Mousepad, passive			1	4613.000	–	1146
Lock systems						
Standard lock insert, may be exchanged for rear door/designer door, front: Lock inserts, 27 mm, version A, see page 956. Ergoform-S lock system, see page 953. Keyboard drawer/fold-out tray: Lock inserts, 27 mm, version A, see page 956.						

[1] Without mousepad
[2] With mousepad



Mobile workstation.
Model No. see page 1147.

Accessories Page 890 **Component shelves** Page 1013 **Monitors, keyboards** Page 1133 **Climate control** Page 628
PC enclosure system, stainless steel Page 323

Industrial Workstations

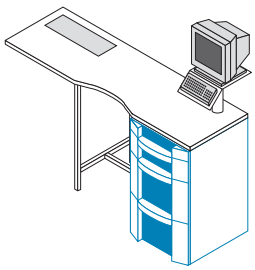
Features



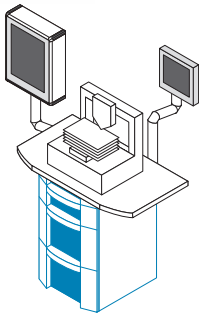
For Rittal, Industrial Workstations means the ability to create professional workstations for virtually any application from a comprehensive modular system.

In combination with operating housings, support arm systems, PC enclosures and the diverse range of system accessories, there are virtually no limits to your creativity.

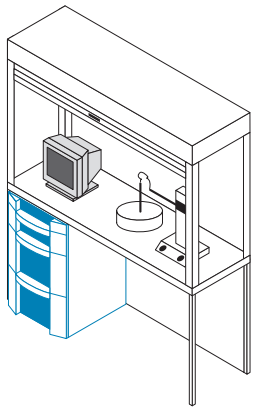
Here are few examples:



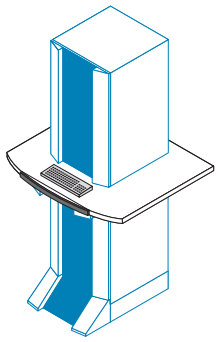
Workbench/assembly bench consisting of:
- IW enclosure
- IW pedestal
- Individual worktop



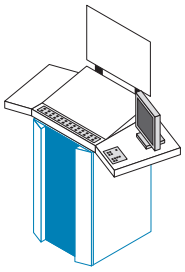
Laboratory equipment and **small machinery** consisting of:
- IW enclosure
- Worktop
- Support arm system
- Operating housings



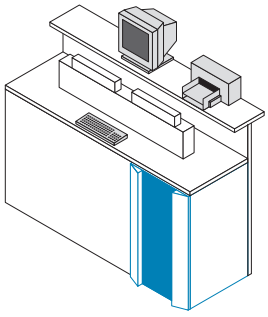
Protective cabinets:
With lockable roller blind on request.



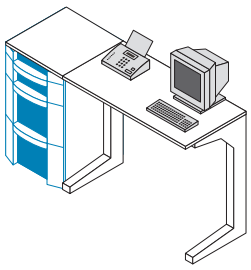
Measurement/control systems:
"More space" with the enclosure on top of the worktop.



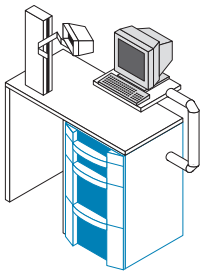
Control desks e. g. for printing presses consisting of:
- IW enclosure
- Individual worktop and assemblies



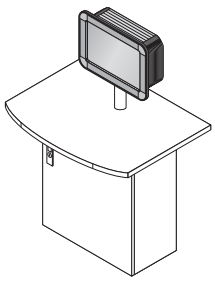
Workbench consisting of:
- IW enclosure for tools etc.
- Individual worktop with shelf for monitor, printer etc.



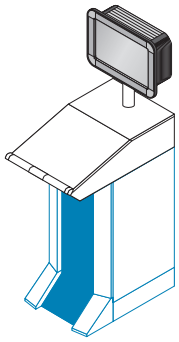
Calibration/measuring station consisting of:
- IW enclosure
- IW pedestal
- Worktop



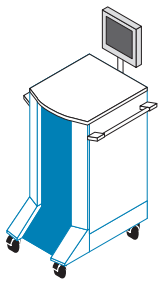
Programming station:
Ergonomically adaptable via the support arm system.



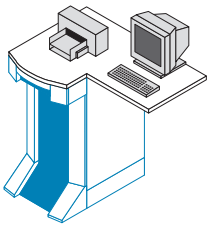
Production workstation consisting of:
- TP pedestal
- IW worktop
- Support arm system
- Operating housing



Workstation consisting of:
- Base/plinth
- IW enclosure
- TP desk unit
- Support arm system
- Operating housing



Mobile workstation/workshop trolley consisting of:
- Base/plinth with castors
- IW enclosure
- Worktop
- Handle system
- Operating housing



Scanner/PC station consisting of:
- IW enclosure
- Individual worktop



IW Quality Point/IW Logistic Point



The integration of a TFT monitor creates space on the work surface.



The rotatable printer shelf and the paper tray are a perfect duo for the secure accommodation of printers in an industrial environment.



Optimum glare-free illumination of the workplace with the integral workstation light.



IW enclosure



In two standard heights, optionally with designer door or glazed door. Offers plenty of storage space.



With drawer front for an orderly filing system.
A pull-out lock which prevents the simultaneous opening of several drawers is integrated to increase operational safety.



If no enclosure is needed to accommodate documents or equipment, the IW pedestal may be used instead. By combining with a worktop, a large work surface is created.



IW monitor housing



In two sizes for monitors up to 17″ and 21″ screen diagonal respectively. In conjunction with a turntable, the monitor can be viewed from all angles.



TFT monitors are increasingly being used in industrial environments. Thanks to the large number of standardised system components, TFTs may be easily integrated into the workstation.



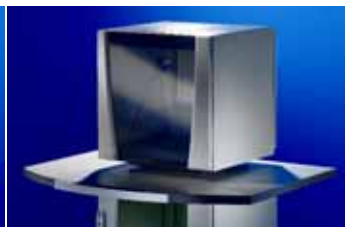
Mounting of a TFT monitor without reducing the work space. With the aid of the enclosure attachment, the angle of the display is ideally adapted to suit the user.



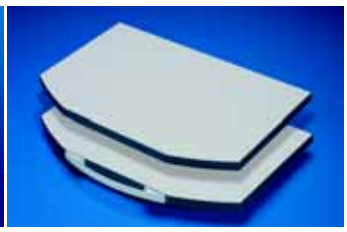
IW worktops



14 different worktops in 7 different sizes accommodate virtually all requirements.



Monitor housings may be mounted either rigidly or swivel-mounted on worktops prepared for a turntable.



Worktops with or without a handle – both variants are available off the shelf.

Fast selection

Choose the appropriate IW components according to your requirements.

► Continue with system assembly using the item numbers shown beneath the arrow.

⊢ System assembly can be completed here.



1 Pre-configured complete solutions

1.1 Quality Point L
Width 1000 mm
Height 2000 mm
IW 6920.100
► 11.1

Quality Point XL
Width 2000 mm
Height 2000 mm
IW 6920.200
see page 177

Logistic Point
Width 1000 mm
Height 2000 mm
IW 6920.000
see page 178



1.2 Enclosure with worktop
Height 1000 mm
IW 6901.100[1)]
see page 181
► 11.1 11.2 11.6 ⊢



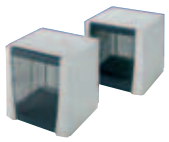
[1)] The fitted version IW 6901.100 (with worktop) is also available with other worktops on request.

Assembly example:

- 2.2 Optipanel
- 3.3 Support arm system CP-L
- 6.1 Worktop, prepared for enclosure attachment
- 9.1 Enclosure with drawer section
- 11.1 Base/plinth, stationary
- 11.6 Twin castors

2 Monitor housing and add-ons

2.1 Monitor housing 17″
IW 6902.510
Monitor housing 21″
IW 6902.500
see page 185
► 3.1 3.2



2.2 Optipanel
For TFT monitors or other display and input units
see page 206
For 15″ TFT
CP 6380.010
For 17″ and 19″ TFT
CP 6380.030
see page 205
TFT monitor 15″/17″/19″
see page 1133
► 3.3 3.4 3.5



2.3 Comfort Panel
For TFT monitors or other display and input units
see page 196
For 15″ TFT
CP 6371.120/CP 6371.130/ CP 6371.140
For 17″ TFT
CP 6371.150/CP 6371.160/ CP 6371.170
see page 194
TFT monitor 15″/17″/19″
see page 1133
► 3.3 3.4 3.5



2.4 Quality Point attachment L
Width 1000 mm
Height 960 mm
IW 6920.110
Quality Point attachment XL
Width 2000 mm
Height 960 mm
IW 6920.210
see page 185
► 4.3 4.4 5 6 4.5 4.6



3 Mounting comp.

for monitor and operating housings

3.1 Feet for monitor housing

IW 6902.610

see page 186



3.2 Spacer plate for monitor housing

IW 6902.630

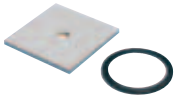
rotatable in conjunction with:

Turntable

for spacer and support plate

IW 6902.620

see page 187



3.3 Support arm system CP-L

for rotatable, swivel and height-adjustable positioning of the Optipanel and Comfort Panel

see page 250



3.4 Enclosure attachment tilting, top mounting[1)]

IW 6902.670

see page 243



3.5 Enclosure attachment tilting, base mounting

IW 6902.640

see page 257



[1)] May also be used rotated through 180°.

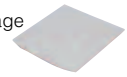
4 Worktops

solid

4.1 Cover solid
Width 600 mm
Depth 640 mm

IW 6902.400

see page 182

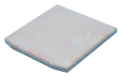


8.1 8.2 8.3 8.4 9.3

4.2 Without handle
Width 610 mm
Depth 645 mm

IW 6902.300

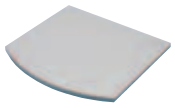
see page 183



4.3 Without handle
Width 1000 mm
Depth 895 mm

IW 6902.100

see page 183

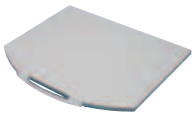


8.1 8.2 8.3 8.4 9 10.1

4.4 With handle
Width 950 mm
Depth 600 mm

IW 6902.000

see page 183

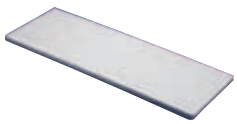


8.1 8.2 8.3 8.4 9.3 10.1

4.5 Without handle
Width 2000 mm
Depth 685 mm

IW 6902.200

see page 183



8.1 8.2 8.3 8.4 10.1

4.6 Without handle
Width 2000 mm
Depth 685/900 mm

IW 6902.210

Width 2000 mm
Depth 900/685 mm

IW 6902.220

see page 183



8.1 8.2 8.3 8.4 9 10.1

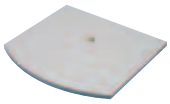
5 Worktops

for turntable
see 3.2/3.3

5.1 Without handle
Width 1000 mm
Depth 895 mm

IW 6902.110

see page 183



8.1 8.2 8.3 8.4 9 10.1

6 Worktops

prepared for enclosure attachment CP-L, Ø 130 mm
see 3.4/3.5

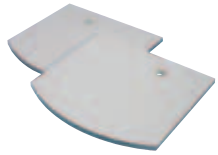
6.1 Without handle, prepared on left
Width 1000 mm
Depth 895 mm

IW 6902.120[1)]

Without handle, prepared on right
Width 1000 mm
Depth 895 mm

IW 6902.130[1)]

see page 184



8.1 8.2 8.3 8.4 9 10.1

[1)] Hole may be used in conjunction with the adaptor plate for connector grommet IW 6902.660 (see page 1057) for cable entry!

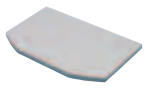
7 Worktops

for pedestal/enclosure
for tower PC
see 3.6

7.1 Without handle
Width 950 mm
Depth 600 mm

IW 6902.310

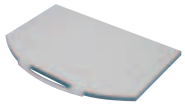
see page 184



7.2 With handle
Width 950 mm
Depth 658 mm

IW 6902.320

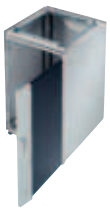
see page 184

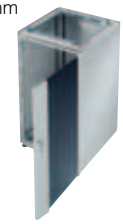


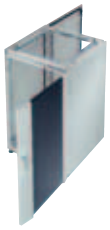
8.5 10.2

Fast selection

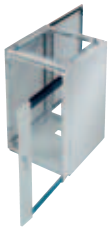
8 Cases
with doors

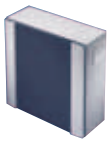
8.1 Designer door, rear panel screw-fastened from the inside
Height 900 mm
IW 6900.000
see page 180

11.1 11.2 11.6

8.2 Designer door, rear panel screw-fastened from the outside
Height 1000 mm
IW 6901.000
see page 180


8.3 Designer door, solid, rear door
Height 900 mm
IW 6900.100
see page 180


8.4 Designer door, prepared as printer cabinet, rear door
Height 900 mm
IW 6900.110
see page 180


8.5 Glazed door, rear door
Height 900 mm
IW 6900.200
see page 180


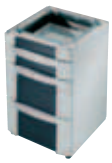
8.6 Enclosure for tower PC
Width 760 mm
Height 760 mm
IW 6900.300
see page 179

10.3

9 Cases
with drawers

9.1 Drawer section, designer door, rear door
Height 900 mm
IW 6900.400
see page 181

11.1 11.2 11.6

9.2 Drawer section for keyboard and mouse, designer door, rear door
Height 900 mm
IW 6900.410
see page 181


9.3 Drawer front, rear panel screw-fastened from the inside
Height 900 mm
IW 6900.600
see page 181


Note:
Component shelf, see from page 1015, drawer tray, see page 1016.

10 Pedestals

10.1 Worktop base
Height 702 mm
IW 6900.500
Height 902 mm
IW 6900.510
Prepared for attachment of the:
Cable duct
IW 6903.700
see page 186

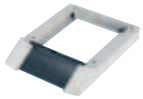
11.6

10.2 Pedestal
IW 6141.200
see page 290


10.3 Cast feet for tower PC
IW 6902.920
see page 903

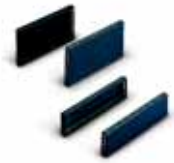
11.6

11 Base/plinth components

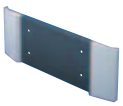
11.1 Base/plinth, stationary
PC 8800.920
see page 898

11.4

11.2 Base/plinth components, front and rear for TS, solid
Height 100 mm
TS 8601.600 (RAL 7022)
Height 200 mm
TS 8602.600 (RAL 7022)
see page 893

11.3 11.4 11.6 11.5

11.3 Base/plinth trim panels, side for TS
Height 100 mm
TS 8601.060 (RAL 7022)
Height 200 mm
TS 8602.060 (RAL 7022)
see page 893


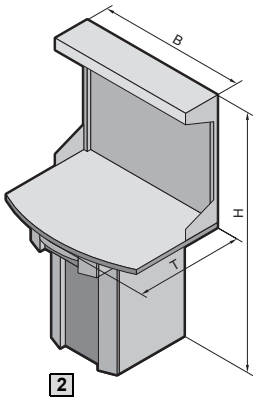
11.4 Base/plinth trim panels with brush strip
Height 100 mm
TS 8601.610 (RAL 7022)
see page 897

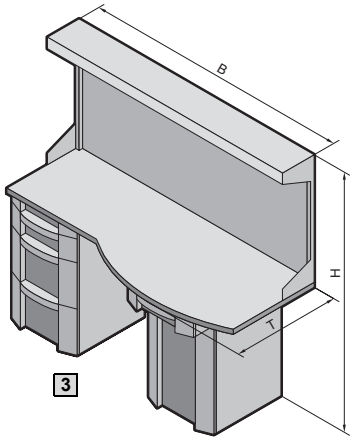

11.5 Base/plinth trim
Height 200 mm
PC 8360.920
see page 897


11.6 Twin castors
PC 4634.500
see page 907


Quality Point L and XL







The complete system for use as a testing station in industrial environments (e. g. directly at the machine) where it is necessary to perform testing and process the data electronically. An individual PC system is integrated to perfection.

Benefits:
- Plenty of space to accommodate test equipment
- Easy integration of PCs, monitors, printers etc.
- Integral lighting
- Theft protection

Colour:
RAL 7015/7035/9006

Supply includes Quality Point L:
Enclosure with keyboard drawer section IW 6900.410, see page 181, worktop W/H/D: 1000 x 38 x 895 mm, Quality Point attachment with side system punchings on a 25 mm pitch pattern for the attachment of system accessories (such as punched sections with mounting flanges), workstation light IW, 2 x 36 W, 230 V, 50 Hz.

Supply includes Quality Point XL:
Enclosure with drawer front (left), IW 6900.600, see page 181, enclosure with keyboard drawer section (right), IW 6900.410, see page 181, worktop W/H/D: 2000 x 38 x 895 mm, Quality Point attachment with side system punchings on a 25 mm pitch pattern for the attachment of system accessories (such as punched sections with mounting flanges), workstation light IW (two), 2 x 36 W, 230 V, 50 Hz.

1 Assembly example
2 Quality Point L
3 Quality Point XL

Material:
Enclosure, see page 181, Quality Point attachment, see page 185, worktop, see page 183.

Protection category:
IP 54 to EN 60 529/09.2000, complies with NEMA 12.



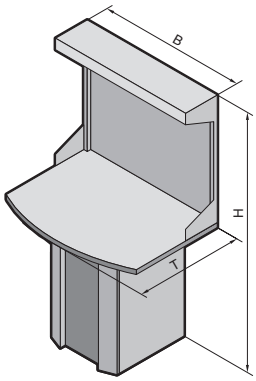


	Quality Point L	Quality Point XL	Page
Width (B) mm	1000	2000	
Height (H) mm	2000	2000	
Depth (T) mm	895	895	
Model No. IW	**6920.100**	**6920.200**	
Weight (kg)	139	276	
Accessories			
Vertical section	–	6903.010	188
Punched sections with mounting flanges, 17 x 73 mm	8612.090	–	1023
Bracket, locatable for shelves	6902.690	6902.690	1001
Paper removal flap	6903.200	6903.200	1148
Paper tray	6903.000	6903.000	1148
Cable duct	–	6903.700	186
Mounting plate	8614.675	8614.675	984
Component shelf, static installation	8800.900	8800.900	1015
Component shelf, pull-out	6902.960	6902.960	1016
Drawer tray	6902.700	6902.700	1016
Lock systems			
Standard double-bit lock insert, may be exchanged for type F lock inserts, see page 956, type B lock cylinder inserts, see page 957, or comfort handle, see page 947 – 948, for front designer door only in conjunction with handle adaptor PC 8611.300, see page 934. Drawer with lock no. 3524 E. Other versions available on request.			

Accessories Page 890 **Comfort Panel** Page 192 **Optipanel** Page 204 **TFT monitor** Page 1133

Logistic Point





1 Assembly example

The complete system for the input and output of data in the field of company logistics.

Benefits:
- Easy integration of PC, monitor, printer etc.
- Integral lighting
- Theft protection
- Protects against dust and humidity.

Colour:
RAL 7015/7035/9006

Supply includes:
Printer cabinet IW 6900.110, see page 180,
built-in module, paper removal flap IW 6903.200, see page 1148,
component shelf, pull-out, IW 6902.690, see page 1016,
worktop W/H/D: 1000 x 38 x 895 mm prepared for enclosure attachment CP-L Ø 130 mm, IW 6902.130, see page 184,
Quality Point attachment L with side system punchings on a 25 mm pitch pattern for the attachment of system accessories (such as punched sections with mounting flanges), see page 185,
Optipanel for desk TFT up to 20.1″ CP 6380.050, see page 205,
workstation light IW, 2 x 36 W, 230 V, 50 Hz, see page 189.

Material:
Enclosure, see page 180,
Quality Point attachment L, see page 185,
worktop, see page 183.

Protection category:
IP 40 as per EN 60 529/09.2000.

Also required:
For power supply to the workstation light:
Connection cable for infeed, see page 1030.

Accessories:
Optipanel for desk TFT, see page 205.

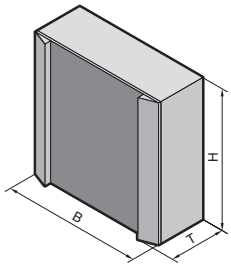
Note:
Supplied unassembled.
All components may also be ordered individually.

	Logistic Point	Page
Width (B) mm	1000	
Height (H) mm	2000	
Depth (T) mm	895	
Model No. IW	**6920.000**	
Weight (kg)	185.5	
Accessories		
Bracket, locatable for shelves	6902.690	1001
Desktop keyboard IP 65	6446.000	1138
Socket strip	6902.040	1043
Paper removal flap	6903.200	1148
Mounting plate	8614.675	984
Component shelf, static installation	8800.900	1015
Drawer tray	6902.700	1016
Horizontal punched section with mounting flange for Quality Point attachment	8612.090	1023
Lock systems		
Standard double-bit lock insert, may be exchanged for type F lock inserts, see page 956, type B lock cylinder inserts, see page 957, or comfort handle, see page 947 – 948, for front designer door only in conjunction with handle adaptor PC 8611.300, see page 934.		

Accessories Page 890 **Comfort Panel** Page 192 **Optipanel** Page 204 **TFT monitor** Page 1133

Enclosure for tower PC





1 Assembly example

Compact enclosure, ready to connect. Standard commercially available tower PCs, up to W/H/D: 250 x 530 x 600 mm (max. 20 kg) may be attached securely to the base screw fastened to the door using the retaining strap supplied loose. The rear interfaces of the PC are readily accessible with the door open. Because the socket strip and fan-and-filter unit are already pre-installed, the enclosure is ready for immediate use.

Roof prepared for mounting
- worktop IW 6902.310/IW 6902.320
- beneath surfaces

Base prepared for mounting
- cast feet IW 6902.920
- on surfaces

Material:
Enclosure:
Sheet steel, powder-coated in textured RAL 7035
Door:
Sheet steel, spray-finished in RAL 7015 with fitted design strips of aluminium in RAL 7035

Protection category:
IP 54 to EN 60 529/09.2000, complies with NEMA 12 (in conjunction with connector gland SZ 2400.300/.500 supplied loose)

Supply includes:
Enclosure sealed all round, r/h door hinge, with screw-fastened base on the inside of the tubular door frame to accommodate a tower PC, locked at the side with a fitted cam lock.

Rear panel with two cut-outs for use of the connector gland SZ 2400.300 and .500, supplied loose,
connector for power supply, retaining strap to secure the tower PC to the base,
left-hand side panel with fitted outlet filter SK 3322.200.

Side panel, right, fitted with:
- Fan-and-filter unit SK 3322.107, technical description see page 690, with door operated switch PS 4315.500
- Supply socket for 230 V power supply
- Socket strip with 3 sockets and overvoltage protection

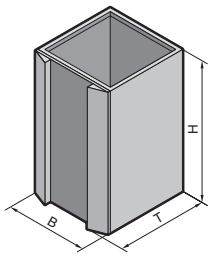


	Enclosure for tower PC	Page
Width (B) mm	760	
Height (H) mm	760	
Depth (T) mm	300	
Model No. IW	**6900.300**	
Weight (kg)	55	
Accessories		
Cast feet	6902.920	903
Twin castors	4634.500	907
Worktop without handle	6902.310	184
Worktop with handle	6902.320	184
Enclosure attachment, tilting, base mounting	6902.640	257
Optipanel for TFT monitor 17″	6380.030	205
TFT monitor 17″ with safety glass screen	6450.020	1133
Desktop keyboard IP 65	6446.000	1138
Lock systems		
Standard double-bit lock insert may be exchanged for 47 mm lock inserts, type D, see page 956, or plastic handles, type G, see page 954.		

Accessories Page 890 **Comfort Panel** Page 192 **Optipanel** Page 204 **TFT monitor** Page 1133 **IW stainless steel** Page 319

Enclosure with doors





1 Assembly example

Material:
Enclosure, designer door, rear panel, rear door:
Sheet steel, RAL 7035
Glazed door:
Plastic to UL 94-V0, RAL 7035, toughened safety glass 4.0 mm

Protection category:
IP 55 to EN 60 529/09.2000.
Complies with NEMA 12
for IW 6900.110:
IP 40 to EN 60 529/09.2000

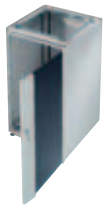
Note:
- Other enclosure depths or heights, variable on a 25 mm pitch pattern,
- All IW components as well as system accessories fully assembled ex works

are available on request.

For details of what the supply includes,
see page 1197.

Detailed drawing,
see page 1198.

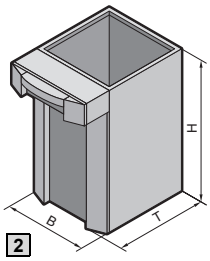
Property rights:
German patent
no. 100 13 034
German registered design
no. 400 02 325
US patent no. 6,538,876
US design patent no. D 487,730
UK reg. design no. 2 094 499
Japan. reg. design
no. 113 95 92
IR reg. design no. DM/053 554
with validity for FR, IT

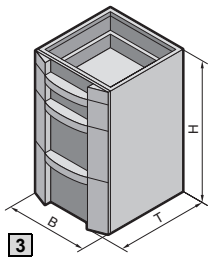
							
Design		Designer door, rear panel screw-fastened from the inside	Designer door, rear panel screw-fastened from the outside	Designer door, rear door	Designer door, prepared as printer cabinet, rear door	Glazed door, rear door	Page
Width (B) mm		600	600	600	600	600	
Height (H) mm		900	1000	900	900	900	
Depth (T) mm		600	600	600	600	600	
Model No. IW		**6900.000**	**6901.000**	**6900.100**	**6900.110**	**6900.200**	
Weight (kg)		54.9	59.8	59.9	59	60.6	
Accessories							
Base/plinth, stationary		8800.920	8800.920	8800.920	8800.920	8800.920	898
Cross member, adjustable		8601.680	8601.680	8601.680	8601.680	8601.680	903
Twin castors		4634.500	4634.500	4634.500	4634.500	4634.500	907
Paper tray		6903.000	6903.000	6903.000	–	–	1148
Paper removal flap		6903.200	6903.200	6903.200	6903.200	–	1148
Handle adaptor for comfort handle		8611.300	8611.300	8611.300	8611.300	6903.170	934
Mounting plate for enclosure width 600 mm		8614.675	8614.675	8614.675	8614.675	8614.675	984
Component shelf, static installation		8800.900	8800.900	8800.900	8800.900	8800.900	1015
Component shelf, pull-out		6902.960	6902.960	6902.960	6902.960	6902.960	1016
Drawer tray		6902.700	6902.700	6902.700	6902.700	6902.700	1016
Drawer extension lock		6902.730	6902.740	6902.730	6902.730	6902.730	1026
Mobile workstations		4641.000	4641.000	4641.000	4641.000	4641.000	1147
Adaptor section 482.6 mm (19″)		8613.070	8613.070	8613.070	8613.070	8613.070	1089
Gland plate	Size	2	2	2	2	2	from 1048
	Qty.	1	1	1	1	1	
Lock systems							
Standard double-bit lock insert, may be exchanged for type F lock inserts, type B lock cylinder inserts, or comfort handle, see from page 947, for designer door and glazed door only in conjunction with handle adaptor PC 8611.300, see page 934.							

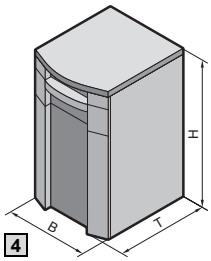
Accessories Page 890 **Comfort Panel** Page 192 **Optipanel** Page 204 **TFT monitor** Page 1133 **IW stainless steel** Page 318

Enclosure with drawers or worktop









1 Assembly example

Material:
Enclosure, roof, drawer tray, designer door and rear door:
Sheet steel, RAL 7035
Worktop:
Chipboard, plastic-laminated on both sides, similar to RAL 7035, with tough plastic edging, similar to RAL 7015
Drawer trim panel:
Plastic, RAL 7035/7015/9006

Protection category:
IP 54 to EN 60 529/09.2000, complies with NEMA 12.

Note:
- Other enclosure depths or heights, variable on a 25 mm pitch pattern,
- All IW components as well as system accessories fully assembled ex works,
- Other drawer combinations,
- Fitted version IW 6901.100 (with worktop) also with other worktops, see page 183,

are available on request.

For details of what the supply includes,
see page 1197.

Detailed drawing,
see page 1198.

		2	2	3	4	
Design		Drawer section for documents, designer door, rear door	Drawer section for keyboard and mouse, designer door, rear door	Drawer front, rear panel	Enclosure with worktop, keyboard drawer	Page
Width (B) mm		600	600	600	600	
Height (H) mm		900	900	900	1000	
Depth (T) mm		600 (890)	600 (890)	600	645	
Model No. IW		**6900.400**	**6900.410**	**6900.600**	**6901.100**	
Weight (kg)		73	73	78	91	
Accessories						
Base/plinth, stationary		8800.920	8800.920	8800.920	8800.920	898
Cross member, adjustable		8601.680	8601.680	8601.680	–	903
Twin castors		4634.500	4634.500	4634.500	4634.500	907
Paper removal flap		6903.200	6903.200	6903.200	6903.200	1148
Paper tray		6903.000	6903.000	–	6903.000	1148
Cable gland		6902.770	6902.770	–	6902.770	187
Mounting plate		8614.675	8614.675	–	8614.675	984
Component shelf, static installation		8800.900	8800.900	–	8800.900	1015
Component shelf, pull-out		6902.960	6902.960	–	6902.960	1016
Drawer tray		6902.700	6902.700	–	6902.700	1016
Drawer extension lock		6902.730	6902.730	■[1)]	–	1026
Mobile workstations		4641.000	4641.000	–	–	1147
Adaptor section 482.6 mm (19″)		8613.070	8613.070	–	–	1089
Gland plate	Size	2	2	2	2	from 1048
	Qty.	1	1	1	1	
Lock systems						

Standard double-bit lock insert, may be exchanged for type F lock inserts, type B lock cylinder inserts, or comfort handle, see from page 947, for designer door only in conjunction with handle adaptor PC 8611.300, see page 934. Drawer with lock no. 3524 E. Other versions available on request.

[1)] Included with the supply.

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Roof, worktops



Note:
- Keyboard and front panels for keys integrated into the worktop,
- Worktops in modified sizes,
- All IW components as well as system accessories fully assembled ex works,

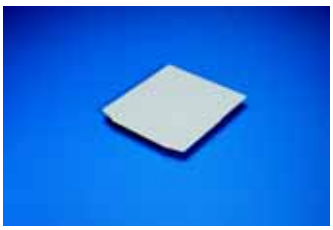
are available on request.

Detailed drawing,
see page 1199.

Combination options for enclosures/worktops

Width mm		600	600	600	600	600	600	600
Height mm		900	900	900	900	900	900	1000
Depth mm		600	600	600	600 (890)	600 (890)	600	600
Enclosures Model No. IW		6900.000	6900.100	6900.200	6900.400	6900.410	6900.600	6901.000
Worktop	Page							
6902.000	183	■	■	■	–	–	■	■
6902.100	183	■	■	■	■	■	■	■
6902.110[1)]	183	■	■	■	■	■	■	■
6902.120 6902.130	184	■	■	■	■	■	■	■
6902.200	183	■	■	■	–	–	■	■
6902.210	183	■	■	■	■	■	■	■
6902.220	183	■	■	■	■	■	■	■
6902.300	183	■	■	■	–	–	■	■
Roof								
6902.400	182	■	■	■	–	–	■	■

[1)] Delivery times available on request.
To order worktops in the ESD version, please add the extension .XX8 to the Model No.



Roof

Folded all-round, with brackets for screw-fastening to the enclosure from the inside.

Material:
Sheet steel 1.5 mm

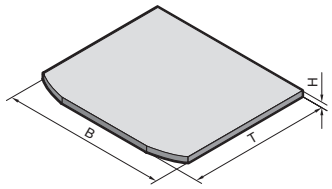
Surface finish:
Spray-finished in textured RAL 7035

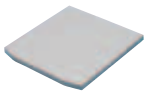
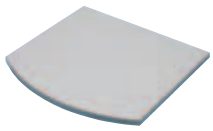
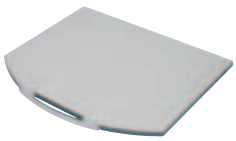
Width (B) mm	600
Height (H) mm	13
Depth (T) mm	640
Weight (kg)	7.4
Model No. IW	**6902.400**

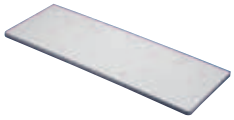
Accessories Page 890 **Comfort Panel** Page 192 **Optipanel** Page 204 **TFT monitor** Page 1133

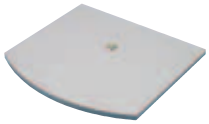
Worktops

Material and surface finish:
Chipboard, plastic-laminated on both sides, similar to RAL 7035, with tough plastic edging, similar to RAL 7015.
Handle made from aluminium, powder-coated in RAL 9006.



Solid			
Design	Without handle for enclosure	Without handle for enclosure/worktop base	With handle for enclosure
Width (B) mm	610	1000	1200
Height (H) mm	38	38	38
Depth (T) mm	645	895	950
Model No. IW	**6902.300**	**6902.100**	**6902.000**
Weight (kg)	11.6	24	34

Solid		
Design	Without handle for enclosure/worktop base	Without handle for enclosure/worktop base	Without handle for enclosure/worktop base
Width (B) mm	2000	2000	2000
Height (H) mm	38	38	38
Depth (T) mm	685	685/900	900/685
Model No. IW	**6902.200**	**6902.210**	**6902.220**
Weight (kg)	37	45	45

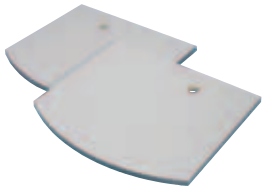
Prepared for turntable		
Design	Without handle[1)]	Page
Width (B) mm	1000	
Height (H) mm	38	
Depth (T) mm	895	
Model No. IW	**6902.110[2)]**	
Weight (kg)	23	
Accessories		
Turntable	6902.620	187
Spacer plate for monitor housing	6902.630	187

[1)] On request also available with handle.
[2)] Delivery times available on request.

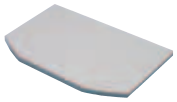
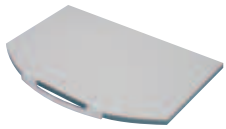
Accessories Page 890 **Comfort Panel** Page 192 **Optipanel** Page 204 **TFT monitor** Page 1133

Industrial Workstations

Roof, worktops

Prepared for enclosure attachment CP-L, Ø 130 mm[1]		
Design	Without handle[2] prepared on left	Without handle[2] prepared on right
Width (B) mm	1000	1000
Height (H) mm	38	38
Depth (T) mm	895	895
Model No. IW	**6902.120**	**6902.130**
Weight (kg)	23	23

[1] Hole may be used in conjunction with the adaptor plate for connector grommet IW 6902.660 (see page 1057) for cable entry.
[2] On request also available with handle.

Prepared for mounting on **– Pedestal IW** **– Enclosure for tower PC** **– Worktop attachment**		
Design	Without handle	With handle
Width (B) mm	950	950
Height (H) mm	38	38
Depth (T) mm	600	658
Model No. IW	**6902.310**	**6902.320**
Weight (kg)	16	18



Cable glands
Model No. see page 1057.



Enclosure attachment, tilting
Model No. see page 257.



Socket strip IW
Model No. see page 1043.



Built-in keyboard 19″/4 U with integral touchpad
Model No. see page 1138.

Accessories Page 890 **Comfort Panel** Page 192 **Optipanel** Page 204 **TFT monitor** Page 1133





Quality Point attachment

Existing IW solutions may be upgraded to a complete testing station. Side punched profile on a 25 mm pitch pattern for the attachment of system accessories (e. g. TS punched section with mounting flange 17 x 73 mm for inner mounting level, see page 993). Projection with integral glare shield prepared for mounting of workstation light 6903.080 (1 x for IW 6920.110/2 x for IW 6920.210).

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Supply includes:
Assembly parts for mounting on worktops (see page 182).

Note:
The Quality Point attachment may be mounted directly on the wall if necessary.
Shelf to finish off at the bottom available on request.

	Quality Point attachment L	Quality Point attachment XL	Page
Width (B) mm	1000	2000	
Height (H) mm	960	960	
Model No. IW	**6920.110**	**6920.210**	
Weight (kg)	34	64	
Accessories			
Workstation light	6903.080	6903.080	189
Vertical section	–	6903.010	188
Display board with wall bracket	6013.100	6013.100	1118
Utility shelf 220 mm wide	6514.110	6514.110	1123
Utility shelf 450 mm wide	6514.100	6514.100	1123
Mounting plates, locatable	8612.400	8612.400	1003
Metal multi-tooth screws BZ 5.5 x 13 mm	2486.500	2486.500	1011
Bracket, locatable, for shelves	6902.690	6902.690	1001
TS punched section with mounting flange, 17 x 73 mm	8612.090	–	993



Monitor housing

For protected accomodation of monitors up to 17″ or 21″ screen diagonal.

Material:
Enclosure, rear door and component shelf: 1.5 mm sheet steel
Designer door: Vertical plastic decorative trim panels to UL 94-V0
Pane: Toughened safety glass 4.0 mm

Surface finish:
Enclosure and rear door: Textured RAL 7035
Designer door: Decorative trim panels RAL 7035, screen-printed mask on glass pane RAL 7015
Component shelf: RAL 7015

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes:
Front designer door with internal lock, unlatched behind the rear door via a lever with Bowden cable.
Rear door with standard double-bit lock insert, may be exchanged for 27 mm lock inserts, type A, or lock cylinder inserts, type B, see page 956/957, and for Ergoform-S lock system, see page 953.
Enclosure with cut-out at the bottom and reinforcement for mounting
– on worktops, prepared for turntable, see page 183,
– on spacer place for monitor housing, see page 187.
Base prepared for the mounting of feet for desktop use IW 6902.610.
Fitted component shelf, slotted, height-adjustable on a 25 mm pitch pattern, prepared for mounting fan expansion kit DK 7980.000, see page 703, and a socket strip, 482.6 mm (19″) long, see page 1038.

	Monitor housing for screen 17″	Monitor housing for screen 21″
Width (B) mm	600	600
Height (H) mm	600	600
Depth (T) mm	500	600
Model No. IW	**6902.510**	**6902.500**
Weight (kg)	38.5	42.5

Delivery times available on request.

Accessories:

Feet for desktop use, see page 186.
Spacer plate for monitor housing, see page 187.
Turntable for monitor housing, see page 187.

Detailed drawing,
see page 1198.

Accessories



Feet

for monitor housing
Thread length 39 mm.

Max. static load per foot:
300 kg

Thread	Packs of	Model No. IW
M8	4	**6902.610**

Delivery times available on request.



Worktop base

For mounting instead of an enclosure when using a wide worktop. Prepared for attachment of cable duct IW 6903.700.

Material:
Steel, spray-finished

Colour:
RAL 7035

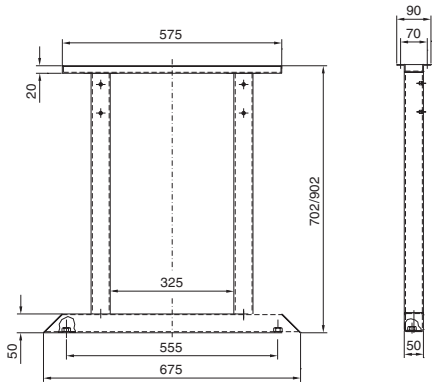
Supply includes:
Levelling feet and screws for the attachment of a worktop.

Note:
For reasons of stability, the worktop base should always be fitted in conjunction with the cable duct IW 6903.700 or other cross-braces supplied by the customer.

Height mm	Packs of	Model No. IW
702	1	**6900.500**
902	1	**6900.510**

Accessories:

Cable duct,
see page 186.
Worktops,
see page 182.





Cable duct

With punchings for the attachment of cable ties and prepared for the installation of a socket strip. Extension to any length may be achieved by baying several cable ducts together.

Installation:
- Beneath worktops IW
- Beneath surfaces
- Between IW enclosures
- Between IW worktop bases

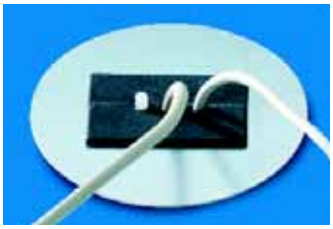
Material:
Sheet steel, spray-finished

Colour:
Textured RAL 7035

Length mm	Packs of	Model No. IW
760	1	**6903.700**

Accessories:

Cable tie for fast assembly SZ 2597.000,
see page 1066.
Socket strip,
see page 1043.



Adaptor plate

for connector gland,
see page 1057.





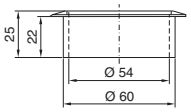
Cable gland

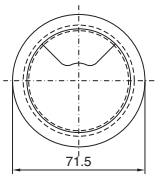
for IW worktops
To fit drilled holes 60 mm. For the entry of cables with pre-assembled connectors, the rotating flap and cover are easily removed.

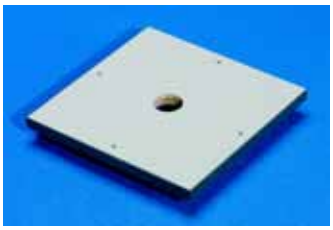
Material:
Plastic

Colour:
RAL 7035

Packs of	Model No. IW
1	**6902.770**







Spacer plate

for monitor housing
Creates distance from the worktop to prevent damage to the mouse and keyboard.

Material:
Chipboard, plastic-laminated on both sides, similar to RAL 7035, with tough plastic edging, similar to RAL 7015.

Note:
If a wider gap is required, 2 spacer plates may also be screw-fastened on top of one another.

- Other sizes
- Other drilled holes

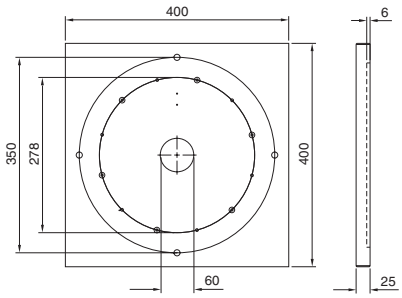
available upon request.

Width mm	Depth mm	Height mm	Model No. IW
400	400	25	**6902.630**

Delivery times available on request.

Accessories:

Turntable,
see page 187.





Turntable

for spacer plate IW 6902.630
Diameter: 328 mm
Height: 14 mm
Load capacity: 300 kg, vertical

Rotation range:
350°, may be limited to 90°, 180° and 270° by 3 end stops.

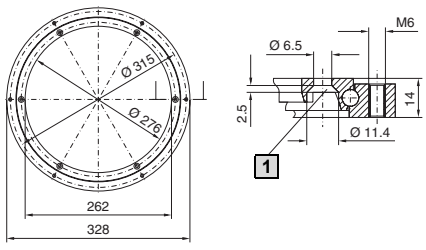
Material:
Cast aluminium, powder-coated

Colour:
Black

Supply includes:
Assembly parts for screw-fastening on both sides.

Packs of	Model No. IW
1	**6902.620**

Delivery times available on request.



1 For csk screw M6

Accessories



Optipanel

A stylish enclosure of extruded aluminium section. In installation depths 50, 100 and 150 mm, the width and height are sized to your specified panels.

Standard sizes are available off the shelf for TFT monitors 15″ and 17″ with safety glass or touchscreen, and also for conventional desktop TFTs up to 20.1″, see page 205.

Full information on the Optipanel from page 204.



Compact Panel

For slimlline and compact panels, or as a visually appealing switch housing.
Thanks to the tiltable enclosure attachment IW 6902.670, see page 243, may also be fitted via support arm system CP-L on worktops prepared for enclosure attachment CP-L, Ø 130 mm, see page 256

Full information on the Compact Panel from page 231.



Comfort Panel

Choose from 11 installation depths in a number of different variants. Whether screw-fastened or with a flat front frame, hinged, the Comfort Panel will always adapt to suit your requirements. An all-round soft profile reduces the risk of injury. Simply compile your individual Comfort Panel or use the standard sizes, available off the shelf for TFT monitors 15″ and 17″.

Full information on the Comfort Panel from page 192.

Support arm system CP-L

Using support section CP-L, operating housings may be positioned in a rotatable and swivelling configuration depending on the respective ergonomic conditions, see from page 250.





Vertical section

For subdividing the vertical surface of the Quality Point XL. By locating e. g. TS punched sections with mounting flanges (17 x 73 mm) into the TS punched profile, the simple mounting of system accessories (such as CP utility shelves) is facilitated.
Length: 950 mm.

Material:
Sheet steel, 1.5 mm

Colour:
RAL 7035

Supply includes:
Assembly parts.

Packs of	Model No. IW
1	6903.010

Accessories:

TS punched sections with mounting flange 17 x 73 mm,
see page 993,
Utility shelves CP,
see page 1123.
Snap-on nuts,
see page 1005.





Drawer

for documents

Under-mounting

For mounting beneath
- Worktop
- Adequately large surfaces

For test equipment, pens, production documents etc. Lockable, lock cylinder insert, lock no. 3524 E.

Material:
Drawer housing: Sheet steel
Front: Plastic to UL 94-V0

Colour:
RAL 7035,
front surface RAL 7015,
handle strip RAL 9006.

Protection category:
IP 55 to EN 60 529/09.2000,
complies with NEMA 12.

Packs of	Model No. IW
1	**6902.900**

Delivery times available on request.

Accessories:

Cross members for drawer tray,
see page 1016.





Drawer

for keyboard and mouse

Under-mounting

For mounting beneath
- Worktop
- Adequately large surfaces

Lockable with mousepad support, may be extended to the left or right, and cable support for safe, pinch-free cable routing.
Cable entry with brush strip.

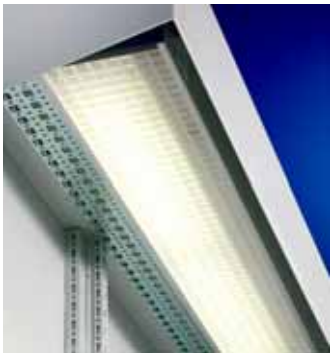
Material:
Drawer housing: Sheet steel
Front: Plastic to UL 94-V0

Colour:
RAL 7035,
front surface RAL 7015,
handle strip RAL 9006.

Protection category:
IP 55 to EN 60 529/09.2000,
complies with NEMA 12.

Packs of	Model No. IW
1	**6902.910**





Workstation light

For IW

For mounting on the IW Quality Point attachment. The workstation light ensures optimum, glare-free illumination of the workstation.

Technical specifications:
2 compact fluorescent lamps (36 W, 230 V, 50 Hz) TC-L 36, base/plinth 2 GL. With switch, sockets and connectors for power infeed and through-wiring.

Supply includes:
Assembly parts.

Width mm	Height mm	Depth mm	Model No. IW
900	135	60	**6903.080**

Also required:

Connection accessories,
see page 1030.

Command Panels

System comparison



The right enclosure to suit virtually any application.

Different designs for individual adaptation to your respective requirements.

From “simple” switch housings to “complex” operating stations.

Comfort Panel ..... from page 192
Optipanel ..... from page 204
VIP 6000 ..... from page 213
Compact Panel ..... page 231
Quickline Panel ..... page 232
Command Panel housings with door, based on AE ..... page 233
Command Panels based on AE ..... page 234 – 236
Stainless steel enclosures ..... page 311 – 312
Support arm systems ..... from page 237
Stand systems ..... from page 286

Aluminium – System enclosures with protection category IP 65

“Tailor-made suits off the peg”
A production service designed especially for these enclosures facilitates short delivery times. This eliminates the need for machining of the front panels and enclosures by the customer.



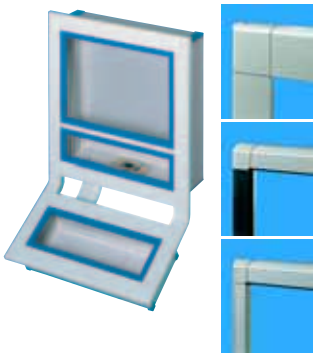
Comfort Panel
Our latest generation of Command Panels, tailored to the current panels from Siemens, B&R, Phoenix Contact etc. for medium-sized and large installed equipment.

Benefits:
- Stylish, slimline design
- 19 installation depths, hinged and screw-fastened
- Optionally without cooling fins or with cooling fins on the sides
- With or without keyboard housing
- 11 basic sizes available off the shelf
- Individual sizes as standard



Optipanel
“Not bulky at all”, “Needs hardly more space than the installed equipment itself” – for smaller panels and control solutions.

Benefits:
- Super-slimline design
- 3 fixed installation depths
- With or without keyboard housing
- 7 basic sizes available off the shelf
- Individual sizes as standard



VIP 6000
The classic in three different design variants for individual adaptation to local conditions. For medium-sized and large operating panels.

Benefits:
- 3 design variants
- 5 installation depths, hinged and screw-fastened
- Optionally without cooling fins, or with cooling fins on the sides or all round, for optimum adaptation of the dissipatable heat loss
- With or without keyboard housing
- Individual sizes as standard



Compact Panel
Ideal for combinations of small panels, display equipment, switches and indicator lights. For small installed equipment.

Benefits:
- Stylish design
- Rear panel optionally hinged on the left or right
- 5 basic sizes available off the shelf
- Other heights available individually

Sheet steel – Standard enclosures

Extensive storage programme tailored to the most common operating panels.



Quickline Panel
Sized for direct installation of the new Siemens Panels with dimensions width x height = 19″ (482.6 mm) x 7 U (310.3 mm) solo and with additional operator panel width x height = 19″ (482.6 mm) x 3.5 U (155 mm)

Benefits:
- Inexpensive standard sizes available ex-works
- Front swings up for easy servicing
- With support arm connection CP-L Ø 130 mm (alternatively CP-XL, CP-Q by drilling 4 holes)
- Protection category IP 55



Command Panel housing with door based on AE
For various operating and control tasks.

Benefits:
- Optimum access to installed equipment during servicing and installation
- Second installation level possible at the rear of the enclosure
- 6 standard sizes available ex-works
- Protection category IP 55



Command Panel based on AE
The alternative to the Command Panel housing with door based on AE with vertically hinged rear door.

Benefits:
- Aluminium front panel, easily dismantled for machining
- Rear door for easy access in case of servicing
- Accessories for interior installation
- 5 standard sizes available ex-works
- Protection category IP 55



Command Panel based on AE with display panel front
The display frame serves to protect the installed equipment.

Benefits:
- Display panel front is easily dismantled for machining
- Rear door for easy access in case of servicing
- 5 standard sizes available ex-works
- Protection category IP 54



Command Panel based on AE with wide VIP 6000 frame
Adapted to the VIP 6000 Command Panel design.

Benefits:
- Keyboard housings and supports from the VIP 6000 range may be mounted on the front frame
- Rear door for easy access in case of servicing
- Protection category IP 56

Stainless steel – Standard enclosures

Especially for applications with high demands in terms of corrosion, design, hygiene and chemical resistance.



Premium Panel
First-class in terms of sealing, protection, hygiene and design.

Benefits:
- Protection category IP 69K (resistant to high-pressure cleaning)
- Suitable for clean room use
- With or without keyboard housing
- 6 standard sizes available ex-works



Command Panel housing with door

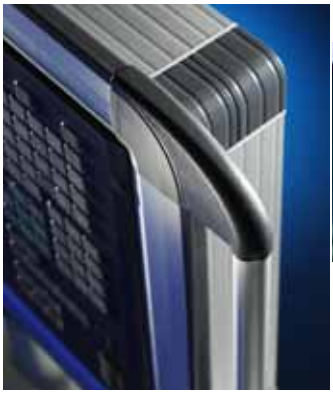
Benefits:
- Front with handle strip (plastic approved for use with foodstuffs)
- Front swings up for easy servicing
- 4 standard sizes available ex-works
- Protection category IP 66

Comfort Panel

Features



Individual in terms of dimensions, specifications and design – these are the distinguishing features of the success story behind Rittal's range for the human/machine interface. With new user benefits, the Rittal Comfort Panel is a refinement of and a convincing addition to the Command Panels VIP 6000 and Optipanel.



Design and protection



All-round soft profile
minimises the risk of injury.



Design section
Variant for individual design according to customer requirements.



Designer handle
as an accessory.



Perfect in every detail



Keyboard housing
vertically hinged via frame connector. Also suitable for retrofitting.



Flat front frame section
Optimum access to integral drives.



Hinges on the outside – Two functions supported:
1. Front frame for removal in case of servicing.
2. Door protection via symmetrical arrangement of the hinges.



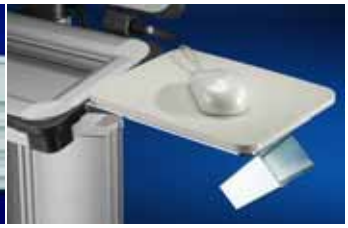




Assembly made easy



All-round uniform mounting channels
External and internal mounting of accessories such as earthing plate or mousepad support via the use of spring nuts in the mounting channels.





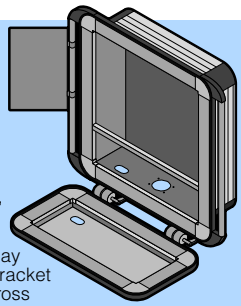
Front panel installation from the rear via screw/grub screw.

Endless diversity. . .

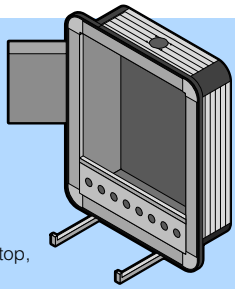
The following examples are just a small selection of the numerous opportunities afforded by the Rittal Comfort Panel. Over the next few pages, compile your own individual enclosure, step-by-step. We look forward to seeing which solution will suit you best.



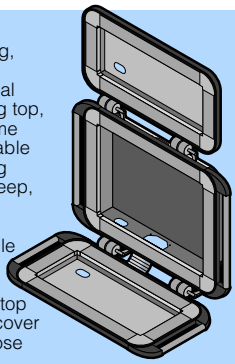
Example A
- Operating housing, 152 mm deep
- Keyboard housing, 35 mm deep, with cable tube
- Frame connector, adjustable
- Handle set, vertical and display board with wall bracket
- With horizontal cross member
- Support arm connection CP-L bottom, Ø 130 mm



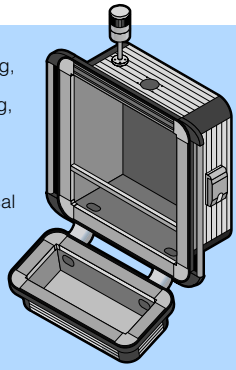
Example B
- Operating housing, 191 mm deep
- With spacing panel and built-in trim panel
- Clipboard
- Utility bars, vertically hinged
- Support arm connection CP-L top, Ø 130 mm



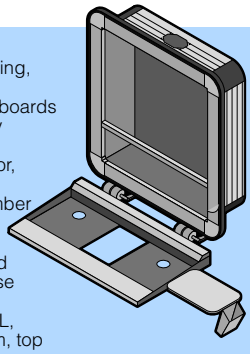
Example C
- Operating housing, 74 mm deep
- Handle set, vertical
- Keyboard housing top, 35 mm deep, frame connector adjustable
- Keyboard housing bottom, 35 mm deep, frame connector adjustable
- Cable tube, flexible
- Support arm connection CP-L, ▭ 120 x 65 mm, top and bottom with cover plate supplied loose



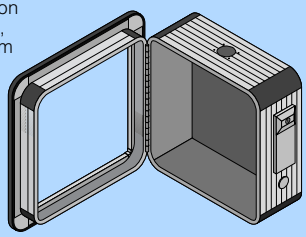
Example D
- Operating housing, 230 mm deep
- Keyboard housing, 113 mm deep
- Design strip, top
- Enclosure duct connector
- Handle set, vertical
- Interface flap
- Signal light
- Support arm connection CP-L top, Ø 130 mm



Example E
- Operating housing, 113 mm deep
- Support for keyboards with cable entry grommet
- Frame connector, adjustable
- With cross member
- Support for mousepad, vertically hinged
- Holder for mouse
- Support arm connection CP-L, ▭ 120 x 65 mm, top

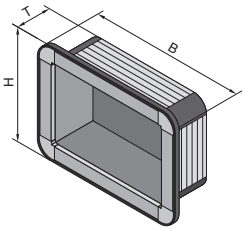


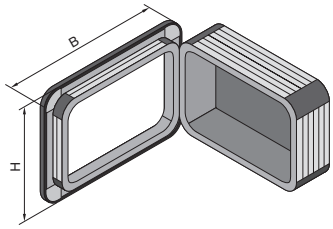
Example F
- Operating housing, 191 mm deep, hinged
- Interface flap
- USB extension
- Support arm connection CP-L top, Ø 130 mm



Operating housings, standard sizes







Material:
Enclosure:
Extruded aluminium section
Corner pieces:
Die-cast zinc
Corner protectors:
Self-extinguishing plastic
Rear panel:
Aluminium

Surface finish:
Enclosure and rear panel:
Natural-anodised
Corner pieces:
Powder-coated in finely-textured RAL 7035
Corner protectors:
Dyed similar to RAL 7024

Protection category:
IP 65 to EN 60 529/09.2000 (if the openings in the enclosure are covered or sealed in accordance with the protection category).

Accessories:

Keyboard housing,
see page 195.
Support arm systems,
see page 237.

Detailed drawing,
see page 1200 – 1201.

		Packs of	Operating housing						
To fit front panels	Width x height mm		482.6 (19″) x 310.3 (7 U)					430 x 343	482.6 (19″) x 354.8 (8 U)
To fit TFT monitor, see page 1133			–	–	–	–	–	6450.010 6450.030 6450.070 6450.120 6450.150	6450.020 6450.040 6450.080 6450.130 6450.160
Installation depth			74	113	152	191	308	74	
Width (B) mm			591					538	591
Height (H) mm			419					452	464
Depth (T) mm			92	131	170	209	326	92	
Support arm connection			**Model No. CP**						
CP-L (see page 250)			▭ 120 x 65 mm 1.4	▭ 120 x 65 mm 1.4	Ø 130 mm 1.1	Ø 130 mm 1.1	Ø 130 mm 1.1	▭ 120 x 65 mm 1.4	▭ 120 x 65 mm 1.4
Top or bottom, by rotating the enclosure		1	**6371.000**	**6371.220**	**6371.030**	**6371.060**	**6371.090**[2]	**6371.120**	**6371.150**
Top, with cable tube cut-out at the bottom[1]		1	**6371.010**	**6371.230**	**6371.040**	**6371.070**	**6371.100**[2]	**6371.130**	**6371.160**
Bottom, with cable tube cut-out at the bottom[1]		1	**6371.020**	**6371.240**	**6371.050**	**6371.080**	**6371.110**[2]	**6371.140**	**6371.170**
Weight (kg)			7.4	9.6	10.5	13.3	18.3	7.2	7.8
Front frame hinged			–	–	–	■	■	–	–
Rear panel	Hinged		■	■	■	■	■	■	■

[1] Extended delivery times.
[2] Enclosure with fins at the sides to boost the dissipation of heat.



Interface flaps
as programming interface, for maintenance access and for connecting to network structures.
Model No. see page 1150.

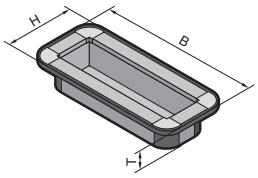


Housing coupling for desktop mounting
Model No. see page 273.

Accessories Page 890 **Support arm systems** Page 237 **Stand systems** Page 286 **Industrial Workstations IW** Page 172

Keyboard housings, standard sizes





Material:
Enclosure:
Extruded aluminium section
Corner pieces:
Die-cast zinc
Corner protectors:
Self-extinguishing plastic
Rear panel:
Aluminium

Surface finish:
Enclosure and rear panel:
Natural-anodised
Corner pieces:
Powder-coated in finely-textured RAL 7035
Corner protectors:
Dyed similar to RAL 7024

Protection category:
IP 65 to EN 60 529/09.2000
(if the openings in the enclosure are covered or sealed in accordance with the protection category).

Accessories:

Operating housings,
see page 194.

Detailed drawing,
see page 1202.

		Packs of	Keyboard housing			
To fit front panels	Width x height mm		482.6 (19″) x 155 (3.5 U)	482.6 (19″) x 177 (4 U)	482.6 (19″) x 155 (3.5 U)	482.6 (19″) x 177 (4 U)
Installation depth			74		113	
Width (B) mm			591		591	
Height (H) mm			264	286	264	286
Depth (T) mm			92		131	
Cable tube cut-out			**Model No. CP**			
Without		1	**6371.180**	**6371.200**	**6371.250**	**6371.270**
With		1	**6371.190**[1)]	**6371.210**[1)]	**6371.260**[1)]	**6371.280**[1)]
Weight (kg)			5.7	5.9	8.0	8.2
Rear panel	Screw-fastened		■	■	■	■

[1)] Extended delivery times.



USB/RJ 45 extension
Model No. see page 1150.



Frame connector, adjustable
for Comfort Panel,
Model No. see page 977.

Accessories Page 890 **Support arm systems** Page 237 **Stand systems** Page 286 **Industrial Workstations IW** Page 172

Installation criteria

1. Panel dimensions

For operating and keyboard housings
For your own sizes/variants, please state the width (B) x height (H) x depth (T) of the control components and the manufacturer/model on the enquiry/order form.

Checking the installation criteria

Subject to compliance with criteria **1** to **4**, front panels/panels may be mounted directly with the appropriate mounting kits, see page 1122. If these criteria are not met, installation via an adaptor panel is possible – see 2.2, version code 3.

B **Width of front panel**
Different widths of operating and keyboard housings are possible (whereby only the keyboard housing may be wider than the operating housing).
For minimum size, refer to minimum front panel width under technical details, page 1203.

H **Height of the front panel/ panel**

1 **Distance from centre of hole/bolt**
to outer edge of front panel
8.5 to 15 mm

2 **Front panel projection**
– on sides with attachment, see drawing below
– from seal at least 6.5 mm

3 **Front panel thickness**

4 **Installation depth**

Operating housing =
74 mm, 113 mm, 152 mm, 191 mm[1)], 230 mm[1)], 269 mm[1)], 308 mm[1)], 347 mm[1)], 386 mm[1)], 425 mm[1)], 464 mm[1)]

Keyboard housing =
35 mm, 74 mm, 113 mm

[1)] Also with hinged front frames. For versions with a hinged rear panel and cam lock, the maximum installation depth is reduced by 27 mm in the vicinity of the lock.

Note:
Load information for installed equipment, see page 1214.

A.

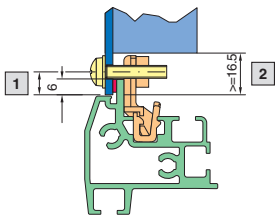


B.

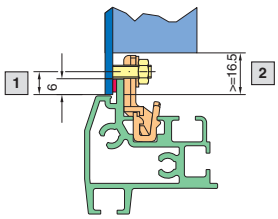


A. Front panel/Panel installation:

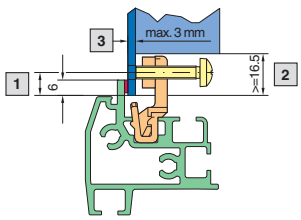
From the front via screw



From the front via studs



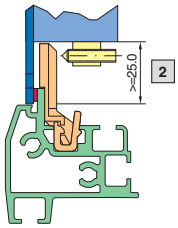
From the rear via screw/ grub screw



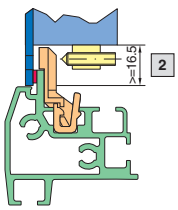
- Frame section
- Front panel
- Seal
- Screw clamp
- Retaining claw
- Enclosure/controller

B. Front panel/Panel installation from the front via screw clamp:

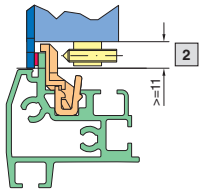
Long retaining claw
e.g. Siemens Sinumerik OP 012[2)]



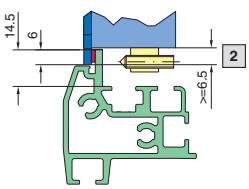
Medium retaining claw
e.g. Siemens Simatic MP 377 12″ keys, horizontal[2)]



Short retaining claw
e.g. Siemens Simatic MP 377 12″ keys, vertical[2)]
B&R Automation Panel, Panel PC[2)]

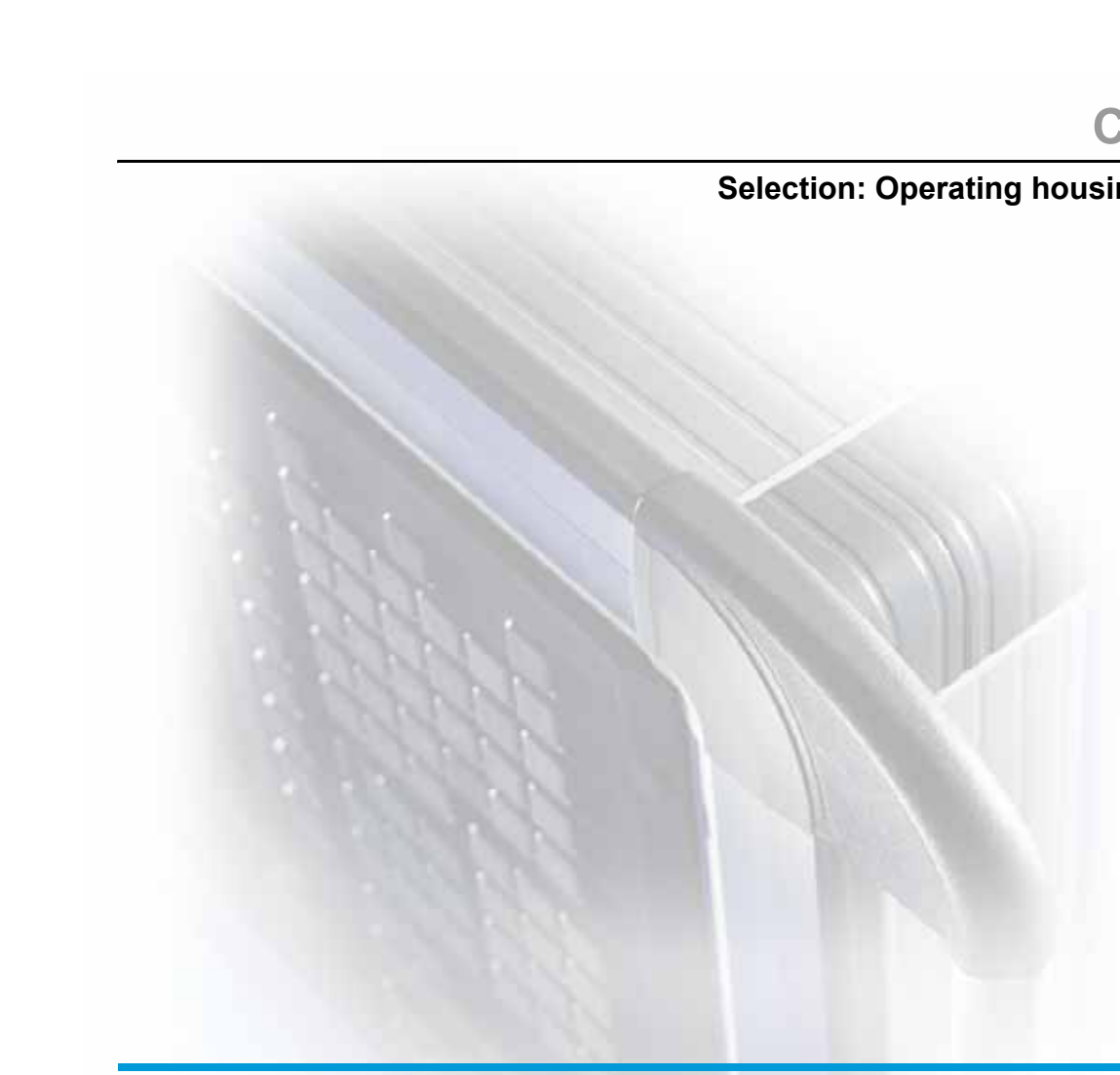


Without retaining claw
e.g. Phoenix Contact PPC 5115



[2)] For more panels suitable for installation, see page 1122.

Selection: Operating housing/keyboard housing



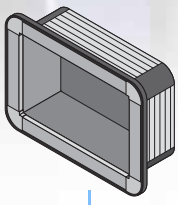
It's so easy!

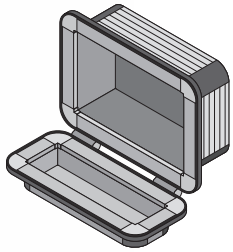
We need the following three pieces of information in order to deal with your enquiry/order:

- Model No.: CP 6372.009
- The dimensions and number of panels/ front panels to be installed in the keyboard/operating housing
- Design code number

2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8

Comfort Panel configurator, see page 227, or on our website at www.rittal.com/configurator





Operating/keyboard housing

Model No. CP

6	3	7	2	.	0	0	9

Material:
Enclosure:
Extruded aluminium section
Corner pieces:
Die-cast zinc
Corner protectors:
Plastic, self-extinguishing

Surface finish:
Enclosure: Natural-anodised
Corner pieces:
Powder-coated in finely-textured RAL 7035
Corner protectors:
Dyed similar to RAL 7024

Protection category:
IP 65 to EN 60 529/09.2000 (if the openings in the enclosure are covered or sealed in accordance with the protection category).

Selection: Operating housing/keyboard housing

2.1 Installation depth

Note:
Support arm connection see 2.5.
Drawing view from above.
R/h hinge is also possible.

Detailed drawing,
see page 1200.

1)



Secured =
As delivered



Removable =
Replace C
with D in the
code number

2) Prepared for support arm connection CP-L ▭ 120 x 65 mm



One-piece

Installation depth 74 mm[2)] — 2.1 A1



Installation depth 152 mm — 2.1 A2



Installation depth 113 mm[2)] — 2.1 A3



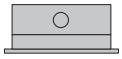


Screw-fastened

Installation depth 191 mm — 2.1 B1



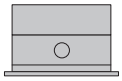
Installation depth 230 mm — 2.1 B2



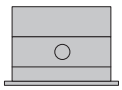
Installation depth 308 mm — 2.1 B3



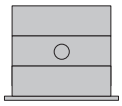
Installation depth 347 mm — 2.1 B4



Installation depth 386 mm — 2.1 B5



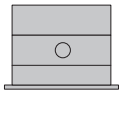
Installation depth 464 mm — 2.1 B6



Installation depth 269 mm[2)] — 2.1 B7



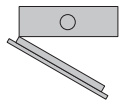
Installation depth 425 mm — 2.1 B8



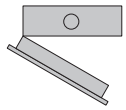


Hinged[1)]

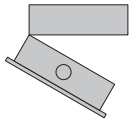
Installation depth 191 mm — 2.1 C1



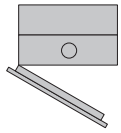
Installation depth 230 mm — 2.1 C2



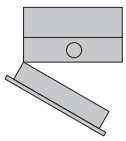
Installation depth 308 mm — 2.1 C3



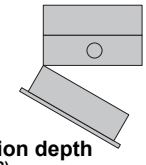
Installation depth 347 mm — 2.1 C4



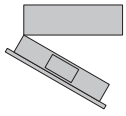
Installation depth 386 mm — 2.1 C5



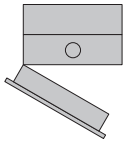
Installation depth 464 mm — 2.1 C6

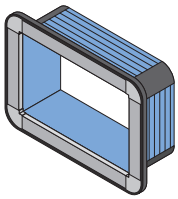


Installation depth 269 mm[2)] — 2.1 C7



Installation depth 425 mm — 2.1 C8





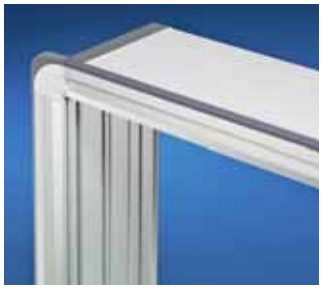
2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8

2.2 Front design

Also required:

Mounting kit for installing front panels, operating panels and keyboards in operating and keyboard housings,
see page 1122.

[1] **Detailed drawing,**
see page 1202.

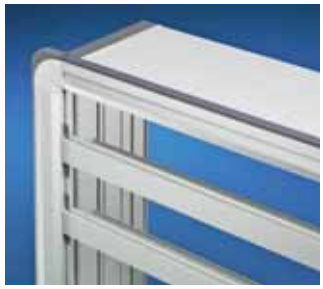


Without cross member 2.2 0



With one cross member[1)] 2.2 1
For horizontal and/or vertical division of the Command Panel front.
With mounting channel on both sides to accommodate mounting kits, see page 1122.

Material:
Extruded aluminium section, natural-anodised



With two cross members[1)] 2.2 2



With an adaptor plate 2.2 3
(to specification)

Material thickness:
3 mm aluminium, natural-anodised.

Please specify the dimensions for the front panel and the desired holes and cut-outs.

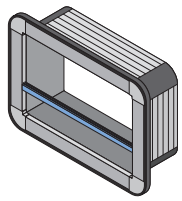


With spacing and built-in trim panel[1)], at the top 2.2 4
For additional space for cable entry and for installing switches/indicator lights, emergency off/key switches, CD-ROM/disk drives, interfaces, interface flaps etc.

Material:
Extruded aluminium section, natural-anodised

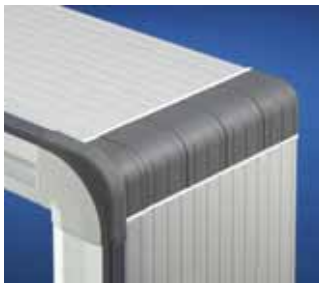


With spacing and built-in trim panel[1)], at the bottom 2.2 5



2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8

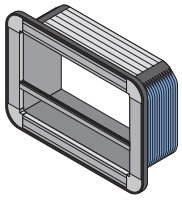
2.3 Cooling fins



No fins 2.3 0



Fins at sides 2.3 1
To boost the dissipated heat loss with an installation depth of 74 mm or more.
Guidelines for dissipatable heat loss,
see page 227.



2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8

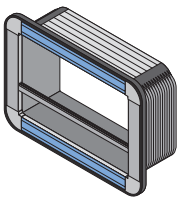
Selection: Operating housing/keyboard housing

2.4 Design strip

Material:
Transparent plastic

Note:
Label/colour-coded strips:
Your dimensions:
max. H = 14.5 mm and
thickness = 0.8 mm

Detailed drawing,
see page 1202.



2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8
			■				





Without 2.4 0



Top 2.4 1



Bottom 2.4 2



Top and bottom 2.4 3



All-round
Without cooling fins 2.4 4

With cooling fins for 191 + 347 mm installation depth

2.5 Support arm and pedestal connection

Users may choose from 4 different support arm systems,
see page 237,
and a variety of stand systems,
see page 286.

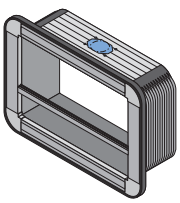
Detailed drawing,
see page 1200.

[1] Including a cover plate for sealing the unused section.

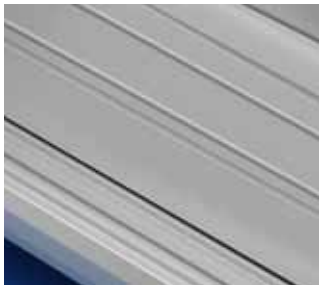
[2] Support arm connection

for the narrow variant of connection plate 6528.420,
see page 274,
housing coupling for desktop mounting 6528.400,
see page 273,
by additionally specifying the code number: **A**

for the wide variant of connection plate 6528.430,
see page 274,
housing coupling for desktop mounting 6528.410,
see page 273,
by additionally specifying the code number: **B**

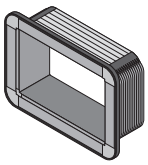


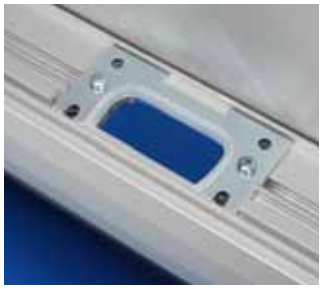
2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8
				■			



Without support arm connection

Without connection 2.5 0

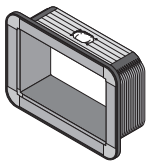




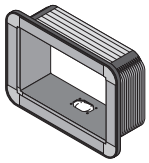
CP-L ▭ 120 x 65 mm
Installation depth 74 mm, 113 mm, 269 mm

CP-L, see page 250/1.4
CP-S, see page 242/3.3

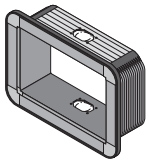
Connection top 2.5 1

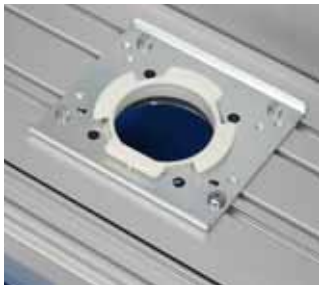


Connection bottom 2.5 2



Connection top and bottom[1] 2.5 3

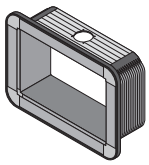




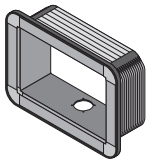
CP-L Ø 130 mm
Installation depth 152 mm and above

CP-L, see page 250/1.1
CP-XL, see page 268/1.3
CP-Q, see page 280/1.3.

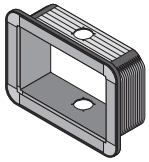
Connection top[2] 2.5 4



Connection bottom 2.5 5



Connection top and bottom[1] [2] 2.5 6

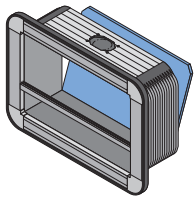


2.6 Rear panel

Material:
Aluminium, natural-anodised.

[1] When installing the pull-out keyboard CP 6002.1X0 (see page 1137) in the Comfort Panel, design variant 2.1, no. A2 the cooling fins and screw channels protruding 11 mm into the enclosure may be milled off in this area. Please state the installation position when ordering.

[2] On the longest side (right/bottom), cam with double-bit insert, may be exchanged for lock inserts 41 mm, type C, see page 956, plastic handles and T handles, type C, see page 954/955. The max. installation depth in the vicinity of the lock is reduced by 27 mm.



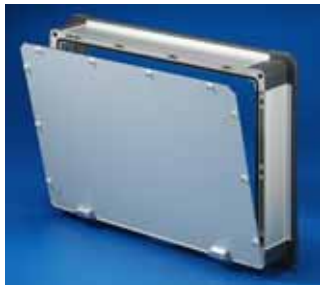
2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8
					▲		



Screw-fastened 2.6 1



Hinged on the longest edge[2] 2.6 2

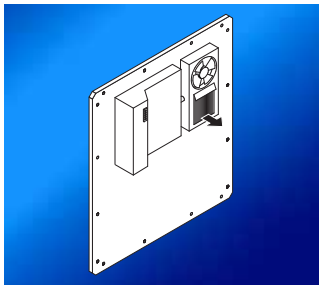


Hinged with quick-release fasteners 2.6 3



Rear cooling panel, modular[1] 2.6 4
Increases the dissipation of heat loss from the enclosure by approx. 10 %.

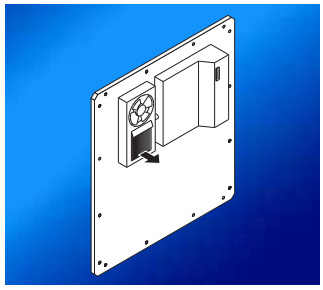
Detailed drawing,
see page 1206.



Screw-fastened with built-in VIP small cooling unit, condenser assembly at the top left 2.6 5
Recommended operating housing design (see 2.1 from an installation depth of 191 mm)

Material:
Aluminium, natural-anodised.

Detailed drawing,
see page 641.



Condenser assembly, top right 2.6 6

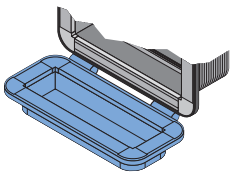
2.7 Keyboard housing

Width independent from the operating housing. The swivel bracket is adjustable from +88° to –136° from the horizontal in 8° increments.

[1] Mounting kit for installing front panels, operating panels and keyboards in operating and keyboard housings, see page 1122.

[2] Alternatively, the bars may be inserted to the rear with the support arm connection at the bottom.

[3] By labelling with index A: Rigid connection via enclosure duct connector (see illustration on page 1119). With the support arm connection at the bottom, this must be checked in each individual case.



2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8
						▲	



Without keyboard housing 2.7 0



With keyboard housing and cable tube
Installation depth 35 mm[1] 2.7 1



With keyboard housing and cable tube
Installation depth 74 mm[1] [3] 2.7 2



With support for keyboards 2.7 3
and cable entry grommet. Please specify keyboard dimensions.

Detailed drawing,
see page 1202.



Utility bars, vertically hinged 2.7 4
and cable grommet[2]



With keyboard housing and cable tube 2.7 5
Installation depth 113 mm[1] [3]

Selection: Operating housing/keyboard housing

2.8 Integration of accessories

In addition to the design code, you should also indicate the position or enclose a sketch.

[1] Interface inserts may be found on page 1151, these may also be fitted by specifying the Model No. and position.



Without accessories 2.8 0



Interface flap, single, with plastic flap[1] 2.8 1
from installation depth 113 mm



Interface flap, double, with plastic flap[1] 2.8 2
only possible in the front panel, spacer and built-in trim panel or rear panel



Interface flap, single, with metal flap[1] 2.8 3
from installation depth 113 mm



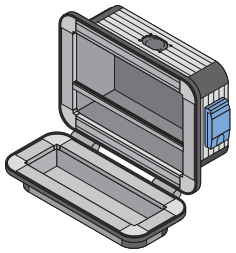
Interface flap, double, with metal flap[1] 2.8 4
only possible in the front panel, spacer and built-in trim panel or rear panel



USB/RJ 45 extension 2.8 5
For order information, refer to page 1150.



Mounting preparations for signal pillars, modular 2.8 6
Mounting component, see page 1129.
Signal pillars, modular, see page 1126



2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8

Example

The picture opposite shows the solution we have chosen, together with its corresponding design code number. The following key explains how the code number in our example is made up.

Operating/ keyboard housing

Model No.: CP 6372.009

Design code number:

2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8
A3	0	0	0	2	1	1	1

2.1 A3	Operating housing, installation depth 113 mm
2.2 0	Without cross member
2.3 0	No fins
2.4 0	Without design strip
2.5 2	Support arm connection CP-L ▭ 120 x 65 mm, bottom
2.6 1	Rear panel screw-fastened
2.7 1	With keyboard housing Installation depth 35 mm
2.8 1	Fitted interface flap

We need the following three pieces of information in order to deal with your enquiry/order:

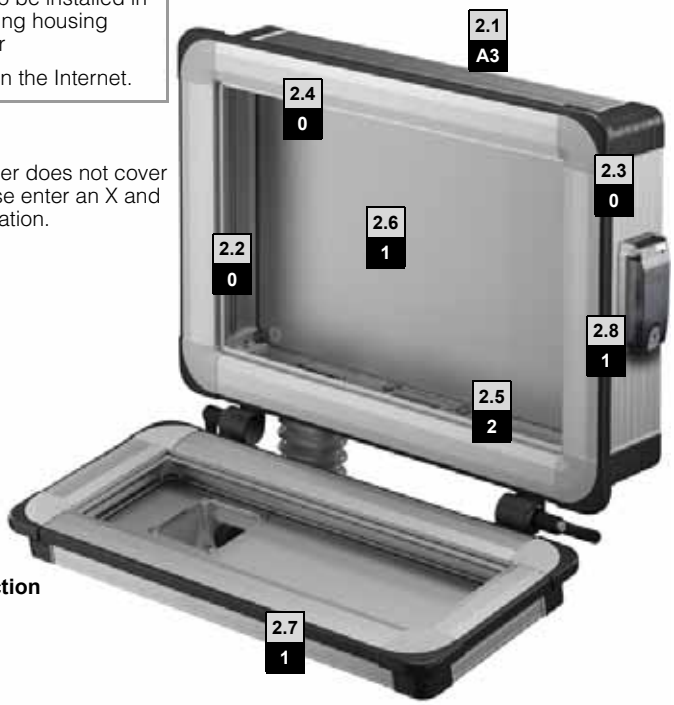
- Model No.: CP 6372.009
- The dimensions and number of panels/front panels to be installed in the keyboard/operating housing
- Design code number

Order form, available on the Internet.

Note:
If the design code number does not cover your requirements, please enter an X and enclose a written explanation.



Rigid keyboard connection
Selection see design code 2.7.







Optipanel

Features



The stylish, customised solution.

Three installation depths: 50 mm, 100 mm, 150 mm.

Hinged rear panels facilitate easy servicing.

Customised to order or in standard sizes off the shelf.

Property rights:
German patent no. 41 09 695
European patent no. 0 505 681
with validity for CH, FR, GB, IT
Jap. patent no. 3221506
German patent no. 199 02 174
German registered design
no. 400 02 955

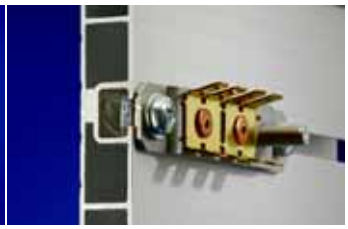
IR reg. des. No. DM/055 168
with validity for CH, FR, IT
US design patent no. D 456,403
European patent no. 1 269 067
with validity for CH, DE, FR, IT



Always within reach



Tailored precisely to the operator's requirements, various handle sets may be fitted in accordance with ergonomic requirements. "Steering" the enclosure becomes child's play.



All-round spring groove channels for flexible interior installation and for mounting accessories.



Superior seal helps to achieve protection category IP 65. For installations flush with the frame section with a front panel thickness of approx. 3.5 mm.



Keyboard housing/rear panels



Choose a suitable keyboard housing. There are two installation depths available, along with the keyboard support.



Choose the rear panel:
- Screw-fastened
- Hinged with cam lock



- Hinged with quick-release fasteners



All-round attachment



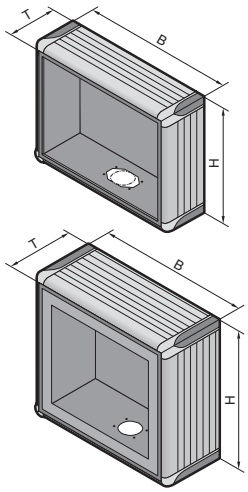
Every attachment point is accessible on all sides!

Movable retaining claws create sufficient play to accommodate virtually all hole spacings (distance from the panel's outer edge 7 – 13 mm). Panels with screw fastening from the front, with studs or screw clamps, may be used.

Standard sizes and for desktop TFT up to 20.1″







Material:
Enclosure:
Extruded aluminium section
Corner pieces:
Die-cast zinc
Corner protectors:
Plastic, self-extinguishing
Sealing trim:
Flexible plastic section

For CP 6380.050:
Front panel:
Aluminium, natural-anodised
Viewing window:
Toughened safety glass 4 mm

Surface finish:
Enclosure:
Natural-anodised
Corner pieces:
Powder-coated in finely-textured RAL 7035
Corner protectors and sealing trim:
Dyed similar to RAL 7024

Protection category:
IP 65 to EN 60 529/09.2000 (if the openings in the enclosure are covered or sealed in accordance with the protection category).

Approvals,
see page 37.

Detailed drawing,
see page 1207.

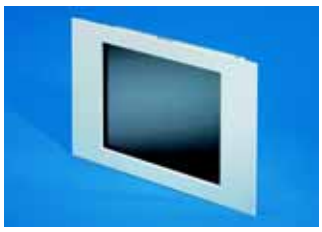
To fit front panels[1] Width x height mm		Packs of	Standard sizes						Optipanel for desktop TFT up to 20.1″	
			270 x 234	482.6 x 310.3	430 x 343	430 x 343	482.6 x 354.8	482.6 x 354.8	–	Page
To fit TFT monitor			–	–	6450.010/ 6450.030/ 6450.070/ 6450.120/ 6450.150	6450.010/ 6450.030/ 6450.070/ 6450.120/ 6450.150	6450.020/ 6450.040/ 6450.080/ 6450.130/ 6450.160	6450.020/ 6450.040/ 6450.080/ 6450.130/ 6450.160	–	1133
Width (B) mm			314	527	475	475	527	527	574.5	
Height (H) mm			278	354	387	387	399	399	484.5	
Depth (T) mm			60	110	60	110	60	110	160	
Model No. CP		1	**6380.100**	**6380.000**	**6380.010**[2)6)]	**6380.020**	**6380.030**[2)]	**6380.040**	**6380.050**[7)]	
Rear panel, hinged	Quick-release fastener for screwdriver		■	–	■	–	■	–	–	
	Cam with double-bit insert[3)]		–	■	–	■	–	■	■	
Support arm connection[4)]			CP-S VESA 75[5)]	CP-L ▭ 120 x 65 mm	CP-L ▭ 120 x 65 mm, rear	CP-L ▭ 120 x 65 mm	CP-L ▭ 120 x 65 mm, rear	CP-L ▭ 120 x 65 mm	CP-L Ø 130 mm	
Weight (kg)			2.8	6.2	4.48	5.28	5.8	6.6	14.2	

[1)] Installation criteria required for direct mounting of the panels, see page 207.
[2)] For depth 60 mm the power pack must be mounted externally for reasons of space, e. g. in IW Station.
[3)] Standard double-bit lock insert may be exchanged for 41 mm lock inserts, type C, see page 956.
Plastic handles and T handles, type C, see page 954/955.
[4)] Support arm connection at the top or bottom, by rotating the enclosure.
[5)] Additional marked points for drilling holes, for the external mounting of:
Assembly components with drilling pattern to VESA 75 = Enclosure attachment, tiltable IW 6902.670
Support arm system CP-L, ▭ 120 x 65 mm
Support arm system CP-S.
[6)] Extended delivery times.
[7)] Screw-fasten the TFT to the mounting plate, slide into the enclosure from behind and secure.



To fit **desktop TFT up to 20.1″** with rear connection
- VESA 75
- VESA 100

Model No. 6380.050



TFT monitor,
Model No. see page 1133.

Accessories Page 890 **Industrial Workstations IW** Page 172 **Support arm systems** Page 237 **Stand systems** Page 286

Selection: Operating housing/keyboard housing



It's so easy!

We need the following three pieces of information in order to deal with your enquiry/order:

- Model No.: CP 6382.009
- The dimensions and number of panels/ front panels to be installed in the keyboard/operating housing
- Design code number

Optipanel configurator, see page 227, or on our website at www.rittal.com/configurator



Operating/keyboard housing

Model No. CP

6	3	8	2	.	0	0	9

Material:
Enclosure: Extruded aluminium section
Corner pieces: Die-cast zinc
Corner protectors:
Plastic, self-extinguishing
Sealing trim: Flexible plastic section

Surface finish:
Enclosure: Natural-anodised
Corner pieces: Powder-coated in finely-textured RAL 7035
Corner protectors and sealing trim:
Dyed similar to RAL 7024

For larger orders, other colours similar to RAL

- 5018 (turquoise)
- 5005 (bright blue)
- 3001 (bright red)
- 7030 (pebble grey)

are available.

Protection category:
IP 65 to EN 60 529/09.2000
(if the openings in the enclosure are covered or sealed in accordance with the protection category).

1. Panel dimensions

1.1 For operating housings and
1.2 For keyboard housings
On the order form, please state the width (B) x height (H) x depth (T) of the control components and the manufacturer/model.
(See installation criteria).

Checking the installation criteria

Please check whether your operator panel may be installed directly into the Optipanel. Subject to compliance with the criteria, front panels/panels may be mounted directly with the appropriate mounting kits, see page 1121. Otherwise, an adaptor panel will be required, see 2.2, design code 2.
The dimensions of the operating and keyboard housing are derived from the dimensions of your panel and the number of cross members.

Note:
Different widths of operating and keyboard housings are possible (whereby only the keyboard housing may be wider than the operating housing).
For minimum size, refer to minimum front panel width under technical details, page 1206.

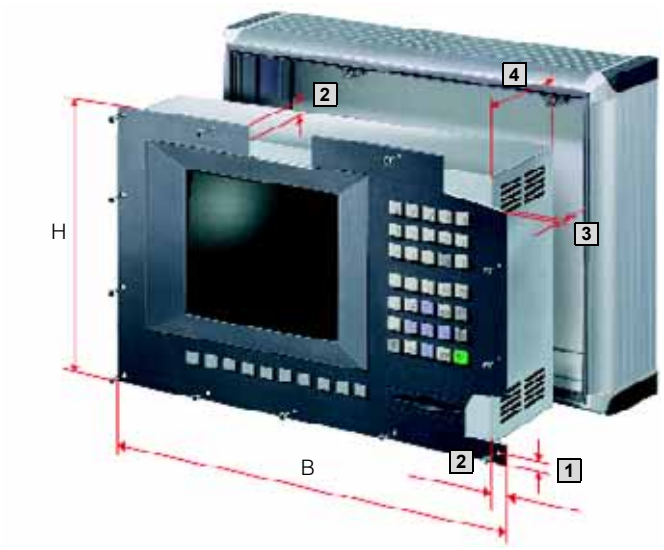
1 **7 to 13 mm edge spacing** of the mounting holes or bolts.

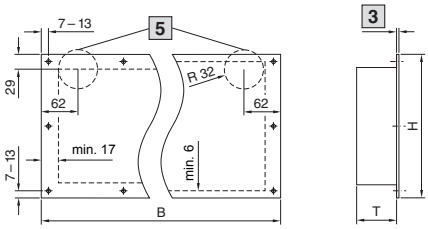
2 **Front panel projection** on sides with mounting holes and bolts at least 17 mm, on sides without attachments at least 6 mm.

3 **Front panels up to 5 mm.** From a thickness of aprox. 3.5 mm the front panel is flush with the sealing trim and the enclosure front.

4 **Installation depths:** Operating housing = 50 mm, 100 mm, 150 mm. Keyboard housing = 50 mm, 100 mm.

5 For versions with a hinged rear panel with cam fastener, the maximum installation depth is reduced by 27 mm in the vicinity of the lock.

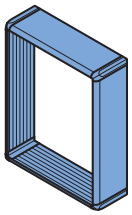




B = Width

2.1 Installation depth

Detailed drawing,
see page 1204.



2.1	2.2	2.3	2.4	2.5	2.5	2.6



50 mm 2.1 / 1



100 mm 2.1 / 2



150 mm 2.1 / 3

Note:
Installation depth > 150 mm over recessed rear panel on request (like VIP 6000, design variant 3.8, no. 3 and 4, see page 221).

Selection: Operating housing/keyboard housing

2.2 Front design

Also required:

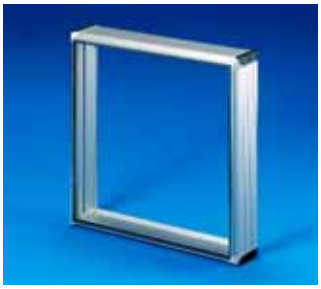
Mounting kit for installing front panels, operating panels and keyboards in operating and keyboard housings,
see page 1121.

Detailed drawing,
see page 1204.

[1] Suitable quantity for sealing the individual separation points. For example: 3 front panels in operating housing = 2 separation points = 2 cross members/sealing bars included with the supply. Other combinations available on request.

[2] Screw-fastened from the inside, with cam or l/h hinge on request.

[3] **Detailed drawing,**
see page 1123.

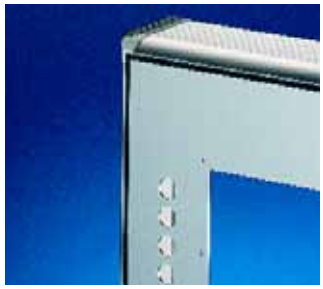


Without cross member 2.2 / 0



With cross member[1] 2.2 / 1
For horizontal and/or vertical division of the operating housing front. With mounting channel on both sides to accommodate mounting kits,
see page 1121.

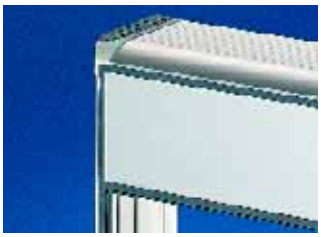
Material:
Extruded aluminium section, natural-anodised



With an adaptor plate (to specification) 2.2 / 2

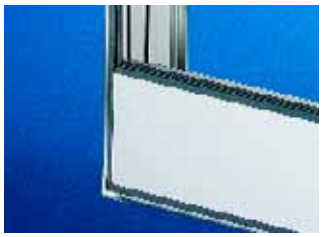
Material thickness:
3 mm aluminium, natural-anodised.

Please specify the dimensions for the front panel and the desired holes and cut-outs.



With spacing and built-in trim panel[3], at the top 2.2 / 3
For additional space for cable entry and for installing switches/indicator lights, emergency off/key switches, CD-ROM/disk drives, interfaces etc.

Material:
Extruded aluminium section, natural-anodised



With spacing and built-in trim panel[3], at the bottom 2.2 / 4
For additional space for cable entry and for installing switches/indicator lights, emergency off/key switches, CD-ROM/disk drives, interfaces etc.

Material:
Extruded aluminium section, natural-anodised



With sealing bar[1] 2.2 / 5
For horizontal and/or vertical division of operating housings. The “slot-free” division produces a height gain of 22 mm.

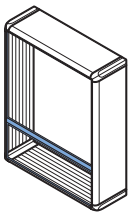
Material:
Extruded aluminium section 8 x 20 mm, natural-anodised



With front panel hinged[2] 2.2 / 6
For example, if a disk drive built into the operator panel requires such free access,
see page 1120.

Standard design:
- Screw-fastened from the outside
- R/h hinge

Material:
Front panel: 3 mm aluminium, natural-anodised.
Extruded aluminium section: Natural-anodised



2.1	2.2	2.3	2.4	2.5	2.6

2.3 Support arm wall and pedestal connection

Accessories:

Support arm components for connection of the Optipanel to the support arm system CP-S[1], CP-L,
see from page 243.
Stand systems,
see from page 286.

Detailed drawing,
see page 1205.



Without connection 2.3 0



Connection top[1] 2.3 1



Connection bottom[1] 2.3 2



Connection top and bottom[1] [2] 2.3 3

CP-L ▭ 120 x 65 mm for
housing coupling CP 6525.1X0,
enclosure attachment CP 6525.6X0,
housing coupling CP-S, CP 6501.130
only applies to installation depth 100 mm



Connection top[1] [4] 2.3 4



Connection bottom[1] [4] 2.3 5



Connection top and bottom[1] [2] [4] 2.3 6

CP-L, Ø 130 mm for
housing coupling CP 6525.1X0,
enclosure attachment CP 6525.6X0,
angle coupling CP 6526.0X0
only applies to installation depth 150 mm

[1] For support arm system CP-S, steel, for installation depth 100 and 150 mm, please add an **S** after the design code number.

[2] Including a cover plate for sealing the unused section.

[3] Unless otherwise specified, will be supplied in RAL 7024

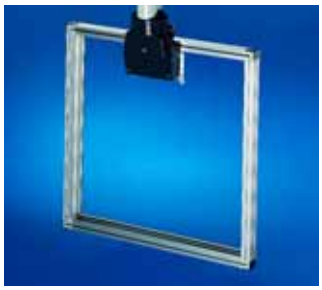
[4] Support arm connection

for the narrow variant of connection plate 6528.420,
see page 274,
housing coupling for desktop mounting 6528.400,
see page 273,
by additionally specifying the code number: **A**

for the wide variant of connection plate 6528.430,
see page 274,
housing coupling for desktop mounting 6528.410,
see page 273,
by additionally specifying the code number: **B**



Note:
Wall mounting possible: hinged with CP 6016.200,
see page 977.

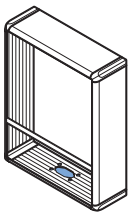


Connection rear, top[3] 2.3 7



Connection rear, bottom[3] 2.3 8

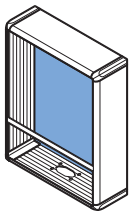
CP-L ▭ 120 x 65 mm for
housing coupling CP 6525.1X0,
enclosure attachment CP 6525.6X0,
enclosure attachment, tilting CP 6902.640/.670,
housing coupling CP-S, CP 6501.130
only applies to installation depth 50 mm



2.1	2.2	2.3	2.4	2.5	2.6

Selection: Operating housing/keyboard housing

2.4 Rear panels





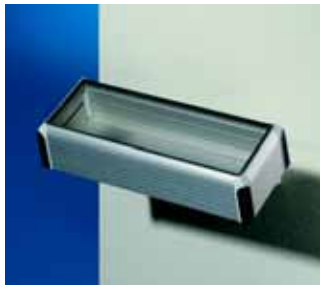
Rear panel screw-fastened

2.4 | 1



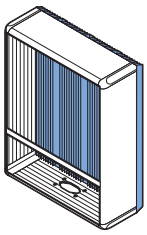
Rear panel hinged on the longest edge
Viewed from the rear, hinged on the right or at the bottom[1) 2) 3)].

2.4 | 2



Example of the versatility of the enclosure: Mounting on doors
With all operating/keyboard housings, the rear panel may be supplied prepared for external mounting on flat surfaces on request.

! Also required:
Enclosure duct connector CP 6006.000, see page 1119. For mounting and cable entry.





Rear cooling panel, modular
Increases the dissipation of heat loss from the enclosure by approx. 10 %.
Guidelines for dissipatable heat loss, see page 227.

2.4 | 3

Material:
Extruded aluminium section

Note:
When installing the pull-out keyboard CP 6002.1X0 (see page 1137) in an Optipanel, design variant 2.1, no. 3, the cooling fins and screw channels protruding 11 mm into the enclosure may be milled off in this area – please specify when ordering.

Detailed drawing,
see page 1206.

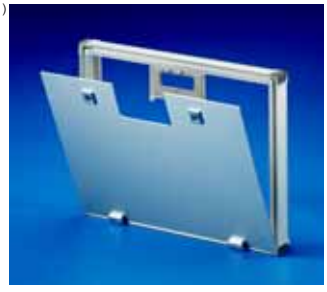


Rear panel hinged with quick-release fasteners[1)]

2.4 | 4

2.1	2.2	2.3	2.4	2.5	2.6

Note:
[1)] With a support arm connection at the rear, only possible on the side opposite the support arm connection.
[2)] Standard double-bit lock insert may be exchanged for 41 mm lock inserts, type C, see page 956, plastic handles and lever handles, type C, see page 954/955.
[3)] With a hinged rear panel, the maximum installation depth in the vicinity of the lock is reduced by 27 mm (see page 207, drawing point **5**).

[1)]


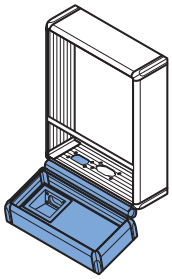
2.5 Keyboard housing

Width independent of operating housing.
The swivel bracket is infinitely adjustable from 80° to 155°.

Also required:

[1] Mounting kit for installing front panels, operating panels and keyboards in operating and keyboard housings, see page 1121.

Detailed drawing, see page 1205.



2.1	2.2	2.3	2.4	2.5	2.6



Without keyboard housing 2.5 0



With keyboard housing Installation depth 50 mm[1] 2.5 1



With keyboard housing Installation depth 100 mm[1] 2.5 2



With support for keyboards 2.5 3



Utility bars, vertically hinged With cable entry grommet[2] 2.5 4

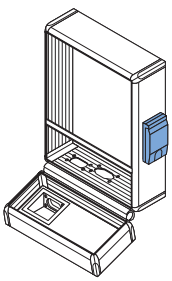
[2] With a support arm connection at the bottom, from depth 150 mm, swivelling is only supported in conjunction with enclosure attachment CP-S (CP 6501.070), enclosure attachment CP-L for support arm connection ▭ 120 x 65 mm (CP 6525.6X0).

When mounting beneath surfaces, the bars may alternatively be pushed towards the rear.

2.6 Integration of accessories

In addition to the design code, you should also indicate the position or enclose a sketch.

[1] Interface inserts may be found on page 1151, these may also be fitted by specifying the Model No. and position.



2.1	2.2	2.3	2.4	2.5	2.6



Without accessories 2.6 0



Interface flap, single, with plastic flap[1] from an installation depth of 100 mm. 2.6 1

Interface flap, double, with plastic flap[1] only possible in the front panel, spacer and built-in trim panel or rear panel. 2.6 2



Interface flap, single, with metal flap[1] from an installation depth of 100 mm. 2.6 3



Interface flap, double, with metal flap[1] only possible in the front panel, spacer and built-in trim panel or rear panel. 2.6 4



USB/RJ 45 extension For order information, refer to page 1150. 2.6 5



Mounting preparations for signal pillars Mounting component, see page 1129. Signal pillars, modular, see page 1126. 2.6 6

Selection: Operating housing/keyboard housing

Example

The picture opposite shows the solution we have chosen, together with its corresponding design code number. The following key explains how the code number in our example is made up.

Operating/keyboard housing

Model No.: CP 6382.009

Design code number:

2.1	2.2	2.3	2.4	2.5	2.6
2	1	2	1	1	1

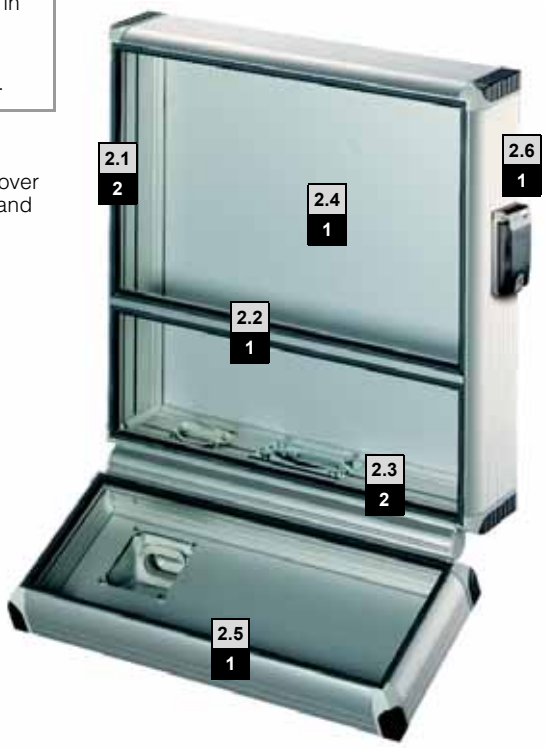
2.1 2	Operating housing, installation depth 100 mm
2.2 1	With one cross member
2.3 2	Support arm connection CP-L ▭ 120 x 65 mm, bottom
2.4 1	Rear panel, screw-fastened
2.5 1	With keyboard housing, Installation depth 50 mm
2.6 1	Fitted interface flap

We need the following three pieces of information in order to deal with your enquiry/order:

- Model No.: CP 6382.009
- The dimensions and number of panels/front panels to be installed in the keyboard/operating housing
- Design code number

Order form, available on the Internet.

Note:
If the design code number does not cover your requirements, please enter an X and enclose a written explanation.







Features



The VIP 6000 offers exceptionally diverse opportunities.

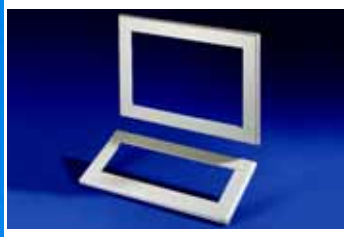
Each of the three frames conveys its own design line with special functions. Each enclosure is manufactured to order and covers every conceivable requirement.

Protective rights for frames:
German patent
no. 195 25 876
German patent
no. P 41 09 695
European patent no. 0 505 681
with validity for DE, FR, GB, IT
European patent no. 0 839 299
with validity for FR, GB, IT
Jap. patent no. 3199745
Jap. patent no. 3221506
South Korean patent
no. 97-70 77 12
US patent no. 5,921,050
German registered design
no. M 94 02 325
IR reg. design no. DM/053 168
with validity for BE, CH, FR, IT, NL
Austral. reg. des. no. 125352
Japan. reg. design
no. 983 783
Austrian registered design
no. 17467
Swedish registered design
no. 58 996
UK reg. des. no. 2047055
US design patent
no. des. 375,726
Brazilian design pattern
no. DI 5500 709-0

Approvals,
see page 37.



Three customised design lines



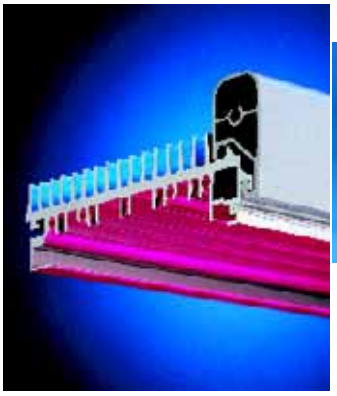




Wide frame
A frame and handle in one; the ideal choice where enclosures with fins all round are used for better heat dissipation.

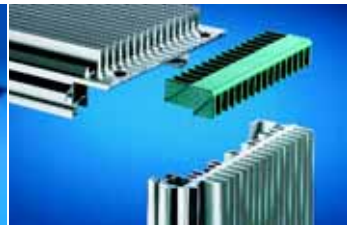
Narrow frame
An eye-catching design with its stylish lines, particularly for small enclosures.

Combined frame
The soft-coated frame at the sides is particularly sympathetic to the touch. This is also suitable for use with enclosures with fins at the sides.



Enclosure/rear panels







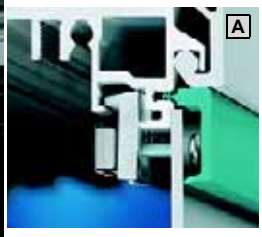
There is a choice of five installation depths (155, 185, 295, 328 and 438 mm). Either screw-fastened or hinged, depending on requirements.

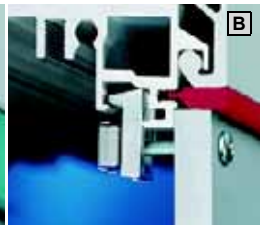
Because it is equipped with cooling fins, the VIP 6000 solution often eliminates the need for active cooling components.

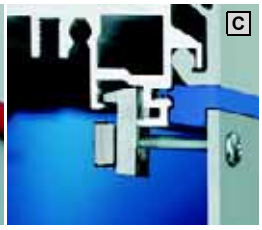
Screw-fastened or vertically/horizontally hinged – choose the rear panel to suit your servicing requirements.



Attachment/trim









Each attachment point all round is achieved with sliding retaining claws.

The screw heads disappear stylishly beneath the cover trim (A).
Front panels with threaded bolts may also be combined with the end trim (B) or spacer trim (C).
Panels with screw clamp (D) are mounted with the end trim.

Configuration examples

Nothing's impossible . . .

A kaleidoscope of incredible solution diversity. Configure your perfect enclosure.

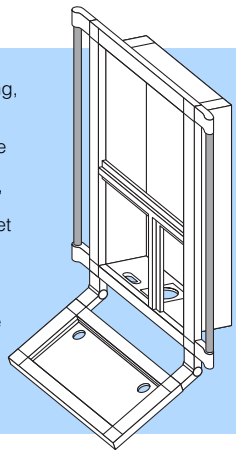
Allow yourself to be inspired by these examples: e. g. by the front divisions, the handle arrangements, the enclosure depths, and much more besides.



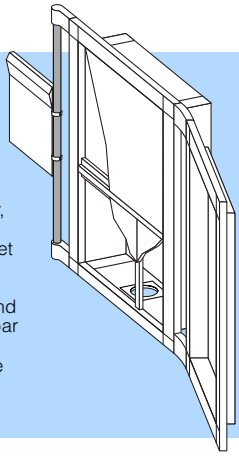
. . . with wide frame.

A small selection from the wide range of opportunities available.
For enclosures with cooling fins, the wide frame is important.

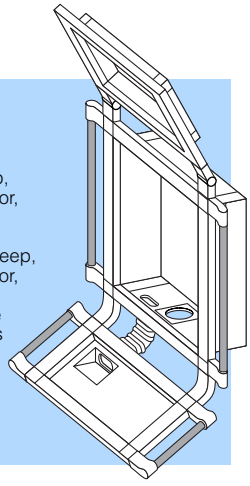
Example A
- Operating housing, 155 mm deep
- Support for key-boards with cable entry grommet
- Frame connector, adjustable
- Vertical handle set
- With vertical and horizontal cross member
- Support arm connection at the bottom



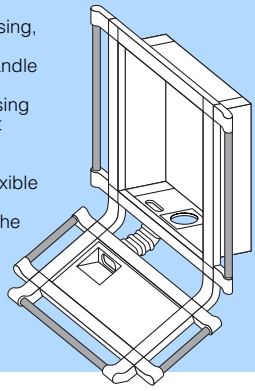
Example B
- Operating housing, 155 mm deep
- Side keyboard housing, 44 mm deep
- Frame connector, rigid
- Vertical handle set with clipboard
- With horizontal cross member and vertical sealing bar
- Support arm connection at the bottom



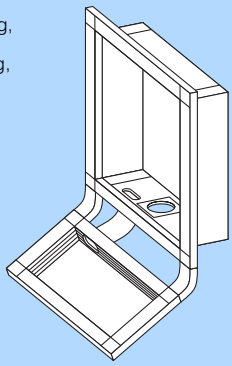
Example C
- Operating housing, 155 mm deep
- Keyboard housing at top, 44 mm deep, with frame connector, adjustable
- Keyboard housing at bottom, 44 mm deep, with frame connector, rigid
- Cable tube, flexible
- Vertical handle sets
- Support arm connection at the bottom



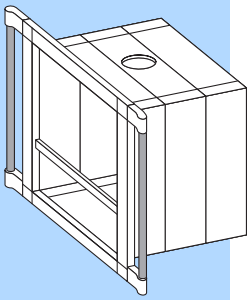
Example D
- Operating housing, 155 mm deep, with vertical handle set
- Keyboard housing with handle set horizontal and vertical
- Cable tube, flexible
- Support arm connection at the bottom



Example E
- Operating housing, 155 mm deep
- Keyboard housing, 105 mm deep
- Frame connector and cable tube, rigid
- Support arm connection at the bottom



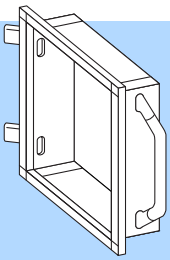
Example F
- Operating housing, 438 mm deep, e. g. for colour screen
- With handle set vertical
- With horizontal sealing bar
- Support arm connection, top



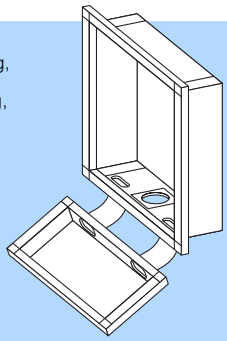
. . . with narrow frame.

Stylish lines for small enclosures and those without fins.

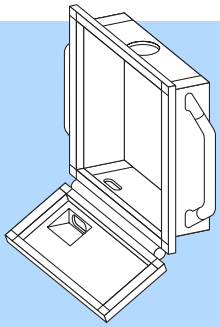
Example G
- Operating housing, 155 mm deep
- With U handle, vertical
- Enclosure connector, adjustable, on the left-hand side for vertically hinged wall mounting



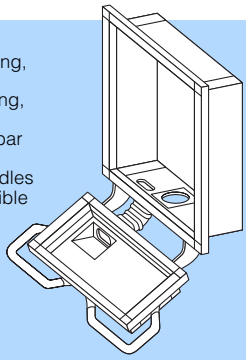
Example H
- Operating housing, 155 mm deep
- Keyboard housing, 105 mm deep
- Enclosure duct connector
- Support arm connection at the bottom



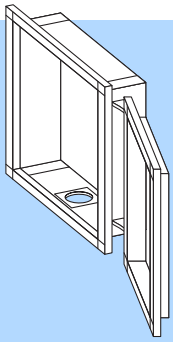
Example I
- Operating housing, 155 mm deep
- Keyboard housing, 44 mm deep
- Hinged frame connector
- U handles, vertical
- Cable tube, flexible
- Support arm connection, top



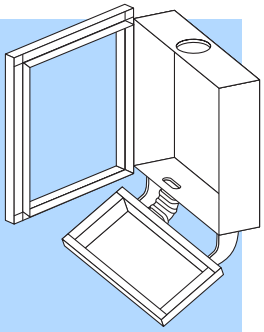
Example J
- Operating housing, 155 mm deep
- Keyboard housing, 44 mm deep
- With enclosure bar connector
- With corner handles
- Cable tube, flexible
- Support arm connection at the bottom



Example K
- Operating housing, 155 mm deep
- Keyboard housing, 44 mm deep
- Enclosure bar connector
- Support arm connection at the bottom



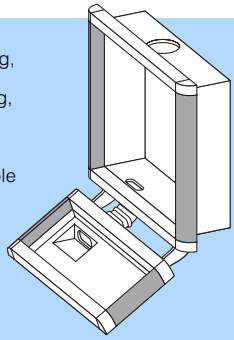
Example L
- Operating housing, 185 mm deep, hinged
- Keyboard housing, 44 mm deep
- Enclosure bar connector
- Cable tube, flexible
- Support arm connection, top



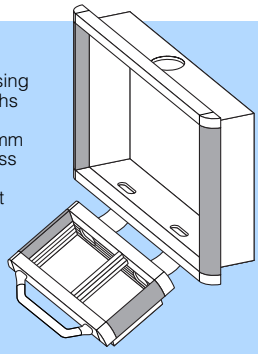
. . . with combined frame.

The soft-coated frame at the sides is particularly sympathetic to the touch.

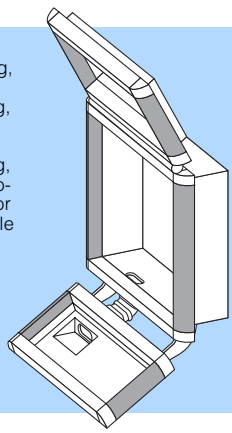
Example M
- Operating housing, 155 mm deep
- Keyboard housing, 44 mm deep
- Enclosure bar connector
- Cable tube, flexible
- Support arm connection, top



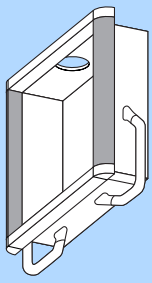
Example N
- Operating and keyboard housing in various widths
- Keyboard housing, 105 mm deep, with cross member
- Enclosure duct connector
- U handle, horizontal
- Support arm connection, top



Example O
- Operating housing, 155 mm deep
- Keyboard housing, top, with hinged frame connector
- Keyboard housing, bottom, with enclosure bar connector
- Cable tube, flexible
- Support arm connection, top



Example P
- Operating housing, 155 mm deep
- Corner handles
- Support arm connection, top





Selection: Operating housing/keyboard housing

We need the following information in order to deal with your enquiry/order:

- Model No. front frame: CP 6392.X09
- The dimensions and number of panels/front panels to be installed in the operating/keyboard housing
- Design code number for the operating/keyboard housing

Protection category:
IP 65 (if the opening in the enclosure is covered or sealed in accordance with the protection category).

Order form, available on the Internet.

1. Front frame

Select the frame to match your requirements. It is automatically used for a keyboard housing as well.

Model No. CP Command Panel

6	3	9	2	.		0	9

Model No. CP Keyboard housing

6	3	5	1	.		0	9

.009



Wide frame 0
Extruded aluminium section

Die-cast zinc corner pieces

Colour: RAL 7035[1)]
Finely-textured

.109



Combined frame 1
Extruded aluminium section

Soft-coated frame similar to RAL 7024 (sides), vertical

Die-cast zinc corner pieces

Note:
For visual reasons, only enclosures without fins or with fins at the sides should be mounted here.

.209



Narrow frame 2
Extruded aluminium section

Die-cast zinc corner pieces

Note:
For visual reasons, only enclosures without fins should be mounted here.

[1)] Other RAL colours available on request.

2. Panel dimensions

2.1 For operating housings CP 6392.X09 and
2.2 For keyboard housings CP 6351.X09
On the order form, please state the width (B) x height (H) x depth (T) of the control components and the manufacturer/model, with due regard for the installation criteria (see below).

Checking the installation criteria

Subject to compliance with criteria 1 – 4, front panels/ panels may be mounted directly with the appropriate mounting kits, see page 1121.
Otherwise, an adaptor panel is needed – see 3.2, design code number **6**, page 218.
The dimensions of the operating panel and keyboard housing are derived from the dimensions of your panel and the number of cross members.

1 **7 to 13 mm edge spacing** of the mounting holes or bolts.

2 **Front panel projection** on sides with mounting holes or bolts **at least 17 mm,** on sides without attachments at least 6 mm.

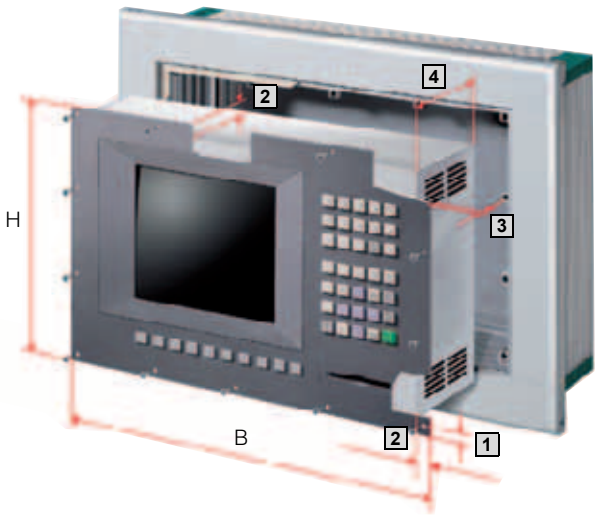
3 **Front panel thickness** varies according to the type of trim section, see page 219, version 3.4.

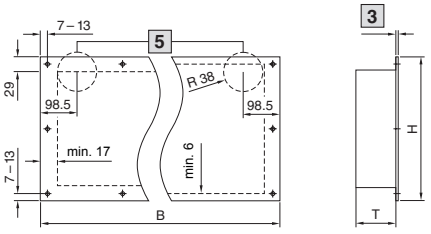
4 **Installation depths:**
Command Panels = 155 mm, 185 mm, 295 mm, 328 mm, 438 mm.
Command Panels **with 45 mm deep rear panel[1)]** = 200 mm, 230 mm, 340 mm, 373 mm, 483 mm.
Command Panels **with 245 mm deep rear panel[1)]** = 400 mm, 430 mm, 540 mm, 573 mm, 683 mm.

5 For versions with a hinged rear panel, the maximum installation depth is reduced by 27 mm in the vicinity of the lock.

[1)] Other depths available on request.

Note:
Load information for installed equipment, see page 1214.





B = Width
T = Depth

3.1 Installation depth

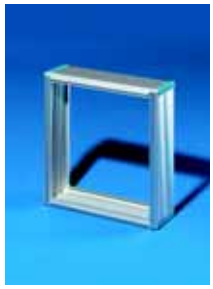
Material:
Enclosure:
Extruded aluminium section
Corner protectors:
Plastic, self-extinguishing

Surface finish:
Enclosure: Natural-anodised

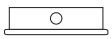
Note:
Support arm connection see 3.6.
Drawing view from above.
R/h hinge is also possible.

Detailed drawing,
see page 1208/1209.





Installation depth 155 mm

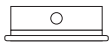


Screw-fastened — 3.1 1

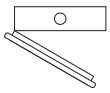
Support arm system CP-L	prepared
Support arm system CP-XL/CP-Q	with adaptor CP 6528.5X0



Installation depth 185 mm

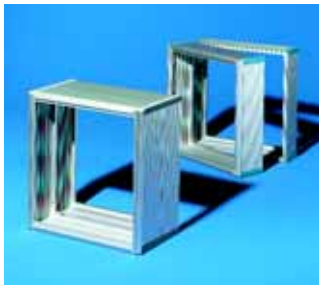


Screw-fastened — 3.1 2

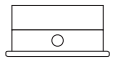


Hinged[1)] — 3.1 3

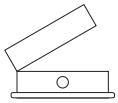
	prepared
	with adaptor CP 6528.5X0



Installation depth 295 mm



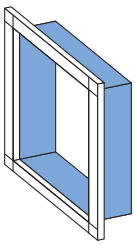
Screw-fastened — 3.1 4



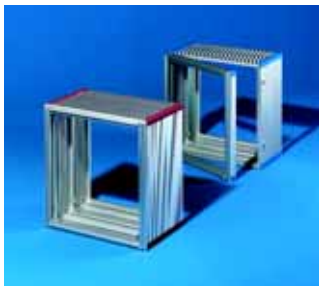
Hinged[1)] — 3.1 5

	prepared
	with adaptor CP 6528.5X0

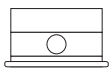
X = 0 (RAL 7030)
X = 1 (RAL 7024)



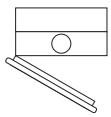
3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9



Installation depth 328 mm

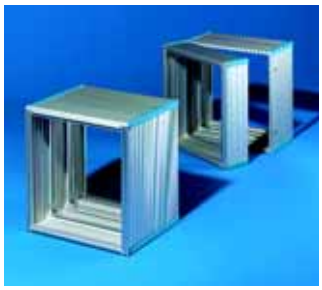


Screw-fastened — 3.1 6

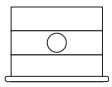


Hinged[1)] — 3.1 7

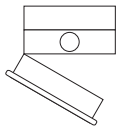
Support arm system CP-L	with adaptor CP 6528.0X0[2)]
Support arm system CP-XL/CP-Q	prepared



Installation depth 438 mm



Screw-fastened — 3.1 8



Hinged[1)] — 3.1 9

	with adaptor CP 6528.0X0[2)]
	prepared

[1)] Cam lock with double-bit lock insert may be exchanged for 41 mm lock inserts, type C, see page 956.

[2)] Provided the admissible load capacity of the support arm system is adequate, see page 237.

Selection: Operating housings

3.2 Front design

Cross member
For horizontal and/or vertical division. With channel on both sides for mounting kits, see page 1121.

Material:
Extruded aluminium section, RAL 7035

Sealing bar
For horizontal and/or vertical division. The “slot-free” division produces a height gain of 28 mm.

Material:
Extruded aluminium section 8 x 20 mm, natural-anodised

Adaptor plate

Material thickness:
3 mm aluminium, natural-anodised.

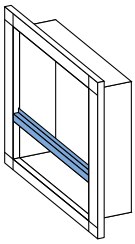
Please specify the dimensions for the front panel and the desired holes and cut-outs.

Spacer and built-in trim panel
For additional space for cable entry and for the installation of switches/indicator lights, emergency off/key switches, CD-ROM drives, interfaces etc. With channel on one side for mounting kits, see page 1121.

Material:
Extruded aluminium section, natural-anodised.

Detailed drawing,
see page 1123.

Also required:
Mounting kit for installing front panels, operating panels and keyboards in operating and keyboard housings, see page 1121.

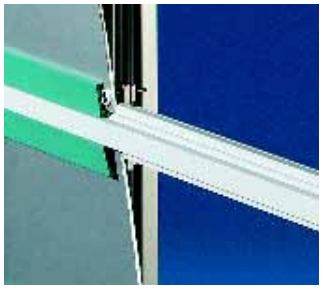


3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9





Without cross member 3.2 0



With one cross member 3.2 1



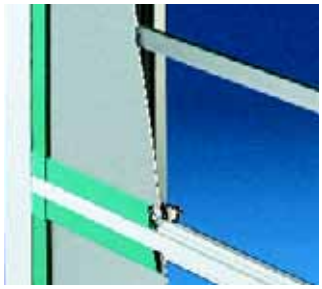
With one sealing bar[1)] 3.2 2



With two cross members 3.2 3



With two sealing bars[1)] 3.2 4



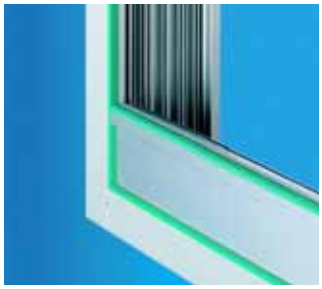
With one cross member and one sealing bar[1) 2)] 3.2 5



With one adaptor plate (to specifications) 3.2 6



With spacing and built-in trim panel at the top[3)] 3.2 7



With spacing and built-in trim panel at the bottom[3)] 3.2 8



With front panel hinged[4)] 3.2 9
For example, if a disk drive built into the operator panel necessitates free access.

Standard design
- Screw-fastened from the outside
- R/h hinge

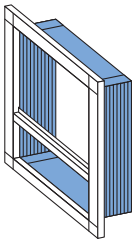
[1)] Not possible with spacer trim (see 3.4).

[2)] Unless otherwise specified: Sealing bar at the top, cross member at the bottom.

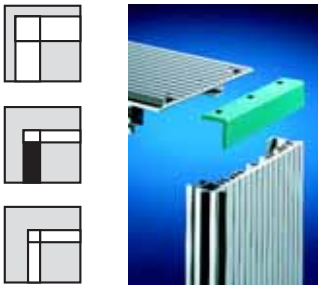
[3)] Only for use in conjunction with end trim.

[4)] Screw-fastened from the inside, with cam or l/h hinge on request.

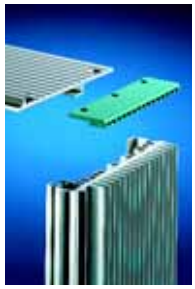
3.3 Cooling fins



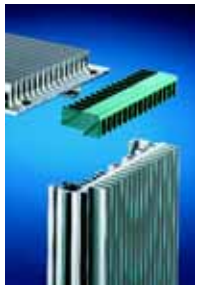
3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9
		■						



No fins 3.3 1



Fins at sides 3.3 2



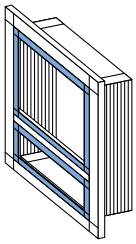
Fins all round 3.3 3

Fin design is chosen according to the heat loss to be dissipated.
Guidelines for dissipatable heat loss, see page 227.

Enclosures in installation depth 185 mm and 328 mm have no fins immediately behind the front frame at a depth of 44 mm. The colour of the corner protectors matches the trim colour selected under 3.5.

3.4 Trim types

Detailed drawing,
see page 1210.



3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9
			■					



Cover trim 3.4 1
To cover the front panel fastening screws. For front panel thickness up to 3.5 mm.

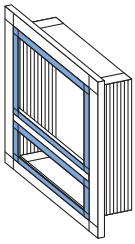


End trim 3.4 2
Attractively finishes off the space between the front panel and the frame section. For all front panel thicknesses.
Only this trim may be selected when installing drawers.



Spacer trim 3.4 3
For installed equipment flush with the frame section.
For front panel thickness approx. 3.5 mm.

3.5 Trim colours



3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9
				■				



Turqoise (similar to RAL 5018) 3.5 1

Bright blue (similar to RAL 5005) 3.5 2

Bright red (similar to RAL 3001) 3.5 3

Pebble grey (similar to RAL 7030) 3.5 5

Graphite grey (similar to RAL 7024) 3.5 6

Note:
Enclosure corner protectors are supplied in the chosen colour.
Other colours available on request with larger orders.

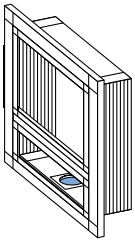
Selection: Operating housings

3.6 Support arm/ wall and pedestal connection

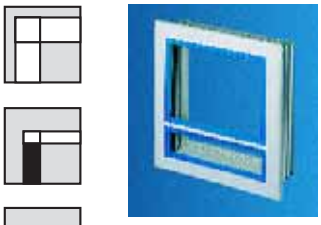
Users may choose from 4 different support arm systems, see page 237, and a variety of stand systems, see page 286.

Note:
Support arm connection CP-S for small enclosures with an installation depth of 155 mm is selected by adding an **"S"** after the design code number.

Detailed drawing,
see page 1205.



3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9



Without connection 3.6 0



Connection top[1] 3.6 1



Wall connection rigid,
see page 1119



Connection bottom[1] 3.6 2



Connection top and bottom[1], one cover plate included 3.6 3

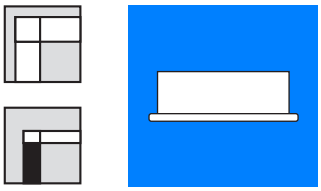
[1] Support arm connection

for the narrow variant of connection plate 6528.420, see page 274, housing coupling for desktop mounting 6528.400, see page 273, by additionally specifying the code number: **A**

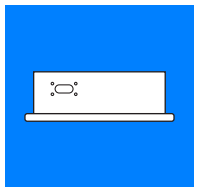
for the wide variant of connection plate 6528.430, see page 274, housing coupling for desktop mounting 6528.410, see page 273, by additionally specifying the code number: **B**

3.7 Preparations for mounting keyboard housings

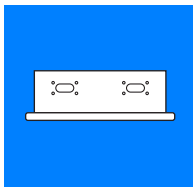
Detailed drawing,
see page 1211.



Without connection to keyboard housing 3.7 0

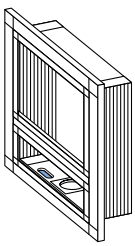


Connection to frame connector either rigid or adjustable 3.7 1

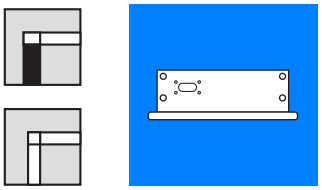


Connection with enclosure duct connector 3.7 2

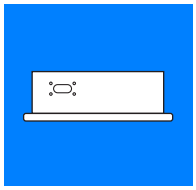
To fit keyboard housing depth:	–	105	105
	–	44	–
	–	Support for keyboards	–
Connection of operating housing to keyboard housing: (Selection 4.4, page 225)	–	Frame connector rigid/adjustable	Enclosure duct connector
Cable tube: (Selection 4.5, page 226)	–	rigid/flexible	Enclosure duct connector



3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9



Connection with enclosure bar connector 3.7 3



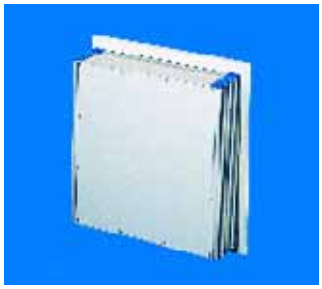
Connection with hinged frame connector 3.7 4

To fit keyboard housing depth:	–	44	105
		–	44
			Support for keyboards
Connection of operating housing to keyboard housing: (Selection 4.4, page 225)		Enclosure bar connector	Hinged frame connector
Cable tube: (Selection 4.5, page 226)		flexible	flexible

3.8 Rear panels

[1] On the longest side (right/bottom), cam with double-bit insert, may be exchanged for lock inserts 41 mm, type C, see page 956, plastic handles and T handles, type C, see page 954/955.





Screw-fastened

Material:
Aluminium, natural-anodised

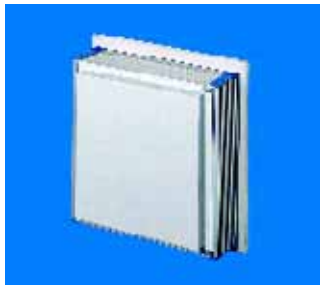
3.8 1



Hinged[1]
for rapid service access

Material:
Aluminium, natural-anodised

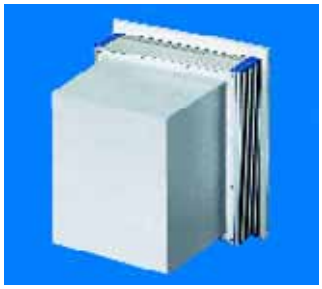
3.8 2



Depth plus 45 mm
hinged,
screw-fastening

Material:
Sheet steel, RAL 7035

3.8 3



Depth plus 245 mm,
square[2], screw-fastened

Material:
Sheet steel, RAL 7035

[2] For 482.6 mm (19″)/7 U concave

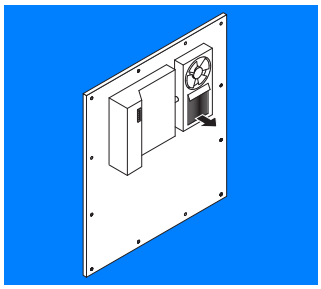
3.8 4



Hinged[1]
for heavy installed equipment

Material:
Aluminium, natural-anodised

3.8 5

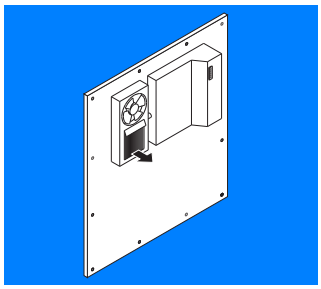


Screw-fastened with built-in VIP SK small cooling unit, condenser assembly at the top left
Recommended for operating housing design (see 3.1 from an installation depth of 185 mm)

Material:
Aluminium, natural-anodised

Detailed drawing,
see page 641.

3.8 6



Screw-fastened with built-in VIP SK small cooling unit, condenser assembly at the top right
Recommended for operating housing design (see 3.1 from an installation depth of 185 mm)

Material:
Aluminium, natural-anodised

Detailed drawing,
see page 641.

3.8 7

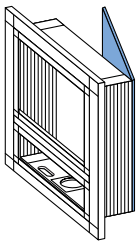


Rear cooling panel, modular[3]
Increases the dissipation of heat loss from the enclosure by approx. 10 %.

Material:
Extruded aluminium section, natural-anodised

Detailed drawing and arrangement of sections,
see page 1206.

3.8 8



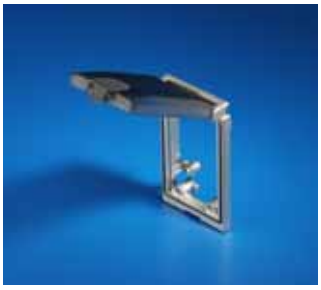
3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9

[3] When installing the pull-out keyboard CP 6002.1X0 (see page 1137) in the VIP 6000, design variant 3.1, no. 1 the cooling fins and screw channels protruding 11 mm into the enclosure may be milled off in this area.
Please state the installation position when ordering.

3.9 Integration of accessories

In addition to the design code, you should also indicate the position or enclose a sketch.

[1] Interface inserts may be found on page 1151, these may also be fitted by specifying the Model No. and position.



Without accessories 3.9 0



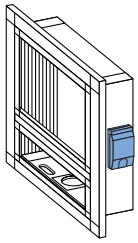
Interface flap, single, with plastic flap[1] 3.9 1
from installation depth 155 mm



Interface flap, double, with plastic flap[1] 3.9 2
only possible in the front panel, spacer and built-in trim panel or rear panel.



Interface flap, single, with metal flap[1] 3.9 3
from installation depth 155 mm



3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9

Interface flap, double, with metal flap[1] 3.9 4
only possible in the front panel, spacer and built-in trim panel or rear panel.



USB/RJ 45 extension 3.9 5
For order information, refer to page 1150.



Mounting preparations for signal pillars 3.9 6
Mounting component, see page 1129.
Signal pillars, modular, see page 1126.

4.1 Keyboard housing

Without fins.

For the internal or surface mounting of keyboards.

All keyboard housings are custom-produced to your dimensions. When selecting the wide front frame, the width of the keyboard housing depends on the operating housing.

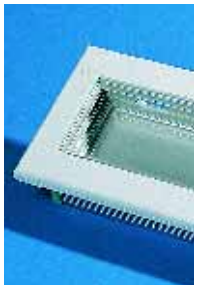
Material:
Extruded aluminium section

Detailed drawing,
see page 1211 – 1213.

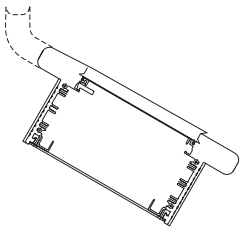
Also required:

Mounting kit for installing front panels, operating panels and keyboards in operating and keyboard housings,
see page 1121.





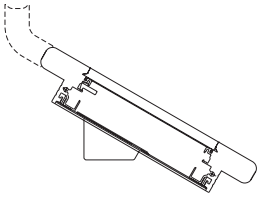
Installation depth 105 mm for built-in keyboards 4.1 1

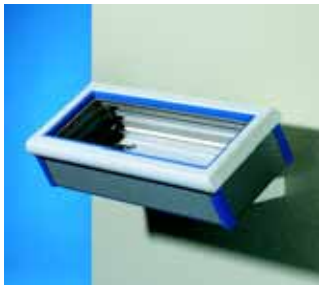






Installation depth 44 mm for built-in keyboards 4.1 2





Example of the versatility of the keyboard housing: Mounting on doors
With all keyboard housings, the rear panel may be supplied prepared for external mounting on flat surfaces on request.

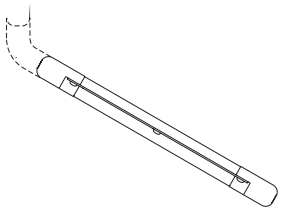
Also required:

Enclosure duct connector CP 6006.000, see page 1119.
For mounting and cable entry.





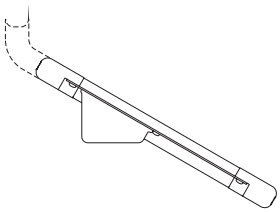
Support for keyboards with cable entry grommet 4.1 3

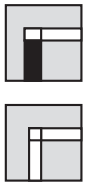






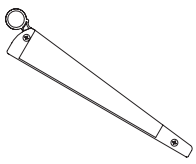
Support for keyboards with cable tube, flexible 4.1 4

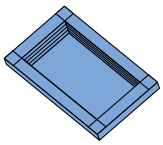






Support for keyboards with cable entry grommet[1)] 4.1 5





4.1	4.2	4.3	4.4	4.5

[1)] Only in conjunction with hinged frame connector, see 4.4 design code number **5.**

Selection: Keyboard housing

4.2 Trim types[1)]

Detailed drawing,
see page 1210.

[1)] Selection not possible with support for keyboards.
In such cases, please enter an **X**.





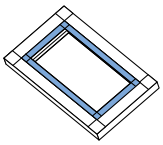
Cover trim 4.2 1
To cover the front panel assembly screws. For front panel thickness up to 3.5 mm.



End trim 4.2 2
Attractively finishes off the space between the front panel and the frame section. For all front panel thicknesses.



Spacer trim 4.2 3
For installed equipment flush with the frame section.
For front panel thickness approx. 3.5 mm.



4.1	4.2	4.3	4.4	4.5

4.3 Trim colours[1)]

Note:
Enclosure corner protectors are supplied in the chosen colour. Other colours available on request with larger orders.

[1)] Selection not possible with support for keyboards.
In such cases, please enter an **X**.





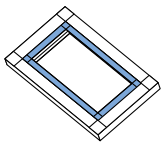
Turqoise 4.3 1
(similar to RAL 5018)

Bright blue 4.3 2
(similar to RAL 5005)

Bright red 4.3 3
(similar to RAL 3001)

Pebble grey 4.3 5
(similar to RAL 7030)

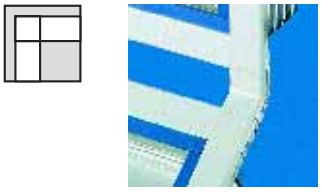
Graphite grey 4.3 6
(similar to RAL 7024)



4.1	4.2	4.3	4.4	4.5

4.4 Keyboard housing connector

Supplied loose with the keyboard housing for connecting operating housings and keyboard housings.



Frame connector (rigid) 4.4 1

To fit keyboard housing depth:	105
	44
	Support for keyboards
Tilt angle:	120°, rigid
Cable tube:	See 4.5

To fit operating and keyboard housings with the same width.

Material:
Die-cast zinc, RAL 7035



Frame connector (adjustable) 4.4 2

To fit keyboard housing depth:	105
	44
	Support for keyboards
Tilt angle:	75 – 120°, adjustable in 7.5° increments
Cable tube:	See 4.5

To fit operating and keyboard housings with the same width.

Material:
Die-cast zinc, RAL 7035



Enclosure duct connector 4.4 3

To fit keyboard housing depth:	105
	–
	–
Tilt angle:	120°, rigid
Cable tube:	Integral

To fit operating housings with keyboard housings 105 mm deep, also available in different widths.

Material:
Aluminium, RAL 7035



Enclosure bar connector 4.4 4

To fit keyboard housing depth:	–
	44
Tilt angle:	120°, rigid
Cable tube:	See 4.5

To fit operating housings with keyboard housings 44 mm deep, also available in different widths.

Material:
Sheet steel, RAL 7035

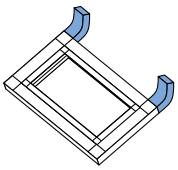


Hinged frame connector 4.4 5

To fit keyboard housing depth:	105
	44
Tilt angle:	75 – 120°, infinitely adjustable
Cable tube:	See 4.5

To fit operating housings with keyboard housings 105, 44 mm deep and support for keyboards, also available in different widths.

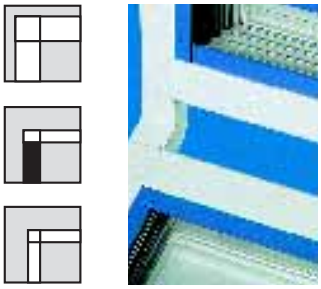
Material:
Aluminium, RAL 7035



4.1	4.2	4.3	4.4	4.5

Selection: Keyboard housing

4.5 Cable tube



Without cable tube 4.5 0



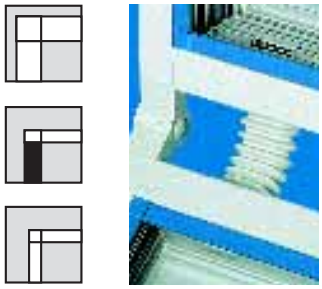
Cable tube, rigid 4.5 1

Suitable for cable routing when using the rigid frame connector (for wide frames) and keyboard housings with a depth of 105 mm.

Material:
Aluminium, RAL 7035

Note:
Not possible with:
3.1 Operating housing, design code numbers 3 and 7.

4.4 Keyboard housing connector, design code 2.

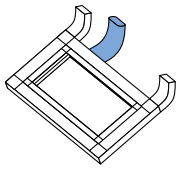


Cable tube, flexible 4.5 2

Suitable for cable entry when using the frame connector, adjustable, hinged frame connector or enclosure bar connector. For mounting on keyboard housings with an installation depth of 105 mm, 44 mm or support for keyboards.

Material:
Plastic, RAL 7035

Note:
Not possible with:
4.1 Keyboard housing, design code numbers 3 and 5.



4.1	4.2	4.3	4.4	4.5

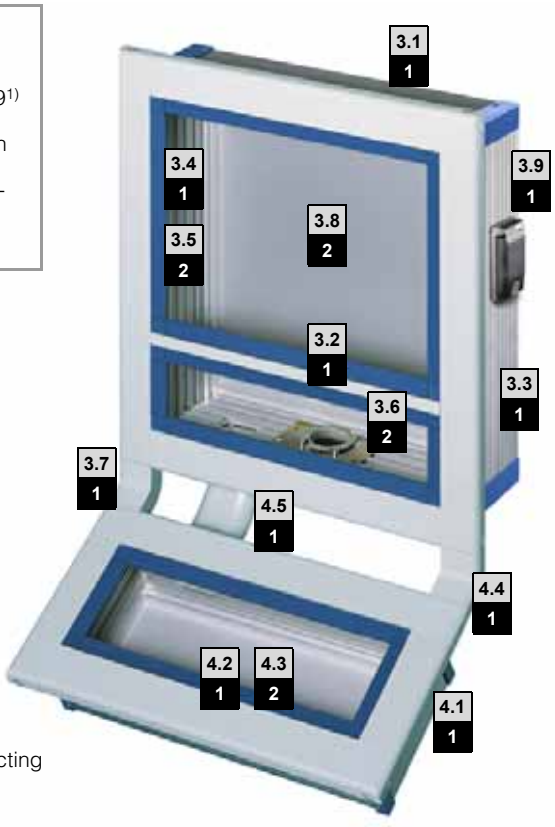
Example

The picture opposite shows the solution we have chosen, together with its corresponding design code number.
The following key explains how the code number in our example is made up.

We need the following information in order to deal with your enquiry/ order:

- Model No. front frame: CP 6392.X09[1)]
- The dimensions and number of panels/front panels to be installed in the operating/keyboard housing
- Design code number for the operating/keyboard housing

Order form, available on the Internet.



Operating housing

Model No.: CP 6392.009

Design code number:

3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9
1	1	1	1	2	2	1	2	1

3.1 1	Operating housing, installation depth 155 mm
3.2 1	With one cross member
3.3 1	No fins
3.4 1	Cover trim
3.5 2	Trim colour: Bright blue
3.6 2	Support arm connection CP-L, Ø 130 mm, bottom
3.7 1	Connection with frame connector, rigid
3.8 2	Rear panel, hinged with double bit lock
3.9 1	Fitted interface flap

Keyboard housing

Model No.: CP 6351.009

Design code number:

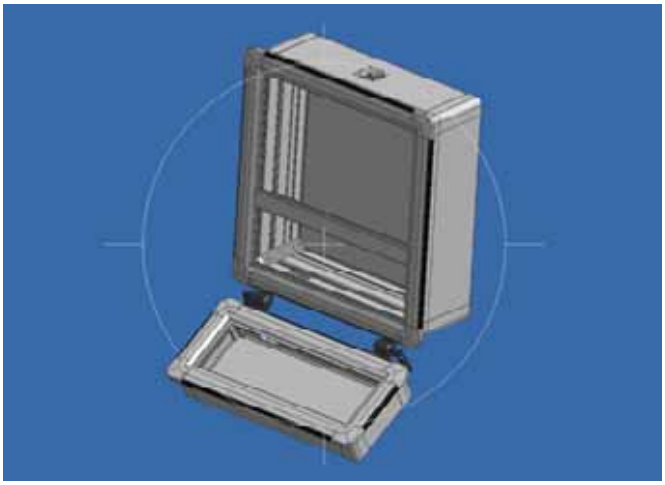
4.1	4.2	4.3	4.4	4.5
1	1	2	1	1

4.1 1	Keyboard housing, installation depth 105 mm
4.2 1	Cover trim
4.3 2	Trim colour: Bright blue
4.4 1	Frame connector, rigid
4.5 1	Cable tube, rigid

[1)] Replace X with the number after selecting the front frame.

Note:
If the design code number does not cover your requirements, please enter an X and enclose a written explanation.

Configurators and guides to dissipatable heat loss







Further information can be found at:
www.rittal.com/configurator

Comfort Panel and Optipanel Configurator

Individual, perfectly coordinated panel solutions can be configured using these online tools. The configurator guides you automatically through the catalogue of questions in the individual selection masks. There is also an integrated intelligent consistency check that ensures that your selected configuration is complete, feasible and error-free.

When you have completed your configuration you can display a visual presentation and 3D CAD model of your separate command panel solutions in the format of your choice, which can be imported into your machines and plant design. You can also call up an online quote from Rittal.

Benefits at a glance:

- Design your panel solution at a click of the mouse
- Check the installation of pre-defined command panels
- Integrated consistency checks to exclude configuration errors
- The possibility of using a standard size is automatically checked
- Detailed description of the specified panel
- Sent to you:
  - A visual presentation of the enclosure
  - 3D CAD data for interlinking the machines and plant design to display a virtual prototype on the screen
  - A quote for the selected command panel solution.

Guides to the dissipatable heat loss with aluminium operating housings

for front panel dimensions W = 482.6 mm (19″) x H = 310.3 mm (7 U)

Operating housings	**Model No. CP**	Installation depth mm	Enclosure[1] without fins	Enclosure[1] with partial fins	Enclosure[1] with fins all round	Page
Comfort Panel	6372.009	152	100 W	115 W	–	197
Optipanel	6382.009	150	80 W	–	–	206
VIP 6000	6392.X09	155	105 W	120 W	135 W	216

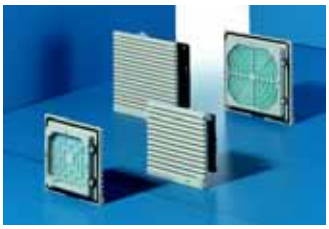
[1] With additional use of the rear cooling panel, the dissipatable heat loss is increased by around 10 %.

Tests were carried out under the following conditions:

- Single enclosure, free-standing (location)
- Difference between internal and external temperature Δt = 20 K

Note:
Other dimensions may be checked using the Rittal Therm software (see page 1155).

Other climate control options



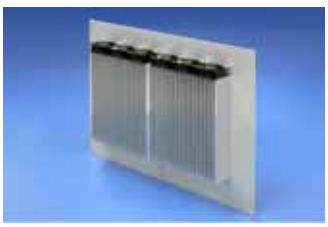
Fan-and-filter unit,
see page 690.



Air/water heat exchangers,
see page 676.



Small cooling unit,
see page 641.



DCP Panel Cooling,
(on request) see page 735.

Operating housings

Features



Modern, flexible production technology demands solutions which precisely meet the required standards of ergonomics, user-friendliness, hygiene and corrosion protection at the operating interface. The Rittal Command Panel range is tailored to these requirements. Supplemented by a support arm or pedestal system, system accessories or system climate control, an enclosure becomes a complete solution. All this is achieved quickly and practically on your behalf.



Compact Panel, aluminium



Front panels are inserted from the rear and secured with a screw clamp.



Rear door hinged optionally on the right or left by loosening the screws.



Mounting optionally on support arm system CP-S or directly with the wall attachment, vertically hinged, see page 977.



CP pedestal, height adjustable, the ideal attachment for light operating units. Adjustment range 200 mm, swivel area max. 180°, see page 1136.



The cable conduit ensures safe cable routing between the machine and the operating console, see page 1065.



Quickline Panel



Simple door opening: Release the hinge pins from the outside with a screwdriver, and it's done.



Simple attachment of TS 8 system accessories with the mounting bracket CP 6205.100, see page 1004.

Features



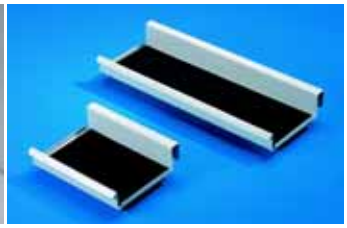
Command Panel housing with door, with handle strips



For additional aluminium front panels, the handle strips may be set forward by up to 5 mm.



Rear panel with welded nuts for the attachment of mounting plate or support rails.



Space for tools, measuring instruments or scanners with the utility shelf, screw connection, see page 1123.



Operating housing with handle strips



Interior installation of the enclosure via side mounting angles with system punchings.



Additional installation space is created by the perforated mounting strips on both sides in the rear door.



The support arm bracket 90° CP-L may be used for external mounting of compact support arm systems, see page 254.



Operating housing with display panel front



For installation or servicing, the hinged display panel front may be opened from the inside by loosening the screws.



Interior installation of the enclosure via side mounting angles with system punchings.



For the support of keyboards. For programming and servicing work, the vertically hinged utility bars, CP 6514.200, may be externally mounted, see page 1140.



Operating housing with wide VIP 6000 frame



External mounting of VIP keyboard housings via frame connectors, rigid or adjustable, see page 225.



Interior installation of the enclosure via side mounting angles with system punchings.



The interface flap SZ 2482.200 ensures secure accommodation of sockets, ports or drives, see page 1150.

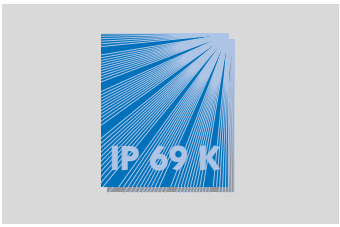
Features



Premium Panel, stainless steel (may be found in the stainless steel section on page **311**)



Exceptionally hygienic, thanks to easy-to-clean, external, highly resistant silicone seal.



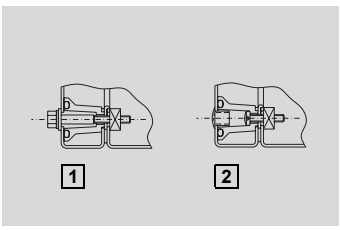
Pressure washer-resistant (protection category IP 69K to DIN 40 050-9) and high EMC shielding effect thanks to ideal shaping of the seal and all-round metallic contact between the enclosure and the rear panel.



Suitable for use in clean rooms to meet the most demanding requirements, certified by the Fraunhofer-Institut IPA.



Clear hygiene benefits compared with external hinges, rear panel bracket CP 6682.000, see page 962.



Screw fastening of the rear panel optionally via external hex screws **1** or internal screws, concealed with plastic stoppers **2.**



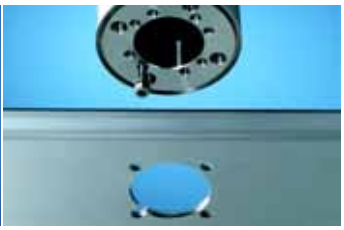
Protected cable routing from the operating housing to the keyboard housing via a robust duct connector.



Operating housing with door, stainless steel (may be found in the stainl. steel section on p. **312**)



Rear panel with welded nuts for the attachment of mounting plate or support rails.

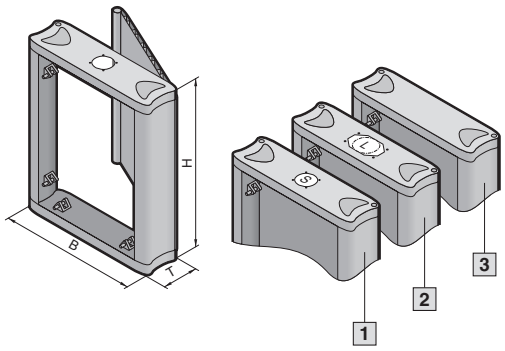


Simple mounting on the support arm system CP-S stainless steel by locating the pre-assembled screw in the cut-out.



Safe handling when swivelling, thanks to side handle strips.





For small operating units built into front panels. The front panel is inserted from the rear and secured with screw clamps. Special front panels with a material thickness of between 2 and 6 mm are possible. Rear panel optionally hinged on the left or right.

Material:
Roof tray, base tray, rear panel:
Aluminium
Side parts:
Extruded aluminium section
Screw cover:
Plastic

Surface finish and colour:
Roof tray, base tray, side parts:
Powder-coated, RAL 7024
Rear panel: Natural-anodised
Screw cover:
Similar to RAL 7024

Protection category:
IP 65 to EN 60 529/09.2000

Supply includes:
Roof tray, base tray, rear panel, side parts, screw cover, including seal and screw clamp.

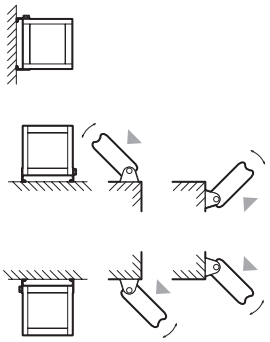
Rittal service:

- Other RAL colours
- Holes and cut-outs in the roof and base tray

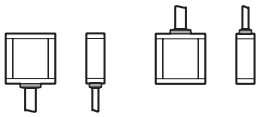
Detailed drawing,
see page 1215.

Property rights:
German patent
no. 102 16 448
German patent
no. 102 16 366

Assembly examples:
with wall mounting bracket



with support arm connection



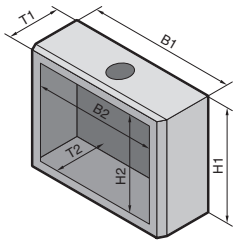
Width (B) mm		Packs of	241	241	241	315	315	Page
Height (H) mm			238	388	521	238	388	
Depth (T) mm			87	87	87	87	87	
To fit	Front panel width mm		178	178	178/4 U	252	252	
	Front panel height mm		200	350	482.6/19″	200	350	
1 **Model No. CP** (with support arm connection CP-S)		1	**6340.000**	**6340.100**	**6340.200**[1)]	**6340.300**	**6340.400**	
2 **Model No. CP**[1)] (with support arm connection CP-L, ▭ 120 x 65 mm)		1	**6340.010**	**6340.110**	**6340.210**	**6340.310**	**6340.410**	
3 **Model No. CP**[1)] (without support arm connection)		1	**6340.020**	**6340.120**	**6340.220**	**6340.320**	**6340.420**	
Weight (kg)			2.8	3.8	4.5	3.4	4.5	
Accessories								
Front panel, 3.0 mm aluminium, natural-anodised		1	6028.500	6028.510	6028.520	6028.530	6028.540	1120
Wall mounting bracket, vertically hinged		1 set	6341.000	6341.000	6341.000	6341.000	6341.000	977
Pedestal, height-adjustable		1	6510.500	–	–	6510.500	–	1136
Cable conduit and accessories			see page					1065
Cover plate for support arm connection CP-S		1	6505.200	6505.200	6505.200	6505.200	6505.200	1124
Spring nut M5		50	6108.000	6108.000	6108.000	6108.000	6108.000	1011

[1)] Extended delivery times.
To order different heights for front panel width:
– 178 mm use Model No.: CP 6342.109
– 252 mm use Model No.: CP 6342.209
and additionally specify the front panel height. Extended delivery times.

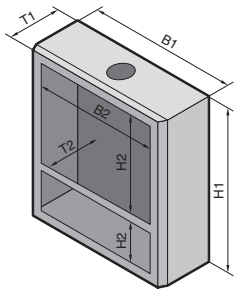
Accessories Page 890 **Support arm systems** Page 237 **Stand systems** Page 286

Quickline Panel





CP 6690.500



CP 6691.500

The Command Panel for every occasion

- Support arm cut-out may be at the top or bottom by simply refitting:
  – Door with one aperture: Simply rotate, and swap over the door hinge if necessary.
  – Door with two apertures: Remove the door, rotate the enclosure, exchange the lock parts, and re-attach the door.
- Standard support arm cut-out CP-L Ø 130 mm, easily swapped for a larger support arm system CP-XL/CP/Q by drilling 4 holes.
- Hinges right and left with multiple function:
  – Door hinging on l/h or r/h side. With symmetrical enclosures, by rotating the enclosure body against the door.

Direct Command Panel mounting:

Door with one aperture:

- **Siemens Sinumerik:**
  – OP 010,
  – OP 010 C,
  – OP 012,
  – OP 015.
- **Siemens Simatic:**
  – Panel PC 477, 577, 677B (12″ keys, 15″ touchscreen),
  – OP 277 10″,
  – MP 277B 10″ keys,
  – MP 377B 12″ keys.

Door with two apertures:
– MCP 483C,
– MCP 483,
– PP 012.

Material:
Enclosure and door: Sheet steel

Surface finish:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside

Supply includes:
Enclosure with cut-out and reinforecement, prepared for support arm system CP-L Ø 130 mm, door with foamed seal, threaded bolts in all 4 corners for flexible interior installation via mounting brackets (see table).

Rittal service:

Other dimensions and apertures for different controllers available on request.

Detailed drawing,
see page 1215.

Width (B1) mm		575		Page
Height (H1) mm		383	538	
Depth (T1) mm		191		
For installation panel W x H		482.6 mm (19″) x 310 mm (7 U)	482.6 mm (19″) x 310 mm (7 U) + 482.6 mm (19″) x 155 mm (3.5 U)	
Cut-out size B2 x H2		450 mm x 290 mm	450 mm x 290 mm + 450 mm x 137.5 mm	
Installation depth (T2) mm		185		
Support arm connection		Top	Top	
Model No. CP		**6690.500**	**6691.500**	
Accessories				
Mounting bracket for the installation of punched section with mounting flange and TS support strips		6205.100	6205.100	1004
Punched section with mounting flange	horizontal	8612.160	8612.160	993
	vertical	–	8612.150	993
TS mounting bars	horizontal	4696.000	4696.000	997
	vertical	4594.000	4695.000	997



Fast service and good access

- Simple door opening: Release the hinge pins from the outside with a screwdriver, and it's done.
- Easy door removal: Open the door, release the hinge pins and remove.



Perfect interior installation

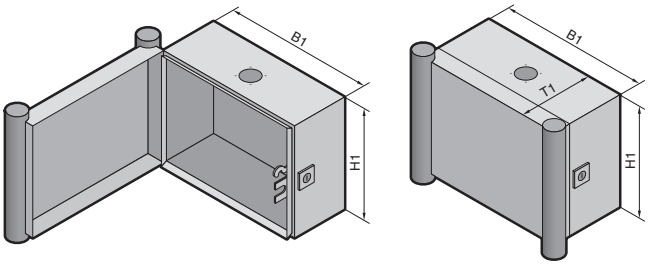
- Use of TS 8 system accessories: TS punched sections with mounting flanges and TS supports strips, for vertical or horizontal installation (see table).
- Simple attachment with mounting bracket CP 6205.100.

Accessories Page 890 **Support arm systems** Page 237 **Stand systems** Page 286

Command Panel housing with door

based on AE





Material and surface finish:
Enclosure and door:
Sheet steel, dipcoat-primed and powder-coated in textured RAL 7035
Handle strips:
Aluminium, powder-coated in RAL 5018
Cover caps:
Plastic, RAL 5018

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
Enclosure with cut-out and reinforcement for support arm system CP-L[1], Ø 130 mm, with seal.
Door with sealing frame, side handle strips and end caps.

Note:
The support arm connection and door hinge may be swapped over by rotating the enclosure.

Rittal service:

- Other sizes
- Other RAL colours
- Modified support arm cut-out or door hinge
- Drilled holes and cut-outs for keypads and operator panels
- Aluminium front panels (up to 5 mm thick, may be positioned on the enclosure front between the side handle strips and door)

available on request.

Detailed drawing,
see page 1216.

Approvals,
see page 38.

Width (B1) mm		Packs of	300	300	300	400	400	500	Page
Height (H1) mm			200	300	400	300	400	500	
Depth (T1) mm			180	180	180	180	180	180	
Model No. CP[1]		1	**6534.000**	**6535.000**	**6537.000**	**6536.000**	**6538.000**	**6544.000**	
Weight (kg)			5.5	7.1	8.4	8.4	10.6	14.5	
Accessories									
Matching mounting plate	AE type		1032.500	1033.500	1034.500	1030.500	1380.500	1050.500	128/129
	Model No.[3]		0271.324	0271.926	0271.927	0274.131	0271.548	0271.333	
Support rails[2]	Model No.	10	2316.000	2316.000	2316.000	2317.000	2317.000	2318.000	1002
Lock systems									
Standard double-bit lock insert may be exchanged for 41 mm lock inserts, plastic handle and T handle, type C, see page 954 – 956.									

[1] To order a Command Panel housing with door with mounting cut-out CP-S, please use the extension number .080. Delivery times available on request.
[2] Only with vertical attachment of punched rail 23 x 23 mm, see page 998.
[3] Delivery times available on request.



Signal pillar LED compact.
Model No. see page 1125.



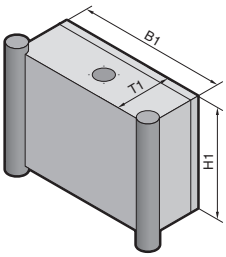
Utility bars, vertically hinged
for keyboards.
Model No. see page 1140.

Accessories Page 890 **Support arm systems** Page 237 **Stand systems** Page 286 **Command Panel housing with door, stainless steel** Page 312

Command Panel

based on AE





Material and surface finish:
Enclosure and door:
Sheet steel, dipcoat-primed and powder-coated in textured RAL 7035
Handle strips:
Aluminium in RAL 7030
Cover caps:
Plastic, RAL 7030

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
Enclosure with cut-out and reinforcement for support arm system CP-L, Ø 130 mm and with mounting angles spot welded at the sides.
Front with maximum cut-out, covered with easily machinable 3 mm aluminium front panel and side handle strips with end caps.
Rear with door.

Note:
The support arm connection and door hinge may be swapped over by rotating the enclosure.

Rittal service:

- Other sizes
- Other RAL colours
- Modified support arm cut-out or door hinge
- Drilled holes and cut-outs for keypads and operator panels

available on request.

Property rights:
German patent no. 44 13 543
French patent no. 95 04769
GB patent no. 2 288 971
Ital. patent no. 01273518
Jap. patent no. 2 820 637
US patent no. 5,662,397
German registered design no. M 94 03 156
U.K. reg. des. no. 2 042 639
Jap. reg. des. no. 955 950
US design patent no. des. 375,938

Detailed drawing,
see page 1216.

Approvals,
see page 38.

Width (B1) mm	Packs of	300	380	380	500	600	Page
Height (H1) mm		200	300	380	500	380	
Depth (T1) mm		155	210	210	210	210	
Model No. CP	1	**6540.200**[1)]	**6531.200**	**6530.200**	**6532.200**	**6533.200**	
Weight (kg)		4.9	9.3	10.2	15.4	14.6	
Accessories							
Support strips for attaching to the mounting angles of the side panel	20	–	–	4594.000	4309.000	4594.000	964
Lock systems							
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, lock cylinder, plastic handles and T-handles, type B, see page 954 – 957.							

[1)] Support arm connection and door hinge at the bottom.



Support arm bracket 90° CP-L
for the assembly of compact support arm systems.
Model No. see page 254.

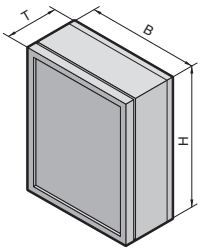


Open pedestal
for the entry of cables with pre-assembled connectors.
Model No. see page 294.

Accessories Page 890 **Support arm systems** Page 237 **Stand systems** Page 286 **Command Panel housing with door, stainless steel** Page 312

based on AE with display panel front





Material and surface finish:
Enclosure and door:
Sheet steel, dipcoat-primed and powder-coated in textured RAL 7035
Frame and front panel:
Aluminium, natural-anodised.

Protection category:
IP 54 to EN 60 529/09.2000

Supply includes:
Enclosure without support arm connection with mounting angles spot-welded at the sides. With maximum cut-out at the front and fitted, easily machinable 3 mm front panel with aluminium frame, with r/h hinge, screw-fastened from the inside.
Rear door, r/h hinge, with two cam locks (for CP 6442.500 one lock).

Rittal service:

- Other sizes
- Other RAL colours
- With support arm cut-out
- Drilled holes and cut-outs for keypads and operator panels

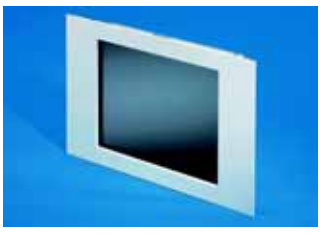
available on request.

Detailed drawing,
see page 1217.

Approvals,
see page 39.

Width (B) mm	Packs of	380	380	500	600	Page
Height (H) mm		380	600	500	600	
Depth (T) mm		249	249	249	249	
Model No. CP	1	**6442.500**	**6462.500**	**6552.500**	**6662.500**	
Weight (kg)		9.5	13.4	18.0	19.6	
Accessories						
Reinforcement plate with support arm cut-out CP-L	1	6143.210	6143.210	6143.210	–	296
Enclosure reinforcement with support arm cut-out CP-L	1	–	–	–	6503.000	296
Lock systems						
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, lock cylinder, plastic handles and T-handles, type B, see page 954 – 957.						

To order Command Panels in RAL 7032, please add extension .200 to the Model No. Delivery times available on request.



TFT monitor
for industrial use.
Model No. see page 1133.



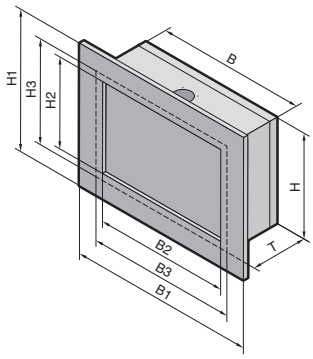
Support for keyboards.
Model No. see page 1140.

Accessories Page 890 **Support arm systems** Page 237 **Stand systems** Page 286 **Command Panel housing with door, stainless steel** Page 312

Command Panel

based on AE with wide VIP 6000 frame





Width dimensions:
B = enclosure width
B1 = B + 79 mm, overall width
B2 = B – 42 mm, clearance between the front frames
B3 = B – 5 mm, front panel width

Height dimensions:
H = enclosure height
H1 = H + 79 mm, overall height
H2 = H – 42 mm, clearance between the front frames
H3 = H – 5 mm, front panel height

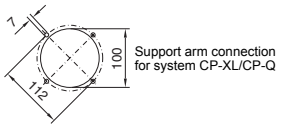
Depth dimensions:
T = enclosure depth

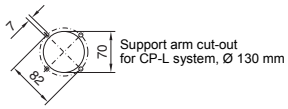
The right frame, even for deeper operator panels.
On request, the compact enclosure AE can be equipped with a stylish VIP 6000 frame mounted on the rear panel. The large AE door provides easy access for servicing.

Material and surface finish:
Enclosure and door:
Sheet steel, dipcoat-primed and powder-coated in textured RAL 7035
Front plate:
3 mm aluminium, natural-anodised
Frame section:
Aluminium, powder-coated in RAL 7035
Frame corner pieces:
Die-cast zinc, powder-coated in RAL 7035

Protection category:
IP 56 to EN 60 529/09.2000, complies with NEMA 12.

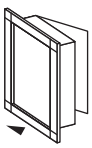
Supply includes:
Enclosure with integral roof or base reinforcement and connection for support arm system CP-L or CP-XL or CP-Q. Aluminium front plate and front frame supplied loose, door at rear.





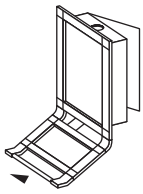
Command Panel with wide VIP 6000 frame in the dimensions of compact enclosures AE or in individual dimensions	Basic Model No. CP	Design code number		
	6541.009			
Support arm connection for support arm system				
Without	6541.009	**0**		
CP-XL or CP-Q top	6541.009	**1**		
CP-XL or CP-Q bottom	6541.009	**2**		
CP-L, Ø 130 mm, top	6541.009	**3**		
CP-L, Ø 130 mm, bottom	6541.009	**4**		
Cable tube connection				
Without	6541.009	X	**0**	
Bottom	6541.009	X	**1**	
Dimensions				
Individual sizes mm	6541.009	X	X	W x H x D:
Like compact enclosure AE (see page 128)	6541.009	X	X	Model No. AE:
Lock systems				
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, lock cylinder, plastic handles and T-handles, type B, see page 954 – 957.				

Order example	6541.009	**4**	**1**	W x H x D: 537 x 352 x 350 mm (or e.g. AE 1050.600)



Order example

Model No. CP 6541.009
Design code numbers:
- **Support arm connection CP-L, Ø 130 mm, bottom (4)**
- **Cable tube connection at the bottom (1)**
- **Individual dimensions: W x H x D: 537 x 352 x 350 mm**



Additional mounting of a VIP 6000 keyboard housing is possible via the design code number (see page 223).
The front panel width refers to an enclosure width B – 54 mm and is achieved via a frame connector, which is included with the supply of the keyboard housing.

Accessories Page 890 **Support arm systems** Page 237 **Stand systems** Page 286 **VIP 6000 keyboard housing** Page 223
Command Panel with door, stainless steel Page 312

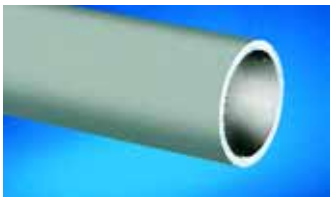
Features

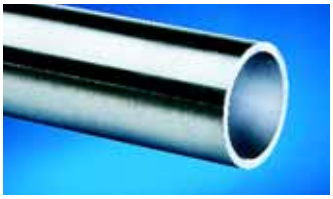


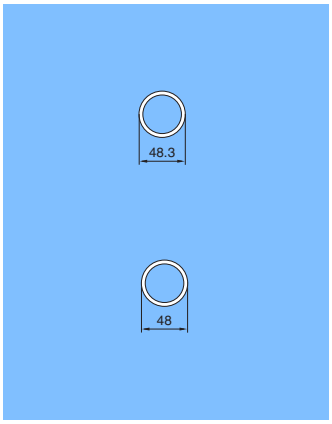
Different viewing angles of the machine, tall or short operating staff, sitting or standing – with the support arm systems from Rittal, the interaction between monitoring and operating is achieved to perfection.

Four different systems are used, depending on the system configuration, jib length and enclosure weight.

Load capacity CP-S steel/stainless steel

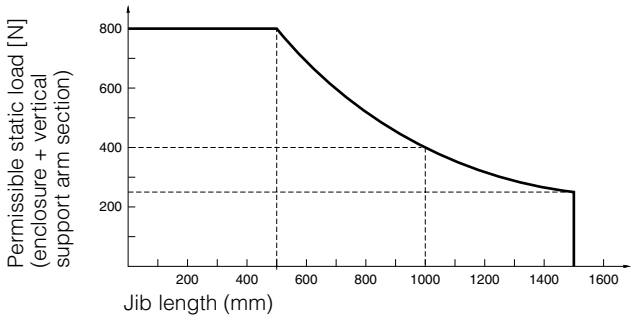






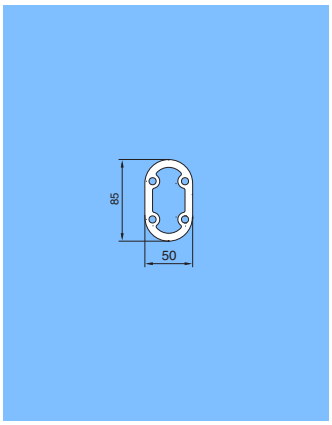
Support arm system CP-S, see page 313.

When using CP-S in conjunction with CP-L (in the horizontal development of the system), the CP-L load diagram applies.

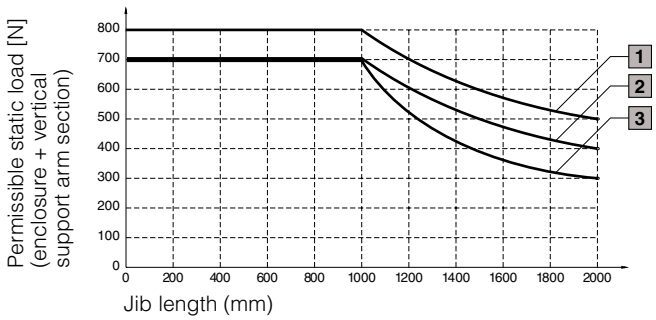


Load capacity CP-L





Permissible load depending on system assembly
Intermediate hinge CP 6523.0X0 should only be used once per system!



1 System assembly without intermediate hinge

2 System assembly with one intermediate hinge

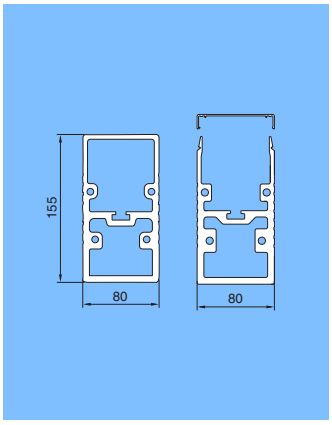
3 System assembly with one intermediate hinge and one top-mounted/wall-mounted joint

Features

Load capacity CP-XL

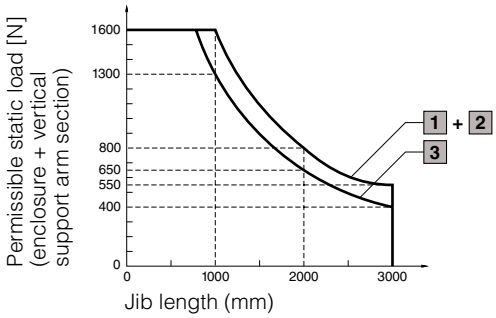






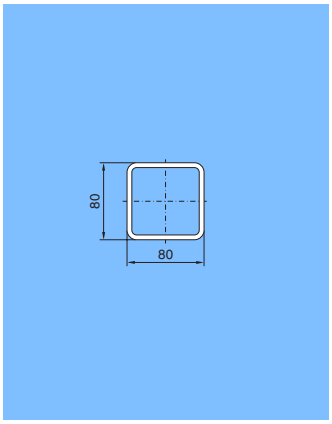
1 Open and solid support section without intermediate hinge
2 Solid support section with one intermediate hinge
3 Open support section with one intermediate hinge

Permissible load depending on system assembly
Intermediate hinge CP 6120.000 should only be used once per system!



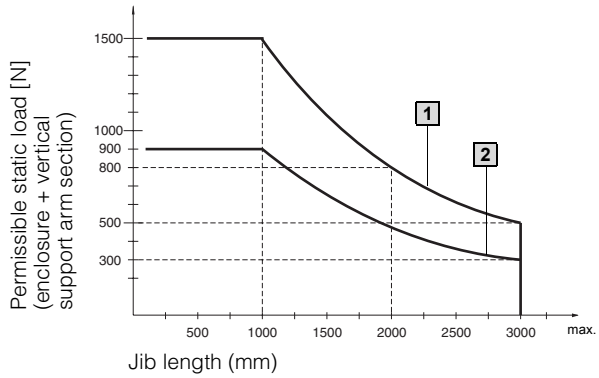
Load capacity CP-Q





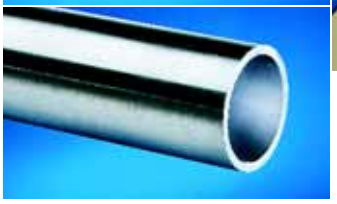
1 Without intermediate hinge
2 With one intermediate hinge

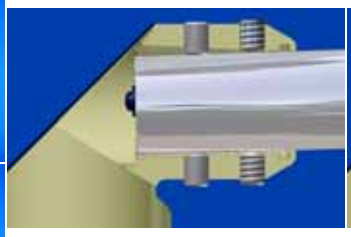
Permissible load depending on system assembly
Intermediate hinge CP 6080.140 should only be used once per system!

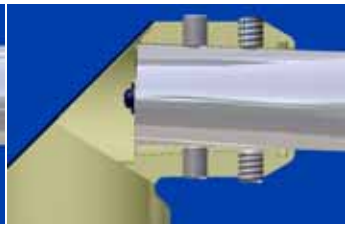


CP-S steel and stainless steel











The angle coupling and angle piece, wall-mounted and top-mounted joint of the system from steel have an integral adjustment facility.

In this way, deviations in the horizontal of up to ±2.5° can be compensated in a flash.

The enclosures are easily located on the enclosure coupling of the stainless steel system with a pre-assembled screw.



Angle adaptor 90°
The ideal connection of the CP-S and CP-L systems.

Due to the differing requirements and slightly deviating attachment types, the support arm and enclosure should be made from the same material (steel or stainless steel).

Features



CP-L aluminium



The alternative for the configuration of compact systems – the 90° support arm bracket.



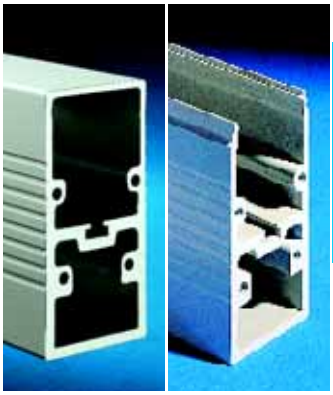
Signal pillars may be mounted on many connecting elements of the systems using the mounting component,
see page 1129.



The height-adjustable support arm offers even better ergonomics.



Angle adaptor 90°
The ideal connection of the CP-XL and CP-L systems.



CP-XL aluminium



With quadruple screw-fastening, the system offers a particularly high level of safety.



Two ducts allow the control cable and supply voltage to be separated.



A stable base point for the system – the custom-produced pillar,
see page 295.



CP-Q steel



The support arm system has adjustment options if 4 clamping screws are used.



Removable panel for problem-free cable entry.



Concertina section with zip for easy access during assembly and service.

Getting from the enclosure to the matching support arm components

The diagrams show how the connection points of the Rittal enclosures may be continued with support arm systems, either directly or via adaptors.
There is a choice of four support arm systems, depending on your design, load and cabling requirements.

tiltable or rotatable components

System end

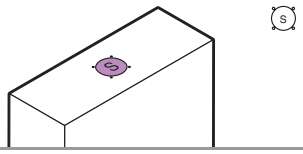
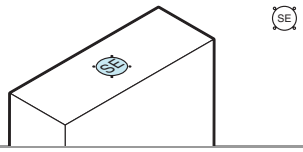
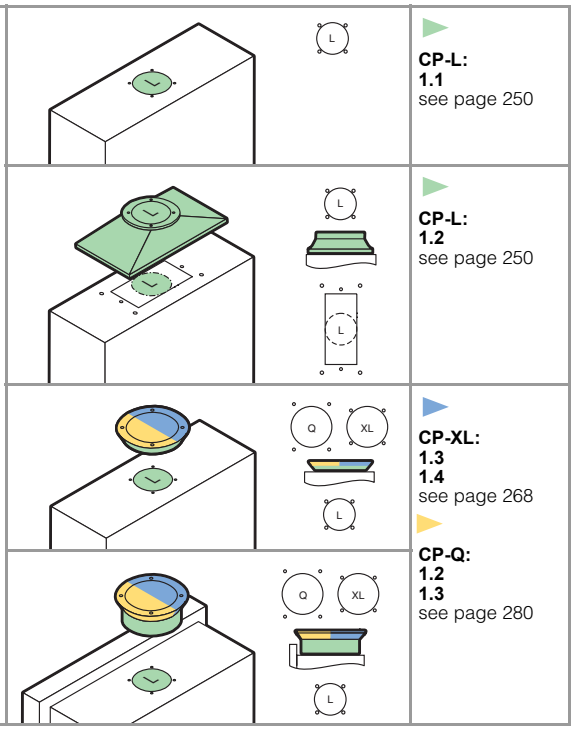
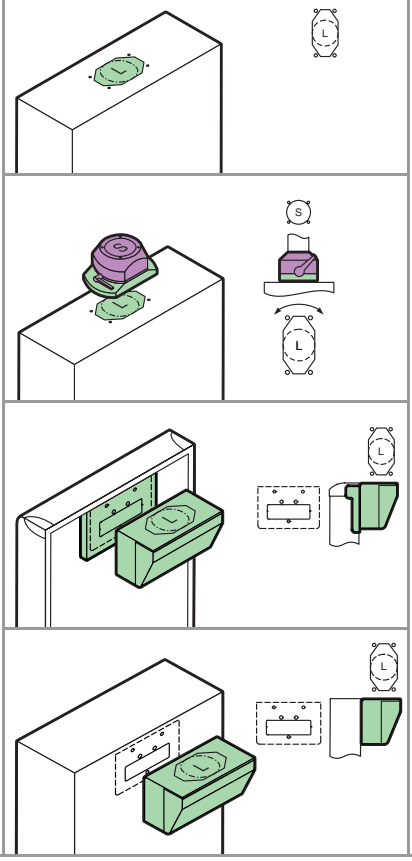
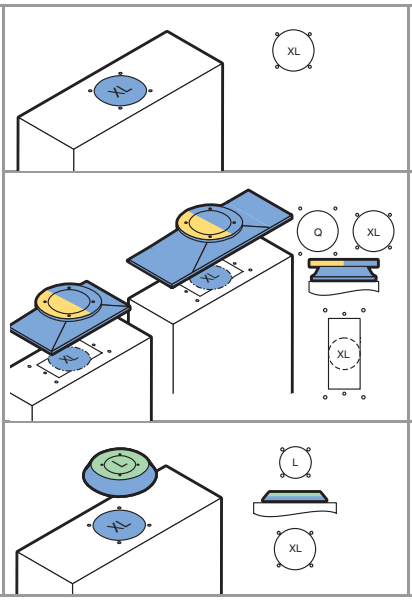
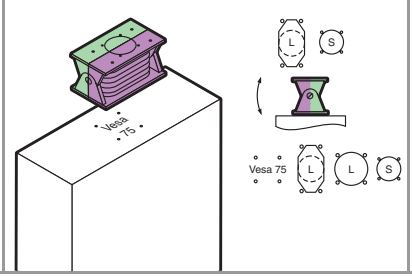
CP-S steel
For small and lightweight enclosures.

CP-S stainless steel
For use where there are special requirements in terms of corrosion and hygiene.

CP-L
The system for average command panel weights, stylish lines, and outstanding solution diversity.

CP-XL
The system for extreme loads. Also with open cable duct for super-easy cable entry.

CP-Q
The square alternative to the CP-L and CP-XL support arm systems.

	Enclosure	Continuation with support arm system
CP-S steel		**CP-S steel: 1.1** see page 242 **CP-L: 1.6** see page 250
CP-S stainless steel		**CP-S stainless steel: 1.1** see page 313 – 316
CP-L Ø 130 mm		**CP-L: 1.1** see page 250 **CP-L: 1.2** see page 250 **CP-XL: 1.3, 1.4** see page 268 **CP-Q: 1.2, 1.3** see page 280
CP-L ▭ 120 x 65 mm		**CP-L: 1.4** see page 250 **CP-S steel: 1.2** see page 242
CP-XL		**CP-XL: 1.1** see page 268 **CP-XL: 1.2** see page 268 **CP-Q: 1.2, 1.3** see page 280 **CP-L: 1.3** see page 250 **CP-L: 1.3 1.4** see page 250
VESA 75		**CP-S: 1.3** see page 242 **CP-L ▭ 120 x 65 mm: 1.6** see page 250

Fast selection

Make a simple sketch showing the basic form of the support arm.
Next, select the corresponding support arm components.
Start with **1** system start by selecting the appopriate enclosure situation.

Continue with CP-S according to the item numbers.

System changes are indicated by the colour.
Green = CP-L

System continuation/system end:
all directions

vertical

horizontal

angled

tiltable or

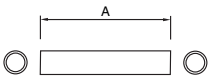
rotatable components

From position **3** enclosure attachments, a support section is required between each component (minimum length approx. 100 mm, for wall/floor mounting approx. 160 mm).

T Support sections

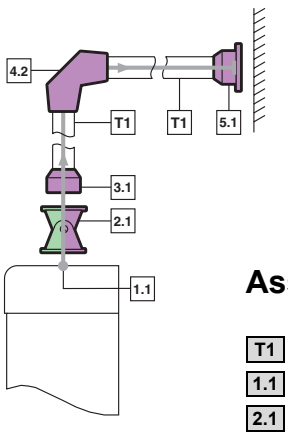
T1 Support section CP-S

$A_{min.}$ = 100 mm
$A_{max.}$ = 2000 mm



A mm	RAL 9006 **Model No. CP**
500	6501.010
1000	6501.030
as per specifications	6501.340[1)]

See page 243.
[1)] Delivery times available on request.



Assembly example:

- T1 Support section CP-S
- 1.1 Mounting cut-out CP-S
- 2.1 Tilting enclosure attachment, top mounting
- 3.1 Enclosure attachment CP-S
- 4.2 Angle piece 90° CP-S
- 5.1 Wall/base mounting CP-S

Note:
After any given support section, the 90° angle adaptor CP-L to CP-S may be used as a transition to the CP-L system.
Load diagram,
see page 237.

Support arm system CP-S steel

Fast selection

1 System start

Enclosure with mounting cut-out

1.1 Mounting cut-out CP-S
see page 240


→ 2.1 3.1 3.2 3.4

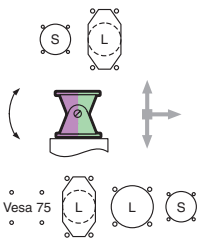
1.2 Mounting cut-out CP-L, ▭ 120 x 65 mm
see page 240


→ 2.1 3.3

1.3 Mounting cut-out VESA 75
see page 240


→ 2.1

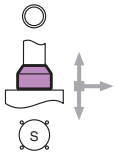
2 Tilting adaptor

2.1 Enclosure attachment, tilting, top mounting[1)]
IW 6902.670 (RAL 7024)
see page 243


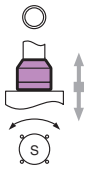
→ 3.1 3.2 3.4
→ CP-L 2.4 s. p. 251
→ ▭

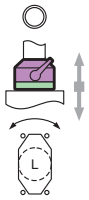
[1)] May also be used rotated through 180°, e. g. from CP-L ▭ 120 x 65 mm or CP-S to CP-L Ø 130 mm.

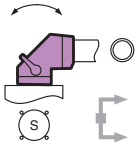
3 Enclosure attachments

3.1 CP-S attachment CP-S
CP 6501.070 (RAL 7024)
see page 244


→ 4.1 4.2 5.1 5.2 5.3

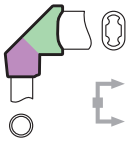
3.2 Housing coupling, round CP-S
CP 6501.050 (RAL 7024)
see page 245


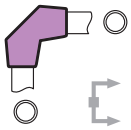
3.3 Housing coupling CP-S, for support arm connection CP-L ▭ 120 x 65 mm
CP 6501.130 (RAL 7024)
see page 245


3.4 Angle coupling 90° CP-S
CP 6501.120 (RAL 7024)
see page 246


→ 5.1 5.2 5.3

4 Angle components

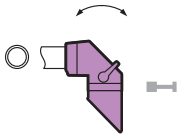
4.1 Angle adaptor 90° CP-L to CP-S
CP 6501.090 (RAL 7024)
see page 264

→ CP-L s. p. 250

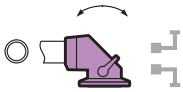
4.2 Angle piece 90° CP-S
CP 6501.140 (RAL 7024)
see page 247

→ 5.1 5.2 5.3

5 System end

5.1 Wall/base mounting CP-S
CP 6501.110 (RAL 7024)
see page 248

→ ▭

5.2 Wall-mounted hinge CP-S
CP 6501.150 (RAL 7024)
see page 249

→ ▭

5.3 Top-mounted joint CP-S
CP 6501.160 (RAL 7024)
see page 248

→ ▭



Support section CP-S

Attached to the connection components with 2 clamping screws.

Dimensions:
External diameter: 48.3 mm
Wall thickness: 4.0 mm

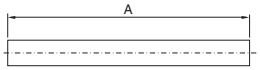
Material:
Steel conduit, powder-coated

Colour:
RAL 9006

Note:
Bent support sections available on request.

A mm	Weight kg	Model No. CP
500	2.1	**6501.010**
1000	4.2	**6501.030**
To specifications A =	4.2 kg/m	**6501.340**[1)]

[1)] Delivery times available on request.



$A_{min.}$ = 100 mm
$A_{max.}$ = 2000 mm





Enclosure attachment, tilting, top mounting

For mounting on:
- IW worktop, prepared for enclosure attachment CP-L, Ø 130 mm, see page 184
- Surfaces
- Enclosure attachment/coupling CP-L ▭ 120 x 65 mm, see page 260/262
- Attachment/housing coupling CP-S (may also be used as tilting adaptor +100°/–60° for CP-S), see page 244/245.

To fit enclosures up to 20 kg with support arm connection:
- CP-S
- CP-L, ▭ 120 x 65 mm
- CP-L Ø 130 mm
- VESA Standard 75.

With cable tube for protected cable entry.

Tilt angle:
+100°/–60°, adjustable in 7.2° increments via clamping lever and may be limited to +100°/–15° using the stop screw supplied loose.

Colour RAL	Weight kg	Model No. IW
7024	0.8	**6902.670**

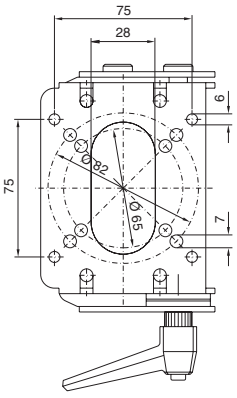
Material:
Sheet steel, spray-finished

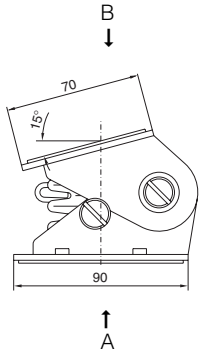
Supply includes:
Assembly parts and plastic concertina section.

Accessories:

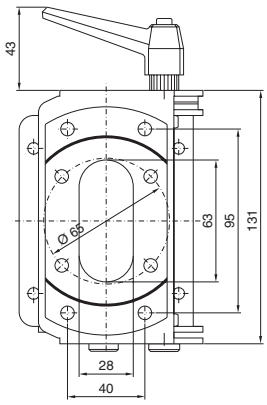
IW worktops prepared for enclosure attachment, see page 184.

View A

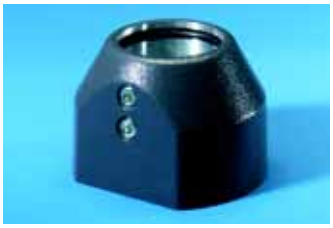




View B



Steel





CP-S attachment

For rigid attachment of the
- enclosure to the support section,
- support arm to flat surfaces, rear[1].

With two drilling patterns for
a) Rittal Command Panels
b) Complete Control Panels

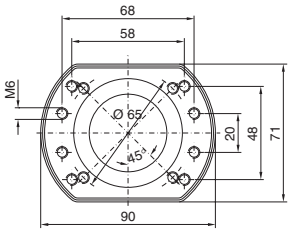
Material:
Die-cast zinc

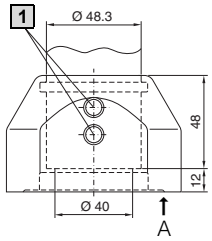
Supply includes:
Seal and 2 clamping screws for support section CP-S.

Colour RAL	Weight kg	**Model No. CP**
7024	1.0	**6501.070**

[1] Maximum load 400 N

View A

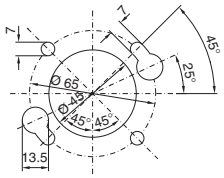




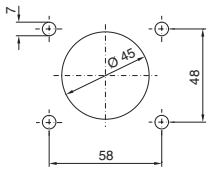
1 Clamping screw

Mounting cut-outs

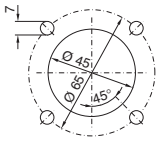
a)



b)



Like cut-out a), but with lock holes







Enclosure coupling CP-S

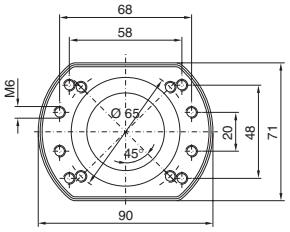
for support arm connection CP-S, round
For swivel mounting of the enclosure on the vertical section of the support arm system.
With two drilling patterns for
a) Rittal Command Panels
b) Complete Control Panels

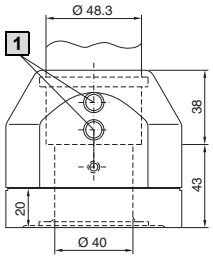
Rotation range:
Approx. 305°, lockable via clamping lever.
By inserting additional tension pins 4 x 16 mm to ISO 8752 the rotation range may be limited to ±7°, 44°, 104°, 142°.

Colour RAL	Weight kg	Model No. CP
7024	1.1	**6501.050**

Material:
Die-cast zinc

Supply includes:
Seal, 2 clamping screws for support section CP-S and clamping lever.

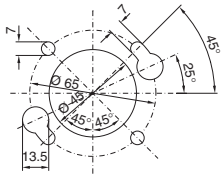




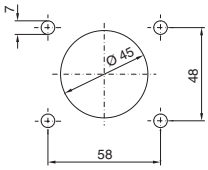
1 Clamping screw

Mounting cut-outs

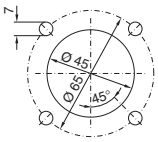
a)

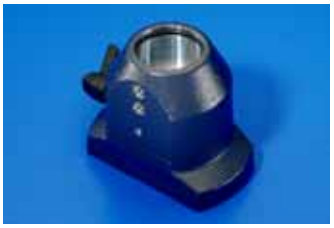


b)



Like cut-out a), but with lock holes







Enclosure coupling CP-S

for support arm connection CP-L, ▭ 120 x 65 mm
For swivel mounting of the enclosure on the vertical section of the support arm system.

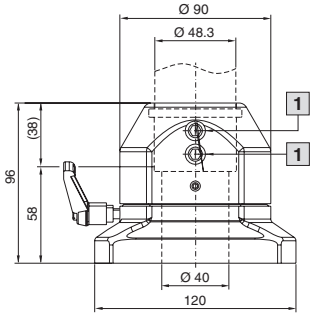
For mounting on:
- Comfort Panel standard dimensions
  CP 6371.000 – .020
  CP 6371.120 – .170
  CP 6371.220 – .240
  (see page 194)
- Optipanel to fit TFT monitors
  CP 6380.010 – .040 (see page 205)
- Optipanel W x H x D = 19″ x 7 U x 100 mm
  CP 6380.000 (see page 205)
- Optipanel installation depth 50 mm, with rear support arm connection (see page 209)
- Compact Panel
  CP 6340.X10 (see page 231).

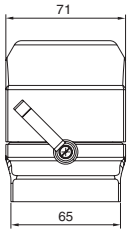
Colour RAL	Weight kg	Model No. CP
7024	1.5	**6501.130**

Rotation range:
Approx. 305°, lockable via clamping levers.
By inserting additional tension pins 4 x 16 mm to ISO 8752 the rotation range may be limited to ±7°, 44°, 104°, 142°.

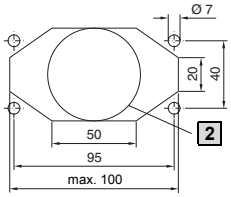
Material:
Die-cast zinc

Supply includes:
Seals, 2 locking screws.





Mounting cut-out, enclosure

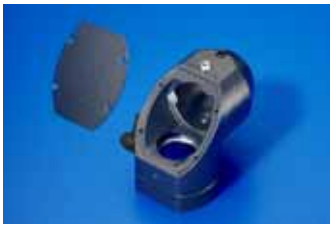


1 Locking screw

2 Alternative max. Ø 55 mm

Support arm system CP-S

Steel





Angle coupling 90°CP-S

For swivel fastening of the enclosure to the horizontal support arm system.

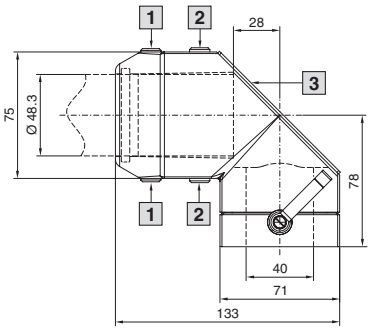
- Enclosure top-mounted or suspended
- Adjustment option of the support arm system (see page 238)
- Removable panel for problem-free cable entry

Rotation range:
Approx. 305°, lockable via clamping levers.
By inserting additional tension pins 4 x 16 mm to ISO 8752 the rotation range may be limited to ±7°, 44°, 104°, 142°.

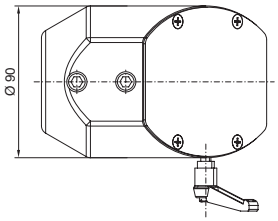
Colour RAL	Weight kg	Model No. CP
7024	1.6	**6501.120**

Material:
Cast aluminium/die-cast zinc

Supply includes:
Seals, 2 locking screws and 2 adjusting screws.

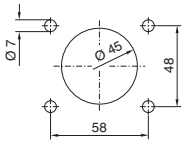


1 Locking screw
2 Adjusting screw
3 Removable plate

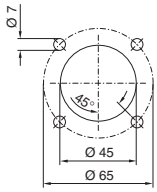


Possible mounting cut-outs of enclosures

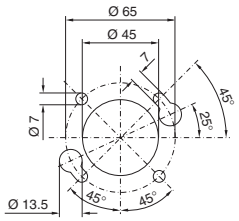
a)



b)



c)

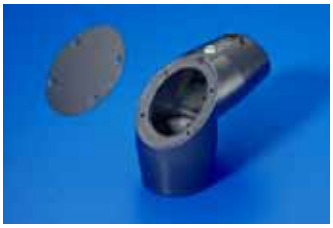


Version c) for quick/one-man assembly



Angle adaptor 90° CP-L to CP-S

see page 264.





Angle piece 90°CP-S

For connecting horizontal and vertical support arm components.

- Adjustment option of the support arm system (see page 238)
- Removable panel for problem-free cable entry

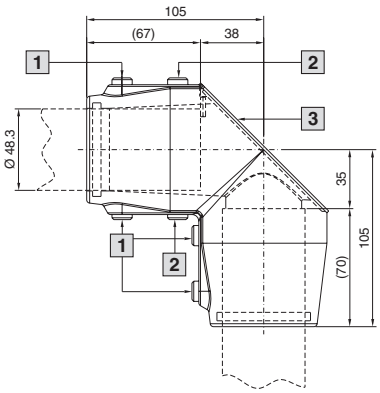
Material:
Cast aluminium

Supply includes:
Seals, 4 locking screws and 2 adjusting screws.

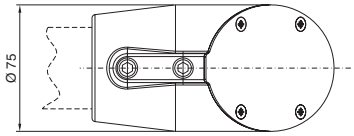
Colour RAL	Weight kg	Model No. CP
7024	1.1	**6501.140**

Accessories:

Mounting component for signal pillars (SZ 2375.030), see page 1129.



1 Locking screw
2 Adjusting screw
3 Removable plate





Mounting components

for support arm systems
For mounting a signal pillar, see page 1129.

Support arm system CP-S

Steel





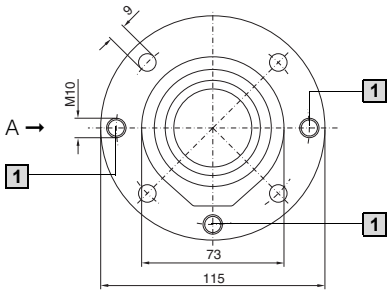
Wall/base mounting CP-S

For rigid attachment of the support section to surfaces. With flange for front mounting.

Material:
Cast aluminium

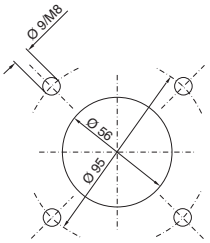
Supply includes:
Seal, 2 clamping screws for support section CP-S and 3 pre-fitted adjusting screws.

Colour RAL	Weight kg	Model No. CP
7024	0.7	**6501.110**

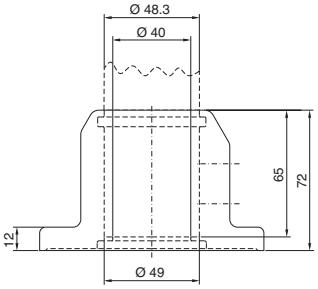


1 Adjusting screw

Mounting cut-out



View A







Top-mounted joint CP-S

For swivel mounting of the support arm system to horizontal surfaces.

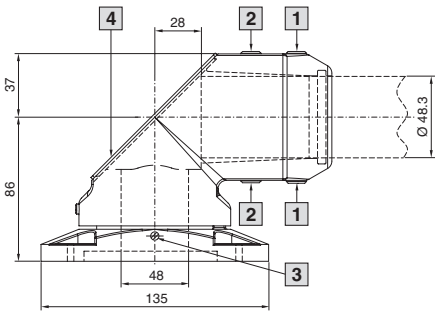
- Enclosure top-mounted or suspended
- Adjustment option of the support arm system (see page 238)
- Removable panel for problem-free cable entry

Rotation range:
Approx. 300°. By inserting additional pins 6 x 20 mm to ISO 8752 the rotation range may be limited to ±6°, 51°, 96°. To lock the joint, the screw may be exchanged for standard clamping lever M6 x 25 mm.

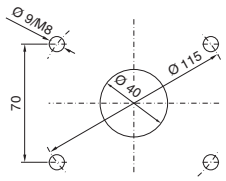
Colour RAL	Weight kg	Model No. CP
7024	1.8	**6501.160**

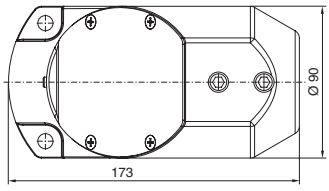
Material:
Cast aluminium

Supply includes:
Seals, 2 locking screws and 2 adjusting screws.



Mounting cut-out





1 Locking screw
2 Adjusting screw
3 Screw for adjusting rotatability
4 Removable plate





Wall-mounted hinge CP-S

For vertically hinged mounting of the support arm on vertical surfaces.

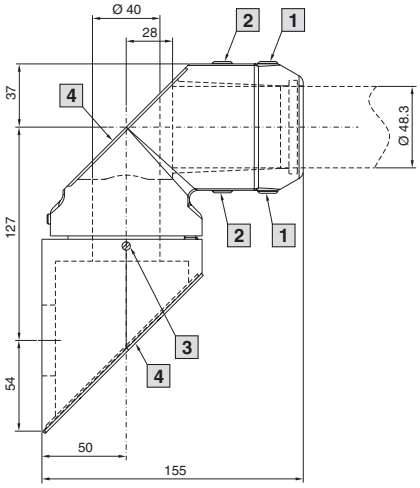
- Machined keyhole as mirror image for support arm outlet at the top or bottom for easy one-man assembly.
  – Pre-mount the screws on a vertical surface
  – Locate the wall-mounted hinge (support arm system pre-mounted)
  – Tighten the screws
- Adjustment option of the support arm system (see page 238)
- Removable panel for problem-free cable entry

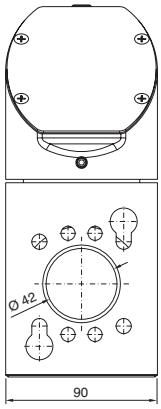
Rotation range:
Approx. 300°. By inserting additional pins 6 x 20 mm to ISO 8752 the rotation range may be limited to ±6°, 51°, 96°. To lock the joint, the screw may be exchanged for standard clamping lever M6 x 25 mm.

Colour RAL	Weight kg	Model No. CP
7024	2.2	**6501.150**

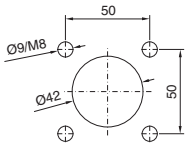
Material:
Cast aluminium

Supply includes:
Seals, 2 locking screws and 2 adjusting screws.





Mounting cut-out 90°



1 Locking screw
2 Adjusting screw
3 Screw for adjusting rotatability
4 Removable plate

Support arm system CP-L

Fast selection

Make a simple sketch showing the basic form of the support arm.
Next, select the corresponding support arm components.
Start with **1** system start by selecting the appopriate enclosure situation.

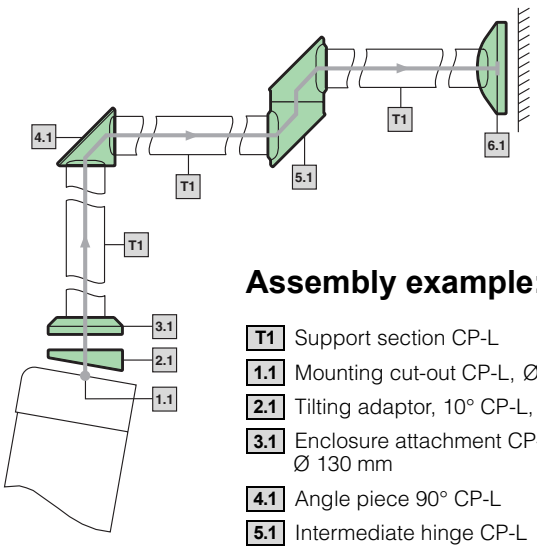
Continue with CP-L according to the item numbers.

System changes are indicated by the colour.
Violet = CP-S
Blue = CP-XL

System continuation/system end:
all directions
vertical
horizontal
angled
tiltable or
rotatable components

From position **3** enclosure attachments, a support section is required between each component (minimum length approx. 100 mm, for wall/floor mounting approx. 160 mm).
The cross-sections indicate the installation position(s).

X = 0 (RAL 7030)

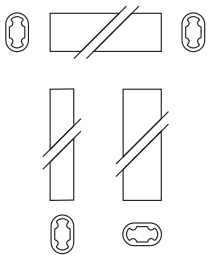


Assembly example:

- T1 Support section CP-L
- 1.1 Mounting cut-out CP-L, Ø 130 mm
- 2.1 Tilting adaptor, 10° CP-L, Ø 130 mm
- 3.1 Enclosure attachment CP-L, Ø 130 mm
- 4.1 Angle piece 90° CP-L
- 5.1 Intermediate hinge CP-L
- 6.1 Wall/base mounting CP-L

T Support sections

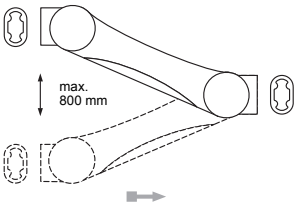
T1 Support section CP-L



Length mm	Colour RAL	Model No. CP
250	7035	6509.000
500	7035	6511.000
1000	7035	6513.000
2000	7035	6515.000
250	9006	6509.010
500	9006	6511.010
1000	9006	6513.010
2000	9006	6515.010

See page 254

T2 Support arm CP-L, height-adjustable

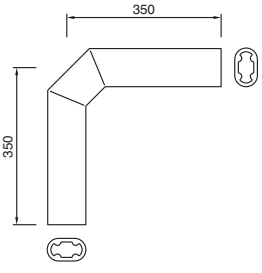


Colour: RAL 7024/9006

Weight range kg	Length mm	Model No. CP
10 – 20	962	6510.210
19 – 30	958	6510.310

See page 252

T3 Support arm bracket 90°, CP-L



Colour RAL	Model No. CP
7035	6519.000
9006	6519.010

See page 254

1 System start

Enclosure with mounting cut-out

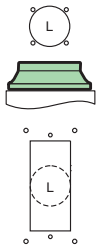
1.1 Mounting cut-out CP-L, Ø 130 mm



→ 2.1 2.2 2.4 3.1 3.2 3.3

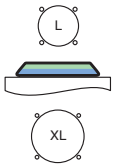
1.2 Connection plate for support arm CP-L

CP 6528.2X0, see page 259



1.3 Connection adaptor CP-L to CP-XL

CP 6528.0X0, see page 258



1.4 Mounting cut-out CP-L, ▭ 120 x 65 mm



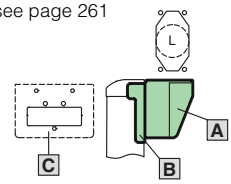
→ 2.3 2.4 3.4 3.5 3.6
→ CP-S 3.3 s. p. 242

1.5 Connection console CP-L ▭ 120 x 65 mm A

CP 6508.0X0
on Optipanel support plate **B**
CP 6508.100

Other enclosures with mounting cut-out **C** for connection console

see page 261



→ 2.3 2.4 3.4 3.5 3.6
→ CP-S 3.3 s. p. 242

1.6 Mounting cut-out VESA 75

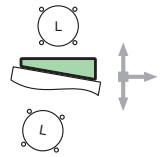
see page 240



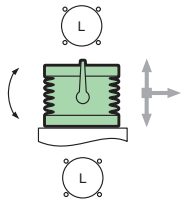
→ 2.4

Fast selection

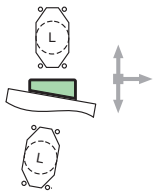
2 Tilting adaptor

2.1 Tilting adaptor 10° CP-L, Ø 130 mm
CP 6527.0X0, see page 255


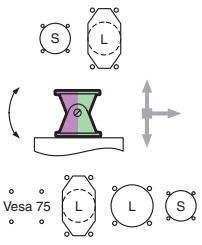
→ 3.1 3.2 3.3

2.2 Tilting adaptor +/– 45° CP-L, Ø 130 mm
CP 6529.0X0, see page 255


→ 3.1 3.2 3.3

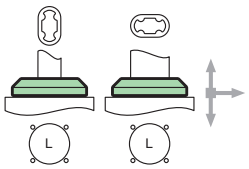
2.3 Tilting adaptor, 10° CP-L, ▭ 120 x 65 mm
CP 6527.1X0, see page 256


→ 3.4 3.5 3.6

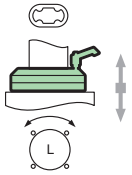
2.4 Enclosure attachment, tilting, top mounting[1)]
CP 6902.670 (RAL 7024), see page 243


→ 3.4 3.5
▶ CP-S s. p. 241 242

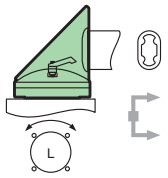
3 Enclosure attachments

3.1 Enclosure attachment CP-L, Ø 130 mm
CP 6525.5X0, see page 256


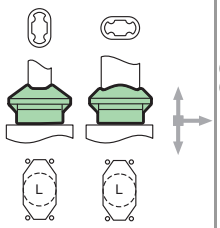
→ 4.1 4.2 4.3 6.1 6.2 6.3 6.4

3.2 Housing coupling CP-L, Ø 130 mm
CP 6525.0X0, see page 262


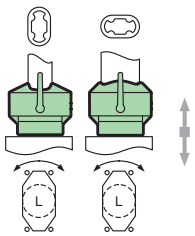
→ 4.1 4.3 6.1 6.2 6.3[2)] 6.4[2)]

3.3 Angle coupling 90° CP-L, Ø 130 mm
CP 6526.0X0, see page 263


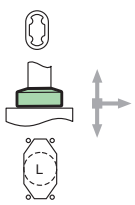
→ 4.1 5.1 6.1 6.2 6.3 6.4

3.4 Enclosure attachment CP-L, ▭ 120 x 65 mm
CP 6525.6X0, see page 257


→ 4.1 4.2 4.3 6.1 6.2 6.3[2)] 6.4[2)]

3.5 Housing coupling CP-L, ▭ 120 x 65 mm
CP 6525.1X0, see page 262


→ 4.1 4.3 6.1 6.2 6.3[2)] 6.4[2)]

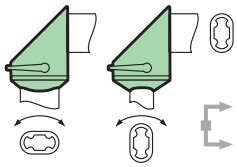
3.6 Enclosure attachment CP-L, ▭ 120 x 65 mm, locatable
CP 6525.2X0, see page 260


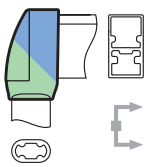
→ 4.1 4.2 4.3 6.1 6.2

4 Angle components

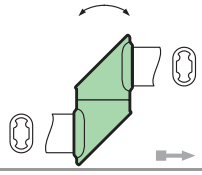
4.1 Angle piece 90° CP-L
CP 6524.0X0, see page 263

→ 5.1 6.1 6.2 6.3 6.4

4.2 Articulated joint 90° CP-L
CP 6524.2X0, see page 264


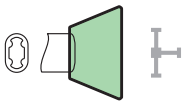
4.3 Angle adaptor 90° CP-L to CP-S
CP 6528.100, see page 264

▶ CP-XL s. p. 268

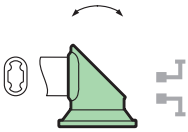
5 Intermediate hinge

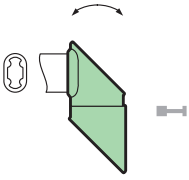
5.1 Intermediate hinge CP-L
CP 6523.0X0, see page 265

→ 6.1 6.2

6 System end

6.1 Wall/base mounting, small, CP-L
CP 6520.5X0, see page 265


6.2 Wall/base mounting, large, CP-L
CP 6520.0X0, see page 266


6.3 Top-mounted joint CP-L
CP 6522.0X0, see page 266


6.4 Wall-mounted hinge CP-L
CP 6521.0X0, see page 267


Notes:

Re T2
Support arm, height adjustable should always be inserted as the first horizontal component after the enclosure.

Re 5.1 / 6.3 / 6.4
It is always expedient to use only one intermediate hinge or one wall mounted hinge.

Two joints will restrict load capacity and make positioning the Command Panel more difficult.
Load diagram,
see page 237.

Re 4.1
Two angle pieces may also be used one after the other.

[1)] May also be used rotated through 180°, e. g. from CP-L ▭ 120 x 65 mm or CP-S to CP-L Ø 130 mm.
[2)] Via T3 support arm bracket 90° CP-L.

Support arm system CP-L

Support arm, height adjustable







Support arm, height adjustable CP-L

Offers enhanced ergonomics thanks to:

- Adjustment range
  – for tall and short operators
  – for seated and standing work
  adjustable to up to 800 mm as required via and adjustment screw at the front of the support arm.
- Precise coordination of the compression spring to the enclosure weight via an adjusting screw at the rear of the support arm.
- Complete functional reliabilty – if the compression spring breaks, the arm will remain in position.
- Plastic casing clips off for access to the integral U-section cable tray.
- Tilting angle of the mounted enclosure is identical in every height position.

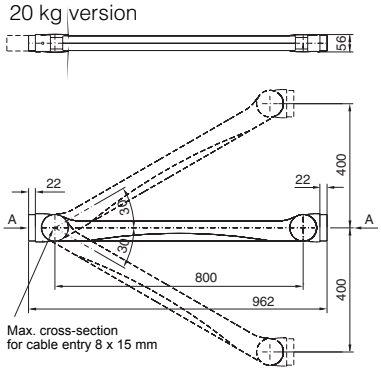
Material:
Plastic-coated steel

Supply includes:
Round tube with compression spring relief and U-section cable tray, 2 threaded connectors, plastic casing, including assembly parts.

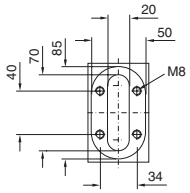
Overall length mm	Colour RAL	Weight range kg[1)]	**Model No. CP**
962	9006	10 – 20	**6510.210**
958	9006	19 – 30	**6510.310**

[1)] For configured enclosure and vertical support section.

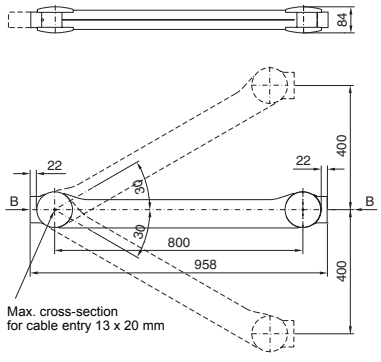
20 kg version



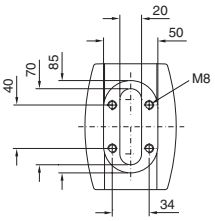
View A



30 kg version

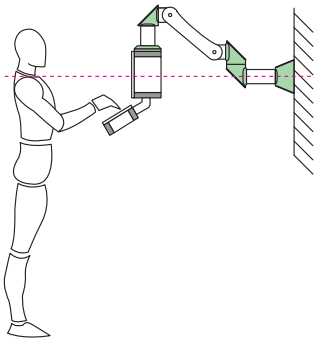


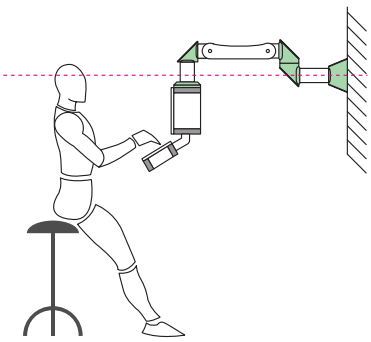
View B

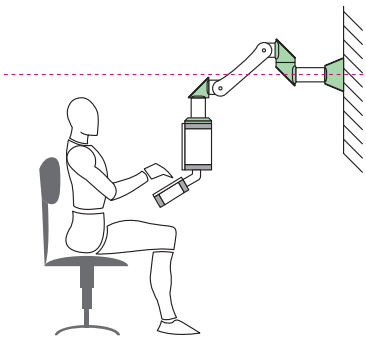


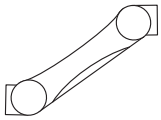
Support arm, height adjustable

The versatile combination options with horizontal mounting are illustrated in this diagram.

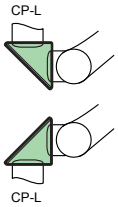




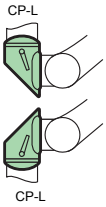




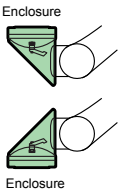
Enclosure side



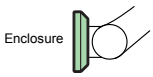
Angle piece 90° CP-L
Model No. 6524.0X0[1)],
see page 263.



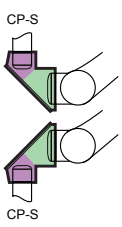
Angle piece 90° CP-L
Model No. 6524.2X0[1)],
see page 264.



Angle coupling 90° CP-L
for support arm connection
Ø 130 mm
Model No. 6526.0X0[1)],
see page 263.

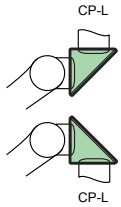


Enclosure attachment CP-L
for support arm connection
Ø 130 mm
Model No. 6525.5X0[1)],
enclosure attachment CP-L
for support arm connection
▭ 120 x 65 mm
Model No. 6525.6X0[1)],
see page 256/257.
Enclosure with rear support arm cut-out/reinforcement available on request.

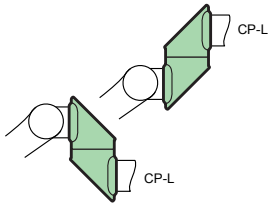


Angle adaptor 90°, CP-L to CP-S
Model No. 6501.090 (RAL 7024),
see page 264.

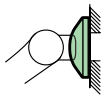
Attachment side



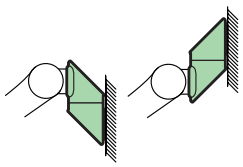
Angle piece 90° CP-L
Model No. 6524.0X0[1)],
see page 263.



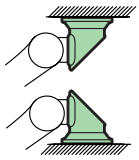
Intermediate hinge CP-L
Model No. 6523.0X0[1)],
see page 265.



Wall/base mounting, small,
CP-L
Model No. 6520.5X0[1)],
see page 265.



Wall-mounted hinge CP-L
Model No. 6521.0X0[1)],
see page 267.



Top-mounted joint CP-L
Model No. 6522.0X0[1)],
see page 266.

[1)] Key:
X = 0 RAL 7030
X = 1 RAL 7024

Support arm system CP-L

Aluminium



Support section CP-L

Attachment to the connection components with 4 self-tapping screws in a screw channel, may be cut to any required length, no thread-tapping required.

Dimensions:
50 x 85 mm

Wall thickness:
8 mm

Material:
Extruded aluminium section

Note:
Load information,
see page 237.

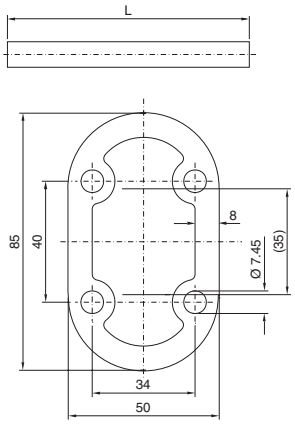
German patent no. 43 31 124
French patent no. 94 10 806
Ital. patent no. 01275022
Jap. patent no. 2730621
US patent no. 5,460,894

Length (L)[1) mm	Weight kg	RAL 7035 Model No. CP	RAL 9006 Model No. CP
250	1.3	**6509.000**	**6509.010**
500	2.6	**6511.000**	**6511.010**
1000	5.1	**6513.000**	**6513.010**
2000	10.2	**6515.000**	**6515.010**

[1) L min = 135 mm

Rittal service:

Support section CP-L, open with two chambers for cable entry:
– sealed, e. g. for standard cabling,
– open, with plastic cover section for easy retro-fitting of cables.
Available on request.





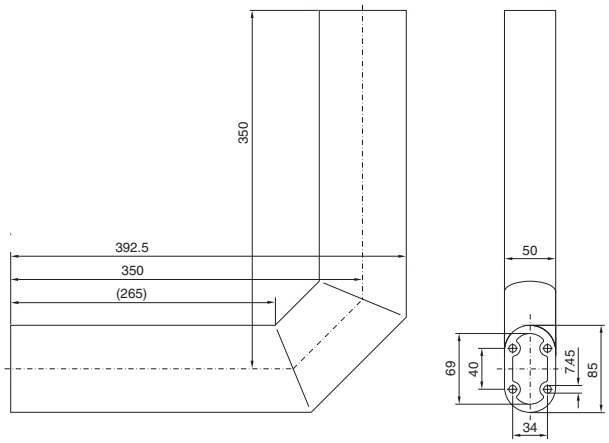


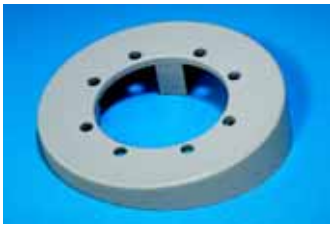
Support arm bracket 90° CP-L

The compact, welded alternative; no thread-tapping required.

Material:
Extruded aluminium section

Colour RAL	Weight kg	Model No. CP
7035	3.4	**6519.000**
9006	3.4	**6519.010**







Tilting adaptor, 10° CP-L

for support arm connection Ø 130 mm
For mounting between:
- Housing coupling CP-L (CP 6525.0X0)

or
- Enclosure attachment CP-L (CP 6525.0X0)

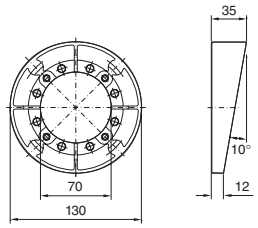
or
- Angle coupling 90° CP-L (CP 6526.0X0)

and the Command Panel.

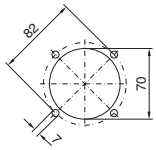
Material:
Die-cast zinc

Supply includes:
Seal and assembly parts.

Colour RAL	Weight kg	**Model No. CP**
7030	0.6	**6527.000**
7024	0.6	**6527.010**



Mounting cut-out
Enclosure CP-L, Ø 130 mm







Tilting adaptor, ±45° CP-L

for support arm connection Ø 130 mm
For mounting between:
- Housing coupling CP-L (CP 6525.0X0)

or
- Enclosure attachment CP-L (CP 6525.0X0)

or
- Angle coupling 90° CP-L (CP 6526.0X0)

and the Command Panel.

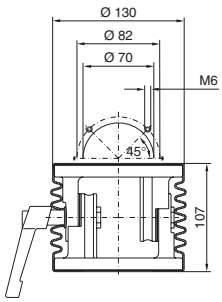
Tilting angle:
Adjustable in 7.5° increments

Material:
Cast aluminium

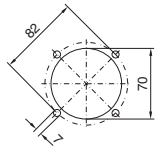
Supply includes:
Seal, plastic concertina section and assembly parts.

German patent no. 195 40 298
US patent no. 5,911,393

Colour RAL	Weight kg	**Model No. CP**
7030	1.3	**6529.000**
7024	1.3	**6529.010**



Mounting cut-out
Enclosure CP-L, Ø 130 mm



Support arm system CP-L

Aluminium





Tilting adaptor, 10°CP-L

for support arm connection ▭ 120 x 65 mm
For mounting between:
- Housing coupling CP-L (CP 6525.1X0)

or
- Enclosure attachment CP-L (CP 6525.6X0)

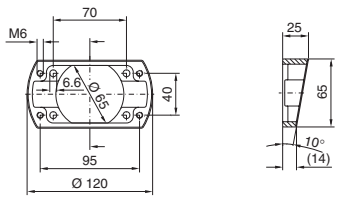
or
- Housing coupling CP-S (CP 6501.130)

and the Command Panel.

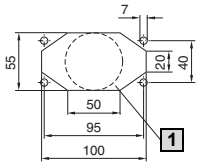
Material:
Die-cast zinc

Supply includes:
Seal and assembly parts.

Colour RAL	Weight kg	**Model No. CP**
7030	0.4	**6527.100**
7024	0.4	**6527.110**



Mounting cut-out
Enclosure CP-L ▭ 120 x 65 mm



1 Alternative max. Ø 55 mm



Enclosure attachment, tilting

Assembly,
see page 243.





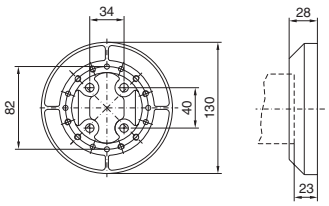
Enclosure attachment CP-L

for support arm connection Ø 130 mm
For rigid fastening of the enclosure to the support arm system.

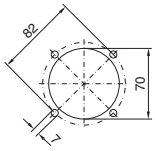
Material:
Die-cast zinc

Supply includes:
Seals and self-tapping screws for CP-L support section attachment.

Colour RAL	Weight kg	**Model No. CP**
7030	1.0	**6525.500**
7024	1.0	**6525.510**



Mounting cut-out
Enclosure CP-L, Ø 130 mm







Enclosure attachment CP-L

for support arm connection ▭ 120 x 65 mm
For rigid fastening of the enclosure to the support arm system.

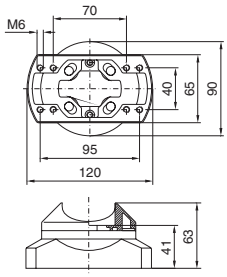
Material:
Die-cast zinc

Supply includes:
Seals and self-tapping screws for CP-L support section attachment.

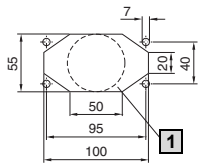
Colour RAL	Weight kg	**Model No. CP**
7030	1.0	**6525.600**
7024	1.0	**6525.610**

Accessories:

Connection console CP-L,
CP-L, see page 261.



Mounting cut-out
Enclosure CP-L ▭ 120 x 65 mm



1 Alternative max. Ø 55 mm







Enclosure attachment, tilting, base mounting

CP-L ▭ 120 x 65 mm
For mounting beneath:
- IW worktop with pedestal
- Sufficiently large surfaces.

Fits enclosures with mounting cut-out:
- CP-L ▭ 120 x 65 mm (e. g. Optipanel, see page 205, Comfort Panel, see page 194).

With mounting cut-out for connector grommet for sealed cable entry.

Tilt angle:
+40°/–40°, lockable via clamping lever

Material:
Sheet steel, spray-finished

Supply includes:
Assembly parts

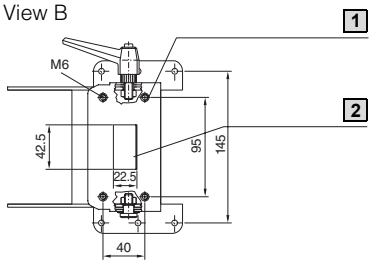
Colour RAL	Weight kg	**Model No. IW**
7024	1.6	**6902.640**

Note:
The enclosure attachment can be mounted either on the support arm connection of the Optipanel enclosure or on the underside or rear of any enclosure.

Accessories:

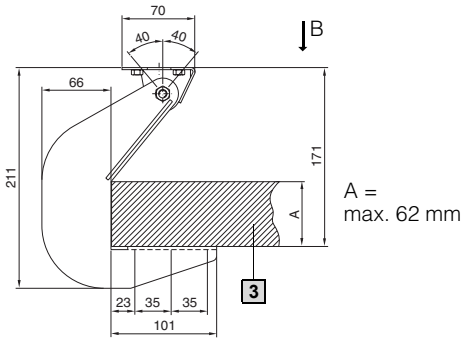
Connector gland,
see page 1057.
IW worktop,
see page 184.
Pedestal,
see page 290.

View B



1 Prepared for enclosure with connection CP-L/CP-S, ▭ 120 x 65 mm or connection console CP-L CP 6508.0X0

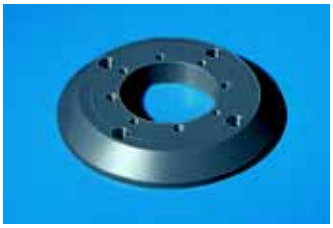
2 Preparation for connector grommet SZ 2400.300/SZ 2400.500



3 Worktop, e.g. IW 6902.310/IW 6902.320

Support arm system CP-L

Aluminium







Connection adaptor CP-L on CP-XL or CP-L on CP-Q

for mounting between:
- Enclosure with support arm connection CP-L and
- Support arm system CP-XL or CP-Q.

May also be used for the attachment of command panels with cut-out for CP-L directly to machines and systems without a support arm. The mounting cut-out CP-XL or CP-Q should be provided there.

Assembly sequence:
- Mount the connection adaptor on the supporting structure
- Mount the enclosure and tighten the screws

The seal to the supporting structure is available on request, if required.

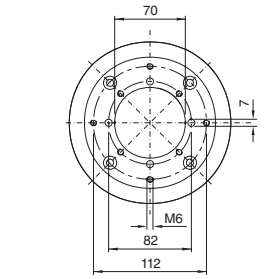
Material:
Cast aluminium

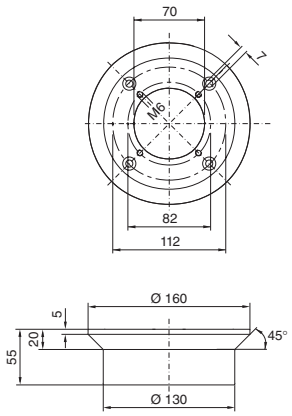
Supply includes:
Seal and assembly parts.

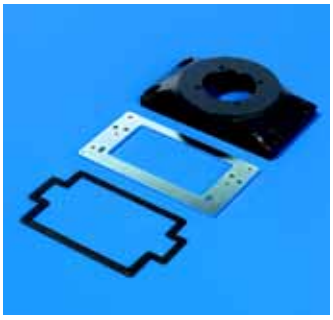
Height mm	Colour RAL	Weight kg	**Model No. CP**
20[1)]	7030	0.6	**6528.000**
20[1)]	7024	0.6	**6528.010**
55[2)]	7030	0.7	**6528.500**
55[2)]	7024	0.7	**6528.510**

[1)] If the load permits, also suitable for mounting between enclosure with support arm connection CP-XL or CP-Q and support arm system CP-L Ø 130 mm.

[2)] For Command Panel VIP 6000, see page 213, 3.1. Operating housing, design code number 1 to 5.







Connection plate CP-L

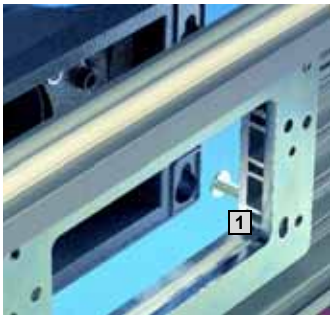
With reinforcement plate

- For easy location of the Command Panel onto the support arm or pedestal.
- Easily screw-fastened from the outside after drilling 4 holes Ø 7 mm.
- More space for cable entry plus clamping bracket.

For mounting:

- Comfort Panel[1)]
- VIP 6000[2)]
- Optipanel[3)]
- Sheet steel Command Panel[4)]

on:



Support arm system components	CP-L
Enclosure attachment	CP 6525.5X0
Housing coupling	CP 6525.0X0
Angle coupling	CP 6526.0X0
Tilting adaptor 10°	CP 6527.0X0
Tilting adaptor +/– 45°	CP 6529.0X0

1 Pre-install screws, locate the enclosure, tighten the screws, and it's done!

With support arm connection	Colour RAL	Weight kg	**Model No. CP**
CP-L	7030	0.7	**6528.200**
CP-L	7024	0.7	**6528.210**

Note:
The square support arm cut-out can be prepared on request.

Material:
Connection plate: Cast aluminium
Reinforcement plate: Sheet steel 6 mm

Supply includes:
Seals and assembly parts.

[1)] From a front panel width 247 mm and installation depth 152 mm.

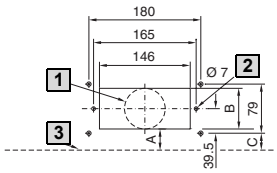
[2)] From a front panel width of 265 mm.

[3)] From a front panel width of 220 mm and installation depth of 150 mm.

[4)] Mounting surface, minimum W x D = 300 mm x 135 mm (e.g. Command Panel housing with door).



Mounting cut-out CP-L



1 Alternative Ø B

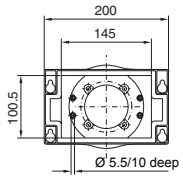
2 Ø 6 mm only with metal enclosures for securing the reinforcement plate

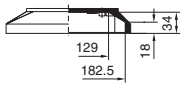
3 Outer edge of enclosure at the rear

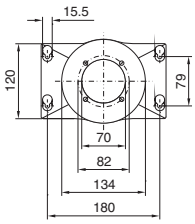
	Installation depth mm	A	B	C
Comfort Panel	152/308	28.9	77.9	30.5
	191 – 464	43.1	82.5	48.1
VIP 6000	155 – 185	32.5	81	30.5
	295 – 438	174.5	81	173
Optipanel	150	34	65.5	28
Metal enclosure	–	[1)]	86	[1)]

[1)] Make the drilled holes/cut-out in the centre of the enclosure reinforcement plate.

CP-L







Support arm system CP-L

Aluminium





Enclosure attachment locatable CP-L

for support arm connection ▭ 120 x 65 mm

For rigid fastening of the enclosure to the support section.
With “machined keyholes” for easy, secure mounting by just one person:

- Screw the enclosure attachment to the support arm.
- Secure the supporting plate to the inside of the enclosure and pre-fit two screws from the outside.
- Locate the enclosure and tighten the screws.

For enclosures from a depth of 70 mm.

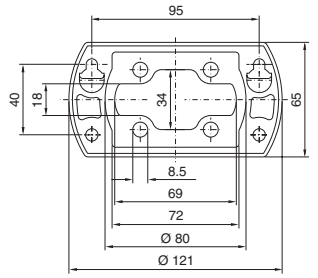
Material:
Enclosure attachment: Die-cast zinc
Support plate: Sheet steel

Supply includes:
Seal, support plate and assembly parts.

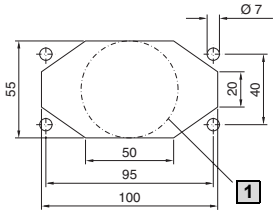
Colour RAL	Weight kg	**Model No. CP**
7030	0.4	**6525.200**
7024	0.4	**6525.210**

Also required:

Articulated joint 90° CP-L,
see page 264.



Mounting cut-out
Enclosure ▭ 120 x 65 mm



1 Alternative max. Ø 55 mm





Fig. A Optipanel



Fig. B General

Connection console CP-L

For rear connection of slimline operating housings. Removable lid for simple cable entry.

Material:
Cast aluminium

Supply includes:
Seals and assembly parts for mounting on the enclosure and 2 cable ties.

Mounting options:

1. Optipanel
Retro-fitting:
- Cut-out in rear panel/door
- With support plate CP 6508.100 (see page 262) directly screw-fastened to extrusion (see Fig. A)

Selection via design code number (see page 209, item 2.3, selection 7 or 8):
Connection console and support plate are fitted.

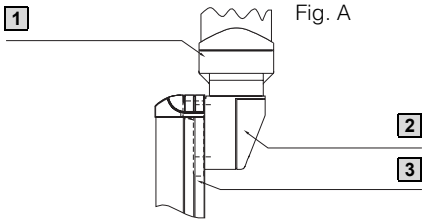


Fig. A

2. General
e.g.
- Terminal boxes (see page 116),
- Cast aluminium enclosures (see page 114)

the connection console may be mounted
a) directly, flush with enclosure edge (see Fig. B top),
b) in the centre with spacer plate CP 6508.200 (available on request) (see Fig. B bottom), to the rear panel of the enclosure. Additional reinforcement of the rear panel should be checked in individual cases.

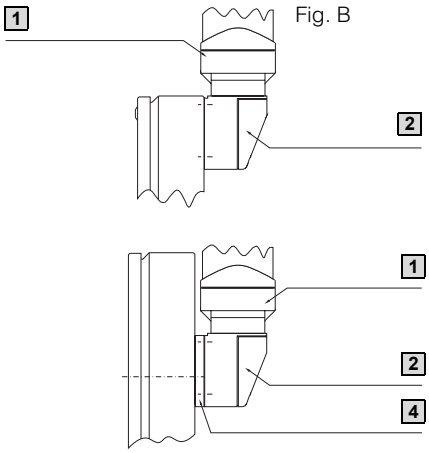


Fig. B

Colour RAL	Weight kg	**Model No. CP**
7030	0.7	**6508.000**
7024	0.7	**6508.010**

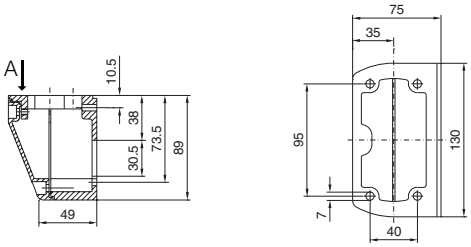
Also required:

Enclosure attachment CP 6525.6X0), see page 257.
Housing coupling (CP 6525.1X0), see page 262.
Tilting adaptor 10° (CP 6527.1X0), see page 256.
Housing coupling CP-S (CP 6501.130), see page 245.

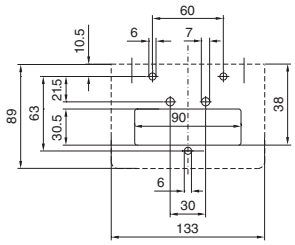
Accessories:

Spacer plate (CP 6508.200), available on request.
Support plate Optipanel CP 6508.100, see page 262.

View A



Mounting cut-out



1 Support arm component CP-L ▭ 120 x 65 mm
2 Connection console CP-L
3 Support plate (inside)
4 Spacer plate

Support arm system CP-L

Aluminium



Optipanel support plate

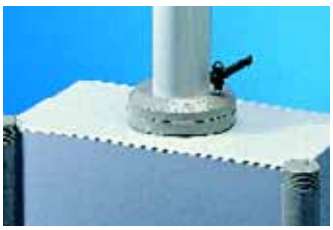
For mounting on the enclosure section.
The rear panel or door are recessed in this area, thereby ensuring easy access in case of servicing.

Material:
Cast aluminium

Supply includes:
Seals and assembly parts.

Weight kg	Model No. CP
0.2	**6508.100**





Housing coupling CP-L

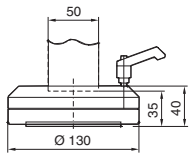
for support arm connection Ø 130 mm
For swivel mounting of the enclosure on the vertical section of the support arm system.

Rotation range:
Approx. 310°, lockable via clamping levers.
By inserting additional tension pins 5 x 18 mm to ISO 8752 the rotation range may be limited to ±5°, 65°, 95° and 155°.

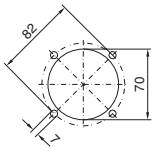
Material:
Die-cast zinc

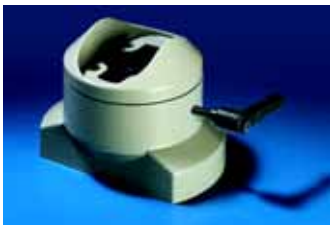
Supply includes:
Seals and self-tapping screws for CP-L support section attachment.

Colour RAL	Weight kg	Model No. CP
7030	1.7	**6525.000**
7024	1.7	**6525.010**



Mounting cut-out
Enclosure CP-L, Ø 130 mm







Housing coupling CP-L

for support arm connection ▭ 120 x 65 mm
For swivel mounting of the enclosure on the vertical section of the support arm system.

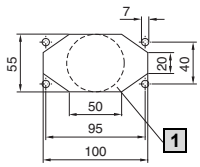
Rotation range:
Approx. 350°, lockable via clamping levers.
By inserting additional tension pins 6 x 20 mm to ISO 8752 the rotation range may be limited to ±5° and ±100°.

Material:
Die-cast zinc

Supply includes:
Seals and self-tapping screws for CP-L support section attachment.

Colour RAL	Weight kg	Model No. CP
7030	1.4	**6525.100**
7024	1.4	**6525.110**

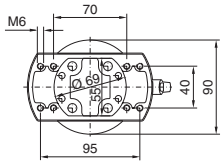
Mounting cut-out
Enclosure CP-L ▭ 120 x 65 mm

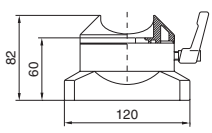


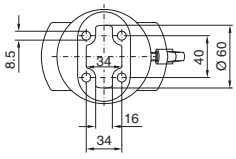
1 Alternative max. Ø 55 mm

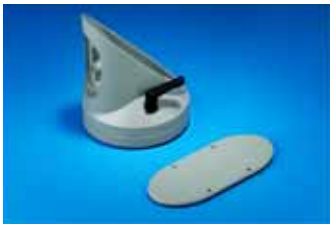
Accessories:

Connection console CP-L (CP 6508.0X0), siehe Seite 261.











Angle coupling 90° CP-L

for support arm connection Ø 130 mm

For swivel mounting of the enclosure on the horizontal part of the support arm system. Enclosure may be suspended or top-mounted.
The removable plate enables problem-free cable entry.

Rotation range:
Approx. 310°.
By inserting additional tension pins 5 x 18 mm to ISO 8752 the rotation range may be limited to ±5°, 65°, 95° and 155°.

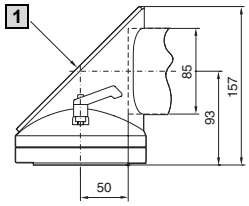
Material:
Cast aluminium/die-cast zinc

Supply includes:
Seals, adjustment set and self-tapping screws for CP-L support section attachment.

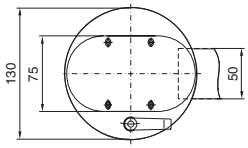
Colour RAL	Weight kg	**Model No. CP**
7030	1.9	**6526.000**
7024	1.9	**6526.010**

Accessories:

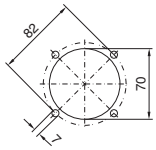
Mounting component for signal pillars (SZ 2375.000),
see page 1129.



1 Removable plate



Mounting cut-out
Enclosure CP-L, Ø 130 mm







Angle piece 90° CP-L

For connecting horizontal and vertical support arm components. The removable plate ensures easier cable entry.

Material:
Die-cast zinc

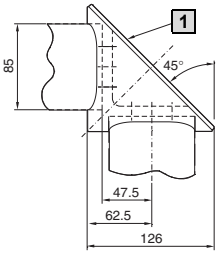
Supply includes:
Seals, adjustment set and self-tapping screws for CP-L support section attachment.

German patent no. 43 31 125
French patent no. 94 10901
Italian patent no. 012 74 738
Japanese patent no. 2 809 993
US patent no. 5,533,763

Colour RAL	Weight kg	**Model No. CP**
7030	1.4	**6524.000**
7024	1.4	**6524.010**

Accessories:

Mounting component for signal pillars (SZ 2375.000),
see page 1129.



1 Removable plate
75 x 174 mm

Support arm system CP-L

Aluminium





Articulated joint 90° CP-L

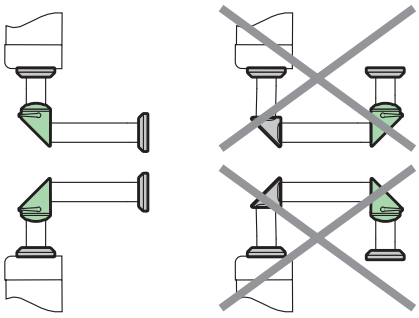
The swivel connection between horizontal and vertical support sections.
With very slimline enclosures, there is no need for the deep housing coupling. With the shallow enclosure attachment (CP 6525.2X0), the support section may also be attached with its wide side.

Rotation range:
Approx. 325°.
Option of limiting the rotation range via the use of additional tension pins 5 x 18 mm to ISO 8752 to ±54° and ±98°.

Material:
Cast aluminium/die-cast zinc

Supply includes:
Seals, self-tapping screws for support section attachment and adjustment set.

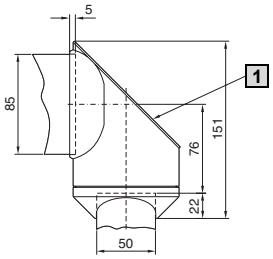
Note:
May only be top-mounted/suspended on the enclosure side.

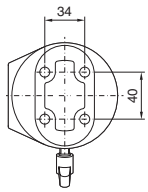


Colour RAL	Weight kg	Model No. CP
7030	1.2	**6524.200**
7024	1.2	**6524.210**

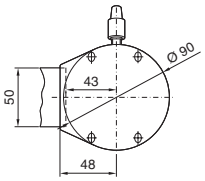
Also required:

Enclosure attachment, suspended CP-L for support arm connection ▭ 120 x 65 mm (CP 6525.2X0),
see page 260,
or enclosure attachment CP-L for support arm connection ▭ 120 x 65 mm (CP 6525.6X0),
see page 257.





1 Removable plate











Angle adaptor 90°

Connection component between:
- small and larger support arm systems.

Outlet optionally at the top or bottom if this configuration is chosen for static or visual reasons.
The removable cover ensures easier cable entry.

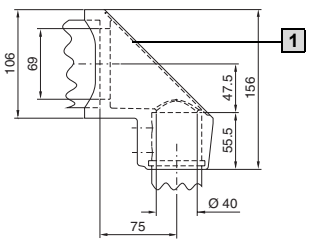
Material:
Cast aluminium

Supply includes:
Seal for support section attachment.

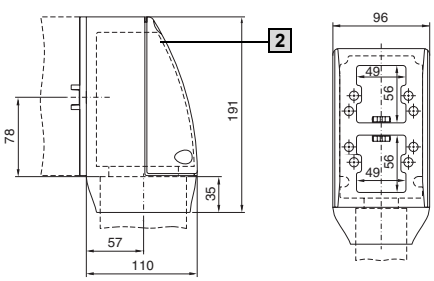
	Colour RAL	Weight kg	Model No. CP
CP-L to CP-S	7024	1.0	**6501.090**
CP-XL to CP-L	7024	1.7	**6528.110**[1)]
CP-XL to CP-L	7030	1.7	**6528.100**

[1)] Extended delivery times.

CP 6501.090

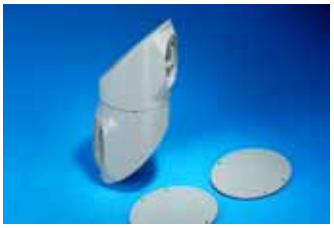


CP 6528.100



1 Removable plate 71 x 149 mm

2 Removable cover







Intermediate hinge CP-L

For vertically hinged connection of horizontal support sections within the support arm system. The removable plates ensure simple cable entry.

Rotation range:
Approx. 315°.
Option of restricting the rotation range in 60° increments with the screws supplied loose.

Material:
Cast aluminium

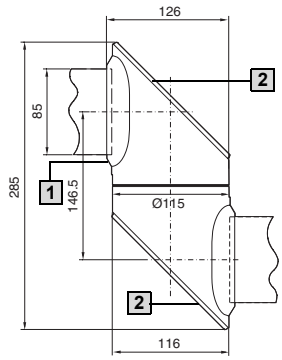
Supply includes:
Seals, adjustment set and self-tapping screws for CP-L support section attachment.

German patent no. 44 03 593
French patent no. 94 10902
Italian patent no. 01274751
Japanese patent no. 2 675 264
US patent no. 5,522,118

Colour RAL	Weight kg	**Model No. CP**
7030	3.2	**6523.000**
7024	3.2	**6523.010**

Accessories:

Mounting component for signal pillars (SZ 2375.020),
see page 1129.



1 Screw for adjusting rotatability
2 Removable plate





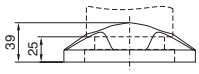
Wall/base mounting bracket, small, CP-L

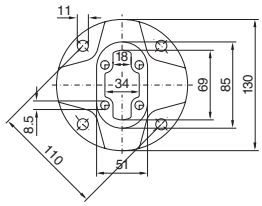
For rigid attachment of the support arm system to vertical or horizontal surfaces.
Particularly suitable for the configuration of compact support arm systems with cable infeed from the inside.

Material:
Cast aluminium

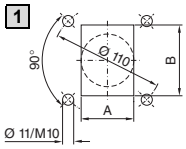
Supply includes:
Seals, adjustment set for support section and self-tapping screws for CP-L support section attachment.

Colour RAL	Weight kg	**Model No. CP**
7030	0.6	**6520.500**
7024	0.6	**6520.510**





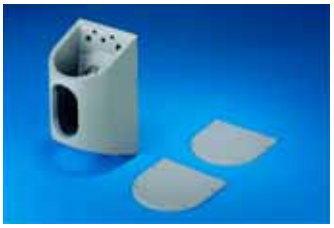
Mounting cut-out



1 Alternative Ø 52 mm
A = max. 52 mm
B = max. 70 mm

Support arm system CP-L

Aluminium





Wall/base mounting, large CP-L

For rigid attachment of the support arm system to vertical or horizontal surfaces with cable infeed from the inside.

Material:
Cast aluminium

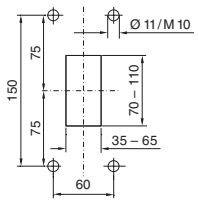
Supply includes:
Seals, opportunity for adjustment with grub screws and self-tapping screws supplied loose for CP-L support section attachment.

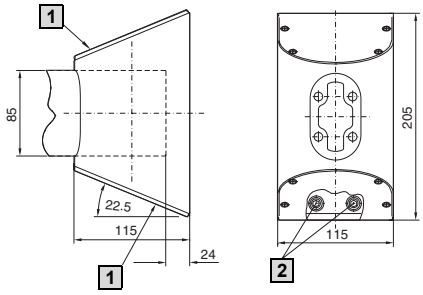
Colour RAL	Weight kg	Model No. CP
7030	1.9	**6520.000**
7024	1.9	**6520.010**

Accessories:

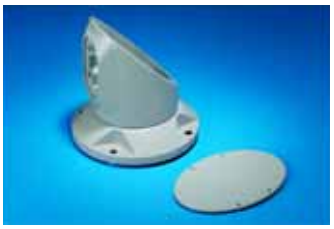
Pillar,
see page 295.

Mounting cut-out





1 Removable plate
2 Adjusting screws





Top-mounted joint CP-L

For swivel mounting of the support arm system on horizontal surfaces – also suitable for suspending from the ceiling. The removable plate enables simplified cable entry.

Rotation range:
Approx. 315°.
Option of restricting the rotation range in 60° increments and adjusting the mobility of the joint with the screws supplied loose. To lock the joint, the screw may be exchanged for standard clamping lever M8 x 16.

Material:
Cast aluminium

Supply includes:
Seals, adjustment set and self-tapping screws for CP-L support section attachment.

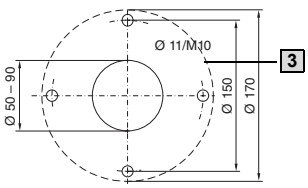
Note:
Not suitable for the suspension of enclosures.

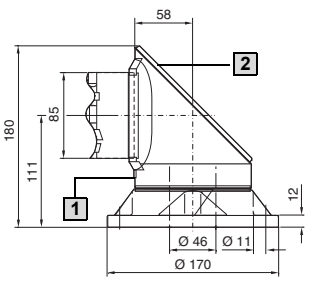
Colour RAL	Weight kg	Model No. CP
7030	3.0	**6522.000**
7024	3.0	**6522.010**

Accessories:

Pillar,
see page 295.
Mounting component for signal pillars (SZ 2375.020),
see page 1129.

Mounting cut-out





1 Screw for adjusting rotatability
2 Removable plate
3 Mounting surface







Wall-mounted hinge CP-L

For vertically hinged mounting of the support arm surface on vertical surfaces. The removable plates facilitate problem-free cable routing or cable entry.

Rotation range:
Approx. 315°.
Option of restricting the rotation range in 60° increments and adjusting the mobility of the joint with the screws supplied loose. To lock the joint, the screw may be exchanged for standard clamping lever M8 x 16.

Material:
Cast aluminium

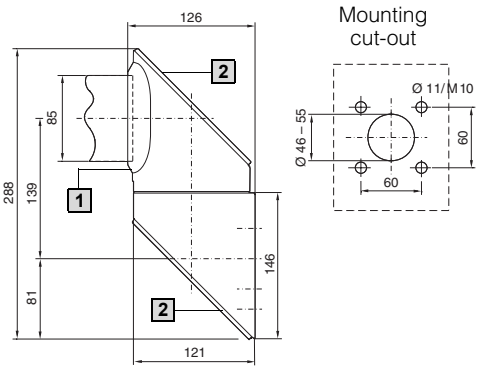
Supply includes:
Seals, adjustment via grub screws, adjusting screws and self-tapping screws for CP-L support section attachment.

German patent no. 44 03 593
French patent no. 94 10902
Italian patent no. 01274751
Japanese patent no. 2 675 264
US patent no. 5,522,118

Colour RAL	Weight kg	**Model No. CP**
7030	3.2	**6521.000**
7024	3.2	**6521.010**

Accessories:

Pillar, see page 295.
Mounting component for signal pillars (SZ 2375.020), see page 1129.



1 Screw for adjusting rotatability
2 Removable plate





Mounting components

for support arm systems
For external mounting of a signal pillar, see page 1129.

Support arm system CP-XL

Fast selection

Make a simple sketch showing the basic form of the support arm. Next, select the corresponding support arm components. Start with **1** system start by selecting the appopriate enclosure situation.

Continue with CP-XL according to the item numbers.

System continuation/system end:

all directions

vertical

horizontal

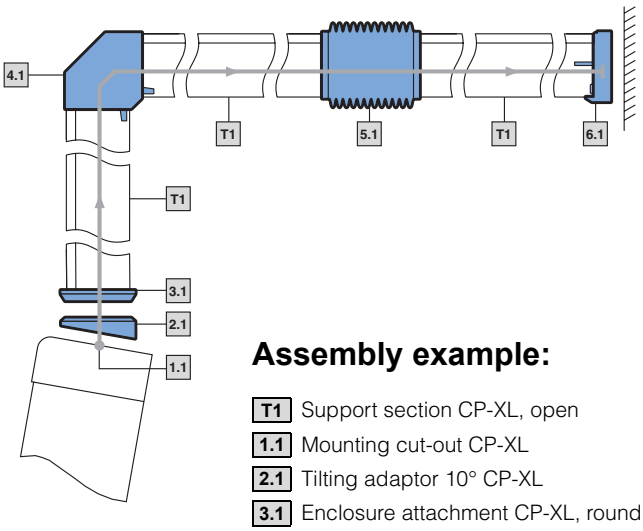
angled

rotatable components

From position **3** enclosure attachments, a support section is required between each component (minimum length approx. 100 mm, for wall/floor mounting approx. 160 mm).
The cross-sections indicate the installation position(s).

X = 0 (RAL 7030)

X = 1 (RAL 7024)

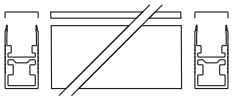


Assembly example:

- T1 Support section CP-XL, open
- 1.1 Mounting cut-out CP-XL
- 2.1 Tilting adaptor 10° CP-XL
- 3.1 Enclosure attachment CP-XL, round
- 4.1 Angle piece 90° CP-XL, outlet at bottom
- 5.1 Intermediate hinge CP-XL
- 6.1 Wall/base mounting CP-XL

T Support sections

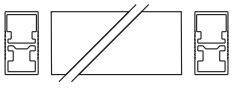
T1 Support section CP-XL, open



Length mm	Colour RAL	**Model No. CP**
500	7035	6050.000
1000	7035	6100.000
2000	7035	6200.000

See page 270

T2 Support arm CP-XL, solid



Length mm	Colour RAL	**Model No. CP**
500	7035	6050.500
1000	7035	6100.500
2000	7035	6200.500

See page 270

1 System start

Enclosure with mounting cut-out

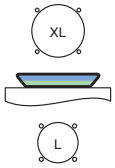
1.1 Mounting cut-out CP-XL



→ 2.1 3.1 3.2 3.3 3.4 3.5

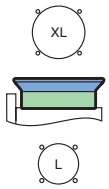
1.2 Connection adaptor CP-L to CP-XL

CP 6528.0X0 see page 258



1.3 Connection adaptor CP-L to CP-XL
for VIP 6000 enclosures with installation depths 155, 185 and 295 mm

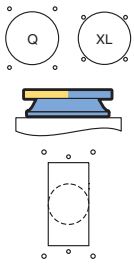
CP 6528.5X0 see page 258



1.4 Connection plate with reinforcement plate

CP 6528.420 (width 200 mm)
CP 6528.430 (width 418 mm)

see page 274



→ 2.1 3.1 3.2 3.3 3.4

Note:

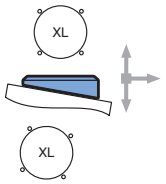
- Only insert one intermediate hinge
- Two angle pieces may also be used one after the other
- With angle pieces, take care to ensure correct positioning of the support section cable duct
- **Load diagram,** see page 237.

Fast selection

2 Tilting adaptor

2.1 Tilting adaptor 10° CP-XL

CP 6023.0X0 see page 271

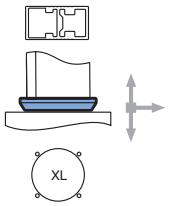


3.1
3.3
3.4

3 Enclosure attachments

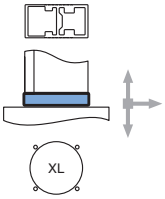
3.1 Enclosure attachment CP-XL, round

CP 6130.6X0 see page 271



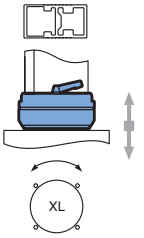
3.2 Enclosure attachment CP-XL, rectangular

CP 6130.5X0 see page 272



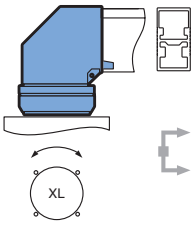
3.3 Housing coupling CP-XL

CP 6130.0X0 see page 272



3.4 Angle coupling 90° CP-XL

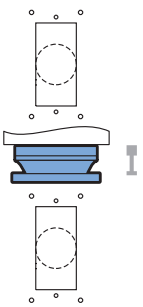
CP 6040.0X0 see page 275



3.5 Housing coupling for desktop mounting

CP 6528.400 (width 200 mm)
CP 6528.410 (width 418 mm)

see page 273

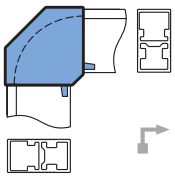


4.1
4.2
5.1
6.1
6.2
6.3

4 Angle components

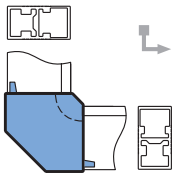
4.1 Angle piece 90° CP-XL, outlet at bottom

CP 6140.0X0 see page 276



4.2 Angle piece 90° CP-XL, outlet at top

CP 6180.0X0 see page 276

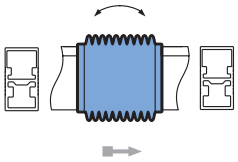


5.1
6.1
6.2
6.3

5 Intermediate hinge

5.1 Intermediate hinge CP-XL

CP 6120.0X0 see page 277



4.1
4.2
6.2
6.3

6 System end

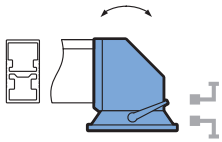
6.1 Wall/base mounting CP-XL

CP 6160.0X0 see page 279



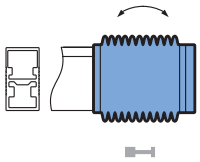
6.2 Top-mounted joint CP-XL

CP 6170.0X0 see page 278



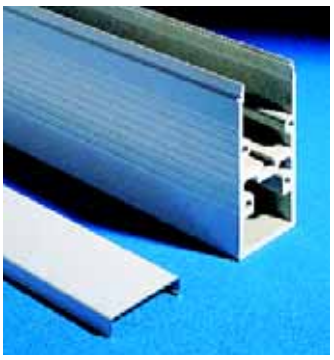
6.3 Wall-mounted hinge CP-XL

CP 6110.0X0 see page 277



Support arm system CP-XL

Aluminium



Support section CP-XL, open

Attachment to the connection components with 4 self-tapping screws in a screw channel, may be cut to any required length.
With open cable duct, for easy servicing access and for pre-assembled cables with connectors; easily locked via clip-in lid.

Dimensions:
80 x 155 mm

Material:
Extruded aluminium section

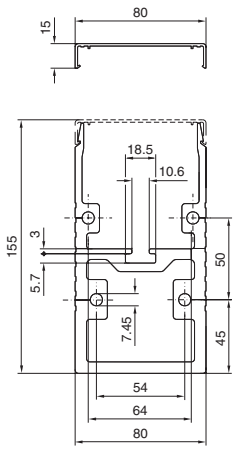
Supply includes:
Clip-in lid

Length mm	Colour RAL	Weight kg	Model No. CP
500	7035	4.9	**6050.000**
1000	7035	9.8	**6100.000**
2000	7035	19.6	**6200.000**

Note:
Load information, see page 238.

Accessories:

Adjustment set for support section, see page 270.





Support section CP-XL, solid

The alternative solution for higher loads and torsion compared with the CP-L support section, open.

Dimensions:
80 x 155 mm

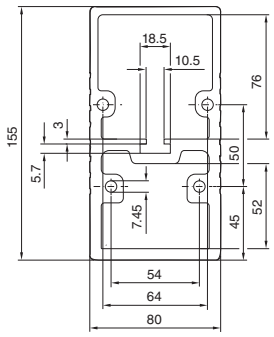
Material:
Extruded aluminium section

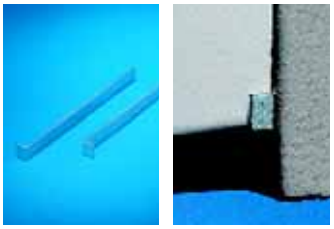
Length mm	Colour RAL	Weight kg	Model No. CP
500	7035	5.5	**6050.500**
1000	7035	11.0	**6100.500**
2000	7035	22.0	**6200.500**

Note:
Load information, see page 238.

Accessories:

Adjustment set for support section, see page 270.





Adjustment set for support section CP-XL

The adjustment set also supports retrospective alignment of the CP support section.

Material:
Sheet steel 1.0 mm, zinc-plated, passivated.

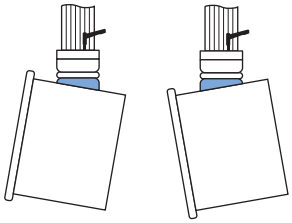
Packs of	Model No. CP
10	**6205.000**



Connection adaptor CP-L to CP-XL

see page 258.





Tilting adaptor 10° CP-XL

For mounting between:
- Housing coupling (CP 6130.0X0)

or
- Enclosure attachment (CP 6130.6X0)

or
- Angle coupling (CP 6040.0X0)

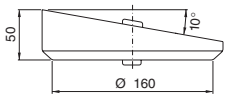
and the command panel.

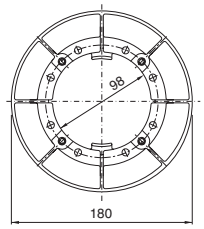
Material:
Die-cast zinc

Supply includes:
Seals and assembly parts.

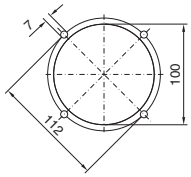
Colour RAL	Weight kg	**Model No. CP**
7030	1.4	**6023.000**
7024	1.4	**6023.010**[1)]

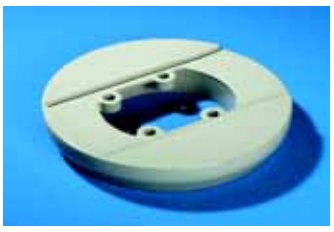
[1)] Extended delivery times.

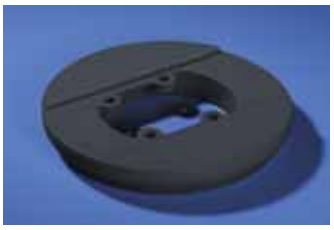




Mounting cut-out enclosure CP-XL







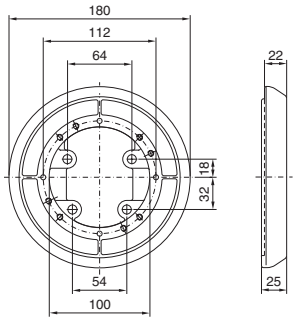
Enclosure attachment CP-XL, round

For rigid external mounting of enclosures to:
- Support section
- Tilting adaptor 10° (CP 6023.0X0)

Material:
Die-cast zinc

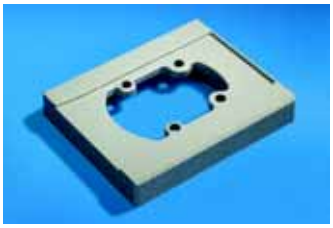
Supply includes:
Seals and self-tapping screws for CP-XL support section attachment.

Colour RAL	Weight kg	**Model No. CP**
7030	1.6	**6130.600**
7024	1.6	**6130.610**



Support arm system CP-XL

Aluminium



Enclosure attachment CP-XL, rectangular

For rigid external mounting on the enclosure.

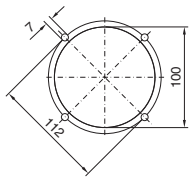
Material:
Die-cast zinc

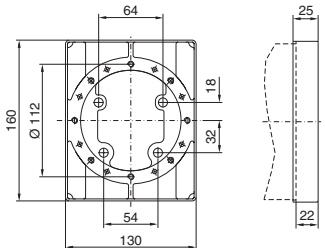
Supply includes:
Seal and self-tapping screws for CP-XL support section attachment.

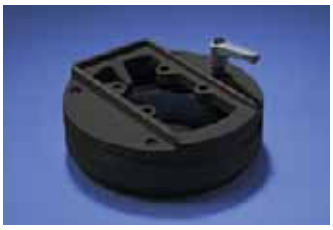
Colour RAL	Weight kg	Model No. CP
7030	1.2	**6130.500**
7024	1.2	**6130.510**[1)]

[1)] Extended delivery times.

Mounting cut-out enclosure CP-XL









Housing coupling CP-XL

For swivel mounting of the enclosure on the vertical section of the support arm system.

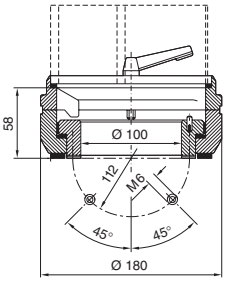
Rotation range:
Approx. 350°

Material:
Die-cast zinc

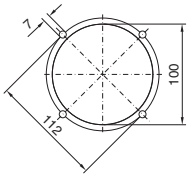
Supply includes:
Seals and self-tapping screws for CP-XL support section attachment.

Note:
By inserting pins 5 x 12 to DIN EN ISO 8741, the rotation range may be limited in 90° increments.

Colour RAL	Weight kg	Model No. CP
7030	6.8	**6130.000**
7024	6.8	**6130.010**



Mounting cut-out enclosure CP-XL





Adaptor with connector cut-out 24-pole

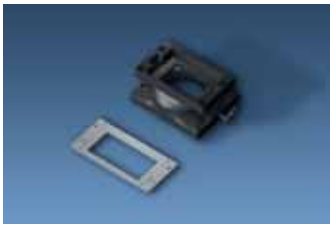
For partitioning between the command panel and support arm or stand system.

To fit:
- Housing coupling for desktop mounting
  CP 6528.400 (W = 200 mm)
  CP 6528.410 (W = 418 mm)
- Connection plates CP-XL with reinforcement plate
  CP 6528.420 (W = 200 mm)
  CP 6528.430 (W = 418 mm)

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Seal and assembly parts.

Packs of	Model No. SZ
1	**2477.010**







Housing couplings CP-XL

for desktop mounting

The stable, rotating connection with extra space for cable routing.
Design width = 418 mm for additional stability of the roof and base with heavy installed equipment.

For mounting
- Command Panels from an installation depth of 150 mm

on
- IW worktops
- Horizontal surfaces (floors or ceilings)

Attachment
- Of the Command Panel: one-man assembly via machined keyholes
- On surfaces: via external screws with cover

Rotation range:
Max. 350°, lockable via clamping levers.
By using additional M6 cheese-head screws, the rotation range may be limited to ±28°, ±73°, ±118°, ±163°.

Material:
Housing coupling: Cast aluminium/die-cast zinc
Reinforcement plate: Sheet steel, 6 mm

Surface finish:
Housing coupling:
Powder-coated in textured RAL 7024
Reinforcement plate:
Sheet steel, zinc-plated, passivated

Supply includes:
Reinforcement plate, seals and assembly parts.

Design	VIP 6000	Opti-panel	Comfort Panel	Weight kg	Model No. CP
W = 200 mm	222[1)]	244[1)]	247[1)]	3.4	**6528.400**
W = 418 mm	410[1)]	432[1)]	435[1)]	4.2	**6528.410**

[1)] From front panel width mm without keyboard housing; with keyboard housing on request.

	Installation depth mm	A	B	C
Comfort Panel	152/308	28.9	77.9	30.5
	191 – 464	43.1	82.5	48.1
VIP 6000	155 – 185	32.5	81	30.5
	295 – 438	174.5	81	173
Optipanel	150	34	65.5	28
Metal enclosure	–	[1)]	86	[1)]

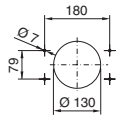
[1)] Make the drilled holes/cut-out in the centre of the enclosure reinforcement plate.

Accessories:

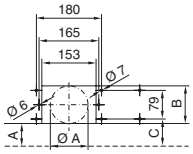
Adaptor with connector cut-out, 24-pole (SZ 2477.010), see page 272.

Note:
With the Comfort Panel, Optipanel and VIP 6000 enclosures, the rectangular support arm cut-out may be ordered and prepared using the design code:
Comfort Panel, see page 197.
Optipanel, see page 209.
VIP 6000, see page 220.

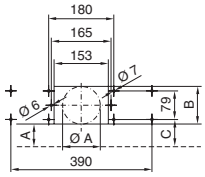
Mounting cut-out for surfaces
CP 6528.400/.410



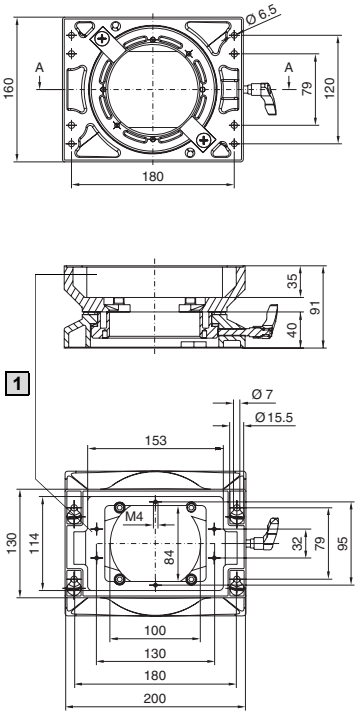
Mounting cut-out, enclosure side
CP 6528.400



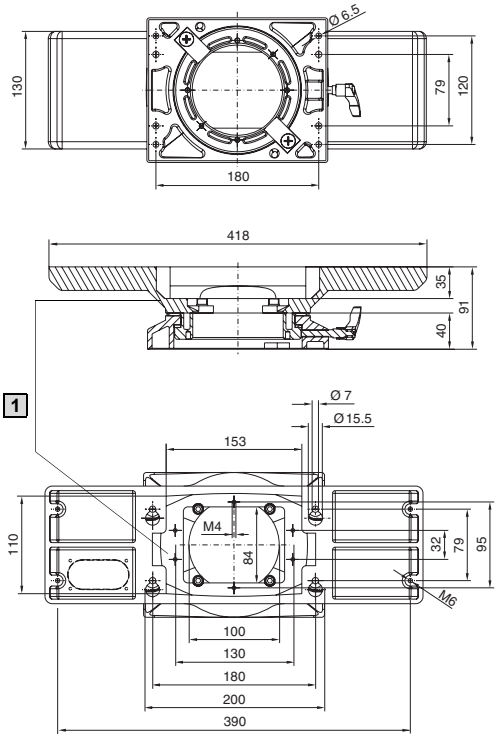
CP 6528.410



CP 6528.400

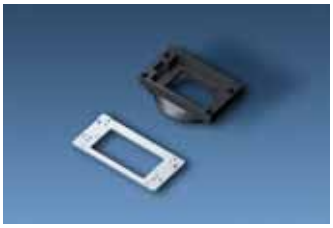


CP 6528.410



A or Ø A is manufactured to order in the case of Optipanel, VIP 6000 and Comfort Panel.
$A_{max.}$ = 100 mm

1 Space/preparation for assembly of adaptors with connector cut-out, 24-pole SZ 2477.010







Connection plates CP-XL

With reinforcement plate
For easy location of the Command Panel onto the support arm system or pedestal via machined keyholes.

Design width = 418 mm for additional stability of the roof and base with heavy installed equipment, with extra space for cable routing.

Material:
Connection plate: Cast aluminium
Reinforcement plate: Sheet steel, 6 mm

Surface finish:
Connection plate:
Powder-coated in textured RAL 7024
Reinforcement plate:
Sheet steel, zinc-plated, passivated

Supply includes:
Seals and assembly parts.

Command Panels from an installation depth of 150 mm:

Design W =	VIP 6000	Opti-panel	Comfort Panel	Weight kg	Model No. CP
200 mm	222[1)]	244[1)]	250[1)]	2.4	**6528.420**
418 mm	410[1)]	432[1)]	460[1)]	3.2	**6528.430**

[1)] From front panel width mm without keyboard housing; with keyboard housing on request.

	Installation depth mm	A	B	C
Comfort Panel	152/308	28.9	77.9	30.5
	191 – 464	43.1	82.5	48.1
VIP 6000	155 – 185	32.5	81	30.5
	295 – 438	174.5	81	173
Optipanel	150	34	65.5	28
Metal enclosure	–	[1)]	86	[1)]

[1)] Make the drilled holes/cut-out in the centre of the enclosure reinforcement plate.

Accessories:

Adaptor with connector cut-out, 24-pole (SZ 2477.010), see page 272.

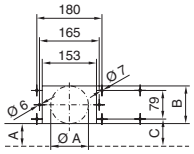
Note:
With the Comfort Panel, Optipanel and VIP 6000 enclosures, the rectangular support arm cut-out may be ordered and prepared using the design code:
Comfort Panel, see page 200.
Optipanel, see page 209.
VIP 6000, see page 220.

For mounting Command Panels on:

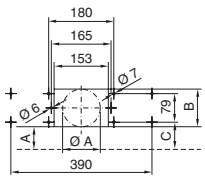
Support arm system	CP-L Ø 130 mm[1)]	CP-XL	CP-Q
Enclosure attachment	CP 6525.510	CP 6130.610	–
Housing coupling	CP 6525.010	CP 6130.010	CP 6080.120
Angle coupling	CP 6526.010	–	CP 6080.110
Tilting adaptor 10°	CP 6527.010	–	–
Tilting adaptor ±45°	CP 6529.010	–	–

[1)] Via connection adaptor CP-L to CP-XL CP 6528.010

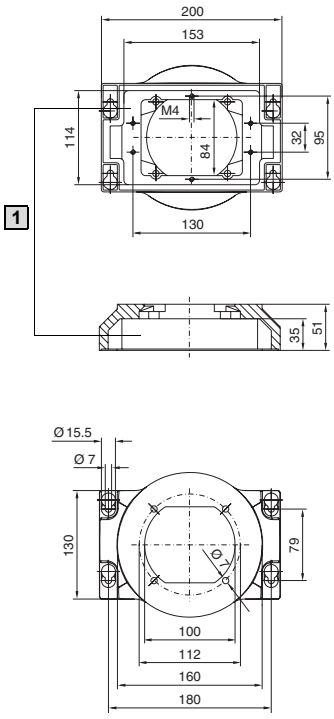
Mounting cut-out
CP 6528.420



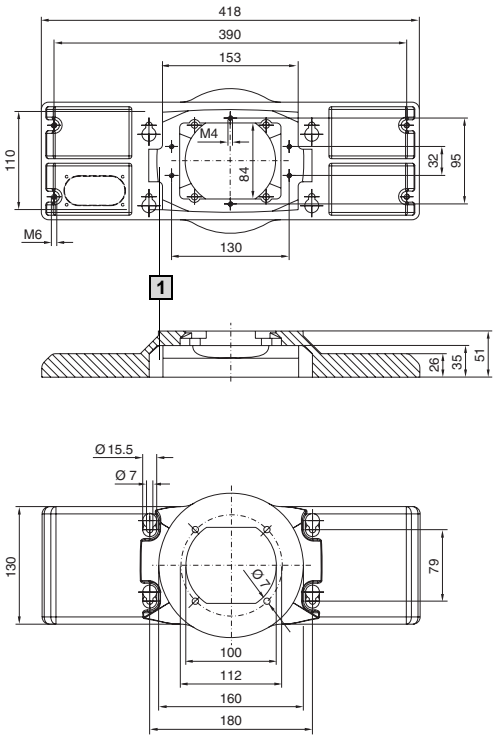
CP 6528.430



CP 6528.420



CP 6528.430



A or Ø A is manufactured to order in the case of Optipanel, VIP 6000 and Comfort Panel.
$A_{max.}$ = 100 mm

1 Space/preparation for assembly of adaptors with connector cut-out, 24-pole SZ 2477.010





Angle coupling 90° CP-XL

For swivel mounting of the enclosure on the horizontal part of the support arm system. Enclosure may be suspended or top-mounted.

Rotation range:
Approx. 350°

Material:
Spheroidal-graphite cast iron and die-cast zinc

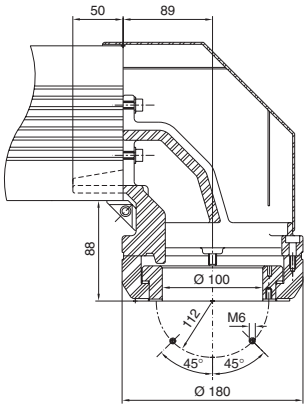
Supply includes:
Seals, plastic casing and self-tapping screws for CP-XL support section attachment.

Note:
By inserting pins 5 x 12 to DIN EN ISO 8741, the rotation range may be limited in 90° increments.

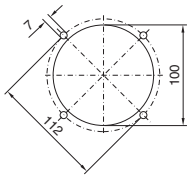
German patent no. 4033747
Italian patent no. 1252120

Colour RAL	Weight kg	**Model No. CP**
7030	6.2	**6040.000**
7024	6.2	**6040.010**[1)]

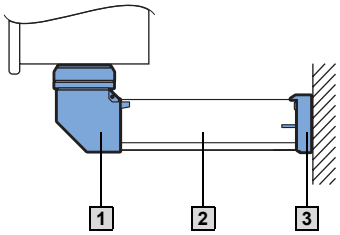
[1)] Extended delivery times.



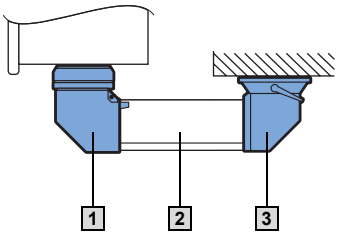
Mounting cut-out enclosure CP-XL



Top-mounting is only possible as shown in the diagrams below (without intermediate hinge).



1 Angle coupling CP 6040.0X0
2 Support section CP-XL
3 Wall/base mounting bracket 6160.0X0



1 Angle coupling CP 6040.0X0
2 Support section CP-XL
3 Top-mounted joint CP 6170.0X0

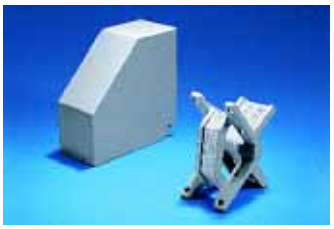
Support arm system CP-XL

Aluminium

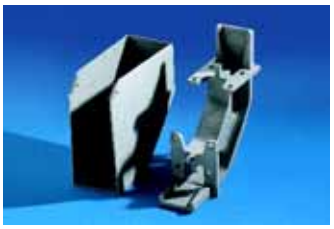


Angle adaptor 90° CP-XL to CP-L

see page 264.









Angle piece 90° CP-XL

For connecting horizontal and vertical support arm components.

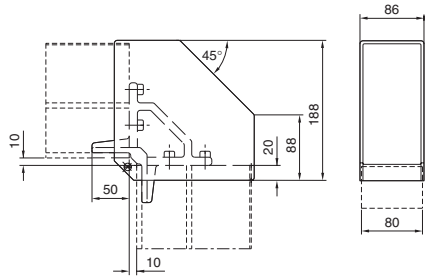
Material:
Spheroidal-graphite cast iron

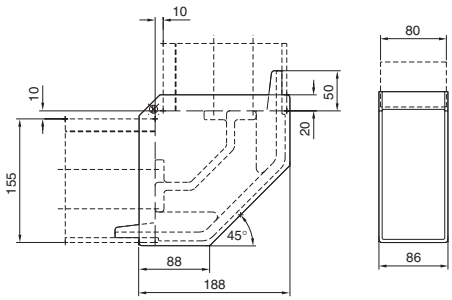
Supply includes:
Seals, plastic casing and self-tapping screws for CP-XL support section attachment.

German patent no. 58901106
European patent no. 0330027
with validity for IT

Outlet	Colour RAL	Weight kg	Model No. CP
Bottom	7030	2.4	**6140.000**
Bottom	7024	2.4	**6140.010**[1)]
Top	7030	3.6	**6180.000**
Top	7024	3.6	**6180.010**[1)]

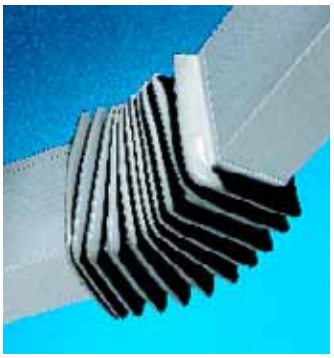
[1)] Extended delivery times.





Aluminium





Intermediate hinge CP-XL

For vertically hinged connection of horizontal support sections within the support arm system.

Rotation range:
Approx. 180°

Material:
Spheroidal-graphite cast iron

Supply includes:
Self-tapping screws for CP-XL support section attachment and divided concertina section with zip for uninhibited access to the cable duct.

Note:
Rotation range may be reduced with rotation range limiter CP-XL, CP 6110.100.

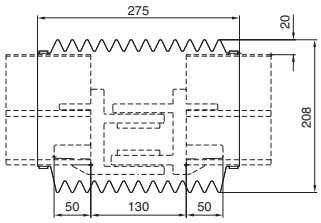
German patent no. 3805424
European patent no. 0330029
with validity for IT

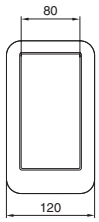
Colour RAL	Weight kg	Model No. CP
7030	6.5	**6120.000**
7024	6.5	**6120.010**[1)]

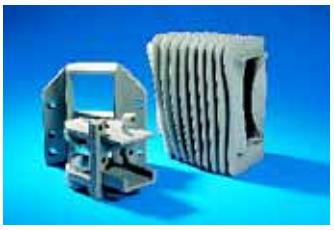
[1)] Extended delivery times.

Accessories:

Rotation range limiter CP-XL,
see page 278.









Wall-mounted hinge CP-XL

For vertically hinged mounting of the support arm surface on vertical surfaces.

Rotation range:
Approx. 180°

Material:
Spheroidal-graphite cast iron

Supply includes:
Seals, concertina section and assembly parts.

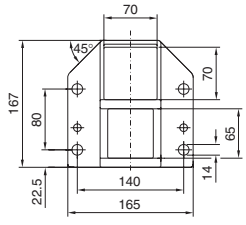
Note:
Rotation range may be reduced with rotation range limiter CP-XL, CP 6110.100.

Colour RAL	Weight kg	Model No. CP
7030	8.5	**6110.000**
7024	8.5	**6110.010**[1)]

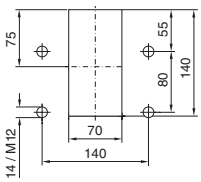
[1)] Extended delivery times.

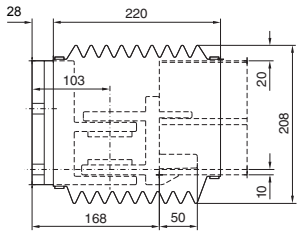
Accessories:

Pillar, see page 295.
Rotation range limiter CP-XL,
see page 278.



Mounting cut-out





Support arm system CP-XL

Aluminium





Rotation range limiter CP-XL

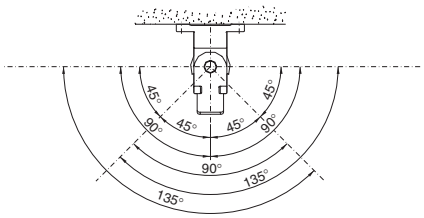
Suitable for:
- Wall-mounted hinge (CP 6110.0X0)
- Intermediate hinge (CP 6120.0X0).

Material:
Steel, zinc-plated, passivated

Supply includes:
2 steel disks, slotted, including 3 cheese-head screws for assembly.

Packs of	Weight kg	Model No. CP
1 set	0.6	**6110.100**

Adjustable swivel area:





Top-mounted joint CP-XL

For swivel mounting of the support arm system on horizontal surfaces – also suitable for suspending from the ceiling.

Rotation range:
Approx. 350°, lockable.
Rotation range may additionally be reduced and adjusted in 60° increments via the limit plate.

Material:
Steel and cast parts

Supply includes:
Seals and plastic casing, self-tapping screws for CP-XL support section attachment and limit plate.

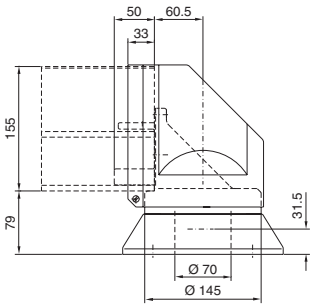
Note:
Safety end stop as anti-twist protection.

Colour RAL	Weight kg	Model No. CP
7030	11.9	**6170.000**
7024	11.9	**6170.010**[1)]

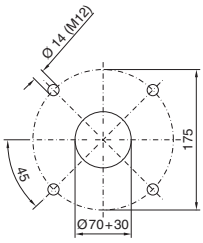
[1)] Extended delivery times.

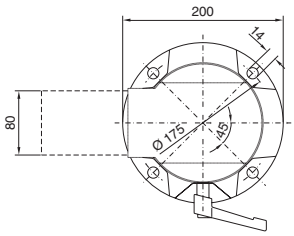
Accessories:

Pillar, see page 295.



Mounting cut-out







Wall/base mounting CP-XL

For rigid attachment of the support arm system to vertical or horizontal surfaces.

Material:
Spheroidal-graphite cast iron

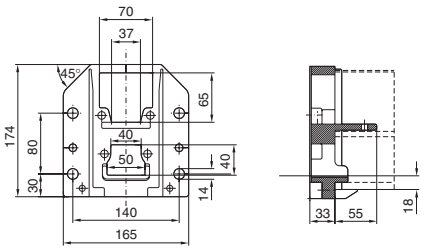
Supply includes:
Seals and self-tapping screws for CP-XL support section attachment.

Colour RAL	Weight kg	**Model No. CP**
7030	4.1	**6160.000**
7024	4.1	**6160.010**[1)]

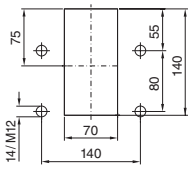
[1)] Extended delivery times.

Accessories:

Pillar, see page 295.



Mounting cut-out



Support arm system CP-Q

Fast selection

Make a simple sketch showing the basic form of the support arm.
Next, select the corresponding support arm components.
Start with **1** system start by selecting the appopriate enclosure situation.

Continue with CP-Q according to the item numbers.

System continuation/system end:

all directions

vertical

horizontal

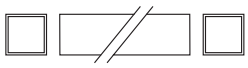
angled

rotatable components

From item 2.1 enclosure attachments, a support section is required between each component.
Minimum length between:
Items 2.1 and 3.1 = 200 mm
Items 3.1 and 4.1/5.1 = 260 mm
Items 4.1 and 5.1 = 310 mm

T Support sections

T1 Support section CP-Q,



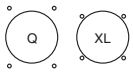
Length mm	Weight kg	**Model No. CP**
500	5.5	6080.050
1000	11.0	6080.100
2000	22.0	6080.200

See page 282

1 System start

Enclosure with mounting cut-out

1.1 Mounting cut-out CP-Q/CP-XL

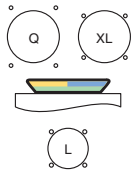


→ 2.1
2.2

1.2 Connection adaptor CP-L to CP-Q

CP 6528.010 (RAL 7024)

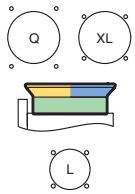
see page 258

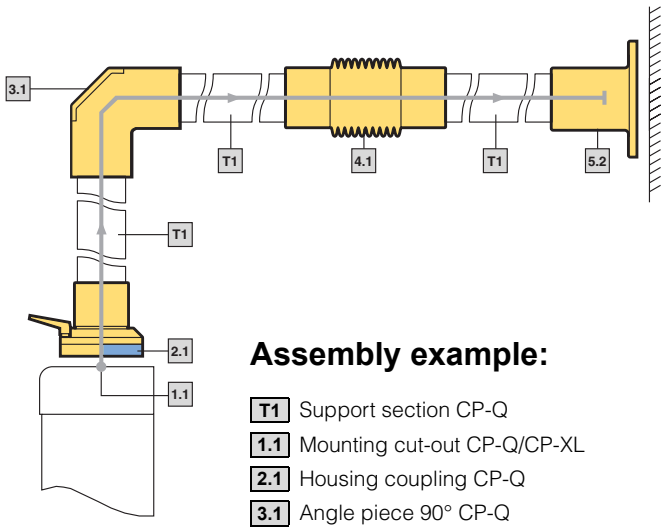


1.3 Connection adaptor CP-L to CP-Q

CP 6528.510 (RAL 7024)

see page 258





Assembly example:

- T1 Support section CP-Q
- 1.1 Mounting cut-out CP-Q/CP-XL
- 2.1 Housing coupling CP-Q
- 3.1 Angle piece 90° CP-Q
- 4.1 Intermediate hinge CP-Q
- 5.2 Wall/base mounting CP-Q

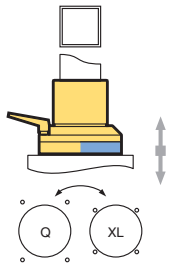
Note:
- Only insert one intermediate hinge
- Two angle pieces may also be used one after the other
- **Load diagram,** see page 238.

Fast selection

2 Enclosure attachments

2.1 Housing coupling CP-Q

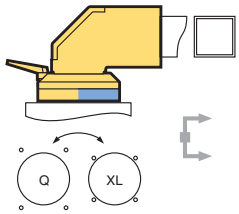
CP 6080.120 (RAL 7024), see page 282



▶ 3.1 5.2

2.2 Angle coupling 90° CP-Q

CP 6080.110 (RAL 7024), see page 283

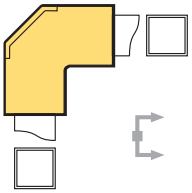


▶ 3.1 4.1 5.1 5.2 5.3

3 Angle components

3.1 Angle piece 90° CP-Q

CP 6080.130 (RAL 7024), see page 283

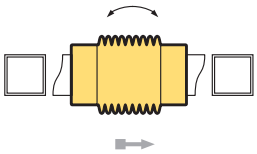


▶ 4.1 5.1 5.2 5.3

4 Intermediate hinge

4.1 Intermediate hinge CP-Q

CP 6080.140 (RAL 7024), see page 284

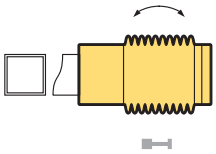


▶ 5.2 5.3

5 System end

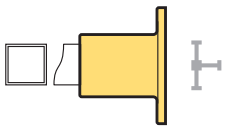
5.1 Wall-mounted hinge CP-Q

CP 6080.150 (RAL 7024), see page 284



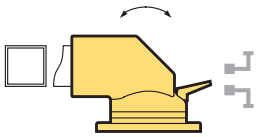
5.2 Wall/base mounting CP-Q

CP 6080.170 (RAL 7024), see page 285



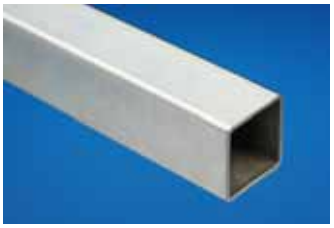
5.3 Top-mounted joint CP-Q

CP 6080.160 (RAL 7024), see page 285



Support arm system CP-Q

Steel, 80 x 80 mm



Support section CP-Q

Attached to the connection components via clamping screws.

Dimensions:
80 x 80 mm

Wall thickness:
5.0 mm

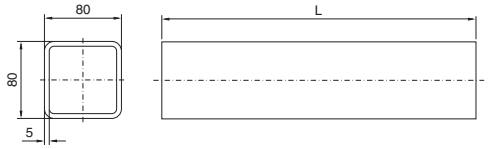
Material:
Extruded steel tubular section

Surface finish:
Zinc-plated

L mm[1)]	Weight kg	Model No. CP
500	5.5	**6080.050**
1000	11.0	**6080.100**
2000	22.0	**6080.200**

[1)] L min. = 200 mm

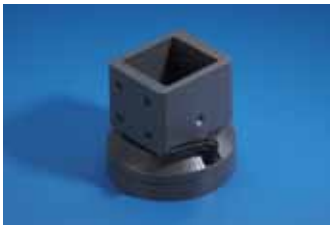
Note:
Load information,
see page 238.





Connection adaptor CP-L to CP-Q

see page 258.





Housing coupling CP-Q

for support arm connection CP-XL
For swivel mounting of the enclosure on the vertical section of the support arm system.

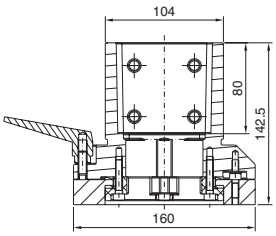
Rotation range:
Approx. 350°, lockable via clamping lever.
Fit additional M6 x 10 screws as per DIN EN ISO 4762 to restrict the rotation range to 20° increments.

Material:
Cast aluminium

Supply includes:
Assembly parts and seals.

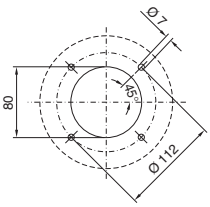
Colour RAL	Weight kg	Model No. CP
7024	4.7	**6080.120**

Note:
For enclosures with support arm connection CP-L Ø 130 mm, a CP-L to CP-Q connection adaptor (CP 6528.010 or CP 6528.510) is also required.

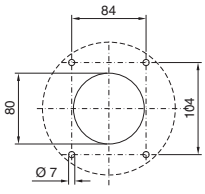


Possible mounting cut-outs

Mounting cut-out 1
Compatible with Rittal CP-XL



Mounting cut-out 2







Angle coupling 90° CP-Q

For swivel fastening of the enclosure to the horizontal support arm system.

- Enclosure top-mounted or suspended
- The support arm system is adjustable via clamping screws
- Removable panel for problem-free cable entry

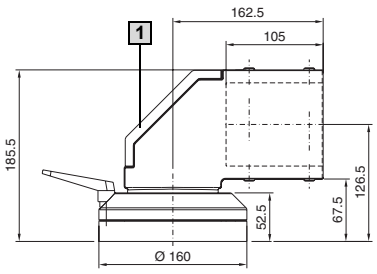
Rotation range:
Approx. 350°, lockable via clamping levers.
Fit additional M6 x 10 screws as per DIN EN ISO 4762 to restrict the rotation range to 20° increments.

Material:
Cast aluminium

Supply includes:
Assembly parts and seals.

Colour RAL	Weight kg	Model No. CP
7024	6.2	**6080.110**

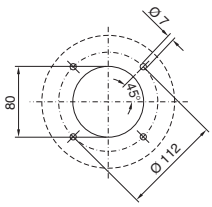
Note:
For enclosures with support arm connection CP-L Ø 130 mm, a CP-L to CP-Q connection adaptor (CP 6528.010 or CP 6528.510) is also required.



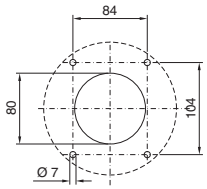
1 Removable plate

Possible mounting cut-outs

Mounting cut-out 1
Compatible with Rittal CP-XL



Mounting cut-out 2







Angle piece 90° CP-Q

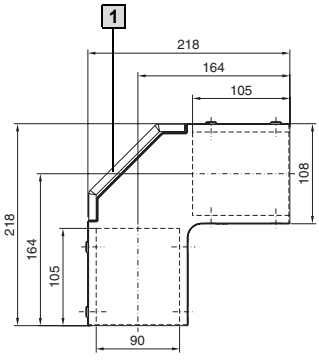
For connecting horizontal and vertical support arm components.

- The support arm system is adjustable via 4 clamping screws
- Removable panel for problem-free cable entry

Material:
Steel

Supply includes:
Assembly parts and seals.

Colour RAL	Weight kg	Model No. CP
7024	8.2	**6080.130**



1 Removable plate

Support arm system CP-Q

Steel, 80 x 80 mm





Intermediate hinge CP-Q

For vertically hinged connection of horizontal support sections within the support arm system.

- Concertina section with zip for easy mounting and access during service.

Rotation range:
Approx. 180°

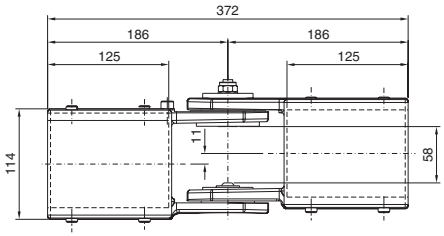
Material:
Zinc-coated steel, plastic

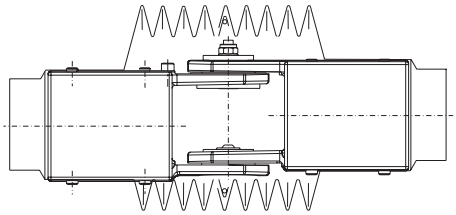
Supply includes:
Assembly parts and concertina section.

Colour RAL	Weight kg	Model No. CP
9005	14.6	**6080.140**

Accessories:

Rotational range available on request.









Wall-mounted hinge CP-Q

For vertically hinged mounting of the support arm on vertical surfaces.

- Concertina section with zip for easy mounting and access during service.

Rotation range:
Approx. 180°

Material:
Plastic coated steel

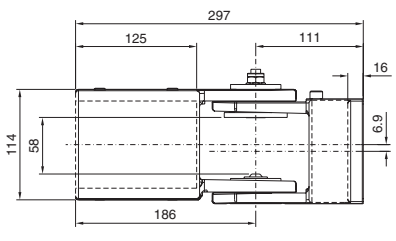
Supply includes:
Assembly parts and concertina section.

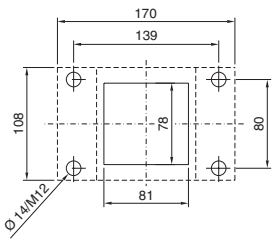
Colour RAL	Weight kg	Model No. CP
9005/7024	11.7	**6080.150**

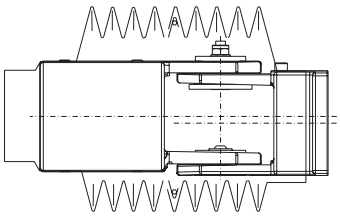
Accessories:

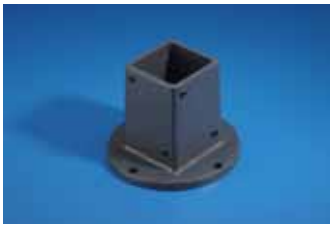
Rotational range available on request.

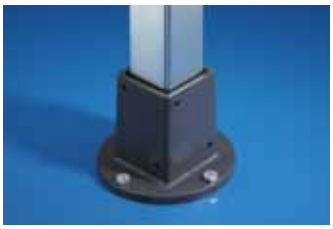
Mounting cut-out











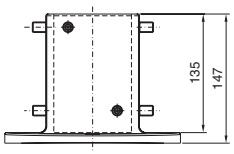
Wall/base mounting CP-Q

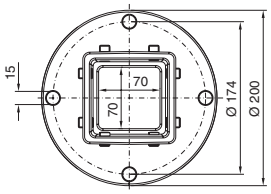
For rigid attachment of the support section to vertical and horizontal surfaces. With flange for front mounting.

Material:
Steel, spray-finished

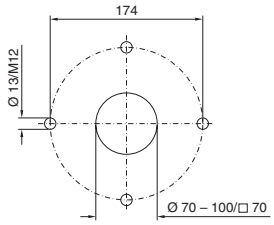
Supply includes:
Assembly parts.

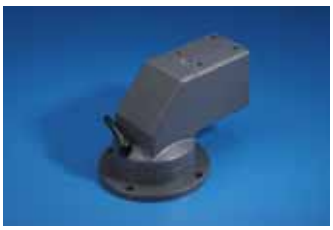
Colour RAL	Weight kg	Model No. CP
7024	5.9	**6080.170**





Mounting cut-out







Top-mounted joint CP-Q

For swivel mounting of the support arm system to horizontal surfaces.

- Suspended or top-mounted
- Adjustment facility for the support arm system
- Removable panel for problem-free cable entry

Rotation range:
Approx. 350°, lockable via clamping levers. Fit additional M8 x 8 or M8 x 10 screws as per DIN EN ISO 4762 to restrict the rotation range to 20° increments.

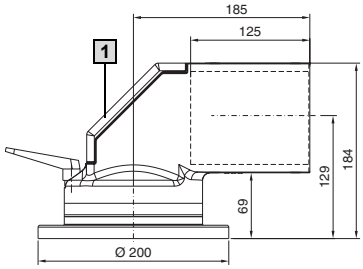
Material:
Steel, spray-finished

Supply includes:
Assembly parts.

Colour RAL	Weight kg	Model No. CP
7024	11.3	**6080.160**

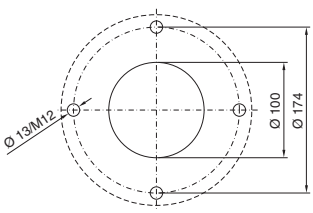
Accessories:

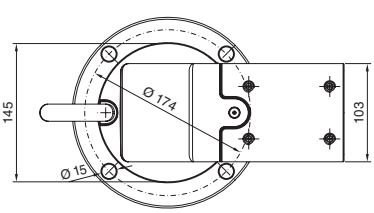
Pillar,
see page 295.



1 Removable plate

Mounting cut-out





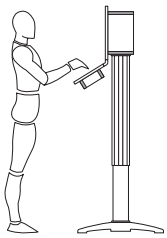
Stand systems

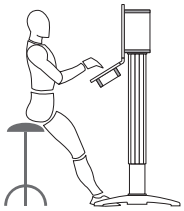
Features

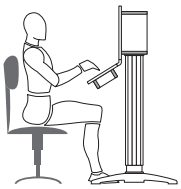


Bringing movement to Rittal stand systems, to meet all your ergonomic and technical requirements.

For every enclosure type, height variability, mobile use, and accommodation of cables. Our extensive solution diversity meets every conceivable requirement.

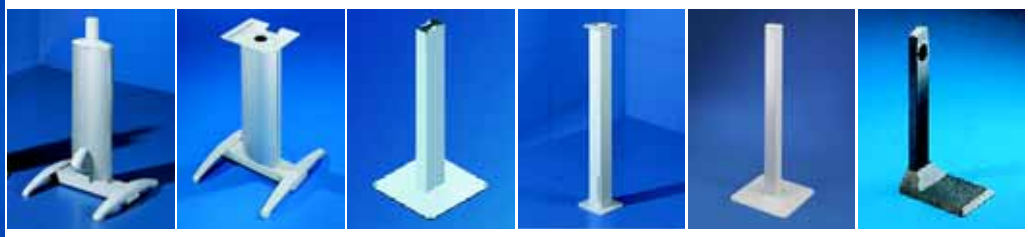








Powerful pillars with numerous options – fixed . . .



Pedestal for Command Panel
with support section CP-L

Pedestal for IW worktops

Pillar, small
For compact assemblies

Pillar, large
The robust base point for heavy assemblies.

Pedestal, open
With cable duct open

Pedestal for operating housing
Suitable for side mounting of operating housings.

. . . and with variable height







Lifting pillar, electric
Height adjustment (from 670 to 1140 mm), spindle drive secured against unintentional dropping.

Support section, height-adjustable
Adjustment range from 732 to 1122 mm. Inner section for external mounting of operating housings.

Pedestal, modular, small
for the configuration of compact operating stations. Height of support section may be shortened by sawing to the required length.

Pedestals in every variant – fixed or mobile



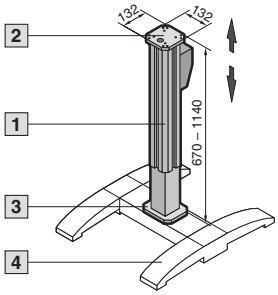
Pedestal base plate, large
Fitted with: Cut-out for concealed mounting of cable conduit adaptors and PG segments.

Cross member with cast feet
Steel cross member with mounting holes for lifting pillar.

Pedestal, mobile CP-L/CP-XL
for changing locations.

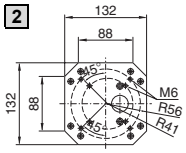
Pedestal, height-adjustable



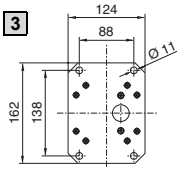


May be compiled from the following modules:	Model No. CP	Page
1 Lifting pillar, electric	**6142.000**	see below
Control unit for external mounting on surfaces/enclosures	**6142.020**	
4 Cross member with cast feet	**6142.100**	291

Mounting surface, head plate



Mounting surface, base plate





1 Lifting pillar, electric

Height adjustment 470 mm (from 670 to 1140 mm), spindle drive secured against unintentional dropping.
With electronic overload cut-out to protect the drive.
Adjuster unit made from extruded aluminium sections with all-round groove.

2 Head plate

- For direct mounting of worktop attachment IW, enclosures with support arm connection
  – CP-L, Ø 130 mm
  – CP-XL
- For swivel mounting of enclosures, including those with keyboard support, via wall/base mounting bracket, small CP-L, CP 6520.5X0, in conjunction with support arm system CP-L.

3 Base plate

For external mounting on the cross member or a sub-structure provided by the customer.

Note:
Only suitable for upright assembly.

Weight kg	Packs of	Model No. CP
13.8	1	**6142.000**

Technical specifications:
Permissible load: Max. 80 kg
Duty cycle: Max. 6 min/h with continuous operation
Ambient temperature: +5°C to +40°C
Mains connection: 230 V/50 Hz
Transformer: 24 V DC

Protection category:
IP 65 to EN 60 529/09.2000
(for electrical components).

Supply includes:
Adjusting drive with transformer, head and base plate.

Also required:

Control unit,
see page 287.

Accessories:

Cross member with cast feet CP 6142.100,
see page 291.
Worktop attachment CP 6902.780,
see page 1124.
Wall/base mounting, small CP-L,
CP 6520.5X0, see page 265.



Control unit

for height adjustment of the lifting pillar. Design ready for connection with spiral cable and connector. With mounting brackets for screw fastening.

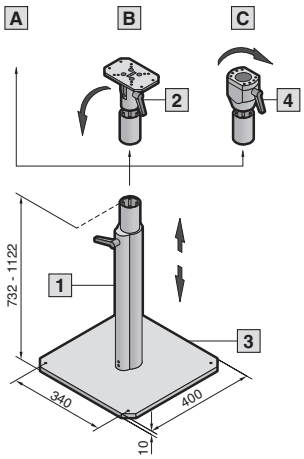
Design	Protection rating	Model No. CP
External mounting on surfaces/enclosures	IP 30	**6142.020**

Comfort Panel Page 192 **Optipanel** Page 204 **VIP 6000** Page 213 **Compact Panel** Page 231 **Support arm system CP-L** Page 250

Pedestal, modular, CP-S







For small panels and keyboard housings up to 20 kg

May be compiled from the following modules:	Model No. CP	Page
1 Support section, height-adjustable	**6146.200**	288
2 Tilt adjustment	**6146.300**	289
3 Pedestal base plate	**6146.100**	289
4 CP-S attachment	**6501.070**	244
or CP-S housing coupling	**6501.050**	245

External mounting of operating housings or other devices:

A Direct screw-fastening

B With tilt adjuster 2

C With attachment 6501.070 or housing coupling 6501.050 CP-S, see page 244/245.



Support section

height-adjustable

Adjustment range from 732 to 1122 mm.
Inner section for external mounting of operating housings.
External section with:

- Clamping screws at the rear for external mounting on pedestal base plate CP 6146.100
- Clamping lever for height fixing
- Surface for external cable routing.

Material:
Extruded aluminium section, natural-anodised

Supply includes:
Inner and outer section including locking lever and assembly parts for external mounting on the base plate and enclosure.

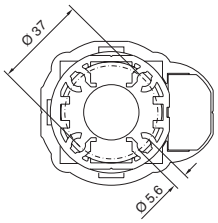
Weight kg	Packs of	Model No. CP
3.0	1	**6146.200**

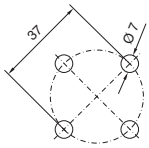
Accessories:

Tilt adjustment CP 6146.300, see page 289.
Pedestal base plate CP 6146.100, see page 289.
Attachment CP-S CP 6501.070, see page 244.
Housing coupling CP-S CP 6501.050, see page 245.

Rittal service:

Other heights available on request.







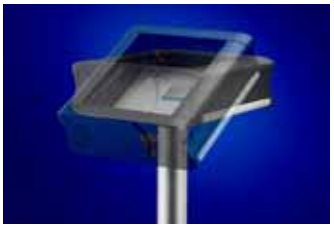
Gas-pressurised spring

- For relief with height adjustment
- Optional installation
- Internal mounting
- Load capacity 15 kg
- Length 490/885 mm

Supply includes:
Assembly parts for installing in the support section, height-adjustable.

Packs of	Model No. CP
1	**6146.400**

Optipanel Page 204 **Compact Panel** Page 231





Tilt adjustment

For direct top-mounting on enclosures with mounting cut-out:

- CP-S
- CP-L, ▭ 120 x 65 mm
- CP-L, Ø 130 mm

Cannot be combined with enclosure attachment or coupling.

Adjustment range:
±30°

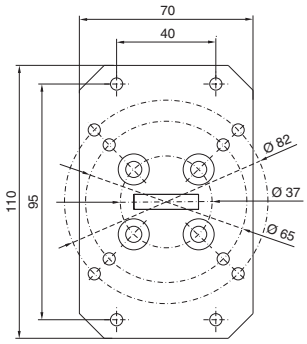
Material:
Sheet steel, zinc-plated, passivated

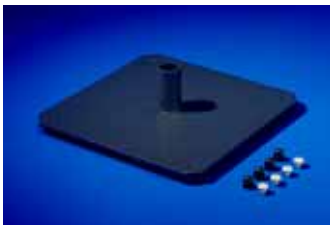
Supply includes:
Locking lever and assembly parts for height-adjustable mounting on the support section.

Packs of	Model No. CP
1	**6146.300**

Rittal service:

As tilt adjustment for support arm system CP-S on request.







Pedestal base plate

With large surface for stability and welded tube connectors (Ø 48.3 mm) to accommodate the external profile of the support section, height-adjustable. Base mount from the outside using screws up to M10.

Material:
Sheet steel, powder-coated

Colour RAL	Packs of	Model No. CP
7024	1	**6146.100**

Accessories:

Twin castors CP 6148.000,
see page 907.

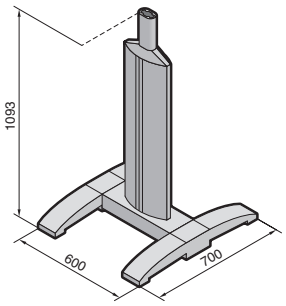
Optipanel Page 204 **Compact Panel** Page 231

Stand systems

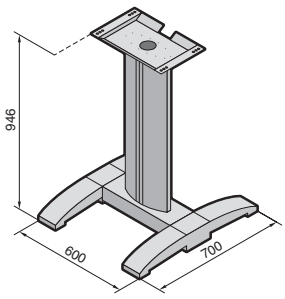
Pedestals







1 + 2



3

Detailed drawing,
see page 1217.



1



2



3

Pedestal

One oval panel is permanently screw-fastened, whilst the other can be opened by "spreading" with a screwdriver for easy laying of cables.
In order to ensure opening of the front panels, we recommend that the adjustable frame connector be used with all panels with keyboard housing.

Material:
Feet: Cast aluminium
Cross member, vertical support tubes: Steel
Panels: Aluminium section

Supply includes:
for Command Panel:
2 cast aluminium feet,
1 cross member made of steel,
2 steel support tubes welded to cross member,
2 oval panels made from aluminium section,
1 top cover made from cast aluminium with support section CP-L,
partially pre-assembled.

for IW worktops:
2 cast aluminium feet,
1 cross member made of steel,
2 steel support tubes welded to cross member,
2 oval panels made from aluminium section,
1 worktop attachment of sheet steel.

	For Command Panel		For IW worktops	
Design	1 with drilled hole for cable entry in cross member	2 with cable conduit adaptor and drilled hole for cable entry in cross member	3 with drilled hole for cable entry in cross member	Page
W x H x D mm[1)]	600 x 1093 x 700	600 x 1093 x 700	600 x 946 x 700	
Model No.	**6141.000**	**6141.100**	**6141.200**	
Weight kg	34.9	35.1	33.7	
Colour RAL	7035/ natural-anodised	7035/ natural-anodised	7035/ natural-anodised	
Accessories				
Twin castors	6148.000, 4634.500	6148.000, 4634.500	6148.000, 4634.500	907
Levelling feet	4612.000	4612.000	4612.000	906
Base mount	6147.000	6147.000	6147.000	291
Foot rest	6145.100	6145.100	6145.100	291
Trim panel	6144.100	6144.100	6144.100	291
Cable conduit	see page			1065
Enclosure attachment CP-L, Ø 130 mm	6525.5X0	6525.5X0	–	256
Enclosure attachment CP-L, ▭ 120 x 65 mm	6525.6X0	6525.6X0	–	257
Housing coupling CP-L, Ø 130 mm	6525.0X0	6525.0X0	–	262
Housing coupling CP-L, ▭ 120 x 65 mm	6525.1X0	6525.1X0	–	262
Enclosure attachment CP-L, ▭ 120 x 65 mm, locatable	6525.2X0	6525.2X0	–	260
Enclosure attachment, tilting	–	–	6902.640	257
Worktop without handle (W x H x D 950 x 38 x 600 mm)	–	–	6902.310	184
Worktop with handle (W x H x D 950 x 38 x 658 mm)	–	–	6902.320	184

[1)] Other widths and heights and support tubes available on request.
X = 0 (RAL 7030), X = 1 (RAL 7024)

Comfort Panel Page 192 **Optipanel** Page 204 **VIP 6000** Page 213 **IW worktops** Page 184



Cross-member

with cast feet
Steel cross member with mounting holes for lifting pillar or other individual assemblies, including 2 cast aluminium feet.

Colour RAL	Weight kg	Model No. CP
7035	5.8	**6142.100**

Accessories:

Foot rest CP 6145.100,
trim panel CP 6144.100,
base mount CP 6147.000,
see page 291.
Twin castors,
see page 907.

Detailed drawing,
see page 1219.



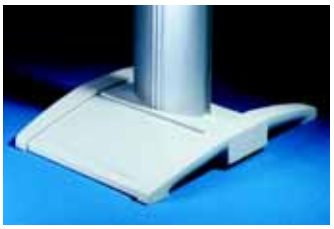
Base mount

Brackets for screw-fastening from below to the cast feet with posidrive raised countersunk screws M12.
Optionally with projection at the front, interior or sides, with Ø 11 mm hole for screw-fastening to the base.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Posidrive raised countersunk screws M12.

Packs of	Model No. CP
4	**6147.000**

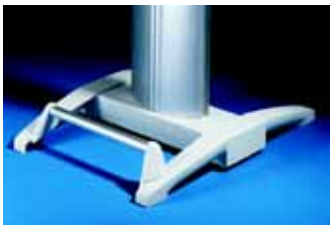


Trim panel

Material:
Cast aluminium

Supply includes:
Assembly parts for screw-fastening between the cast feet at the front or rear.

Colour RAL	Model No. CP
7035 textured	**6144.100**



Foot rest

Material:
Connector pieces: Cast aluminium
Round tube section: Aluminium

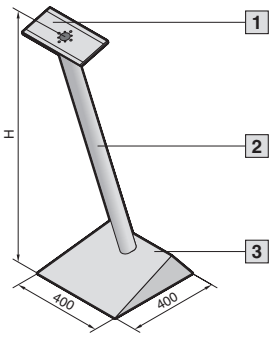
Supply includes:
Assembly parts.

Colour RAL	Weight kg	Model No. CP
7035 textured/ natural-anodised	0.6	**6145.100**

Comfort Panel Page 192 **Optipanel** Page 204 **VIP 6000** Page 213 **IW worktops** Page 184

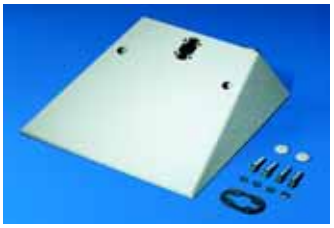
Pedestals





Pedestal
modular, CP-L

May be compiled from the following modules:	Model No. CP	Page
1 Enclosure reinforcement	**6143.210**	296
2 Support section, straight (may be shortened to required length by sawing)		
500 mm	**6511.0X0**	254
1000 mm (H + 65 mm)	**6513.0X0**	254
2000 mm	**6515.0X0**	254
3 Pedestal base plate, small	**6143.200**	292



Pedestal base plate
small

- With one hole at the rear for commercially available cable conduit gland M20.
- With two holes at the top (including sealing bung) for floor attachment.
- Prepared on the inside for a cable clamp for strain relief.

Material:
Sheet steel, 2.5 mm

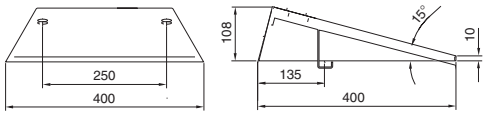
Supply includes:
Assembly parts.

Note:
Commercially available screws up to M8 may be used for floor attachment.

Weight kg	Colour RAL	Model No. CP
6.3	7035	**6143.200**

Accessories:

Cable clamp DK 7077.000 or DK 7078.000, see page 1064.





Pedestal base plate
large

- Cut-out for concealed mounting of cable conduit adaptor M50
- Cut-out for PG segments (EL 2235.010 to EL 2235.080) or cable conduit adaptor up to Ø 70 mm
- Integral cable clamping bracket

Material:
Sheet steel, powder-coated

Supply includes:
Integral reinforcement and mounting cut-out for support section CP-L or CP-XL, complete with assembly parts for configuration of the support section.

For support section	Colour RAL	Weight kg	Model No. CP
CP-L	7035	12.4	**6137.535**
CP-XL	7035	13.1	**6137.035**

Also required:

Support section
CP-L, see page 254,
CP-XL, see page 270.

Accessories:

CP enclosure or worktops according to choice.
Twin castors,
see page 907.
Levelling feet PS 4612.000,
see page 906.
Cable conduit, see page 1065.
Wall mounting bracket KL 1580.000 or KL 1590.000 for base attachment,
see page 975.

Detailed drawing,
see page 1219.

Command Panel housing with door Page 233 **Operating housings** Page 234 **Terminal boxes KL** Page 116





Pedestal

mobile
Consisting of:
2 sheet steel axles, each with
2 die-cast zinc roller bearings with plastic coating,
4 twin castors, 2 x with, 2 x without locks,
1 cross-brace, screw-fastened, of sheet steel with integral cable clamping bracket,
1 support section of aluminium (for CP 6136.000 with clip-in lid),
partially pre-assembled.

Colour:
Powder-coated in RAL 7035,
corner pieces in RAL 7030.

Pedestal, mobile with support section	**Model No. CP**
CP-L (see page 254)	**6136.500**
CP-XL (see page 270)	**6136.000**

Accessories:

Enclosure attachment for	**Model No. CP**	Page
6136.500 CP-L	6525.5X0 6525.6X0	256/257
6136.000 CP-XL	6130.5X0 6130.6X0	271/272

Detailed drawing,
see page 1218.



Pedestal

for operating housing
For side mounting.

Consisting of:
- Pedestal plate, on castors
- Support section
- End cap with recessed handle

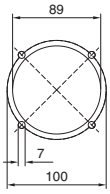
Supply includes:
Assembly parts.

Dimensions:
W x H x D:
360 x 500 x 995 mm

Note:
Up to a maximum enclosure width of 380 mm.

Colour RAL	Weight kg	**Model No. CP**
9011	23.6	**6135.000**

Mounting cut-out



Command Panel housing with door Page 233 **Operating housings** Page 234 **Comfort Panel** Page 192 **Optipanel** Page 204 **VIP 6000** Page 213

Pedestals/pillars





1



2

Pedestal, open

With cable duct open
- for inserting cables with pre-assembled connectors
- for optimum service access.

Head plate with accommodation for:
- CP-L housing coupling for support arm connection Ø 130 mm, CP 6525.0X0, see page 262
- CP-L enclosure attachment for support arm connection Ø 130 mm, CP 6525.5X0, see page 256

Material:
Pedestal tube: Steel, spray-finished in RAL 7035
Cover section: Plastic RAL 7030

Design:
400 x 400 mm, 10 mm thick base plate, with 4 x Ø 11 mm mounting holes.
Pedestal tube W x H = 86 x 73 mm, 3 mm thick, head and base plates welded on.

Supply includes:
Assembly parts and cover section.

1 **Cover section** just clips on

2 With **cable clamping bracket**

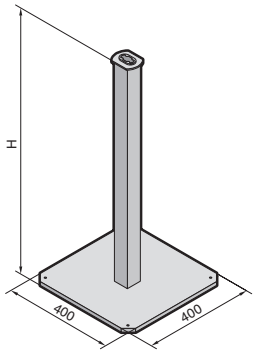
Height (H) mm	Weight kg	Model No. CP
1093	24	**6215.000**
To specifications	–	**6215.100**[1)]

[1)] Delivery times available on request.

Accessories:

Cable tie SZ 2597.000, see page 1066.

Detailed drawing, see page 1218.





Pillar

small
For heavy assemblies, connection plates at the top for support arm components CP-XL.
- With cut-out for 24-pole connectors for cable entry at the bottom rear,
- Height: 1150 mm.

Material:
Steel

Design:
Base plate cross-section 500 x 500 mm, 12 mm thick, with 4 mounting holes.
Pedestal tube (cross-section 160 x 80 mm, wall thickness 3.2 mm) welded to base plate.

Colour RAL	Model No. CP
7035	**6214.500**

Accessories:

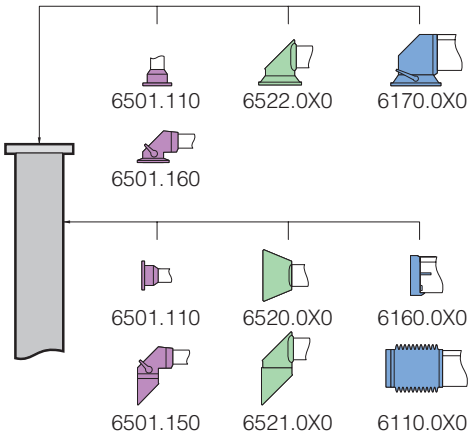
Housing coupling CP-XL, see page 272.
Enclosure attachment CP-XL, see page 271, 272.

Detailed drawing, see page 1218.

Command Panel housing with door Page 233 **Operating housings** Page 234 **Comfort Panel** Page 192 **Optipanel** Page 204 **VIP 6000** Page 213

Pillars





Detailed drawing,
see page 1219.



Pillar

The stable base point for the support arm system. The attachment of additional enclosures, e. g. for security systems, is also possible.
There is a choice of 2 cross-sections:
- 140 x 140 mm
- 200 x 200 mm

Design:
Base plate 15 mm thick, with four mounting holes, cut-out in the base plate according to the cross-section for cable entry from below. Pedestal tube (wall thickness 5 mm) welded to the base plate, with connection facilities for support arm systems as per the selection table.

Delivery times:
Extended delivery times

Material:
Steel, spray-finished

Colour:
RAL 7035

Supply includes:
Assembly parts for support arm system according to selection.

Note:
Customer-specific designs, such as:
- Other RAL colours
- Drilling patterns for CP-Q
- Heights
- Consoles for additional enclosures

available on request.

Accessories:

Support arm system
CP-S, see page 241,
CP-L, see page 250,
CP-XL, see page 268,
Gland plates size 2, see from page 1048.

Supply includes						**Model No. CP**				Page
Cross-section 140 x 140 mm, height 2000 mm						**6214.**	**X**	**X**	**0**	
Cross-section 200 x 200 mm, height 2000 mm						**6220.**	**X**	**X**	**0**	
Cut-out for cable entry										
Without cut-out in pillar							**0**			
Cut-out at the front							**1**			
Cut-out at the rear							**2**			
Cut-out on the left							**3**			
Cut-out on the right							**4**			
Support arm connection										
	for									
	wall/base mounting		wall-mounted hinge	top-mounted joint						
	front	top	front	top						
without							**0**		–
CP-S	6501.110						**6**		248
CP-S		6501.110					**7**		248
CP-S			6501.150				**8**		249
CP-S				6501.160			**9**		248
CP-L	6520.0X0						**2**		266
CP-L			6521.0X0				**3**		267
CP-L				6522.0X0			**4**		266
CP-XL[1)]	6160.0X0		6110.0X0				**1**		279/277
CP-XL[1)]				6170.0X0			**5**		278

[1)] For CP 6220.XX0 only.

Support arm system CP-S Page 241 **Support arm system CP-L** Page 250 **Support arm system CP-XL** Page 268 **Support arm system CP-Q** Page 280

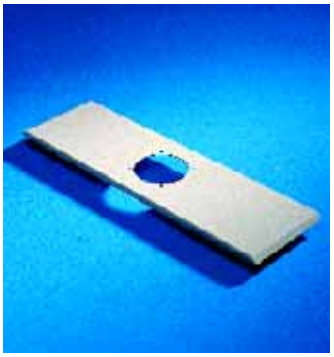
Enclosure reinforcements



CP 6143.310



CP 6143.210



CP 6503.000

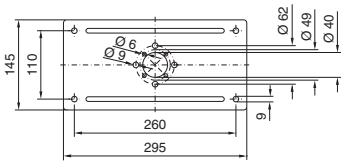
Enclosure reinforcement

For external or internal reinforcement of enclosures of a corresponding size.
Smaller enclosures may also be mounted directly without enclosure reinforcement.

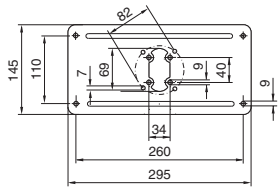
Supply includes:
Assembly parts for the enclosure and support section plus 2 seals.

For enclosure	Support arm connection	Material	Weight kg	**Model No. CP**
B1 ≥ 300 mm, T1 ≥ 150 mm	CP-S	Stainless steel 1.4301	0.9	**6143.310**
B1 ≥ 300 mm, T1 ≥ 150 mm	CP-L	Sheet steel	0.9	**6143.210**
CP 6662.000 or AE (B1 = 600 mm, T1 ≥ 210 mm)	CP-XL	Sheet steel	2.2	**6503.000**

CP 6143.310

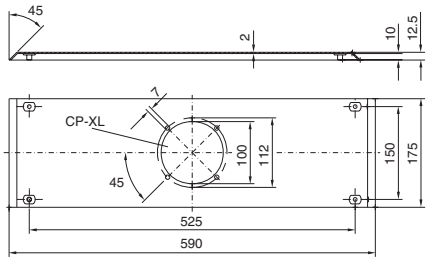


CP 6143.210



B = Width
T = Depth

CP 6503.000



Support arm system CP-S Page 241 **Support arm system CP-L** Page 250 **Support arm system CP-XL** Page 268 **Support arm system CP-Q** Page 280



For the design of production plant in open processes in the food and consumables industry where ease of cleaning is crucial.
When it comes to the exacting demands of food safety, stainless steel enclosures, including those with a protection category of IP 69K, and enclosures in hygienic design are "two different animals".
Rittal Hygienic Design offers mechanical engineers and plant operators in the food sector decisive new building blocks for the hygiene demands of the future. This innovative sub-range is based on our world-renowned expertise in enclosure manufacturing and enclosure climate control.

The Rittal Hygienic Design for food safety is based on:
- Machinery Directive (Directive 98/37/EC)
  Food machinery section, Appendix 1, point 2.1 (to be replaced by 2006/42/EC)
- DIN EN 1672-2:2005 Food machinery – General design principles – Part 2: Hygiene requirements
- DIN EN ISO 14 159 Machine safety – Hygiene requirements pertaining to the design of machinery
- Document 13 EHEDG-Guideline to the Hygienic Design of apparatus for open processes, prepared in collaboration with 3-A and NSF International

Hygienic Design

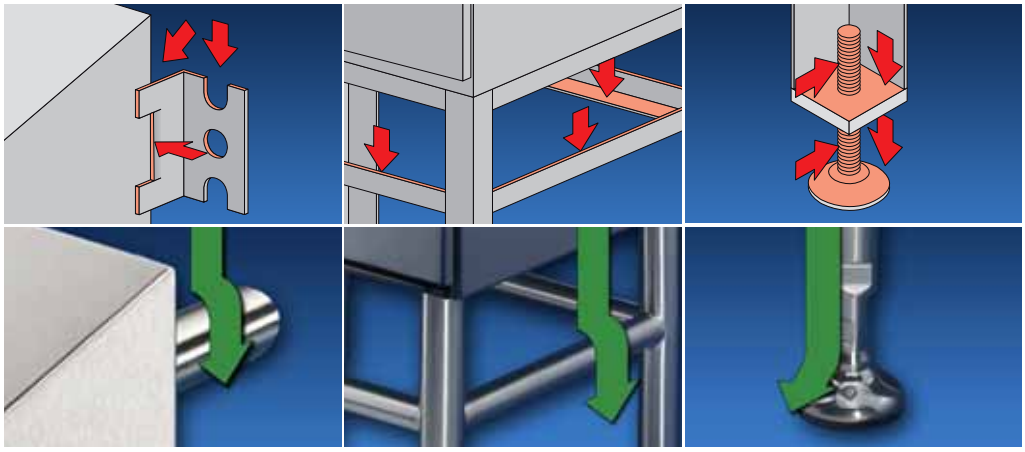


Become healthier, better and more productive – with Rittal Hygienic Design.

Benefits compared with conventional enclosures:

- **Higher productivity** through greater system availability.
- **Reducing the amount of cleaning required** (faster cleaning, reduced energy requirements, reduced use of chemicals).
- **Superior product quality** and greater durability by reducing the contamination risk, which in turn helps to avoid production losses.
- Improved **protection** for both consumers and employees.

Rittal
Hygienic Design

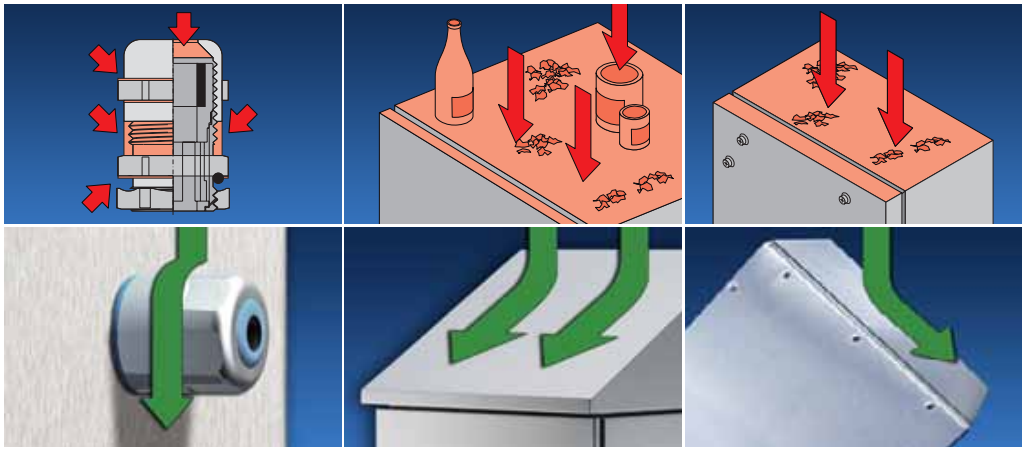


Make existing plant more hygienic. This saves time with cleaning and disinfection, i. e. downtime is reduced, and plant productivity is increased, provided . . .

. . . the wall-mounted devices and enclosures are installed at a distance for cleaning purposes. With the **wall spacer bracket HD.**

. . . enclosures with cable entry from below are mounted on the new **HD base** rather than on a base/plinth or a mounting angle frame.

. . . the new **HD levelling feet** eliminate the need for adjustment with external threads.



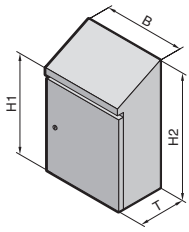
. . . the polyamide or brass cable entry with external thread is replaced by the new **HD stainless steel cable gland.**

. . . the standard flat roofs in TS 8 enclosures are replaced by a **sloped attachment.**

. . . terminal boxes (Premium-KL IP 69K), used e.g. as socket outlets, **are mounted on the wall at 45°** instead of horizontally.

Compact enclosures HD, single-door





Benefits in detail:
- Roof angled forwards by 30°.
- Horizontal drainage edge to protect the seal.
- Chamfered door fold.
- Silicone seal on the outside, no gap.
- Seal may be swapped over.
- Seal dyed blue to clearly distinguish it from foodstuffs.
- Hinge inside the enclosure.
- External fastener made from stainless steel.
- Fastener insert easy to clean.
- Enclosure of all-round solid construction. This means that after machining, only essential openings remain.
- No new project planning input required, since the same mounting plate dimensions are used as in AE enclosures.

Material:
Enclosure and door:
Stainless steel 1.4301 (AISI 304)
Mounting plate: Sheet steel
Lock inserts HD:
Stainless steel 1.4404
(AISI 316L)

Surface finish:
Peak-to-valley height of enclosure surfaces < 0.8 µm
Mounting plate zinc-plated

Protection category:
IP 66 to EN 60 529/09.2000

Supply includes:
Enclosure of all-round solid construction, single door, interchangeable door hinge

Width (B) mm		Packs of	220	390	390	510	610	610	810	810	Page
Height	front (H1) mm		350	430	650	550	430	650	1050	1250	
	rear (H2) mm		437	549	769	669	601	769	1221	1421	
Depth (T) mm			155	210	210	210	300	210	300	300	
Model No. HD		1	**1302.600**	**1306.600**	**1308.600**	**1307.600**	**1320.600**	**1310.600**	**1316.600**	**1317.600**	
Accessories											
Wall spacer bracket	50 mm	1	4000.100	4000.100	4000.100	4000.100	4000.100	4000.100	4000.100	4000.100	301
	150 mm	1	4000.110	4000.110	4000.110	4000.110	4000.110	4000.110	4000.110	4000.110	301
	300 mm	1	4000.120	4000.120	4000.120	4000.120	4000.120	4000.120	4000.120	4000.120	301
Supporting structure HD with 2 feet	Height 300 mm	1	–	–	–	–	–	4000.360	4000.362	4000.362	300
Supporting structure HD with 2 or 4 feet according to design code number, see page 300.											

Delivery times available on request.
To order enclosures in 1.4404 (AISI 316L) please add the extension .500 to the Model No. Delivery times available on request.



Cable gland HD,
without external thread,
Model No. see page 1056.

Accessories Page 300

Supporting structure HD with levelling

Material:
Stainless steel tube 1.4301 (AISI 304)

Supply includes:
Assembly parts and seals.

Accessories:

Wall spacer bracket for secure mounting,
see page 301.

Benefits in detail:
Solid cross-sections and continuously welded seams ensure complete water-tightness. The round profile helps to avoid the common problem of collecting dirt, particularly with horizontal surfaces.

The guaranteed floor clearance of the enclosures facilitates easy wet or dry cleaning.

Horizontal cross struts and support strips ensure a high level of stability.

The width supports the installation of individual supporting structures underneath bayed TS 8 enclosure systems.



with 4 feet
for TS 8

Design
- including levelling 0 – 55 mm
- without base mount
- with horizontal grille for cable routing between the support strips, rear

For TS 8 W x D mm	Height mm	Model No. HD
800 x 500	300	**4000.310**
800 x 600	300	**4000.311**
1200 x 500	300	**4000.312**
1200 x 600	300	**4000.313**

Delivery times available on request.
To order in stainless steel 1.4404 (AISI 316L), please add extension .4XX to the Model No.



with 2 feet
for compact enclosures HD

Design
- including levelling 0 – 55 mm
- without base mount
- with horizontal grille for cable routing

Note:
Additional wall spacer brackets are essential for secure mounting.

For compact enclosures HD W x D mm	Height mm	Model No. HD
610 x 210	300	**4000.360**
810 x 300	300	**4000.362**

Delivery times available on request.
To order in stainless steel 1.4404 (AISI 316L), please add extension .4XX to the Model No.

Supporting structure HD according to specifications

with 4 feet, height 300 mm

Material	Model No. HD
1.4301 (AISI 304)	**4000.309**[1)]
1.4404 (AISI 316L)	**4000.409**[1)]

[1)] Please additionally give the design code. Other heights available on request. Delivery times available on request.

Design code number

☐ – ☐ – ☐ – ☐ – ☐

For enclosure
1 – Compact enclosure HD
2 – TS 8 (stainless steel/ sheet steel)

Enclosure width mm

Enclosure depth mm

Levelling
(0 – 55 mm)
1 – with (for all 4 feet)
2 – without

Base mount
1 – with
2 – without

Example:
Supporting structure for TS 8, width 1000 mm, depth 800 mm, without levelling, with base mount.

2 – 1000 – 800 – 2 – 1

with 2 feet, height 300 mm

Material	Model No. HD
1.4301 (AISI 304)	**4000.359**[1)]
1.4404 (AISI 316L)	**4000.459**[1)]

[1)] Please additionally give the design code. Other heights available on request. Delivery times available on request.

Design code number

☐ – ☐ – ☐ – ☐ – ☐

For enclosure
1 – Compact enclosure HD

Enclosure width mm

Enclosure depth mm

Levelling
(0 – 55 mm)
1 – with (for both feet)
2 – without

Base mount
1 – with
2 – without

Example:
Supporting structure for compact enclosure HD, width 390 mm, depth 210 mm, without levelling, without base mount.

1 – 390 – 210 – 1 – 2





Levelling feet HD

Material:
Stainless steel 1.4301 (AISI 304)

Supply includes:
Assembly parts and seals.

Benefits in detail:
The threaded spindle for levelling is completely concealed by a cover, and permanently sealed, thereby eliminating the time-consuming work of cleaning and disinfecting the thread.

Option of securing to the
- Enclosure
- Base/plinth

For enclosures	Levelling range mm	Base mount	Packs of	Model No. HD
TS 8 (M12)	120 – 175	without	4	**4000.200**
		with	4	**4000.210**
Compact enclosures HD	120 – 175	without	2	**4000.220**
		with	2	**4000.230**

Delivery times available on request.
To order in stainless steel 1.4404 (AISI 316L) please add the extension .XX1 to the Model No.





Wall spacer bracket HD

Material:
Stainless steel tube 1.4301 (AISI 304)

Supply includes:
Assembly parts and seals.

Benefits in detail:
Finding a way to permanently and securely seal the enclosure against the wall remains a problem. With this in mind, we recommend that you leave sufficient space to clean behind the enclosure.

Depending on the weight and dimensions, one, two, three or four supports may be fitted for attachment purposes.

Wall spacer brackets may also be used in customised designs or with an adaptor plate for mounting other components such as switches and sockets, as well as wire-mesh cable trays.

Distance from wall mm	Packs of	Model No. HD
50	1	**4000.100**
150	1	**4000.110**
300	1	**4000.120**

Delivery times available on request.
To order in stainless steel 1.4404 (AISI 316L) please add the extension .XX1 to the Model No.



Enclosure key HD

For lock insert HD

Packs of	Model No. HD
1	**2549.600**

Delivery times available on request.

Bit HD

for universal key SZ 2549.500
See page 959.

Packs of	Model No. HD
1	**2549.510**

Delivery times available on request.



Sloped attachment

for TS 8
For retro-fitting individual or bayed TS 8 enclosures of sheet steel, spray-finished, or stainless steel.
On request.

Stainless steel

Features



Be it automation, communications or power supply technology, Rittal offers the correct enclosures and cabinets to suit virtually all requirement profiles in modern industrial technology. Of course, these are also available in stainless steel for extremely high standards of hygiene and corrosion protection.
Cleverly thought-out system platforms, in conjunction with an extensive selection of system accessories, provide the basis for the outstanding solution diversity of the Rittal stainless steel range.
Why not arrange a consultation? We cater to your requirements.



Compact enclosures



Switch housing
prepared for 1 – 4 switches.



Terminal boxes with quick-release fastener lid and profile strips with mounting holes on both sides for the installation of mounting angles or mounting plate.



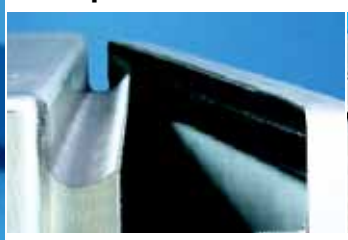
Premium Line KL
Resistant to high-pressure cleaning, IP 69K and high level of EMC shielding, thanks to the sealing system and metallic contact between the enclosure and rear panel.



Bus enclosure with 180° hinges and built-in support rail.



Compact enclosures



Enclosure protection channel
prevents the ingress of dirt and water when the door is opened.



Rain canopies for AE offer additional protection.



AE IP 69K
Perfect protection in a tough environment.

Features



Command Panel/support arm system



Premium Panel
First-class in terms of sealing, protection, hygiene and design, with or without keyboard housing.



Command Panel housing with door
with handle strips and rear panel with welded nuts for the attachment of a mounting plate or support rails.



Suitable for demanding corrosion protection requirements, and resistant to high-pressure cleaning.



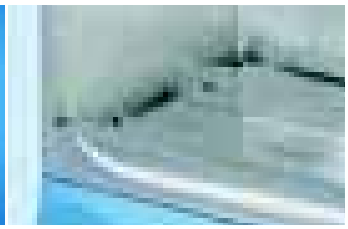
Operating station/consoles



The **IW operating station** offers a complete solution for use in areas where hygiene is important.



The lid stay of the **one-piece consoles** is locked to prevent unintentional closure.



Maximum space for cable entry with divided gland plates.



Enclosure systems



PC enclosure system with keyboard drawer.



Baying systems TS 8 – infinite possibilities for interior installation.



Free-standing enclosures ES 5000 with profiled enclosure formed from a single piece (roof + side).



Hygienic Design



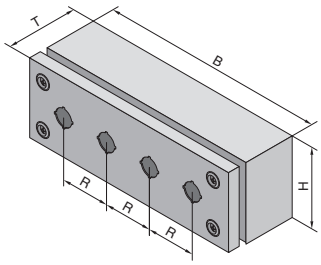
For further information on the design of production plant in open processes in the food and consumables industry where ease of cleaning is a key consideration, please refer to page 297.



Cable gland HD, stainless steel, see page 1056.

Switch housing





Switch housing
For the installation of switches and other command devices Ø 22.5 mm.

Benefits:
- Integral lid clip allows you to keep your hands free when wiring.
- Versatile attachment options: Screw fastening from the inside or outside, and via wall mounting brackets.
- Opening and closing the lid with quick-release fasteners (a three-quarter revolution is sufficient).

Material:
Stainless steel
Enclosure: 1.25 mm
Cover: 1.25 mm

Surface finish:
Enclosure and cover:
Brushed, grain 240

Protection category:
IP 66 to EN 60 529/09.2000, complies with NEMA 4x.

Supply includes:
Enclosure,
lid with foamed-in seal and 2 or 4 quick-release fasteners.

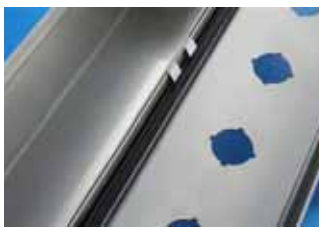
Detailed drawing,
see page 1220.

Width (B) mm		Packs of	100	160	220	280	Page
Height (H) mm			100	100	100	100	
Depth (T) mm			90	90	90	90	
Model No. SM	1.4301 (AISI 304)	1	**2384.010**	**2384.020**	**2384.030**	**2384.040**	
	1.4404 (AISI 316L)	1	**2384.510**[1)]	**2384.520**[1)]	**2384.530**[1)]	**2384.540**[1)]	
Pitch pattern (R) mm			–	60	60	60	
No. of switch cut-outs			1	2	3	4	
Accessories							
Wall mounting bracket		4	1594.000	1594.000	1594.000	1594.000	975

[1)] Delivery times available on request.



Cable glands
made from polyamide or brass.
Model No. see page 1054.

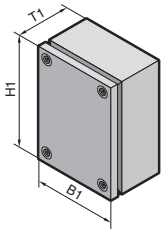


Integral lid clip
allows you to keep your hands free when wiring.

Accessories Page 890

Terminal boxes KL





Material:
Stainless steel
Enclosure: 1.25 mm
Cover: 1.25 mm

Surface finish:
Enclosure and cover:
Brushed, grain 180

Protection category:
IP 66 to EN 60 529/09.2000, complies with NEMA 4x.

Supply includes:
Enclosure, cover with all-round foamed-in PU-seal and quick-action screws, including plastic bushes.

Approvals,
see page 25.

Detailed drawing,
see page 1175.

Width (B1) mm		Packs of	150	300	200	300	400	300	Page
Height (H1) mm			150	150	200	200	200	300	
Depth (T1) mm			80	80	80	80	120	120	
Model No. KL	1.4301 (AISI 304) with PU seal	1	**1521.010**	**1522.010**	**1523.010**	**1524.010**	**1525.010**	**1526.010**	
	1.4301 (AISI 304) with silicone seal	1	**1521.020**[1)]	**1522.020**[1)]	**1523.020**[1)]	**1524.020**[1)]	**1525.020**[1)]	**1526.020**[1)]	
	1.4404 (AISI 316L) with PU seal	1	**1521.510**[1)]	**1522.510**[1)]	**1523.510**[1)]	**1524.510**[1)]	**1525.510**[1)]	**1526.510**[1)]	
	1.4404 (AISI 316L) with silicone seal	1	**1521.520**[1)]	**1522.520**[1)]	**1523.520**[1)]	**1524.520**[1)]	**1525.520**[1)]	**1526.520**[1)]	
Weight (kg)			1.3	1.8	1.8	2.4	3.6	3.9	
Cover screws			4	4	4	4	4	4	
Accessories									
Mounting plate		1	1560.700	1561.700	1562.700	1563.700	1564.700	1567.700	978
Wall mounting bracket		4	1594.000	1594.000	1594.000	1594.000	1594.000	1594.000	975
Wall angle		1	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	976
Pole clamp		1	2584.000	2584.000	2584.000	2584.000	2584.000	2584.000	976
Support rails TS 35/7.5		10	2314.000	2316.000	2315.000	2316.000	2317.000	2316.000	1002
Cover hinge, stainless steel 1.4404		2	1592.010	1592.010	1592.010	1592.010	1592.010	1592.010	962
Pressure relief stopper		5	2459.500	2459.500	2459.500	2459.500	2459.500	2459.500	916

[1)] Delivery times available on request.



Wall mounting bracket
for secure attachment to the wall.
Model No. see page 975.



Housing coupling
for attaching the 120 mm deep KL to the support arm system.
Model No. see page 314.

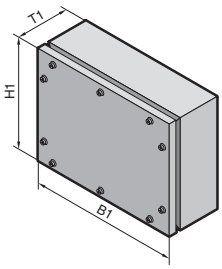
Accessories Page 890 **Terminal boxes KL sheet steel** Page 116 **Terminal boxes KL Ex-proof** Page 325

Premium Line KL, protection category IP 69K









The correct solution in cases where high-pressure cleaning is a priority.

- **Resistant to high-pressure cleaning** (protection category IP 69K). The seal lies between two surfaces and is optimally compressed by the screw fastening.
- **Suitable for clean room use.** Optional screw fastening to comply with high standards in the food industry:
  1 external with hex screws,
  2 internal with plastic bungs.
- **Optimum EMC conditions.** The labyrinth seal achieves a particularly high level of RF shielding of the enclosure.
- **Accessibility.** Internal rear panel bracket. This solution is clearly superior to external hinges from a hygiene point of view.
- Wall mounting can be implemented directly from the rear using M8 pull-in nuts, or from the front using wall mounting brackets.

Material:
Stainless steel, 1.5 mm

Surface finish:
Brushed, grain 240

Protection category:
IP 69K to DIN 40 050-9

Rittal service:

Other sizes and other enclosures with this sealing concept are available on request.
Cut-outs and drilled holes to your specifications.

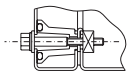
Detailed drawing,
see page 1221.

Width (B1) mm		Packs of	150	150	300	400	Page
Height (H1) mm			150	150	200	300	
Depth (T1) mm			80	120	120	120	
Model No. KL	1.4301 (AISI 304)	1	**1024.010**	**1024.020**	**1024.030**	**1024.040**	
	1.4404 (AISI 316L)	1	**1024.510**[1)]	**1024.520**[1)]	**1024.530**[1)]	**1024.540**[1)]	
Number of lid screws			4	4	6	10	
Accessories							
Mounting plate		1	1024.910	1024.910	1024.920	1024.930	978
Wall mounting bracket		4	1594.000	1594.000	1594.000	1594.000	975
Wall angle		1	2583.000	2583.000	2583.000	2583.000	976
Rear panel bracket		2	6682.000	6682.000	6682.000	6682.000	962

[1)] Delivery times available on request.



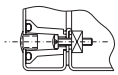
1



Depending on customer requirements, screw head on the outside . . .



2

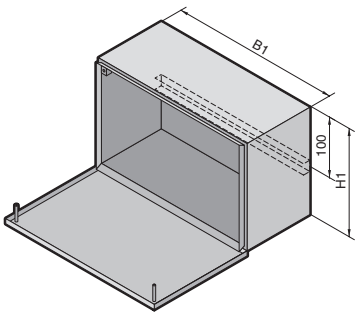


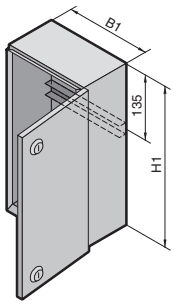
. . . or plastic stoppers on the outside with concealed screws (included in the supply).

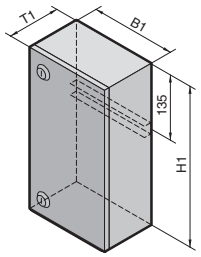
Accessories Page 890 **Compact enclosures Hygienic Design** Page 297

Bus enclosures BG









Material:
Stainless steel
Enclosure: 1.25 mm
Cover: 1.25 mm
Hinges:
Die-cast zinc

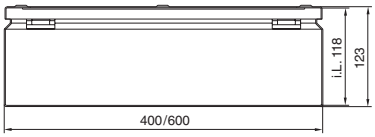
Surface finish:
Enclosure and cover:
Brushed, grain 240
Hinges: plated

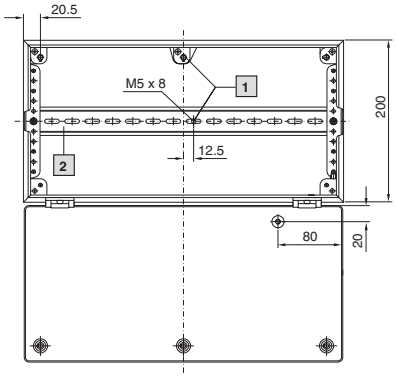
Protection category:
IP 66 to EN 60 529/09.2000,
complies with NEMA 4x.

Supply includes:
Enclosure with 1 support rail
TS 35/7.5
Lid with foamed seal 180° hinged
with quick-release fasteners.

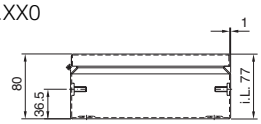
Approvals,
see page 40.

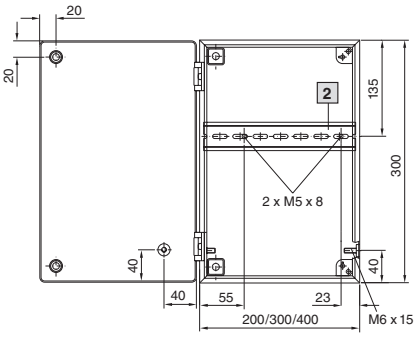
BG 1558.XX0, BG 1559.XX0





BG 1583.XX0, BG 1584.XX0,
BG 1585.XX0





1 Only for BG 1559.XX0
2 Support rail TS 35/7.5
i.L. = Clearance width

Width (B1) mm		Packs of	200	300	400	400	600	Page
Height (H1) mm			300	300	300	200	200	
Depth (T1) mm			80	80	80	123	123	
Model No. BG	1.4301 (AISI 304) with PU seal	1	**1583.010**[1]	**1584.010**[1]	**1585.010**[1]	**1558.010**[2]	**1559.010**[2]	
	1.4301 (AISI 304) with silicone seal	1	**1583.020**[3]	**1584.020**[3]	**1585.020**[3]	**1558.020**[3]	**1559.020**[3]	
	1.4404 (AISI 316L) with PU seal	1	**1583.500**[3]	**1584.500**[3]	**1585.500**[3]	**1558.500**[3]	**1559.500**[3]	
	1.4404 (AISI 316L) with silicone seal	1	**1583.530**[3]	**1584.530**[3]	**1585.530**[3]	**1558.530**[3]	**1559.530**[3]	
Weight (kg)			2.8	3.7	4.5	4.5	6.0	
Accessories								
Wall mounting bracket		4	1594.000	1594.000	1594.000	1594.000	1594.000	975
Pole clamp		1	2584.000	2584.000	2584.000	2584.000	2584.000	976
Condensate discharge		6	2459.000	2459.000	2459.000	2459.000	2459.000	916

[1] Support rail fixed on studs
[2] Support rail adjustable on profile strip
[3] Extended delivery times.



Wall mounting bracket
for the secure attachment of enclosures.
Model No. see page 975.

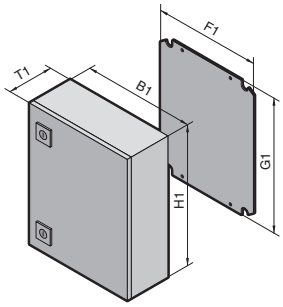


EMC cable glands
with contact spring for optimum all-round contact.
Model No. see page 1032.

Accessories Page 890 **Bus enclosures, sheet steel** Page 120

Compact enclosures AE





Material:
Stainless steel
Enclosure and door:
Stainless steel
Mounting plate: Sheet steel
Cam lock: Die-cast zinc, nickel-plated

Surface finish:
Enclosure and door:
Brushed, grain size 240
Mounting plate: Zinc-plated

Protection category:
IP 66 to EN 60 529/09.2000 for AE 1001.XX0 – AE 1017.XX0, complies with NEMA 4x.

Supply includes:
Enclosure, door(s) with foamed-in PU seal, mounting plate.

Approvals,
see page 28.

Detailed drawing,
see page 1179.

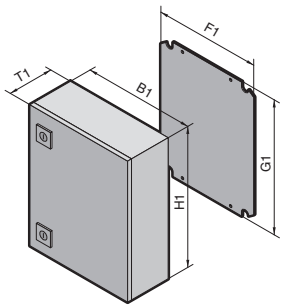
Width (B1) mm		Packs of	200	200	300	380	380	300	380	600	400	Page
Height (H1) mm			300	300	300	300	300	380	380	380	500	
Depth (T1) mm			120	155	210	155	210	210	210	210	210	
Mounting plate width (F1) mm			162	162	254	334	334	254	334	549	354	
Mounting plate height (G1) mm			275	275	275	275	275	355	355	355	475	
Model No. AE	1.4301 (AISI 304) with PU seal	1	**1001.600**	**1002.600**	**1003.600**	**1004.600**	**1011.600**	**1005.600**	**1006.600**	**1009.600**	**1015.600**	
	1.4301 (AISI 304) with silicone seal	1	**1001.620**[1)]	**1002.620**[1)]	**1003.620**[1)]	**1004.620**[1)]	**1011.620**[1)]	**1005.620**[1)]	**1006.620**[1)]	**1009.620**[1)]	**1015.620**[1)]	
	1.4404 (AISI 316L) with PU seal	1	**1001.500**[1)]	**1002.500**	**1003.500**[1)]	**1004.500**[1)]	**1011.500**[1)]	**1005.500**	**1006.500**	**1009.500**[1)]	**1015.500**[1)]	
	1.4404 (AISI 316L) with silicone seal	1	**1001.520**[1)]	**1002.520**[1)]	**1003.520**[1)]	**1004.520**[1)]	**1011.520**[1)]	**1005.520**[1)]	**1006.520**[1)]	**1009.520**[1)]	**1015.520**[1)]	
Door			1	1	1	1	1	1	1	1	1	
Weight (kg)			3.6	4.1	6.9	7.4	8.4	8.4	9.8	14.6	12.9	
Accessories												
Rain canopy		1	–	2470.000	2361.000	2471.000	2472.000	2361.000	2472.000	2473.000	–	969
Wall mounting bracket	1.4301 (AISI 304)	4	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	975
	1.4404 (AISI 316L)	4	2433.500	2433.500	2433.500	2433.500	2433.500	2433.500	2433.500	2433.500	2433.500	975
Wall angle		1	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	976
Pole clamp		1	2584.000	2584.000	2584.000	2584.000	2584.000	2584.000	2584.000	2584.000	2584.000	976
Cam lock 1.4404 (AISI 316L)		1	2304.000	2304.000	2304.000	2304.000	2304.000	2304.000	2304.000	2304.000	2304.000	955
Lock systems												
Standard double-bit lock insert may be exchanged in enclosures with cam (except AE 1018.600/AE 1019.600) for lock inserts 41 mm, lock cylinder insert, plastic handle, T handles, type C, see page 954 – 957.												

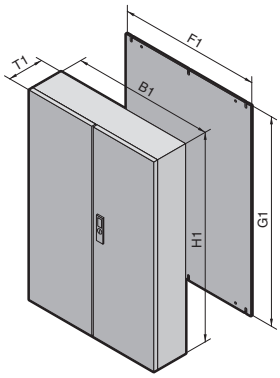
[1)] Delivery times available on request.

Accessories Page 890 **Compact enclosures AE sheet steel** Page 128 **Compact enclosures AE, IP 69K** Page 131
Compact enclosures Hygienic Design Page 297

Compact enclosures AE







Material:
Stainless steel
Enclosure and door:
Stainless steel
Mounting plate: Sheet steel
Cam lock: Die-cast zinc, nickel-plated

Surface finish:
Enclosure and door:
Brushed, grain size 240
Mounting plate: Zinc-plated

Protection category:
IP 66 to EN 60 529/09.2000 for AE 1001.XX0 – AE 1017.XX0, complies with NEMA 4x.
IP 55 to EN 60 529/09.2000 for AE 1018.XX0/AE 1019.XX0, complies with NEMA 12.

Supply includes:
Enclosure, door(s) with foamed-in seal, 3-point lock system, for AE 1017.XXX and AE 1019.XXX, mounting plate.

Approvals,
see page 28.

Detailed drawing,
see page 1179.

Width (B1) mm		Packs of	500	500	380	600	600	760	800	800	1000	1000	Page
Height (H1) mm			500	500	600	600	760	760	1000	1200	1000	1200	
Depth (T1) mm			210	300	210	210	210	300	300	300	300	300	
Mounting plate width (F1) mm			449	449	334	549	549	704	739	740	939	940	
Mounting plate height (G1) mm			470	470	570	570	730	730	955	1155	955	1155	
Model No. AE	1.4301 (AISI 304) with PU seal	1	**1007.600**	**1013.600**	**1008.600**	**1010.600**	**1012.600**	**1014.600**	**1016.600**	**1017.600**	**1018.600**	**1019.600**	
	1.4301 (AISI 304) with silicone seal	1	**1007.620**[1)]	**1013.620**[1)]	**1008.620**[1)]	**1010.620**[1)]	**1012.620**[1)]	**1014.620**[1)]	**1016.620**[1)]	**1017.620**[1)]	**–**	**–**	
	1.4404 (AISI 316L) with PU seal	1	**1007.500**[1)]	**1013.500**[1)]	**1008.500**[1)]	**1010.500**	**1012.500**[1)]	**1014.500**[1)]	**1016.500**[1)]	**1017.500**[1)]	**1018.500**[1)]	**1019.500**	
	1.4404 (AISI 316L) with silicone seal	1	**1007.520**[1)]	**1013.520**[1)]	**1008.520**[1)]	**1010.520**[1)]	**1012.520**[1)]	**1014.520**[1)]	**1016.520**[1)]	**1017.520**[1)]	**–**	**–**	
Door(s)			1	1	1	1	1	1	1	1	2	2	
Weight (kg)			15.7	18.4	15.1	23.5	30.2	42.5	52.9	61.5	71.0	76.0	
Accessories													
Rain canopy		1	2362.000	–	2472.000	2473.000	2473.000	2474.000	2475.000	2475.000	2363.000	2363.000	969
Wall mounting bracket	1.4301 (AISI 304)	4	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	975
	1.4404 (AISI 316L)	4	2433.500	2433.500	2433.500	2433.500	2433.500	2433.500	2433.500	2433.500	2433.500	2433.500	975
Wall angle		1	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	976
Pole clamp		1	2584.000	2584.000	2584.000	2584.000	2584.000	–	–	–	–	–	976
Cam lock 1.4404 (AISI 316L)		1	2304.000	2304.000	2304.000	2304.000	2304.000	2304.000	2304.000	–	2304.000	–	955

Lock systems

Standard double-bit lock insert may be exchanged in enclosures with cam (except AE 1017.600/AE 1019.600) for lock inserts 41 mm, lock cylinder insert, plastic handle, T handles, type C, see page 954 – 957.
With AE 1018.600, may only be exchanged for 41 mm lock inserts, type C, see page 956.
For enclosures with locking rod, may be exchanged for 27 mm lock inserts, type A, see page 956 and Ergoform-S lock system, see page 953.

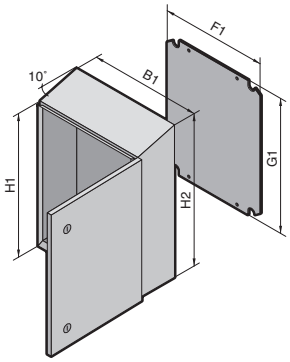
[1)] Delivery times available on request.

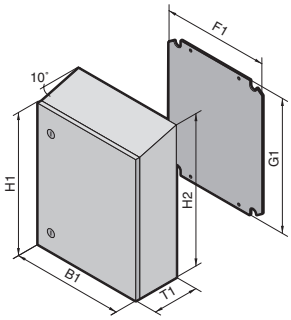
Accessories Page 890 **Compact enclosures AE sheet steel** Page 128 **Compact enclosures AE, IP 69K** Page 131
Compact enclosures Hygienic Design Page 297

Compact enclosures AE, protection category IP 69K









Perfect protection in a tough environment
The compact enclosure AE to IP 69K is the ideal solution when a high protection category, corrosion resistance and optimum cleanability are needed.

- **Resistant to high-pressure cleaning** (protection category IP 69K). The interior seal is protected against direct hosed water.
- Ideal for mounting on vehicles: Lock, hinges and mounting plate are all vibration resistant.
- 10° roof tilt prevents liquids from accumulating on the roof.
- Foamed-in silicone seal. The closed cell structure of the foam means that water absorption is negligible. Temperature resistant from –60°C to +180°C.

Material:
Enclosure and door:
Stainless steel 1.4301 (AISI 304)
Mounting plate: Sheet steel

Surface finish:
Enclosure and door:
Brushed, grain size 240
Mounting plate: Zinc-plated

Protection category:
IP 69K to DIN 40 050-9, complies with NEMA 4x.

Supply includes:
Enclosure sealed all round, single-door,
door hinge may be swapped to opposite side,
cam lock with double-bit insert,
mounting plate.

Rittal service:
Other sizes available on request. Cut-outs and drilled holes to your specifications.

Detailed drawing,
see page 1221.

Width (B1) mm	Packs of	230	400	400	650	Page
Height, front (H1) mm		330	400	650	650	
Height, rear (H2) mm		352	439	689	689	
Depth (T1) mm		155	250	250	250	
Mounting plate width (F1) mm		162	334	334	549	
Mounting plate height (G1) mm		275	355	570	570	
Mounting plate thickness mm		2	2	2.5	2.5	
Model No. AE	1	**1101.110**	**1101.120**	**1101.130**	**1101.140**	
Locks		1	1	2	2	
Accessories						
Interior door	1	1101.910	1101.920	1101.930	1101.940	939
Door stay	1	1101.800	1101.800	1101.800	1101.800	967
Wall mounting bracket	4	2433.000	2433.000	2433.000	2433.000	975



Door, internal
with 4 (2 for 1101.110) bolts for universal installation.

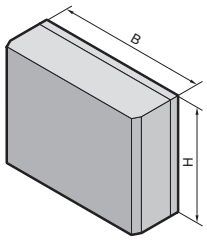


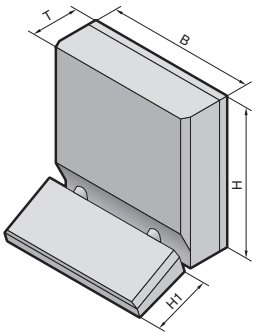
Wall mounting
directly from the rear via M8 nut or with wall mounting bracket, see page 975.

Accessories Page 890 **Compact enclosures AE sheet steel** Page 128 **Compact enclosures AE, EMC-shielded** Page 328
Compact enclosures AE, Ex-proof Page 325 **Compact enclosures Hygienic Design** Page 297

Premium Panel, protection category IP 69K







Optionally with or without keyboard housing

- **Resistant to high-pressure cleaning** (protection category IP 69K). The seal lies between two surfaces and is ideally compressed by the screw fastening (see detailed drawing).
- **Suitable for clean room use.** Screw-fastening to comply with high standards in the food industry. With plastic stoppers on the inside or hex screws on the outside.
- **Optimum EMC conditions.** The labyrinth seal achieves a particularly high level of RF shielding of the enclosure.
- **Accessibility.** Internal rear panel bracket. This solution is clearly superior to external hinges from a hygiene point of view.
- **Handling.** Two duct connectors between the enclosures.

Material:
Stainless steel

Surface finish:
Brushed, grain 240

Protection category:
IP 69K to DIN 40 050-9

Property rights:
German patent
no. 102 16 430

Clean room:
Air purity class 1
to DIN EN ISO 14 644-1

Detailed drawing,
see page 1222.

		Packs of	Premium Panel					
			with keyboard housing				without keyboard housing	
Model No. CP	1.4301 (AISI 304)	1	**6680.000**	**6680.010**	**6680.100**	**6680.110**	**6681.000**	**6681.100**
	1.4404 (AISI 316L)	1	**6650.000**[1)]	**6650.010**[1)]	**6650.100**[1)]	**6650.110**[1)]	**6651.000**[1)]	**6651.100**[1)]
Width (B) mm			530	530	530	530	530	530
Height mm	Operating housing (H)		460	460	460	460	360	360
	Keyboard housing (H1)		200	200	200	200	–	–
Depth mm	Operating housing (T)		120	120	220	220	120	220
For installation panel W x H	Operating housing		482.6 mm (19″) x 354.8 mm (8 U)				482.6 mm (19″) x 310 mm (7 U)	
	Keyboard housing		482.6 mm (19″) x 177 mm (4 U)				–	–
Installation depth mm	Operating housing		115	115	215	215	115	215
	Keyboard housing		front 58 rear 63	front 58 rear 63	front 58 rear 63	front 58 rear 63	–	–
Support arm connection			top	bottom	top	bottom	top, or bottom by rotating the enclosure	
Accessories								
Rear panel bracket		2	6682.000	6682.000	6682.000	6682.000	6682.000	6682.000

[1)] Delivery times available on request.



The **rear panel holder** holds the rear panel in an open position.
Model No. see page 962.

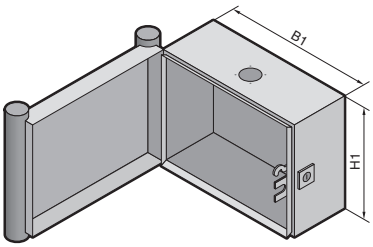


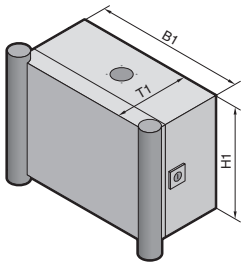
Premium TFT 17″
Model No. see page 1133.

Accessories Page 890 **Premium TFT 17″** Page 1133 **Support arm system CP-S stainless steel** Page 313
Compact enclosures Hygienic Design Page 297

Command Panel housing with door







Material:
Enclosure and door:
Stainless steel
Handle strips: Plastic-approved for use with foodstuffs, similar to RAL 5002 (ultramarine blue).

Surface finish:
Brushed, grain 240

Protection category:
IP 66 to EN 60 529/09.2000

Supply includes:
Enclosure sealed all-round, with cut-out and reinforcement for support arm system, fastener with guide plate. Door with sealing frame and side handle strips. The support arm connection and door hinge may be swapped over by rotating the enclosure.

Rittal service:

Separate keyboard housing, other sizes, modified support arm connection or door hinge, drilled holes and cut-outs for switches and operator panels available on request.

Approvals,
see page 38.

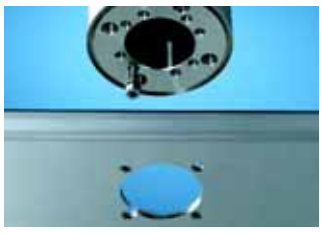
Detailed drawing,
see page 1223.

Width (B1) mm		Packs of	300	400	400	600	Page
Height (H1) mm			300	300	400	400	
Depth (T1) mm			150	150	150	150	
Model No. CP	1.4301 (AISI 304)	1	**6535.010**	**6536.010**	**6538.010**	**6539.010**	
	1.4404 (AISI 316L)	1	**6535.510**[1)]	**6536.510**[1)]	**6538.510**[1)]	**6539.510**[1)]	
Weight kg			6.3	7.5	8.8	12.1	
Accessories							
Matching mounting plate from AE			1033.500	1030.500	1380.500	1039.500	128
	ID no.		271926	274131	271548	271351	
Support rails[2)] SZ	**Model No. SZ**	10	2316.000	2317.000	2317.000	2319.000	1002
Lock systems							
Standard double-bit lock insert may be exchanged for 41 mm lock inserts, plastic handle and T handle, type C, see page 954 – 956.							

[1)] Delivery times available on request.
[2)] Only with vertical attachment of punched rail 23 x 23 mm, see page 998.



Semi-cylinder lock
for retro-fitting to all stainless steel enclosures with cam lock.
Model No. see page 957.



Enclosure attachment CP-S, stainless steel
with pre-fitted screw for locating.
Model No. see page 314.

Accessories Page 890 **Support arm system CP-S stainless steel** Page 313



Support arm system CP-S, stainless steel

In conjunction with stainless steel Command Panels, terminal boxes 120 mm deep and compact enclosures AE from stainless steel, this support arm system is particularly well-suited for meeting high standards of corrosion protection and hygiene.
The tilting adaptor and enclosure coupling may optionally be mounted on the top or bottom of the enclosure. **They are not suitable for use as the base point of a system.** For this purpose, we recommend wall/base mountings, or with larger heights and widths, an additional pillar made of steel tubing or stainless steel (available on request).

Material:
Stainless steel 1.4305

Protection category:
IP 69K to DIN 40 050-9
(resistant to high-pressure cleaning)

Load information:
see page 237.





Support section CP-S, stainless steel

Attached to the connection components via 2 clamping screws.

Dimensions:
External diameter: 48.3 mm
Wall thickness: 3.6 mm

Material:
Stainless steel 1.4301 (AISI 304)

Surface finish:
Brushed, grain 240

Other sizes to order available on request.

Order example:
U-shaped = CP 6660.200
Dimension A = 300 mm
Dimension B = 800 mm
Dimension C = 240 mm

The minimum dimensions must be adhered to, because of the bending radius and insertion depth of the enclosure attachment, housing coupling and wall/base mountings.

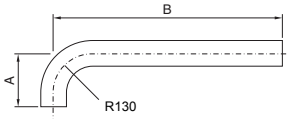
Straight
$A_{min.}$ = 100 mm,
$A_{max.}$ = 2000 mm



A mm	Weight kg	Model No. CP
500	2.0	**6660.050**
1000	3.9	**6660.010**
2000	7.8	**6660.020**
as per specifications A =	3.9 kg/m	**6660.000**[1]

[1] Extended delivery times.

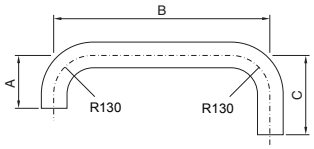
L-shaped
$A_{min.}$ = $B_{min.}$ = 240 mm,
$B_{max.}$ = 1500 mm



A mm	B mm	Weight kg	Model No. CP
240	500	2.6	**6660.110**
500	1000	5.5	**6660.120**
as per specifications A =	as per specifications B =	3.9 kg/m	**6660.100**[1]

[1] Extended delivery times.

U-shaped
$A_{min.}$ = $C_{min.}$ = 240 mm,
$B_{min.}$ = 410 mm,
$B_{max.}$ = 1500 mm



A mm	B mm	C mm	Weight kg	Model No. CP
240	800	800	6.6	**6660.210**[2]
				6660.230[3]
240	500	500	4.3	**6660.220**[2]
				6660.240[3]
as per specifications A =	as per specifications B =	as per specifications C =	3.9 kg/m	**6660.200**[1][2]
				6660.250[1][3]

[1] Extended delivery times.
[2] Enclosure top-mounted
[3] Enclosure suspended

Support arm system CP-S



Tilting adaptor, 10° CP-S stainless steel

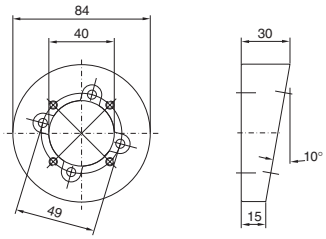
For mounting between the Command Panel and
- Enclosure attachment CP 6664.500
  or
- Housing coupling CP 6664.000

Material:
Stainless steel 1.4305

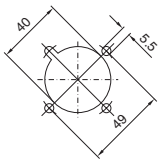
Weight kg	Model No. CP
0.7	**6664.100**

Supply includes:
Seal and assembly parts.





Mounting cut-out enclosure





Enclosure attachment CP-S, stainless steel

For rigid fastening of the enclosure to the support section.

Material:
Stainless steel 1.4305

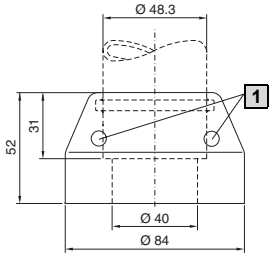
Supply includes:
Seals and 2 clamping screws for support section CP-S, stainless steel.

Note:
For assembly of a pedestal, modular, see page 317, 2 pieces are required.

Weight kg	Model No. CP
1.3	**6664.500**

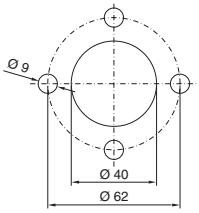
Accessories:

Enclosure reinforcement, see page 317.

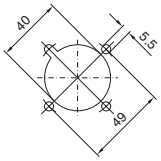


1 Clamping screw

Mounting cut-out for pedestal, bottom



Mounting cut-out, enclosure





Housing coupling CP-S stainless steel

For mounting on the vertical part of the support arm system.

Rotation range:
Approx. 350°, lockable via knurled screw.

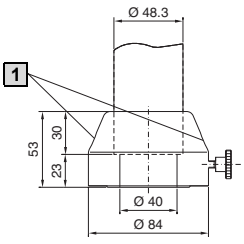
Material:
Stainless steel 1.4305

Supply includes:
Seals and 2 clamping screws for support section CP-S, stainless steel.

Weight kg	Model No. CP
1.1	**6664.000**

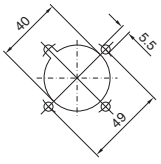
Accessories:

Enclosure reinforcement, see page 317.



1 Clamping screw

Mounting cut-out enclosure







Wall/base mounting, rigid, CP-S stainless steel

For attaching the support arm system to vertical or horizontal surfaces.

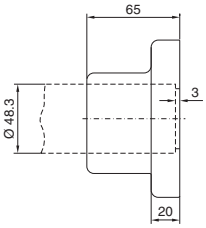
Material:
Stainless steel 1.4305

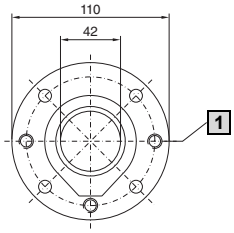
Supply includes:
Seals, 3 adjusting screws to compensate for any irregularities, and 2 clamping screws for support section CP-S, stainless steel.

Weight kg	Model No. CP
1.7	**6663.000**

Accessories:

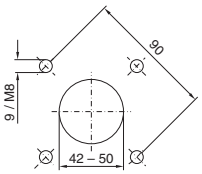
Wall consoles,
see page 316.





1 Adjusting screw

Mounting cut-out





1



1



2



2

Swivel base mount, CP-S stainless steel

For external mounting on
- Horizontal surfaces (suspended or top-mounted)
- Wall console (CP 6663.500 only)

Rotation range:
Approx. 350°, lockable via knurled screw.

Material:
Stainless steel 1.4305

Supply includes:
Seals and 2 clamping screws for support section CP-S, stainless steel.

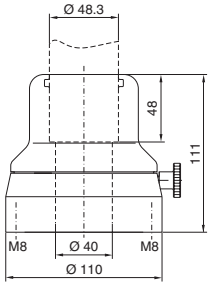
Note:
Rotation range may be limited in 60° increments using a limit plate, supplied loose.

Attachment	Weight kg	Model No. CP
1 rear, M8 thread	3.9	**6663.500**
2 front, hole Ø 9 mm	4.5	**6663.400**

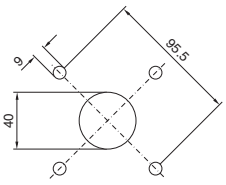
Accessories:

Wall consoles,
see page 316.

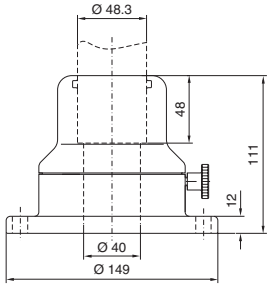
1 Rear attachment CP 6663.500



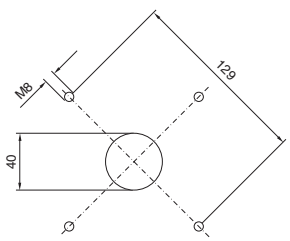
Mounting cut-out



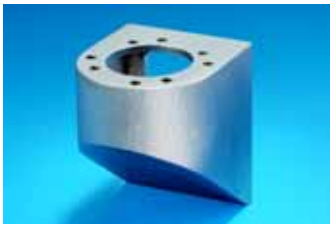
2 Front attachment CP 6663.400



Mounting cut-out



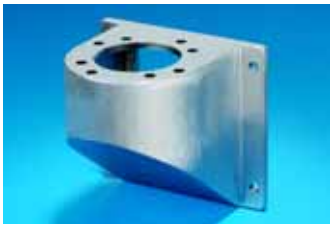
Support arm system CP-S



1



1



2



2

Wall console CP-S stainless steel

With holes for mounting

- Base mount, swivel, CP-S (CP 6663.500), with 4 screws
- Wall/base mount, rigid, CP-S (CP 6663.000), with 4 screws and nuts.

Material:
Stainless steel 1.4301 (AISI 304)

Surface finish:
Brushed, grain 240

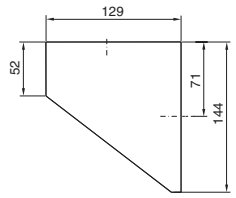
Supply includes:
Seals and assembly parts.

1 Rear attachment, M8 thread

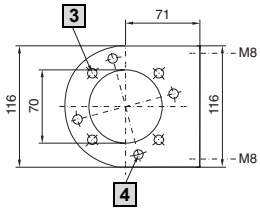
2 Front, hole Ø 9 mm

Attachment	Weight kg	Model No. CP
rear, M8 thread	1.5	**6665.000**
front, hole Ø 9 mm	1.8	**6665.500**

Rear fastening



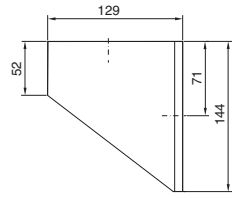
Mounting cut-out



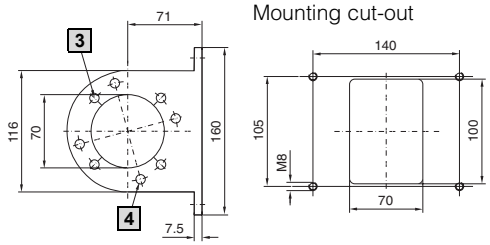
3 Hole for PG 6663.000

4 Hole for PG 6663.500

Front fastening



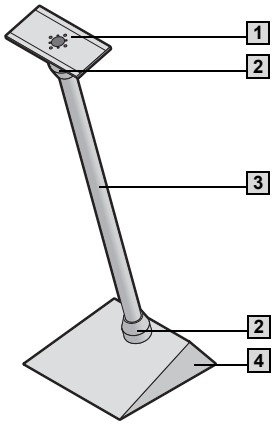
Mounting cut-out



3 Hole for PG 6663.000

4 Hole for PG 6663.500



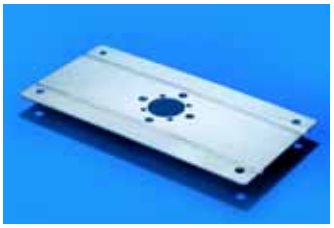


Pedestal, modular, CP-S stainless steel

For the configuration of compact operating stations.

May be compiled from the following modules:	Model No. CP	Page
1 Enclosure reinforcement	**6143.310**	317
2 2 enclosure attachments top/bottom	**6664.500**	314
3 Support section, straight (may be shortened to required length by sawing)		
500 mm	**6660.050**	313
1000 mm	**6660.010**	313
2000 mm	**6660.020**	313
4 Pedestal base plate, small	**6143.300**	317

Detailed drawing,
see page 1223.



Enclosure reinforcement CP-S stainless steel

For external or internal reinforcement of stainless steel enclosures of a corresponding size. Smaller enclosures may also be mounted directly without a flange.

For use with
- Enclosure attachment CP 6664.500
- Housing coupling CP 6664.000

Material:
Stainless steel 1.4301 (AISI 304)

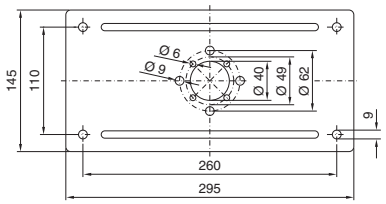
Surface finish:
Brushed

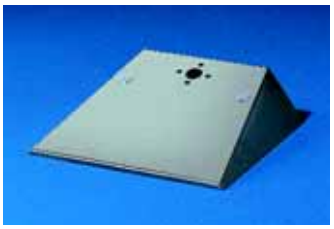
Supply includes:
Assembly parts for the enclosure and support section plus 2 seals.

Packs of	Model No. CP
1	**6143.310**

Accessories:

Enclosure attachment CP 6664.500,
see page 314.
Housing coupling CP 6664.000,
see page 314.





Pedestal base plate, small

With reinforcement bracket for assembling a support section via an enclosure attachment.

- With one hole at the rear for commercially available cable conduit gland M20.
- With two holes at the top (including sealing bung) for lower base attachment cross member.
- Prepared on the inside for a cable clamp DK 7077.000 or DK 7078.000 for strain relief.

Material:
Stainless steel 1.4301 (AISI 304)

Surface finish:
Brushed

Packs of	Model No. CP
1	**6143.300**

Supply includes:
Assembly parts for enclosure attachment plus seal.

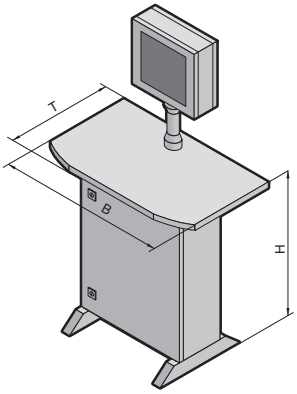
Note:
Commercially available screws up to M8 may be used for floor attachment.

Accessories:

Cable clamp DK 7077.000 or DK 7078.000,
see page 1064.

IW operating station





Complete solution for use in areas where hygiene is important.
All that is needed is a standard commercially available tower PC up to W/H/D:
220 x 530 x 600 mm
(max. 20 kg) and a mouse.

Protection category:
IP 66 to EN 60 529/09.2000, complies with NEMA 4x.

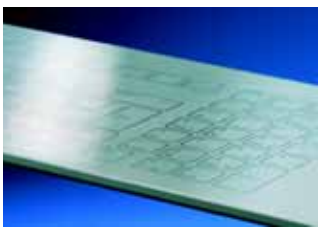
Also required:
Connection cable for infeed, see page 1030.

Note:
Supplied unassembled. All components may also be ordered individually.

Detailed drawing,
see page 1224.

Delivery times available on request.

Width (B1) mm	Packs of	900	Page
Height (H1) mm		875	
Depth (T1) mm		600	
Model No. IW	1	**6920.010**	
Supply includes			
Enclosure for tower PC, stainless steel 1.4301 (AISI 304)			319
Worktop, stainless steel, prepared for stainless steel keyboard 482.6 mm (19″)/4 U			319
Enclosure attachment CP-S, stainless steel			314
Support section CP-S, stainless steel, 500 mm long (may be shortened)			313
Housing coupling CP-S, stainless steel			314
Premium TFT 17″, IP 69K			1133
Power pack for TFT			1134
Connection cable for power pack			1134
Cross-member, stainless steel			319
Stainless steel keyboard 482.6 mm (19″)/4 U			1139
Lock systems			
Standard double-bit lock insert may be exchanged for 41 mm lock inserts, lock cylinder insert, plastic handle and T handles, type C, see page 954 – 956.			



Stainless steel keyboard
see page 1139.



Premium TFT 17″
see page 1133.

Accessories Page 890 **IW sheet steel** Page 179

IW enclosure for tower PC



Compact, connection-ready enclosure for standard commercially available tower PCs, up to W/H/D: 220 x 530 x 600 mm (max. 20 kg). The rear interfaces of the PC are readily accessible with the door open.

Roof prepared for mounting
- worktop IW 6902.340/.350
- beneath surfaces

Base prepared for mounting
- cross-member IW 6902.050
- on surfaces

Material:
Enclosure:
Stainless steel 1.4301 (AISI 304), brushed grain 240
Base for tower PC:
Sheet steel, powder-coated in textured RAL 7015.

Protection category:
IP 66 to EN 60 529/09.2000, complies with NEMA 4x (if the openings in the enclosure are covered or sealed in accordance with the protection category).

Supply includes:
Enclosure sealed all round, r/h door hinge, with screw-fastened base on the inside of the tubular door frame to accommodate a tower PC, locked at the side with 2 fitted cam locks, retaining strap to secure the tower PC to the base.

Side panel right:
- With fitted socket strip with 3 sockets, overvoltage protection and interference suppressor filter on the inside.
- Hole for cable gland M20 supplied loose, brass, for cable entry.

Rear panel with cut-out for use of the connector gland SZ 2400.500, supplied loose,

Delivery times available on request.

Detailed drawing,
see page 1224.

	Enclosure for tower PC	Page
Width (B) mm	760	
Height (H) mm	760	
Depth (T) mm	300	
Model No. IW	**6900.310**	
Weight (kg)	53	
Accessories		
Cross-member, stainless steel	6902.050	see below
Worktop, stainless steel, prepared for stainless steel keyboard	6902.340	see below
Worktop, stainless steel, solid	6902.350	see below
Lock systems		
Standard double-bit lock insert may be exchanged for 41 mm lock inserts, lock cylinder insert, plastic handles and T handles, type C, see page 954 – 957.		



Cross member, stainless steel

for IW 6900.310
To increase stability, the cross-member protrudes 120 mm in front of and behind the IW enclosure.

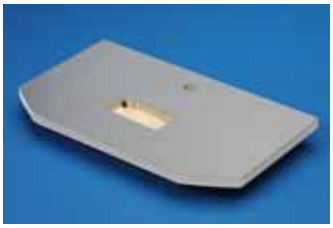
Material and surface finish:
Stainless steel, 1.4301 (AISI 304) brushed, grain size 240

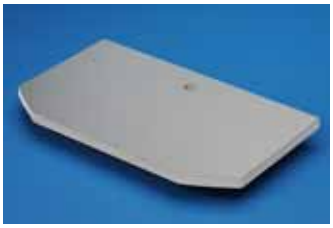
Detailed drawing,
see page 1224.

To fit	Packs of	Model No. IW
IW 6900.310	2	**6902.050**

Accessories:

Levelling feet SO 2859.000, see page 907,
twin castors, see page 907.





Worktop, stainless steel

For use in areas where enhanced hygiene is crucial.

Material/surface finish:
Chipboard, laminated on both sides with stainless steel film, 1.4301 (AISI 304), with tough stainless steel edge strip, brushed surface finish.

Note:
- Other sizes
- With drilled holes, recesses available upon request.

Detailed drawing,
see page 1224.

Worktop	Width mm	Height mm	Depth mm	Model No. IW
Prepared for stainless steel keyboard 482.6 mm (19″)/ 4 U	900	38	600	**6902.340**
Solid				**6902.350**

Delivery times available on request.

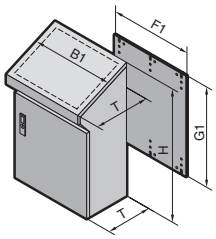
Accessories:

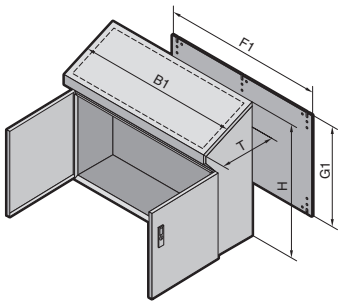
Stainless steel keyboard 19″/4 U, see page 1139,
support arm system CP-S, stainless steel, see page 313 – 316.

Accessories Page 890 **Support arm system CP-S stainless steel** Page 313 **Premium Panel** Page 311 **Premium TFT 17″** Page 1133

One-piece consoles AP







Material:
Stainless steel
Enclosure: 1.5 mm
Door or double door and console lid: 2.0 mm
Mounting plate: Sheet steel 3.0 mm

Surface finish:
Enclosure, door and console lid: Brushed, grain size 120
Mounting plate: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes:
Enclosure sealed at the rear and sides, door or double door at the front, with locking rod, console lid with lid stay and stainless steel cam latched in the enclosure,
two-piece gland plate,
mounting plate, zinc-plated.

Approvals,
see page 34.

Detailed drawing,
see page 1192.

Width (B1) mm		Packs of	600	800	1000	1200	Page
Height (H) mm			960	960	960	960	
Depth (T) mm			400/480	400/480	400/480	400/480	
Mounting plate width (F1) mm			530	730	930	1130	
Mounting plate height (G1) mm			780	780	780	780	
Model No. AP	1.4301 (AISI 304)	1	**2683.600**	**2684.600**	**2685.600**	**2686.600**	
	1.4404 (AISI 316L)	1	**2683.500**[1)]	**2684.500**[1)]	**2685.500**[1)]	**2686.500**[1)]	
Door(s)			1	1	2	2	
Weight (kg)			52.0	65.2	79.5	90.3	
Accessories							
Base/plinth	Height 100 mm	1	2865.000	2869.000	2867.000	2870.000	902
	Height 200 mm	1	2875.000	2878.000	2885.000	2886.000	902
Lock systems							
Standard double-bit lock insert in the locking rod may be exchanged for 27 mm lock inserts, type A, see page 956 and for the Ergoform-S lock system, see page 953.							

[1)] Delivery times available on request.



Stainless steel wall console
mounted on the rear panel for an additional operating housing.
Model No. see page 316.

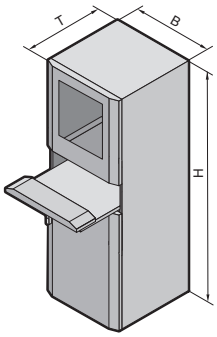


Cable gland, brass.
Model No. see page 1054.

Accessories Page 890 **Monitors, keyboards** Page 1133 **Climate control** Page 629 **One-piece consoles** Page 165

PC enclosure systems





PC 4650.000
with keyboard drawer
- Lock insert, lock no. 3524 E
- Swing-down front for handrest
- Mouse pad support (also suitable for IP 67 mouse), may optionally be used on the left or right
- Hinged cable support

Material:
Stainless steel
Enclosure:
10-fold profiled, 1.8 mm
Rear door: 2.0 mm
Gland plates: 1.5 mm
Monitor field with single-pane safety glass for screen diagonal 482.6 mm (19″).

Surface finish:
Brushed, grain 240

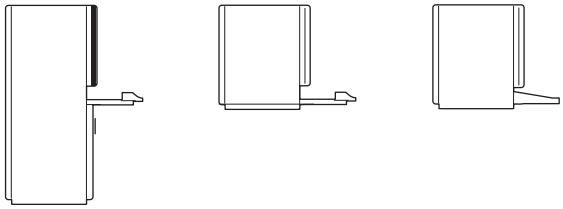
Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

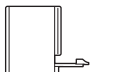
Supply includes:
see page 1225.

Available on request:
- Enclosure system PC with mounting compartment, large and drawer
- PC enclosure system with desk section
- PC enclosure system with drawer
- PC enclosure system with desk section

Approvals,
see page 35.

Detailed drawing,
see page 1225.





Design		Packs of	With keyboard drawer	Page
Width (B) mm			600	
Height (H) mm			1600	
Depth (T) mm			620	
Model No. PC	1.4301 (AISI 304)	1	**4650.000**	
	1.4404 (AISI 316L)	1	**4650.500**[1)]	
Weight (kg)			115	
Accessories				
Base/plinth	Height 100 mm	1	2855.000	902
	Height 200 mm	1	2877.000	902
Levelling feet, 100 mm high		1 set	2859.000	907
Base/plinth trim, modular		4	2913.000	899
Adaptor sections, 482.6 mm (19″)		4	4632.000	1089
Adaptor pieces, 482.6 mm (19″)		8	4547.000	1090
Lock systems				

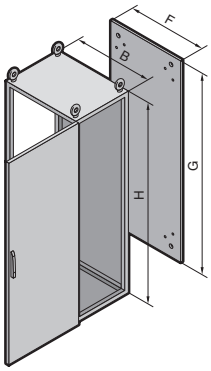
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 956 or lock cylinder inserts, type B, see page 957.
Lower and rear door prepared for installation of the Ergoform-S lock system, see page 953.

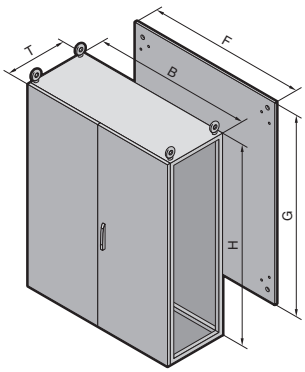
[1)] Delivery times available on request.

Accessories Page 890 **PC enclosure systems, sheet steel** Page 167 **Stainless steel keyboard 482.6 mm (19″)/4 U** Page 1139

Baying systems TS 8







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door(s): 2.0 mm; Mounting plate: Sheet steel, 3.0 mm

Surface finish:
Enclosure frame and gland plates: Uncoated
Door, roof and rear panel: Brushed on the outside, grain size 400
Mounting plate: Zinc-plated

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 12.

Supply includes:
Enclosure frame with door(s), mounting plate, gland plates, rear panel and roof,
2 support strips mounted in the enclosure depth (only with a depth of 600 mm).

Note:
Due to the hardness of the material, we recommend using metal multi-tooth screw SZ 2486.300, see page 1011, for the interior installation.

Approvals,
see page 30.

Detailed drawing,
see page 1184.

Rittal service:
TS stainless steel (1.4301), single-door, available on request as free-standing enclosures with fitted side panels in protection category IP 65 to EN 60 529/ 09.2000 and NEMA 4x; please add extension .640 to the Model No. (see page 917).

Width (B) mm		Packs of	800	1200	600	800	1200	600	800	1200	Page
Height (H) mm			1800	1800	1800	1800	1800	2000	2000	2000	
Depth (T) mm			400	400	500	500	500	600	600	600	
Mounting plate width (F) mm			699	1099	499	699	1099	499	699	1099	
Mounting plate height (G) mm			1696	1696	1696	1696	1696	1896	1896	1896	
Model No. TS	1.4301 (AISI 304)	1	**8454.600**	**8456.600**	**8457.600**	**8455.600**	**8453.600**	**8452.600**	**8450.600**	**8451.600**	
	1.4404 (AISI 316L)	1	**8454.500**[1]	**8456.500**[1]	**8457.500**[1]	**8455.500**[1]	**8453.500**[1]	**8452.500**[1]	**8450.500**[1]	**8451.500**[1]	
Door(s)			1	2	1	1	2	1	1	2	
Weight (kg)			112.9	170.4	92.5	116.3	174.9	104.4	129.7	194.7	
Walls											
Side panels	1.4301 (AISI 304)	2	8700.840	8700.840	8700.850	8700.850	8700.850	8700.060	8700.060	8700.060	917
	1.4404 (AISI 316L)	2	8705.840[1]	8705.840[1]	8705.850[1]	8705.850[1]	8705.850[1]	8705.060[1]	8705.060[1]	8705.060[1]	917
Divider panel		1	8609.840	8609.840	8609.850	8609.850	8609.850	8609.060	8609.060	8609.060	921
Divider panel for module plates		1	–	–	8609.100	8609.100	8609.100	8609.130	8609.130	8609.130	922
Base/plinth											
Components front and rear	Height 100 mm	1 set	8701.800	8701.200	8701.600	8701.800	8701.200	8701.600	8701.800	8701.200	899
	Height 200 mm	1 set	8702.800	8702.200	8702.600	8702.800	8702.200	8702.600	8702.800	8702.200	899
Trim panels (sides)	Height 100 mm	1 set	8701.040	8701.040	8701.050	8701.050	8701.050	8701.060	8701.060	8701.060	899
	Height 200 mm	1 set	8702.040	8702.040	8702.050	8702.050	8702.050	8702.060	8702.060	8702.060	899
Base/plinth trim, modular		4	2907.000	2907.000	2908.000	2908.000	2908.000	2913.000	2913.000	2913.000	899
Accessories											
Cable clamp rails		2	4192.000	4196.000	4191.000	4192.000	4196.000	4191.000	4192.000	4196.000	1061
Cable entry plates		2	8700.800	8700.120[2]	8700.600	8700.800	8700.120[2]	8700.600	8700.800	8700.120[2]	1045
Wiring plan pocket, sheet steel		1	4118.000	4116.000	4116.000	4118.000	4116.000	4116.000	4118.000	4116.000	967
Lock systems											
Standard double-bit lock insert may be exchanged for type F lock inserts and comfort handle, see page 947/956.											

[1] Delivery times on request. [2] Packs of 4



Supporting structure HD
for hygienic, cleaning-optimised assembly of TS 8 enclosures in food production locations.
Model No. see page 300.

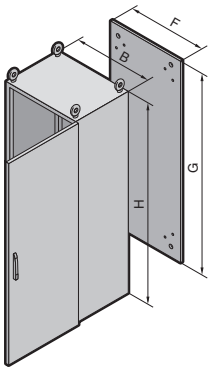


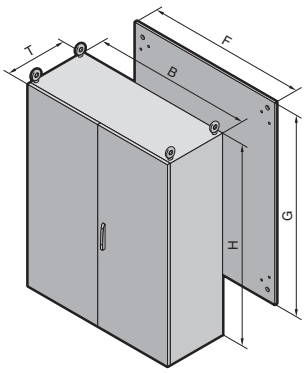
Sloped attachment HD
For controllable cleaning of the TS 8 enclosures.
Available on request.

Accessories Page 890 **Baying systems TS 8, sheet steel** Page 138 **Baying systems TS 8 EMC-shielded** Page 329

Free-standing enclosures ES 5000







Material:
Stainless steel
Enclosure: 1.8 mm
Door(s): 2.0 mm
Rear panel: 1.5 mm
Mounting plate:
Sheet steel 3.0 mm

Surface finish:
Enclosure, rear panel and doors:
Brushed, grain size 240
Mounting plate: Zinc-plated

Protection category:
IP 56 to EN 60 529/09.2000 (single-door ES),
IP 55 to EN 60 529/09.2000 (double-door ES),
complies with NEMA 12.

Supply includes:
Enclosure, closed top and sides, removable rear panel, r/h door hinge, can be changed to opposite side, except ES 5455.600; 130° hinges, mounting plate, three-part gland plates.

Note:
Due to the hardness of the material, we recommend using metal multi-tooth screw SZ 2486.300, see page 1011, for the interior installation.

Approvals,
see page 32.

Detailed drawing,
see page 1188/1189.

Width (B) mm		Packs of	600	600	800	800	1000	1200	Page
Height (H) mm			1600	1800	1800	2000	1800	2000	
Depth (T) mm			400	500	500	600	400	500	
Mounting plate width (F) mm			499	499	699	699	899	1099	
Mounting plate height (G) mm			1496	1696	1696	1896	1696	1896	
Model No. ES	1.4301 (AISI 304)	1	**5450.600**	**5451.600**	**5452.600**	**5453.600**	**5454.600**	**5455.600**	
	1.4404 (AISI 316L)	1	**5450.500**[1)]	**5451.500**[1)]	**5452.500**[1)]	**5453.500**[1)]	**5454.500**[1)]	**5455.500**[1)]	
Door(s)			1	1	1	1	1	2	
Eyebolts			2	2	2	2	4	4	
Weight (kg)			92.5	169.6	131.8	154.0	146.9	205.4	
Accessories									
Base/plinth	Height 100 mm	1	2865.000	2868.000	2866.000	2856.000	2867.000	2860.000	902
	Height 200 mm	1	2875.000	2876.000	2879.000	2880.000	2885.000	2887.000	902
Base/plinth trim, modular		4	2907.000	2908.000	2908.000	2913.000	2907.000	2908.000	899
System support rails		2	4361.000	4361.000	4362.000	4362.000	4347.000	4363.000	1000
Cable clamp rails		2	4191.000	4191.000	4192.000	4192.000	4336.000	4196.000	1061
Mounting bars		20	4596.000	4596.000	4598.000	4598.000	4599.000	4596.000	964
Utility lectern		1	4638.600	4638.600	4638.800	4638.800	–	4638.600	965
Wiring plan pockets		1	4116.000	4116.000	4118.000	4118.000	4124.000	4116.000	967
Lock systems									
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 956 and for lock system Ergoform-S, see page 953.									

[1)] Delivery times available on request.



Cable gland brass,
nickel-plated in IP 68 (5 bar, 30 min),
Model No. see page 1054.



Signal pillar LED compact,
Model No. see page 1125.

Accessories Page 890 **ES 5000 sheet steel** Page 154 **ES 5000 EMC-shielded** Page 329

Ex enclosures

Features



Under ATEX, the requirements placed on Ex enclosures for use in explosion hazard atmospheres are high. For this reason, Rittal refuses to compromise in this area. Enclosure concepts proven a million times over are tailored to the specific Ex requirements. The results is a series of empty enclosures providing ideal conditions for applications in the chemical and petrochemical industries, in the offshore sector and in the food industry.

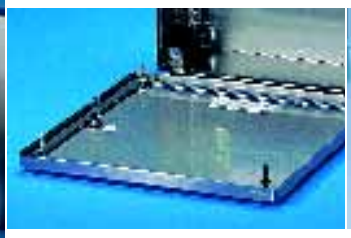
Baying systems TS 8 prepared for Ex pressurisation,

see page 152.

Rittal Ex enclosures — Individual Ex accessories — Manufacturer confirms resistance



Ex enclosures, stainless steel



Based on KL
with screw-fastened cover and profile strips with mounting holes on both sides of the enclosure for the attachment of support rails or mounting plate.



Based on AE
with hinged door, cam lock and mounting plate made from sheet steel, zinc-plated.



Blind threaded bushes M8 in the rear panel for wall mounting and side panel for **external connection of a PE conductor.**



Ex enclosures, plastic



Double seal on top and/or bottom edges of the door thanks to the additional, integral rain protection strip.



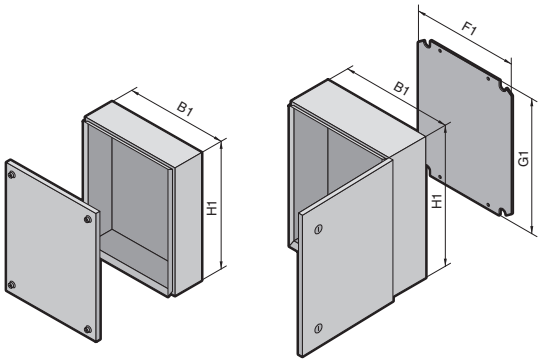
Attachment from the outside with **wall mounting bracket** 9266.000 into the threaded inserts M8 x 15.



Moulded **bosses** in the door for the attachment of cable routing.

Stainless steel





With screw-fastened lid

Material:
Stainless steel 1.4301 (AISI 304)

Surface finish:
Brushed, grain 240

Protection category:
IP 66 to EN 60 529/09.2000

Supply includes:
Enclosure, lid with all-round foamed-in PU seal.

Certificates:
PTB 03 ATEX 1013U

With hinged door

Material:
Stainless steel 1.4301 (AISI 304)
Mounting plate: Sheet steel

Surface finish:
Brushed, grain 240
Mounting plate: Zinc-plated

Protection category:
IP 66 to EN 60 529/09.2000

Supply includes:
Enclosure, door with all-round foamed-in PU seal, mounting plate.

Certificates:
PTB 02 ATEX 1082U

Approvals,
see page 41.

Detailed drawing,
see page 1226/1227.

With screw-fastened lid

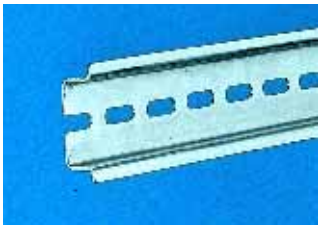
Width (B1) mm	Packs of	150	200	300	300	300	400	Page
Height (H1) mm		150	200	150	200	300	200	
Depth mm		80	80	80	80	120	120	
Model No. KEL	1	**9301.000**	**9303.000**	**9302.000**	**9304.000**	**9306.000**	**9305.000**	
Weight (kg)		1.3	1.8	1.8	2.4	3.9	3.6	
Accessories								
Mounting plates		1560.700	1562.700	1561.700	1563.700	1567.700	1564.700	978

To order Ex enclosures in stainless steel 1.4404 (AISI 316L), please add extension .500 to the Model No. Delivery times available on request.

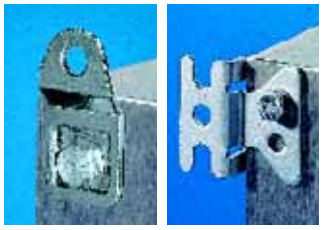
With hinged door

Width (B1) mm	Packs of	200	300	380	380	380	600	600	760	800
Height (H1) mm		300	380	300	380	600	600	760	760	1000
Depth mm		155	210	155	210	210	210	210	300	300
Mounting plate width (F1) mm		162	334	334	334	334	549	549	704	739
Mounting plate height (G1) mm		275	275	275	355	570	570	730	730	955
Model No. KEL	1	**9401.600**	**9409.600**	**9402.600**	**9403.600**	**9404.600**	**9405.600**	**9406.600**	**9407.600**	**9408.600**
Number of cams		1	1	1	1	2	2	2	2	2
Weight (kg)		3.8	7.7	7.4	9.7	13.3	15.6	22.3	30.5	36.3

To order Ex enclosures in stainless steel 1.4404 (AISI 316L), please add extension .500 to the Model No. Delivery times available on request.



Support rails
in matching sizes,
Model No. see page 1002.

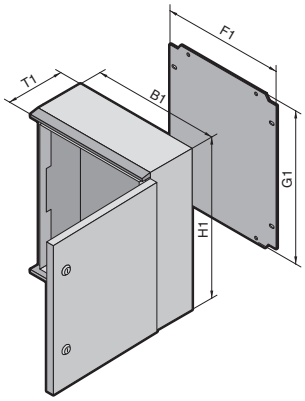


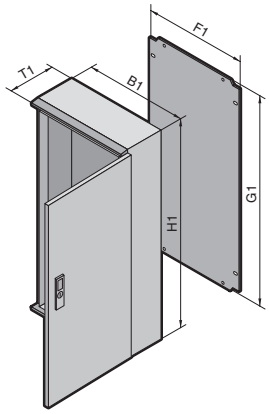
Wall mounting bracket,
Model No. see page 975.

Accessories Page 890 **Cable entry** Page 1045

Plastic







Material:
Enclosure: Fibreglass-reinforced unsaturated polyester
Surface resistance: < 10^9 Ω
Mounting plate:
Sheet steel, zinc-plated, passivated

Colour:
RAL 9011

Protection category:
IP 66 to EN 60 529/09.2000
KEL 9209.600:
IP 56 to EN 60 529/09.2000

Supply includes:
Enclosure, door with all-round foamed-in PU seal, mounting plate.

Certificates:
PTB 03 ATEX 1011U

Approvals,
see page 42.

Detailed drawing,
see page 1182/1183.

Width (B1) mm	Packs of	200	250	300	400	400	500	600	600	800
Height (H1) mm		300	350	400	400	600	500	600	800	1000
Depth (T1) mm		150	150	200	200	200	300	200	300	300
Mounting plate width (F1) mm		145	195	245	345	345	417	545	517	717
Mounting plate height (G1) mm		250	300	350	350	550	450	550	750	950
Model No. KEL	1	**9201.600**	**9202.600**	**9203.600**	**9204.600**	**9205.600**	**9207.600**	**9206.600**	**9208.600**	**9209.600**
Number of cams		1	1	2	2	2	2	2	[1]	[1]
Weight (kg)		3.7	4.6	6.0	6.5	11.5	12.9	15.9	24.3	39.0

[1] 3-point lock system.



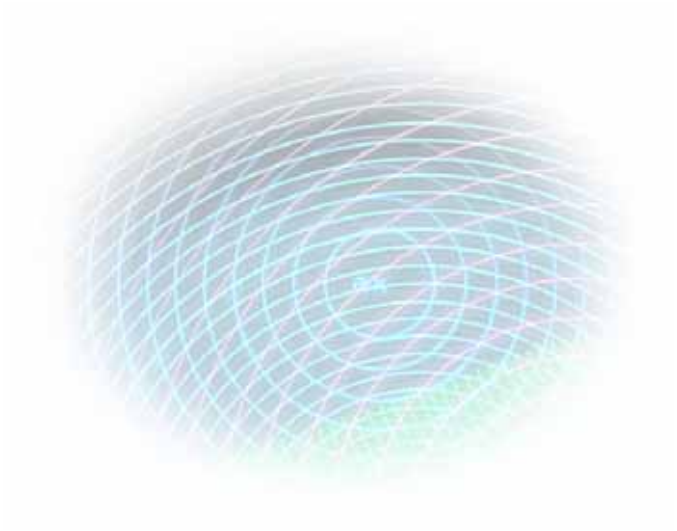
Wall mounting bracket,
Model No. see page 975.



Baying system TS 8,
prepared for Ex pressurisation,
Model No. see page 152.

Accessories Page 890 **Cable entry** Page 1045

Features



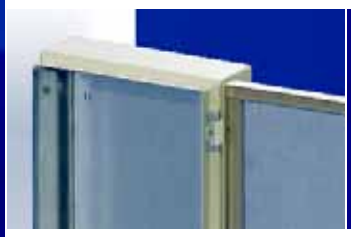
Forward-thinking EMC planning is crucial for the permanent functioning of sensitive electronics.

Electromagnetic compatibility is required of your product.

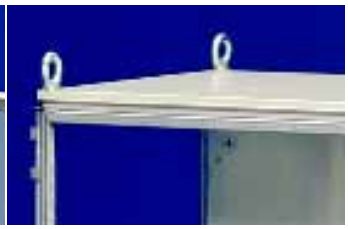
For this reason, our EMC specialists will support you with expert assistance and advice. We can help you to effectively prevent both the inlet and outlet of interference fields into and from enclosures.



EMC enclosures and cases



EMC enclosures: Gland plates are deliberately omitted in order to achieve a high shielding effect.



EMC baying system: Frame made from sheet steel with an aluminium zinc surface finish. EMC/IP combination seals ensure slot-free all-round contact.



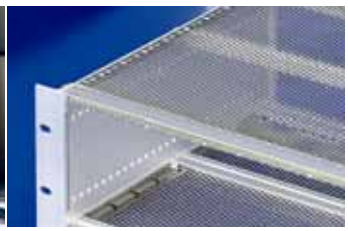
EMC free-standing enclosures: Solid top and sides. EMC/IP seals are attached to the door, rear panel and gland plate.



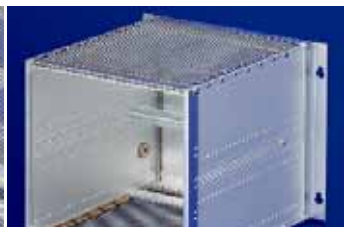
EMC subracks and systems



Ripac rack-mounted systems for CPCI and VMEbus, with power supply, backplane, climate control, EMC and ESD protection.



Ripac Vario EMC: Vibration and shock-tested subracks equipped for EMC-compatible installation.



Ripac Compact and Ripac Vario Mobil: The EMC specialists for mounting on top-hat rails, mounting plates, or for use in rail vehicles.



EMC electronic enlcosures



Wall-mounted enclosure, based on Rittal EL, 3-part: Front door with 4 mm EMC polycarbonate window, hinged centre part, solid wall unit.



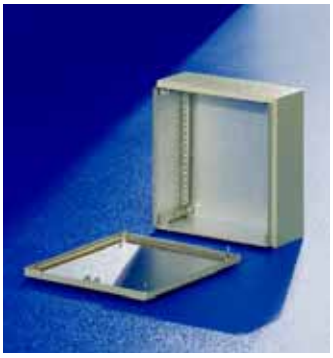
Low-resistance connection between the glazed door and conductive sealing edge ensures a high shielding effect.

The Rittal EMC concept

Rittal offers excellent pre-requisites for EMC enclosure configurations in the form of its standard sheet steel enclosures, EMC-shielded enclosures, and a practical range of EMC accessories.
Even the standard enclosures offer good shielding against electrical fields, which is generally sufficient for many applications.

Depending on the individual application, anything is possible, be it closely inter-meshed potential equalisation in a standard enclosure to prevent conducted interfer-ence, or extra shielding to protect against high-frequency electromagnetic fields.
The large enclosures in the TS 8 series offer a “good” level of shielding even in the stand-ard version.

For Rittal EMC enclosures with a high level of shielding, excellent attenuation levels and attractive value-for-money products are achieved on the basis of zinc-plated metal surfaces in conjunction with low-resistance EMC shields.
According to EMC legislation, CE labelling is only compulsory for active equipment and systems.
Empty enclosures are not subject to the EMC Directive because these are passive components which cannot be furnished with a declaration of conformity with regard to EMC standards.



EMC terminal boxes KL

Material/surface finish:
Sheet steel with aluminium zinc-coating, powder-coated in RAL 7035 on the outside, interior surfaces conductive.

Protection category:
IP 55 to EN 60 529/09.2000.
The EMC version (“high RF attenuation”) has been certified by the VDE.

Supply includes:
Enclosure, cover with special seal and cover screws.

Width mm	Height mm	Depth mm	Model No. KL
300	300	120	**1507.750**

Other sizes available on request.

Approvals,
see page 42.

EMC diagram,
see page 331.



EMC E-Box EB

Material/surface finish:
Sheet steel with aluminium zinc-coating, powder-coated in RAL 7035 on the outside, interior surfaces conductive.

Protection category:
IP 55 to EN 60 529/09.2000.
The EMC version (“high RF attenuation”) has been certified by the VDE.

Supply includes:
Enclosure with mounting plate, door with special seal including 180° hinge and cam lock with double-bit insert.

Note:
All sizes available on request.

EMC diagram,
see page 331.



EMC compact enclosures AE

Material/surface finish:
Sheet steel with aluminium zinc-coating, powder-coated in RAL 7035 on the outside, interior surfaces conductive.

Protection category:
IP 55 to EN 60 529/09.2000.
The EMC version (“high RF attenuation”) has been certified by the VDE.

Supply includes:
Enclosure with mounting plate, door with special seal (130° hinge) including cam lock with double-bit insert.

Width mm	Height mm	Depth mm	Model No. AE
380	380	210	**1380.750**
600	380	210	**1039.750**
600	600	210	**1060.750**
800	1000	300	**1180.750**

Other sizes available on request.

Approvals,
see page 42.

EMC diagram,
see page 331.



EMC baying systems TS 8

Material:
Sheet steel with aluminium zinc-coating
Door: 2.0 mm
Rear panel: 1.5 mm
Mounting plate: 3.0 mm

Surface finish:
Framework, door, rear panel and roof plate of sheet steel with an aluminium zinc-coating, spray-finished on the outside in RAL 7035 and unpainted on the inside.

Protection category:
IP 55 to EN 60 529/09.2000.
The EMC version ("high RF attenuation") has been certified by the VDE.

Supply includes:
Enclosure frame with removable door,
rear panel and roof plate,
r/h door hinge, can be changed to opposite side,
4 eyebolts, fitted,
mounting plate,
three-part gland plates.

Width mm	Height mm	Depth mm	Model No. TS	
			TS enclosures	TS side panels
800	2000	600	**8806.750**	**8106.750**
800	2000	800	**8808.750**	**8108.750**

Note:
Other sizes available on request.

Property rights:
European patent no. 0 857 406 with validity for CH, ES, FR, GB, IT, NL, SE
US patent no. 6,384,323
Japanese patent no. 3 193 059

Also required:
EMC baying seal TS 8800.690,
see page 1033, for bayed enclosures.

EMC diagram,
see page 331.



EMC free-standing enclosure ES 5000

Material:
Sheet steel with aluminium zinc-coating
Enclosure body: 10-fold profiled
Door: 2.0 mm
Rear panel: 1.5 mm
Mounting plate: 3.0 mm

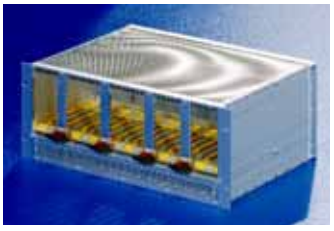
Surface finish:
Enclosure body, door, rear panel and roof plate of sheet steel with an aluminium zinc-coating, spray-finished on the outside in RAL 7035 and unpainted on the inside.

Protection category:
IP 55 to EN 60 529/09.2000.
The EMC version ("high RF attenuation") has been certified by the VDE.

Supply includes:
Enclosure, closed top and sides,
removable rear panel,
r/h door hinge, can be changed to opposite side,
2 eyebolts, not fitted,
mounting plate,
three-part gland plates.

Note:
All sizes available on request.

EMC diagram,
see page 331.



EMC subrack Ripac Vario

The Ripac Vario EMC subrack system was developed with consideration for EMC aspects. The subracks are equipped with a conductive surface finish and with EMC components such as springs and extrusions. Further upgrading will allow individual EMC requirements to be met, depending on your required application.

Technical specifications:
Total depth:
245, 285, 305, 345, 405, 465, 525, 585 mm
Installation width: 84 HP
Height: 3 U, 4 U, 6 U, 7 U, 9 U

Testing:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea

Standards:
Ripac Vario subracks are based on the system dimensions to IEC 60 297-3.

Material:
Side panels: 2.5 mm aluminium
Flanges and horizontal rails:
Extruded aluminium section
Cover plates: Aluminium

Surface finish:
Clear-chromated

Note:
Further information,
see page 553.

EMC diagram,
see page 331.



EMC wall-mounted enclosure, based on Rittal EL, 3-part

Material:
Wall unit and centre part:
1.5 mm sheet steel
Mounting plate:
2.5 mm sheet steel
Front door:
Extruded aluminium section, die-cast aluminium corner connectors, 4 mm polycarbonate pane, with EMC mesh.

Surface finish:
Powder-coated
Enclosure: RAL 7035
Door frame: RAL 7033

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
1 wall unit, solid,
2 gland plates, solid,
1 centre part, hinged,
2 x 482.6 mm (19″) mounting angles, fitted,
1 mounting plate, zinc-coated, passivated,
1 front door with EMC polycarbonate pane.

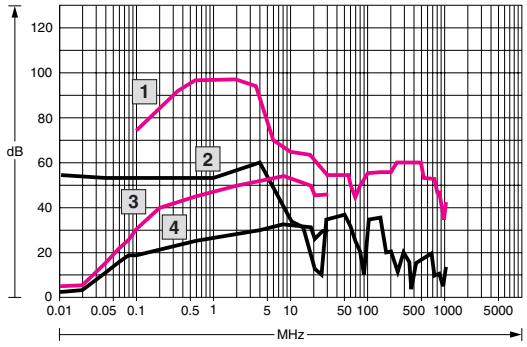
U	Width mm	Height mm	Depth mm	**Model No. EL**
6	600	345	515	**2256.705**

Delivery times available on request.

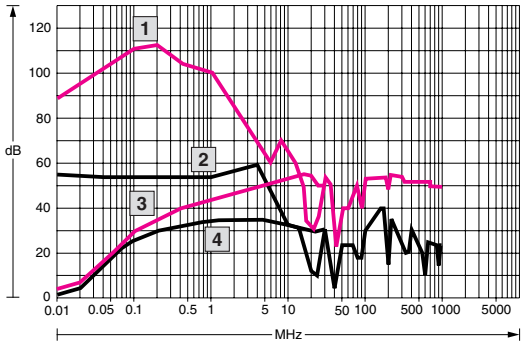
Approvals,
see page 331.

EMC diagram,
see page 331.

EMC terminal boxes KL Page 328



EMC free-standing enclosure ES 5000 Page 329



MHz = frequency
dB = RF attenuation

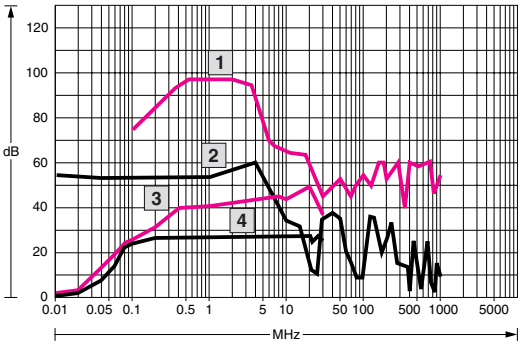
1 E field = Electrical field [V/m] EMC enclosures

2 E field standard enclosures

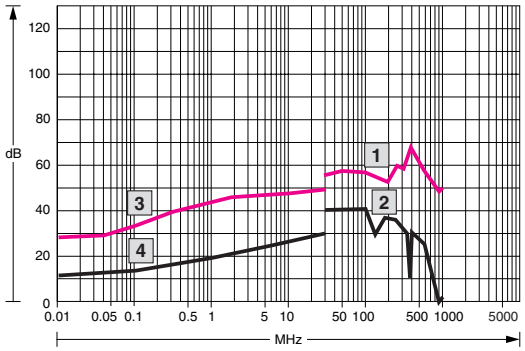
3 H field = Magnetic field [A/m] EMC enclosures

4 H field standard enclosures

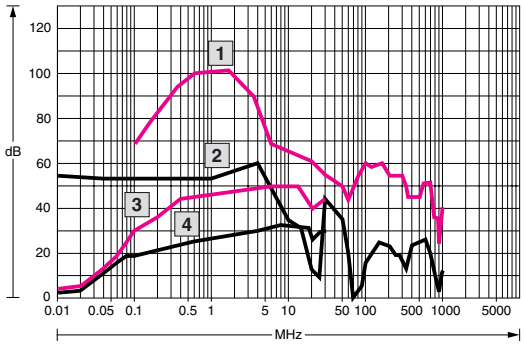
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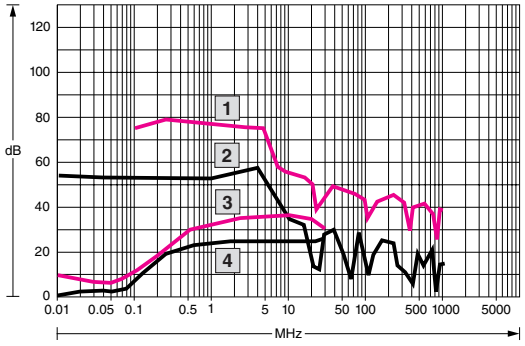
EMC subrack Ripac Vario Page 329



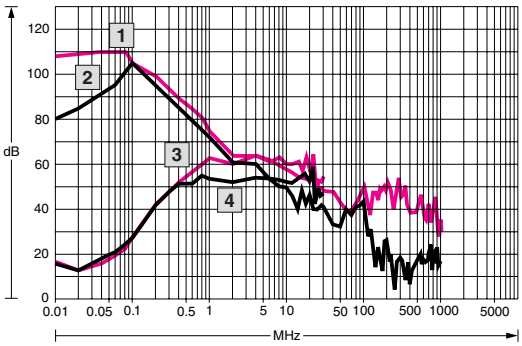
EMC compact enclosures AE Page 328



EMC wall-mounted enclosure, based on Rittal EL, 3-part Page 330



EMC baying systems TS 8 Page 329



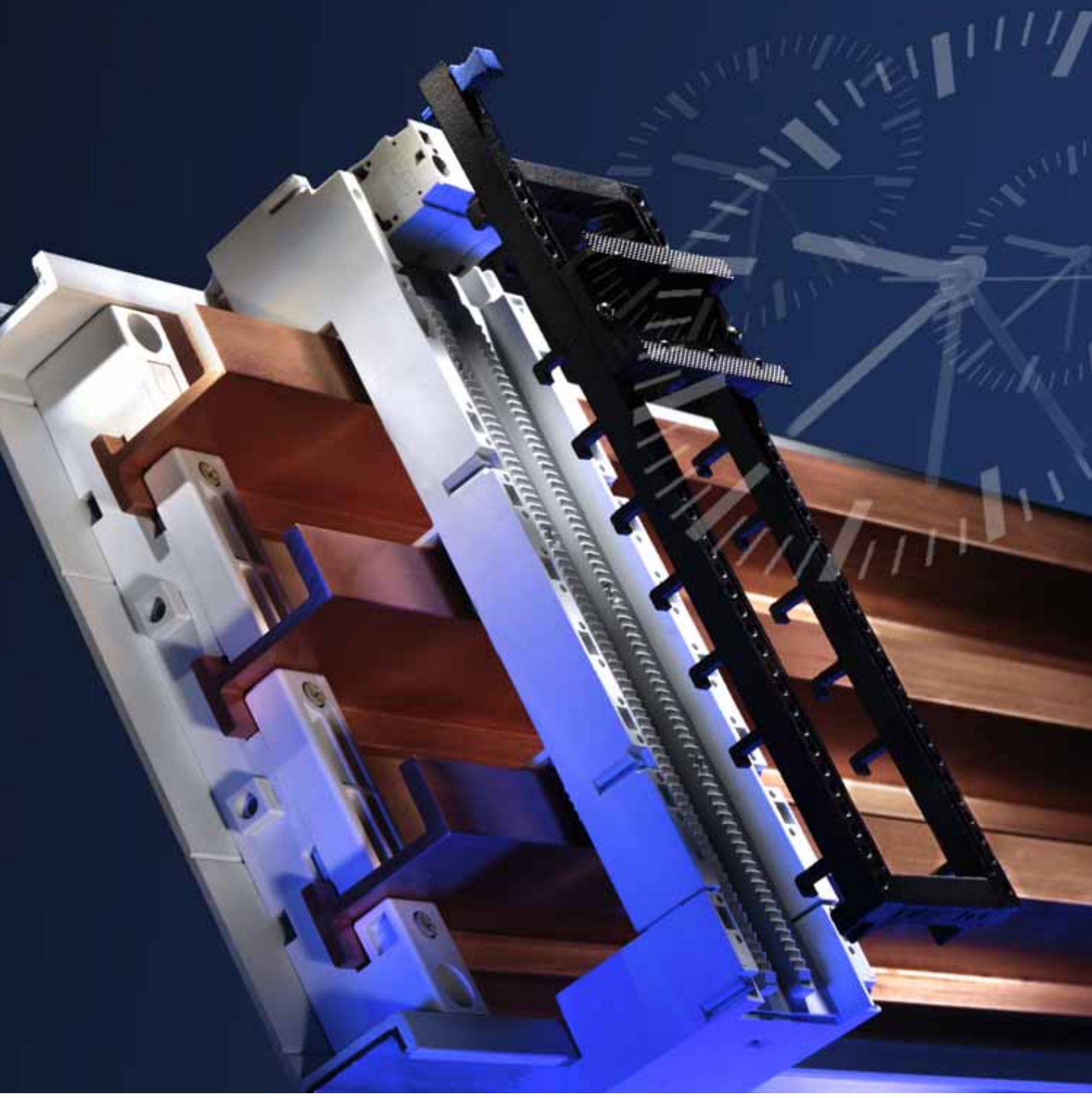
Approvals:

EMC terminal boxes KL
- UL
- CSA
- TÜV
- Lloyds Register of Shipping
- VDE

EMC baying systems TS 8
- UL – Underwriters Laboratories Inc. For USA and Canada

EMC free-standing enclosure ES 5000
- UL
- CSA

EMC wall-mounted enclosure, based on Rittal EL, 3-part
- TÜV
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- VDE
- UL – Underwriters Laboratories Inc. For USA and Canada



When it comes to future-oriented solutions for modern low-voltage power distribution, you are most definitely on the right track with **Rittal busbar systems.** Rittal RiLine60, the fascinating 60 mm system of the future – assembly-friendly, time-saving, individual and modular. Key features of the new Rittal RiLine60 busbar system include: Versatile application options, individual modularity, and reliability thanks to type-testing. **Rittal Ri4Power is the new name for high-current power distributors, distribution enclosures and switchgear with form separation** under a single roof – in accordance with the worldwide standard (IEC 60 439-1).

RITTAL®

Power Distribution

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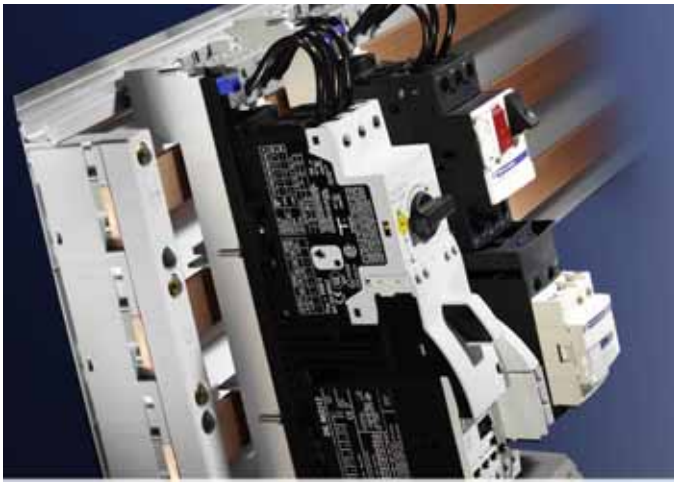
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Rittal RiLine60 busbar systems

Overview



Time-saving assembly, versatile applications and individual modularity are the winning features of the Rittal RiLine60 busbar system. Simply insert the bars from above, secure, and it's done! This is how quickly you can mount flat copper cross-sections in one support, with no need for any inserts!



RiLine60 bar systems





Busbar support for flat bars with integral cross-section adaptation
Height compensation with 5 mm bars is achieved via slides.

An integral locating block automatically adapts to widths of 15, 20, 25 or 30 mm. No other accessories required.

Unrestricted top mounting of the PLS busbar support with power distribution components.

RiLine60 adaptor system







System separation of the adaptor section and support frame translates into service-friendly device configuration.

Sliding block concept for circuit-breaker adaptors up to 630 A. As a result, mounting of all standard power circuit-breakers is now much simpler and faster.

The **multi-functional adaptors** use modern, practical technology to set standards in terms of contact reliability, assembly rationalisation and configuration diversity of switchgear.



RiLine60 fusible elements







Bus-mounting fuse bases for snap-on mounting
The three-pole components ensure reliable-contact, shake-proof connection with the busbars.

RiLine NH isolators
The contact swivel feet have one outstanding function: The cable outlet can be switched from bottom to top in a matter of seconds.

NH fused isolator
With a build width of just 50 mm, it sets new standards in compact, space-saving configuration.



Mini-PLS busbar systems up to 250 A (40 mm)



Optimum space utilisation and rapid assembly of all components via plug and lock connection from the front.

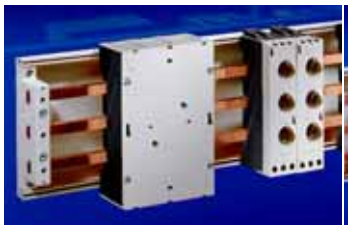


Top-mounting over the entire surface of the busbar support and busbar connector with system components.



Contact hazard protection thanks to all-round encapsulation with base tray, cover section and end cover.

Busbar systems up to 360 A (40 mm)



Busbar supports with integral inserts.
Simple component assembly via insertion or snap-mounting.



All-round contact hazard protection analogous to the Rittal Mini-PLS system.



Time-saving assembly of standard commercially available power circuit-breakers via preconfigured connection cables.



Busbar systems up to 1250 A (100 mm), 1600 A (185 mm)



Busbar system with 100 mm centre-to-centre spacing
Suitable for the assembly of NH fused isolators size 00 and NH on-load isolators sizes 1 to 3.





Busbar system with 185 mm centre-to-centre spacing
The special design of the support allows seamless top-mounting in the support section with NH fused isolators sizes 00 to 3.

Busbar systems up to 2500 A/3000 A (150 mm)





These two busbar supports with 150 mm centre-to-centre spacing are suitable for electricity transmission and distribution.

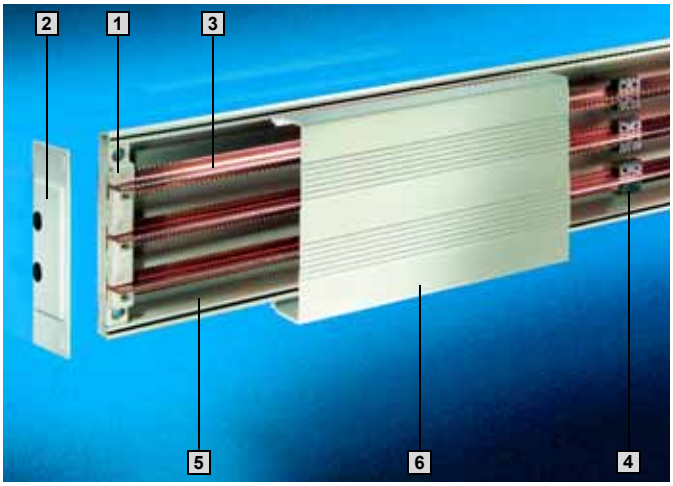


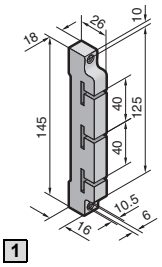


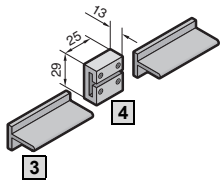
Spacing pieces allow a stepped configuration of the busbars.

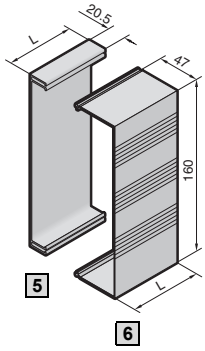
Busbar systems up to 250 A (40 mm)

Mini-PLS busbar supports (3-pole)









Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Short-circuit protection diagram,
see page 1228.

Design	Packs of	1
Number of poles		3-pole
Bar centre distance		40 mm
Model No. SV	4	**9600.000**
Accessories		
2 End covers for contact hazard protection on the sides	2	**9610.000**

3 Mini-PLS special busbars

E-Cu 120 mm², 3 mm bar thickness.

Length mm	Packs of	Model No. SV
500	3	**9601.000**
700	3	**9602.000**
1100	3	**9603.000**
1500	3	**9624.000**
Accessories		
4 Busbar connectors for connecting the busbars; no drilling required	3	**9611.000**[1)]

[1)] Maximum tightening torque 2 Nm.

5 Mini-PLS base tray sections

For rear contact hazard protection of the Mini-PLS assembly.

Length (L) mm	Packs of	Model No. SV
250	1	**9604.000**
500	1	**9605.000**
700	1	**9606.000**
1100	1	**9607.000**

6 Mini-PLS cover sections

May be cut to length individually; for clip-on mounting onto the Mini-PLS base tray section.

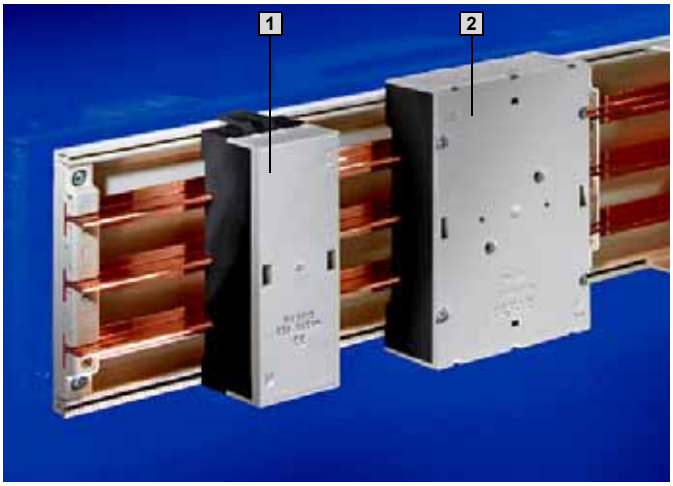
Length (L) mm	Packs of	Model No. SV
250	1	**9608.000**
500	1	**9609.000**

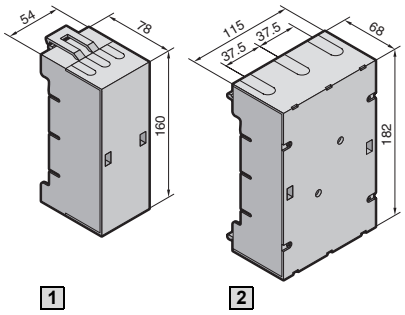
Material
Base tray and cover sections:
Thermally modified hard PVC.
Continuous operating temperature max. 91°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Busbar connection adaptors Page 337 **Component adaptors** Page 338 **Bus-mounting fuse base** Page 341 **NH on-load isolator** Page 341

Mini-PLS busbar connection adaptors (3-pole)





Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035 (cover),
RAL 9011 (chassis)

Supply includes:
Cover.

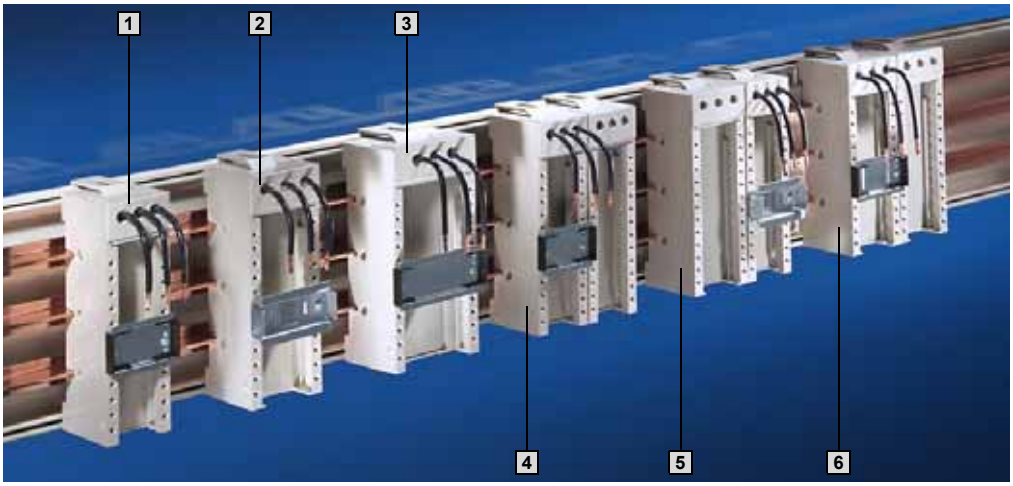
Design	1	2	Page
Rated current up to	63 A	250 A	
Rated operating voltage	690 V~	690 V~	
Connection	top/bottom	top/bottom	
Connection of round conductors[1)]	1.5 – 35 mm²	10 – 120 mm²	
Clamping area for laminated copper bars	10 x 8 mm	17 x 15 mm	
Tightening torque ● Terminal screw	2 – 3 Nm	4 – 6 Nm	
Packs of	1	1	
Model No. SV	**9613.000**	**9612.000**	
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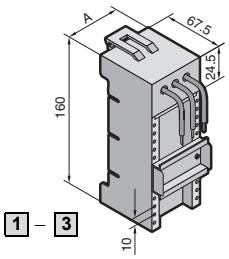
[1)] Wire end ferrules should be used with fine wire conductors.

Busbar system Page 336 **Component adaptors** Page 338 **Bus-mounting fuse base** Page 341 **NH on-load isolator** Page 341

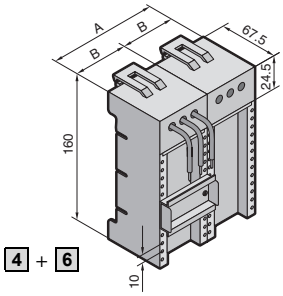
Busbar systems up to 250 A (40 mm)

Mini-PLS component adaptors 12 A/25 A (3-pole)

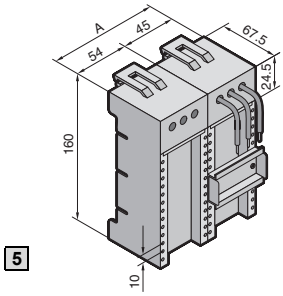




1 – 3



4 + 6



5

Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Note:
Overview of switchgear for the appropriate adaptor, see page 1236.

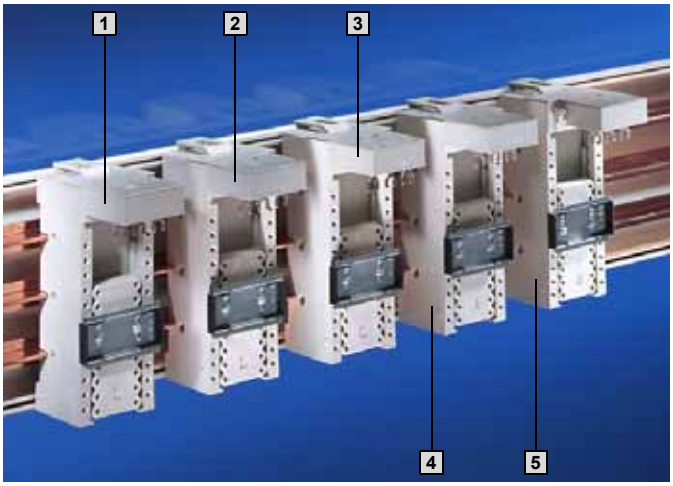
The current carrying capacity of the supply cables fitted as standard can be found on page 1236.

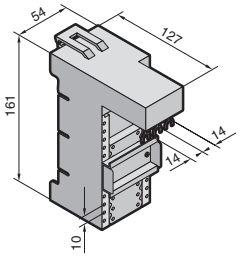
Design		1			2		3		4	5	6	Page
Construction width	A	45 mm			54 mm		72 mm		90 mm	99 mm	108 mm	
	B	–			–		–		45 mm	–	54 mm	
Rated current up to		12 A	25 A	25 A	25 A	25 A	25 A	25 A	25 A	25 A	25 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top	top	top	top	top	top	top	top	top	
Connection cables[1)]		AWG 14	AWG 12	AWG 12	AWG 12	AWG 12	AWG 12	AWG 12	AWG 12	AWG 12	AWG 12	
Support rails	Qty.	1	1	1	1	1	1	1	1	1	1	
	Height	7.5 mm	7.5 mm	15 mm	7.5 mm	15 mm	7.5 mm	15 mm	7.5 mm	7.5 mm	7.5 mm	
Packs of		1	1	1	1	1	1	1	1	1	1	
Model No. SV		**9614.110**	**9614.100**	**9615.100**	**9614.000**	**9615.000**	**9625.000**	**9626.000**	**9629.010**	**9629.020**	**9629.030**	
Accessories	Packs of											
Insert strip	2	9623.000	9623.000	9623.000	9623.000	9623.000	9623.000	9623.000	9623.000	9623.000	9623.000	400
Support rails, width 45 mm, height 7.5 mm	10	9320.150	9320.150	9320.150	–	–	–	–	9320.150	9320.150	–	404
Support rails, width 54 mm, height 7.5 mm	10	–	–	–	3548.000	3548.000	–	–	–	3548.000	3548.000	404
Support rails, width 72 mm, height 7.5 mm	10	–	–	–	–	–	3549.000	3549.000	–	–	–	404
Plug-in connector	1	9623.100	9623.100	9623.100	9623.100	9623.100	–	–	9623.100	9623.100	9623.100	405

[1)] AWG = American Wire Gauges
AWG 14 = 2.08 mm² ≙ 2.5 mm²
AWG 12 = 3.31 mm² ≙ 4 mm²

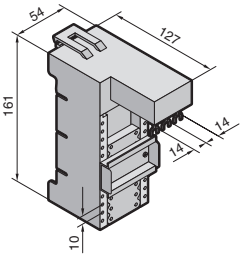
Busbar system Page 336 **Busbar connection adaptors** Page 337 **Bus-mounting fuse base** Page 341 **NH on-load isolator** Page 341

Mini-PLS quick-fit component adaptors 25 A/32 A (3-pole)





1 – 4



5

Rapid DIN rail adjustment for component connection.

Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

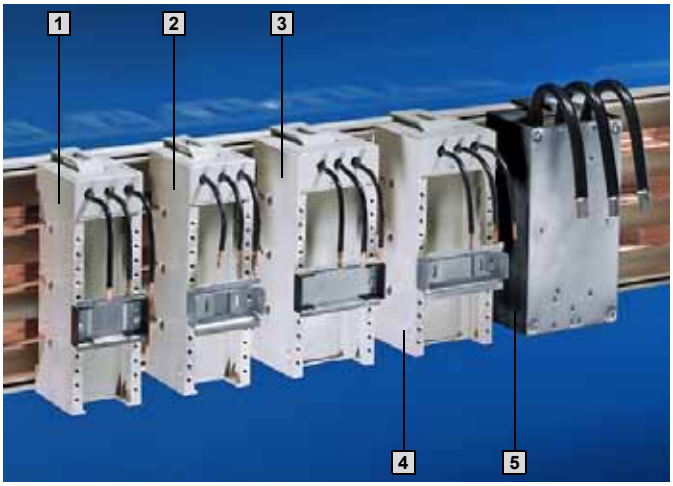
Colour:
RAL 7035

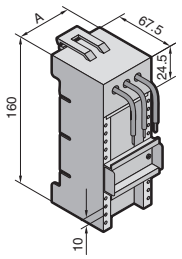
Note:
Overview of switchgear for the appropriate adaptor,
see page 1236.

Design		1	2	3	4	5	Page
Construction width		54 mm	54 mm	54 mm	54 mm	54 mm	
Rated current up to		25 A at 35°C ambient temperature 32 A at 25°C ambient temperature					
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	690 V~	
Support rails	Qty.	1	1	1	1	1	
	Height	7.5 mm	7.5 mm	7.5 mm	7.5 mm	7.5 mm	
Packs of		1	1	1	1	1	
Model No. SV		**9618.000**	**9619.000**	**9620.000**	**9621.000**	**9622.000**	
Accessories	Packs of						
Insert strip	2	9623.000	9623.000	9623.000	9623.000	9623.000	400

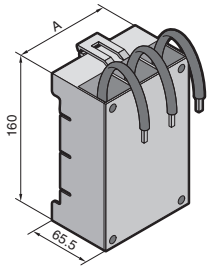
Busbar system Page 336 **Busbar connection adaptors** Page 337 **Bus-mounting fuse base** Page 341 **NH on-load isolator** Page 341

Mini-PLS component adaptors 40 A/100 A (3-pole)





1 – 4



5

Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035,
RAL 9011 (SV 9629.000)

Note:
Overview of switchgear for the appropriate adaptor, see page 1237.

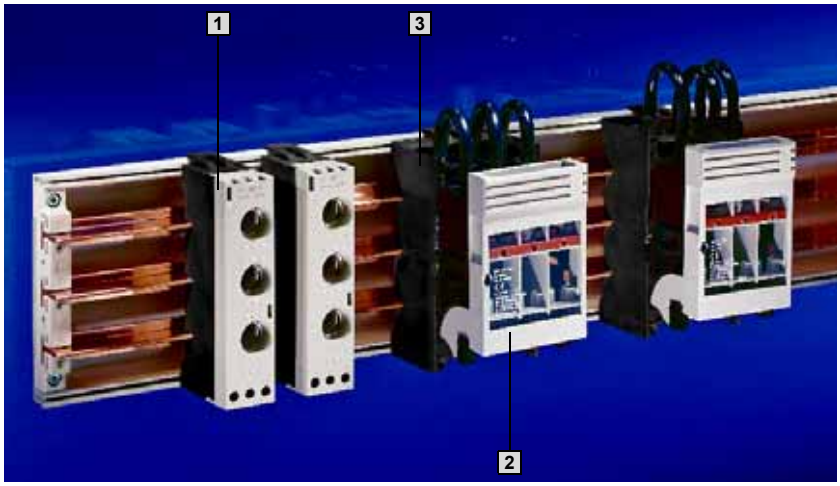
The current carrying capacity of the supply cables fitted as standard can be found on page 1236.

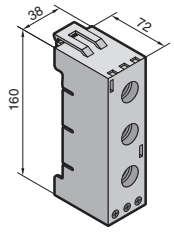
Design		1	2	3	4	5	Page
Construction width (A)		54 mm	54 mm	72 mm	72 mm	90 mm	
Rated current up to		40 A	40 A	40 A	40 A	100 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top	top	top	top	
Connection cables[1)]		AWG 10	AWG 10	AWG 10	AWG 10	35 mm²	
Support rails	Qty.	1	1	1	1	–	
	Height	7.5 mm	15 mm	7.5 mm	15 mm	–	
Packs of		1	1	1	1	1	
Model No. SV		**9616.000**	**9617.000**	**9627.000**	**9628.000**	**9629.000**	
Accessories	Packs of						
Insert strip	2	9623.000	9623.000	9623.000	9623.000	–	400
Support rails width 54 mm, height 7.5 mm	10	3548.000	3548.000	–	–	–	404
Support rails width 72 mm, height 7.5 mm	10	–	–	3549.000	3549.000	–	404
Support rails width 72 mm, height 15 mm	5	–	–	–	–	9320.120	405
Plug-in connector	1	9623.100	9623.100	–	–	–	405

[1)] AWG = American Wire Gauges
AWG 10 = 5.26 mm² ≙ 6 mm²

Busbar system Page 336 **Busbar connection adaptors** Page 337 **Bus-mounting fuse base** Page 341 **NH on-load isolator** Page 341

Mini-PLS bus-mounting fuse base/NH on-load isolator (3-pole)





1 Mini-PLS bus-mounting fuse base D 02-E 18

Material:
Polyamide (PA 6.6), 30 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035 (cover),
RAL 9011 (chassis)

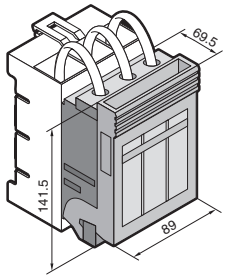
Supply includes:
Cover.

Rated current	63 A
Rated operating voltage	400 V~
Connection of round conductors[1)]	1.5 – 16 mm²
Tightening torque ● Terminal	2.5 Nm
Packs of	1
Model No. SV	**9630.000**

[1)] Wire end ferrules should be used with fine wire conductors.

Accessories:

Identification labels SV 9320.080,
see page 406.



2 NH on-load isolators size 000

Material:
Chassis, lid, contact hazard protection:
Fibreglass-reinforced polyamide
Contact tracks: Silver-plated hard copper

Colour:
RAL 7035

Technical information,
see page 1246.

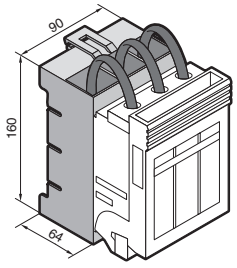
Size	000
Rated current	100 A
Rated operating voltage	690 V~
Cable outlet	top/bottom
Type of connection	Terminal up to 50 mm²
Tightening torque	3 Nm
Packs of	1
Model No. SV	**3431.000**

Also required:

Mini-PLS busbar adaptor,
see below.

Accessories:

Micro-switch SV 3071.000,
see page 406.



3 Mini-PLS busbar adaptor

For mounting SV 3431.000 on Rittal Mini-PLS.

Material:
Polyamide (PA 6.6), 30 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 9011

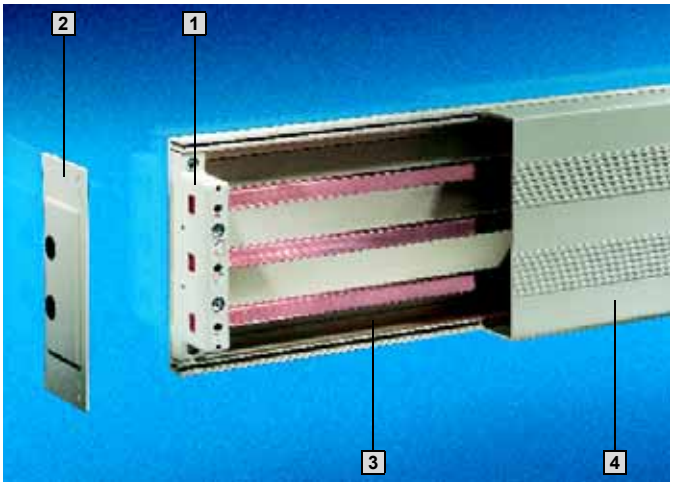
Packs of	Model No. SV
1	**9629.100**

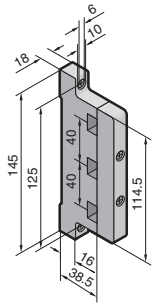
Supply includes:
35 mm² connection cables fitted as standard.

Busbar system Page 336 **Busbar connection adaptors** Page 337 **Component adaptors** Page 338

Busbar systems up to 360 A (40 mm)

Busbar supports (3-pole)





1

Material:
Fibreglass-reinforced, thermoplastic polyester (PBT). Continuous operating temperature max. 140°C. Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Supply includes:
Inserts for adaptation of bar sizes 12 x 5 – 15 x 5 mm.

Short-circuit protection diagram,
see page 1228.

Technical information
for the calculation of rated currents,
see page 1247.

Design	Packs of	1
Number of poles		3-pole
Bar centre distance		40 mm
For busbars E-Cu		12 x 5 – 15 x 10 mm
Tightening torque ● Assembly screw ● Cover attachment		 3 – 5 Nm 1 – 3 Nm
Model No. SV	4	**9350.000**
Accessories		
2 End covers for contact hazard protection on the sides	2	**9610.000**

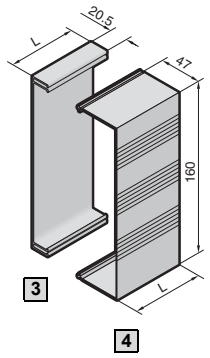
Busbars E-Cu

To DIN EN 13 601.
Length: 2400 mm/bar.

Dimensions mm	Packs of	Model No. SV	Page
12 x 5	6	**3580.000**	
12 x 10	6	**3580.100**	
15 x 5	6	**3581.000**	
15 x 10	6	**3581.100**	
Accessories			
Busbar connectors for E-Cu 12 x 5 – 15 x 10 mm	3	9350.075	410
Busbar cover section (length 1 m/each) for E-Cu			
12/15 x 5 mm	4	9350.010	343
12/15 x 10 mm	4	9350.060	343

Busbar connection adaptors Page 344 **Bus-mounting fuse base** Page 345 **NH on-load isolator** Page 345 **Component adaptors** Page 346

System components (3-pole)



3 Base tray section

For rear contact hazard protection of the busbar assembly.

Length (L) mm	Packs of	Model No. SV
250	1	**9604.000**
500	1	**9605.000**
700	1	**9606.000**
1100	1	**9607.000**

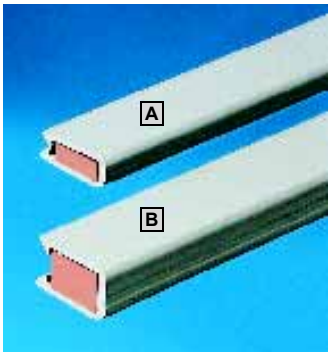
4 Cover section

May be cut to length as required; for clip-on mounting to the base tray section.

Length (L) mm	Packs of	Model No. SV
250	1	**9608.000**
500	1	**9609.000**

Material
Base tray and cover sections:
Thermally modified hard PVC.
Continuous operating temperature max. 91°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035



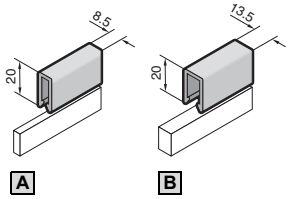
Busbar cover sections

Contact hazard protection via covering of the busbars. May be cut to required length.
Length: 1000 mm/section.

Material:
Thermally modified hard PVC.
Continuous operating temperature max. 100°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

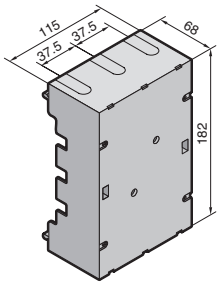
For busbars mm	Packs of	Model No. SV
A 12/15 x 5	4	**9350.010**
B 12/15 x 10	4	**9350.060**



Busbar connection adaptors Page 344 **Bus-mounting fuse base** Page 345 **NH on-load isolator** Page 345 **Component adaptors** Page 346

Busbar connection adaptors (3-pole)





Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035 (cover),
RAL 9011 (chassis)

Supply includes:
Cover.

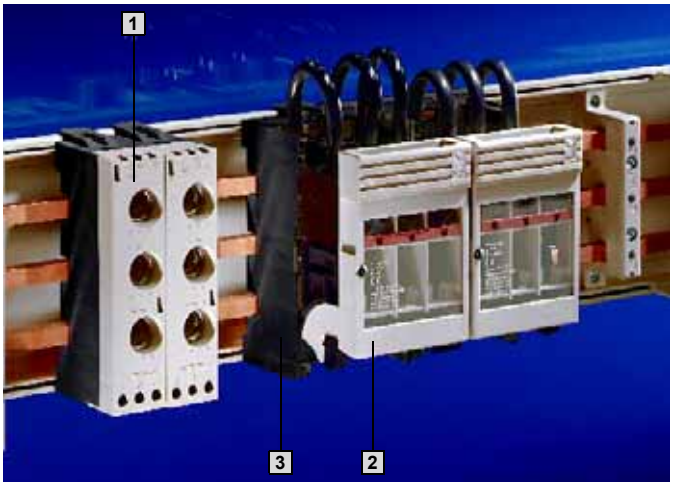
Note:
Conductor connection clamps for the connection of round conductors 1 – 16 mm², see page 358.

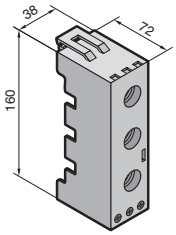
Rated current up to	360 A		Page
Rated operating voltage	690 V~		
Connection	top/bottom		
Connection of round conductors[1)]	10 – 120 mm² (max. 250 A)		
Clamping area for laminated copper bars	17 x 15 mm (max. 360 A)		
Tightening torque ● Terminal screw	4 – 6 Nm		
For busbars	12 x 5/10 mm	15 x 5/10 mm	
Packs of	1	1	
Model No. SV	**9350.020**	**9350.030**	
Accessories			
Laminated copper bars	■	■	411

[1)] Wire end ferrules should be used with fine wire conductors.

Busbar system Page 342 **Bus-mounting fuse base** Page 345 **NH on-load isolator** Page 345 **Component adaptors** Page 346

Bus-mounting fuse base/NH on-load isolator (3-pole)





1 Bus-mounting fuse base D 02-E 18

Material:
Polyamide (PA 6.6), 30 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035 (cover),
RAL 9011 (chassis)

Supply includes:
Cover.

Rated current	63 A
Rated operating voltage	400 V~
Connection of round conductors[1)]	1.5 – 16 mm²
Tightening torque ● Terminal	2.5 Nm
Packs of	1
For busbars 12 x 5/10 mm **Model No. SV**	**9350.050**
For busbars 15 x 5/10 mm **Model No. SV**	**9350.500**

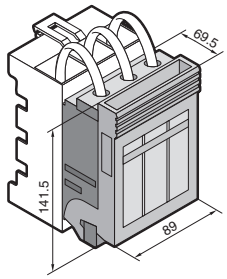
[1)] Wire end ferrules should be used with fine wire conductors.

Accessories:

Identification labels SV 9320.080,
see page 406.

Also required:

Base tray section,
see page 343.



2 NH on-load isolators size 000

Material:
Chassis, lid, contact hazard protection:
Fibreglass-reinforced polyamide
Contact tracks: Silver-plated hard copper

Colour:
RAL 7035

Technical information,
see page 1246.

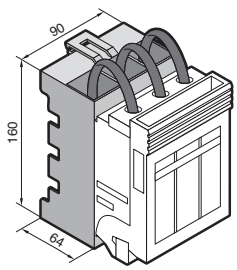
Size	000
Rated current	100 A
Rated operating voltage	690 V~
Cable outlet	top/bottom
Type of connection	Terminal up to 50 mm²
Tightening torque	3 Nm
Packs of	1
Model No. SV	**3431.000**

Accessories:

Micro-switch SV 3071.000,
see page 406.

Also required:

Busbar adaptor,
see below.



3 Busbar adaptor

For mounting SV 3431.000 on 40 mm busbar systems.

Material:
Polyamide (PA 6.6), 30 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Supply includes:
35 mm² connection cables fitted as standard.

For busbars mm	Packs of	Model No. SV
12 x 5/10	1	**9350.400**
15 x 5/10	1	**9350.410**

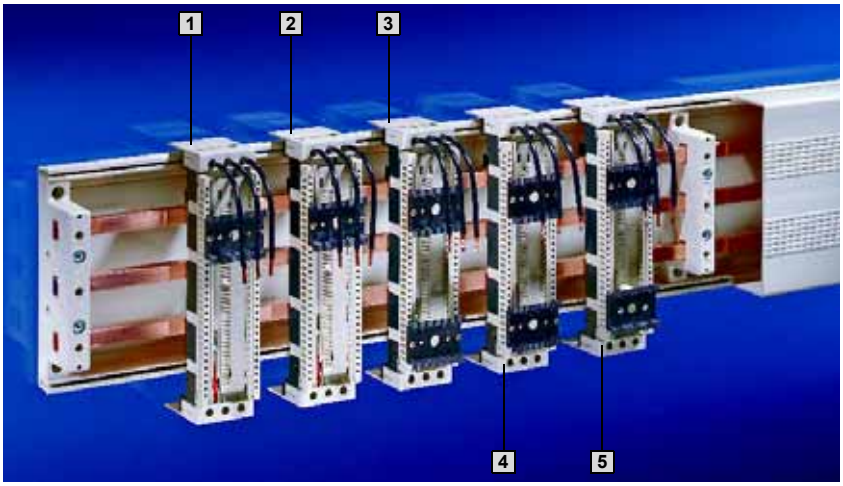
Also required:

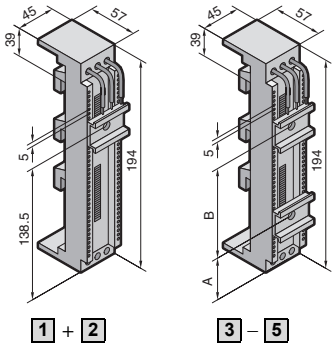
Base tray section,
see page 343.

Busbar system Page 342 **Busbar connection adaptors** Page 344 **Component adaptors** Page 346

Busbar systems up to 360 A (40 mm)

Multi-functional component adaptors 12 A/25 A (3-pole)





Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035,
RAL 9011 (chassis)

Note:
Overview of switchgear for the appropriate adaptor, see page 1238.

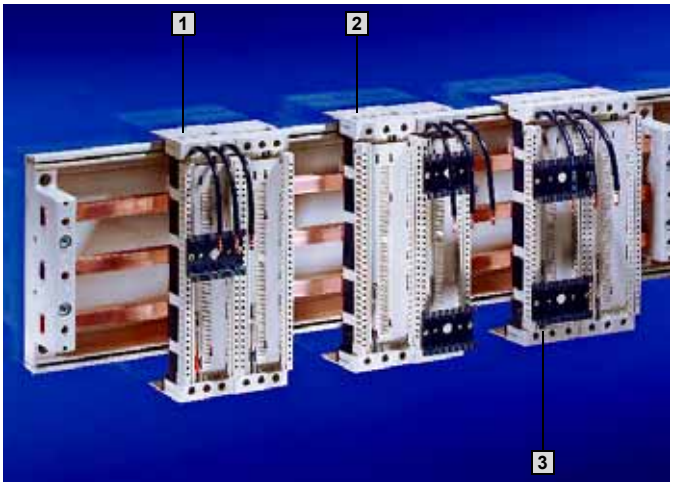
The current carrying capacity of the supply cables fitted as standard can be found on page 1236.

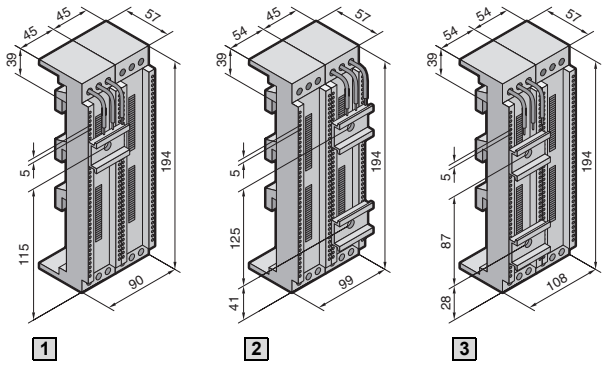
For snap-on mounting		1	2	3	4	5	Page
Construction width		45 mm	45 mm	45 mm	45 mm	45 mm	
Rated current up to		12 A	25 A	25 A	25 A	25 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top	top	top	top	
Connection cables[1)]		AWG 14	AWG 12	AWG 12	AWG 12	AWG 12	
Support rails	Qty.	1	1	2	2	2 (1 variable)	
	Height	10 mm	10 mm	10 mm	10 mm	10 mm	
	A	–	–	38.5 mm	28 mm	variable	
	B	–	–	100 mm	125 mm	variable	
Packs of		1	1	1	1	1	
For 5 mm bar thickness **Model No. SV**		**9350.080**	**9350.100**	**9350.120**	**9350.260**	**9350.140**	
For 10 mm bar thickness **Model No. SV**		**9350.090**	**9350.110**	**9350.130**	**9350.270**	**9350.150**	
Accessories	Packs of						
Support rails width 45 mm, height 10 mm	5	9320.090	9320.090	9320.090	9320.090	9320.090	404
Plug-in connector	1	9320.110	9320.110	9320.110	9320.110	9320.110	405
Mounting clip	5	9320.140	9320.140	9320.140	9320.140	9320.140	405

[1)] AWG = American Wire Gauges
AWG 14 = 2.08 mm² ≙ 2.5 mm²
AWG 12 = 3.31 mm² ≙ 4 mm²

Busbar system Page 342 **Busbar connection adaptors** Page 344 **Bus-mounting fuse base** Page 345 **NH on-load isolator** Page 345

Multi-functional component adaptors 25 A (3-pole)





Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035,
RAL 9011 (chassis)

Note:
Overview of switchgear for the appropriate adaptor, see page 1238.

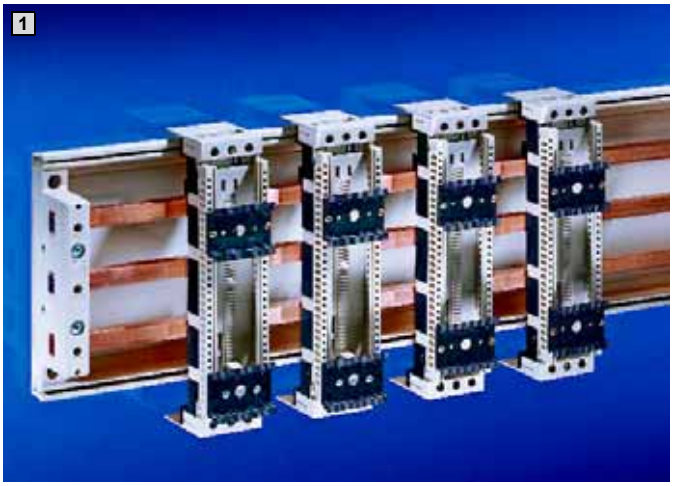
The current carrying capacity of the supply cables fitted as standard can be found on page 1236.

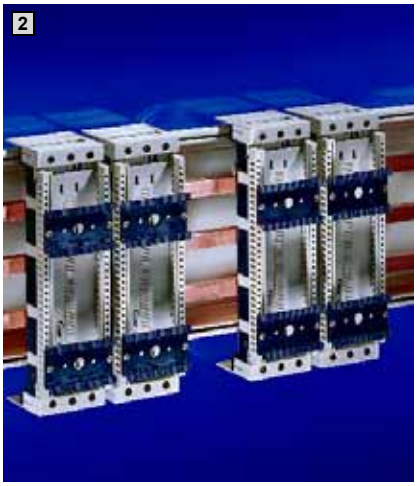
For snap-on mounting		1	2	3	Page
Construction width		90 mm	99 mm	108 mm	
Rated current up to		25 A	25 A	25 A	
Rated operating voltage		690 V~	690 V~	690 V~	
Cable outlet		top	top	top	
Connection cables[1)]		AWG 12	AWG 12	AWG 12	
Support rails	Qty.	1	2	2	
	Height	10 mm	10 mm	10 mm	
Packs of		1	1	1	
For 5 mm bar thickness **Model No. SV**		**9350.280**	**9350.300**	**9350.320**	
For 10 mm bar thickness **Model No. SV**		**9350.290**	**9350.310**	**9350.330**	
Accessories	Packs of				
Support rails width 45 mm, height 10 mm	5	9320.090	9320.090	–	404
Support rails width 54 mm, height 10 mm	5	–	9320.100	9320.100	404
Mounting clip	5	9320.140	9320.140	–	405

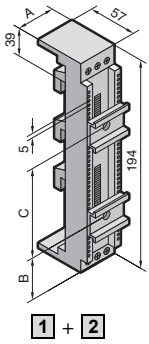
[1)] AWG = American Wire Gauges
AWG 12 = 3.31 mm² ≙ 4 mm²

Busbar system Page 342 **Busbar connection adaptors** Page 344 **Bus-mounting fuse base** Page 345 **NH on-load isolator** Page 345

Multi-functional component adaptors 25 A/40 A (3-pole)







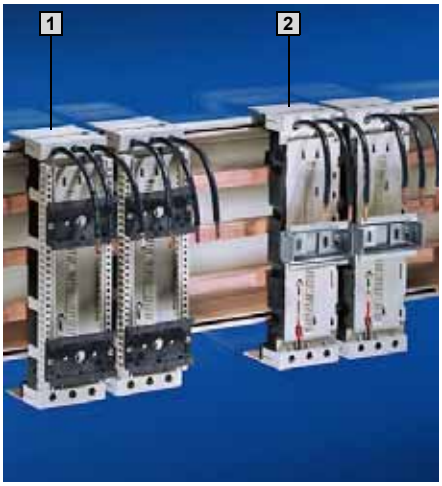
Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating
temperature max. 140°C.
Fire protection corresponding
to UL 94-V0.

Colour:
RAL 7035,
RAL 9011 (chassis)

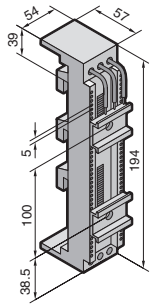
For snap-on mounting		1		2		Page
Construction width (A)		45 mm		54 mm		
Rated current up to		25 A	25 A	40 A	40 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top/bottom	top	top/bottom	
Connection of round conductors up to		16 mm²	16 mm²	16 mm²	16 mm²	
Support rails	Qty.	2 (1 variable)	2	2	2	
	Height	10 mm	10 mm	10 mm	10 mm	
	B	variable	38.5 mm	38.5 mm	38.5 mm	
	C	variable	100 mm	100 mm	100 mm	
Packs of		1	1	1	1	
For 5 mm bar thickness **Model No. SV**		**9350.160**	**9350.180**	**9350.220**	**9350.240**	
For 10 mm bar thickness **Model No. SV**		**9350.170**	**9350.190**	**9350.230**	**9350.250**	
Accessories	Packs of					
Support rails width 45 mm, height 10 mm	5	9320.090	9320.090	–	–	404
Support rails width 54 mm, height 10 mm	5	–	–	9320.100	9320.100	404
Plug-in connector	1	9320.110	–	–	–	405
Mounting clip	5	9320.140	9320.140	–	–	405

Busbar system Page 342 **Busbar connection adaptors** Page 344 **Bus-mounting fuse base** Page 345 **NH on-load isolator** Page 345

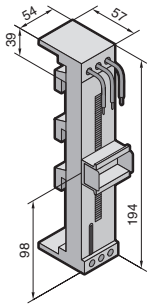
Multi-functional component adaptors 40 A/component adaptors 100 A (3-pole)



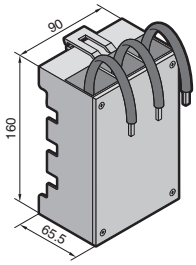




1



2



3

Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035,
RAL 9011 (chassis)

Note:
Overview of switchgear for the appropriate adaptor, see page 1238.

The current carrying capacity of the supply cables fitted as standard can be found on page 1236.

For snap-on mounting		1	2	3	3	Page
Construction width		54 mm	54 mm	90 mm	90 mm	
Rated current up to		40 A	40 A	100 A	100 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top	top	top	
Connection cables		AWG 10[1)]	AWG 10[1)]	35 mm²	35 mm²	
Support rails	Qty.	2	1	–	–	
	Height	10 mm	15 mm	–	–	
For bar width		12/15 mm	12/15 mm	12 mm	15 mm	
Packs of		1	1	1	1	
For 5 mm bar thickness **Model No. SV**		**9350.200**	**9350.340**	**9350.420**	**9350.430**	
For 10 mm bar thickness **Model No. SV**		**9350.210**	**9350.350**			
Also required						
Base tray section		–	–	■	■	343
Accessories	Packs of					
Support rails width 72 mm, height 15 mm	5	–	–	9320.120	9320.120	405

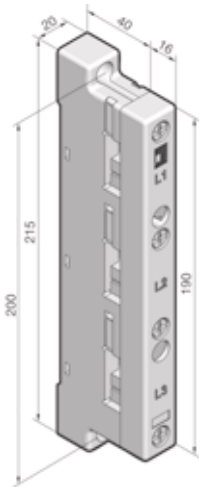
[1)] AWG = American Wire Gauges
AWG 10 = 5.26 mm² ≙ 6 mm²

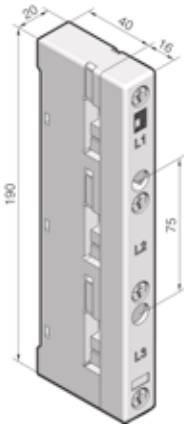
Busbar system Page 342 **Busbar connection adaptors** Page 344 **Bus-mounting fuse base** Page 345 **NH on-load isolator** Page 345

Busbar supports (3-pole)









1 With attachment holes on the outside

2 With attachment holes on the inside

Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Short-circuit protection diagram,
see page 1229.

Technical information
for the calculation of rated currents,
see page 1247.

Design	Packs of	1 With external attachment	2 With internal attachment	Page
Number of poles		3-pole	3-pole	
Bar centre distance		60 mm	60 mm	
For busbars E-Cu		12 x 5/10 mm[1], 15 x 5 – 30 x 10 mm		
Tightening torque ● Assembly screw (M5 x 16) ● Lid attachment		 3 – 5 Nm 1 – 3 Nm	 3 – 5 Nm 1 – 3 Nm	
Model No. SV	4	**9340.010**	**9340.000**	
Accessories				
3 End covers for contact hazard protection on the sides	2	**9340.070**	**9340.070**	
Spacers for SV 9340.000/.010	12	**9340.090**	**9340.090**	400

[1] If 12 x 5/10 mm busbars are used, the spacer SV 9340.090 is additionally required.

Busbars E-Cu

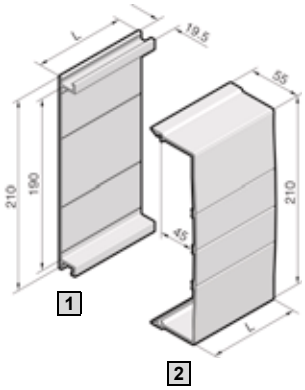
To DIN EN 13 601.
Length: 2400 mm/bar.

Dimensions in mm	Packs of	Model No. SV	Page
12 x 5	6	**3580.000**	
12 x 10	6	**3580.100**	
15 x 5	6	**3581.000**	
15 x 10	6	**3581.100**	
20 x 5	6	**3582.000**	
20 x 10	6	**3585.000**	
25 x 5	6	**3583.000**	
30 x 5[1]	6	**3584.000[2]**	
30 x 10[1]	6	**3586.000[2]**	
Accessories			
Busbar cover section (length 1 m/each)	10	3092.000	408
Busbar connector for E-Cu			
4 12 x 5 – 15 x 10 mm (single connection)	3	9350.075	410
5 20 x 5 – 30 x 10 mm (single connection)	3	9320.020	410
6 20 x 5 – 30 x 10 mm (bayed connection)[3]	3	9320.030	410

[1] Other busbar lengths, see page 409.
[2] Tin-plated version available on request.
[3] From enclosure to enclosure.

Busbar connection adaptors Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367 **OM/OT supports** Page 368/369
Component adaptors Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

System components (3-pole)



1 Base tray

For rear contact hazard protection of the flat bar assembly.

Length (L) mm	Packs of	Model No. SV
500	2	**9340.100**
700	2	**9340.110**
900	2	**9340.120**
1100	2	**9340.130**
2400	1	**9340.170**

2 Cover section

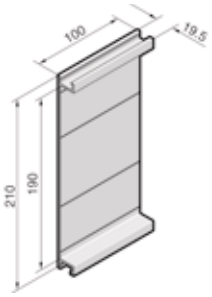
May be cut to length as required; for clip-on mounting to the base tray.

Length (L) mm	Packs of	Model No. SV
700	2	**9340.200**
1100	2	**9340.210**

Base tray and cover section
Material:
Thermally modified hard PVC.
Continuous operating temperature max. 91°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Note:
If the cover section is mounted from the front, the support panel (SV 9340.220) is needed for stability.



Base tray infill

For rear contact hazard protection when connecting the busbars from enclosure to enclosure.

Material:
Thermally modified hard PVC.
Continuous operating temperature max. 91°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Packs of	Model No. SV
2	**9340.140**

Supply includes:
Assembly parts.



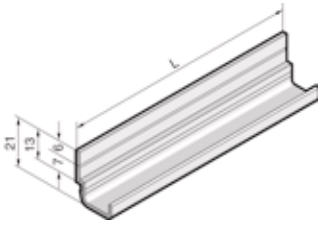
Base tray reinforcement

For clipping into the base tray.
Required when using OT adaptors or supports, see page 366/367 and 369.

Material:
Aluminium

Note:
Self-tapping screws (Model No. SZ 2487.000) for attaching the base tray reinforcement to the mounting level, see page 1011.

Length (L) mm	Packs of	Model No. SV
500	2	**9340.150**
1000	2	**9340.160**





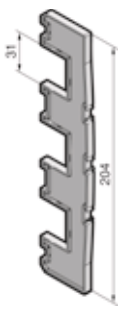
Support panel

for cover section
To prevent side access to the cover section. The support panel also provides additional stability.

Material:
Polyamide (PA 6.6).
Continuous operating temperature max. 105°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

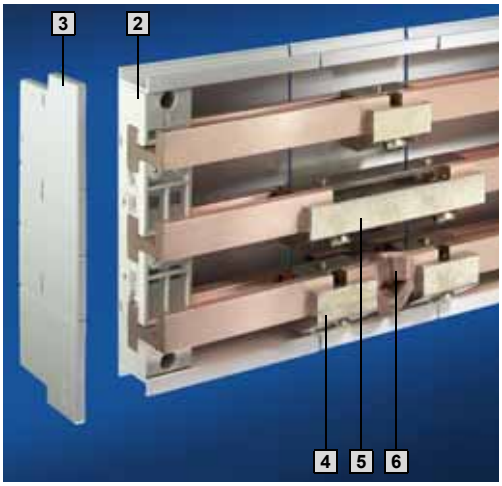
Packs of	Model No. SV
5	**9340.220**

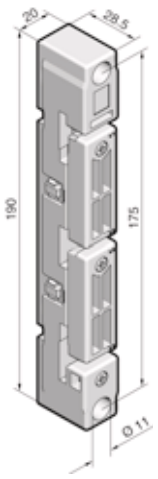


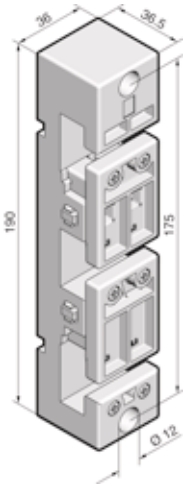
Busbar connection adaptors Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367 **OM/OT supports** Page 368/369
Component adaptors Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

PLS busbar supports (3-pole)









1 Rittal PLS 800

2 Rittal PLS 1600

Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Short-circuit protection diagram,
see page 1229.

Technical information
for the calculation of rated currents,
see page 1247.

For Rittal system	Packs of	1 PLS 800	2 PLS 1600
Number of poles		3-pole	3-pole
Bar centre distance		60 mm	60 mm
Tightening torque ● Assembly screw (M6 x 20) ● Busbar anti-slip guard		 3 – 5 Nm 0.7 Nm	 3 – 5 Nm 0.7 Nm
Model No. SV	4	**9341.000**	**9342.000**
Accessories			
3 End covers for side contact hazard protection	2	**9341.070**	**9342.070**

PLS special busbars

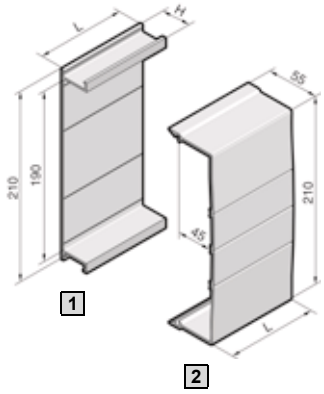
made from E-Cu

For Rittal system		Packs of	PLS 800	PLS 1600	Page
Cross-section			300 mm²	900 mm²	
Bar thickness			5 mm	10 mm	
Length mm	For enclosure width mm		**Model No. SV**	**Model No. SV**	
495	600[1]	3	**3524.000[2]**	**3527.000[2]**	
695	800[1]	3	**3525.000[2]**	**3528.000[2]**	
895	1000[1]	3	**3525.010[2]**	**3528.010[2]**	
1095	1200[1]	3	**3526.000[2]**	**3529.000[2]**	
2400	variable	1	**3509.000[2]**	**3516.000[2]**	
Accessories					
4 PLS busbar connector (single connection)		3	3504.000	3514.000	410
5 PLS busbar connector (bayed connection)[3]		3	3505.000	3515.000	410
6 PLS expansion connectors[4]		3	9320.060	9320.070	410

[1] For Rittal TS 8/ES enclosure systems.
[2] To order tin-plated version, please add extension .2X0 to the Model No. Delivery times available on request.
[3] From enclosure to enclosure.
[4] Two PLS rail connectors (single connection) are required to fit one expansion connector.

Busbar connection adaptors Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367 **OM/OT supports** Page 368/369
Component adaptors Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

System components (3-pole)



1 Base tray

For rear contact hazard protection of the PLS busbar assembly.

Length (L) mm	Packs of	Model No. SV For system	
		PLS 800	PLS 1600
500	2	**9341.100**	**9342.100**
700	2	**9341.110**	**9342.110**
900	2	**9341.120**	**9342.120**
1100	2	**9341.130**	**9342.130**
2400	1	**9341.170**	**9342.170**
Height (H) mm		32	43

2 Cover section

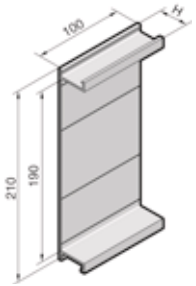
May be cut to length individually, for clip-on mounting to the base tray for PLS system 800 A and 1600 A.

Length (L) mm	Packs of	Model No. SV
700	2	**9340.200**
1100	2	**9340.210**

Base tray and cover section
Material:
Thermally modified hard PVC.
Continuous operating temperature max. 91°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Note:
If the cover section is mounted from the front, the support panel (SV 9340.220) is needed for stability.



Base tray infill

For rear contact hazard protection when connecting the busbars from enclosure to enclosure.

Material:
Thermally modified hard PVC.
Continuous operating temperature max. 91°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

For system	Height (H) mm	Packs of	Model No. SV
PLS 800	32	2	**9341.140**
PLS 1600	43	2	**9342.140**

Supply includes:
Assembly parts.



Base tray reinforcement

For clipping into the base tray.
Required when using OT adaptors or supports, see page 366/367 and 369.

Material:
Aluminium

Note:
Self-tapping screws (Model No. SZ 2487.000) for attaching the base tray reinforcement to the mounting level, see page 1011.

Length (L) mm	Packs of	Model No. SV For system	
		PLS 800	PLS 1600
500	2	**9341.150**	**9342.150**
1000	2	**9341.160**	**9342.160**



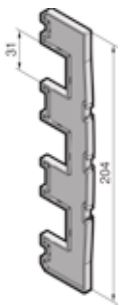
Support panel

for cover section
To prevent side access to the cover section. The support panel also provides additional stability.

Material:
Polyamide (PA 6.6).
Continuous operating temperature max. 105°C.
Fire protection corresponding to UL 94-V0.

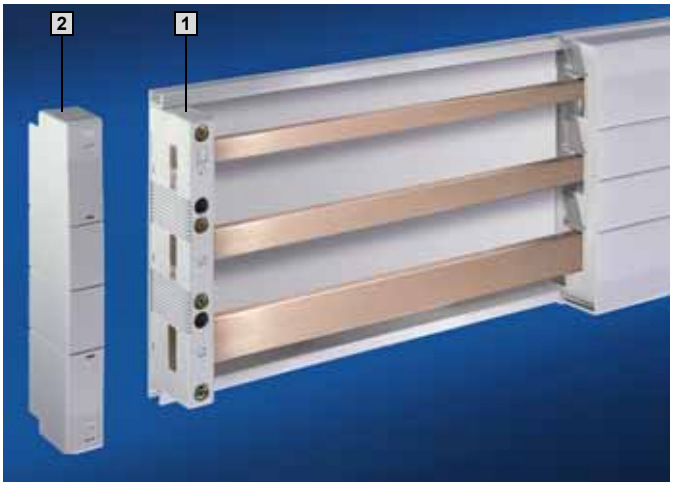
Colour:
RAL 7035

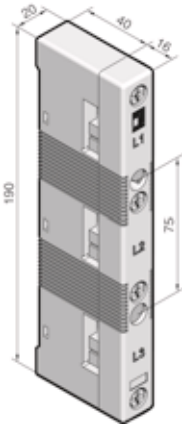
Packs of	Model No. SV
5	**9340.220**



Busbar connection adaptors Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367 **OM/OT supports** Page 368/369
Component adaptors Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

Busbar supports for feeder circuits 700 A (3-pole)





Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Short-circuit protection diagram,
see page 1230.

Note:
Data given in accordance with UL may deviate from IEC data, see page 1233 – 1235.

1 With attachment holes on the inside

Design	Packs of	1 Internal attachment	Page
Number of poles		3-pole	
Bar centre distance		60 mm	
For busbars E-Cu		15 x 5 – 30 x 10 mm	
Tightening torque ● Assembly screw (M5 x 16) ● Cover attachment		 3 – 5 Nm 1 – 3 Nm	
Model No. SV	4	**9340.050**	
Accessories			
2 End covers for contact hazard protection on the sides	2	**9340.070**	
Base tray			351
Cover section			351
Base tray infill			351
Base tray reinforcement			351
Support panel			351

Busbars E-Cu

To DIN EN 13 601.
Length: 2400 mm/bar.

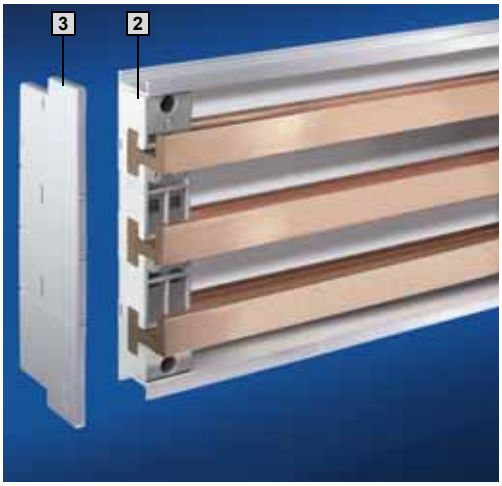
Dimensions mm	Rated current max. A	Packs of	**Model No. SV**	Page
15 x 5	175	6	**3581.000**	
15 x 10	350	6	**3581.100**	
20 x 5	230	6	**3582.000**	
20 x 10	465	6	**3585.000**	
25 x 5	290	6	**3583.000**	
30 x 5	350	6	**3584.000**[1)]	
30 x 10	700	6	**3586.000**[1)]	
Accessories				
Busbar cover section (length 1 m/each)		10	3092.000	408

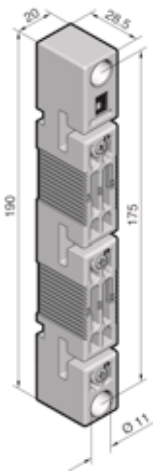
[1)] Tin-plated version available on request.

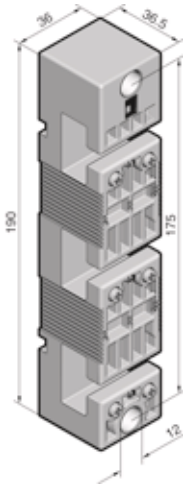
Busbar connection adaptors Page 356/357 **OM/OT adaptors** Page 364/365, 367 **OM/OT supports** Page 368/369 **Component adaptors** Page 370/371

PLS busbar supports for feeder circuits 700 A/1400 A (3-pole)









1 Rittal PLS 800

2 Rittal PLS 1600

Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Short-circuit protection diagram,
see page 1230.

Note:
Data given in accordance with UL may deviate from IEC data,
see page 1233 – 1235.

For Rittal system	Packs of	1 PLS 800	2 PLS 1600	Page
Number of poles		3-pole	3-pole	
Bar centre distance		60 mm	60 mm	
Tightening torque ● Assembly screw (M5 x 20) ● Busbar anti-slip guard		 3 – 5 Nm 0.7 Nm	 3 – 5 Nm 0.7 Nm	
Model No. SV	4	**9341.050**	**9342.050**	
Accessories				
3 End covers for contact hazard protection on the sides	2	**9341.070**	**9342.070**	
Base tray				353
Cover section				353
Base tray infill				353
Base tray reinforcement				353
Support panel				353

PLS special busbars

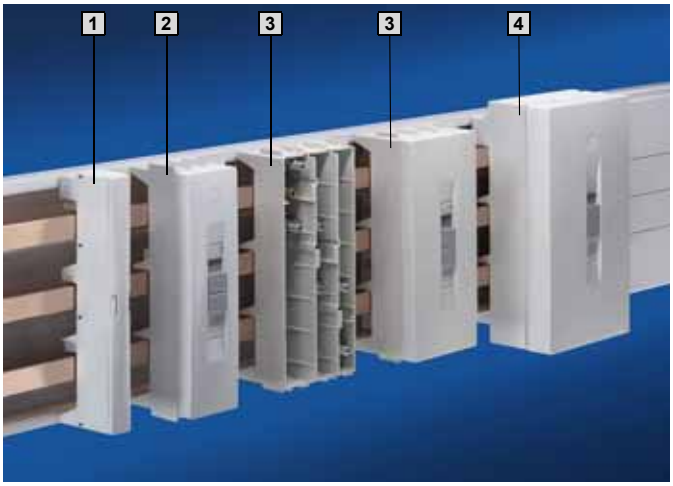
made from E-Cu

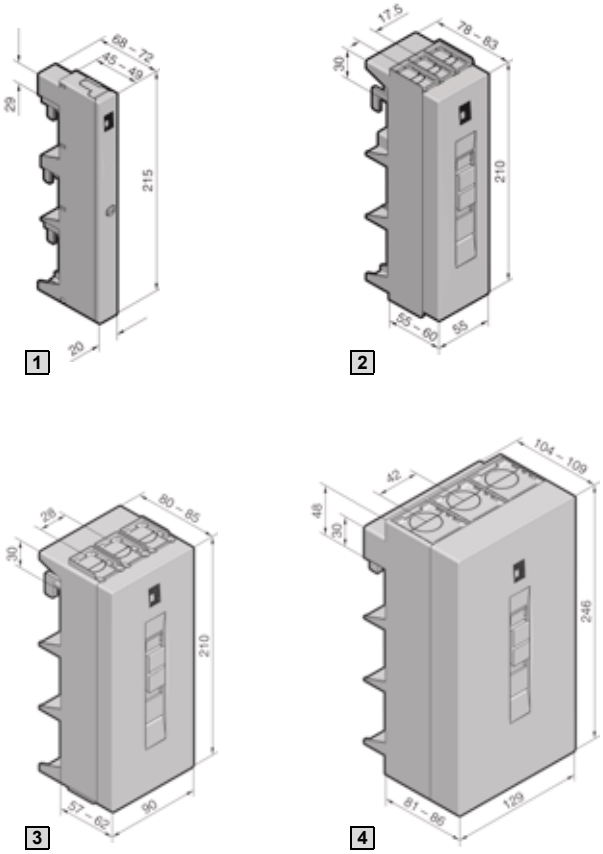
For Rittal system		Packs of	PLS 800	PLS 1600
Rated current max.			700 A	1400 A
Cross-section			300 mm²	900 mm²
Bar thickness			5 mm	10 mm
Length mm	For enclosure width mm		**Model No. SV**	**Model No. SV**
495	600[1)]	3	**3524.000[2)]**	**3527.000[2)]**
695	800[1)]	3	**3525.000[2)]**	**3528.000[2)]**
895	1000[1)]	3	**3525.010[2)]**	**3528.010[2)]**
1095	1200[1)]	3	**3526.000[2)]**	**3529.000[2)]**
2400	variable	1	**3509.000[2)]**	**3516.000[2)]**

[1)] For Rittal TS 8/ES enclosure systems.
[2)] To order tin-plated version, please add extension .2X0 to the Model No. Delivery times available on request.

Busbar connection adaptors Page 356/357 **OM/OT adaptors** Page 364/365, 367 **OM/OT supports** Page 368/369 **Component adaptors** Page 370/371

Busbar connection adaptors (3-pole)





Material:
Punched section
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.
Cover
ABS,
fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Supply includes:
Cover.

Note:
The technical data given in the tables may vary for UL applications;
see page 1235.

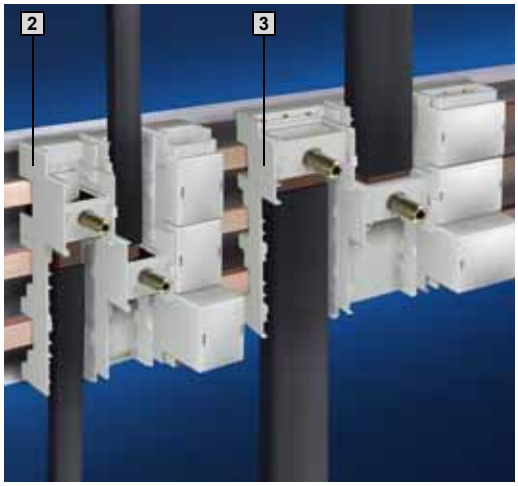
Version (3-pole)	Packs of	1	2	3	4	Page
Rated current up to		63 A	125 A	250 A	800 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	
Connection of round conductors ● Fine wire with wire end ferrule ● Multi-wire ● Solid		 2.5 – 10 mm² 2.5 – 16 mm² 2.5 – 16 mm²	 10 – 25 mm² 16 – 35 mm² –	 35 – 120 mm² 35 – 120 mm² –	 95 – 185 mm² 95 – 300 mm² –	
Clamping area for laminated copper bars		–	10 x 7.8 mm	18.5 x 15.5 mm	33 x 20 mm	
Tightening torque ● Assembly screw ● Terminal screw		 2 Nm 2.5 Nm	 2 Nm 2 – 3 Nm	 4 – 6 Nm 8 – 10 Nm	 6 Nm 12 – 14 Nm	
For bar thickness		5/10 mm	5/10 mm	5/10 mm	5/10 mm	
Outlet top/bottom **Model No. SV**	1	**–**	**9342.220**[1)]	**9342.250**	**9342.280**[1)]	
Outlet at top **Model No. SV**	1	**9342.200**	**9342.230**	**9342.260**	**9342.290**	
Outlet at bottom **Model No. SV**	1	**9342.210**	**9342.240**	**9342.270**	**9342.300**	
Accessories						
Laminated copper bars		–	■	■	■	411

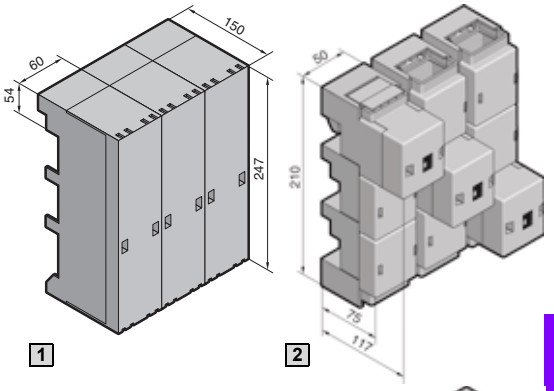
[1)] Not suitable for UL applications.

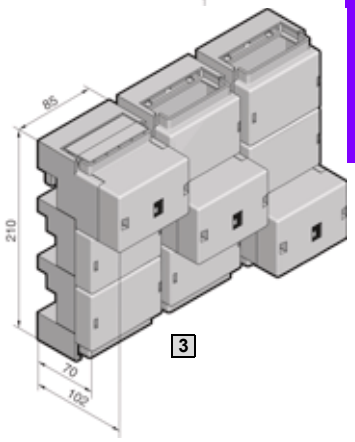
Busbar systems Page 350 – 355 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367 **OM/OT supports** Page 368/369
Component adaptors Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

Busbar connection adaptors (3-pole)









Material:
Punched section
SV 3439.010
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.
SV 9342.310/.320
Polyamide (PA 6.6), 25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.

Cover
ABS,
fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Supply includes:
Cover.

Note:
The technical data given in the tables may vary for UL applications;
see page 1235.

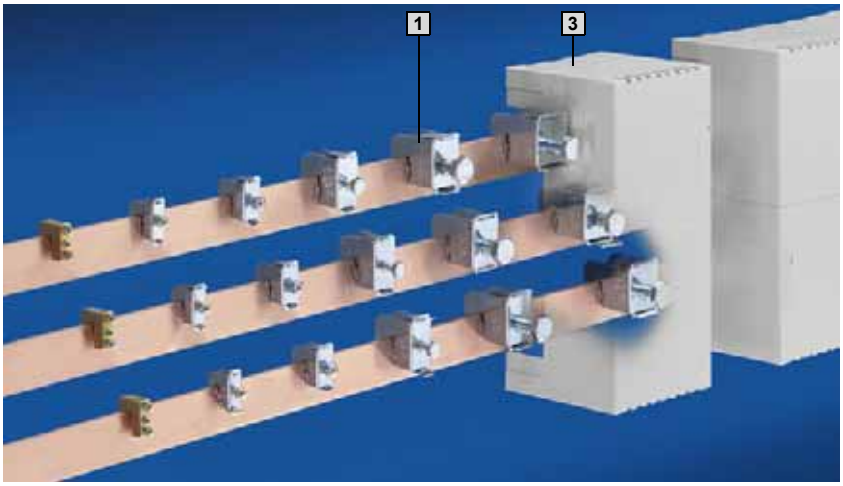
SV 3439.010
When connecting round conductors 300 mm² with ring terminal, the terminal clamps fitted as standard in the busbar connection adaptors must be replaced with screws and/or bolts M10.

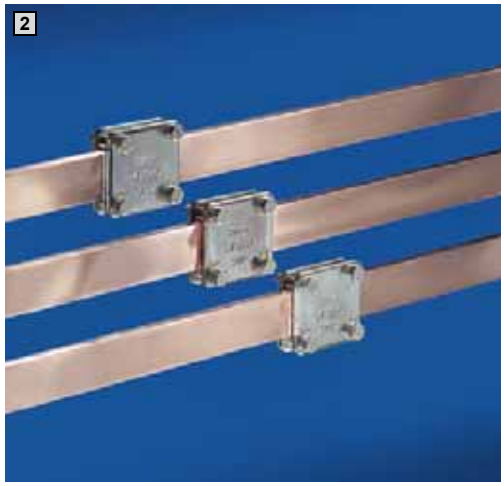
Version (3 x 1-pole)	Packs of	1	2	3	Page
Rated current up to		600 A	800 A	1600 A	
Rated operating voltage		690 V~	690 V~	690 V~	
Outlet		top/bottom	top/bottom	top/bottom	
Connection of round conductors ● Fine wire with wire end ferrule ● Multi-wire		 35 – 240 mm² 35 – 240 mm²	 95 – 185 mm² 95 – 300 mm²	 – –	
Clamping area for laminated copper bars ● with 5 mm bar thickness ● with 10 mm bar thickness		 24 x 21 mm 24 x 21 mm	 33 x 27 mm 33 x 22 mm	 65 x 27 mm 65 x 22 mm	
Tightening torque ● Assembly screw ● Terminal screw		 15 – 20 Nm 15 Nm	 – 12 – 14 Nm	 – 15 – 20 Nm	
For bar thickness		5/10 mm	5/10 mm	5/10 mm	
Model No. SV	1 set (of 3)	**3439.010**[1)]	**9342.310**	**9342.320**	
Accessories					
Laminated copper bars		■	■	■	411

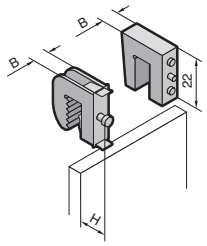
[1)] Not suitable for UL applications.

Busbar systems Page 350 – 355 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367 **OM/OT supports** Page 368/369
Component adaptors Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

Connection clamps/system covers







1 Conductor connection clamps

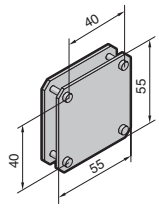
For bar thickness mm	Connection of round conductors[1] mm²	Clamping area for laminated copper bars mm	Tightening torque Nm	Width (B) mm	Height (H) mm min.	Height (H) mm max.	Packs of	Model No. SV
3 – 5	1 – 4	–	2	8.0	–	–	15	**3550.000**
5	1 – 4	–	2	11.0	17	23	15	**3450.500**
5	2.5 – 16	8 x 8	3	14.0	22	29	15	**3451.500**
5	16 – 50	10.5 x 11	6 – 8	18.5	26	39	15	**3452.500**
5	35 – 70	16.5 x 15	10 – 12	24.5	39	57	15	**3453.500**
5	70 – 185	22.5 x 20	12 – 15	30.5	44	66	15	**3454.500**
6 – 10	1 – 4	–	2	8.0	–	–	15	**3555.000**
10	1 – 4	–	2	11.0	17	23	15	**3455.500**
10	2.5 – 16	8 x 8	3	14.0	22	29	15	**3456.500**
10	16 – 50	10.5 x 11	6 – 8	18.5	26	39	15	**3457.500**
10	35 – 70	16.5 x 15	10 – 12	24.5	39	57	15	**3458.500**
10	70 – 185	22.5 x 20	12 – 15	30.5	44	66	15	**3459.500**

[1] Wire end ferrules should be used with fine wire conductors.

Material:
Sheet steel, zinc-plated, passivated
(SV 3450.500 – SV 3459.500),
Brass (SV 3550.000/SV 3555.000).

Accessories:

Laminated copper bars,
see page 411.



2 Plate clamp

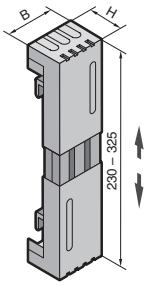
For busbars 12 x 5 – 30 x 10 mm.
Clamping area for laminated copper bars:
34 x 10 mm.
Tightening torque: 6 – 8 Nm.

Material:
Sheet steel, zinc-plated, passivated.

Packs of	Model No. SV
3	**3554.000**

Accessories:

Laminated copper bars,
see page 411.



3 System covers

For conductor connection clamps and plate clamps.

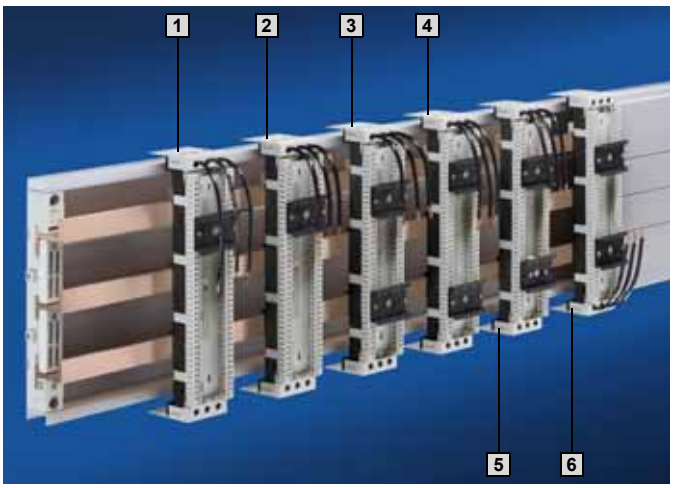
Material:
ABS.
Continuous operating temperature max. 80°C.
Fire protection corresponding to UL 94-V0.

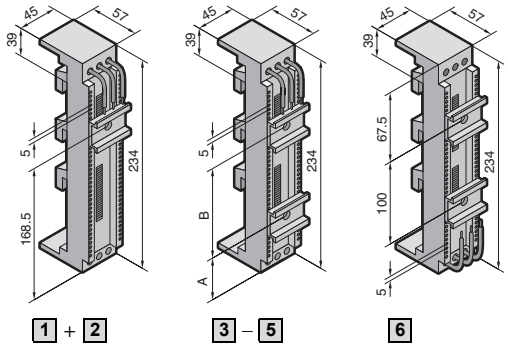
Note:
Only suitable for use with systems without a base tray.

Width (B) mm	Height (H) mm	Packs of	Model No. SV
50	80	4	**3086.000**
100	80	4	**3087.000**
100	110	4	**3090.000**
200	80	4	**3088.000**
200	110	4	**3091.000**

Busbar systems Page 350 – 355 **Busbar connection adaptors** Page 356/357 **OM/OT adaptors** Page 362 – 367 **OM/OT supports** Page 368/369
Component adaptors Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

Multi-functional component adaptors 12 A/25 A (3-pole)





Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035,
RAL 9011 (chassis)

Note:
Overview of standard switchgear with allocation of the relevant adaptor,
see page 1239.

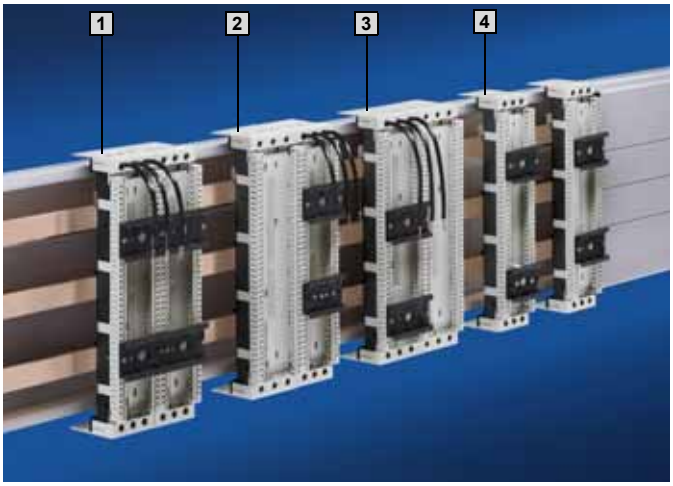
Current carrying capacity of the supply cables fitted as standard,
see page 1236.

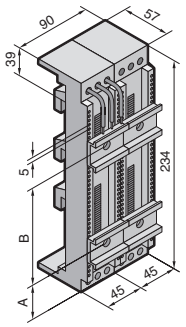
For snap-on mounting		1	2	3	4	5	6	Page
Construction width		45 mm	45 mm	45 mm	45 mm	45 mm	45 mm	
Rated current up to		12 A	25 A	25 A	25 A	25 A	25 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top	top	top	top	bottom	
Connection cables[1)]		AWG 14	AWG 12	AWG 12	AWG 12	AWG 12	AWG 12	
Support rails	Qty.	1	1	2	2	2 (1 variable)	2	
	Height	10 mm	10 mm	10 mm	10 mm	10 mm	10 mm	
	A	–	–	68.5 mm	55 mm	variable	–	
	B	–	–	100 mm	125 mm	variable	–	
Packs of		1	1	1	1	1	1	
For 5 mm bar thickness **Model No. SV**		**9320.160**	**9320.180**	**9320.200**	**9320.440**	**9320.220**	**9320.240**	
For 10 mm bar thickness **Model No. SV**		**9320.170**	**9320.190**	**9320.210**	**9320.450**	**9320.230**	**9320.250**	
Accessories	Packs of							
Support rails Width 45 mm, height 10 mm	5	9320.090	9320.090	9320.090	9320.090	9320.090	9320.090	404
Plug-in connector	1	9320.110	9320.110	9320.110	9320.110	9320.110	–	405
Mounting clip	5	9320.140	9320.140	9320.140	9320.140	9320.140	9320.140	405

[1)] AWG = American Wire Gauges
AWG 14 = 2.08 mm² ≙ 2.5 mm²
AWG 12 = 3.31 mm² ≙ 4 mm²

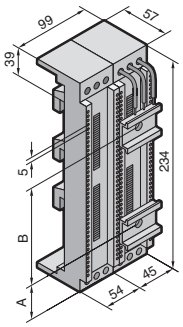
Busbar systems Page 350 – 353 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367
OM/OT supports Page 368/369 **Component adaptors** Page 370/371 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

Multi-functional component adaptors 25 A (3-pole)

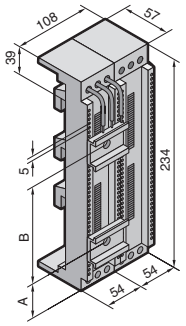




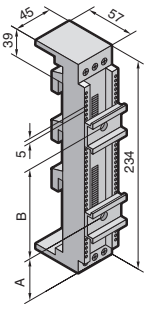
1



2



3



4

Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035,
RAL 9011 (chassis)

Note:
Overview of standard switchgear with allocation of the relevant adaptor,
see page 1239.

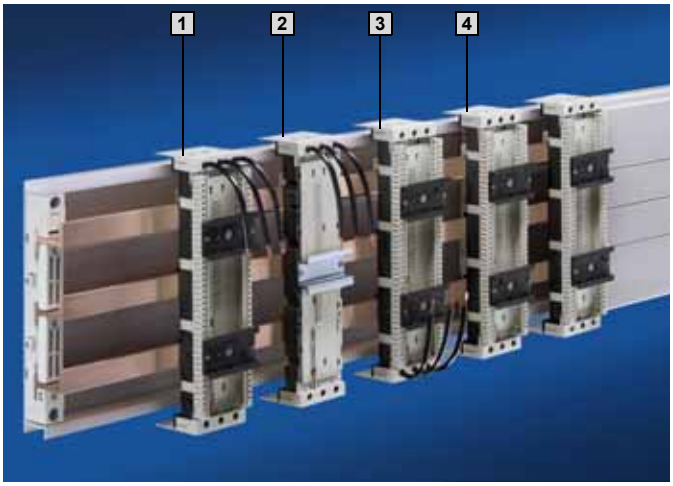
Current carrying capacity of the supply cables fitted as standard,
see page 1236.

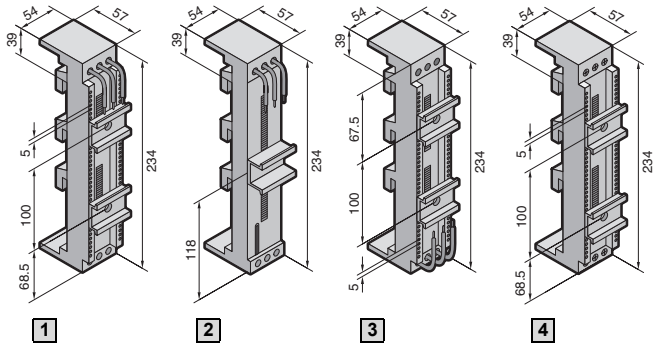
For snap-on mounting		1	2	3	4	4	Page
Construction width		90 mm	99 mm	108 mm	45 mm	45 mm	
Rated current up to		25 A	25 A	25 A	25 A	25 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top	top	top	top/bottom	
Connection cables[1)]		AWG 12	AWG 12	AWG 12	–	–	
Connection of round conductors up to		–	–	–	16 mm²	16 mm²	
Support rails	Qty.	2	2	2	2 (1 variable)	2	
	Height	10 mm	10 mm	10 mm	10 mm	10 mm	
	A	68.5 mm	43 mm	43 mm	variable	68.5 mm	
	B	100 mm	125 mm	90 mm	variable	100 mm	
Packs of		1	1	1	1	1	
For 5 mm bar thickness **Model No. SV**		**9320.380**	**9320.400**	**9320.420**	**9320.260**	**9320.280**	
For 10 mm bar thickness **Model No. SV**		**9320.390**	**9320.410**	**9320.430**	**9320.270**	**9320.290**	
Accessories	Packs of						
Support rails Width 45 mm, height 10 mm	5	9320.090	9320.090	–	9320.090	9320.090	404
Support rails Width 54 mm, height 10 mm	5	–	9320.100	9320.100	–	–	404
Plug-in connector	1	–	–	–	9320.110	–	405
Mounting clip	5	9320.140	9320.140	–	9320.140	9320.140	405

[1)] AWG = American Wire Gauges
AWG 12 = 3.31 mm² ≙ 4 mm²

Busbar systems Page 350 – 353 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367
OM/OT supports Page 368/369 **Component adaptors** Page 370/371 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

Multi-functional component adaptors 40 A (3-pole)





Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035,
RAL 9011 (chassis)

Note:
Overview of standard switchgear with allocation of the relevant adaptor,
see page 1239.

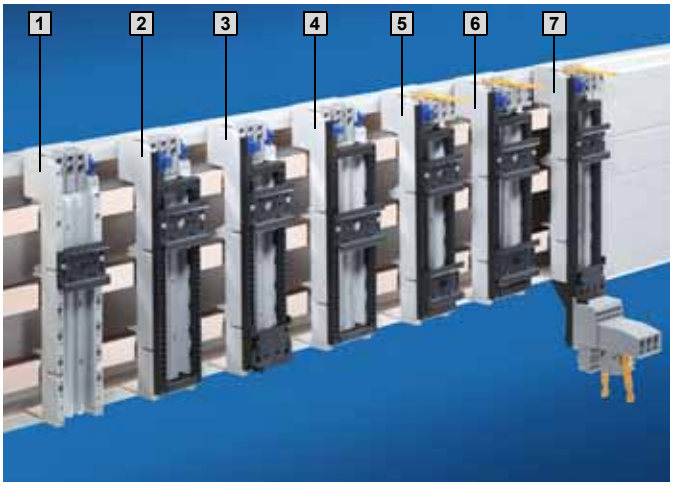
Current carrying capacity of the supply cables fitted as standard,
see page 1236.

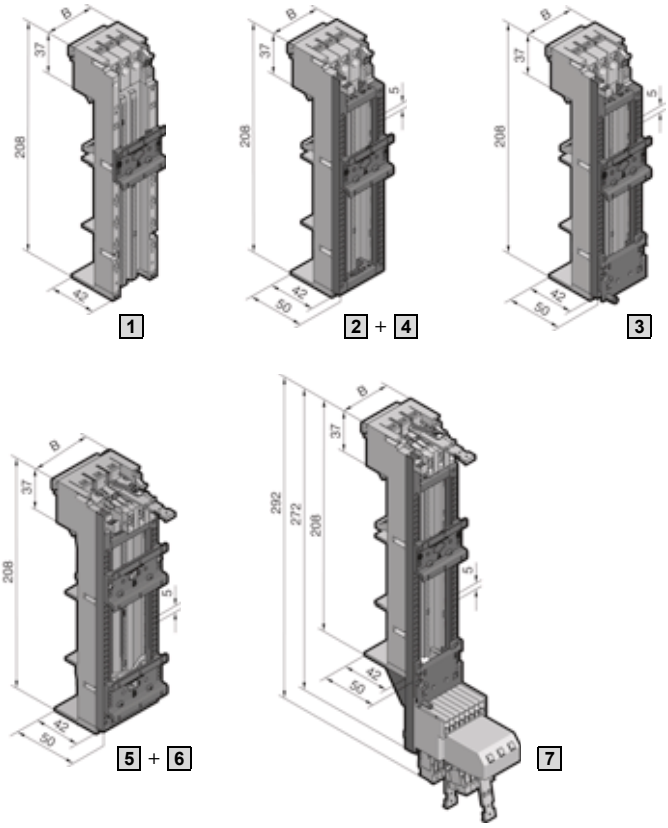
For snap-on mounting		1	2	3	4	4	Page
Construction width		54 mm	54 mm	54 mm	54 mm	54 mm	
Rated current up to		40 A	40 A	40 A	40 A	40 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top	bottom	top	top/bottom	
Connection cables[1)]		AWG 10	AWG 10	AWG 10	–	–	
Connection of round conductors up to		–	–	–	16 mm²	16 mm²	
Support rails	Qty.	2	1	2	2	2	
	Height	10 mm	15 mm	10 mm	10 mm	10 mm	
Packs of		1	1	1	1	1	
For 5 mm bar thickness **Model No. SV**		**9320.300**	**9320.460**	**9320.320**	**9320.340**	**9320.360**	
For 10 mm bar thickness **Model No. SV**		**9320.310**	**9320.470**	**9320.330**	**9320.350**	**9320.370**	
Accessories	Packs of						
Support rails Width 54 mm, height 10 mm	5	9320.100	–	9320.100	9320.100	9320.100	404

[1)] AWG = American Wire Gauges
AWG 10 = 5.26 mm² ≙ 6 mm²

Busbar systems Page 350 – 353 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367
OM/OT supports Page 368/369 **Component adaptors** Page 370/371 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

OM adaptors 32 A with tension spring clamp/OM Premium adaptors 25 A (3-pole)





Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035 (chassis)

Note:
Overview of standard commercially available switchgear with allocation of the relevant adaptor,
see page 1240.

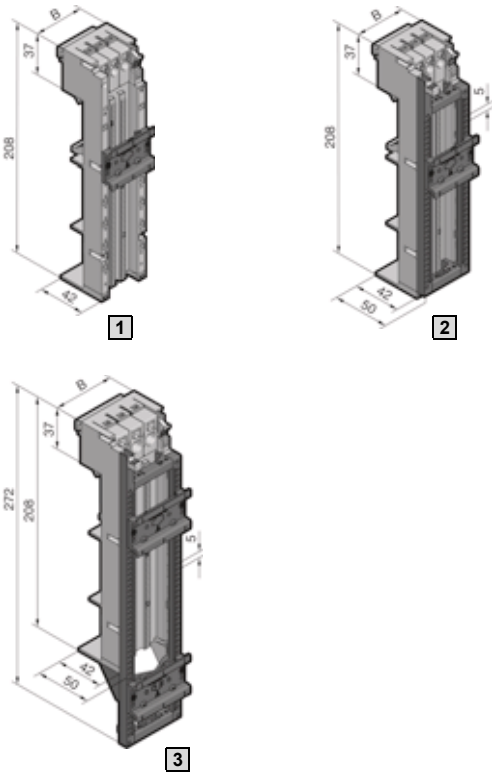
Design		Packs of	1	2	3	4	Premium adaptor 5	6	7	Page
Construction width (B)			45 mm	45 mm	45 mm	55 mm	45 mm	55 mm	45 mm	
Length			208 mm	208 mm	208 mm	208 mm	208 mm	208 mm	272 mm	
Rated current up to			32 A	32 A	32 A	32 A	25 A	25 A	25 A	
Rated operating voltage			690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	
Connection of round conductors			1.5 – 6 mm²	1.5 – 6 mm²	1.5 – 6 mm²	1.5 – 6 mm²	1.5 – 4 mm²	1.5 – 4 mm²	1.5 – 4 mm²	
With	Support frame		–	45 x 170 mm	45 x 170 mm	55 x 170 mm	45 x 170 mm	55 x 170 mm	45 x 237 mm	
	Support frame supports		–	–	–	–	–	–	■	
	PinBlock		–	–	■	–	–	–	■	
	Connector outlet		–	–	–	–	[1]	[1]	[2]	
Number of support rails, height 10 mm			1	1	1	1	2[3]	2[3]	1	
Support rail with anti-slip guard[4]			■	■	■	–	–	–	■	
For 5/10 mm bar thickness **Model No. SV**		1	**9340.510**	**9340.530**	**9340.550**	**9340.660**	**9340.910**	**9340.930**	**9340.900**	
Accessories										
Cable set for OM adaptor	AWG 14	15	9340.850	9340.850	9340.850	9340.850	9340.850	9340.850	9340.850	402
	AWG 12	15	9340.860	9340.860	9340.860	9340.860	9340.860	9340.860	9340.860	402
	AWG 10	15	9340.870	9340.870	9340.870	9340.870	–	–	–	402
	AWG 8	6	–	–	–	–	–	–	–	402
	AWG 6	6	–	–	–	–	–	–	–	402
Connection pin		20	9340.280	9340.280	9340.280	9340.280	9340.280	9340.280	9340.280	401
Insert strip 10 mm		2	9340.290	9340.290	9340.290	9340.290	9340.290	9340.290	9340.290	400
OM support	45 x 208 mm	1	9340.260	9340.260	9340.260	9340.260	9340.260	9340.260	9340.260	368
	55 x 208 mm	1	9340.270	9340.270	9340.270	9340.270	9340.270	9340.270	9340.270	368
Support frame										401
PinBlock for support frame										402
PinBlock Plus										402
Support rails										404/405
ST-Combi connector										403

[1] Supply includes: Connector with connection facility for 3 main contacts (1.5 – 4 mm²).
[2] Supply includes: Sub-unit with connection facility for 3 main contacts (1.5 – 4 mm²) and 8 auxiliary contacts (0.5 – 2.5 mm²) including connector.
[3] The lower support rail with special latch is secured from behind with the support frame loosened.
[4] Anti-slip guard for motor circuit-breaker brands Moeller, Siemens and Telemecanique. Without anti-slip guard for universal applications.

Busbar systems Page 350 – 353 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT supports** Page 368/369
Component adaptors Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

OM adaptors 65 A with tension spring clamp (3-pole)





Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035 (chassis)

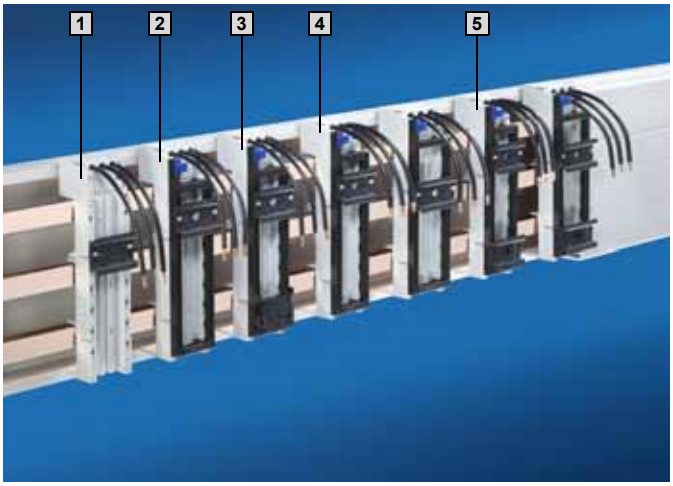
Note:
Overview of market switchgear with allocation of the relevant adaptor,
see page 1240.

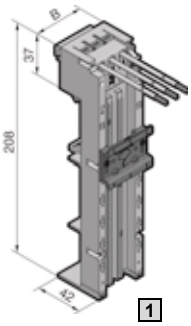
Design		Packs of	1	2	3	Page
Construction width (B)			55 mm	55 mm	55 mm	
Length			208 mm	208 mm	272 mm	
Rated current up to			65 A	65 A	65 A	
Rated operating voltage			690 V~	690 V~	690 V~	
Connection of round conductors			2.5 – 16 mm²	2.5 – 16 mm²	2.5 – 16 mm²	
With	Support frame		–	55 x 170 mm	55 x 237 mm	
	Support frame supports		–	–	■	
Number of support rails, height 10 mm			1	1	2[1]	
Support rail with anti-slip guard[2]			■	■	■	
For 5/10 mm bar thickness **Model No. SV**		1	**9340.610**	**9340.630**	**9340.650**	
Accessories						
Cable set for OM adaptor	AWG 14	15	9340.850	9340.850	9340.850	402
	AWG 12	15	9340.860	9340.860	9340.860	402
	AWG 10	15	9340.870	9340.870	9340.870	402
	AWG 8	6	9340.880	9340.880	9340.880	402
	AWG 6	6	9340.890	9340.890	9340.890	402
Connection pin		20	9340.280	9340.280	9340.280	401
Insert strip 10 mm		2	9340.290	9340.290	9340.290	400
OM support	45 x 208 mm	1	9340.260	9340.260	9340.260	368
	55 x 208 mm	1	9340.270	9340.270	9340.270	368
Support frame						401
PinBlock for support frame						402
PinBlock Plus						402
Support rails						404/405

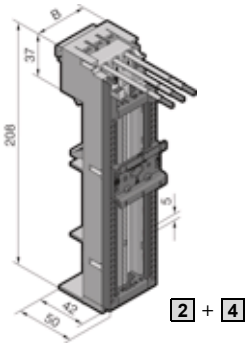
[1] The lower support rail with special latch is attached from the rear with the support frame loosened.
[2] Anti-slip guard for motor circuit-breaker brands Moeller, Siemens and Telemecanique. Without anti-slip guard for universal applications.

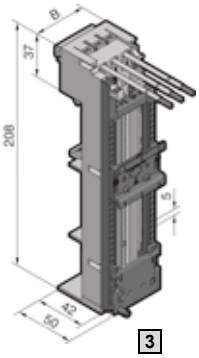
Busbar systems Page 350 – 353 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT supports** Page 368/369
Component adaptors Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

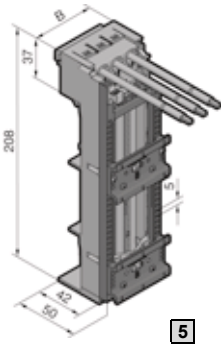
OM adaptors 25 A/32 A with connection cables (3-pole)











Material:
Polyamide (PA 6.6), 25 % fibreglass-reinforced. Continuous operating temperature max. 130°C. Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035 (chassis)

Note:
The technical data given in the tables may vary for UL applications;
see page 1235.

Overview of standard commercially available switchgear with allocation of the relevant adaptor,
see page 1241.

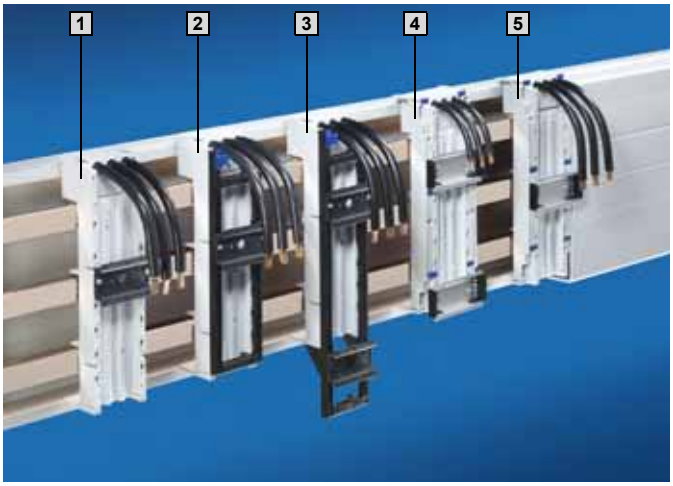
Current carrying capacity of the supply cables fitted as standard,
see page 1236.

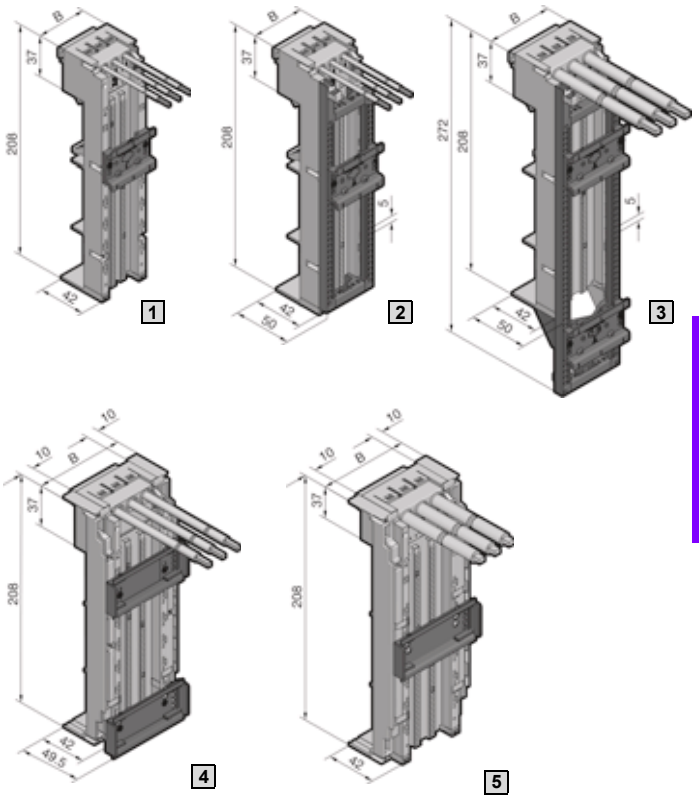
Design		Packs of	1	2	3	4	5	4	5	Page
Construction width (B)			45 mm	45 mm	45 mm	45 mm	45 mm	55 mm	55 mm	
Length			208 mm	208 mm	208 mm	208 mm	208 mm	208 mm	208 mm	
Rated current up to			25 A	25 A	25 A	32 A	32 A	32 A	32 A	
Rated operating voltage			690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	
Connection cables[1]			AWG 12	AWG 12	AWG 12	AWG 10	AWG 10	AWG 10	AWG 10	
With	Support frame		–	45 x 170 mm	45 x 170 mm	45 x 170 mm	45 x 170 mm	55 x 170 mm	55 x 170 mm	
	PinBlock		–	–	■	–	–	–	–	
Number of support rails, height	10 mm		1	1	1	1	2[2]	1	2[2]	
Support rail with anti-slip guard[3]			■	■	■	■	–	–	–	
For 5/10 mm bar thickness **Model No. SV**		1	**9340.310**	**9340.340**	**9340.370**	**9340.350**	**9340.380**	**9340.460**	**9340.470**	
Accessories										
Connection pin		20	9340.280	9340.280	9340.280	9340.280	9340.280	9340.280	9340.280	401
Insert strip 10 mm		2	9340.290	9340.290	9340.290	9340.290	9340.290	9340.290	9340.290	400
OM support	45 x 208 mm	1	9340.260	9340.260	9340.260	9340.260	9340.260	9340.260	9340.260	368
	55 x 208 mm	1	9340.270	9340.270	9340.270	9340.270	9340.270	9340.270	9340.270	368
Support frame										401
PinBlock for support frame										402
PinBlock Plus										402
Support rails										404/405

[1] AWG = American Wire Gauges
AWG 12 = 3.31 mm² ≙ 4 mm²
AWG 10 = 5.26 mm² ≙ 6 mm²
[2] The lower support rail with special latch is secured from behind with the support frame loosened.
[3] Anti-slip guard for motor circuit-breaker brands Moeller, Siemens and Telemecanique. Without anti-slip guard for universal applications.

Busbar systems Page 350 – 355 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT supports** Page 368/369
Component adaptors Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

OM adaptors 40 A/65 A with connection cables (3-pole)





Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035 (chassis)

Note:
The technical data given in the tables may vary for UL applications;
see page 1235.

Overview of standard commercially available switchgear with allocation of the relevant adaptor,
see page 1241.

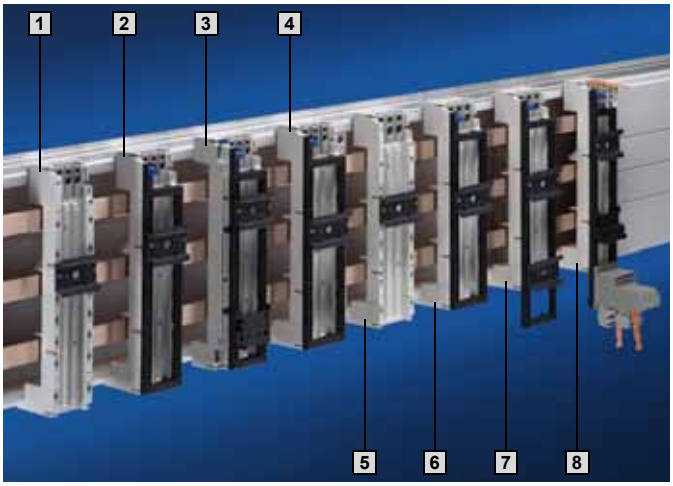
Current carrying capacity of the supply cables fitted as standard,
see page 1236.

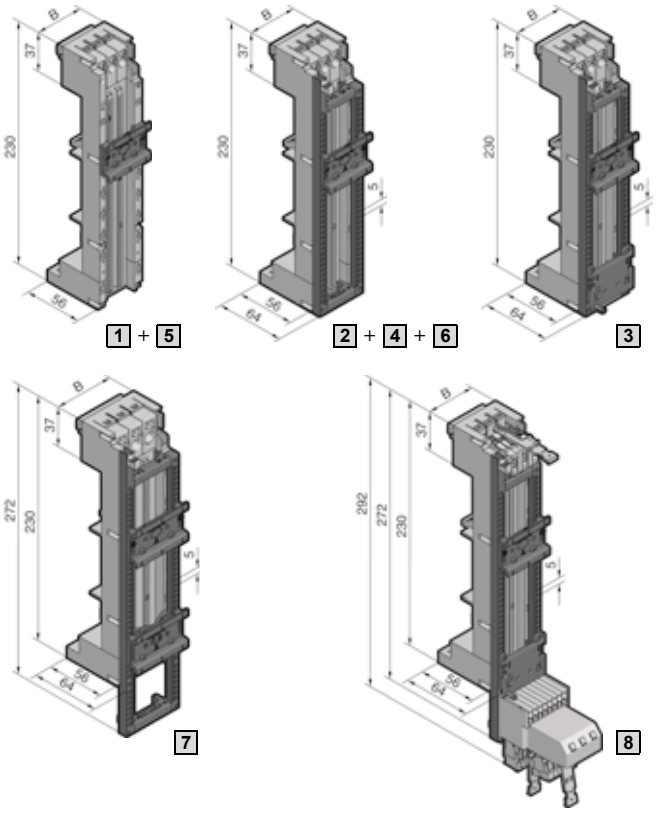
Design		Packs of	1	2	3	4	5	Page
Construction width (B)			55 mm	55 mm	55 mm	75 mm	75 mm	
Length			208 mm	208 mm	272 mm	208 mm	208 mm	
Rated current up to			65 A	65 A	65 A	40 A	65 A	
Rated operating voltage			690 V~	690 V~	690 V~	690 V~	690 V~	
Connection cables[1]			AWG 6	AWG 6	AWG 6	AWG 8	AWG 6	
With	Support frame		–	55 x 170 mm	55 x 237 mm	–	–	
	Support frame supports		–	–	■	–	–	
	Insert strips		–	–	–	■	■	
Number of support rails, height	10 mm		1	1	2[2]	–	–	
	7.5 mm		–	–	–	2	1	
Support rail with anti-slip guard[3]			■	■	■	–	–	
For 5/10 mm bar thickness **Model No. SV**		1	**9340.410**	**9340.430**	**9340.450**	**9340.710**	**9340.700**	
Accessories								
Connection pin		20	9340.280	9340.280	9340.280	9340.280	9340.280	401
Insert strip 10 mm		2	9340.290	9340.290	9340.290	9340.290	9340.290	400
OM support	45 x 208 mm	1	9340.260	9340.260	9340.260	9340.260	9340.260	368
	55 x 208 mm	1	9340.270	9340.270	9340.270	9340.270	9340.270	368
Support frame								401
PinBlock for support frame								402
PinBlock Plus								402
Support rails								404/405

[1] AWG = American Wire Gauges
AWG 8 = 8.37 mm² ≙ 10 mm²
AWG 6 = 13.3 mm² ≙ 16 mm²
[2] The lower support rail with special latch is secured from behind with the support frame loosened.
[3] Anti-slip guard for motor circuit-breaker brands Moeller, Siemens and Telemecanique. Without anti-slip guard for universal applications.

Busbar systems Page 350 – 355 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT supports** Page 368/369
Component adaptors Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

OT adaptors 32 A/65 A with tension spring clamp/OT Premium adaptors 25 A (3-pole)





Material:
Polyamide (PA 6.6), 25 % fibreglass-reinforced. Continuous operating temperature max. 130°C. Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035 (chassis)

Note:
OT adaptors may only be used with 10 mm thick busbars or Rittal PLS 800/1600. Maximum support spacing 300 mm.

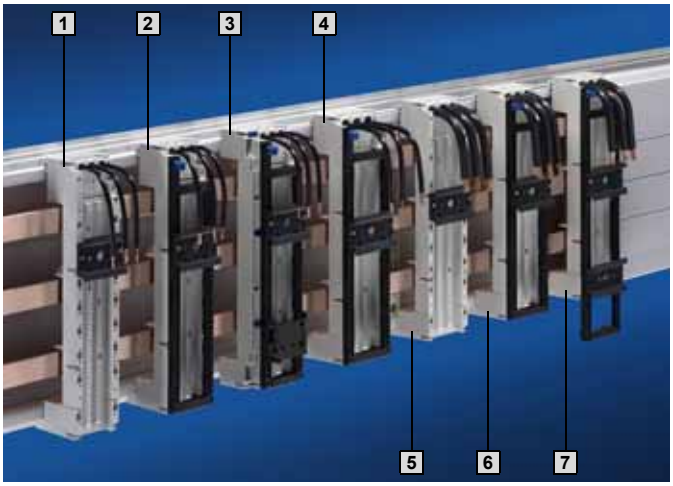
Overview of standard commercially available switchgear with allocation of the relevant adaptor,
see page 1242.

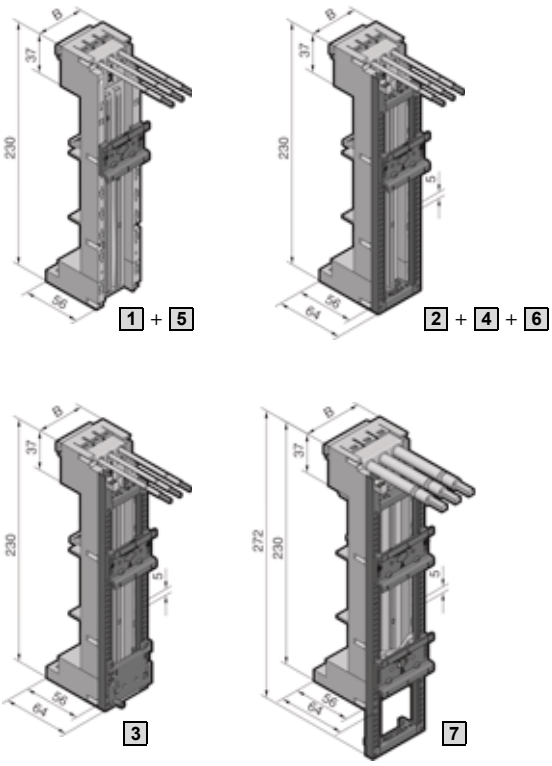
Design		Packs of	1	2	3	4	5	6	7	Premium adaptor 8	Page
Construction width (B)			45 mm	45 mm	45 mm	55 mm	55 mm	55 mm	55 mm	45 mm	
Length			230 mm	230 mm	230 mm	230 mm	230 mm	230 mm	272 mm	272 mm	
Rated current up to			32 A	32 A	32 A	32 A	65 A	65 A	65 A	25 A	
Rated operating voltage			690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	
Connection of round conductors			1.5 – 6 mm²	1.5 – 6 mm²	1.5 – 6 mm²	1.5 – 6 mm²	2.5 – 16 mm²	2.5 – 16 mm²	2.5 – 16 mm²	1.5 – 4 mm²	
With	Support frame		–	45 x 195 mm	45 x 195 mm	55 x 195 mm	–	55 x 195 mm	55 x 237 mm	45 x 237 mm	
	PinBlock		–	–	■	–	–	–	–	■	
	Connector outlet[1]		–	–	–	–	–	–	–	■	
Number of support rails, height 10 mm			1	1	1	1	1	1	2[2]	1	
Support rail with anti-slip guard[3]			■	■	■	–	■	■	■	■	
For 5/10 mm bar thickness **Model No. SV**		1	**9341.510**	**9341.530**	**9341.550**	**9341.660**	**9341.610**	**9341.630**	**9341.650**	**9341.900**	
Also required											
Base tray											351, 353
Base tray reinforcement											351, 353
Accessories											
Cable set for OT adaptor	AWG 14	15	9340.850	9340.850	9340.850	9340.850	9340.850	9340.850	9340.850	9340.850	402
	AWG 12	15	9340.860	9340.860	9340.860	9340.860	9340.860	9340.860	9340.860	9340.860	402
	AWG 10	15	9340.870	9340.870	9340.870	9340.870	9340.870	9340.870	9340.870	–	402
	AWG 8	6	–	–	–	–	9340.880	9340.880	9340.880	–	402
	AWG 6	6	–	–	–	–	9340.890	9340.890	9340.890	–	402
Connection pin		20	9340.280	9340.280	9340.280	9340.280	9340.280	9340.280	9340.280	9340.280	401
Insert strip 10 mm		2	9341.290	9341.290	9341.290	9341.290	9341.290	9341.290	9341.290	9341.290	400
OT support	45 x 230 mm	1	9341.260	9341.260	9341.260	9341.260	9341.260	9341.260	9341.260	9341.260	369
	55 x 230 mm	1	9341.270	9341.270	9341.270	9341.270	9341.270	9341.270	9341.270	9341.270	369
Support frame											401
PinBlock for support frame											402
PinBlock Plus											402
Support rails											404/405
ST-Combi connector											403

[1] Supply includes: Sub-unit with connection facility for 3 main contacts (1.5 – 4 mm²) and 8 auxiliary contacts (0.5 – 2.5 mm²) including connector.
[2] The lower support rail with special latch is secured from behind with the support frame loosened.
[3] Anti-slip guard for motor circuit-breaker brands Moeller, Siemens and Telemecanique. Without anti-slip guard for universal applications.

Busbar systems Page 350 – 353 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT supports** Page 368/369
Component adaptors Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

OT adaptors 25 A/32 A/65 A with connection cables (3-pole)





Material:
Polyamide (PA 6.6), 25 % fibreglass-reinforced. Continuous operating temperature max. 130°C. Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035 (chassis)

Note:
OT adaptors may only be used with 10 mm thick busbars or Rittal PLS 800/1600. Maximum support spacing 300 mm.

The technical data given in the tables may vary for UL applications;
see page 1235.

Overview of standard commercially available switchgear with allocation of the relevant adaptor,
see page 1243.

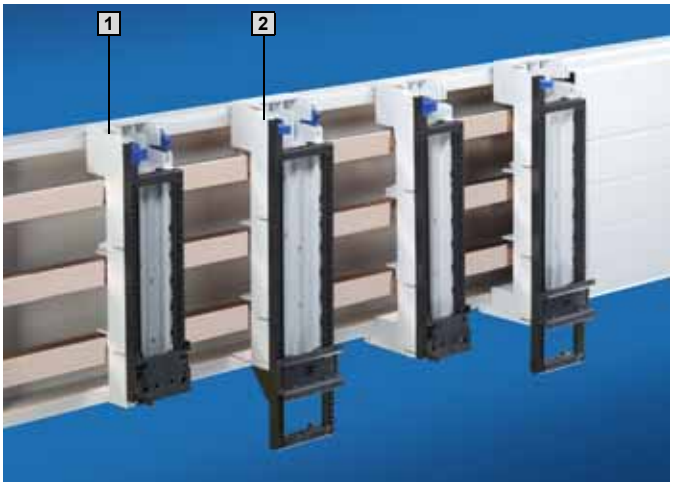
Current carrying capacity of the supply cables fitted as standard,
see page 1236.

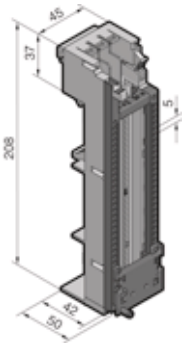
Design		Packs of	1	2	3	4	5	6	7	Page
Construction width (B)			45 mm	45 mm	45 mm	55 mm	55 mm	55 mm	55 mm	
Length			230 mm	230 mm	230 mm	230 mm	230 mm	230 mm	272 mm	
Rated current up to			25 A	25 A	25 A	32 A	65 A	65 A	65 A	
Rated operating voltage			690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	
Connection cables[1]			AWG 12	AWG 12	AWG 12	AWG 10	AWG 6	AWG 6	AWG 6	
With	Support frame		–	45 x 195 mm	45 x 195 mm	55 x 195 mm	–	55 x 195 mm	55 x 237 mm	
	PinBlock		–	–	■	–	–	–	–	
Number of support rails, height 10 mm			1	1	1	1	1	1	2[2]	
Support rail with anti-slip guard[3]			■	■	■	–	■	■	■	
For 5/10 mm bar thickness **Model No. SV**		1	**9341.310**	**9341.340**	**9341.370**	**9341.460**	**9341.410**	**9341.430**	**9341.450**	
Also required										
Base tray										351, 353
Base tray reinforcement										351, 353
Accessories										
Connection pin		20	9340.280	9340.280	9340.280	9340.280	9340.280	9340.280	9340.280	401
Insert strip 10 mm		2	9341.290	9341.290	9341.290	9341.290	9341.290	9341.290	9341.290	400
OT support	45 x 230 mm	1	9341.260	9341.260	9341.260	9341.260	9341.260	9341.260	9341.260	369
	55 x 230 mm	1	9341.270	9341.270	9341.270	9341.270	9341.270	9341.270	9341.270	369
Support frame										401
PinBlock for support frame										402
PinBlock Plus										402
Support rails										404/405

[1] AWG = American Wire Gauges
AWG 12 = 3.31 mm² ≙ 4 mm²
AWG 10 = 5.26 mm² ≙ 6 mm²
AWG 6 = 13.3 mm² ≙ 16 mm²
[2] The lower support rail with special latch is secured from behind with the support frame loosened.
[3] Anti-slip guard for motor circuit-breaker brands Moeller, Siemens and Telemecanique. Without anti-slip guard for universal applications.

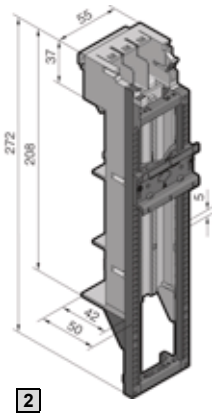
Busbar systems Page 350 – 355 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT supports** Page 368/369
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OM supports without contact system (3-pole)





1



2

Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035 (chassis)

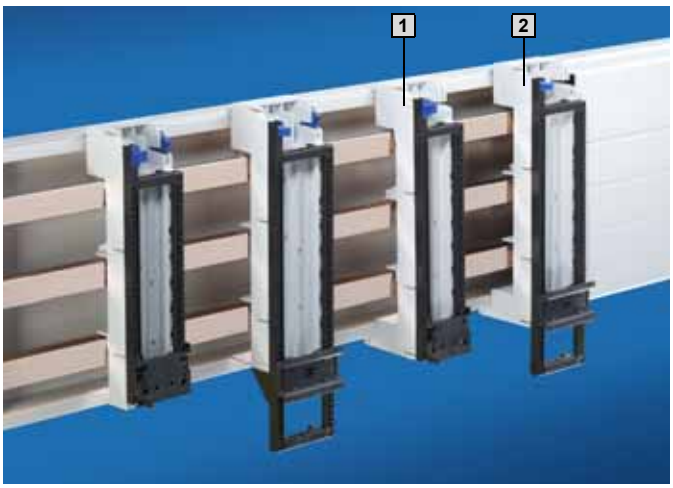
Note:
Suitable for use in UL applications.

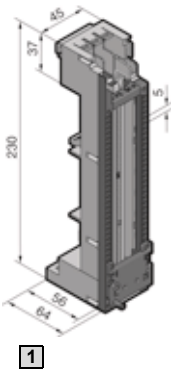
Design		Packs of	1	2	Page
Construction width			45 mm	55 mm	
Length			208 mm	272 mm	
With	Support frame		45 x 170 mm	55 x 237 mm	
	Support frame supports		–	■	
	PinBlock		■	–	
Number of support rails, height 10 mm			–	1[1)]	
For 5/10 mm bar thickness **Model No. SV**		1	**9340.260**	**9340.270**	
Accessories					
Connection pin		20	9340.280	9340.280	401
Insert strip 10 mm		2	9340.290	9340.290	400
Support frame					401
PinBlock for support frame					402
PinBlock Plus					402
Support rails					404/405

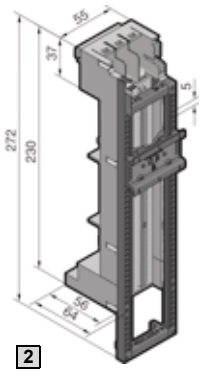
[1)] The support rail with special latch is attached from the rear with the support frame loosened.

Busbar systems Page 350 – 355 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367
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OT supports without contact system (3-pole)







Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035 (chassis)

Note:
OT supports may only be used with 10 mm thick busbars or Rittal PLS 800/1600. Maximum support spacing 300 mm.

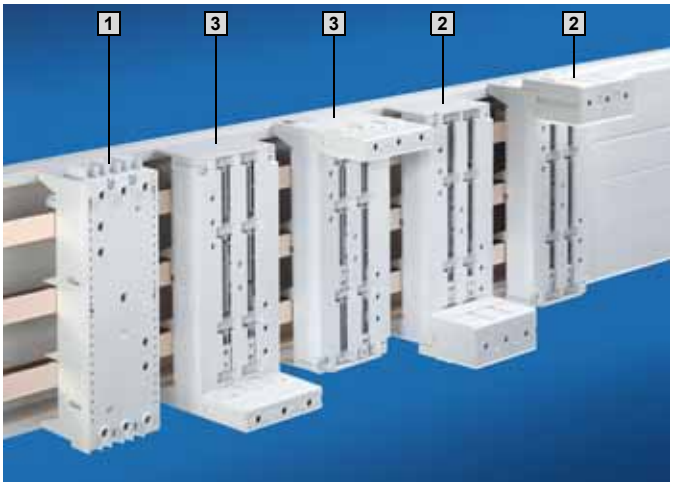
Suitable for use in UL applications.

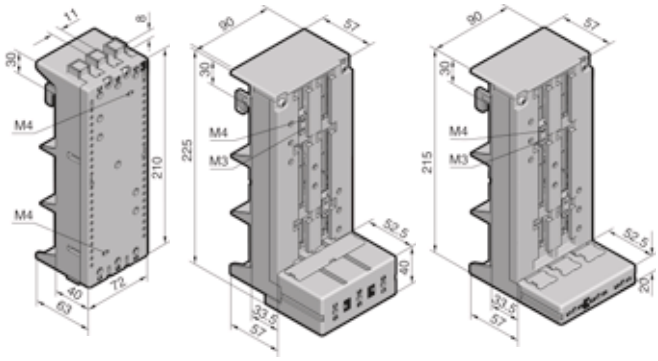
Design		Packs of	1	2	Page
Construction width			45 mm	55 mm	
Length			230 mm	272 mm	
With	Support frame		45 x 195 mm	55 x 237 mm	
	PinBlock		■	–	
Number of support rails, height 10 mm			–	1[1)]	
For 5/10 mm bar thickness **Model No. SV**		1	**9341.260**	**9341.270**	
Also required					
Base tray					351, 353
Base tray reinforcement					351, 353
Accessories					
Connection pin		20	9340.280	9340.280	401
Insert strip 10 mm		2	9341.290	9341.290	400
Support frame					401
PinBlock for support frame					402
PinBlock Plus					402
Support rails					404/405

[1)] The support rail with special latch is attached from the rear with the support frame loosened.

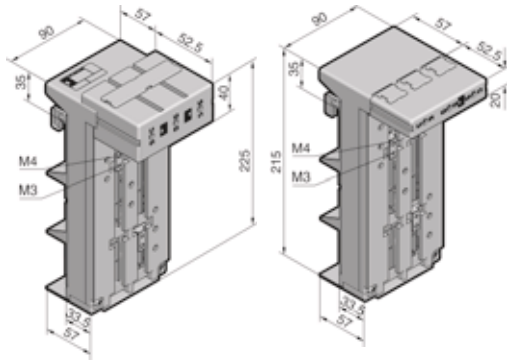
Busbar systems Page 350 – 355 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367
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Component adaptors 100 A/circuit-breaker component adaptors 125 A, 160 A (3-pole)





1 SV 9342.400/ SV 9342.410 | 2 SV 9342.540 | 3 SV 9342.500



2 SV 9342.550 | 3 SV 9342.510

Material:
Polyamide (PA 6.6), 25 % fibreglass-reinforced. Continuous operating temperature max. 130°C. Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Supply includes Circuit-breaker component adaptor:
Terminal cover and sliding blocks for switchgear attachment.

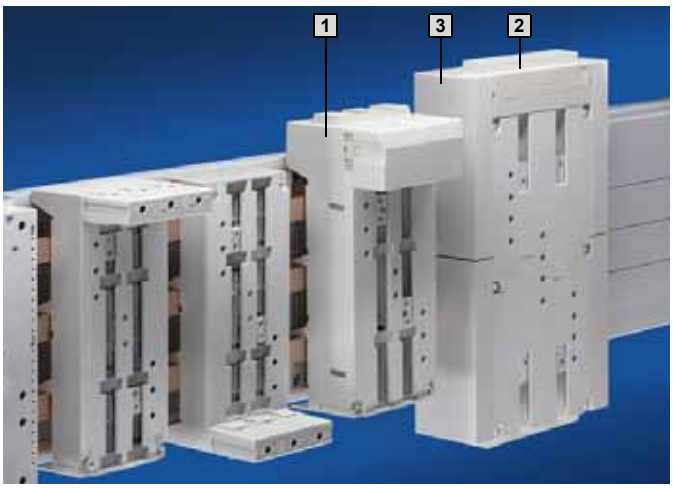
Note:
The technical data given in the tables may vary for UL applications;
see page 1235.

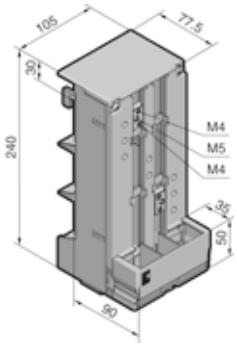
Design		Packs of	1 Component adaptor	2 Circuit-breaker component adaptor	3 Circuit-breaker component adaptor	Page
Construction width			72 mm	90 mm	90 mm	
Length			210 mm	225 mm	215 mm	
Rated current up to			100 A	125 A	160 A	
Rated operating voltage			690 V~	690 V~		
Connection clamp			Box terminal	Box terminal		
Connection of round conductors			10 – 35 mm²	35 – 120 mm²		
Clamping area for laminated copper bars			10 x 7.8 mm	18.5 x 15.5 mm		
Tightening torque ● Terminal screw ● Bar attachment			2 – 3 Nm 2 Nm	8 – 10 Nm 4 – 6 Nm		
For switchgear make/model	ABB		MS 497	S2, T1, T2		
	GE		–	FD		
	Merlin Gerin		–	NS80, NSC100		
	Moeller Electric		PKZ2[1]	NZM1		
	Siemens		S3	–		
	Telemecanique		GV3[1]	–		
	Universal application		■ [1]	–		
For bar thickness			5/10 mm	5/10 mm		
Cable outlet at the top[2] **Model No. SV**		1	**9342.400**	**9342.540**	**9342.500**[3]	
Cable outlet at the bottom[2] **Model No. SV**		1	**9342.410**	**9342.550**	**9342.510**[3]	
Accessories						
Support rail Width 72 mm, height 15 mm		5	9320.120	–	–	405
Sliding block		6	–	9342.560	9342.560	401
Connection bracket			–	■	■	403

[1] Mounting only possible with support rail SV 9320.120.
[2] Switch outlet or outgoing cable.
[3] Not suitable for UL applications.

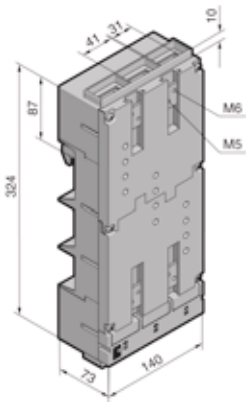
Busbar systems Page 350 – 355 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367
OM/OT supports Page 368/369 **Component adaptors** Page 359 – 361 **Bus-mounting fuse bases** Page 372/373 **NH fused isolators** Page 374
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Circuit-breaker component adaptors 250 A/630 A (3-pole)

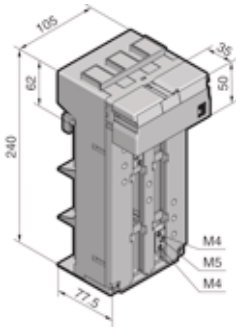




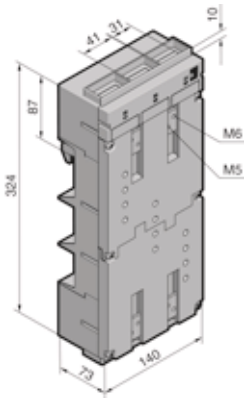
1 SV 9342.600



2 SV 9342.700



1 SV 9342.610



2 SV 9342.710

Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Supply includes:
Terminal cover and sliding blocks for switchgear attachment.

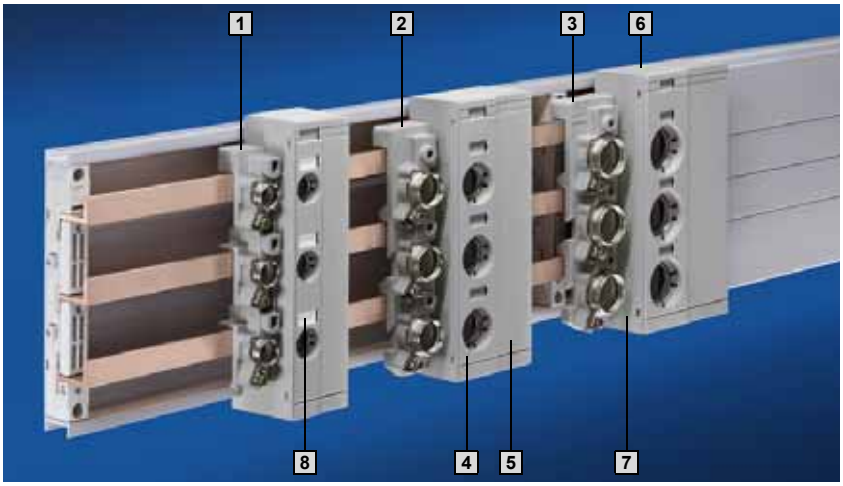
Note:
The technical data given in the tables may vary for UL applications;
see page 1235.

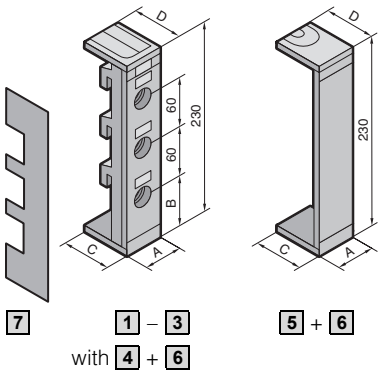
Design		Packs of	1	2	Page
Construction width			105 mm	140 mm	
Length			240 mm	324 mm	
Rated current up to			250 A	630 A[2)]	
Rated operating voltage			690 V~	690 V~	
Connection clamp			Box terminal	Screw terminal M10	
Connection of round conductors			35 – 120 mm²	max. 150 mm²[3)]	
Clamping area for laminated copper bars			18.5 x 15.5 mm	32 x 10 mm	
Tightening torque ● Terminal screw ● Bar attachment			 8 – 10 Nm 4 – 6 Nm	 30 – 32 Nm 12 – 14 Nm	
For switchgear make/model	ABB		S3, T3, T4	S5, T5	
	GE		FE	–	
	Merlin Gerin		NS100, NS160, NS250	NS400, NS630	
	Moeller Electric		NZM2	NZM3	
	Siemens		VL160X, VL160, VL250	VL400, VL630[4)]	
	Telemecanique		GV7	–	
For bar thickness			5/10 mm	5/10 mm	
Cable outlet at the top[1)] **Model No. SV**		1	**9342.600**	**9342.700**	
Cable outlet at the bottom[1)] **Model No. SV**		1	**9342.610**	**9342.710**	
Accessories					
3 Insert strip 25 mm to extend the construction width from 140 mm to 190 mm		4 (1 set)	–	9342.720	400
Sliding block		6	9342.640	–	401
Connection bracket			■	■	403

[1)] Switch outlet or outgoing cable.
[2)] Derating may be necessary, depending on the application.
[3)] With ring terminal.
[4)] Also required: Insert strip 25 mm (SV 9342.720).

Busbar systems Page 350 – 355 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367
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NH bus-mounting on-load isolators Page 375 – 379 **Accessories** Page 400 – 411

Bus-mounting fuse bases (3-pole)





Material:
Bus-mounting fuse base:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Contact hazard protection cover:
Polyamide (PA 6.6).
Continuous operating temperature max. 105°C.
Fire protection corresponding to UL 94-V0.

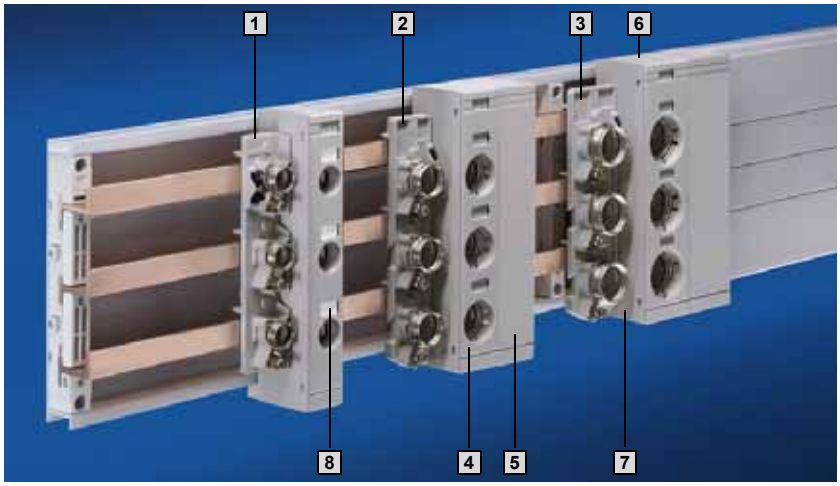
Colour:
RAL 7035

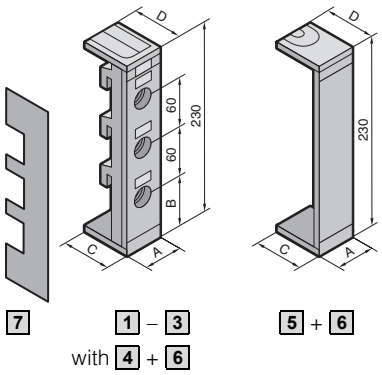
For clamping screw attachment	Packs of	1	2	3
Type		D 02-E 18 (adaptor sleeve)	D II-E 27 (adaptor screw)	D III-E 33 (adaptor screw)
Width (A)		27 mm	42 mm	57 mm
Rated current		63 A	25 A	63 A
Rated operating voltage		400 V~	500 V~	690 V~
Terminal for round conductors[1]		1.5 – 16 mm²	1.5 – 16 mm²	1.5 – 16 mm²
Tightening torque ● Assembly screw ● Terminal screw		 2 Nm 2.5 Nm	 2 Nm 2.5 Nm	 2 Nm 2.5 Nm
For 5/10 mm bar thickness **Model No. SV**	10	**3418.000**	**3427.000**	**3433.000**
Accessories				
4 **Contact hazard protection cover** **Model No. SV**	10	**3419.000**	**3428.000**	**3434.000**
5 **Extension cover** **Model No. SV**	10	**3421.000**	**3430.000**	**3436.000**
6 **End caps** for rail system with base tray **Model No. SV**	10	**3420.010**	**3429.010**	**3435.010**
End caps for rail system without base tray **Model No. SV**	10	**3420.000**	**3429.000**	**3435.000**
7 **Side cover** **Model No. SV**	10	**3093.000**	**3093.000**	**3093.000**
8 **Identification labels** **Model No. SV**	100	**9320.080**	**9320.080**	**9320.080**
Width (A) mm		27	42	57
Spacing (B) mm		57	40	40
Depth (C) mm[2]		67	71.5	71.5
Depth (D) mm[3] for rail system – with base tray		47	51.5	51.5
Depth (D) mm[3] for rail system – without base tray		67	71.5	71.5

[1] Wire end ferrules should be used with fine wire conductors.
[2] Bottom end cap
[3] Top end cap

Busbar systems Page 350 – 353 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367
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Bus-mounting fuse bases (3-pole)





7 | 1 – 3 with 4 + 6 | 5 + 6

Material:
Bus-mounting fuse base:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Contact hazard protection cover:
Polyamide (PA 6.6).
Continuous operating temperature: max. 105°C.
Fire protection corresponding to UL 94-V0.

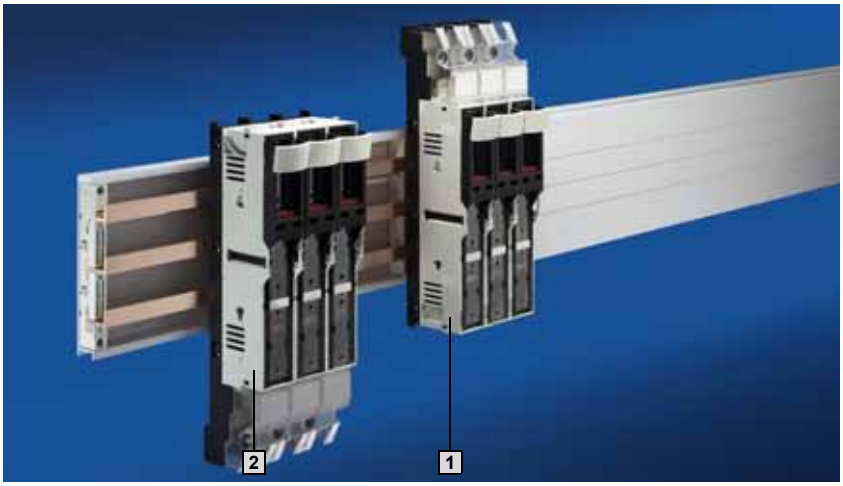
Colour:
RAL 7035

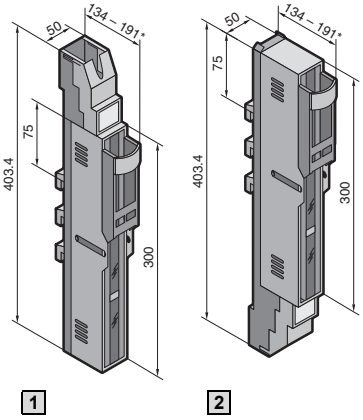
For snap-on mounting	Packs of	1	2	3
Type		D 02-E 18 (adaptor sleeve)	D II-E 27 (gauge ring)	D III-E 33 (gauge ring)
Width (A)		36 mm	42 mm	57 mm
Rated current		63 A	25 A	63 A
Rated operating voltage		400 V~	500 V~	690 V~
Terminal for round conductors[1]		1.5 – 16 mm²	1.5 – 16 mm²	1.5 – 16 mm²
Tightening torque ● Terminal screw		2.5 Nm	2.5 Nm	2.5 Nm
For 5 mm bar thickness **Model No. SV**	10	**3422.000**	**3520.000**	**3530.000**
For 10 mm bar thickness **Model No. SV**	10	**3423.000**	**3521.000**	**3531.000**
Accessories				
4 **Contact hazard protection cover** **Model No. SV**	10	**3424.000**	**3428.000**	**3434.000**
5 **Extension cover** **Model No. SV**	10	**–**	**3430.000**	**3436.000**
6 **End caps** for rail system with base tray **Model No. SV**	10	**3425.010**	**3429.010**	**3435.010**
End caps for rail system without base tray **Model No. SV**	10	**3425.000**	**3429.000**	**3435.000**
7 **Side cover** **Model No. SV**	10	**3093.000**	**3093.000**	**3093.000**
8 **Identification labels** **Model No. SV**	100	**9320.080**	**9320.080**	**9320.080**
Width (A) mm		36	42	57
Spacing (B) mm		57	40	40
Depth (C) mm[2]		67	71.5	71.5
Depth (D) mm[3] for rail system – with base tray		47	51.5	51.5
Depth (D) mm[3] for rail system – without base tray		67	71.5	71.5

[1] Wire end ferrules should be used with fine wire conductors.
[2] Bottom end cap
[3] Top end cap

Busbar systems Page 350 – 353 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367
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NH fused isolators, size 00 (3-pole)





* Off-load position

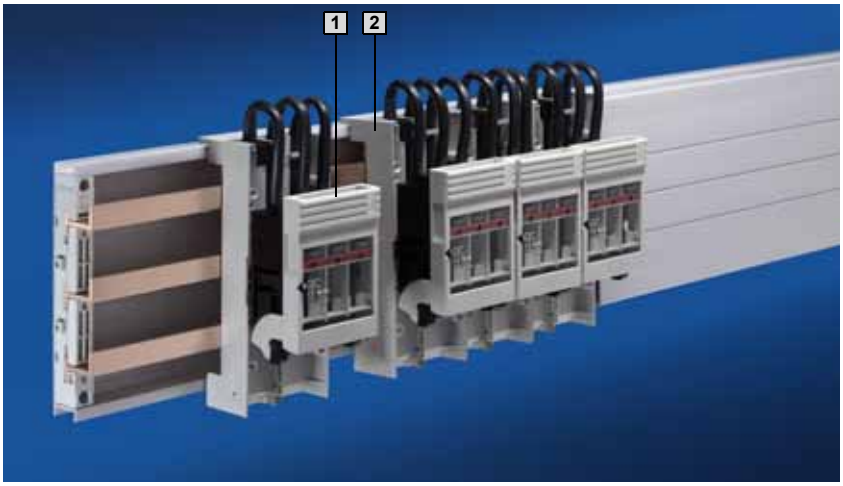
Material:
Cover, strip chassis:
Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

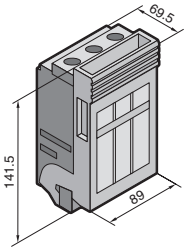
Technical information,
see page 1244.

Design	Packs of	1	2	Page
Size		Size 00	Size 00	
Rated current		160 A	160 A	
Rated operating voltage		690 V~	690 V~	
Cable outlet		top	bottom	
Type of connection		Screw M8	Screw M8	
Tightening torque ● Assembly screw ● Terminal screw		 6 Nm 14 Nm	 6 Nm 14 Nm	
For bar thickness		5/10 mm	5/10 mm	
Model No. SV	1	**3591.020**	**3591.030**	
Accessories				
Side panel	2	9341.230	9341.230	405
Identification label support	6	3595.010	3595.010	406
Micro-switch	5	3071.000	3071.000	406
Lug terminal connection parts	1 set	3592.020	3592.020	407
Clamp-type terminal connection	1 set	3592.010	3592.010	407

Busbar systems Page 350 – 353 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367
OM/OT supports Page 368/369 **Component adaptors** Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373
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NH on-load isolators, size 000 (3-pole)



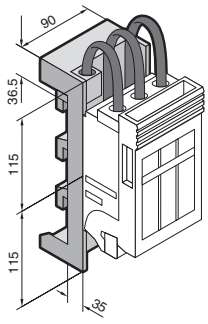


Material:
Chassis, lid, contact hazard protection:
Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

Technical information,
see page 1246.

Size	Packs of	Size 000	Page
Rated current		100 A (160 A)[1)]	
Rated operating voltage		690 V~	
Cable outlet		top/bottom	
Type of connection		Terminal	
Connection of round conductors		1.5 – 50 mm²	
Clamping area for laminated copper bars		10 x 10 mm	
Tightening torque ● Terminal screw		3 Nm	
1 Model No. SV	1	**3431.000**	
Also required			
Busbar adaptor		see below	
Accessories			
Micro-switch	5	3071.000	406

[1)] 160 A at 95 mm² connection cross-section (95 mm² connector pieces available on request).



2 Busbar adaptor

For mounting SV 3431.000 on 60 mm busbar systems.

Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

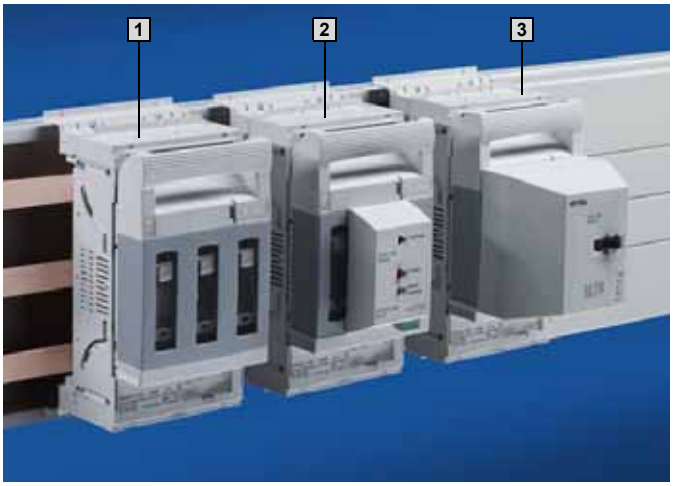
Colour:
RAL 7035

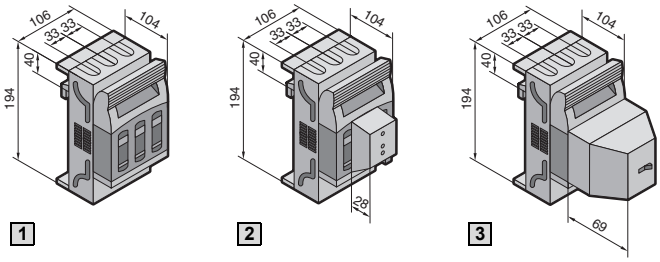
Supply includes:
35 mm² connection cables fitted as standard.

For bar thickness mm	Packs of	Model No. SV
5	1	**9320.040**
10	1	**9320.050**

Busbar systems Page 350 – 353 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367
OM/OT supports Page 368/369 **Component adaptors** Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373
NH fused isolators Page 374 **Accessories** Page 400 – 411

NH bus-mounting on-load isolators, size 00 (3-pole)





Material:
Chassis, lid, contact hazard protection: Polyamide PA6
Contact tracks:
Electrolytic copper, silver-plated

Supply includes:
Top and bottom covers.

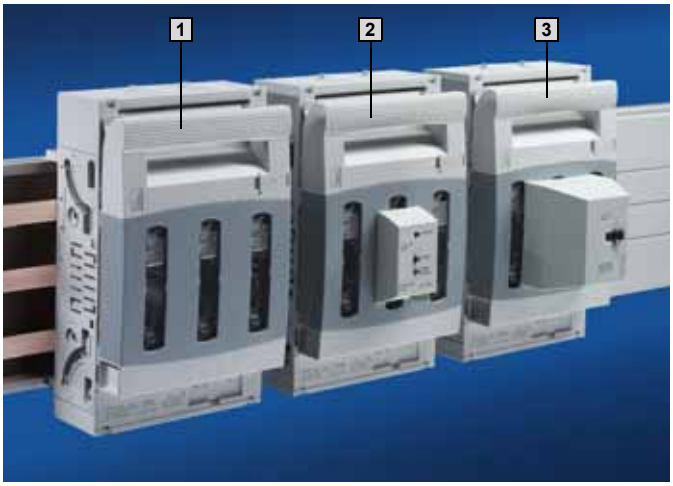
Technical information,
see page 1244 – 1246.

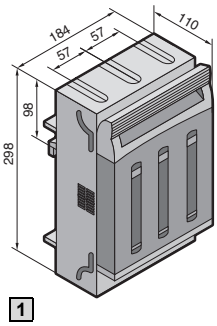
Size	Packs of	Size 00		Page
Rated current		160 A		
Rated operating voltage		690 V~/500 V~[1]		
Cable outlet		top/bottom		
Type of connection		Box terminal	Screw M8	
Connection of round conductors		4 – 95 mm²	up to 95 mm²	
Clamping area for laminated copper bars		13 x 13 mm	20 x 5 mm	
Tightening torque ● Assembly screw ● Terminal screw		 6 Nm 4.5 Nm	 6 Nm 12 Nm	
For bar thickness		5/10 mm	5/10 mm	
1 **Model No. SV**	1	**9343.000**	**9343.010**	
2 **with electronic fuse monitoring[1] Model No. SV**	1	**9343.020**	**9343.030**	
3 **with electromechanical fuse monitoring Model No. SV**	1	**9343.040**	**9343.050**	
Accessories				
Micro-switch	5	3071.000	3071.000	406
Connection space cover	2	9344.520	9344.520	406
Prism terminal	3	–	9344.600	407
Laminated copper bars		■	■	411

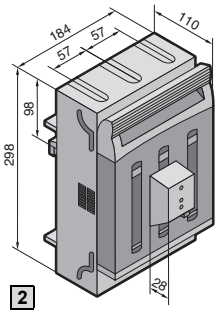
[1] Rated operating voltage 400 V~ to 500 V~ for NH isolators with electronic fuse monitoring.

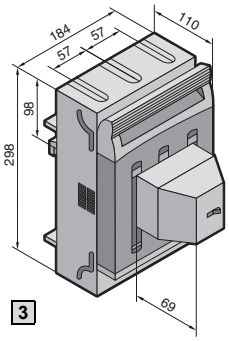
Busbar systems Page 350 – 353 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367
OM/OT supports Page 368/369 **Component adaptors** Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373
NH fused isolators Page 374 **Accessories** Page 400 – 411

NH bus-mounting on-load isolators, size 1 (3-pole)









Material:
Chassis, lid, contact hazard protection: Polyamide PA6
Contact tracks:
Electrolytic copper, silver-plated

Supply includes:
Top and bottom covers.

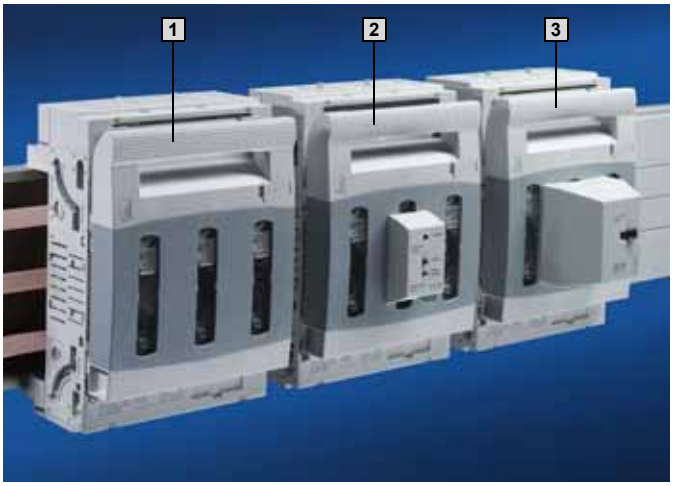
Technical information,
see page 1244 – 1246.

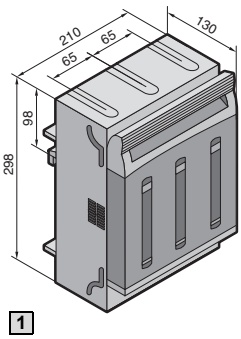
Size	Packs of	Size 1		Page
Rated current		250 A		
Rated operating voltage		690 V~/500 V~[1]		
Cable outlet		top/bottom		
Type of connection		Box terminal	Screw M10	
Connection of round conductors		35 – 150 mm² [2]	up to 150 mm²	
Clamping area for laminated copper bars		20 x 14 mm	32 x 10 mm	
Tightening torque ● Assembly screw ● Terminal screw		 6 Nm 12 Nm	 6 Nm 20 Nm	
For bar thickness		5/10 mm	5/10 mm	
1 **Model No. SV**	1	**9343.100**	**9343.110**	
2 **with electronic fuse monitoring[1] Model No. SV**	1	**9343.120**	**9343.130**	
3 **with electromechanical fuse monitoring Model No. SV**	1	**9343.140**	**9343.150**	
Accessories				
Micro-switch	2	9344.510	9344.510	406
Connection space cover	2	9344.530	9344.530	406
Box terminal	3	–	9344.610	407
Arcing chamber	3	9344.680	9344.680	407
Laminated copper bars		■	■	411

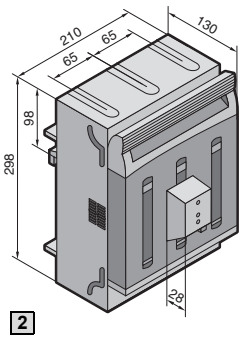
[1] Rated operating voltage 400 V~ to 500 V~ for NH isolators with electronic fuse monitoring.
[2] Connection of sector-shaped conductors 50 – 150 mm².

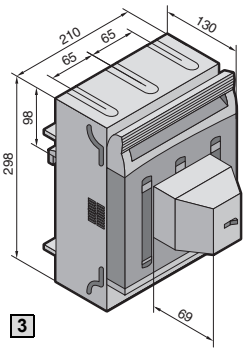
Busbar systems Page 350 – 353 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367
OM/OT supports Page 368/369 **Component adaptors** Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373
NH fused isolators Page 374 **Accessories** Page 400 – 411

NH bus-mounting on-load isolators, size 2 (3-pole)









Material:
Chassis, lid, contact hazard protection: Polyamide PA6
Contact tracks:
Electrolytic copper, silver-plated

Supply includes:
Top and bottom covers.

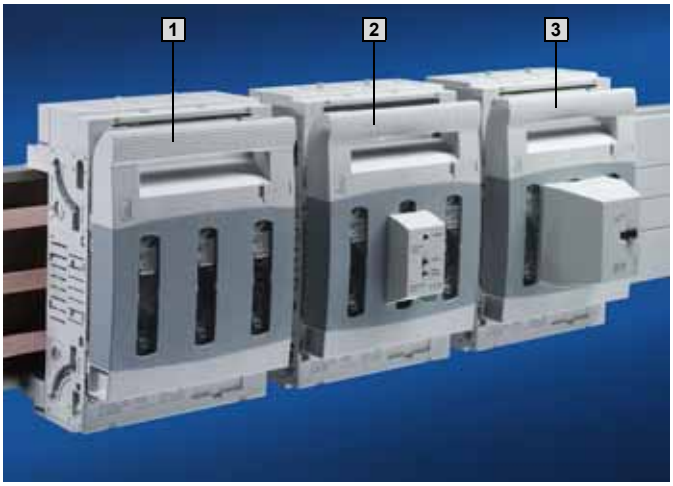
Technical information,
see page 1244 – 1246.

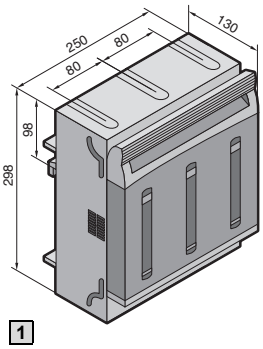
Size	Packs of	Size 2		Page
Rated current		400 A		
Rated operating voltage		690 V~/500 V~[1]		
Cable outlet		top/bottom		
Type of connection		Box terminal	Screw M10	
Connection of round conductors		95 – 300 mm² [2]	up to 240 mm²	
Clamping area for laminated copper bars		32 x 20 mm	50 x 10 mm	
Tightening torque ● Assembly screw ● Terminal screw		 8 Nm 20 Nm	 8 Nm 20 Nm	
For bar thickness		5/10 mm	5/10 mm	
1 **Model No. SV**	1	**9343.200**	**9343.210**	
2 **with electronic fuse monitoring[1] Model No. SV**	1	**9343.220**	**9343.230**	
3 **with electromechanical fuse monitoring Model No. SV**	1	**9343.240**	**9343.250**	
Accessories				
Micro-switch	2	9344.510	9344.510	406
Connection space cover	2	9344.540	9344.540	406
Box terminal	3	–	9344.620	407
Arcing chamber	3	9344.680	9344.680	407
Laminated copper bars		■	■	411

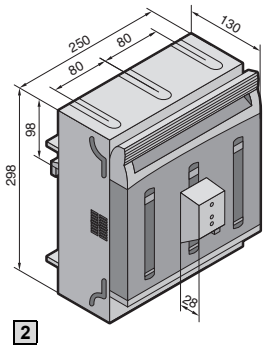
[1] Rated operating voltage 400 V~ to 500 V~ for NH isolators with electronic fuse monitoring.
[2] Connection of sector-shaped conductors 120 – 300 mm².

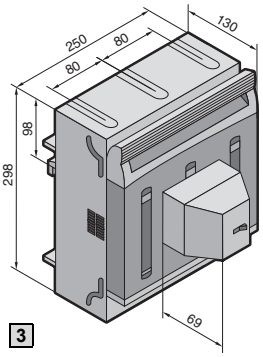
Busbar systems Page 350 – 353 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367
OM/OT supports Page 368/369 **Component adaptors** Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373
NH fused isolators Page 374 **Accessories** Page 400 – 411

NH bus-mounting on-load isolators, size 3 (3-pole)









Material:
Chassis, lid, contact hazard protection: Polyamide PA6
Contact tracks:
Electrolytic copper, silver-plated

Supply includes:
Top and bottom covers.

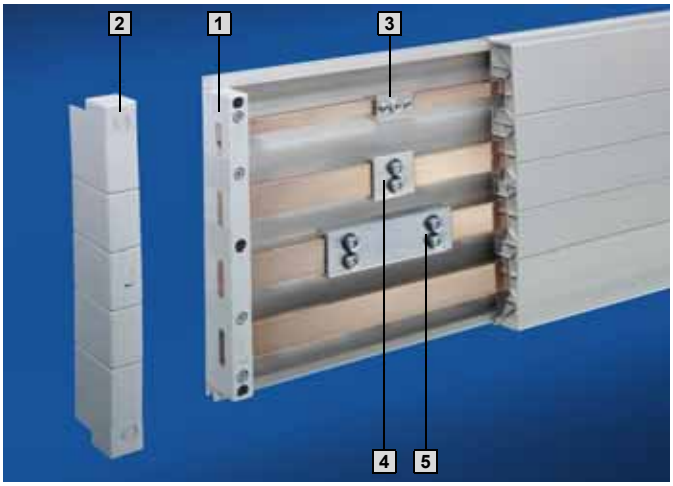
Technical information,
see page 1244 – 1246.

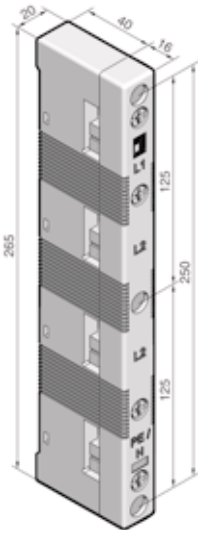
Size	Packs of	Size 3		Page
Rated current		630 A		
Rated operating voltage		690 V~/500 V~[1]		
Cable outlet		top/bottom		
Type of connection		Box terminal	Screw M10	
Connection of round conductors		95 – 300 mm² [2]	up to 300 mm²	
Clamping area for laminated copper bars		32 x 20 mm	50 x 10 mm	
Tightening torque ● Assembly screw ● Terminal screw		 8 Nm 20 Nm	 8 Nm 20 Nm	
For bar thickness		5/10 mm	5/10 mm	
1 **Model No. SV**	1	**9343.300**	**9343.310**	
2 **with electronic fuse monitoring[1] Model No. SV**	1	**9343.320**	**9343.330**	
3 **with electromechanical fuse monitoring Model No. SV**	1	**9343.340**	**9343.350**	
Accessories				
Micro-switch	2	9344.510	9344.510	406
Connection space cover	2	9344.550	9344.550	406
Box terminal	3	–	9344.620	407
Arcing chamber	3	9344.680	9344.680	407
Laminated copper bars		■	■	411

[1] Rated operating voltage 400 V~ to 500 V~ for NH isolators with electronic fuse monitoring.
[2] Connection of sector-shaped conductors 120 – 300 mm².

Busbar systems Page 350 – 353 **Busbar connection adaptors** Page 356/357 **Connection clamps** Page 358 **OM/OT adaptors** Page 362 – 367
OM/OT supports Page 368/369 **Component adaptors** Page 359 – 361, 370/371 **Bus-mounting fuse bases** Page 372/373
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Busbar supports (4-pole)





1 With attachment holes on the inside

Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Short-circuit protection diagram,
see page 1231.

Technical information
for the calculation of rated currents,
see page 1247.

Design	Packs of	1	Page
Number of poles		4-pole	
Bar centre distance		60 mm	
For busbars E-Cu		12 x 5/10 mm[1], 15 x 5 – 30 x 10 mm	
Tightening torque ● Assembly screw (M5 x 25) ● Cover attachment		 3 – 5 Nm 1 – 3 Nm	
Model No. SV	4	**9340.004**	
Accessories			
2 End covers for contact hazard protection on the sides	2	**9340.074**	
Spacers for SV 9340.004	12	**9340.090**	400

[1] If 12 x 5/10 mm busbars are used, the spacer SV 9340.090 is additionally required.

Busbars E-Cu

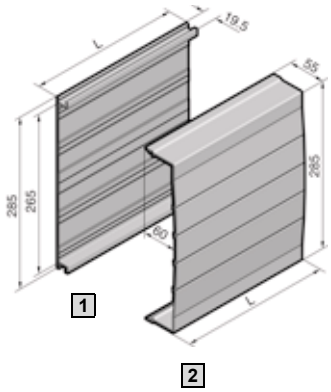
To DIN EN 13 601.
Length: 2400 mm/bar.

Dimensions mm	Packs of	Model No. SV	Page
12 x 5	6	**3580.000**	
12 x 10	6	**3580.100**	
15 x 5	6	**3581.000**	
15 x 10	6	**3581.100**	
20 x 5	6	**3582.000**	
20 x 10	6	**3585.000**	
25 x 5	6	**3583.000**	
30 x 5[1]	6	**3584.000[2]**	
30 x 10[1]	6	**3586.000[2]**	
Accessories			
Busbar cover section (length 1 m/each)	10	3092.000	408
Busbar connector for E-Cu			
3 12 x 5 – 15 x 10 mm (single connection)	3	9350.075	410
4 20 x 5 – 30 x 10 mm (single connection)	3	9320.020	410
5 20 x 5 – 30 x 10 mm (bayed connection)[3]	3	9320.030	410

[1] Other busbar lengths, see page 409.
[2] Tin-plated version available on request.
[3] From enclosure to enclosure.

Bus connection adaptors Page 384/385 **Connection clamps** Page 358 **Component adaptors** Page 386 **Accessories** Page 408 – 411

System components (4-pole)



1 Base tray

For rear contact hazard protection of the flat bar assembly.

Length (L) mm	Packs of	Model No. SV
1100	2	**9340.134**

2 Cover section

May be cut to length as required; for clip-on mounting to the base tray.

Length (L) mm	Packs of	Model No. SV
1100	2	**9340.214**

Base tray and cover section
Material:
Thermally modified hard PVC.
Continuous operating temperature max. 91°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Note:
If the cover section is mounted from the front, the support panel (SV 9340.224) is needed for stability.



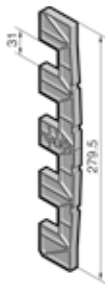
Support panel

for cover section
To prevent side access to the cover section. The support panel also provides additional stability.

Material:
Polyamide (PA 6.6).
Continuous operating temperature max. 105°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

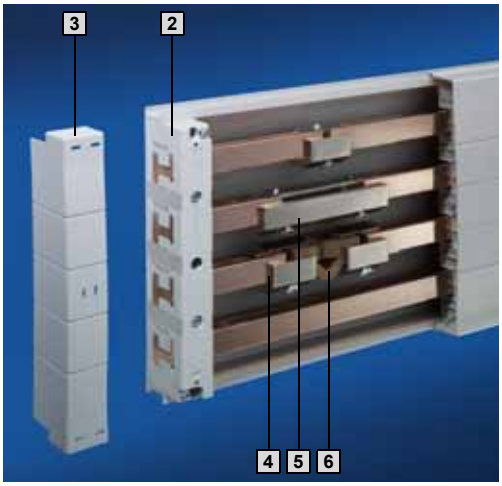
Packs of	Model No. SV
5	**9340.224**

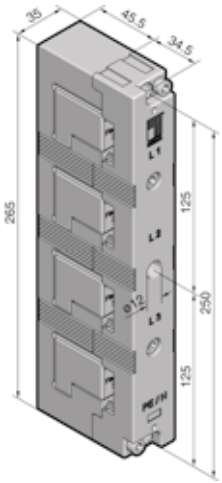


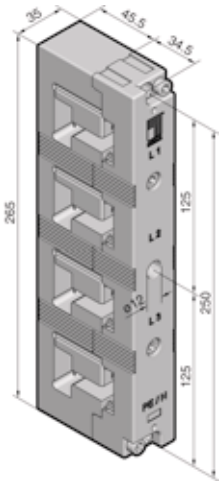
Bus connection adaptors Page 384/385 **Connection clamps** Page 358 **Component adaptors** Page 386 **Accessories** Page 408 – 411

Busbar supports PLUS (4-pole)









1 Rittal 30 x 10 PLUS 2 Rittal PLS 1600 PLUS

Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Short-circuit protection diagram,
see page 1231.

Technical information
for the calculation of rated currents,
see page 1249.

For system		Packs of	1 Rittal 30 x 10 PLUS	2 Rittal PLS 1600 PLUS
Number of poles			4-pole	4-pole
Bar centre distance			60 mm	60 mm
For	busbars E-Cu 30 x 10 mm		■	–
	PLS special busbars (PLS 1600)		–	■
Tightening torque ● Assembly screw (M6 x 20) ● Cover attachment			 3 – 5 Nm 5 – 7 Nm	 3 – 5 Nm 5 – 7 Nm
Model No. SV		4	**9342.014**	**9342.004**
Accessories				
3 End covers for contact hazard protection on the sides		2	**9342.074**	**9342.074**

Busbars
made from E-Cu

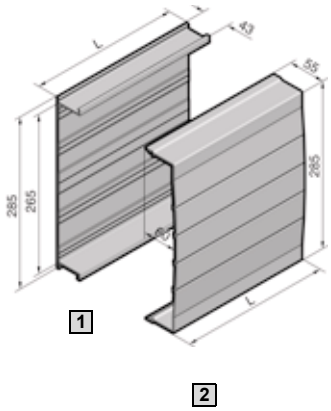
Detailed drawing:
SV 9661.300 to .380, see page 409.

For system		Rittal 30 x 10 PLUS			Rittal PLS 1600 PLUS			Page
Size		30 x 10 mm			–			
Cross-section (bar thickness)		–			900 mm² (10 mm)[1]			
For enclosure width mm		Length mm	Packs of	**Model No. SV**	Length mm	Packs of	**Model No. SV**	
300[2]		265	2	**9661.330**	–	–	**–**	
400[2]		365	2	**9661.340**	–	–	**–**	
600[2]		565	2	**9661.360**	495	3	**3527.000**	
800[2]		765	2	**9661.380**	695	3	**3528.000**	
1000[2]		965	2	**9661.300**	895	3	**3528.010**	
1200[2]		1165	2	**9661.320**	1095	3	**3529.000**	
Variable		2400	6	**3586.000**	2400	1	**3516.000**	
Accessories								
4 PLS busbar connector (single connection)		–	–	–	–	3	3514.000	410
5 PLS busbar connector (bayed connection)[3]		–	–	–	–	3	3515.000	410
6 PLS expansion connectors[4]		–	–	–	–	3	9320.070	410
Baying bracket for SV 9661.300 to .380 (bayed connection)		95	4	9661.350				409
Busbar connector for SV 3586.000	Single connection	–	3	9320.020	–	–	–	410
	Baying connection[3]	–	3	9320.030	–	–	–	410
Busbar cover section		1000	10	3092.000	–	–	–	408

[1] PLS special busbars (1600 A). To order tin-plated version, please add extension .2X0 to the Model No. Delivery times available on request.
[2] For Rittal TS 8/ES enclosure systems.
[3] From enclosure to enclosure.
[4] Two PLS rail connectors (single connection) are required to fit one expansion connector.

Bus connection adaptors Page 384/385 **Connection clamps** Page 358 **Component adaptors** Page 386 **Accessories** Page 408 – 411

System components (4-pole)



1 Base tray

For rear contact hazard protection of the busbar assembly PLUS.

Length (L) mm	Packs of	Model No. SV
1100	2	**9342.134**

2 Cover section

May be cut to length as required; for clip-on mounting to the base tray.

Length (L) mm	Packs of	Model No. SV
1100	2	**9340.214**

Base tray and cover section
Material:
Thermally modified hard PVC.
Continuous operating temperature max. 91°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Note:
If the cover section is mounted from the front, the support panel (SV 9340.224) is needed for stability.



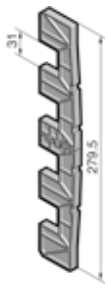
Support panel

for cover section
To prevent side access to the cover section. The support panel also provides additional stability.

Material:
Polyamide (PA 6.6).
Continuous operating temperature max. 105°C.
Fire protection corresponding to UL 94-V0.

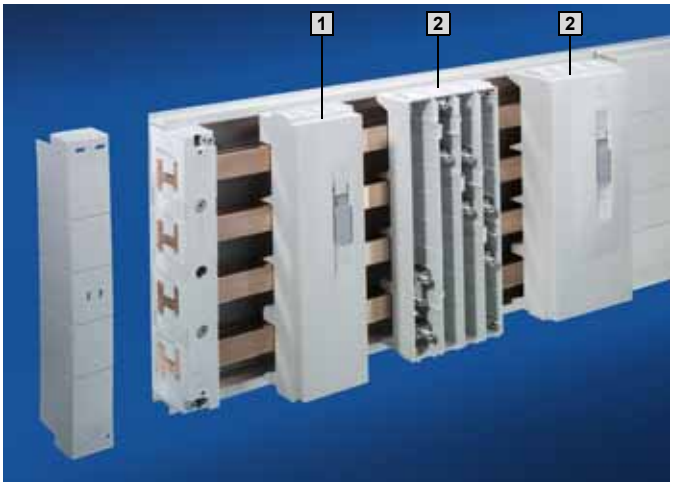
Colour:
RAL 7035

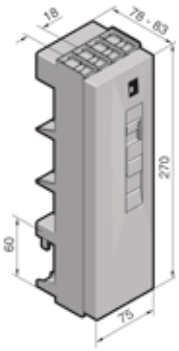
Packs of	Model No. SV
5	**9340.224**



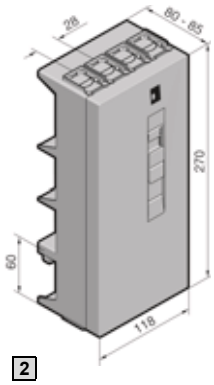
Bus connection adaptors Page 384/385 **Connection clamps** Page 358 **Component adaptors** Page 386 **Accessories** Page 408 – 411

Busbar connection adaptors (4-pole)





1



2

Material:
Punched section
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.
Cover
ABS,
fire protection corresponding to UL 94-V0.

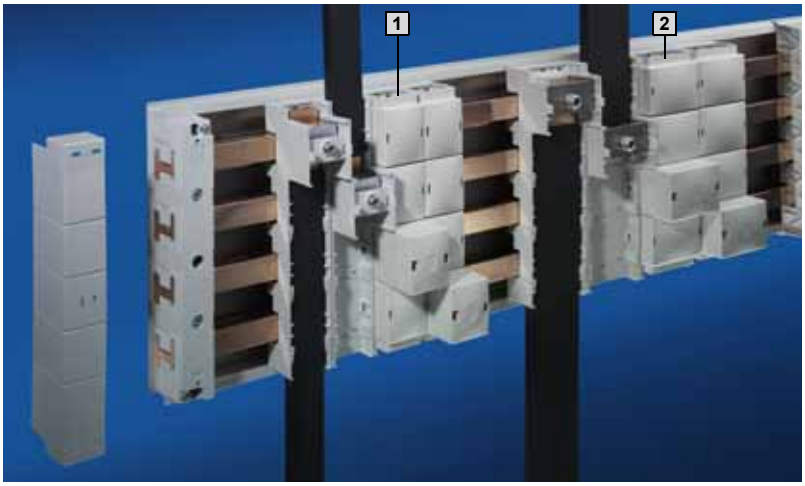
Colour:
RAL 7035

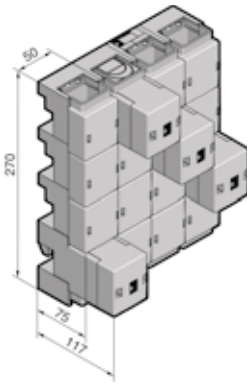
Supply includes:
Cover.

Design (4-pole)	Packs of	1	2	Page
Rated current up to		125 A	250 A	
Rated operating voltage		690 V~	690 V~	
Connection of round conductors ● Fine wire with wire end ferrule ● Multi-wire		 10 – 25 mm² 16 – 35 mm²	 35 – 120 mm² 35 – 120 mm²	
Clamping area for laminated copper bars		10 x 7.8 mm	18.5 x 15.5 mm	
Tightening torque ● Assembly screw ● Terminal screw		 2 Nm 2 – 3 Nm	 4 – 6 Nm 8 – 10 Nm	
For bar thickness		5/10 mm	5/10 mm	
Outlet top/bottom **Model No. SV**	1	**9342.224**	**9342.254**	
Outlet at top **Model No. SV**	1	**9342.234**	**9342.264**	
Outlet at bottom **Model No. SV**	1	**9342.244**	**9342.274**	
Accessories				
Laminated copper bars		■	■	411

Busbar systems Page 380 – 383 **Connection clamps** Page 358 **Component adaptors** Page 386 **Accessories** Page 408 – 411

Busbar connection adaptors (4-pole)



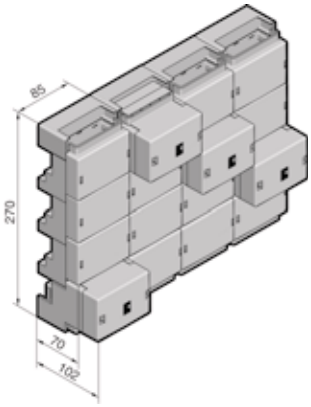


1 SV 9342.310 with SV 9342.314

Material:
Punched section
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.
Cover
ABS,
fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Supply includes:
Cover.



2 SV 9342.320 with SV 9342.324

Design	Packs of	1	2	Page
Rated current up to		800 A	1600 A	
Rated operating voltage		690 V~	690 V~	
Outlet		top/bottom	top/bottom	
Connection of round conductors ● Fine wire with wire end ferrule ● Multi-wire		 95 – 185 mm² 95 – 300 mm²	 – –	
Clamping area for laminated copper bars ● For 5 mm bar thickness ● For 10 mm bar thickness		 33 x 27 mm 33 x 22 mm	 65 x 27 mm 65 x 22 mm	
Tightening torque		12 – 14 Nm	15 – 20 Nm	
For bar thickness		5/10 mm	5/10 mm	
Busbar connection adaptors (3 x 1-pole) **Model No. SV**	1 set (3)	**9342.310**	**9342.320**	
Also required				
Connection adaptor (expansion set for 4-pole configuration)	1	**9342.314**	**9342.324**	
Accessories				
Laminated copper bars		■	■	411

Busbar systems Page 380 – 383 **Connection clamps** Page 358 **Component adaptors** Page 386 **Accessories** Page 408 – 411

Circuit-breaker component adaptors 160 A/250 A (4-pole)



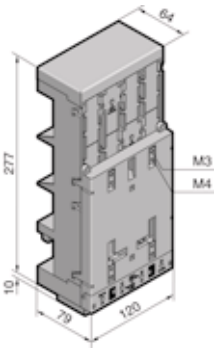


Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.

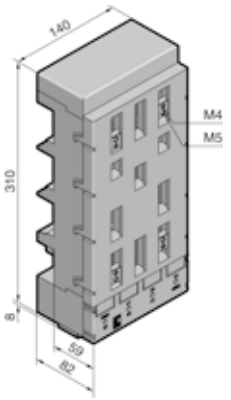
Colour:
RAL 7035

Supply includes:
Terminal cover and sliding blocks for switchgear attachment.

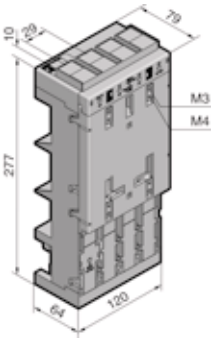
Note:
Circuit-breaker component adaptors in 630 A version available on request.



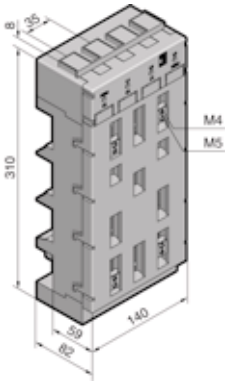
1 SV 9342.504



2 SV 9342.604



1 SV 9342.514



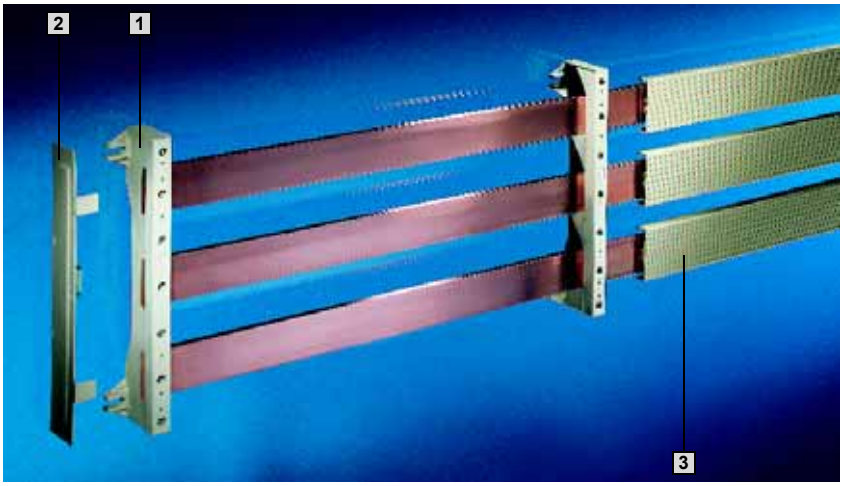
2 SV 9342.614

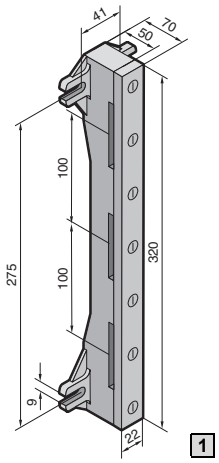
Design		Packs of	1	2
Construction width			120 mm	140 mm
Length			277 mm	310 mm
Rated current up to			160 A	250 A
Rated operating voltage			690 V~	690 V~
Connection clamp			Box terminal	Box terminal
Connection of round conductors			35 – 120 mm²	35 – 120 mm²
Clamping area for laminated copper bars			18.5 x 15.5 mm	18.5 x 15.5 mm
Tightening torque ● Terminal screw ● Rail attachment			 8 – 10 Nm 4 – 6 Nm	 8 – 10 Nm 4 – 6 Nm
For switchgear make/model	ABB		T1 (160 A), T2 (160 A)	T3S (250 A), T4V (315 A)
	Merlin Gerin		NSC100	NS100, NS160, NS250L
	Moeller Electric		NZM1-4 (125 A)	NZM2-4 (250 A)
	Siemens		–	VL160X, VL160, VL250
For bar thickness			5/10 mm	5/10 mm
Cable outlet at the top[1)] **Model No. SV**		1	**9342.504**	**9342.604**
Cable outlet at the bottom[1)] **Model No. SV**		1	**9342.514**	**9342.614**

[1)] Switch outlet or outgoing cable.

Busbar systems Page 380 – 383 **Busbar connection adaptors** Page 384/385 **Connection clamps** Page 358 **Accessories** Page 408 – 411

Busbar support (3-pole)





Material:
Fibreglass-reinforced, thermoplastic polyester (PBT). Continuous operating temperature max. 140°C. Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Short-circuit protection diagram,
see page 1232.

Technical information
for the calculation of rated currents,
see page 1247.

Design	Packs of	1
Number of poles		3-pole
Bar centre distance		100 mm
Max. bar accommodation without inserts		60 x 10 mm
With inserts for bar accommodation		30 x 10 – 50 x 10 mm
Tightening torque ● Assembly screw ● Lid attachment		 8 – 10 Nm 1 – 3 Nm
Model No. SV	4	**3073.000**
Accessories		
2 End covers for side contact hazard protection	10	**3083.000**
Inserts to adapt the bar dimensions		
30 x 10 mm	24	**3074.000**
40 x 10 mm	24	**3075.000**
50 x 10 mm	24	**3076.000**

Busbars E-Cu

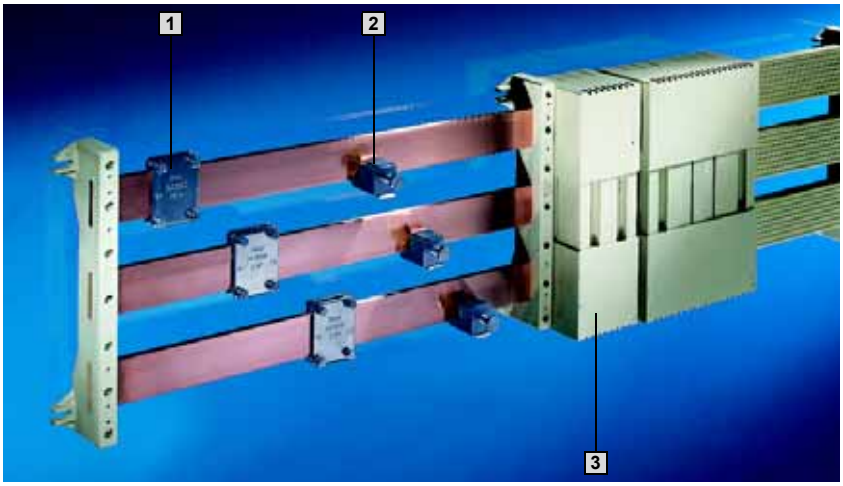
To DIN EN 13 601.
Length: 2400 mm/bar.

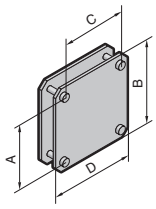
Dimensions in mm	Packs of	Model No. SV	Page
30 x 10[1)]	6	**3586.000[2)]**	
40 x 10[1)]	3	**3587.000**	
50 x 10	3	**3588.000**	
60 x 10	3	**3589.000**	
Accessories			
3 Busbar cover section (length 1 m/each) for E-Cu			
30 x 10 mm	10	3092.000	408
40 x 10 – 60 x 10 mm	10	3085.000	408

[1)] Other busbar lengths, see page 409.
[2)] Tin-plated version available on request.

Connection clamps Page 388 **NH fused isolator** Page 389 **NH on-load isolators** Page 390 **Accessories** Page 408 – 411

Connection clamps/system covers





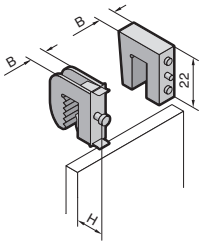
1 Plate clamps

For connecting laminated copper bars; no drilling required.

Material:
Sheet steel, zinc-plated, passivated.

Accessories:
Laminated copper bars,
see page 411.

For busbars mm	Clamping area for laminated copper bars mm	Tightening torque Nm	A mm	B mm	C mm	D mm	Packs of	Model No. SV
30 x 10	34 x 10	6 – 8	40	55	40	55	3	**3554.000**
40 x 10	34 x 10	6 – 8	50	65	40	55	3	**3559.000**
50 x 10	34 x 10	6 – 8	60	75	40	55	3	**3560.000**
50 x 10	54 x 10	6 – 8	60	75	60	75	3	**3562.000**
60 x 10	34 x 10	6 – 8	70	85	40	55	3	**3561.000**
60 x 10	54 x 10	6 – 8	70	85	60	75	3	**3563.000**



2 Conductor connection clamps

For 10 mm bar thickness.

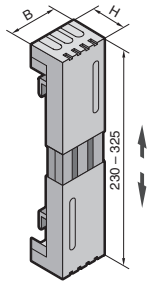
Material:
Sheet steel, zinc-plated, passivated (SV 3455.500 – SV 3459.500),
brass (SV 3555.000).

Note:
Conductor connection clamps for 5 mm bar thickness, see page 358.

Accessories:
Laminated copper bars,
see page 411.

Connection of round conductors[1] mm²	Clamping area for laminated copper bars mm	Tightening torque Nm	Width (B) mm	Height (H) mm min.	Height (H) mm max.	Packs of	Model No. SV
1 – 4	–	2	8	–	–	15	**3555.000**
1 – 4	–	2	11	17	23	15	**3455.500**
2.5 – 16	8 x 8	3	14	22	29	15	**3456.500**
16 – 50	10.5 x 11	6 – 8	18.5	26	39	15	**3457.500**
35 – 70	16.5 x 15	10 – 12	24.5	39	57	15	**3458.500**
70 – 185	22.5 x 20	12 – 15	30.5	44	66	15	**3459.500**

[1] Wire end ferrules should be used with fine wire conductors.



3 System covers

For conductor connection clamps and plate clamps.

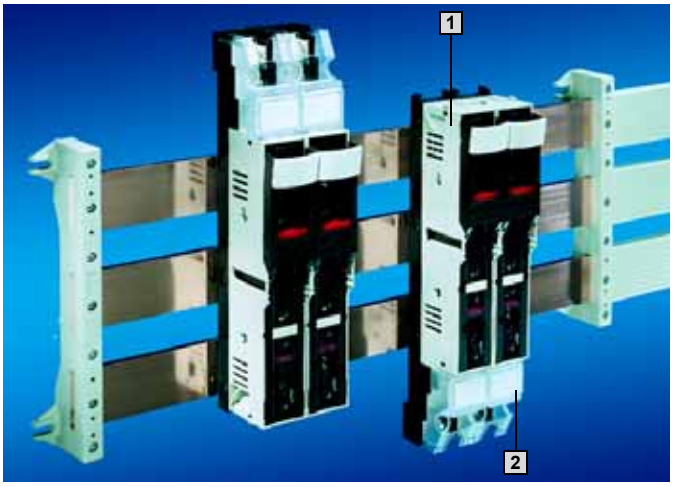
Material:
ABS.
Continuous operating temperature max. 80°C.
Fire protection corresponding to UL 94-V0.

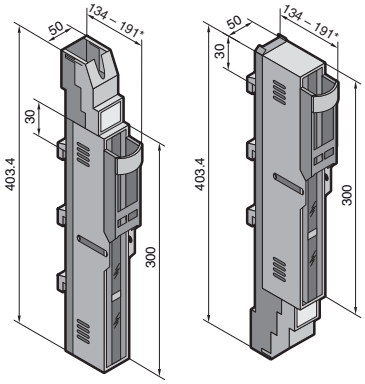
Colour:
RAL 7035

Width (B) mm	Height (H) mm	Packs of	Model No. SV
50	80	4	**3086.000**
100	80	4	**3087.000**
100	110	4	**3090.000**
200	80	4	**3088.000**
200	110	4	**3091.000**

Busbar system Page 387 **NH fused isolator** Page 389 **NH on-load isolators** Page 390 **Accessories** Page 408 – 411

NH fused isolator, size 00 (3-pole)





* Off-load position

Material:
Cover, strip chassis:
Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

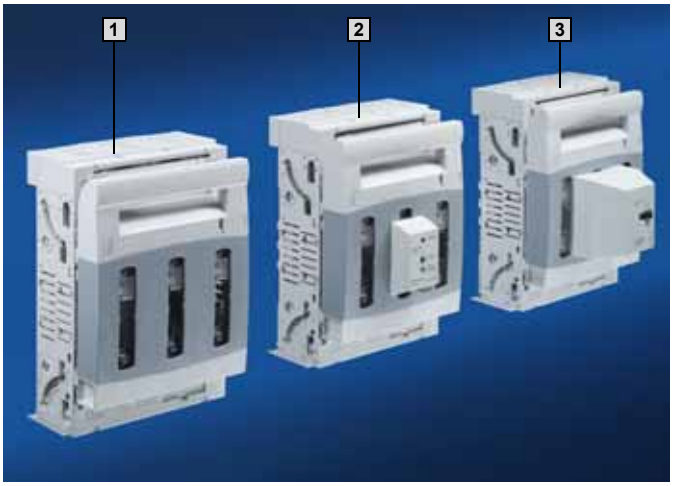
Technical information,
see page 1244.

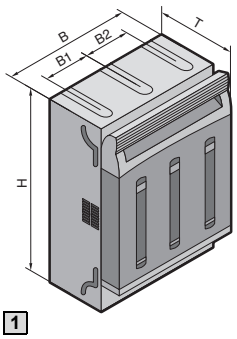
Size	Packs of	00	Page
Rated current		160 A	
Rated operating voltage		690 V~	
Cable outlet		top/bottom	
Type of connection		Screw M8	
Tightening torque ● Assembly screw ● Terminal screw		 6 Nm 14 Nm	
Packs of		1	
1 Model No. SV		**3591.010**	
Accessories			
2 Identification label support	6	3595.010	406
Micro-switch	5	3071.000	406
Lug terminal connection parts	1 set	3592.020	407
Clamp-type terminal connection	1 set	3592.010	407

Busbar system Page 387 **Connection clamps** Page 388 **NH on-load isolators** Page 390 **Accessories** Page 408 – 411

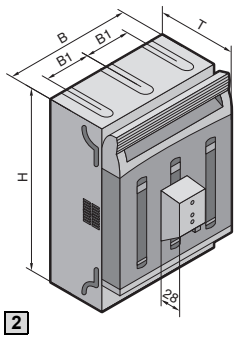
Busbar systems up to 1250 A (100 mm)

NH on-load isolators, sizes 1, 2, 3

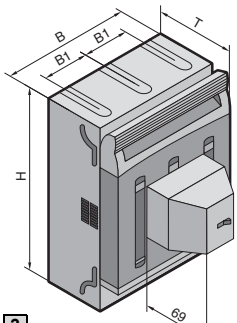




1



2



3

Material:
Chassis, lid, contact hazard protection: Polyamide PA6
Contact tracks:
Electrolytic copper, silver-plated

Colour:
RAL 7035

Technical information,
see page 1244 – 1246.

Size	Packs of	Size 1	Size 2	Size 3	Page
Rated current		250 A	400 A	630 A	
Rated operating voltage		690 V~/500 V~[1)]	690 V~/500 V~[1)]	690 V~/500 V~[1)]	
Cable outlet		top/bottom	top/bottom	top/bottom	
Type of connection		Screw M10	Screw M10	Screw M10	
Connection of round conductors		up to 150 mm²	up to 240 mm²	up to 300 mm²	
Clamping area for laminated copper bars		32 x 10 mm	50 x 10 mm	50 x 10 mm	
Tightening torque Terminal screw		20 Nm	20 Nm	20 Nm	
Width (B) mm		184	210	250	
Height (H) mm		298	298	298	
Depth (T) mm		110	130	130	
Distance (B1)		57	65	80	
1 **Model No. SV**	1	**9344.110**	**9344.210**	**9344.310**	
2 **with electronic fuse monitoring[1)] Model No. SV**	1	**9344.130**	**9344.230**	**9344.330**	
3 **with electromechanical fuse monitoring Model No. SV**	1	**9344.150**	**9344.250**	**9344.350**	
Also required					
Busbar adaptor	1	9344.810	9344.820	9344.830	see below
Accessories					
Micro-switch	2	9344.510	9344.510	9344.510	406
Connection space cover	2	9344.530	9344.540	9344.550	406
Box terminal	3	9344.610	9344.620	9344.620	407
Arcing chamber	3	9344.680	9344.680	9344.680	407
Laminated copper bars		■	■	■	411

[1)] Rated operating voltage 400 V~ to 500 V~ for NH isolators with electronic fuse monitoring.



Busbar adaptor

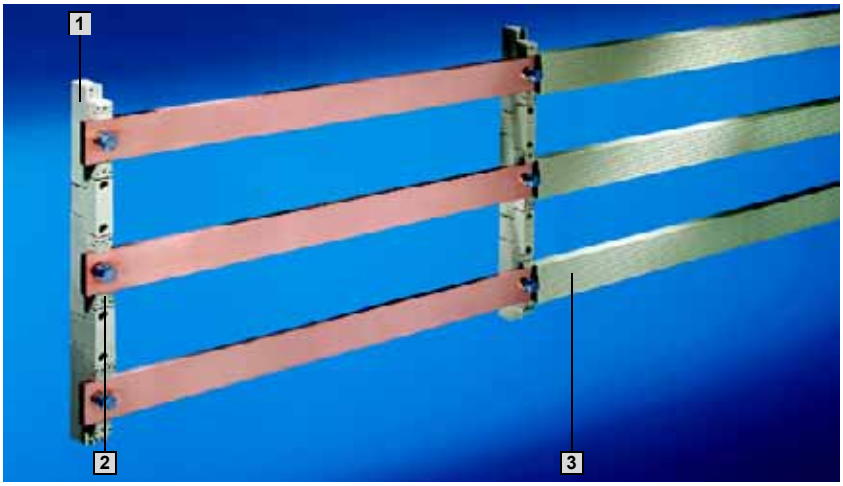
3-pole, for NH on-load isolator
For mounting NH isolators on 100 mm busbar systems.
Outlet top/bottom.

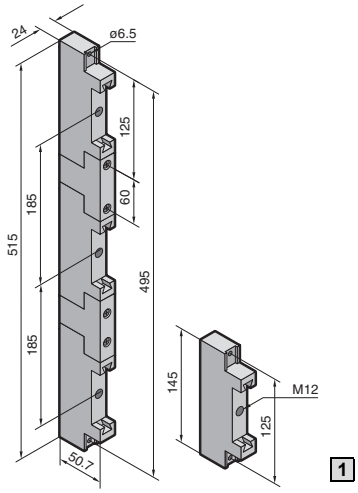
Technical information
For assembly instructions, see page 1249.

For NH isolators	Packs of	Model No. SV
Size 1	1	**9344.810**
Size 2	1	**9344.820**
Size 3	1	**9344.830**

Busbar system Page 387 **Connection clamps** Page 388 **NH fused isolator** Page 389 **Accessories** Page 408 – 411

Busbar support (3-pole)





Material:
Fibreglass-reinforced, thermoplastic polyester (PBT). Continuous operating temperature max. 140°C. Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Note:
The base component of the busbar support may also be used as a single-pole support.

Short-circuit protection diagram,
see page 1232.

Technical information
for the calculation of rated currents,
see page 1247.

Design	Packs of	1
Number of poles		3-pole
Bar centre distance		185 mm
Max. bar accommodation without inserts		80 x 10 mm
With inserts for bar accommodation		50 – 60 x 10 mm
Tightening torque ● Assembly screw ● Bar fastening screw		 3 – 5 Nm 40 Nm
Model No. SV	2	**3052.000**
Accessories		
2 Inserts to adapt the bar dimensions		
50 x 10 mm	24	**3074.000**
60 x 10 mm	24	**3075.000**

Busbars E-Cu

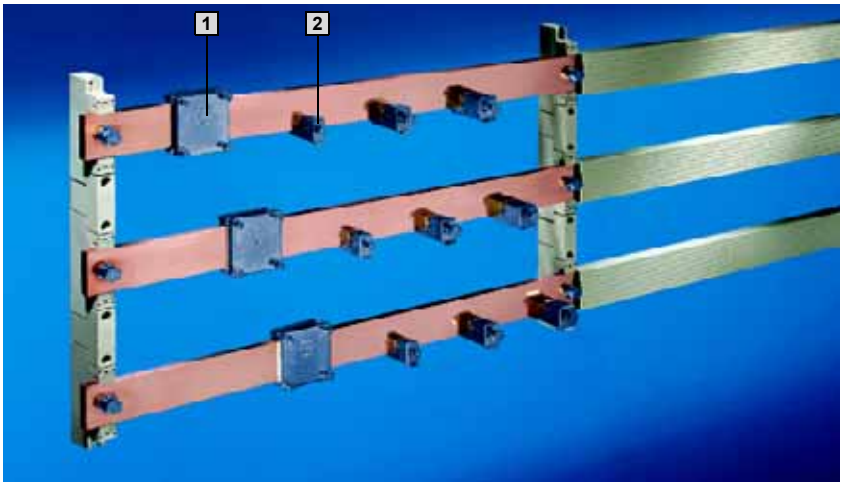
To DIN EN 13 601.
Length: 2400 mm/bar.

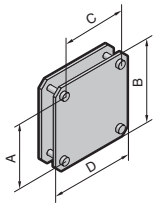
Dimensions in mm	Packs of	Model No. SV	Page
50 x 10	3	**3588.000**	
60 x 10	3	**3589.000**	
80 x 10[1)]	3	**3590.000**	
Accessories			
3 Busbar cover section (length 1 m/each) for E-Cu			
50 x 10 – 60 x 10 mm	10	3085.000	408

[1)] Other busbar lengths, see page 409.

Connection clamps Page 392 **NH fused isolators** Page 393 **Accessories** Page 408 – 411

Connection clamps





1 Plate clamps

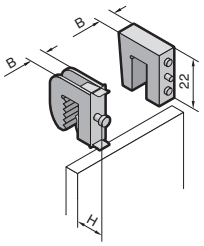
For connecting laminated copper bars; no drilling required.

Material:
Sheet steel, zinc-plated, passivated.

Accessories:

Laminated copper bars,
see page 411.

For busbars mm	Clamping area for laminated copper bars mm	Tightening torque Nm	A mm	B mm	C mm	D mm	Packs of	Model No. SV
50 x 10	34 x 10	6 – 8	60	75	40	55	3	**3560.000**
50 x 10	54 x 10	6 – 8	60	75	60	75	3	**3562.000**
60 x 10	34 x 10	6 – 8	70	85	40	55	3	**3561.000**
60 x 10	54 x 10	6 – 8	70	85	60	75	3	**3563.000**
80 x 10	65 x 10	6 – 8	90	105	71	86	3	**3460.500**



2 Conductor connection clamps

For 10 mm bar thickness.

Material:
Sheet steel, zinc-plated, passivated (SV 3455.500 – SV 3459.500),
brass (SV 3555.000).

Note:
Conductor connection clamps for 5 mm bar thickness, see page 358.

Accessories:

Laminated copper bars,
see page 411.

Connection of round conductors[1] mm²	Clamping area for laminated copper bars mm	Tightening torque Nm	Width (B) mm	Height (H) mm min.	Height (H) mm max.	Packs of	Model No. SV
1 – 4	–	2	8	–	–	15	**3555.000**
1 – 4	–	2	11	17	23	15	**3455.500**
2.5 – 16	8 x 8	3	14	22	29	15	**3456.500**
16 – 50	10.5 x 11	6 – 8	18.5	26	39	15	**3457.500**
35 – 70	16.5 x 15	10 – 12	24.5	39	57	15	**3458.500**
70 – 185	22.5 x 20	12 – 15	30.5	44	66	15	**3459.500**

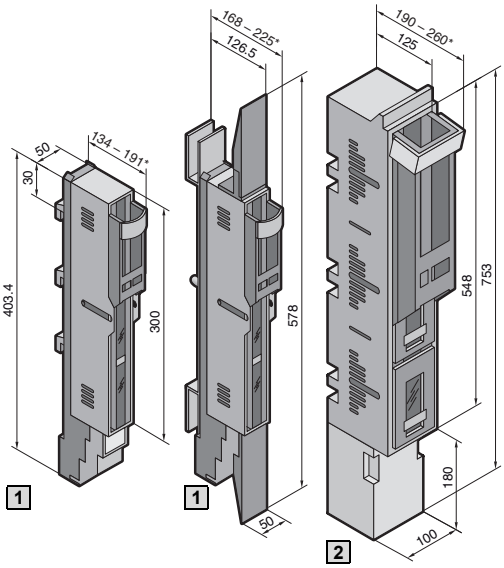
[1] Wire end ferrules should be used with fine wire conductors.

Busbar system Page 391 **NH fused isolators** Page 393 **Accessories** Page 408 – 411

NH fused isolators, size 00 – 3 (3-pole)







* Off-load position

Material:
Cover (size 00 – 3):
Fibreglass-reinforced polyamide
Strip chassis (size 00):
Fibreglass-reinforced polyamide
Strip chassis (size 1 – 3):
Duroplastic polyester
Contact tracks:
Silver-plated hard copper

Scope of supply SV 3591.040:
including
1 busbar adaptor[1)],
2 compensating panels,
3 inserted screw nuts M12

Scope of supply SV 3591.050:
including
1 busbar adaptor[1)],
(double adaptor),
4 compensating panels,
3 inserted screw nuts M12

Scope of supply SV 3485.000 – SV 3487.000:
including
3 inserted screw nuts M12

[1)] Tightening torque 25 Nm (bar attachment)

Technical information,
see page 1244.

Design	Packs of	1		2			Page
Size		00		1	2	3	
Rated current		160 A		250 A	400 A	630 A	
Rated operating voltage		690 V~		690 V~	690 V~	690 V~	
Cable outlet		top/bottom		top/bottom	top/bottom	top/bottom	
Type of connection		Screw M8		Screw M12	Screw M12	Screw M12	
Tightening torque ● Assembly screw ● Terminal screw		14 Nm 14 Nm		40 Nm 40 Nm	40 Nm 40 Nm	40 Nm 40 Nm	
Packs of		1	2	1	1	1	
Model No. SV		**3591.040**	**3591.050**	**3485.000**	**3486.000**	**3487.000**	
Accessories							
3 Identification label support	6	3595.010	3595.010	–	–	–	406
Micro-switch	5	3071.000	3071.000	3071.000	3071.000	3071.000	406
Lug terminal connection parts	1 set	3592.020	3592.020	–	–	–	407
Clamp-type terminal connection	1 set	3592.010	3592.010	–	–	–	407



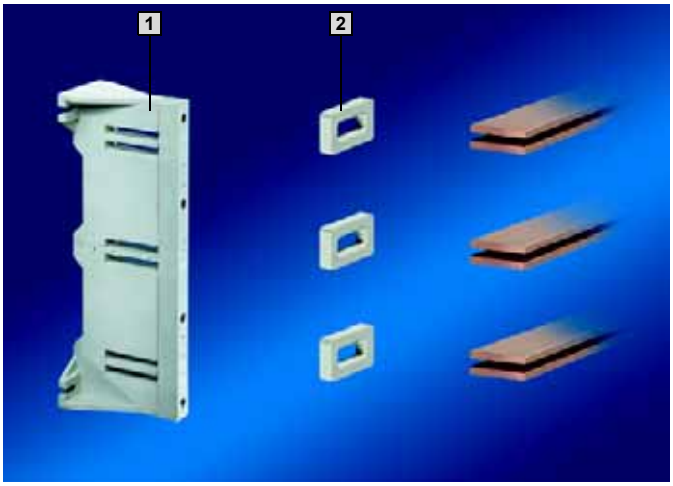
Inserted screw nuts M12

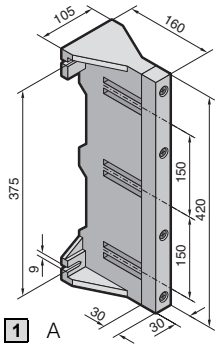
Self-holding nuts with knurled ring.
For drilled holes in busbars Ø 14.5 mm.

Packs of	Model No. SV
30	**3591.060**

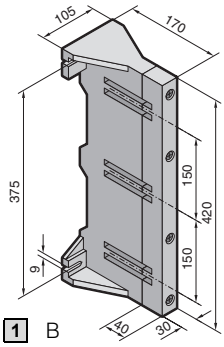
Busbar system Page 391 **Connection clamps** Page 392 **Accessories** Page 408 – 411

Busbar supports (3-pole)





1 A



1 B

Material:
Fibreglass-reinforced, thermoplastic polyester (PBT). Continuous operating temperature max. 140°C. Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Short-circuit protection diagram,
see page 1232.

Technical information
for the calculation of rated currents,
see page 1247.

1 Design	Packs of	A	B
Number of poles		3-pole	3-pole
Bar centre distance		150 mm	150 mm
Max. bar accommodation without spacing pieces		2 x 80 x 10 mm	2 x 100 x 10 mm
Tightening torque ● Assembly screw ● Lid attachment		 8 – 10 Nm 5 – 10 Nm	 8 – 10 Nm 5 – 10 Nm
Model No. SV	2	**3055.000**	**3057.000**
Accessories			
2 Spacing pieces	12	**3056.000**[1)]	**3056.000**[1)]

[1)] To reduce the bar size in 10 mm increments. Also suitable for stepped busbar assemblies.

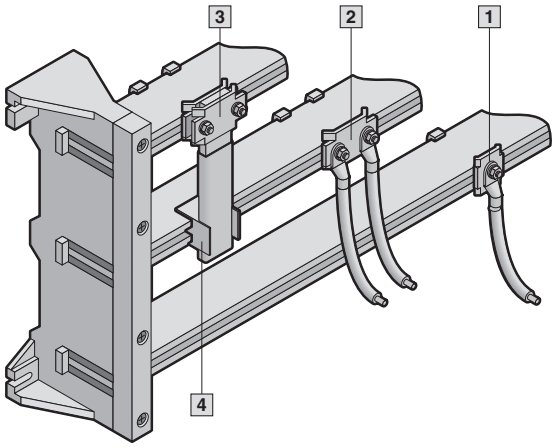
Busbars E-Cu

To DIN EN 13 601.
Length: 2400 mm/bar.

Dimensions in mm	Packs of	Model No. SV
60 x 10	3	**3589.000**
80 x 10	3	**3590.000**

Connection plates Page 395 **Bar insulation** Page 395

System components





Connection plates

for SV 3055.000
Tightening torque: 10 – 15 Nm.

Material:
Connection plate E-Cu, nickel-plated

Connection	Packs of	Model No. SV
1 M10 ring terminal up to 240 mm²	3 sets	**3058.000[1)]**
2 2 x M10 ring terminals up to 240 mm²	3 sets	**3059.000[1)]**
3 Laminated flat copper up to 40 x 10 mm	3 sets	**3061.000[2)]**

T-head screws:
[1)] M10 x 100 mm
[2)] M10 x 120 mm

Accessories:

Laminated copper bars,
see page 411.



Connection plates

for SV 3057.000
Tightening torque: 10 – 15 Nm.

Material:
Connection plate E-Cu, nickel-plated

Note:
One connection plate per terminal connection is omitted.

Connection	Packs of	Model No. SV
3 2 x M10 ring terminals up to 240 mm²	3 sets	**3061.000[1)]**

T-head screws:
[1)] M10 x 120 mm



4 Bar insulation

for SV 3055.000 and SV 3057.000
For supply lead routing, plug-type.

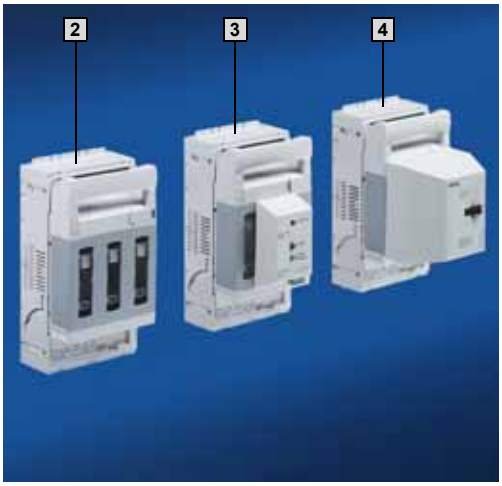
Packs of	Model No. SV
9	**3060.000**

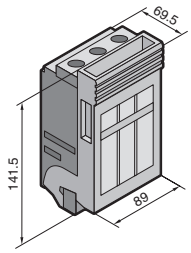
Busbar system Page 394

Rittal RiLine NH (mounting plate assembly)

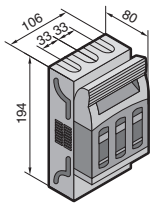
NH on-load isolators, size 000/size 00



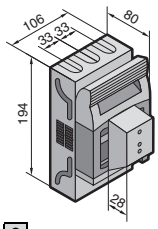




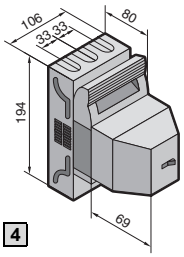
1



2



3



4

Material:
Chassis, lid, contact hazard protection:
- Size 000
  Fibreglass-reinforced polyamide
- Size 00
  Polyamide PA6

Contact tracks:
Electrolytic copper, silver-plated

Technical information,
see page 1244 – 1246.

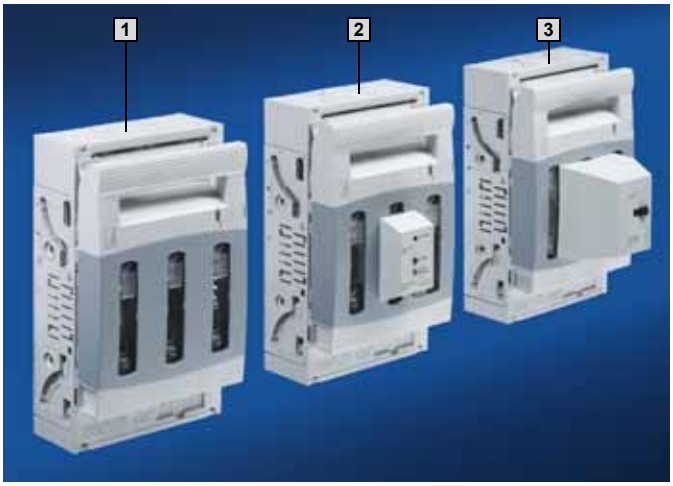
Drilling dimensions,
see page 1249.

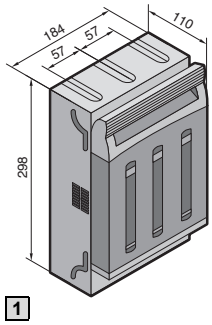
Size	Packs of	Size 000	Size 00		Page
Rated current		100 A (160 A)[1]	160 A		
Rated operating voltage		690 V~	690 V~/500 V~[2]		
Cable outlet		top/bottom	top/bottom		
Type of connection		Terminal	Box terminal	Screw M8	
Connection of round conductors		1.5 – 50 mm²	4 – 70 mm²	up to 95 mm²	
Clamping area for laminated copper bars		10 x 10 mm	13 x 13 mm	20 x 5 mm	
Tightening torque Terminal screw		3 Nm	4.5 Nm	12 Nm	
1 **Model No. SV**	1	**3431.000**	**–**	**–**	
2 **Model No. SV**	1	**–**	**9344.000**	**9344.010**	
3 **with electronic fuse monitoring[1] Model No. SV**	1	**–**	**9344.020**	**9344.030**	
4 **with electromechanical fuse monitoring Model No. SV**	1	**–**	**9344.040**	**9344.050**	
Accessories					
Micro-switch	5	3071.000	3071.000	3071.000	406
Connection space cover	2	–	9344.520	9344.520	406
Prism terminal	3	–	–	9344.600	407
Mounting set	1	3432.000	–	–	406
Laminated copper bars		■	■	■	411

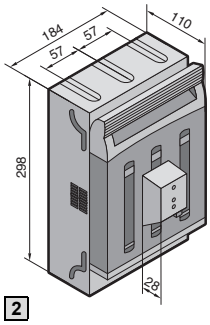
[1] 160 A at 95 mm² connection cross-section (95 mm² connector pieces available on request).
[2] Rated operating voltage 400 V~ to 500 V~ for NH isolators with electronic fuse monitoring.

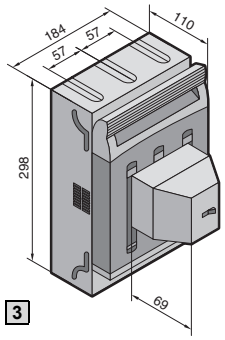
Accessories Page 406/407

NH on-load isolators, size 1









Material:
Chassis, lid, contact hazard protection: Polyamide PA6
Contact tracks:
Electrolytic copper, silver-plated

Technical information,
see page 1244 – 1246.

Drilling dimensions,
see page 1249.

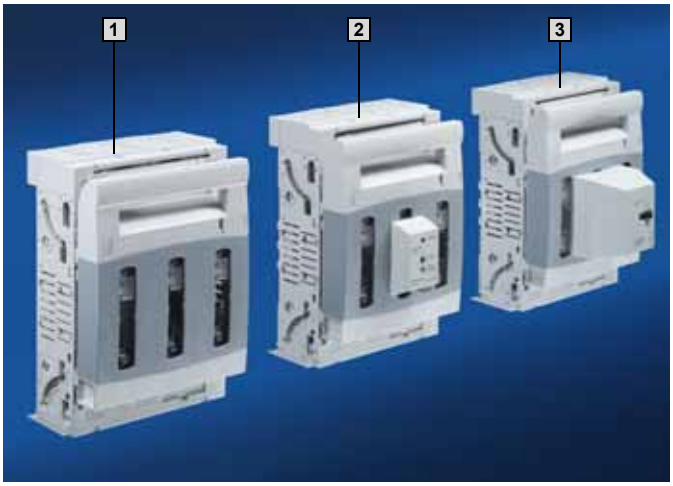
Size	Packs of	Size 1		Page
Rated current		250 A		
Rated operating voltage		690 V~/500 V~ [1]		
Cable outlet		top/bottom		
Type of connection		Box terminal	Screw M10	
Connection of round conductors		35 – 150 mm² [2]	up to 150 mm²	
Clamping area for laminated copper bars		20 x 14 mm	32 x 10 mm	
Tightening torque Terminal screw		12 Nm	20 Nm	
1 **Model No. SV**	1	**9344.100**	**9344.110**	
2 **with electronic fuse monitoring [1] Model No. SV**	1	**9344.120**	**9344.130**	
3 **with electromechanical fuse monitoring Model No. SV**	1	**9344.140**	**9344.150**	
Accessories				
Micro-switch	2	9344.510	9344.510	406
Connection space cover	2	9344.530	9344.530	406
Box terminal	3	–	9344.610	407
Arcing chamber	3	9344.680	9344.680	407
Laminated copper bars		■	■	411

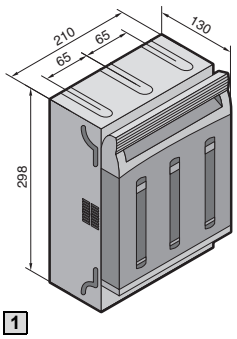
[1] Rated operating voltage 400 V~ to 500 V~ for NH isolators with electronic fuse monitoring.
[2] Connection of sector-shaped conductors 50 – 150 mm².

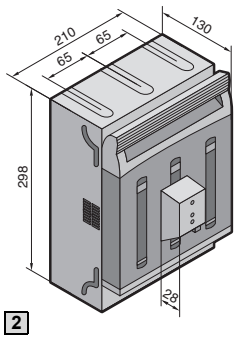
Accessories Page 406/407

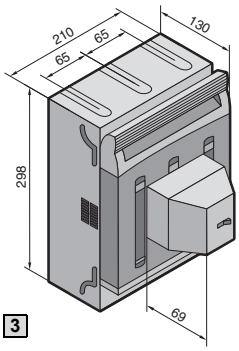
Rittal RiLine NH (mounting plate assembly)

NH on-load isolators, size 2









Material:
Chassis, lid, contact hazard protection: Polyamide PA6
Contact tracks:
Electrolytic copper, silver-plated

Technical information,
see page 1244 – 1246.

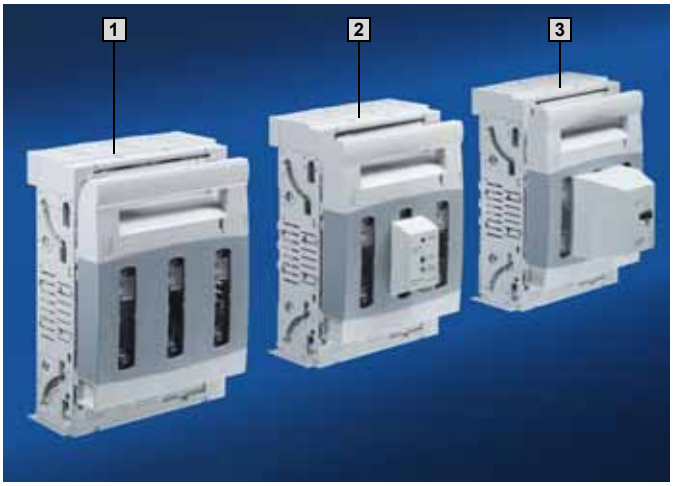
Drilling dimensions,
see page 1249.

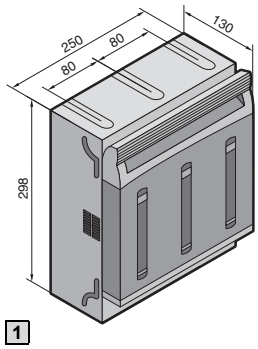
Size	Packs of	Size 2		Page
Rated current		400 A		
Rated operating voltage		690 V~/500 V~ [1]		
Cable outlet		top/bottom		
Type of connection		Box terminal	Screw M10	
Connection of round conductors		95 – 300 mm² [2]	up to 240 mm²	
Clamping area for laminated copper bars		32 x 20 mm	50 x 10 mm	
Tightening torque Terminal screw		20 Nm	20 Nm	
1 **Model No. SV**	1	**9344.200**	**9344.210**	
2 **with electronic fuse monitoring [1] Model No. SV**	1	**9344.220**	**9344.230**	
3 **with electromechanical fuse monitoring Model No. SV**	1	**9344.240**	**9344.250**	
Accessories				
Micro-switch	2	9344.510	9344.510	406
Connection space cover	2	9344.540	9344.540	406
Box terminal	3	–	9344.620	407
Arcing chamber	3	9344.680	9344.680	407
Laminated copper bars		■	■	411

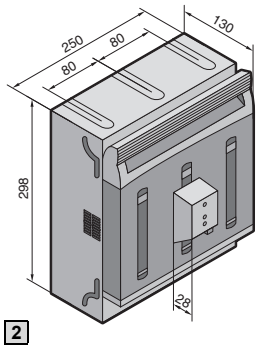
[1] Rated operating voltage 400 V~ to 500 V~ for NH isolators with electronic fuse monitoring.
[2] Connection of sector-shaped conductors 120 – 300 mm².

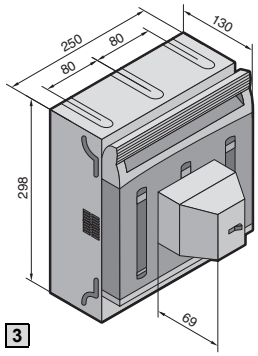
Accessories Page 406/407

NH on-load isolators, size 3









Material:
Chassis, lid, contact hazard protection: Polyamide PA6
Contact tracks:
Electrolytic copper, silver-plated

Technical information,
see page 1244 – 1246.

Drilling dimensions,
see page 1249.

Size	Packs of	Size 3		Page
Rated current		630 A		
Rated operating voltage		690 V~/500 V~ [1]		
Cable outlet		top/bottom		
Type of connection		Box terminal	Screw M10	
Connection of round conductors		95 – 300 mm² [2]	up to 300 mm²	
Clamping area for laminated copper bars		32 x 20 mm	50 x 10 mm	
Tightening torque Terminal screw		20 Nm	20 Nm	
1 **Model No. SV**	1	**9344.300**	**9344.310**	
2 **with electronic fuse monitoring [1] Model No. SV**	1	**9344.320**	**9344.330**	
3 **with electromechanical fuse monitoring Model No. SV**	1	**9344.340**	**9344.350**	
Accessories				
Micro-switch	2	9344.510	9344.510	406
Connection space cover	2	9344.550	9344.550	406
Box terminal	3	–	9344.620	407
Arcing chamber	3	9344.680	9344.680	407
Laminated copper bars		■	■	411

[1] Rated operating voltage 400 V~ to 500 V~ for NH isolators with electronic fuse monitoring.
[2] Connection of sector-shaped conductors 120 – 300 mm².

Accessories Page 406/407

Accessories





Spacers

for RiLine60 busbar supports (flat busbar system)
For adapting 12 x 5 and 12 x 10 mm size busbars.
For busbar supports
- SV 9340.000/.010 (3-pole), see page 350.
- SV 9340.004 (4-pole), see page 380.

Packs of	Model No. SV
12	**9340.090**



Insert strip

for Mini-PLS component adaptors and quick-fit component adaptors
To extend the construction width.
Width 9 mm.

Material:
ABS

Colour:
RAL 7035

Packs of	Model No. SV
2	**9623.000**



Insert strip

for OM and OT adaptors/supports
To extend the construction width in a 10 mm pitch pattern. May be bayed as often as required on both sides. With integral cable duct.

Material:
PA 6.6

Colour:
RAL 7035

Supply includes:
6 connection pins.

For design	Packs of	Model No. SV
OM	2	**9340.290**
OT	2	**9341.290**



Insert strip

for circuit-breaker component adaptors
To extend the construction width from 140 mm to 190 mm.
Width: 25 mm.

Material:
ABS

Colour:
RAL 7035

Note:
4 units (1 set) are needed to widen a component adaptor.

For	Packs of	Model No. SV
SV 9342.700 SV 9342.710	4 (1 set)	**9342.720**



Connection pin

for OM and OT adaptors/supports
For the mechanical connection of adaptors and supports.

Material:
PA 6.6

Colour:
RAL 5015

Packs of	Model No. SV
20	**9340.280**



Sliding blocks

for circuit-breaker component adaptor (3-pole)
For additional power circuit breakers with more than two attachment points.

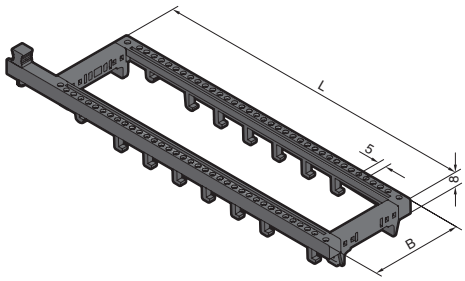
For	With threaded insert	Packs of	Model No. SV
SV 9342.500/.510 SV 9342.540/.550	M3/M4	6	**9342.560**
SV 9342.600/.610	M4/M5	6	**9342.640**



Support frame

for OM and OT adaptors/supports
For use as a spare or for the configuration of replacement assemblies.

Material:
PA 6.6



For adaptor width 45 mm

For design	Width (B) mm	Length (L) mm	Packs of	Model No. SV
OM	45	170	5	**9341.800**
OT	45	195	5	**9341.810**
OM/OT	45	237	5	**9341.820**

For adaptor width 55 mm

For design	Width (B) mm	Length (L) mm	Packs of	Model No. SV
OM	55	170	5	**9341.830**
OT	55	195	5	**9341.840**
OM/OT	55	237	5	**9341.850**



Support frame

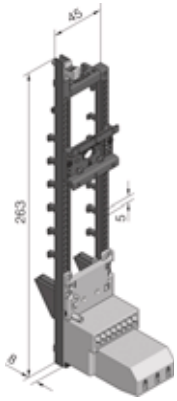
with fitted sub-unit, for OM and OT Premium adaptors
To prepare spare assemblies with fully prewired motor starters for OM/OT Premium adaptor (SV 9340.900/.910, 9341.900).

Connection data of the sub-unit:
3 main contacts (1.5 – 6 mm²), 690 V~
8 auxiliary contacts (0.5 – 2.5 mm²), 300 V~

Material:
PA 6.6

Supply includes:
Sub-unit, pin block, support bar and support frame support.

Packs of	Model No. SV
2	**9341.970**



Accessories



Support frame supports

for OM adaptors
To reinforce support frames 45 x 237 mm and 55 x 237 mm for use on OM adaptors.

Material:
PA 6.6

Packs of	Model No. SV
10	**9340.800**



PinBlock

for support frames
For reliable attachment and positioning of the contactor on motor starter combinations, for simple clip-on mounting onto the support frame. Individual vertical positioning is achieved by relocating the PinBlock.

Material:
PA 6.6

For support frames	Packs of	Model No. SV
45 mm wide	5	**9342.800**
55 mm wide	5	**9342.810**



PinBlock Plus

for starters with increased contactor attachment
Mounted by simply clipping onto the PinBlock (SV 9342.800/.810).

Material:
PA 6.6

Packs of	Model No. SV
5	**9342.820**



Cable set

Pre-assembled connection cables for individual connection of switchgear, top-mounted on OM/OT adaptors with tension spring clamps.
Length: 130 mm.

Material:
PVC insulation.
Temperature-resistant up to 105°C.
Wire ends ultrasonically compressed at both ends.

Note:
For current carrying capacity of the insulated supply cables, see page 1236.

Design	Packs of	Model No. SV
AWG 14 = 2.08 mm^2 ≙ 2.5 mm^2	15	**9340.850**
AWG 12 = 3.31 mm^2 ≙ 4 mm^2	15	**9340.860**
AWG 10 = 5.26 mm^2 ≙ 6 mm^2	15	**9340.870**
AWG 8 = 8.37 mm^2 ≙ 10 mm^2	6	**9340.880**
AWG 6 = 13.3 mm^2 ≙ 16 mm^2	6	**9340.890**

AWG = American Wire Gauges



Connection bracket

for circuit-breaker component adaptors
Pre-assembled, laminated flat copper for connecting standard commercially available moulded case circuit-breakers (MCCB).

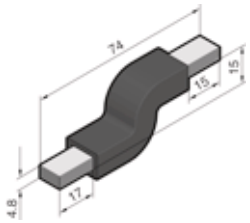
Material:
Electrolyte copper F20

Insulation:
Vinyl compound.
Temperature resistant up to 105°C.
Fire protection corresponding to UL 94-V0.

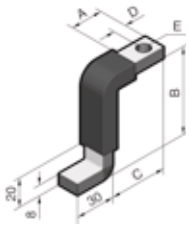
Dimensions[1] mm	For circuit-breaker component adaptor	For connecting moulded case circuit-breakers (MCCB), make (model)	Packs of[2]	Model No. SV
6 x 9 x 0.8	SV 9342.500/.510 SV 9342.540/.550	Moeller (NZM1)	3	**9342.570**
10 x 15.5 x 0.8	SV 9342.600/.610	ABB (T3), GE (FE)	3	**9342.660**
		Merlin Gerin (NS100/160/250), Telemecanique (GV7)	3	**9342.670**
		ABB (S3), Moeller (NZM2), Siemens (VL250)	3	**9342.680**
		Siemens (VL160X, VL160)	3	**9342.690**
10 x 32.0 x 1.0	SV 9342.700/.710	ABB (T5)	3	**9342.770**
		ABB (S5), Merlin Gerin (NS400/630)	3	**9342.780**
		Moeller (NZM3)	3	**9342.790**

[1] Number of lamina x lamina width x lamina thickness
[2] 3 = 1 set

SV 9342.570

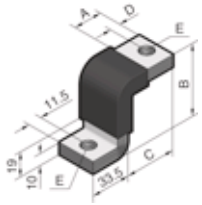


SV 9342.660 – SV 9342.690



Model No. SV	A mm	B mm	C mm	D mm	E mm
9342.660	26	65	43	9	Ø 10
9342.670	19	66	36	10	Ø 10
9342.680	23	71	40	9	Ø 10
9342.690	23	67	40	11	Ø 7
9342.770	26	51	43	9	Ø 12
9342.780	29	57	46	12	Ø 12
9342.790	28	62	38	14	Ø 12

SV 9342.770 – SV 9342.790





ST-Combi connector

for OM and OT Premium adaptors
May be used as a spare. With tension spring clamp at the outlet end.

Material:
PA 6.6

Design	Packs of	Model No. SV
3-pole 1.5 – 4 mm²	5	**9341.980**
8-pole 0.25 – 2.5 mm²	5	**9341.990**

Accessories



Support rails 35 x 10 mm
for OM and OT adaptors/supports

Material:
PA 6.6

Supply includes:
Assembly screws.



For attaching to the adaptor section

Design	Width mm	Packs of	Model No. SV
TS 45C[1)]	45	5	**9342.850**
TS 45D	45	5	**9342.860**
TS 55C[1)]	55	5	**9342.920**
TS 55D	55	5	**9342.930**

[1)] With anti-slip guard for motor circuit-breaker.

For attaching to the support frame

Design	Width mm	Packs of	Model No. SV
TS 45A[1)]	45	5	**9342.830**
TS 45B	45	5	**9342.840**
TS 45B-V[2)]	45	5	**9342.870**
TS 55A[1)]	55	5	**9342.900**
TS 55B	55	5	**9342.910**
TS 55B-V[2)]	55	5	**9342.940**

[1)] With anti-slip guard for motor circuit-breaker.
[2)] With latch for retrospective locking of the support rail after the switchgear has been assembled.



Support rails 35 x 10 mm
for multi-functional component adaptors

Material:
PA 6.6

Supply includes:
Assembly screws.

Width mm	Packs of	Model No. SV
45	5	**9320.090**
54	5	**9320.100**



Support rails 35 x 7.5 mm
for Mini-PLS component adaptors

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws and side end brackets.

Width mm	Packs of	Model No. SV
45	10	**9320.150**
54	10	**3548.000**
72	10	**3549.000**



Support rails 35 x 7.5 mm
for OM and OT adaptors/supports

For assembly on 55 mm wide OM and OT adaptors/supports with 10 mm wide adaptor extension pieces mounted on the right and left.
Arrangement of the mounting hole for central configuration on 55 mm wide adaptor section or support frame.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws and side end brackets.

Width mm	Packs of	Model No. SV
72	5	**9342.980**



Support rail 35 x 15 mm

for component adaptors and Mini-PLS component adaptors

For SV 9342.400/.410, SV 9350.420/.430, SV 9629.000.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws and side end brackets.

Width mm	Packs of	Model No. SV
72	5	**9320.120**



Support rails 35 x 15 mm

for OM and OT adaptors
For attaching to the adaptor section.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws and side end brackets.

Width mm	Packs of	Model No. SV
45	5	**9342.880**
55	5	**9342.950**



Plug-in connector

For fitting the AS-interface load feeder module with matching support 3RK1 901-3CA00 (Siemens) to the multi-functional component adaptor.

For	Packs of	Model No. SV
Mini-PLS component adaptor (width 45/54 mm)	1	**9623.100**
Multi-functional component adaptor (width 45 mm)	1	**9320.110**



Mounting clip

For multi-functional component adaptors (45 mm construction width).
For additional latching of motor starter combinations.

Supply includes:
Support rails, 45 mm wide.

Packs of	Model No. SV
5	**9320.140**



Cover

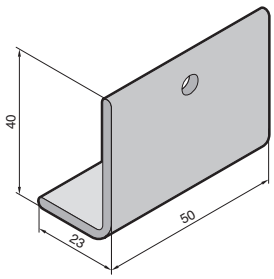
for NH fused isolators, size 00

Increases contact hazard protection between the strip chassis and the base tray.

Material:
PVC

Colour:
RAL 7035

Packs of	Model No. SV
2	**9341.230**



Accessories



1



2

1 Identification label support

for NH fused isolators, size 00
For clip-on mounting on the isolator housing.

Packs of	Model No. SV
6	**3595.010**

2 Identification labels

for bus-mounting fuse bases

Packs of	Model No. SV
100	**9320.080**

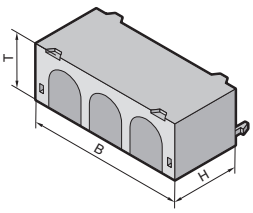


Connection space cover

for NH isolators

- For extending the contact hazard protection cover, e. g. when using ring terminals with a long collar.
- Bayable as required at the top and bottom.

Material:
Polyamide PA6



For NH isolators	Packs of	Model No. SV
Size 00	2	**9344.520**
Size 1	2	**9344.530**
Size 2	2	**9344.540**
Size 3	2	**9344.550**

Model No. SV	W (B) mm	H mm	D (T) mm
9344.520	106	46	37
9344.530	184	70	42
9344.540	210	70	42
9344.550	250	70	42



1



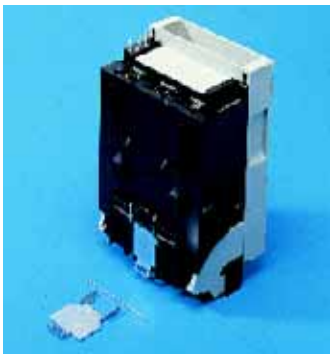
2

Micro-switch

for NH isolators/NH fused isolators, size 00
To indicate the switch position of the NH unit (cover).

For NH unit	Packs of	Model No. SV
1 Size 000/size 00	5	**3071.000**
2 Size 1 – 3	2	**9344.510**[1)]

[1)] Plastic lug for attaching the micro-switch to the isolator chassis.



Mounting set

For mounting the NH on-load isolator, size 000, on 35 mm support rails to DIN EN 60 715 (7.5 mm/ 15 mm high).

Packs of	Model No. SV
1	**3432.000**



Lug terminal connection parts

for NH fused isolators size 00
For connecting laminated copper bars and round conductors 1.5 to 25 mm².
Clamping area: 16 x 10 mm.
Tightening torque:
Terminal screw 4 Nm.

Packs of	Model No. SV
1 set	**3592.020**



Clamp-type terminal connection

for NH fused isolators size 00
For the connection of round conductors 1.5 to 95 mm².
Tightening torque:
Terminal screw 4 Nm.

Packs of	Model No. SV
1 set	**3592.010**



1



2

Prism terminals/box terminals

for NH isolators, sizes 00 to 3 with screw terminal
For direct connection of round and sector-shaped conductors and laminated copper bars.

Design	For NH isolators	Clamping area for laminated copper bars	Connection		Tightening torque	Packs of	Model No. SV
			Round conductors	Sector-shaped conductors			
1 Prism terminals	Size 00	–	10 – 70 mm²	10 – 70 mm²	3 Nm	3	**9344.600**
2 Box terminals	Size 1	20 x 14 mm	35 – 150 mm²	50 – 150 mm²	12 Nm	3	**9344.610**
	Size 2/3	32 x 20 mm	95 – 300 mm²	120 – 300 mm²	20 Nm	3	**9344.620**

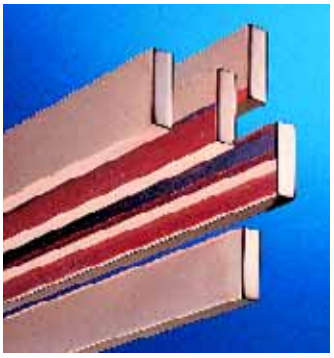


Arc chambers

for NH isolators, sizes 1 to 3
To increase switching capacity.

Technical specifications:
See table “NH isolators (utilisation category)”, page 1246.

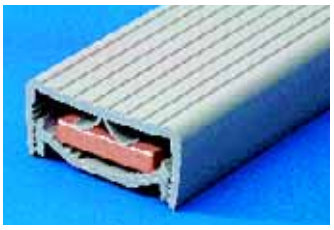
Packs of	Model No. SV
3	**9344.680**



Busbars

made from E-Cu
To DIN EN 13 601.
Length: 2400 mm/bar.

Dimensions mm	Weight/bar kg	Packs of	Model No. SV
12 x 5	1.28	6	**3580.000**
15 x 5	1.60	6	**3581.000**
20 x 5	2.14	6	**3582.000**
25 x 5	2.67	6	**3583.000**
30 x 5	3.20	6	**3584.000**
12 x 10	2.56	6	**3580.100**
15 x 10	3.20	6	**3581.100**
20 x 10	4.27	6	**3585.000**
30 x 10	6.41	6	**3586.000**
40 x 10	8.55	3	**3587.000**
50 x 10	10.68	3	**3588.000**
60 x 10	12.82	3	**3589.000**
80 x 10	17.09	3	**3590.000**

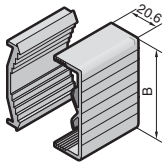


Busbar cover section

Contact hazard protection via full encapsulation of the busbars. May be cut to required length.

Material:
Thermally modified hard PVC.
Continuous operating temperature max. 91°C.
Fire protection corresponding to UL 94-V0.

For busbars mm	Width (B) mm	Packs of	Model No. SV
12 x 5 – 30 x 10	40.6	10 @ 1 m	**3092.000**
40 – 60 x 10	70.6	10 @ 1 m	**3085.000**





1



2

Busbar support

1 and 2-pole:

Material:
SV 3078.000
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

SV 9340.040
Polyamide (PA 6.6), 25 % fibreglass-reinforced.
Continuous operating temperature max. 130°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

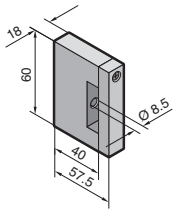
Design	1 1-pole	2 2-pole
Bar centre distance	–	60 mm
For busbars E-Cu	12 x 5 – 30 x 5 mm[1] 30 x 10 mm	12 x 5 – 30 x 10 mm
Tightening torque Assembly screw Lid attachment	5 – 8 Nm 1 – 3 Nm	3 – 5 Nm 1 – 3 Nm
Packs of	4	4
Model No. SV	**3078.000[2]**	**9340.040[3]**

Accessories
Inserts for SV 3078.000

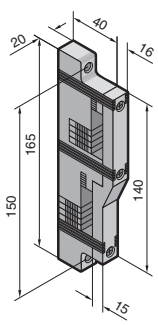
For busbars mm	Packs of	Model No. SV
30 x 5	12	**3001.000**
25 x 5	12	**3002.000**
20 x 10	24	**3003.000**
20 x 5	12	**3004.000**
15 x 5	12	**3007.000**
12 x 10	24	**3008.000**
12 x 5	12	**3009.000**

[1] To accommodate sizes 12 x 5 – 30 x 5 mm, inserts are additionally required.
[2] PEN/N/PE support
[3] N/PE support

1

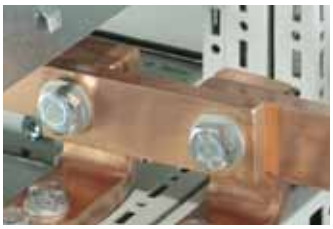


2





1



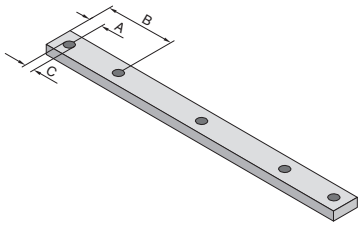
2

1 Busbars

made from E-Cu

Suitable for

- Direct installation in enclosures
- Busbar support
  - SV 9340.000/.010, see page 350
  - SV 9340.004, see page 350
  - SV 9342.014, see page 382
  - SV 3052.000, see page 391
  - SV 3073.000, see page 387
- PE/PEN combinations in conjunction with combination angle and baying bracket.



For enclosure width mm	Packs of	Length mm	30 x 5 mm	30 x 10 mm	Length mm	40 x 10 mm	80 x 10 mm
			Model No. SV	**Model No. SV**		**Model No. SV**	**Model No. SV**
300	2	265	**9661.335**	**9661.330**	292	**9661.030**	**9661.130**
400	2	365	**9661.345**	**9661.340**	392	**9661.040**	**9661.140**
600	2	565	**9661.365**	**9661.360**	592	**9661.060**	**9661.160**
800	2	765	**9661.385**	**9661.380**	792	**9661.080**	**9661.180**
1000	2	965	**9661.305**	**9661.300**	992	**9661.000**	**9661.100**
1200	2	1165	**9661.325**	**9661.320**	1192	**9661.020**	**9661.120**
A mm			15	15		20	20
B mm			–	–		158.5	158.5
C mm			Ø 11	Ø 11		Ø 14	Ø 14
Accessories							
2 Baying bracket E-Cu	4	95	**9661.355**	**9661.350**	–	–	–
		–	–	–	88	**9661.050**	**9661.150**





PE/PEN combination angle

for PE/PEN combinations

The PE/PEN combination, comprised of busbars, combination angles and baying brackets, facilitates type-tested assembly to IEC 60 439-1. The pre-manufactured combination angles and baying brackets, and the busbars customised to the individual enclosure width, facilitate inexpensive, time-saving assembly.

Material:
E-Cu

Supply includes:
Assembly parts.

Technical specifications:
Tested short-circuit resistance
PE/PEN combination

- 30 x 5 mm:
  I_{cw} 18 kA, 1 sec.
- PE/PEN combination
  30 x 10 mm:
  I_{cw} 30 kA, 1 sec.
- PE/PEN combination
  40/80 x 10 mm:
  I_{cw} 30 kA, 1 sec.;
  I_{cw} 42 kA, 1 sec. (when mounting on bar profile frame)

Combination angle for	Packs of	For busbars mm			
		30 x 5	30 x 10	40 x 10	80 x 10
Insert type 2-4	4	**9661.235**	**9661.230**	**9661.240**	**9661.240**[1)]
Other applications	4	**9661.235**	**9661.230**	**9661.200**	**9661.200**[1)]

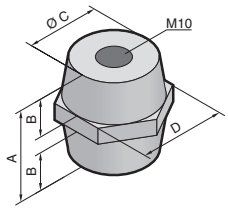
[1)] E-Cu 40 x 10 mm



Base isolators

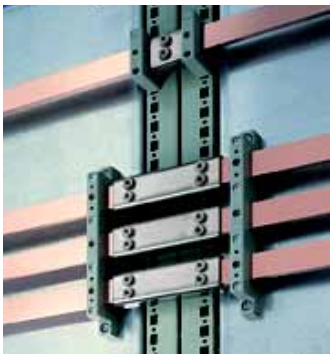
For configuring busbar systems with any given bar centre distances and for assembling PE or PEN bars.

Material:
Duroplastic polyester (UP resin).
Continuous operating temperature max. 135°C.



Rated operating voltage	1 kV	1 kV
Tensile strength	12 kN	13 kN
Torsional strength	75 Nm	90 Nm
Bending strength	6 kN	6 kN
Tightening torque	40 Nm	40 Nm
A mm	40	50
B mm	15	19
Ø C mm	32	42
D mm	SW 36	SW 50
Packs of	6	6
Model No. SV	**3031.000**	**3032.000**





Busbar connectors

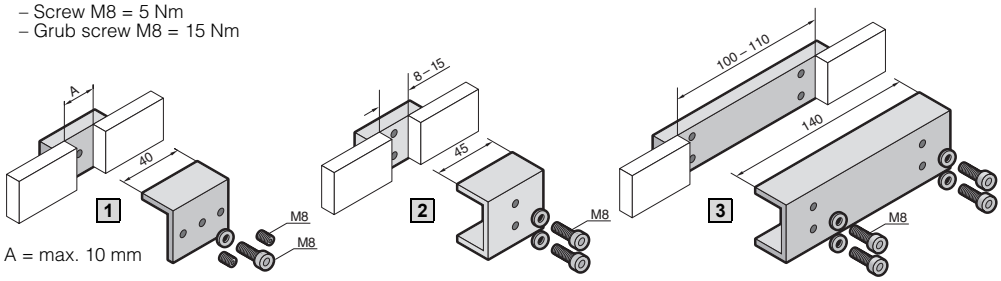
For connecting busbars, no drilling required.

Material:
SV 9350.075
Top part: St 37, nickel-plated surface finish
Base: E-Cu

SV 9320.020/SV 9320.030
Top part: Sheet steel, zinc-plated, passivated
Contact plate: E-Cu, silver-plated

For busbars mm	Application of		Tightening torque	Packs of	Model No. SV
	Single connection	Baying connection[1]			
12 x 5 – 15 x 10	1	–	5 Nm/15 Nm[2]	3	**9350.075**
20 x 5 – 30 x 10	2	–	20 Nm	3	**9320.020**
	–	3	20 Nm	3	**9320.030**

[1] From enclosure to enclosure
[2] Hex socket
– Screw M8 = 5 Nm
– Grub screw M8 = 15 Nm





A



B

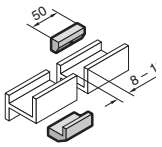
PLS busbar connectors

For connecting the PLS special busbars; no drilling required.

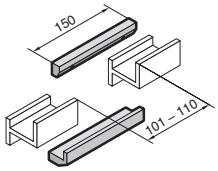
Material:
E-Cu, nickel-plated

For	Packs of	Model No. SV for system	
		PLS 800	PLS 1600
A Single connection	3	**3504.000**	**3514.000**
B Baying connection[1]	3	**3505.000**	**3515.000**
Tightening torque		10 – 15 Nm	15 – 20 Nm

[1] From enclosure to enclosure (TS 8)



A



B



A



B

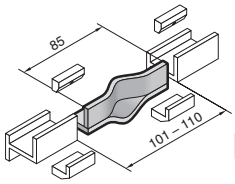
PLS expansion connectors

For thermal and mechanical compensation during connection of PLS special busbars from enclosure to enclosure (TS 8).

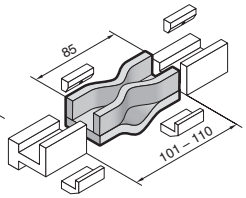
Material:
E-Cu

Packs of	Model No. SV for system	
	A PLS 800	B PLS 1600
3	**9320.060**	**9320.070**
Also required		
PLS busbar connectors[1]	3504.000	3514.000

[1] Two busbar connectors are needed to fit one expansion connector.



A



B

Note:
With a temperature increase of 30 K, the busbars will expand in length by around 0.5 mm/m. Consequently, the use of an expansion connector is recommended for busbar systems with lengths in excess of 3 m.



Laminated copper bars Rittal Flexibar “S”

Length: 2000 mm/bar.

Material:
Cu lamina
- High-purity electrolyte copper F20

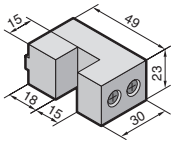
Insulation
- High-strength vinyl compound
- Expansion 370 %
- Temperature range: –30°C to +105°C
- Flame retardant version to UL 94-V0
- Dielectric strength: 20 kV/mm

Short-circuit protection diagram,
see page 1248.

Configuration[1] mm	I_n at 50 K[2]	I_n at 30 K[2]	I_n at 10 K[2]	Packs of	Model No. SV
8 x 6.0 x 0.5	165 A	125 A	–	1	**3565.010**
6 x 9.0 x 0.8	250 A	220 A	120 A	1	**3565.000**
6 x 13.0 x 0.5	200 A	150 A	110 A	1	**3566.000**
4 x 15.5 x 0.8	300 A	210 A	140 A	1	**3567.000**
6 x 15.5 x 0.8	350 A	290 A	170 A	1	**3568.000**
10 x 15.5 x 0.8	450 A	350 A	190 A	1	**3569.000**
5 x 20.0 x 1.0	400 A	300 A	180 A	1	**3570.000**
5 x 24.0 x 1.0	450 A	370 A	230 A	1	**3571.000**
10 x 24.0 x 1.0	800 A	600 A	340 A	1	**3572.000**
5 x 32.0 x 1.0	550 A	470 A	280 A	1	**3573.000**
10 x 32.0 x 1.0	1000 A	800 A	460 A	1	**3574.000**
5 x 40.0 x 1.0	800 A	600 A	340 A	1	**3575.000**
10 x 40.0 x 1.0	1200 A	950 A	500 A	1	**3576.000**
5 x 50.0 x 1.0	900 A	700 A	400 A	1	**3577.000**
10 x 50.0 x 1.0	1400 A	1000 A	600 A	1	**3578.000**
10 x 63.0 x 1.0	1600 A	1240 A	715 A	1	**3579.000**

[1] Number of lamina x lamina width x lamina thickness
[2] The conductor temperature of the laminated copper bar is derived by adding the ambient temperature and the temperature increase together.
Example:
SV 3565.000 loaded with 220 A, i. e. the temperature increases by 30 K. At an ambient temperature of 35°C, this produces a resultant conductor temperature of 35°C + 30 K = 65°C.





Universal support

For the attachment of laminated copper bars from 20 x 5 to 63 x 10 mm.

Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Fire protection corresponding to UL 94-V0.

Supply includes:
Screws and “U” nuts for mounting on PS/TS mounting rails.

Packs of	Model No. SV
3	**3079.000**

Short-circuit protection diagram,
see page 1248.



Universal holder

For the attachment of laminated copper bars from 40 x 5 to 100 x 10 mm.

Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Fire protection corresponding to UL 94-V0.

Supply includes:
Screws and sliding nuts for attachment on C rails.

Packs of	Model No. SV
3 sets	**3079.010**

Accessories:

C rails 30/15,
see page 999.

Ri4Power

Form 1
High-current energy distributor



The system solution consisting of the SV-TS 8 Top enclosure system and the standardised Maxi PLS busbars.

Applications:
- Main current distribution systems
- Current rectification applications
- Wind power
- Industry distribution systems
- Mechanical engineering

Technical specifications:

Rated voltage: up to 690 V AC

Rated currents: up to 1600, 2000 or 3200 A

Rated transient current resistance: up to 70/124 kA

Protection category: up to IP 54

Form 2-4
Low-voltage systems



Modular form separation of the SV-TS 8 Top enclosure system in combination with RiLine busbars.

Applications:
- Process industry
- Water supply/disposal
- Building distribution
- Chemical industry
- Mechanical engineering

Technical specifications:

Rated voltage: up to 690 V AC

Rated currents: up to 800 A, up to 1600 A, up to 4000 A

Rated transient current resistance: up to 52 kA

Protection category: up to IP 54

Form 1
Distribution enclosure



Everything from a single source: ISV-TS 8 enclosure system, ISV modules and SV components.

Applications:
- Building distribution systems
- Industry distribution systems
- Subdistribution systems

Technical specifications:

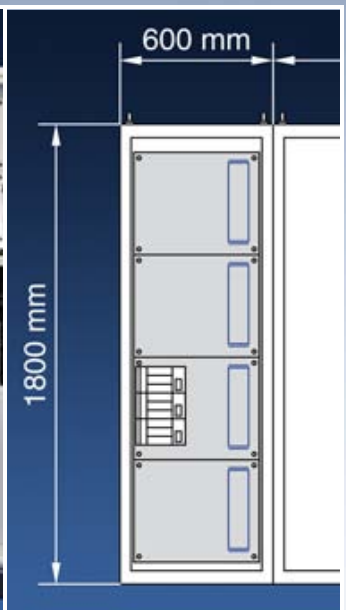
Rated voltage: up to 690 V AC

Rated currents: up to 630 A, up to 1600 A

Rated transient current resistance: up to 50 kA

Protection category: up to IP 54

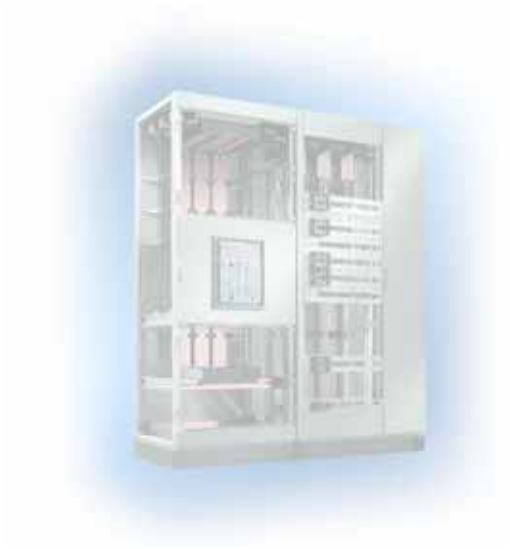
Software
Planning, configuring, selection



Innovative software for fast achievement of Ri4Power systems.

Rittal Power Engineering
- For planners: Tendering text and plan drawings at the press of a button
- For preparing a tender: Exact costing for each part in just a few easy steps
- For the plant constructor: Field-related bills of materials and drawings at the press of a button

Ri4Power
Type-tested to IEC 60 439-1
Accidental arc testing to IEC 61 641



Heavy current power distributor with Maxi-PLS

TS 8 and Maxi-PLS bar. This is the ideal combination for Ri4Power Form 1 low-voltage distributors and switchgear in the heavy current range. The system is assembled without any form of machining (such as sawing, drilling, bending etc.). As a result, this future-oriented, type-tested fully modular system offers new dimensions in fast assembly and safety. Rittal Power Engineering, an intuitive software solution,

is available to help you with planning and calculation.



Ri4Power Form 1 enclosures





Prepared SV-TS 8 enclosures for all field types.
Standardised enclosure frames for the installation of power circuit-breakers, NH fused isolators, coupling switches etc. Installation has been mechanically prepared in such a way that minimum assembly work is required for maximum combination diversity.



Maxi-PLS busbars and system components





Standardised Maxi-PLS busbars with ingenious fastening technology.
Thanks to the perfect system technology and customised pitch pattern, installation of Maxi-PLS supports and bars is precise-fit, simple and fast. With the aid of sliding blocks or studs, the four attachment levels of the Maxi-PLS busbars permit infinitely variable attachment and contacting of round conductors, laminated flat copper and Maxi-PLS connection brackets and connection kits.

Ri4Power Form 1 system components

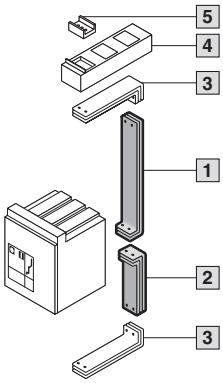


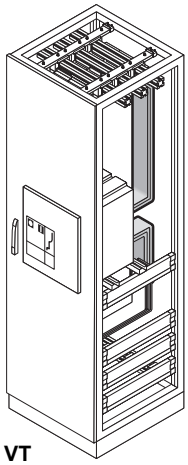

System packages for all commercially available power circuit-breakers.
Maxi-PLS busbars, in conjunction with the isolator chassis, the U contact washers and the connection brackets, form the heart of this system for the connection of power circuit-breakers up to 3200 A with standardised components. The connection kits are precisely tailored to the respective power circuit-breakers.

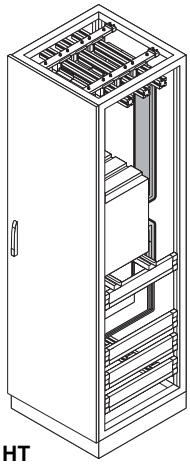
Type tests to EN 60 439-1/ IEC 60 439-1, special test under accidental arcing conditions to EN 60 439-1, supplement 2/IEC 1641

Connection kits (3-pole), Maxi-PLS up to 2000 A









For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 600 mm.

Material:
E-Cu

Correct selection should be made according to the following criteria:

- Manufacturer, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cut-out
  HT = behind the door

1 Connection kit, top
2 Connection kit, bottom
3 Connection bracket
4 Isolator chassis
5 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WL, Moeller IZM			**Model No. SV**						Page
Rated operating current I_e			630 A	800 A	1000 A	1250 A	1600 A	2,000 A	
Size (BG)			I	I	I	I	I	II	
Static	VT	1 top	**9644.030**	**9644.070**	**9644.110**	**9644.150**	**9644.190**	**9644.510**	
		2 bottom	**9644.040**	**9644.080**	**9644.120**	**9644.160**	**9644.200**	**9644.520**	
	HT	1 top	**9644.010**	**9644.050**	**9644.090**	**9644.130**	**9644.170**	**9644.490**	
		2 bottom	**9644.020**	**9644.060**	**9644.100**	**9644.140**	**9644.180**	**9644.500**	
Rack-mounted	VT	1 top	**9644.310**	**9644.350**	**9644.390**	**9644.430**	**9644.470**	**9644.530**	
		2 bottom	**9644.320**	**9644.360**	**9644.400**	**9644.440**	**9644.480**	**9644.540**	
	HT	1 top	**9644.290**	**9644.330**	**9644.370**	**9644.410**	**9644.450**	**9644.550**[1)]	
		2 bottom	**9644.300**	**9644.340**	**9644.380**	**9644.420**	**9644.460**	**9644.560**[1)]	
Accessories		Packs of							
3 Connection bracket		1 set	9640.430	9640.430	9640.430	9640.440	9640.440	9640.450	423
4 Isolator chassis		1 set	9640.020	9640.020	9640.020	9640.020	9640.020	9640.020	423
5 U contact maker		3	9640.170	9640.170	9640.170	9640.170	9640.170	9640.170	423
Stacking insulator		6	9660.200	9660.200	9660.200	9660.200	9660.200	9660.200	454

Mitsubishi AE-SS				**Model No. SV**					Page
Rated operating current I_e			630 A	800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	**–**	**–**	**9645.030**	**9645.070**	**9645.110**	**9645.150**	
		2 bottom	**–**	**–**	**9645.040**	**9645.080**	**9645.120**	**9645.160**	
	HT	1 top	**–**	**–**	**9645.010**	**9645.050**	**9645.090**	**9645.130**	
		2 bottom	**–**	**–**	**9645.020**	**9645.060**	**9645.100**	**9645.140**	
Rack-mounted	VT	1 top	**–**	**–**	**9645.350**	**9645.390**	**9645.430**	**9645.470**	
		2 bottom	**–**	**–**	**9645.360**	**9645.400**	**9645.440**	**9645.480**	
	HT	1 top	**–**	**–**	**9645.330**	**9645.370**	**9645.410**	**9645.450**	
		2 bottom	**–**	**–**	**9645.340**	**9645.380**	**9645.420**	**9645.460**	
Accessories		Packs of							
3 Connection bracket		1 set	–	–	9640.430	9640.440	9640.440	9640.450	423
4 Isolator chassis		1 set	–	–	9640.020	9640.020	9640.020	9640.020	423
5 U contact maker		3	–	–	9640.170	9640.170	9640.170	9640.170	423
Stacking insulator		6	–	–	9660.200	9660.200	9660.200	9660.200	454

[1)] For installation in 800 mm deep enclosures.

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Connection kits (3-pole), Maxi-PLS up to 2000 A

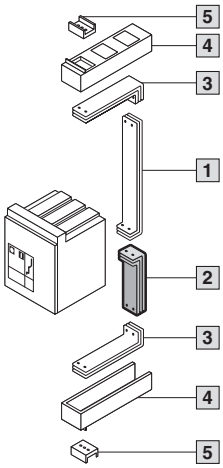
Merlin Gerin Masterpact NW			**Model No. SV**					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	**9642.030**	**9642.070**	**9642.110**	**9642.150**	**9642.190**	
		2 bottom	**9642.040**	**9642.080**	**9642.120**	**9642.160**	**9642.200**	
	HT	1 top	**9642.010**	**9642.050**	**9642.090**	**9642.130**	**9642.170**	
		2 bottom	**9642.020**	**9642.060**	**9642.100**	**9642.140**	**9642.180**	
Rack-mounted	VT	1 top	**9642.310**	**9642.350**	**9642.390**	**9642.430**	**9642.470**	
		2 bottom	**9642.320**	**9642.360**	**9642.400**	**9642.440**	**9642.480**	
	HT	1 top	**9642.290**	**9642.330**	**9642.370**	**9642.410**	**9642.450**	
		2 bottom	**9642.300**	**9642.340**	**9642.380**	**9642.420**	**9642.460**	
Accessories	Packs of							
3 Connection bracket	1 set		9640.430	9640.440	9640.440	9640.440	9640.450	423
4 Isolator chassis	1 set		9640.020	9640.020	9640.020	9640.020	9640.020	423
5 U contact maker	3		9640.170	9640.170	9640.170	9640.170	9640.170	423
Stacking insulator	6		9660.200	9660.200	9660.200	9660.200	9660.200	454

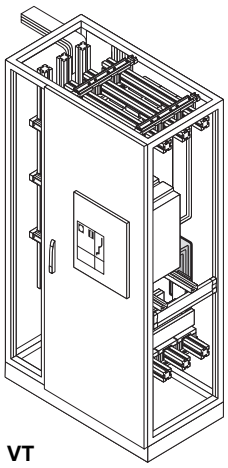
ABB Sace Emax			**Model No. SV**					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			E1	–	E1	E2	E2	
Static	VT	1 top	**9643.030**	**–**	**9643.070**	**9643.110**	**9643.150**	
		2 bottom	**9643.040**	**–**	**9643.080**	**9643.120**	**9643.160**	
	HT	1 top	**9643.010**	**–**	**9643.050**	**9643.090**	**9643.130**	
		2 bottom	**9643.020**	**–**	**9643.060**	**9643.100**	**9643.140**	
Rack-mounted	VT	1 top	**9643.310**	**–**	**9643.350**	**9643.390**	**9643.430**	
		2 bottom	**9643.320**	**–**	**9643.360**	**9643.400**	**9643.440**	
	HT	1 top	**9643.290**	**–**	**9643.330**	**9643.370**	**9643.410**	
		2 bottom	**9643.300**	**–**	**9643.340**	**9643.380**	**9643.420**	
Accessories	Packs of							
3 Connection bracket	1 set		9640.430	–	9640.440	9640.440	9640.450	423
4 Isolator chassis	1 set		9640.020	–	9640.020	9640.020	9640.020	423
5 U contact maker	3		9640.170	–	9640.170	9640.170	9640.170	423
Stacking insulator	6		9660.200	–	9660.200	9660.200	9660.200	454

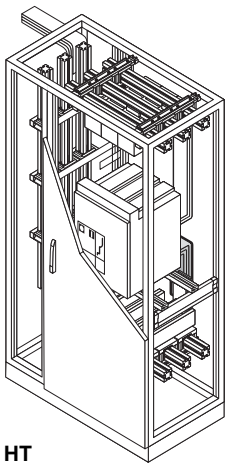
System overview Page 413 **System components** Page 422 **Connection components** Page 423 **SV-TS 8 enclosures** Page 438 **Accessories** Page 453

Connection kits for coupling sets (3-pole), Maxi-PLS up to 2000 A









For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 800 mm.

Material:
E-Cu

Correct selection should be made according to the following criteria:

- Manufacturer, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cut-out
  HT = behind the door

1 Connection kit, top see page 414 and 415.

2 Connection kit, bottom for coupling section

3 Connection bracket

4 Isolator chassis

5 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WL, Moeller IZM		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Size (BG)		I	II	
Static	VT 2 bottom	**9644.205**	**9644.525**	
	HT 2 bottom	**9644.185**	**9644.505**	
Rack-mounted	VT 2 bottom	**9644.485**	**9644.545**	
	HT 2 bottom	**9644.465**	**9644.565**[1)]	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	9640.450	423
4 Isolator chassis	1 set	9640.020	9640.020	423
5 U contact maker	3	9640.170	9640.170	423
Stacking insulator	6	9660.200	9660.200	454

Mitsubishi AE-SS		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Static	VT 2 bottom	**9645.125**	**9645.165**	
	HT 2 bottom	**9645.105**	**9645.145**	
Rack-mounted	VT 2 bottom	**9645.445**	**9645.485**	
	HT 2 bottom	**9645.425**	**9645.465**	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	9640.450	423
4 Isolator chassis	1 set	9640.020	9640.020	423
5 U contact maker	3	9640.170	9640.170	423
Stacking insulator	6	9660.200	9660.200	454

[1)] For installation in 800 mm deep enclosures.

System overview Page 413 **Connection kits, top** Page 414/415 **System components** Page 422 **Connection components** Page 423
SV-TS 8 enclosures Page 438 **Accessories** Page 453

Connection kits for coupling sets (3-pole), Maxi-PLS up to 2000 A

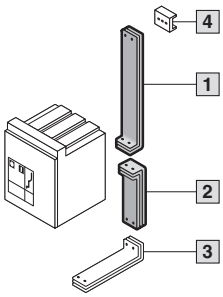
Merlin Gerin Masterpact NW		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Static	VT 2 bottom	**9642.165**	**9642.205**	
	HT 2 bottom	**9642.145**	**9642.185**	
Rack-mounted	VT 2 bottom	**9642.445**	**9642.485**	
	HT 2 bottom	**9642.425**	**9642.465**	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	9640.450	423
4 Isolator chassis	1 set	9640.020	9640.020	423
5 U contact maker	3	9640.170	9640.170	423
Stacking insulator	6	9660.200	9660.200	454

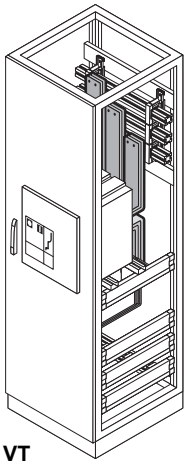
ABB Sace Emax		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Size (BG)		E2	E2	
Static	VT 2 bottom	**9643.125**	**9643.165**	
	HT 2 bottom	**9643.105**	**9643.145**	
Rack-mounted	VT 2 bottom	**9643.405**	**9643.445**	
	HT 2 bottom	**9643.385**	**9643.425**	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	9640.450	423
4 Isolator chassis	1 set	9640.020	9640.020	423
5 U contact maker	3	9640.170	9640.170	423
Stacking insulator	6	9660.200	9660.200	454

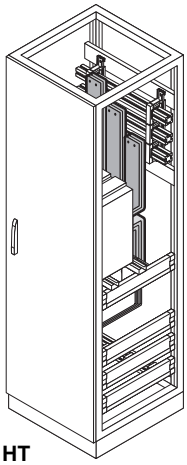
System overview Page 413 **Connection kits, top** Page 414/415 **System components** Page 422 **Connection components** Page 423
SV-TS 8 enclosures Page 438 **Accessories** Page 453

Connection kits for rear section (3-pole), Maxi-PLS up to 2000 A









For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 600 mm.

Material:
E-Cu

Correct selection should be made according to the following criteria:

- Manufacturer, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cut-out
  HT = behind the door

1 Connection kit, top
2 Connection kit, bottom
3 Connection bracket
4 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WL, Moeller IZM			Model No. SV						Page
Rated operating current I_e			630 A	800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			I	I	I	I	I	II	
Static	VT	1 top	**9644.033**	**9644.073**	**9644.113**	**9644.153**	**9644.193**	**9644.513**	
		2 bottom	**9644.043**	**9644.083**	**9644.123**	**9644.163**	**9644.203**	**9644.523**	
	HT	1 top	**9644.013**	**9644.053**	**9644.093**	**9644.133**	**9644.173**	**9644.493**	
		2 bottom	**9644.023**	**9644.063**	**9644.103**	**9644.143**	**9644.183**	**9644.503**	
Rack-mounted	VT	1 top	**9644.313**	**9644.353**	**9644.393**	**9644.433**	**9644.473**	**9644.533**[1)]	
		2 bottom	**9644.323**	**9644.363**	**9644.403**	**9644.443**	**9644.483**	**9644.543**[1)]	
	HT	1 top	**9644.293**[1)]	**9644.333**[1)]	**9644.373**[1)]	**9644.413**[1)]	**9644.453**[1)]	**9644.553**[1)]	
		2 bottom	**9644.303**[1)]	**9644.343**[1)]	**9644.383**[1)]	**9644.423**[1)]	**9644.463**[1)]	**9644.563**[1)]	
Accessories		Packs of							
3 Connection bracket		1 set	9640.430	9640.430	9640.430	9640.440	9640.440	9640.450	423
4 U contact maker		3	9640.170	9640.170	9640.170	9640.170	9640.170	9640.170	423

Mitsubishi AE-SS			Model No. SV						Page
Rated operating current I_e			630 A	800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	–	–	**9645.033**	**9645.073**	**9645.113**	**9645.153**	
		2 bottom	–	–	**9645.043**	**9645.083**	**9645.123**	**9645.163**	
	HT	1 top	–	–	**9645.013**	**9645.053**	**9645.093**	**9645.133**	
		2 bottom	–	–	**9645.023**	**9645.063**	**9645.103**	**9645.143**	
Rack-mounted	VT	1 top	–	–	**9645.353**	**9645.393**	**9645.433**	**9645.473**	
		2 bottom	–	–	**9645.363**	**9645.403**	**9645.443**	**9645.483**	
	HT	1 top	–	–	**9645.333**	**9645.373**	**9645.413**	**9645.453**[1)]	
		2 bottom	–	–	**9645.343**	**9645.383**	**9645.423**	**9645.463**[1)]	
Accessories		Packs of							
3 Connection bracket		1 set	–	–	9640.430	9640.440	9640.440	9640.450	423
4 U contact maker		3	–	–	9640.170	9640.170	9640.170	9640.170	423

[1)] For installation in 800 mm deep enclosures.

System overview Page 413 **System components** Page 422 **Connection components** Page 423 **SV-TS 8 enclosures** Page 438 **Accessories** Page 453

Connection kits for rear section (3-pole), Maxi-PLS up to 2000 A

Merlin Gerin Masterpact NW			**Model No. SV**					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	**9642.033**	**9642.073**	**9642.113**	**9642.153**	**9642.193**	
		2 bottom	**9642.043**	**9642.083**	**9642.123**	**9642.163**	**9642.203**	
	HT	1 top	**9642.013**	**9642.053**	**9642.093**	**9642.133**	**9642.173**	
		2 bottom	**9642.023**	**9642.063**	**9642.103**	**9642.143**	**9642.183**	
Rack-mounted	VT	1 top	**9642.313**	**9642.353**	**9642.393**	**9642.433**	**9642.473**	
		2 bottom	**9642.323**	**9642.363**	**9642.403**	**9642.443**	**9642.483**	
	HT	1 top	**9642.293**	**9642.333**	**9642.373**	**9642.413**	**9642.453**	
		2 bottom	**9642.303**	**9642.343**	**9642.383**	**9642.423**	**9642.463**	
Accessories	Packs of							
3 Connection bracket	1 set		9640.430	9640.440	9640.440	9640.440	9640.450	423
4 U contact maker	3		9640.170	9640.170	9640.170	9640.170	9640.170	423

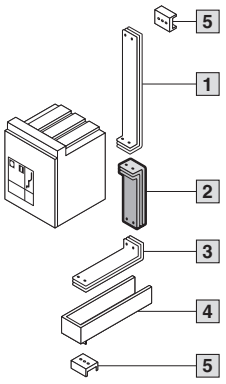
ABB Sace Emax			**Model No. SV**					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			E1	–	E1	E2	E2	
Static	VT	1 top	**9643.033**	**–**	**9643.073**	**9643.113**	**9643.153**	
		2 bottom	**9643.043**	**–**	**9643.083**	**9643.123**	**9643.163**	
	HT	1 top	**9643.013**	**–**	**9643.053**	**9643.093**	**9643.133**	
		2 bottom	**9643.023**	**–**	**9643.063**	**9643.103**	**9643.143**	
Rack-mounted	VT	1 top	**9643.313**	**–**	**9643.353**	**9643.393**	**9643.433**	
		2 bottom	**9643.323**	**–**	**9643.363**	**9643.403**	**9643.443**	
	HT	1 top	**9643.293**	**–**	**9643.333**	**9643.373**	**9643.413**[1)]	
		2 bottom	**9643.303**	**–**	**9643.343**	**9643.383**	**9643.423**[1)]	
Accessories	Packs of							
3 Connection bracket	1 set		9640.430	–	9640.440	9640.440	9640.450	423
4 U contact maker	3		9640.170	–	9640.170	9640.170	9640.170	423

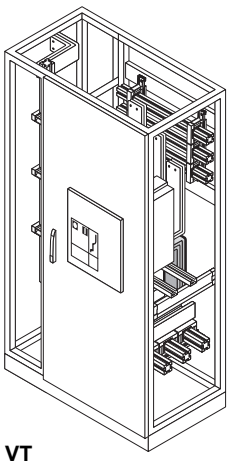
[1)] For installation in 800 mm deep enclosures.

System overview Page 413 **System components** Page 422 **Connection components** Page 423 **SV-TS 8 enclosures** Page 438 **Accessories** Page 453

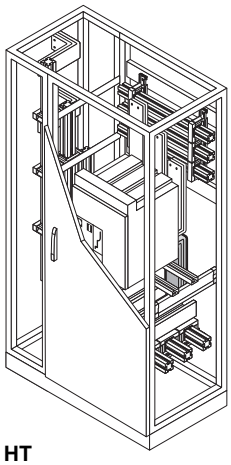
Connection kits for coupling sets – rear section (3-pole), Maxi-PLS up to 2000 A







VT



HT

For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 800 mm.

Material:
E-Cu

Correct selection should be made according to the following criteria:

- Manufacturer, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cut-out
  HT = behind the door

[1] Connection kit, top
see page 418 and 419.

[2] Connection kit, bottom for coupling section

[3] Connection bracket

[4] Isolator chassis

[5] U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WL, Moeller IZM		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Size (BG)		I	II	
Static	VT [2] bottom	**9644.204**	**9644.524**	
	HT [2] bottom	**9644.184**	**9644.504**	
Rack-mounted	VT [2] bottom	**9644.484**	**9644.544**[1)]	
	HT [2] bottom	**9644.464**[1)]	**9644.564**[1)]	
Accessories	Packs of			
[3] Connection bracket	1 set	9640.440	9640.450	423
[4] Isolator chassis	1 set	9640.020	9640.020	423
[5] U contact maker	3	9640.170	9640.170	423

Mitsubishi AE-SS		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Static	VT [2] bottom	**9645.124**	**9645.164**	
	HT [2] bottom	**9645.104**	**9645.144**	
Rack-mounted	VT [2] bottom	**9645.444**	**9645.484**	
	HT [2] bottom	**9645.424**	**9645.464**[1)]	
Accessories	Packs of			
[3] Connection bracket	1 set	9640.440	9640.450	423
[4] Isolator chassis	1 set	9640.020	9640.020	423
[5] U contact maker	3	9640.170	9640.170	423

[1)] For installation in 800 mm deep enclosures.

System overview Page 413 **Connection kits, top** Page 418/419 **System components** Page 422 **Connection components** Page 423
SV-TS 8 enclosures Page 438 **Accessories** Page 453

Connection kits for coupling sets – rear section (3-pole), Maxi-PLS up to 2000 A

Merlin Gerin Masterpact NW		Model No. SV		Page
Rated operating current I_e		1600 A	2000 A	
Static	VT 2 bottom	**9642.164**	**9642.204**	
	HT 2 bottom	**9642.144**	**9642.184**	
Rack-mounted	VT 2 bottom	**9642.444**	**9642.484**	
	HT 2 bottom	**9642.424**	**9642.464**	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	9640.450	423
4 Isolator chassis	1 set	9640.020	9640.020	423
5 U contact maker	3	9640.170	9640.170	423

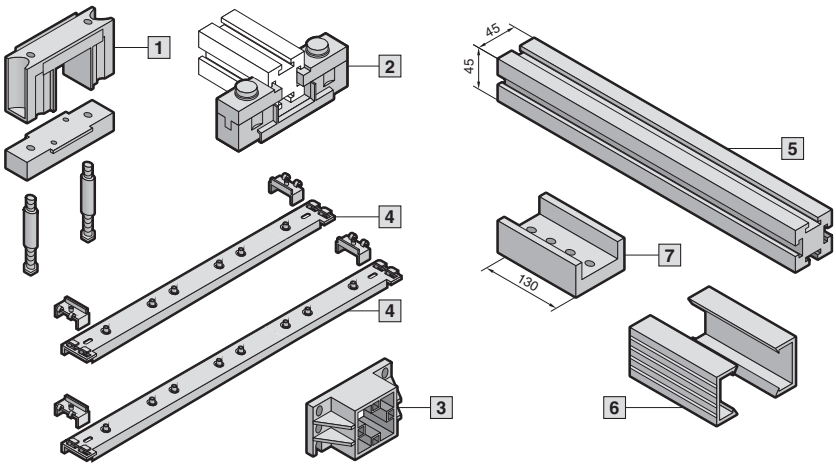
ABB Sace Emax		Model No. SV		Page
Rated operating current I_e		1600 A	2000 A	
Size		E2	E2	
Static	VT 2 bottom	**9643.124**	**9643.164**	
	HT 2 bottom	**9643.104**	**9643.144**	
Rack-mounted	VT 2 bottom	**9643.404**	**9643.444**	
	HT 2 bottom	**9643.384**	**9643.424**[1)]	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	9640.450	423
4 Isolator chassis	1 set	9640.020	9640.020	423
5 U contact maker	3	9640.170	9640.170	423

[1)] For installation in 800 mm deep enclosures.

System overview Page 413 **Connection kits, top** Page 418/419 **System components** Page 422 **Connection components** Page 423
SV-TS 8 enclosures Page 438 **Accessories** Page 453

System components, Maxi-PLS up to 1600 A/2000 A





Material:
Busbar support, end support, end cover: PA 6.6
System attachment: Stainless steel
Cover section: Hard PVC

Note:
PE/PEN combination/busbars, see page 409.

Detailed drawing,
see page 1250.

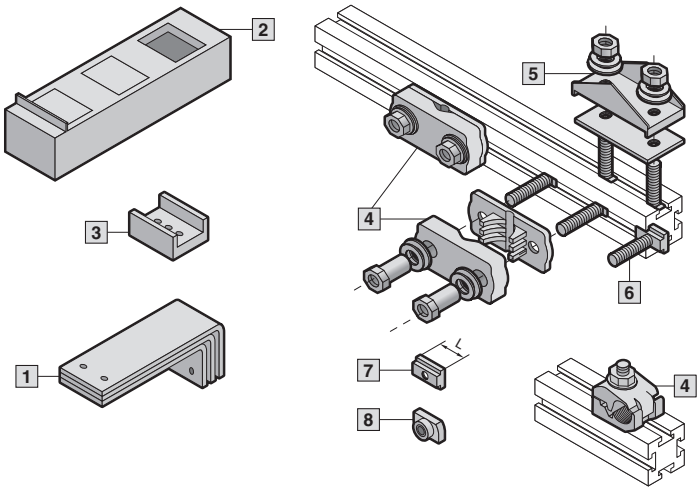
Maxi-PLS system components			3-pole		4-pole	
			Packs of	Model No. SV	Packs of	Model No. SV
1 **Busbar support**			3	**9640.000**	3 + 1	**9640.000** **9649.000**
2 **Busbar support, suitable for top mounting**			3	**9640.160**	3	**9640.160**
3 **End supports**			6	**9640.010**	6 + 2	**9640.010** **9649.010**
4 **System attachment** for installing the busbar supports.						
For enclosures	Enclosure depth mm	Bar centre distance mm				
TS (roof section)	500	100	2	**9640.100**	–	**–**
	600	100	2	**9640.120**	2	**9640.080**
	600	150	2	**9640.140**	–	**–**
TS (rear section)	–	185	2	**9640.150**	–	**–**
	–	100	–	**–**	2	**9640.090**
6 **Cover section** for clip-on mounting on the Maxi-PLS busbars, length 1000 mm.			5	**9640.050**	5	**9640.050**
7 **Longitudinal connector E-Cu** for simple baying connection of the Maxi-PLS busbars. Including sliding blocks, bolts, washers and nuts.			3	**9640.190**	3 + 1	**9640.190** **9649.190**
End cover for clip-on mounting on the end surface of Maxi-PLS busbars.			6	**9640.060**	6 + 2	**9640.060** **9649.060**
5 **Maxi-PLS busbars E-Cu** (special lengths available on request).						
Length mm	For enclosure width mm	For application[1)]		1600 A		2000 A
491	600	A	1	**9640.206**	1	**9640.201**
525	600	B	1	**9640.216**	1	**9640.211**
599	600	C	1	**9640.226**	1	**9640.221**
691	800	A	1	**9640.236**	1	**9640.231**
725	800	B	1	**9640.246**	1	**9640.241**
799	800	C	1	**9640.256**	1	**9640.251**
891	1000	A	1	**9640.266**	1	**9640.261**
925	1000	B	1	**9640.276**	1	**9640.271**
999	1000	C	1	**9640.286**	1	**9640.281**
1091	1200	A	1	**9640.296**	1	**9640.291**
1125	1200	B	1	**9640.306**	1	**9640.301**
1199	1200	C	1	**9640.316**	1	**9640.311**
2400	–	–	3	**9640.365**	3	**9640.360**
2400	–	–	–	**–**	4	**9649.360**

[1)] A = Cable connection system with end support
B = Left-hand or right-hand end enclosure in a switchgear installation
C = Bayed enclosure with panels bayed on the left and right

System overview Page 413 **Connection kits** Page 414 – 421 **Connection components** Page 423 **SV-TS 8 enclosures** Page 438 **Accessories** Page 453

Connection components, Maxi-PLS up to 1600 A/2000 A





Detailed drawing,
see page 1251.

4 SV 9640.325

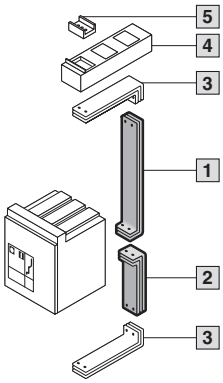
Maxi-PLS connection components				3-pole		4-pole	
				Packs of	Model No. SV	Packs of	Model No. SV
1	**Connection bracket E-Cu** Transition from the main busbar system to the connection kits.						
	For enclosure depth mm	Width mm	Number of brackets per phase				
	500	60	1	1 set	**9640.400**	–	**–**
	500	60	2	1 set	**9640.410**	–	**–**
	500	60	3	1 set	**9640.420**	–	**–**
	600	60	1	1 set	**9640.430**	1 set	**9649.430**
	600	60	2	1 set	**9640.440**	1 set	**9649.440**
	600	60	3	1 set	**9640.450**	1 set	**9649.450**
2	**Isolator chassis** for isolated routing of the connection brackets. Material: PA 6.6, black, including assembly parts.						
	Bar centre distance mm		For connection bracket width mm				
	100		60	1 set	**9640.020**	1 set	**9649.020**
	150		60	1 set	**9650.020**	–	**–**
	150		100	1 set	**9650.030**	–	**–**
3	**U contact maker E-Cu** for contacting the connection brackets to the Maxi-PLS busbars. Including sliding blocks.						
	60 mm width			3	**9640.170**	3 + 1	**9640.170** **9649.170**
	100 mm width			3	**9640.180**	–	**–**
4	**Connection clamp** for the connection of round conductors 95 to 300 mm² (multi-wire and sector). Including assembly parts.						
	50 mm width			1	**9640.325**	1	**9640.325**
	90 mm width			3	**9640.320**	3	**9640.320**
5	**Connection plates** for the connection of laminated flat copper bars. Including assembly parts.						
	Maximum clamping area	2 x 10 x 32 x 1 mm		3	**9640.330**	3	**9640.330**
		2 x 10 x 63 x 1 mm		3	**9640.340**	3	**9640.340**
		2 x 10 x 100 x 1 mm		3	**9640.350**	3	**9640.350**
6	**Terminal stud** for connecting cables with ring terminals. Including sliding blocks.						
	Thread	M12	Length 30 mm	3	**9640.370**	3	**9640.370**
		M16	Length 30 mm	3	**9640.380**	3	**9640.380**
7	**Sliding blocks** for sliding into the Maxi-PLS busbar section at the sides.						
	Thread	M8	Length (L) 20 mm	15	**9640.970**	15	**9640.970**
		M10	Length (L) 25 mm	15	**9640.980**	15	**9640.980**
8	**Sliding nuts** for retrospective insertion into the Maxi-PLS busbar section.						
	Thread	M6		15	**9640.900**	15	**9640.900**
		M8		15	**9640.910**	15	**9640.910**
		M10		15	**9640.920**	15	**9640.920**
	Threaded bolts for individual connection options[1]. Including plain washers, spring lock washers and nuts.						
	Thread	M6	Length 35 mm	6	**9640.930**	6	**9640.930**
		M8	Length 35 mm	6	**9640.940**	6	**9640.940**
		M10	Length 80 mm	6	**9640.960**	6	**9640.960**

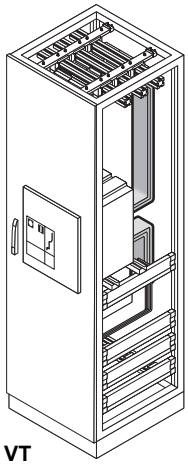
[1] Sliding blocks or sliding nuts are additionally required for attachment.

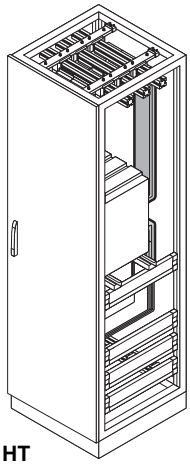
System overview Page 413 **Connection kits** Page 414 – 419 **System components** Page 422 **SV-TS 8 enclosures** Page 438 **Accessories** Page 453

Connection kits (3-pole), Maxi-PLS up to 3200 A






VT


HT

For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 600 mm.

Material:
E-Cu

Correct selection should be made according to the following criteria:

- Manufacturer, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cut-out
  HT = behind the door

1 Connection kit, top
2 Connection kit, bottom
3 Connection bracket
4 Isolator chassis
5 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WL, Moeller IZM			**Model No. SV**						Page
Rated operating current I_e			630 A	800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			I	I	I	I	I	II	
Static	VT	1 top	**9654.030**	**9654.070**	**9654.110**	**9654.150**	**9654.190**	**9654.690**	
		2 bottom	**9654.040**	**9654.080**	**9654.120**	**9654.160**	**9654.200**	**9654.700**	
	HT	1 top	**9654.010**	**9654.050**	**9654.090**	**9654.130**	**9654.170**	**9654.710**	
		2 bottom	**9654.020**	**9654.060**	**9654.100**	**9654.140**	**9654.180**	**9654.720**	
Rack-mounted	VT	1 top	**9654.350**	**9654.390**	**9654.430**	**9654.470**	**9654.510**	**9654.650**	
		2 bottom	**9654.360**	**9654.400**	**9654.440**	**9654.480**	**9654.520**	**9654.660**	
	HT	1 top	**9654.330**	**9654.370**	**9654.410**	**9654.450**	**9654.490**	**9654.670**[1)]	
		2 bottom	**9654.340**	**9654.380**	**9654.420**	**9654.460**	**9654.500**	**9654.680**[1)]	
Accessories	Packs of								
3 Connection bracket	1 set		9650.400	9650.400	9650.400	9650.410	9650.410	9650.420	437
4 Isolator chassis	1 set		9650.020	9650.020	9650.020	9650.020	9650.020	9650.020	437
5 U contact maker	3		9650.170	9650.170	9650.170	9650.170	9650.170	9650.170	437
Stacking insulator	6		9660.200	9660.200	9660.200	9660.200	9660.200	9660.200	454

Mitsubishi AE-SS			**Model No. SV**					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	**–**	**9655.030**	**9655.070**	**9655.110**	**9655.150**	
		2 bottom	**–**	**9655.040**	**9655.080**	**9655.120**	**9655.160**	
	HT	1 top	**–**	**9655.010**	**9655.050**	**9655.090**	**9655.130**	
		2 bottom	**–**	**9655.020**	**9655.060**	**9655.100**	**9655.140**	
Rack-mounted	VT	1 top	**–**	**9655.310**	**9655.350**	**9655.390**	**9655.430**	
		2 bottom	**–**	**9655.320**	**9655.360**	**9655.400**	**9655.440**	
	HT	1 top	**–**	**9655.290**	**9655.330**	**9655.370**	**9655.410**	
		2 bottom	**–**	**9655.300**	**9655.340**	**9655.380**	**9655.420**	
Accessories	Packs of							
3 Connection bracket	1 set		–	9650.400	9650.410	9650.410	9650.420	437
4 Isolator chassis	1 set		–	9650.020	9650.020	9650.020	9650.020	437
5 U contact maker	3		–	9650.170	9650.170	9650.170	9650.170	437
Stacking insulator	6		–	9660.200	9660.200	9660.200	9660.200	454

[1)] For installation in 800 mm deep enclosures.

System overview Page 413 **System components** Page 436 **Connection components** Page 437 **SV-TS 8 enclosures** Page 438 **Accessories** Page 453

Connection kits (3-pole), Maxi-PLS up to 3200 A

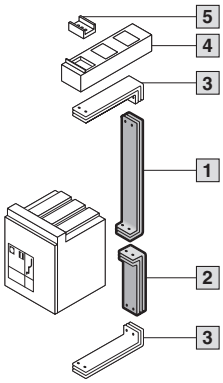
Merlin Gerin Masterpact NW			**Model No. SV**					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	**9652.030**	**9652.070**	**9652.110**	**9652.150**	**–**	
		2 bottom	**9652.040**	**9652.080**	**9652.120**	**9652.160**	**–**	
	HT	1 top	**9652.010**	**9652.050**	**9652.090**	**9652.130**	**–**	
		2 bottom	**9652.020**	**9652.060**	**9652.100**	**9652.140**	**–**	
Rack-mounted	VT	1 top	**9652.310**	**9652.350**	**9652.390**	**9652.430**	**–**	
		2 bottom	**9652.320**	**9652.360**	**9652.400**	**9652.440**	**–**	
	HT	1 top	**9652.290**	**9652.330**	**9652.370**	**9652.410**	**–**	
		2 bottom	**9652.300**	**9652.340**	**9652.380**	**9652.420**	**–**	
Accessories	Packs of							
3 Connection bracket	1 set		9650.400	9650.410	9650.410	9650.410	–	437
4 Isolator chassis	1 set		9650.020	9650.020	9650.020	9650.020	–	437
5 U contact maker	3		9650.170	9650.170	9650.170	9650.170	–	437
Stacking insulator	6		9660.200	9660.200	9660.200	9660.200	–	454

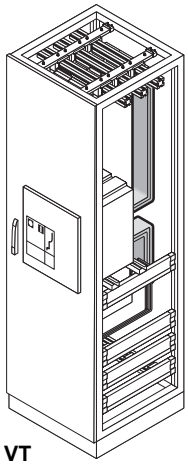
ABB Sace Emax			**Model No. SV**					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			E1	–	E1	E2	E2	
Static	VT	1 top	**9653.030**	**–**	**9653.070**	**9653.110**	**9653.150**	
		2 bottom	**9653.040**	**–**	**9653.080**	**9653.120**	**9653.160**	
	HT	1 top	**9653.010**	**–**	**9653.050**	**9653.090**	**9653.130**	
		2 bottom	**9653.020**	**–**	**9653.060**	**9653.100**	**9653.140**	
Rack-mounted	VT	1 top	**9653.310**	**–**	**9653.350**	**9653.390**	**9653.430**	
		2 bottom	**9653.320**	**–**	**9653.360**	**9653.400**	**9653.440**	
	HT	1 top	**9653.290**	**–**	**9653.330**	**9653.370**	**9653.410**	
		2 bottom	**9653.300**	**–**	**9653.340**	**9653.380**	**9653.420**	
Accessories	Packs of							
3 Connection bracket	1 set		9650.400	–	9650.410	9650.410	9650.420	437
4 Isolator chassis	1 set		9650.020	–	9650.020	9650.020	9650.020	437
5 U contact maker	3		9650.170	–	9650.170	9650.170	9650.170	437
Stacking insulator	6		9660.200	–	9660.200	9660.200	9660.200	454

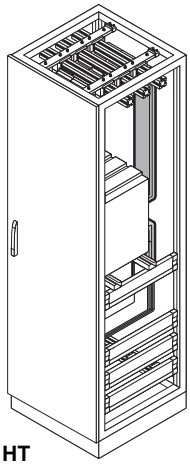
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Connection kits (3-pole), Maxi-PLS up to 3200 A









For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 800 mm.

Material:
E-Cu

Correct selection should be made according to the following criteria:

- Manufacturer, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cut-out
  HT = behind the door

1 Connection kit, top
2 Connection kit, bottom
3 Connection bracket
4 Isolator chassis
5 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WL, Moeller IZM			**Model No. SV**			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Size (BG)			II	II	II	
Static	VT	1 top	**9654.690**	**9654.270**	**9654.310**	
		2 bottom	**9654.700**	**9654.280**	**9654.320**	
	HT	1 top	**9654.710**	**9654.250**	**9654.290**	
		2 bottom	**9654.720**	**9654.260**	**9654.300**	
Rack-mounted	VT	1 top	**9654.650**	**9654.590**	**9654.630**	
		2 bottom	**9654.660**	**9654.600**	**9654.640**	
	HT	1 top	**9654.670**[1)]	**9654.570**[1)]	**9654.610**[1)]	
		2 bottom	**9654.680**[1)]	**9654.580**[1)]	**9654.620**[1)]	
Accessories	Packs of					
3 Connection bracket	1 set		9650.420	9650.480	9650.480	437
4 Isolator chassis	1 set		9650.020	9650.030	9650.030	437
5 U contact maker	3		9650.170	9650.180	9650.180	437
Stacking insulator	6		9660.200	9660.200	9660.200	454

Mitsubishi AE-SS			**Model No. SV**			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Static	VT	1 top	**9655.190**	**9655.230**	**9655.270**	
		2 bottom	**9655.200**	**9655.240**	**9655.280**	
	HT	1 top	**9655.170**	**9655.210**	**9655.250**	
		2 bottom	**9655.180**	**9655.220**	**9655.260**	
Rack-mounted	VT	1 top	**9655.470**	**9655.510**	**9655.550**	
		2 bottom	**9655.480**	**9655.520**	**9655.560**	
	HT	1 top	**9655.450**	**9655.490**	**9655.530**	
		2 bottom	**9655.460**	**9655.500**	**9655.540**	
Accessories	Packs of					
3 Connection bracket	1 set		9650.470	9650.480	9650.480	437
4 Isolator chassis	1 set		9650.030	9650.030	9650.030	437
5 U contact maker	3		9650.180	9650.180	9650.180	437
Stacking insulator	6		9660.200	9660.200	9660.200	454

[1)] For installation in 800 mm deep enclosures.

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Connection kits (3-pole), Maxi-PLS up to 3200 A

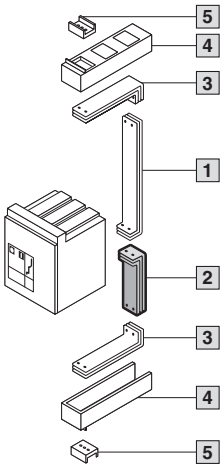
Merlin Gerin Masterpact NW			**Model No. SV**			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Static	VT	1 top	**9652.190**	**9652.230**	**9652.270**	
		2 bottom	**9652.200**	**9652.240**	**9652.280**	
	HT	1 top	**9652.170**	**9652.210**	**9652.250**	
		2 bottom	**9652.180**	**9652.220**	**9652.260**	
Rack-mounted	VT	1 top	**9652.470**	**9652.510**	**9652.550**	
		2 bottom	**9652.480**	**9652.520**	**9652.560**	
	HT	1 top	**9652.450**	**9652.490**	**9652.530**	
		2 bottom	**9652.460**	**9652.500**	**9652.540**	
Accessories	Packs of					
3 Connection bracket	1 set		9650.420	9650.470	9650.480	437
4 Isolator chassis	1 set		9650.020	9650.030	9650.030	437
5 U contact maker	3		9650.170	9650.180	9650.180	437
Stacking insulator	6		9660.200	9660.200	9660.200	454

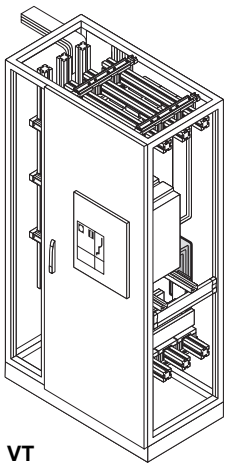
ABB Sace Emax			**Model No. SV**			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Size (BG)			E3	E3	E3	
Static	VT	1 top	**9653.190**	**9653.230**	**9653.270**	
		2 bottom	**9653.200**	**9653.240**	**9653.280**	
	HT	1 top	**9653.170**	**9653.210**	**9653.250**	
		2 bottom	**9653.180**	**9653.220**	**9653.260**	
Rack-mounted	VT	1 top	**9653.470**	**9653.510**	**9653.550**	
		2 bottom	**9653.480**	**9653.520**	**9653.560**	
	HT	1 top	**9653.450**	**9653.490**	**9653.530**	
		2 bottom	**9653.460**	**9653.500**	**9653.540**	
Accessories	Packs of					
3 Connection bracket	1 set		9650.470	9650.470	9650.480	437
4 Isolator chassis	1 set		9650.030	9650.030	9650.030	437
5 U contact maker	3		9650.180	9650.180	9650.180	437
Stacking insulator	6		9660.200	9660.200	9660.200	454

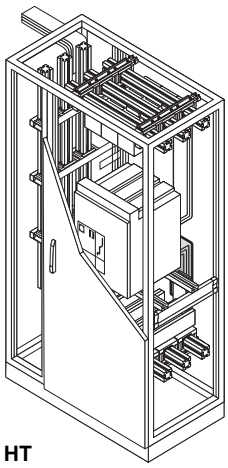
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Connection kits for coupling sets (3-pole), Maxi-PLS up to 3200 A









For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 1000 mm.

Material:
E-Cu

Correct selection should be made according to the following criteria:

- Manufacturer, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cut-out
  HT = behind the door

1 Connection kit, top see page 424 – 427.

2 Connection kit, bottom for coupling section

3 Connection bracket

4 Isolator chassis

5 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WL, Moeller IZM		**Model No. SV**				Page
Rated operating current I_e		1600 A[1)]	2000 A[1)]	2500 A	3200 A	
Size (BG)		I	II	II	II	
Static	VT 2 bottom	**9654.205**	**9654.705**	**9654.285**	**9654.325**	
	HT 2 bottom	**9654.185**	**9654.725**	**9654.265**	**9654.305**	
Rack-mounted	VT 2 bottom	**9654.525**	**9654.665**	**9654.605**	**9654.645**	
	HT 2 bottom	**9654.505**	**9654.685[2)]**	**9654.585[2)]**	**9654.625[2)]**	
Accessories	Packs of					
3 Connection bracket	1 set	9650.410	9650.420	9650.480	9650.480	437
4 Isolator chassis	1 set	9650.020	9650.020	9650.030	9650.030	437
5 U contact maker	3	9650.170	9650.170	9650.180	9650.180	437
Stacking insulator	6	9660.200	9660.200	9660.200	9660.200	454

Mitsubishi AE-SS		**Model No. SV**				Page
Rated operating current I_e		1600 A[1)]	2000 A	2500 A	3200 A	
Static	VT 2 bottom	**9655.125**	**9655.205**	**9655.245**	**9655.285**	
	HT 2 bottom	**9655.105**	**9655.185**	**9655.225**	**9655.265**	
Rack-mounted	VT 2 bottom	**9655.405**	**9655.485**	**9655.525**	**9655.565**	
	HT 2 bottom	**9655.385**	**9655.465**	**9655.505**	**9655.545**	
Accessories	Packs of					
3 Connection bracket	1 set	9650.410	9650.470	9650.480	9650.480	437
4 Isolator chassis	1 set	9650.020	9650.030	9650.030	9650.030	437
5 U contact maker	3	9650.170	9650.180	9650.180	9650.180	437
Stacking insulator	6	9660.200	9660.200	9660.200	9660.200	454

[1)] Installation of the power circuit-breaker is also possible in 800 mm wide enclosures.
[2)] For installation in 800 mm deep enclosures.

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Connection kits for coupling sets (3-pole), Maxi-PLS up to 3200 A

Merlin Gerin Masterpact NW		**Model No. SV**				Page
Rated operating current I_e		1600 A[1)]	2000 A[1)]	2500 A	3200 A	
Static	VT 2 bottom	**9652.165**	**9652.205**	**9652.245**	**9652.285**	
	HT 2 bottom	**9652.145**	**9652.185**	**9652.225**	**9652.265**	
Rack-mounted	VT 2 bottom	**9652.445**	**9652.485**	**9652.525**	**9652.565**	
	HT 2 bottom	**9652.425**	**9652.465**	**9652.505**	**9652.545**	
Accessories	Packs of					
3 Connection bracket	1 set	9650.410	9650.420	9650.470	9650.480	437
4 Isolator chassis	1 set	9650.020	9650.020	9650.030	9650.030	437
5 U contact maker	3	9650.170	9650.170	9650.180	9650.180	437
Stacking insulator	6	9660.200	9660.200	9660.200	9660.200	454

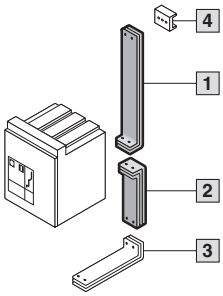
ABB Sace Emax		**Model No. SV**					Page
Rated operating current I_e		1600 A	2000 A		2500 A	3200 A	
Size (BG)		E2[1)]	E2[1)]	E3	E3	E3	
Static	VT 2 bottom	**9653.125**	**9653.165**	**9653.205**	**9653.245**	**9653.285**	
	HT 2 bottom	**9653.105**	**9653.145**	**9653.185**	**9653.225**	**9653.265**	
Rack-mounted	VT 2 bottom	**9653.405**	**9653.445**	**9653.485**	**9653.525**	**9653.565**	
	HT 2 bottom	**9653.385**	**9653.425**	**9653.465**	**9653.505**	**9653.545**	
Accessories	Packs of						
3 Connection bracket	1 set	9650.410	9650.420	9650.470	9650.470	9650.480	437
4 Isolator chassis	1 set	9650.020	9650.020	9650.030	9650.030	9650.030	437
5 U contact maker	3	9650.170	9650.170	9650.180	9650.180	9650.180	437
Stacking insulator	6	9660.200	9660.200	9660.200	9660.200	9660.200	454

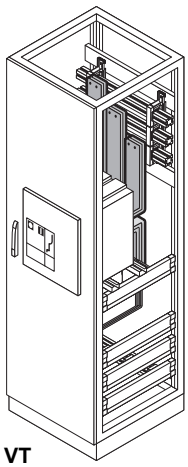
[1)] Installation of the power circuit-breaker is also possible in 800 mm wide enclosures.

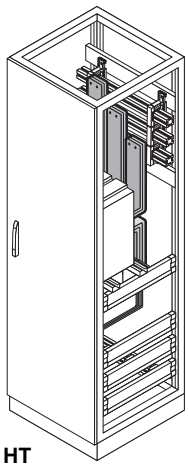
System overview Page 413 **Connection kits, top** Page 424 – 427 **System components** Page 436 **Connection components** Page 437
SV-TS 8 enclosures Page 438 **Accessories** Page 453

Connection kits for rear section (3-pole), Maxi-PLS up to 3200 A






VT


HT

For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 600 mm.

Material:
E-Cu

Correct selection should be made according to the following criteria:

- Manufacturer, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cut-out
  HT = behind the door

1 Connection kit, top
2 Connection kit, bottom
3 Connection bracket
4 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WL, Moeller IZM			Model No. SV						Page
Rated operating current I_e			630 A	800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			I	I	I	I	I	II	
Static	VT	1 top	**9654.033**	**9654.073**	**9654.113**	**9654.153**	**9654.193**	**9654.693**	
		2 bottom	**9654.043**	**9654.083**	**9654.123**	**9654.163**	**9654.203**	**9654.703**	
	HT	1 top	**9654.013**	**9654.053**	**9654.093**	**9654.133**	**9654.173**	**9654.713**	
		2 bottom	**9654.023**	**9654.063**	**9654.103**	**9654.143**	**9654.183**	**9654.723**	
Rack-mounted	VT	1 top	**9654.353**	**9654.393**	**9654.433**	**9654.473**[1)]	**9654.513**[1)]	**9654.653**[1)]	
		2 bottom	**9654.363**	**9654.403**	**9654.443**	**9654.483**[1)]	**9654.523**[1)]	**9654.663**[1)]	
	HT	1 top	**9654.333**[1)]	**9654.373**[1)]	**9654.413**[1)]	**9654.453**[1)]	**9654.493**[1)]	**9654.673**[1)]	
		2 bottom	**9654.343**[1)]	**9654.383**[1)]	**9654.423**[1)]	**9654.463**[1)]	**9654.503**[1)]	**9654.683**[1)]	
Accessories		Packs of							
3 Connection bracket		1 set	9650.400	9650.400	9650.400	9650.410	9650.410	9650.420	437
4 U contact maker		3	9650.170	9650.170	9650.170	9650.170	9650.170	9650.170	437

Mitsubishi AE-SS			Model No. SV					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	–	**9655.033**	**9655.073**	**9655.113**	**9655.153**	
		2 bottom	–	**9655.043**	**9655.083**	**9655.123**	**9655.163**	
	HT	1 top	–	**9655.013**	**9655.053**	**9655.093**	**9655.133**	
		2 bottom	–	**9655.023**	**9655.063**	**9655.103**	**9655.143**	
Rack-mounted	VT	1 top	–	**9655.313**	**9655.353**	**9655.393**	**9655.433**[1)]	
		2 bottom	–	**9655.323**	**9655.363**	**9655.403**	**9655.443**[1)]	
	HT	1 top	–	**9655.293**	**9655.333**[1)]	**9655.373**[1)]	**9655.413**[1)]	
		2 bottom	–	**9655.303**	**9655.343**[1)]	**9655.383**[1)]	**9655.423**[1)]	
Accessories		Packs of						
3 Connection bracket		1 set	–	9650.400	9650.410	9650.410	9650.420	437
4 U contact maker		3	–	9650.170	9650.170	9650.170	9650.170	437

[1)] For installation in 800 mm deep enclosures.

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Connection kits for rear section (3-pole), Maxi-PLS up to 3200 A

Merlin Gerin Masterpact NW			**Model No. SV**					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	**9652.033**	**9652.073**	**9652.113**	**9652.153**	**–**	
		2 bottom	**9652.043**	**9652.083**	**9652.123**	**9652.163**	**–**	
	HT	1 top	**9652.013**	**9652.053**	**9652.093**	**9652.133**	**–**	
		2 bottom	**9652.023**	**9652.063**	**9652.103**	**9652.143**	**–**	
Rack-mounted	VT	1 top	**9652.313**	**9652.353**	**9652.393**	**9652.433**	**–**	
		2 bottom	**9652.323**	**9652.363**	**9652.403**	**9652.443**	**–**	
	HT	1 top	**9652.293**[1)]	**9652.333**[1)]	**9652.373**[1)]	**9652.413**[1)]	**–**	
		2 bottom	**9652.303**[1)]	**9652.343**[1)]	**9652.383**[1)]	**9652.423**[1)]	**–**	
Accessories		Packs of						
3 Connection bracket		1 set	9650.400	9650.410	9650.410	9650.410	–	437
4 U contact maker		3	9650.170	9650.170	9650.170	9650.170	–	437

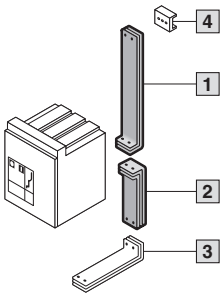
ABB Sace Emax			**Model No. SV**					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Size			E1	–	E1	E2	E2	
Static	VT	1 top	**9653.033**	**–**	**9653.073**	**9653.113**	**9653.153**	
		2 bottom	**9653.043**	**–**	**9653.083**	**9653.123**	**9653.163**	
	HT	1 top	**9653.013**	**–**	**9653.053**	**9653.093**	**9653.133**	
		2 bottom	**9653.023**	**–**	**9653.063**	**9653.103**	**9653.143**	
Rack-mounted	VT	1 top	**9653.313**	**–**	**9653.353**	**9653.393**	**9653.433**[1)]	
		2 bottom	**9653.323**	**–**	**9653.363**	**9653.403**	**9653.443**[1)]	
	HT	1 top	**9653.293**[1)]	**–**	**9653.333**[1)]	**9653.373**[1)]	**9653.413**[1)]	
		2 bottom	**9653.303**[1)]	**–**	**9653.343**[1)]	**9653.383**[1)]	**9653.423**[1)]	
Accessories		Packs of						
3 Connection bracket		1 set	9650.400	–	9650.410	9650.410	9650.420	437
4 U contact maker		3	9650.170	–	9650.170	9650.170	9650.170	437

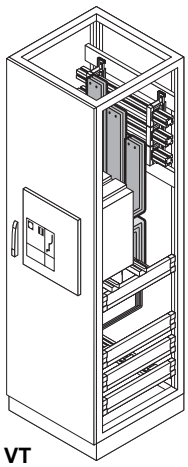
[1)] For installation in 800 mm deep enclosures.

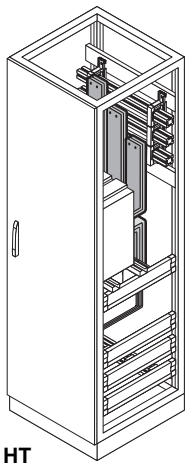
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Connection kits for rear section (3-pole), Maxi-PLS up to 3200 A






VT


HT

For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 800 mm.

Material:
E-Cu

Correct selection should be made according to the following criteria:

- Manufacturer, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cut-out
  HT = behind the door

1 Connection kit, top
2 Connection kit, bottom
3 Connection bracket
4 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WL, Moeller IZM			**Model No. SV**			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Size (BG)			II	II	II	
Static	VT	1 top	**9654.693**	**9654.273**	**9654.313**	
		2 bottom	**9654.703**	**9654.283**	**9654.323**	
	HT	1 top	**9654.713**	**9654.253**	**9654.293**	
		2 bottom	**9654.723**	**9654.263**	**9654.303**	
Rack-mounted	VT	1 top	**9654.653**[1)]	**9654.593**[1)]	**9654.633**[1)]	
		2 bottom	**9654.663**[1)]	**9654.603**[1)]	**9654.643**[1)]	
	HT	1 top	**9654.673**[1)]	**9654.573**[1)]	**9654.613**[1)]	
		2 bottom	**9654.683**[1)]	**9654.583**[1)]	**9654.623**[1)]	
Accessories	Packs of					
3 Connection bracket	1 set		9650.420	9650.480	9650.480	437
4 U contact maker	3		9650.170	9650.180	9650.180	437

Mitsubishi AE-SS			**Model No. SV**			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Static	VT	1 top	**9655.193**	**9655.233**	**9655.273**	
		2 bottom	**9655.203**	**9655.243**	**9655.283**	
	HT	1 top	**9655.173**	**9655.213**	**9655.253**	
		2 bottom	**9655.183**	**9655.223**	**9655.263**	
Rack-mounted	VT	1 top	**9655.473**	**9655.513**[1)]	**9655.553**[1)]	
		2 bottom	**9655.483**	**9655.523**[1)]	**9655.563**[1)]	
	HT	1 top	**9655.453**[1)]	**9655.493**[1)]	**9655.533**[1)]	
		2 bottom	**9655.463**[1)]	**9655.503**[1)]	**9655.543**[1)]	
Accessories	Packs of					
3 Connection bracket	1 set		9650.470	9650.480	9650.480	437
4 U contact maker	3		9650.180	9650.180	9650.180	437

[1)] For installation in 800 mm deep enclosures.

System overview Page 413 **System components** Page 436 **Connection components** Page 437 **SV-TS 8 enclosures** Page 438 **Accessories** Page 453

Connection kits for rear section (3-pole), Maxi-PLS up to 3200 A

Merlin Gerin Masterpact NW			Model No. SV			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Static	VT	1 top	**9652.193**	**9652.233**	**9652.273**	
		2 bottom	**9652.203**	**9652.243**	**9652.283**	
	HT	1 top	**9652.173**	**9652.213**	**9652.253**	
		2 bottom	**9652.183**	**9652.223**	**9652.263**	
Rack-mounted	VT	1 top	**9652.473**	**9652.513**	**9652.553**[1)]	
		2 bottom	**9652.483**	**9652.523**	**9652.563**[1)]	
	HT	1 top	**9652.453**[1)]	**9652.493**[1)]	**9652.533**[1)]	
		2 bottom	**9652.463**[1)]	**9652.503**[1)]	**9652.543**[1)]	
Accessories	Packs of					
3 Connection bracket	1 set		9650.420	9650.470	9650.480	437
4 U contact maker	3		9650.170	9650.180	9650.180	437

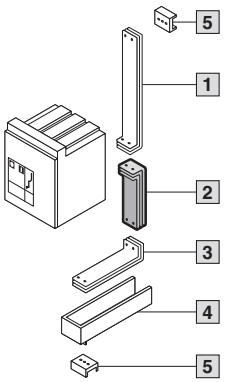
ABB Sace Emax			Model No. SV			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Size (BG)			E3	E3	E3	
Static	VT	1 top	**9653.193**	**9653.233**	**9653.273**	
		2 bottom	**9653.203**	**9653.243**	**9653.283**	
	HT	1 top	**9653.173**	**9653.213**	**9653.253**	
		2 bottom	**9653.183**	**9653.223**	**9653.263**	
Rack-mounted	VT	1 top	**9653.473**	**9653.513**	**9653.553**[1)]	
		2 bottom	**9653.483**	**9653.523**	**9653.563**[1)]	
	HT	1 top	**9653.453**[1)]	**9653.493**[1)]	**9653.533**[1)]	
		2 bottom	**9653.463**[1)]	**9653.503**[1)]	**9653.543**[1)]	
Accessories	Packs of					
3 Connection bracket	1 set		9650.470	9650.470	9650.480	437
4 U contact maker	3		9650.180	9650.180	9650.180	437

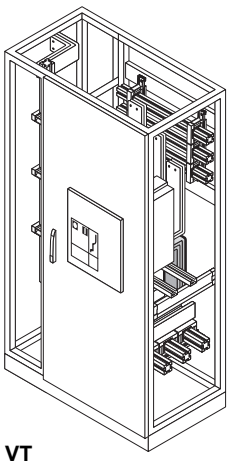
[1)] For installation in 800 mm deep enclosures.

System overview Page 413 **System components** Page 436 **Connection components** Page 437 **SV-TS 8 enclosures** Page 438 **Accessories** Page 453

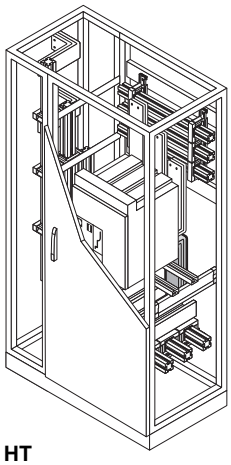
Connection kits for coupling sets – rear section (3-pole), Maxi-PLS up to 3200 A







VT



HT

For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 1000 mm.

Material:
E-Cu

Correct selection should be made according to the following criteria:

- Manufacturer, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cut-out
  HT = behind the door

1 Connection kit, top
see page 430 – 433.

2 Connection kit, bottom for coupling section

3 Connection bracket

4 Isolator chassis

5 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WL, Moeller IZM		**Model No. SV**				Page
Rated operating current I_e		1600 A[1)]	2000 A[1)]	2500 A	3200 A	
Size (BG)		I	II	II	II	
Static	VT 2 bottom	**9654.204**	**9654.704**	**9654.284**	**9654.324**	
	HT 2 bottom	**9654.184**	**9654.724**	**9654.264**	**9654.304**	
Rack-mounted	VT 2 bottom	**9654.524[2)]**	**9654.664[2)]**	**9654.604[2)]**	**9654.644[2)]**	
	HT 2 bottom	**9654.504[2)]**	**9654.684[2)]**	**9654.584[2)]**	**9654.624[2)]**	
Accessories	Packs of					
3 Connection bracket	1 set	9650.410	9650.420	9650.480	9650.480	437
4 Isolator chassis	1 set	9650.020	9650.020	9650.030	9650.030	437
5 U contact maker	3	9650.170	9650.170	9650.180	9650.180	437

Mitsubishi AE-SS		**Model No. SV**				Page
Rated operating current I_e		1600 A[1)]	2000 A	2500 A	3200 A	
Static	VT 2 bottom	**9655.124**	**9655.204**	**9655.244**	**9655.284**	
	HT 2 bottom	**9655.104**	**9655.184**	**9655.224**	**9655.264**	
Rack-mounted	VT 2 bottom	**9655.404**	**9655.484**	**9655.524[2)]**	**9655.564[2)]**	
	HT 2 bottom	**9655.384[2)]**	**9655.464[2)]**	**9655.504[2)]**	**9655.544[2)]**	
Accessories	Packs of					
3 Connection bracket	1 set	9650.410	9650.470	9650.480	9650.480	437
4 Isolator chassis	1 set	9650.020	9650.030	9650.030	9650.030	437
5 U contact maker	3	9650.170	9650.180	9650.180	9650.180	437

[1)] Installation of the power circuit-breaker is also possible in 800 mm wide enclosures.
[2)] For installation in 800 mm deep enclosures.

System overview Page 413 **Connection kits, top** Page 430 – 433 **System components** Page 436 **Connection components** Page 437
SV-TS 8 enclosures Page 438 **Accessories** Page 453

Connection kits for coupling sets – rear section (3-pole), Maxi-PLS up to 3200 A

Merlin Gerin Masterpact NW		Model No. SV				Page
Rated operating current I_e		1600 A[1)]	2000 A[1)]	2500 A	3200 A	
Static	VT 2 bottom	**9652.164**	**9652.204**	**9652.244**	**9652.284**	
	HT 2 bottom	**9652.144**	**9652.184**	**9652.224**	**9652.264**	
Rack-mounted	VT 2 bottom	**9652.444**	**9652.484**	**9652.524**	**9652.564[2)]**	
	HT 2 bottom	**9652.424[2)]**	**9652.464[2)]**	**9652.504[2)]**	**9652.544[2)]**	
Accessories	Packs of					
3 Connection bracket	1 set	9650.410	9650.420	9650.470	9650.480	437
4 Isolator chassis	1 set	9650.020	9650.020	9650.030	9650.030	437
5 U contact maker	3	9650.170	9650.170	9650.180	9650.180	437

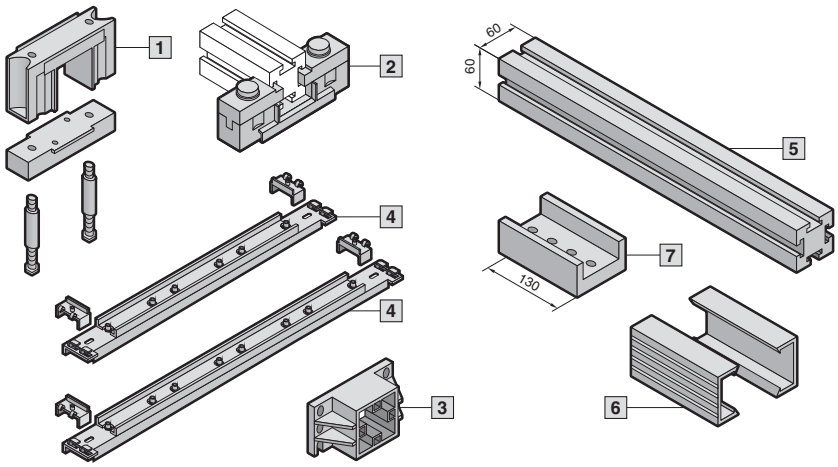
ABB Sace Emax		Model No. SV					Page
Rated operating current I_e		1600 A	2000 A		2500 A	3200 A	
Size (BG)		E2[1)]	E2[1)]	E3	E3	E3	
Static	VT 2 bottom	**9653.124**	**9653.164**	**9653.204**	**9653.244**	**9653.284**	
	HT 2 bottom	**9653.104**	**9653.144**	**9653.184**	**9653.224**	**9653.264**	
Rack-mounted	VT 2 bottom	**9653.404**	**9653.444[2)]**	**9653.484**	**9653.524**	**9653.564[2)]**	
	HT 2 bottom	**9653.384[2)]**	**9653.424[2)]**	**9653.464[2)]**	**9653.504[2)]**	**9653.544[2)]**	
Accessories	Packs of						
3 Connection bracket	1 set	9650.410	9650.420	9650.470	9650.470	9650.480	437
4 Isolator chassis	1 set	9650.020	9650.020	9650.030	9650.030	9650.030	437
5 U contact maker	3	9650.170	9650.170	9650.180	9650.180	9650.180	437

[1)] Installation of the power circuit-breaker is also possible in 800 mm wide enclosures.
[2)] For installation in 800 mm deep enclosures.

System overview Page 413 **Connection kits, top** Page 430 – 433 **System components** Page 436 **Connection components** Page 437
SV-TS 8 enclosures Page 438 **Accessories** Page 453

System components, Maxi-PLS up to 3200 A





Material:
Busbar support, end support, end cover: PA 6.6
System attachment: Stainless steel
Cover section: Hard PVC

Detailed drawing,
see page 1250.

Note:
PE/PEN combination/busbars,
see page 409.

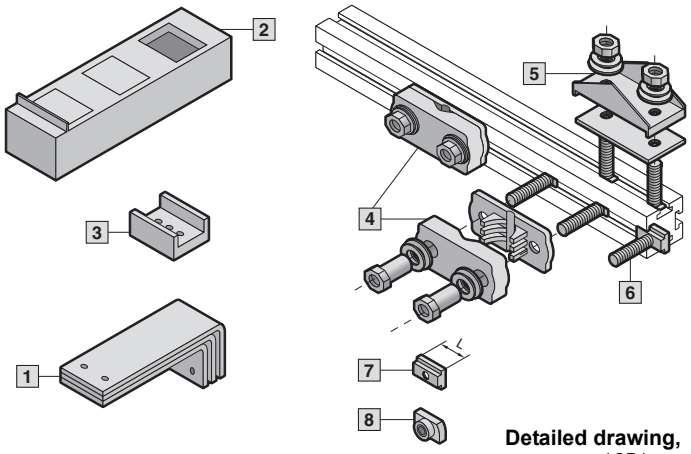
Maxi-PLS system components			3-pole		4-pole	
			Packs of	Model No. SV	Packs of	Model No. SV
1	**Busbar support**		3	**9650.000**	3 + 1	**9650.000** **9659.000**
2	**Busbar support, suitable for top mounting**		3	**9650.160**	3	**9650.160**
3	**End support**		6	**9650.010**	6 + 2	**9650.010** **9659.010**
4	**System attachment** for installing the busbar supports.					
	For enclosures	Enclosure depth mm / Bar centre distance mm				
	TS (roof section)	600 / 150	2	**9650.100**	–	**–**
		800 / 150	2	**9650.120**	2	**9650.080**
	TS (rear section)	– / 185	2	**9650.150**	–	**–**
		– / 150	–	–	2	**9650.090**
6	**Cover section** for clip-on mounting on the Maxi-PLS busbars, length 1000 mm.		5	**9650.050**	5	**9650.050**
7	**Longitudinal connector E-Cu** for simple baying connection of the Maxi-PLS busbars. Including sliding blocks, bolts, washers and nuts.		3	**9650.190**	3 + 1	**9650.190** **9659.190**
	End cover for clip-on mounting on the end surface of Maxi-PLS busbars.		6	**9650.060**	6 + 2	**9650.060** **9659.060**
	Stabiliser to increase short-circuit resistance (I_{cw} up to 120 kA).		4[2]	**9650.140**	–	**–**
5	**Maxi-PLS busbars E-Cu** (special lengths available on request).					
	Length mm	For enclosure width mm / For application[1]	3200 A			
	491	600 / A	1	**9650.201**		
	525	600 / B	1	**9650.211**		
	599	600 / C	1	**9650.221**		
	691	800 / A	1	**9650.231**		
	725	800 / B	1	**9650.241**		
	799	800 / C	1	**9650.251**		
	891	1000 / A	1	**9650.261**		
	925	1000 / B	1	**9650.271**		
	999	1000 / C	1	**9650.281**		
	1091	1200 / A	1	**9650.291**		
	1125	1200 / B	1	**9650.301**		
	1199	1200 / C	1	**9650.311**		
	2400	– / –	3	**9650.360**		
	2400	– / –	4	**9659.360**		

[1] A = Cable connection system with end support
B = Left-hand or right-hand end enclosure in a switchgear installation
C = Bayed enclosure with panels bayed on the left and right
[2] Modules for two complete stabilisers

System overview Page 413 **Connection kits** Page 424 – 435 **Connection components** Page 437 **SV-TS 8 enclosures** Page 438 **Accessories** Page 453

Connection components, Maxi-PLS up to 3200 A





Detailed drawing,
see page 1251.

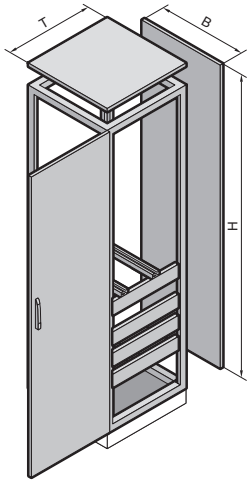
Maxi-PLS connection components				3-pole		4-pole	
				Packs of	Model No. SV	Packs of	Model No. SV
1	**Connection bracket E-Cu** Transition from the main busbar system to the connection kits.						
	For enclosure depth mm	Width mm	Number of brackets per phase				
	600	60	1	1 set	**9650.400**	–	**–**
	600	60	2	1 set	**9650.410**	–	**–**
	600	60	3	1 set	**9650.420**	–	**–**
	800	60	1	1 set	**9650.430**	1 set	**9659.400**
	800	60	2	1 set	**9650.440**	1 set	**9659.410**
	800	60	3	1 set	**9650.450**	1 set	**9659.420**
	600	100	1	1 set	**9650.460**	–	**–**
	600	100	2	1 set	**9650.470**	–	**–**
	600	100	3	1 set	**9650.480**	–	**–**
	800	100	1	1 set	**9650.490**	1 set	**9659.460**
	800	100	2	1 set	**9650.500**	1 set	**9659.470**
	800	100	3	1 set	**9650.510**	1 set	**9659.480**
2	**Isolator chassis** for isolated routing of the connection brackets. Material: PA 6.6, black, including assembly parts.						
	Bar centre distance mm		For connection bracket width mm				
	150		60	1 set	**9650.020**	1 set	**9659.020**
	150		100	1 set	**9650.030**	1 set	**9659.030**
3	**U contact maker E-Cu** for contacting the connection brackets to the Maxi-PLS busbars. Including sliding blocks.						
	60 mm width			3	**9650.170**	3 + 1	**9650.170** **9659.170**
	100 mm width			3	**9650.180**	3 + 1	**9650.180** **9659.180**
4	**Connection clamp** for the connection of round conductors 95 to 300 mm² (multi-wire and sector). Including assembly parts.						
	90 mm width			3	**9650.320**	3	**9650.320**
5	**Connection plates** for the connection of laminated flat copper bars. Including assembly parts.						
	Maximum clamping area	2 x 10 x 32 x 1 mm		3	**9650.330**	3	**9650.330**
		2 x 10 x 63 x 1 mm		3	**9650.340**	3	**9650.340**
		2 x 10 x 100 x 1 mm		3	**9650.350**	3	**9650.350**
6	**Terminal stud** for connecting cables with ring terminals. Including sliding blocks.						
	Thread	M12	Length 32 mm	3	**9650.370**	3	**9650.370**
		M16	Length 32 mm	3	**9650.380**	3	**9650.380**
7	**Sliding blocks** for sliding into the Maxi-PLS busbar section at the sides.						
	Thread	M10	Length (L) 25 mm	15	**9650.980**	15	**9650.980**
		M12	Length (L) 35 mm	15	**9650.990**	15	**9650.990**
8	**Sliding nuts** for retrospective insertion into the Maxi-PLS busbar section.						
	Thread	M6		15	**9650.900**	15	**9650.900**
		M10		15	**9650.910**	15	**9650.910**
		M12		15	**9650.920**	15	**9650.920**
	Threaded bolts for individual connection options[1]. Including plain washers, spring lock washers and nuts.						
	Thread	M6	Length 35 mm	6	**9650.930**	6	**9650.930**
		M10	Length 35 mm	6	**9650.940**	6	**9650.940**
		M12	Length 80 mm	6	**9650.960**	6	**9650.960**

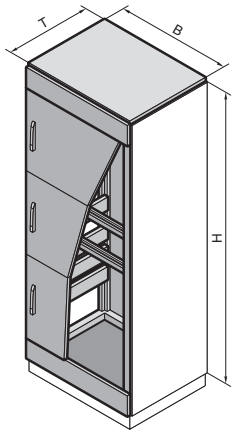
[1] Sliding blocks or sliding nuts are additionally required for attachment.

System overview Page 413 **Connection kits** Page 424 – 435 **System components** Page 436 **SV-TS 8 enclosures** Page 438 **Accessories** Page 453

SV-TS 8 enclosures for incoming/outgoing circuit







Pre-assembled for direct installation of power circuit-breakers

Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Supply includes:
Enclosure frame with fitted punched section without mounting flange for Maxi-PLS end support attachment and fitted system support rails for power circuit-breaker attachment; door(s), roof, rear panel, gland plates (three-piece).

Detailed drawing,
see page 1253.

Technical information,
see page 1254.

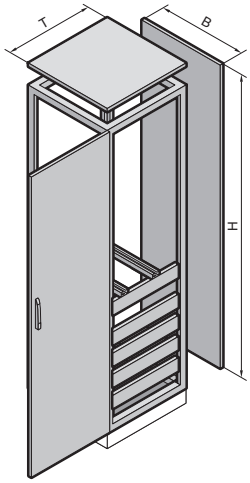
For Maxi-PLS		Packs of	3-pole				Page
			1600 A/2000 A		3200 A		
Width (B) mm			600		800		
Height (H) mm			2000		2000		
Depth (T) mm			600		600		
Model No. SV		1	**9660.665**	**9660.675**	**9660.865**	**9660.875**	
Door(s)			1	3	1	3	
Approximate weight (kg)			78	78	88	88	
Base/plinth							
Components front and rear	Height 100 mm	1 set	8601.600	8601.600	8601.800	8601.800	893
	Height 200 mm	1 set	8602.600	8602.600	8602.800	8602.800	893
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.060	893
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.060	893
Accessories							
Cable clamp rails		2	4191.000	4191.000	4192.000	4192.000	1061
Cable entry plates[1]		2	8800.060	8800.060	8800.080	8800.080	1045
Side panels		2	8106.235	8106.512	8106.235	8106.512	917, 942
Roof plates, vented[2]		1	9660.235	9660.235	9660.245	9660.245	455
Roof plates with pressure relief function[2]		1	9660.935	9660.935	9660.945	9660.945	455
Cover attachment		8	–	9660.680	–	9660.680	453
Device module			■	■	■	■	450
Contact hazard protection cover			■	■	■	■	451
Mounting angle		24	9660.090	9660.090	9660.090	9660.090	453
Lock systems							
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956 and comfort handle, see page 947 – 948.							

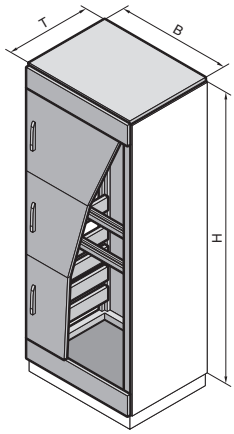
[1] Cable entry grommets, see page 1046.
[2] In exchange for the standard TS roof.

System overview Page 413 **Connection kits** Page 414 – 421, 424 – 435 **System components** Page 422/436 **Connection components** Page 423/437 **Accessories** Page 453

SV-TS 8 enclosures for incoming/outgoing circuit







Pre-assembled for direct installation of power circuit-breakers

Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Supply includes:
Enclosure frame with fitted punched section without mounting flange for Maxi-PLS end support attachment and fitted system support rails for power circuit-breaker attachment; door(s), roof, rear panel, gland plates (three-piece).

Detailed drawing,
see page 1253.

Technical information,
see page 1254.

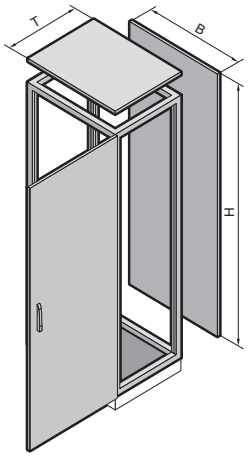
For Maxi-PLS		Packs of	**4-pole**				Page
			1600 A/2000 A		3200 A		
Width (B) mm			800		800		
Height (H) mm			2000		2000		
Depth (T) mm			600		800		
Model No. SV		1	**9649.625**	**9649.635**	**9659.625**	**9659.635**	
Door(s)			1	3	1	3	
Approximate weight (kg)			90	90	100	100	
Base/plinth							
Components front and rear	Height 100 mm	1 set	8601.800	8601.800	8601.800	8601.800	893
	Height 200 mm	1 set	8602.800	8602.800	8602.800	8602.800	893
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.080	8601.080	893
	Height 200 mm	1 set	8602.060	8602.060	8602.080	8602.080	893
Accessories							
Cable clamp rails		2	4192.000	4192.000	4192.000	4192.000	1061
Cable entry plates[1)]		2	8800.080	8800.080	8800.080	8800.080	1045
Side panels		2	8106.235	8106.512	8108.235	8108.512	917, 942
Roof plates, vented[2)]		1	9660.245	9660.245	9659.535	9659.535	455
Roof plates with pressure relief function[2)]		1	9660.945	9660.945	–	–	455
Cover attachment		8	–	9660.680	–	9660.680	453
Device module			■	■	■	■	450
Contact hazard protection cover			■	■	■	■	451
Mounting angle		24	9660.090	9660.090	9660.090	9660.090	453
Lock systems							
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956 and comfort handle, see page 947 – 948.							

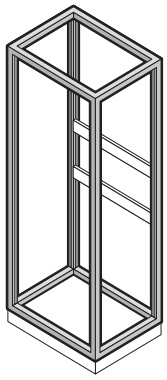
[1)] Cable entry grommets, see page 1046.
[2)] In exchange for the standard TS roof.

System overview Page 413 **Connection kits** Page 414 – 421, 424 – 435 **System components** Page 422/436 **Connection components** Page 423/437 **Accessories** Page 453

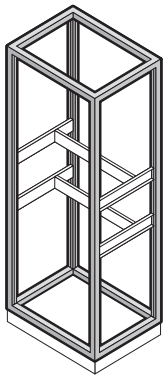
SV-TS 8 enclosures for Rittal NH fused isolators







1 Mounting in rear section



2 Mounting in centre section

Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Supply includes:
Enclosure frame, door, roof, rear panel, gland plates (three-piece), TS punched sections with mounting flanges.

Technical information,
see page 1255.

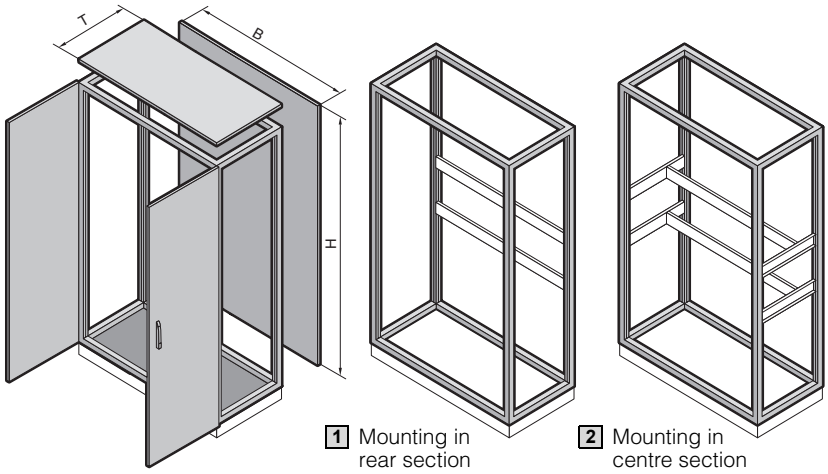
Maxi-PLS **1 For mounting in the rear section**		Packs of	3-pole/4-pole 1600 A/2000 A/3200 A						Page
Width (B) mm			600	600	600	800	800	800	
Height (H) mm			2000	2000	2000	2000	2000	2000	
Depth (T) mm			500	600	800	500	600	800	
Model No. SV		1	**9660.505**[1]	**9660.605**[1]	**9660.805**[1]	**9660.535**[1]	**9660.635**[1]	**9660.835**[1]	
Technical specifications correspond to Model No. TS			8605.500	8606.500	8608.500	8805.500	8806.500	8808.500	144 – 146
Door			1	1	1	1	1	1	
Approximate weight (kg)			74.0	76.0	83.0	88.4	92.6	99.1	
Base/plinth									
Components front and rear	Height 100 mm	1 set	8601.600	8601.600	8601.600	8601.800	8601.800	8601.800	893
	Height 200 mm	1 set	8602.600	8602.600	8602.600	8602.800	8602.800	8602.800	893
Trim panels (sides)	Height 100 mm	1 set	8601.050	8601.060	8601.080	8601.050	8601.060	8601.080	893
	Height 200 mm	1 set	8602.050	8602.060	8602.080	8602.050	8602.060	8602.080	893
Also required									
2 For mounting in the centre section									
TS punched section with mounting flange (4 per enclosure)		4	8612.550	8612.560	8612.580	8612.550	8612.560	8612.580	995
PS punched section without mounting flange (2 per enclosure)		4	4376.000	4376.000	4376.000	4377.000	4377.000	4377.000	998
Support bracket (4 sets per enclosure)		24 sets	4183.000	4183.000	4183.000	4183.000	4183.000	4183.000	1007
Threaded blocks M6 (8 per enclosure)		50	4162.000	4162.000	4162.000	4162.000	4162.000	4162.000	1010
Accessories									
Cable clamp rails		2	4191.000	4191.000	4191.000	4192.000	4192.000	4192.000	1061
Cable entry plates[2]		2	8800.060	8800.060	8800.060	8800.080	8800.080	8800.080	1045
Side panels		2	8105.235	8106.235	8108.235	8105.235	8106.235	8108.235	917
Roof plates, vented[3]		1	–	9660.235	9659.525	–	9660.245	9659.535	455
Roof plates with pressure relief function[3]		1	–	9660.935	–	–	9660.945	–	455
Cover plate, contact hazard protection[4]		1 set	–	9660.460	–	–	9660.470	–	452
Mounting angle		24	–	9660.090	–	–	9660.090	–	453
Cover panel			■	■	■	■	■	■	453
Terminal studs			■	■	■	■	■	■	454
Lock systems									
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956 and comfort handle, see page 947 – 948.									

[1] Without mounting plate.
[2] Cable entry grommets, see page 1046.
[3] In exchange for the standard TS roof.
[4] Only used when mounting the Maxi-PLS system in the rear section.

System overview Page 413 **NH fused isolators size 00 – 3** Page 393 **System components** Page 422/436 **Connection components** Page 423/437 **Accessories** Page 453

SV-TS 8 enclosures for Rittal NH fused isolators





1 Mounting in rear section

2 Mounting in centre section

Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Supply includes:
Enclosure frame, door(s), roof, rear panel, gland plates (three-piece), TS punched sections with mounting flanges.

Technical information,
see page 1255.

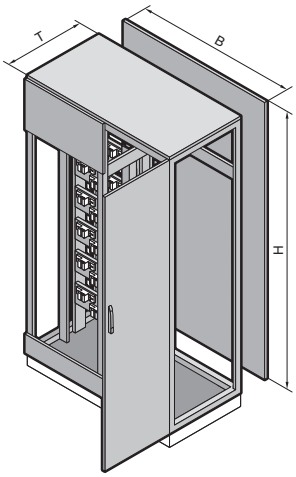
Maxi-PLS **1 For mounting in the rear section**		Packs of	3-pole/4-pole 1600 A/2000 A/3200 A					Page
Width (B) mm			1000	1000	1200	1200	1200	
Height (H) mm			2000	2000	2000	2000	2000	
Depth (T) mm			500	600	500	600	800	
Model No. SV		1	**9660.595**[1)]	**9660.695**[1)]	**9660.555**[1)]	**9660.655**[1)]	**9660.855**[1)]	
Technical specifications correspond to Model No. TS			8005.500	8006.500	8205.500	8206.500	8208.500	144 – 146
Doors			2	2	2	2	2	
Approximate weight (kg)			109.6	113.7	133.6	137.6	146.0	
Base/plinth								
Components front and rear	Height 100 mm	1 set	8601.000	8601.000	8601.200	8601.200	8601.200	893
	Height 200 mm	1 set	8602.000	8602.000	8602.200	8602.200	8602.200	893
Trim panels (sides)	Height 100 mm	1 set	8601.050	8601.060	8601.050	8601.060	8601.080	893
	Height 200 mm	1 set	8602.050	8602.060	8602.050	8602.060	8602.080	893
Also required								
2 For mounting in the centre section								
TS punched section with mounting flange (4 per enclosure)		4	8612.550	8612.560	8612.550	8612.560	8612.580	995
PS punched section without mounting flange (2 per enclosure)		4	4382.000	4382.000	4378.000	4378.000	4378.000	998
Support bracket (4 sets per enclosure)		24 sets	4183.000	4183.000	4183.000	4183.000	4183.000	1007
Threaded blocks M6 (8 per enclosure)		50	4162.000	4162.000	4162.000	4162.000	4162.000	1010
Accessories								
Cable clamp rails		2	4336.000	4336.000	4196.000	4196.000	4196.000	1061
Cable entry plates[2)]		4	8800.100	8800.100	8800.120	8800.120	8800.120	1045
Side panels		2	8105.235	8106.235	8105.235	8106.235	8108.235	917
Roof plates, vented[3)]		1	–	9660.255	–	9660.265	9659.555	455
Roof plates with pressure relief function[3)]		1	–	9660.955	–	9660.965	–	455
Cover plate, contact hazard protection[4)]		1 set	–	9660.480	–	9660.490	–	452
Mounting angle		24	–	9660.090	–	9660.090	–	453
Cover panel			■	■	■	■	■	453
Terminal studs			■	■	■	■	■	454
Lock systems								
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956 and comfort handle, see page 947 – 948.								

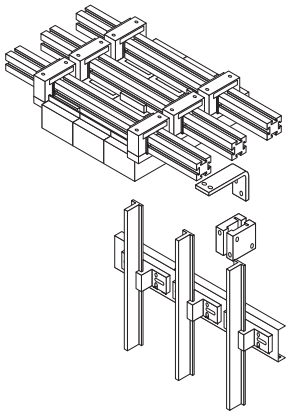
[1)] Without mounting plate.
[2)] Cable entry grommets, see page 1046.
[3)] In exchange for the standard TS roof.
[4)] Only used when mounting the Maxi-PLS system in the rear section.

System overview Page 413 **NH fused isolators size 00 – 3** Page 393 **System components** Page 422/436 **Connection components** Page 423/437 **Accessories** Page 453

SV-TS 8 enclosures for NH fused isolators







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Supply includes:
Enclosure frame with fitted support rails to accommodate the T-bar support;
door, roof, rear panel, gland plates (three-piece).

Detailed drawing,
see page 1253.

Technical information,
see page 1256.

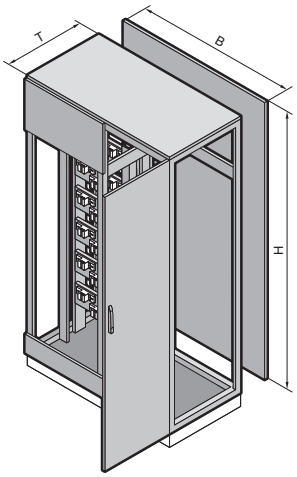
For Maxi-PLS		Packs of	**3-pole** 1600 A/2000 A/3200 A				Page
For NH fused isolators brand			ABB SlimLine		Jean Müller SASIL		
Width (B) mm			1000	1200	1000	1200	
Height (H) mm			2000	2000	2000	2000	
Depth (T) mm			600	600	600	600	
Model No. SV		1	**9660.515**	**9660.545**	**9660.415**	**9660.445**	
Door			1	1	1	1	
Approximate weight (kg)			110	135	110	135	
Base/plinth							
Components front and rear	Height 100 mm	1 set	8601.000	8601.200	8601.000	8601.200	893
	Height 200 mm	1 set	8602.000	8602.200	8602.000	8602.200	893
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.060	893
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.060	893
Maxi-PLS system components							
T-bar supports up to 800 A	T-support	3	9660.000	9660.000	9660.000	9660.000	444
	T-end support	3	9660.010	9660.010	9660.010	9660.010	444
T-bar supports up to 1600 A	T-support	3	9660.100	9660.100	9660.100	9660.100	444
	T-end support	3	9660.110	9660.110	9660.110	9660.110	444
T busbars E-Cu up to 800 A	Length 1600 mm	3	9660.030	9660.030	9660.030	9660.030	444
T busbars E-Cu up to 1600 A	Length 1600 mm	3	9660.130	9660.130	9660.130	9660.130	444
T-connection kits up to 800 A, for Maxi-PLS	2000 A	1 set	9660.050	9660.050	9660.050	9660.050	444
	3200 A	1 set	9660.070	9660.070	9660.070	9660.070	444
T-connection kits up to 1600 A, for Maxi-PLS	2000 A	1 set	9660.140	9660.140	9660.140	9660.140	444
	3200 A	1 set	9660.160	9660.160	9660.160	9660.160	444
U contact maker			■	■	■	■	423/437
Isolator chassis			■	■	■	■	423/437
Accessories							
Side panels		2	8106.512	8106.512	8106.512	8106.512	942
Cover for distributor busbar (from the isolator manufacturer's range)			ABB Model No. NHP 407062 R..		Jean Müller Model No. A 8900 101		
Roof plates, vented[1)]		1	9660.255	9660.265	9660.255	9660.265	455
Roof plates with pressure relief function[1)]		1	9660.955	9660.965	9660.955	9660.965	455
Lock systems							
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956 and comfort handle, see page 947 – 948.							

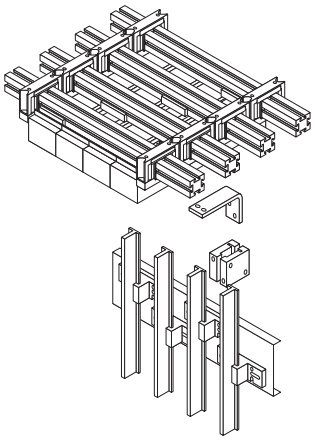
[1)] In exchange for the standard TS roof.

System overview Page 413 **System components** Page 422/436 **Connection components** Page 423/437 **Accessories** Page 453 **C rails** Page 999

SV-TS 8 enclosures for NH fused isolators







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Supply includes:
Enclosure frame with fitted support rails to accommodate the T-bar support;
door, roof, rear panel, gland plates (three-piece).

Detailed drawing,
see page 1252.

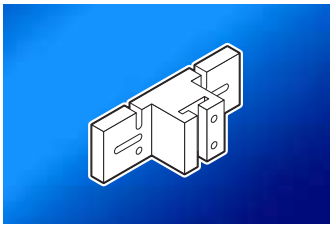
Technical information,
see page 1256.

For Maxi-PLS		Packs of	**4-pole**								Page
			1600 A/2000 A				3200 A				
For NH fused isolators brand			ABB SlimLine		Jean Müller SASIL		ABB SlimLine		Jean Müller SASIL		
Width (B) mm			1000	1200	1000	1200	1000	1200	1000	1200	
Height (H) mm			2000	2000	2000	2000	2000	2000	2000	2000	
Depth (T) mm			600	600	600	600	800	800	800	800	
Model No. SV		1	**9649.665**	**9649.675**	**9649.645**	**9649.655**	**9659.665**	**9659.675**	**9659.645**	**9659.655**	
Door			1	1	1	1	1	1	1	1	
Approximate weight (kg)			120	145	120	145	145	160	145	160	
Base/plinth											
Components front and rear	Height 100 mm	1 set	8601.000	8601.200	8601.000	8601.200	8601.000	8601.200	8601.000	8601.200	893
	Height 200 mm	1 set	8602.000	8602.200	8602.000	8602.200	8602.000	8602.200	8602.000	8602.200	893
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.060	8601.080	8601.080	8601.080	8601.080	893
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.060	8602.080	8602.080	8602.080	8602.080	893
Maxi-PLS system components											
T-bar supports up to 800 A	T-support	3 + 1	9660.000 + 9649.100								444
	T-end support	3 + 1	9660.010 + 9649.110								444
T-bar supports up to 1600 A	T-support	3 + 1	9660.100 + 9659.100								444
	T-end support	3 + 1	9660.110 + 9659.110								444
T busbars E-Cu up to 800 A	Length 1600 mm	3 + 1	9660.030 + 9649.130								444
T busbars E-Cu up to 1600 A	Length 1600 mm	3 + 1	9660.130 + 9659.130								444
T-connection kits up to 800 A		1 set	9649.080	9649.080	9649.140	9649.140	9659.080	9659.080	9659.140	9659.140	444
T-connection kits up to 1600 A		1 set	9649.090	9649.090	9649.150	9649.150	9659.090	9659.090	9659.150	9659.150	444
U contact maker		3 + 1	9640.170 + 9649.170				9650.170 + 9659.170				423/437
Isolator chassis		1 set	9649.020	9649.020	9649.020	9649.020	9659.020	9659.020	9659.020	9659.020	423/437
Accessories											
Side panels		2	8106.512	8106.512	8106.512	8106.512	8108.512	8108.512	8108.512	8108.512	942
Cover for distributor busbar (from the isolator manufacturer's range)			ABB Model No. NHP 407062 R..		Jean Müller Model No. A 8900 101		ABB Model No. NHP 407062 R..		Jean Müller Model No. A 8900 101		
Roof plates, vented[1)]		1	9660.255	9660.265	9660.255	9660.265	9659.545	9659.555	9659.545	9659.555	455
Roof plates with pressure relief function[1)]		1	9660.955	9660.965	9660.955	9660.965	–	–	–	–	455
Lock systems											
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956 and comfort handle, see page 947 – 948.											

[1)] In exchange for the standard TS roof.

System overview Page 413 **System components** Page 422/436 **Connection components** Page 423/437 **Accessories** Page 453 **C rails** Page 999

System components for NH fused isolator panels

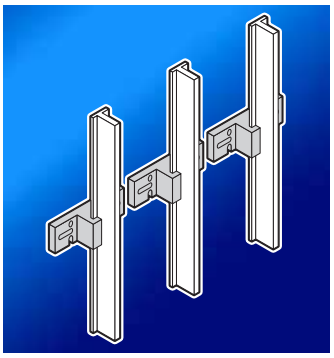


T-bar supports

Rated current up to	Design	3-pole		4-pole				
		Packs of	Model No. SV	Packs of	Model No. SV		Packs of	Model No. SV
800 A	T-support	3	**9660.000**	3	**9660.000**	+	1	**9649.100**
	T-end support	3	**9660.010**	3	**9660.010**	+	1	**9649.110**
1600 A	T-support	3	**9660.100**	3	**9660.100**	+	1	**9659.100**
	T-end support	3	**9660.110**	3	**9660.110**	+	1	**9659.110**

Material:
PA 6.6

Detailed drawing,
see page 1252.



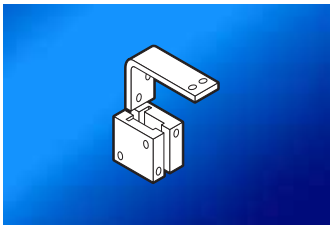
T-busbars E-Cu

10 mm knife edge

Rated current up to	Length mm	3-pole		4-pole				
		Packs of	Model No. SV	Packs of	Model No. SV		Packs of	Model No. SV
800 A	1600	3	**9660.030**	3	**9660.030**	+	1	**9649.130**
1600 A	1600	3	**9660.130**	3	**9660.130**	+	1	**9659.130**

Detailed drawing,
see page 1252.

Technical information,
see page 1256.



T-connection kits

800 A/1600 A
For NH fused isolator brands ABB and Jean Müller

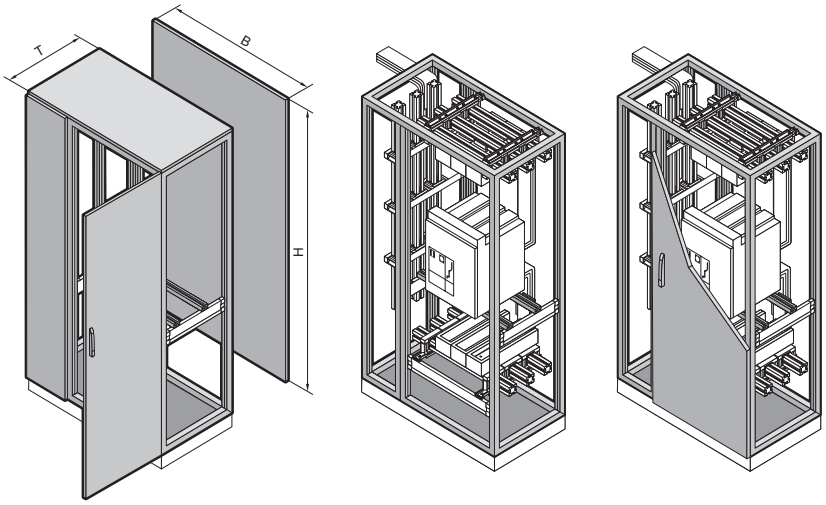
Material:
E-Cu

For Maxi-PLS	Packs of	3-pole					4-pole		Page
		2000 A			3200 A		2000 A	3200 A	
For enclosure depth mm		500	600	600	600	800	600	800	
Bar centre distance mm		100	100	150	150	150	100	150	
For T-busbars up to 800 A									
For ABB SlimLine **Model No. SV**	1 set	**9660.040**	**9660.050**	**9660.060**	**9660.070**	**9660.080**	**9649.080**	**9659.080**	
For Jean Müller SASIL **Model No. SV**	1 set	**9660.040**	**9660.050**	**9660.060**	**9660.070**	**9660.080**	**9649.140**	**9659.140**	
For T-busbars up to 1600 A									
For ABB SlimLine **Model No. SV**	1 set	**–**	**9660.140**	**9660.150**	**9660.160**	**9660.170**	**9649.090**	**9659.090**	
For Jean Müller SASIL **Model No. SV**	1 set	**–**	**9660.140**	**9660.150**	**9660.160**	**9660.170**	**9649.150**	**9659.150**	
Accessories									
U contact maker	3 + 1	9640.170 –	9640.170 –	9640.170 –	9650.170 –	9650.170 –	9640.170 9649.170	9650.170 9659.170	423/437
Isolator chassis	1 set	9640.020	9640.020	9650.020	9650.020	9650.020	9649.020	9659.020	423/437

System overview Page 413 **System components** Page 422/436 **Connection components** Page 423/437 **SV-TS 8 enclosures** Page 442
Accessories Page 453

SV-TS 8 enclosures for coupling sets





Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Supply includes:
Enclosure frame with fitted system support rails for attaching the power circuit-breaker; door, roof, rear panel, gland plates (three-piece).

Detailed drawing,
see page 1252.

Technical information,
see page 1257.

For Maxi-PLS		Packs of	3-pole			4-pole			Page
			1600 A	2000 A	3200 A	1600 A	2000 A	3200 A	
Width (B) mm			800		1000	1000		1000	
Height (H) mm			2000		2000	2000		2000	
Depth (T) mm			600		600	600		800	
Model No. SV		1	**9660.305**		**9660.355**	**9649.685**		**9659.695**	
Door			1		1	1		1	
Approximate weight (kg)			145		175	165		195	
Base/plinth									
Components front and rear	Height 100 mm	1 set	8601.800		8601.000	8601.000		8601.000	893
	Height 200 mm	1 set	8602.800		8602.000	8602.000		8602.000	893
Trim panels (sides)	Height 100 mm	1 set	8601.060		8601.060	8601.060		8601.080	893
	Height 200 mm	1 set	8602.060		8602.060	8602.060		8602.080	893
Maxi-PLS system components									
Coupling sets, vertical (Maxi-PLS in the roof section)		1 set	9660.325	9660.320	9660.370	9649.705	9649.700	9659.700	446
Coupling sets, vertical (Maxi-PLS in the rear section)		1 set	9660.315	9660.310	9660.360	–	–	–	446
Maxi-PLS busbars, E-Cu		1	9640.216	9640.211	9650.241	9640.246	9640.241	9650.241	422/436
System attachment (Maxi-PLS in the roof section)	for coupling set[1)]	2	9640.070		9650.070	9649.070		9659.070	446
	for busbars[1)]	2	9640.120		9650.100	9640.080		9650.080	422/436
System attachment (Maxi-PLS in the rear section)	for coupling set[1)]	2	9640.070		9650.070	9649.070		9659.070	446
	for system rear[2)]	2	9640.150		9650.150	9640.090		9650.090	422/436
	for system bottom[2)]	2	9640.120		9650.100	9640.080		9650.080	422/436
Accessories									
Side panels		2	8106.235		8106.235	8106.235		8108.235	917
Roof plates, vented[3)]		1	9660.245		9660.255	9660.255		9659.545	455
Roof plates with pressure relief function[3)]		1	9660.945		9660.955	9660.955		–	455
Device module			■		■	■		■	450
Mounting angle		24	9660.090		9660.090	9660.090		9660.090	453
Lock systems									
Standard double-bit lock insert may be exchanged for lock inserts, type F, see page 956 and comfort handle, see page 947 – 948.									

[1)] 2 packs required per system configuration.
[2)] 1 pack required per system configuration.
[3)] In exchange for the standard TS roof.

System overview Page 413 **Connection kits** Page 414 – 421, 424 – 435 **System components** Page 422/436 **Connection components** Page 423/437 **Accessories** Page 453

System components for coupling sets



Coupling sets

vertical
For installation in 600/800 mm deep SV-TS 8 enclosures for coupling sets.

Coupling sets should be selected according to the rated current I_e of the primary busbars to be coupled:

- Coupling set 1600 A: $I_e \leq 1900$ A
- Coupling set 2000 A: $I_e \leq 2500$ A
- Coupling set 3200 A: I_e 2000 A ≤ 3200 A

Supply includes:
3-pole
3 Maxi-PLS busbars E-Cu,
1 set of connection brackets E-Cu, top (L1 – L3),
1 set of connection brackets E-Cu, bottom (L1 – L3),
assembly parts.

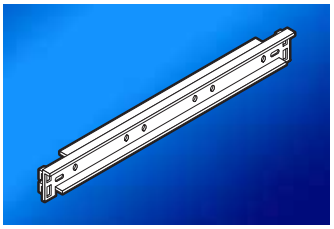
4-pole
4 Maxi-PLS busbars E-Cu,
1 set of connection brackets E-Cu, top (L1 – L3),
1 set of connection brackets E-Cu, bottom (L1 – L3),
assembly parts.

For Maxi-PLS system in the roof area		Packs of	3-pole			4-pole			Page
			1600 A	2000 A	3200 A	1600 A	2000 A	3200 A	
Model No. SV		1 set	**9660.325**	**9660.320**	**9660.370**	**9649.705**	**9649.700**	**9659.700**	
Also required									
Sliding block		15	9640.980[1)]	9640.980[1)]	9650.990[1)]	9640.980[2)]	9640.980[2)]	9650.990[2)]	423/437
System attachment for enclosure depth	600 mm	2	9640.070	9640.070	9650.070	9649.070	9649.070	–	446
	800 mm	2	–	–	–	–	–	9659.070	446
Busbar support		3	9640.000	9640.000	9650.000	9640.000	9640.000	9650.000	422/436
		1	–	–	–	9649.000	9649.000	9659.000	422/436
End supports		6	9640.010	–	–	9640.010	9640.010	9650.010	422/436

Quantity required for system assembly
[1)] 24
[2)] 32

For Maxi-PLS system in the rear section		Packs of	3-pole			Page
			1600 A	2000 A	3200 A	
Model No. SV		1 set	**9660.315**	**9660.310**	**9660.360**	
Also required						
Sliding block		15	9640.980[1)]	9640.980[1)]	9650.990[1)]	423/437
System attachment for enclosure depth	600 mm	2	9640.070	9650.070	9650.070	446
	800 mm	2	–	–	–	446
Busbar support		3	9640.000	9640.000	9650.000	422/436
End supports		6	9640.010	9640.010	9650.010	422/436

Quantity required for system assembly
[1)] 24



System attachment

for vertical coupling set
For attaching the busbar supports – see page 422/436 – and coupling sets to the side TS frame section.

Material:
Stainless steel

For Maxi-PLS coupling section	3-pole		4-pole	
	1600 A/2000 A	3200 A	1600 A/2000 A	3200 A
Bar centre distance mm	100	150	100	150
Packs of	2	2	2	2
Model No. SV	**9640.070**	**9650.070**	**9649.070**	**9659.070**

System overview Page 413 **Connection kits** Page 414 – 421, 424 – 435 **System components** Page 422/436 **Connection components** Page 423/437
SV-TS 8 enclosures Page 445 **Accessories** Page 453



Compact infeed, 3-pole

for Maxi-PLS busbar 1600 A/2000 A
For individual use as a 3-pole cable connection bar system. Direct mounting on the mounting plate or punched section without mounting flange.

Material:
Sheet steel, zinc-plated

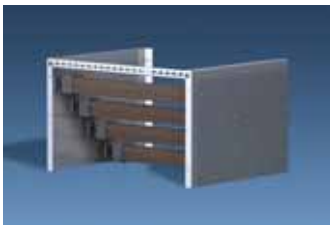
Supply includes:
6 end supports,
2 support plates for end supports,
1 PS mounting rail 23 x 23 mm (length 495 mm),
mounting accessories.

Packs of	Model No. SV
1 set	**9660.980**

Also required:

Maxi-PLS busbars
– 1600 A, see page 422
– 2000 A, see page 422.

Note:
PS 23 x 23 mm punched rails, see page 998, must be ordered separately when using Maxi-PLS busbars that are > 491 mm long.



Compact infeed, 4-pole

for Maxi-PLS busbar 1600 A/2000 A
For individual use as a 4-pole cable connection bar system. Direct mounting on the mounting plate or punched section without mounting flange.

Material:
Sheet steel, zinc-plated

Supply includes:
8 end supports,
2 support plates for end supports,
1 PS mounting rail 23 x 23 mm (length 495 mm),
mounting accessories.

Packs of	Model No. SV
1 set	**9660.984**

Also required:

Maxi-PLS busbars
– 1600 A, see page 422
– 2000 A, see page 422.

Note:
PS 23 x 23 mm punched rails, see page 998, must be ordered separately when using Maxi-PLS busbars that are > 491 mm long.

Mounting kit/corner connectors



Attachment set

for power circuit-breaker installation
For attaching open power circuit-breakers (ACB) to system support rails,
see page 1000.

Material:
Sheet steel, zinc-plated

Supply includes:
4 threaded plates.

Packs of	Model No. SV
1 set	**9660.970**



Corner connectors

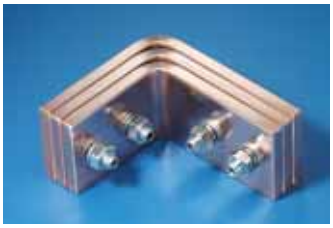
E-Cu
For 90° connection of two Maxi-PLS systems in the roof area.

Material:
E-Cu

Supply includes:
Corner connector kit, threaded bolts, nuts, washers.

For Maxi-PLS in the roof area	Packs of	3-pole			4-pole			Page
		1600 A	2000 A	3200 A	1600 A	2000 A	3200 A	
Bar centre distance mm		100	100	150	100	100	150	
For enclosure depth mm		600	600	600	600	600	800	
Model No. SV	1 set	**9640.715**	**9640.710**	**9650.710**	**9649.715**	**9649.710**	**9659.710**	
Also required								
Sliding block	15	9640.980[1)]	9640.980[1)]	9650.990[1)]	9640.980[2)]	9640.980[2)]	9650.990[2)]	423/437
U contact maker E-Cu	3	9640.170	9640.170	9650.180	9640.170	9640.170	9650.180	423/437
	1	–	–	–	9649.170	9649.170	9659.180	

Quantity required per kit:
[1)] 12
[2)] 16



Corner brackets

E-Cu
For 90° connection of two Maxi-PLS busbars in the rear area. Also suitable for N/PE busbar connection in the lower area of the enclosure and for individual configuration.

Material:
E-Cu

Supply includes:
Bracket, threaded bolts, nuts, washers.

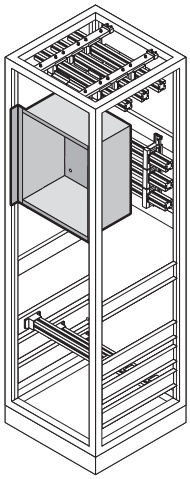
Note:
No. of corner connectors required for applications
- 3-pole = 3
- 4-pole = 4

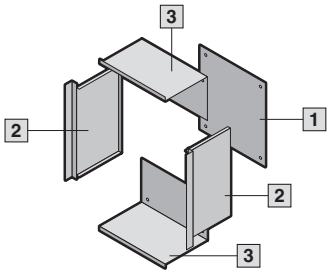
For Maxi-PLS	Packs of	3-pole/4-pole			Page
		1600 A	2000 A	3200 A	
Number of brackets per phase		2 x 60 x 10 mm	3 x 60 x 10 mm	3 x 80 x 10 mm	
Model No. SV	1	**9640.705**	**9640.700**	**9650.700**	
Also required					
Sliding block	15	9640.980[1)]	9640.980[1)]	9650.990[1)]	423/437

[1)] Quantity required per corner bracket: 4.

Device module















For use in power circuit breaker outgoing/incoming feeder panels with a minimum depth of 600 mm.
The removable mounting plate may be used for the configuration e.g. of fuses, power circuit-breakers and switchgear.

Material:
Side parts, centre parts:
Sheet steel, spray-finished in RAL 7035
Mounting plate:
Sheet steel, zinc-plated, passivated
Front panel:
Aluminium, anodised

Supply includes:
2 side parts, 2 centre parts, connector parts, mounting plate, optional front plate.

1 Mounting plate
2 Side parts
3 Centre parts

Note:
Please observe the manufacturer-specific data regarding the arcing space of power circuit-breakers.

Design		Packs of	For enclosure width 600 mm	For enclosure width 800 mm	Page
Interior dimensions, clearance width	Width mm		432	632	
	Height mm		263	263	
	Depth mm		245.5	245.5	
Mounting plate	Width mm		420	620	
	Height mm		250	250	
A Without front panel **Model No. SV**		1	**9660.700**	**9660.710**	
B With front panel **Model No. SV**		1	**9660.720**	**9660.730**	
C With front panel, horizontally hinged **Model No. SV**		1	**9660.740**	**9660.750**	
D With front panel, vertically hinged **Model No. SV**		1	**9660.760**	**9660.770**	
Also required					
Mounting bracket		24	9660.090[1)]	9660.090[1)]	453

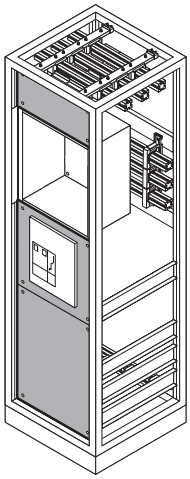
[1)] 4 mounting brackets are required to attach a device module.

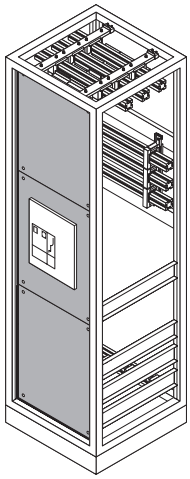
System overview Page 413 **Accessories** Page 453

Contact hazard protection cover









For SV-TS 8 enclosures with power circuit-breaker
For covering incoming or outgoing feeder panels so that they are safe from finger-contact (IP 2X).

Material:
Sheet steel, spray-finished.

Colour:
RAL 7035

Supply includes:
3 front covers.

Note:
Cut-outs for power circuit-breakers must be provided by the customer.
SV-TS 8 enclosures,
see page 438/439.

Device modules,
see page 450.

Variant A:
Incoming/outgoing feeder panel with device module

Variant B:
Incoming/outgoing feeder panel without device module

		Packs of	Variant A (for enclosures with device module)		Variant B (for enclosures without device module)		Page
For enclosure	Width mm		600	800	600	800	
	Height mm		2000	2000	2000	2000	
For design	1 1-door **Model No. SV**	1 set	**9660.280**	**9660.380**	**9660.780**	**9660.880**	
	2 3-door **Model No. SV**	1 set	**9660.290**[1)]	**9660.390**[1)]	**9660.790**	**9660.890**	
Also required							
Mounting bracket		24	9660.090[2)]	9660.090[2)]	9660.090[2)]	9660.090[2)]	453

[1)] Including trim panel.
[2)] 12 mounting brackets are required to attach the contact hazard protection cover plates.

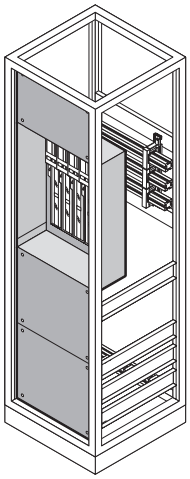
Dimensions of the contact hazard protection cover plates

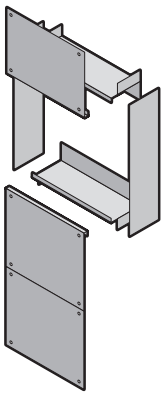
Model No. SV	Width mm	Height mm			
		Top	Middle	Bottom	Trim panel
9660.280	506	204	656	721	–
9660.290	506	246.5	567	567	20
9660.380	706	204	656	721	–
9660.390	706	246.5	567	567	20
9660.780	506	526	656	721	–
9660.790	506	567	567	567	–
9660.880	706	526	656	721	–
9660.890	706	567	567	567	–

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Contact hazard protection cover







For SV-TS 8 enclosures with Rittal NH fused isolators
To cover NH fused isolators in the rear enclosure area so that they are safe from finger-contact (IP 2X).

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Supply includes:
3 front covers,
2 depth covers,
2 side covers,
connector parts.

Note:
SV-TS 8 enclosures,
see page 440/441
NH fused isolators,
see page 393.

For enclosure	Width mm	Packs of	600	800	1000	1200	Page
	Height mm		2000	2000	2000	2000	
	Depth mm		600	600	600	600	
Available installation width for Rittal NH fused isolators[1] mm	**without** use of longitudinal connectors		500	700	900	1100	
	with use of longitudinal connectors on one side		450	650	850	1050	
	with use of longitudinal connectors on both sides		400	600	800	1000	
Model No. SV		1 set	**9660.460**	**9660.470**	**9660.480**	**9660.490**	
Also required							
Mounting bracket		24	9660.090[2]	9660.090[2]	9660.090[2]	9660.090[2]	453
Accessories							
Cover panel for NH isolators	Size 00	4	9660.180	9660.180	9660.180	9660.180	453
	Size 1 – 3	4	9660.190	9660.190	9660.190	9660.190	453

[1] When using the top-mounted busbars SV 9640.160 / SV 9650.160, see page 422/436.
Longitudinal connectors SV 9640.190 / SV 9650.190 for Maxi-PLS busbars, see page 422/436.
[2] 12 mounting brackets are required to attach the contact hazard protection cover plates.

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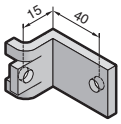
Mounting bracket

For attaching the device modules and cover plates for contact hazard protection.
Tapped hole M6.

Material:
Sheet steel, zinc-plated

Supply includes:
Assembly screws.

Packs of	Model No. SV
24	**9660.090**





Blanking cover

To cover free NH fused isolator slots.

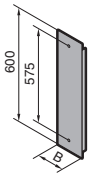
Material:
Sheet steel, spray-finished.

Colour:
RAL 7035

Supply includes:
Assembly screws.

For NH size	Width (B) mm	Packs of	Model No. SV
00	49.5	4	**9660.180**
1 to 3	99.5	4	**9660.190**

Note:
NH fused isolators,
see page 393.





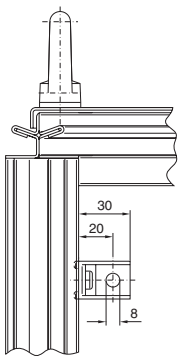
Cover attachment

For simple mounting of covers.

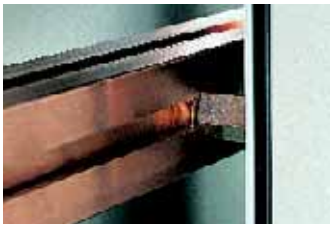
Note:
Only suitable for use in conjunction with three-door enclosures.

Packs of	Model No. SV
8	**9660.680**





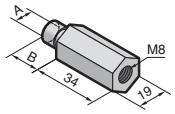
Accessories



Terminal studs

For the attachment of NH fused isolators, size 00 (Model No. SV 3591.040) – see page 393 – on Maxi-PLS busbars.

For Maxi-PLS	1600 A/ 2000 A	3200 A	Page
A	M10	M12	
B	9	12	
Packs of	3	3	
Model No. SV	**9640.390**	**9650.390**	
Also required			
Sliding blocks	9640.980	9650.990	423/437



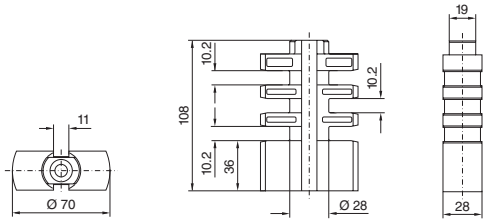


Stacking insulator

To support the connection kits top/bottom. Easily retro-fitted.

Supply includes:
Assembly parts.

Packs of	Model No. SV
6	**9660.200**





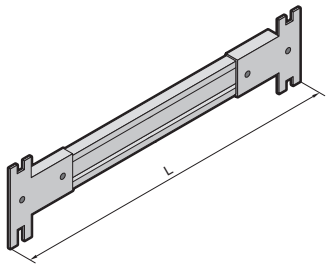
C rails

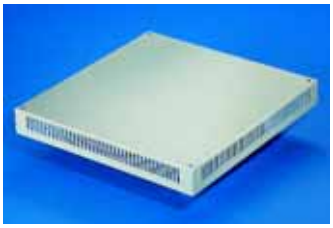
For attaching the stacking insulator to the TS frame section.

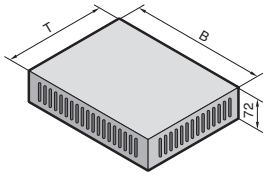
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
4 C rails,
8 clamps,
assembly parts.

For TS enclosures		Length (L) mm	Packs of	Model No. SV
Width mm	Depth mm			
600	600	600	4	**9660.210**
800	800	800	4	**9660.220**







Roof plates, vented

In exchange for the standard SV-TS roof.
All-round vent slots

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

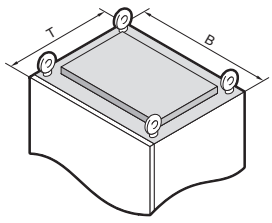
Protection category:
IP 2X

Supply includes:
Assembly parts.

For TS enclosures		Packs of	Model No. SV
Width (B) mm	Depth (T) mm		
600	600	1	**9660.235**
	800	1	**9659.525**
800	600	1	**9660.245**
	800	1	**9659.535**
1000	600	1	**9660.255**
	800	1	**9659.545**
1200	600	1	**9660.265**
	800	1	**9659.555**







Roof plates

with pressure relief function

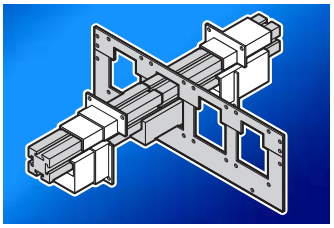
In exchange for the standard SV-TS roof.
Roof plates with pressure relief function to IEC 60 439-1, supplement 2 (special test): “Procedure for testing under accidental arc conditions”.

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

For TS enclosures		Packs of	Model No. SV
Width (B) mm	Depth (T) mm		
400	600	1	**9671.446**
400	800	1	**9671.448**
600	600	1	**9660.935**
600	800	1	**9671.468**
800	600	1	**9660.945**
800	800	1	**9671.488**
1000	600	1	**9660.955**
1200	600	1	**9660.965**

Accessories



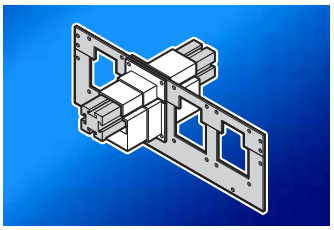
Busbar gland

Exceeds the requirements of BGV A3 in conjunction with the divider panel and the divider panel modules.

Material:
PA 6.6

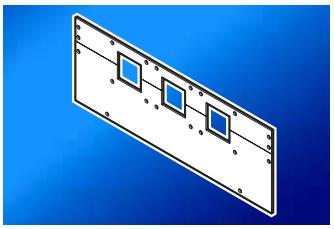
Supply includes:
Assembly parts.

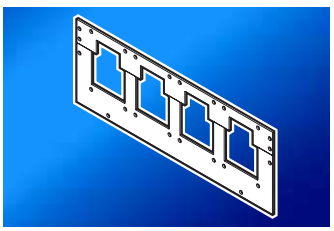
Note:
The busbar gland may also be used as a cover for the longitudinal connectors.



For Maxi-PLS	Packs of	For use **without** longitudinal connectors **Model No. SV**	For use **with** longitudinal connectors **Model No. SV**	
1600 A/2000 A	1 set	**9640.600**[1)]	**9640.610**[2)]	–
3200 A	1 set	**9650.600**[1)]	–	**9650.610**[2)]
Also required				
Busbar gland	1 set	–	**9640.600**[2)]	**9650.600**[2)]

Required number of packs for system configuration
[1)] 3-pole = 6 packs
4-pole = 8 packs
[2)] 3-pole = 3 packs
4-pole = 4 packs



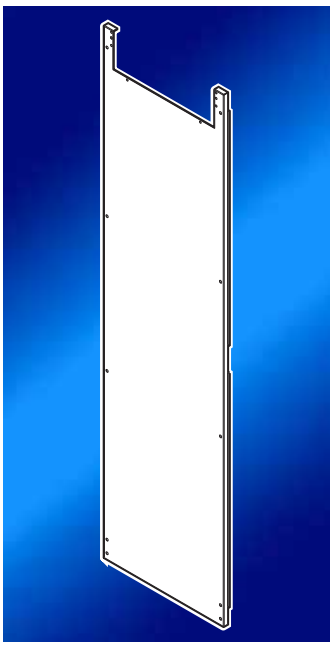


Divider panel modules

For Maxi-PLS		For enclosure depth mm	Bar centre distance mm	Packs of	For use **without** longitudinal connectors **Model No. SV**	For use **with** longitudinal connectors **Model No. SV**
1600 A/ 2000 A	3-pole	600	100	1 set	**9640.620**	**9640.630**
	3-pole	–	185	1 set	**9640.640**	**9640.650**
	4-pole	600	100	1 set	**9649.600**	**9649.610**
3200 A	3-pole	600	150	1 set	**9650.620**	**9650.630**
	3-pole	–	185	1 set	**9650.640**	**9650.650**
	4-pole	800	150	1 set	**9659.600**	**9659.610**

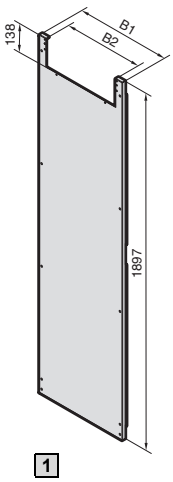
Material:
PA 6.6

Supply includes:
Assembly parts.



Divider panel

For side shielding from neighbouring panels. In conjunction with the busbar gland and the divider panel modules, as a preventive measure to prevent arcing.



1 For TS enclosures with Maxi-PLS busbars in the roof section

For TS enclosures		B1 mm	B2 mm	Packs of	Model No. SV
Depth mm	Height mm				
600	2000	502	418	1	**9660.620**
800	2000	702	618	1	**9659.590**

2 For TS enclosures with Maxi-PLS busbars in the rear section

For TS enclosures		B1 mm	Packs of	Model No. SV
Depth mm	Height mm			
600	2000	502	1	**9660.610**
800	2000	702	1	**9659.580**

Material:
Sheet steel, 1.5 mm, zinc-plated

Supply includes:
Assembly parts.

ISV distribution enclosure up to 630 A/up to 1600 A

The “one-stop supplier” concept has positive advantages. Easier planning and procurement with one partner, faster installation thanks to coordinated systems, which in turn translates into reduced labour and investment costs.

ISV-TS 8 enclosure system
- Bayable with all TS 8 enclosures of the same height and depth
- Pre-configured
- Flexible interior installation with the TS 8 enclosure accessories range, such as doors, lock systems, partial mounting plates, climate control components
- Optional door hinging on l/h or r/h side
- Suitable for component mounting as an incoming or outgoing feeder panel, depending on requirements
- Cable entry freely selectable depending on the enclosure configuration

ISV-AE wall-mounted distributor
- Based on AE standard enclosures
- For industrial applications with a high protection category

ISV modules
- Pitch pattern 150 x 250 mm (H x W)
- Rapid assembly system facilitates precise position of the modules in the ISV-TS 8 enclosure
- Cover is prepared for a lead seal

SV components
Fully available for population with Rittal components, such as
- NH on-load isolators
- Bus-mounting fuse bases
- Connection components
- Optional busbar installation with SV busbar systems up to 1600 A (185 mm bar centre distance) or Rittal Maxi-PLS up to 2000 A



Systematic fast assembly



The ISV enclosure system, with its pre-configured mounting level, is perfectly prepared for mounting the installation modules.



The required modules may be screw-fastened directly to the mounting levels without any further accessories.



The matching contact hazard protection cover plates inside the enclosure guard against accidental contact with live parts.



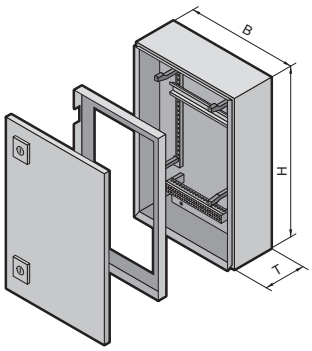
ISV-AE wall-mounted distributor
Suitable for wall mounting (surface mounting). Prepared for the direct installation of ISV installation modules.

Rittal Ri4Power Form 1

ISV wall-mounted distributors based on compact enclosures AE







Suitable for wall mounting (surface mounting). Prepared for the direct installation of ISV installation modules.

Material:
Sheet steel

Surface finish:
Enclosure and door:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Support plate: Zinc-plated
Contact hazard protection frame: Sheet steel, textured RAL 7035

Protection category:
IP 55 for solid door.

Supply includes:
Enclosure of all-round solid construction, single-door:
R/h door hinge, may be swapped to opposite side (except with SV 9665.855), with one cam lock, foamed-in door seal, support plate to accommodate the ISV modules.

Note:
Please note the mounting depths of the various enclosure designs when selecting modules.

Detailed drawing,
see page 1260.

Width (B) mm		Packs of	380	500	600	600	600	1000	Page
Height (H) mm			600	700	760	1000	1200	1200	
Depth (T) mm			210	250	210	250	300	300	
Width unit (WU)[1]			1	1	2	2	2	3	
Height unit (U)[2]			3	4	4	6	7	7	
Max. pitch units			36	48	96	144	168	252	
Model No. SV		1	**9665.805**	**9665.815**	**9665.825**	**9665.835**	**9665.845**	**9665.855**	
Technical specifications correspond to Model No. AE			1038.500	1057.500	1076.500	1090.500	1260.500	1213.500	129/130
Door(s)			1	1	1	1	1	2	
Accessories									
Self-tapping screws		300	–	–	–	–	2487.000	2487.000	1011
Base/plinth	Height 100 mm	1	–	–	–	–	2816.200	2801.200	901
	Height 200 mm	1	–	–	–	–	2826.200	2802.200	901
Eyebolts		4	–	–	–	–	2509.000	2509.000	974
Stainless steel rain canopy									969
Gland plates									1048 – 1053
ISV expansion modules									461 – 468
ISV accessories									469/470

Lock systems

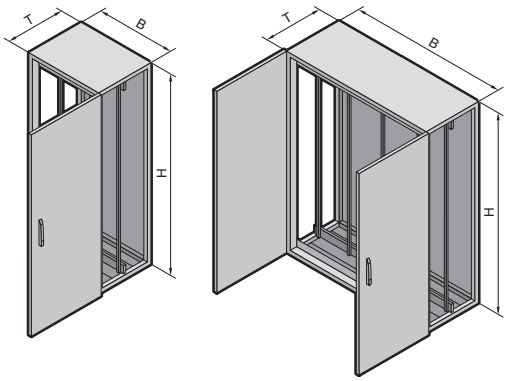
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 956, lock cylinder insert, plastic handles and T handles, type B, see page 954 – 957.

[1] 1 width unit (WU) ≙ 250 mm
[2] 1 U ≙ 150 mm

System overview Page 457 **ISV installation modules** Page 461 **ISV accessories** Page 469 **Enclosure accessories** Page 890

ISV-TS 8 enclosures for distribution enclosures up to 630 A





Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Contact hazard protection frame: Hard PVC, RAL 9002

Surface finish:
Enclosure frame:
Dipcoat-primed
Roof, rear panel, door(s):
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Supply includes:
Enclosure frame with attachment level, door(s), roof, rear panel, gland plates (three-piece), contact hazard protection frame.

Detailed drawing,
see page 1260.

Technical specifications,
see page 1260.

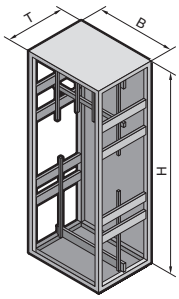
Width (B) mm		Packs of	600		850		1100		Page
Height (H) mm			2000		2000		2000		
Depth (T) mm			400	600	400	600	400	600	
Model No. SV		1	**9665.945**	**9665.905**	**9665.955**	**9665.915**	**9665.965**	**9665.925**	
Door(s)			1	1	1	1	2	2	
Approximate weight (kg)			89.5	94.5	113.5	120	157	167	
Base/plinth									
Components front and rear	Height 100 mm	1 set	8601.600	8601.600	8601.850	8601.850	8601.300	8601.300	893
	Height 200 mm	1 set	8602.600	8602.600	8602.850	8602.850	8602.100	8602.100	893
Trim panels (sides)	Height 100 mm	1 set	8601.040	8601.060	8601.040	8601.060	8601.040	8601.060	893
	Height 200 mm	1 set	8602.040	8602.060	8602.040	8602.060	8602.040	8602.060	893
Accessories									
Cable clamp rails		2	4191.000	4191.000	4195.000	4195.000	–	–	1061
Cable entry plates[1)]		2	8800.060	8800.060	8800.085	8800.085	–	–	1045
Side panels		2	8104.235	8106.235	8104.235	8106.235	8104.235	8106.235	917
Cable entry gland			■	■	■	■	■	■	478
Lock systems									
Standard double-bit lock insert may be exchanged for comfort handle, see page 947 and other inserts, see page 956.									

[1)] Cable entry grommets, see page 1046.

System overview Page 457 **ISV installation modules** Page 461 **ISV accessories** Page 469 **Enclosure accessories** Page 890

ISV-TS 8 enclosures for distribution enclosures up to 1600 A





Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Contact hazard protection frame: Hard PVC, RAL 9002

Surface finish:
Enclosure frame:
Dipcoat-primed
Roof, rear panel, door:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Supply includes:
Enclosure frame with attachment level, door, roof, rear panel, gland plates (three-piece), contact hazard protection frame.

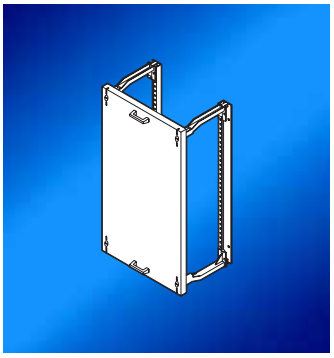
Note:
- For assembly and space reasons, a contact hazard protection module with 4 height units (600 mm) and 2 or 3 width units (500 or 750 mm), depending on the enclosure selection, is always required on the inlet or outlet side.
- When using Rittal NH fused isolators size 00 – 3 – see page 393 – care should be taken to ensure that a contact hazard protection module with at least one height unit (150 mm) is always mounted over the NH strips, for thermal reasons.
- The contact hazard protection modules to cover the NH strips all round will need to be machined by the customer.

Detailed drawing,
see page 1261.

Width (B) mm		Packs of	600	850	Page
Height (H) mm			2000	2000	
Depth (T) mm			600	600	
Model No. SV		1	**9665.975**	**9665.985**	
Door			1	1	
Approximate weight (kg)			94.5	120	
Base/plinth					
Components front and rear	Height 100 mm	1 set	8601.600	8601.850	893
	Height 200 mm	1 set	8602.600	8602.850	893
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	893
	Height 200 mm	1 set	8602.060	8602.060	893
Also required					
Support bracket		24 sets	4183.000	4183.000	1007
Punched sections without mounting flanges		4	4376.000	4382.000	998
System attachment for mounting the Maxi-PLS busbar support SV 9640.160, see page 422		2	9640.150	9640.150	422
System attachment for mounting the flat busbar support SV 3052.000, see page 391		2	9665.971	9665.971	–
Accessories					
Cable clamp rails		2	4191.000	4195.000	1061
Cable entry plates[1)]		2	8800.060	8800.085	1045
Side panels		2	8106.235	8106.235	917
Cable entry gland			■	■	478
Lock systems					
Standard double-bit lock insert may be exchanged for comfort handle, see page 947 and other inserts, see page 956.					

[1)] Cable entry grommets, see page 1046.

System overview Page 457 **ISV installation modules** Page 461 **ISV accessories** Page 469 **Enclosure accessories** Page 890



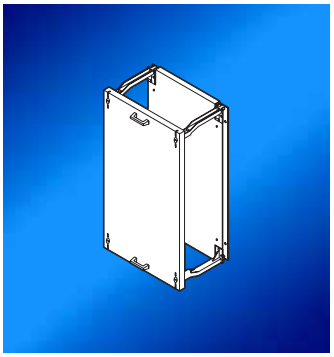
Contact hazard protection modules

- For covering free installation areas
- Cover is prepared for a lead seal
- Insulating material RAL 9002

Mechanical interior installation	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
Empty module	1	250 mm	1	150 mm	1	**9665.000**
	1	250 mm	2	300 mm	1	**9665.010**
	1	250 mm	3	450 mm	1	**9665.020**
	1	250 mm	4	600 mm	1	**9665.030**
	2	500 mm	1	150 mm	1	**9665.040**
	2	500 mm	2	300 mm	1	**9665.050**
	2	500 mm	3	450 mm	1	**9665.060**
	2	500 mm	4	600 mm	1	**9665.070**
	3	750 mm	4	600 mm	1	**9665.510**

Accessories	Page
Terminal block	470
Cable clamp rails	470

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

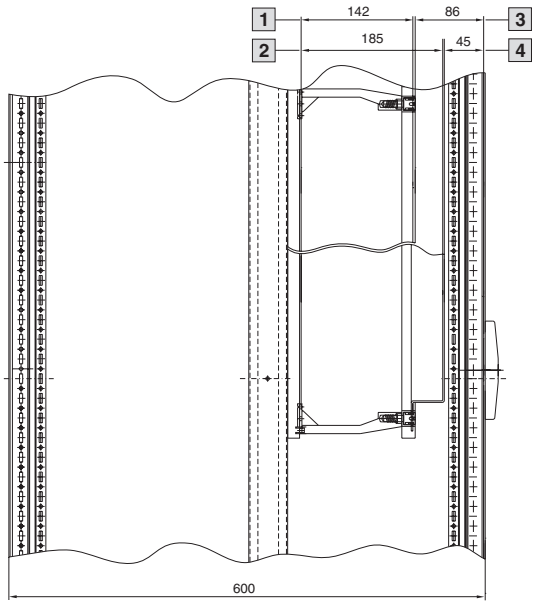


Mounting plate modules

- With mounting plate made from 2 mm zinc-plated sheet steel
- Cover is prepared for a lead seal
- Maximum usable depth 142 mm
- Insulating material RAL 9002

Mechanical interior installation: Mounting plate (W x H)	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
200 x 150 mm	1	250 mm	1	150 mm	1	**9665.080**
200 x 300 mm	1	250 mm	2	300 mm	1	**9665.090**
200 x 450 mm	1	250 mm	3	450 mm	1	**9665.100**
200 x 600 mm	1	250 mm	4	600 mm	1	**9665.110**
450 x 150 mm	2	500 mm	1	150 mm	1	**9665.120**
450 x 300 mm	2	500 mm	2	300 mm	1	**9665.130**
450 x 450 mm	2	500 mm	3	450 mm	1	**9665.140**
450 x 600 mm	2	500 mm	4	600 mm	1	**9665.150**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

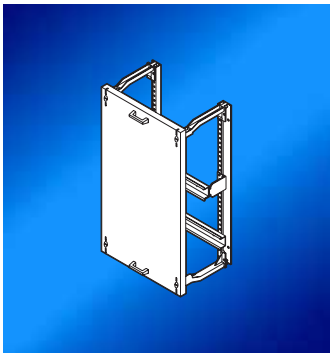


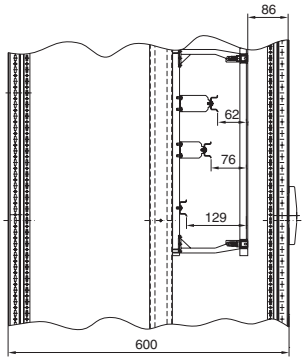
Clearance frame

1 Mounting plate module
2 Mounting plate module with deep cover
3 Contact hazard protection
4 Contact hazard protection with deep cover

System overview Page 457 **ISV wall-mounted distributors** Page 458 **ISV-TS 8 enclosures** Page 459/460 **ISV accessories** Page 469

ISV distribution enclosure, installation modules





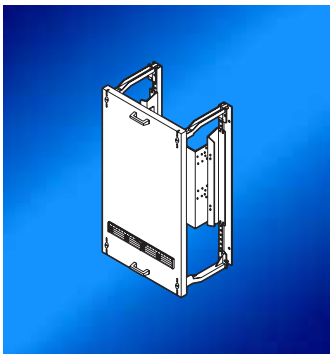
Support rail modules

- For installing terminal blocks, cable ties, etc.
- Support rails 35/15 mm
- Adjustable on a 25 mm pitch pattern
- Cover is prepared for a lead seal
- Insulating material RAL 9002

Mechanical interior installation: Number of support rails	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
1	1	250 mm	1	150 mm	1	**9665.160**
	1	250 mm	2	300 mm	1	**9665.170**
2	1	250 mm	3	450 mm	1	**9665.180**
3	1	250 mm	4	600 mm	1	**9665.190**
1	2	500 mm	1	150 mm	1	**9665.200**
	2	500 mm	2	300 mm	1	**9665.210**
2	2	500 mm	3	450 mm	1	**9665.220**
3	2	500 mm	4	600 mm	1	**9665.230**

Accessories	Page
Spacers	469
Terminal block	470
Cable clamp rails	470
Support rails	470

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm



Support modules

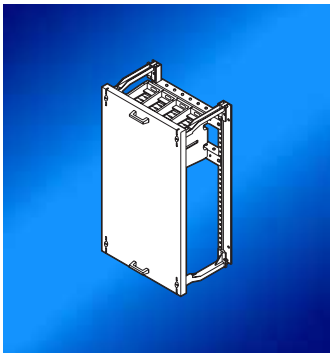
- For mounting switchgear
- Solid mounting plate
- Cover is prepared for a lead seal
- Insulating material RAL 9002

Mechanical interior installation: Mounting surface	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
W x H 190 x 210 mm, installation depth variable from 86 – 161 mm	1	250 mm	3	450 mm	1	**9665.360**
W x H 190 x 210 mm, installation depth variable from 86 – 153 mm	2	500 mm	3	450 mm	1	**9665.370**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

System overview Page 457 **ISV wall-mounted distributors** Page 458 **ISV-TS 8 enclosures** Page 459/460 **ISV accessories** Page 469

ISV distribution enclosure, installation modules



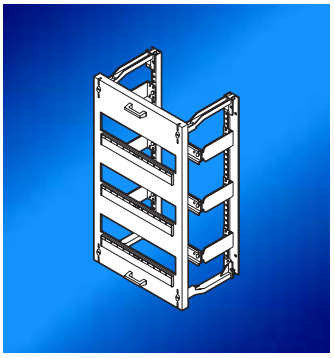
Connection modules

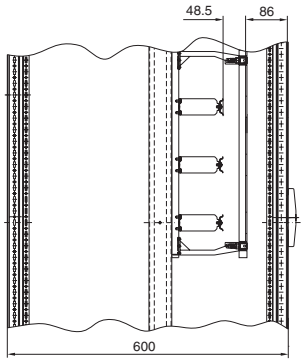
- For connecting copper and aluminium conductors
- Single-wire or multi-wire conductors with crimped wire end ferrule or laminated copper bar
- Cover is prepared for a lead seal
- Insulating material RAL 9002

Mechanical interior installation: Terminal connection top and bottom		Size				Packs of	Model No. SV
		Width unit (WU)[1]		Height unit (U)[2]			
250 A, 4-pole	Round conductor: 1 x 16 – 150 mm² or 2 x 16 – 70 mm²	1	250 mm	3	450 mm	1	**9665.300**
250 A, 5-pole	Laminated flat copper: Clamping area W x H 17 x 21 mm	1	250 mm	3	450 mm	1	**9665.310**
400 A, 4-pole	Round conductor: 1 x 50 – 240 mm² or 2 x 25 – 120 mm²	1	250 mm	3	450 mm	1	**9665.320**
400 A, 5-pole	Laminated flat copper: Clamping area W x H 25 x 21 mm	1	250 mm	3	450 mm	1	**9665.330**
630 A, 4-pole	Round conductor: 1 x 120 – 300 mm² or 2 x 120 – 185 mm²	2	500 mm	3	450 mm	1	**9665.340**
630 A, 5-pole	Laminated flat copper: Clamping area W x H 41 x 21 mm	2	500 mm	3	450 mm	1	**9665.350**

Accessories	Page
Laminated copper bars	411
Cable clamp rails	470

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm





DIN rail mounted device modules

- To accommodate DIN rail mounted devices
- Support rails 35/7.5 mm
- Cover is prepared for a lead seal
- Insulating material RAL 9002

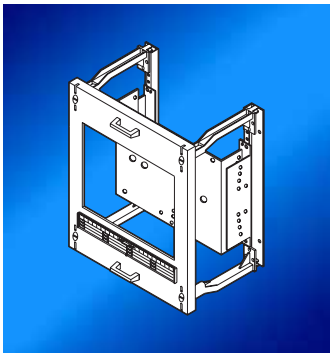
Mechanical interior installation	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
12 divider units (1 x 12 x 18 mm)	1	250 mm	1	150 mm	1	**9665.240**
24 divider units (2 x 12 x 18 mm)	1	250 mm	2	300 mm	1	**9665.250**
36 divider units (3 x 12 x 18 mm)	1	250 mm	3	450 mm	1	**9665.260**
48 divider units (4 x 12 x 18 mm)	1	250 mm	4	600 mm	1	**9665.270**
24 divider units (2 x 12 x 18 mm)	2	500 mm	1	150 mm	1	**9665.280**
48 divider units (4 x 12 x 18 mm)	2	500 mm	2	300 mm	1	**9665.290**
72 divider units (6 x 12 x 18 mm)	2	500 mm	3	450 mm	1	**9665.500**

Accessories	Page
Cover strips	469
Terminal block	470

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

System overview Page 457 **ISV wall-mounted distributors** Page 458 **ISV-TS 8 enclosures** Page 459/460 **ISV accessories** Page 469

ISV distribution enclosure, installation modules



NH on-load isolator modules

- Suitable for accommodating RiLine NH on-load isolators for mounting plate assembly
- Cover is prepared for a lead seal
- Insulating material RAL 9002

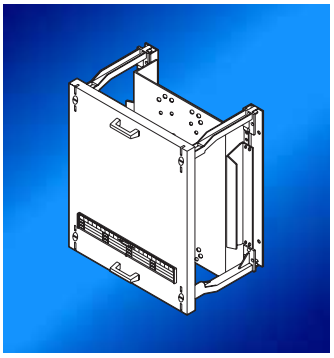
Mechanical interior installation			Size				Packs of	Model No. SV
			Width unit (WU)[1]		Height unit (U)[2]			
Assembly block slotted and positioned plus cut-out in the cover to fit NH on-load isolators	1 x size 00 160 A	1	1	250 mm	2	300 mm	1	**9665.385**
	2 x size 00 160 A	1	1	250 mm	2	300 mm	1	**9665.395**
	1 x size 1 250 A	2	1	250 mm	3	450 mm	1	**9665.405**
	1 x size 2 400 A	3	1	250 mm	3	450 mm	1	**9665.415**
	1 x size 3 630 A	4	2	500 mm	3	450 mm	1	**9665.425**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

NH on-load isolator for mounting plate assembly (RiLine NH)

	Size	Model No. SV	Model No. SV[1]	Page
1	00	9344.000/.010	9344.020/.030	396
2	1	9344.100/.110	9344.120/.130	397
3	2	9344.200/.210	9344.220/.230	398
4	3	9344.300/.310	9344.320/.330	399

[1] With electronic fuse monitoring.



Power circuit-breaker modules

- Suitable for accommodating commercially available power circuit-breakers of brands ABB, Merlin Gerin, Moeller and Siemens in 3-pole versions, up to 630 A
- Cover is prepared for a lead seal
- Insulating material RAL 9002

Note:
The pitch patterns of holes for attachment of the power circuit-breakers and the corresponding cut-out dimensions for the covers are shown in the ISV assembly instructions.

Power circuit-breakers are not included with the supply.

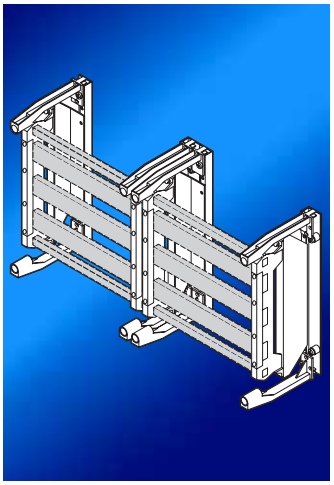
Mechanical interior installation		Size				Packs of	Model No. SV
		Width unit (WU)[1]		Height unit (U)[2]			
Mounting plate slotted and positioned for power circuit-breakers	1	1	250 mm	2	300 mm	1	**9665.430**
	2	1	250 mm	3	450 mm	1	**9665.440**
	3	1	250 mm	2	300 mm	1	**9665.450**
	4	1	250 mm	3	450 mm	1	**9665.460**
	5	1	250 mm	3	450 mm	1	**9665.470**
	6	1	250 mm	3	450 mm	1	**9665.480**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

Power circuit-breakers

I_N	Brand							
	ABB		Merlin Gerin		Moeller Electric		Siemens	
160 A	1	Tmax T1 Tmax T2	3	Compact NS 100 Compact NS 160	1	NZM 1	3	Sentron VL160 Sentron VL160X
					3	NZM 7		
250 A	2	Tmax T3	4	Compact NS 250	11	NZM 2	4	Sentron VL250
					5	NZM 7		
400 A	5	SACE Isomax S5	6	Compact NS 400	5	NZM 3 NZM 10	5	Sentron VL400
630 A	5	SACE Isomax S5 SACE Isomax S6	6	Compact NS 630	5	NZM 3 NZM 10	5	Sentron VL630

System overview Page 457 **ISV wall-mounted distributors** Page 458 **ISV-TS 8 enclosures** Page 459/460 **ISV accessories** Page 469



Busbar support

- 5-pole, 60 mm bar centre distance

Note:

- The busbars must be cut to length prior to installation, in accordance with the "ISV" assembly instructions, depending on the configuration and connection versions being used.
- 5-pole busbar variant only suitable for the configuration of busbar connections and NH bus-mounting on-load isolators, size 00.
- With bus-mounting fuse bases, only 3-pole configuration (L1/L2/L3) is supported. In such cases, N and PE must be configured via busbar support SV 9340.040 (see page 408) or busbar module (Model No. SV 9665.590 or SV 9665.600, see page 468).

Mechanical interior installation	Usable busbar dimensions E-Cu	Packs of	**Model No. SV**
Busbar support for 2 height units[1] and max. 2 width units[2]	Busbars L1/L2/L3 30 x 5 mm (400 A) 30 x 10 mm (630 A)	4	**9665.495**
	Busbar N 25 x 10 mm		
	Busbar PE 12 x 10 mm		

Assembly components		Model No. SV	Page
Conductor connection clamps for bar thickness	5 mm	3450.500 – 3453.500/3550.000	358
	10 mm	3455.500 – 3458.500/3555.000	358
Plate clamp		3554.000	358
Bus-mounting fuse bases			see below
NH bus-mounting on-load isolators, size 00			see below
Also required			
Contact hazard protection cover for			
Conductor connection clamps			466
Plate clamp			466
Bus-mounting fuse bases			466
NH bus-mounting on-load isolators, size 00			466
Accessories		Model No. SV	
Busbars E-Cu			408/409
Busbar connectors for E-Cu[3]	30 x 5/10 mm (L1/L2/L3)	9320.020	410
	25 x 10 mm (N)	9320.020	410
	12 x 10 mm (PE)	9350.075	410
Laminated copper bars			411

[1] 1 U ≙ 150 mm
[2] 1 WU ≙ 250 mm
[3] For busbar connections from enclosure to enclosure.

Bus-mounted fuse bases and accessories

Type	Bus-mounting fuse base	Contact hazard protection cover	End caps	Page
	Model No. SV	Model No. SV	Model No. SV	
D 02-E 18	3418.000	3419.000	3420.000	372
D II-E 27	3427.000	3428.000	3429.000	372
D III-E 33	3433.000	3434.000	3435.000	372

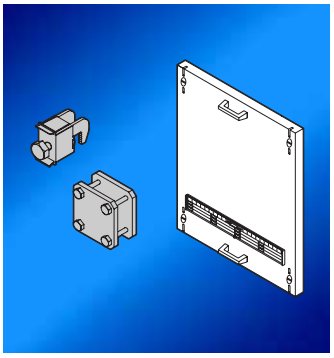
NH bus-mounted on-load isolators (RiLine NH)

Size	Model No. SV	Model No. SV[1]	Page
00	9343.000 9343.010	9343.020 9343.030	376

[1] With electronic fuse monitoring.

System overview Page 457 **ISV wall-mounted distributors** Page 458 **ISV-TS 8 enclosures** Page 459/460 **ISV accessories** Page 469

ISV distribution enclosure, installation modules



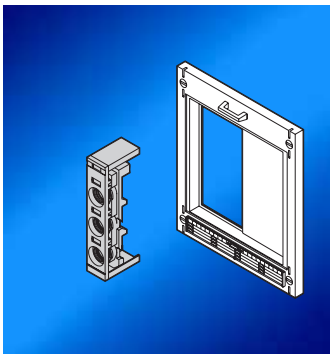
Contact hazard protection cover

for conductor connection clamps and plate clamp

- Cover is prepared for a lead seal
- Insulating material RAL 9002

Design	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
Solid	1	250 mm	2	300 mm	1	**9665.530**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm



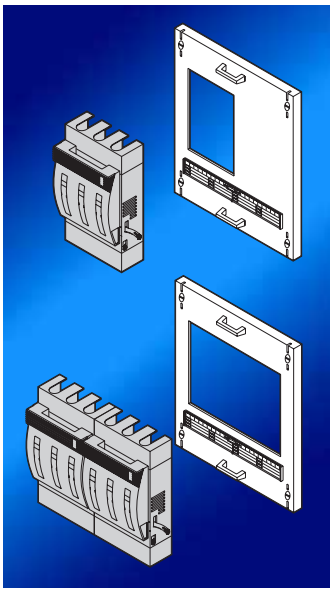
Contact hazard protection covers

for bus-mounted fuse bases

- Cover is prepared for a lead seal
- Insulating material RAL 9002

For	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
7 x D 02-E 18	1	250 mm	2	300 mm	1	**9665.525**
4 x D II-E 27, 3 x D III-E 33	1	250 mm	2	300 mm	1	**9665.545**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm



Contact hazard protection covers

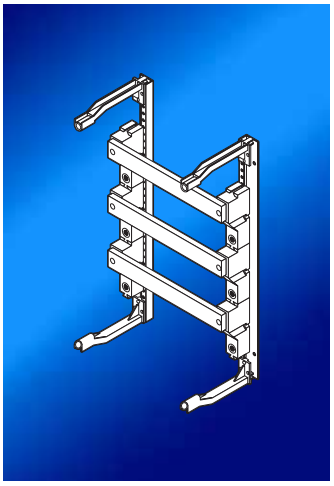
for NH bus-mounting on-load isolators, size 00 (RiLine NH)

- Cover is prepared for a lead seal
- Insulating material RAL 9002

For	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
1 x size 00	1	250 mm	2	300 mm	1	**9665.555**
2 x size 00	1	250 mm	2	300 mm	1	**9665.565**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

System overview Page 457 **ISV wall-mounted distributors** Page 458 **ISV-TS 8 enclosures** Page 459/460 **ISV accessories** Page 469



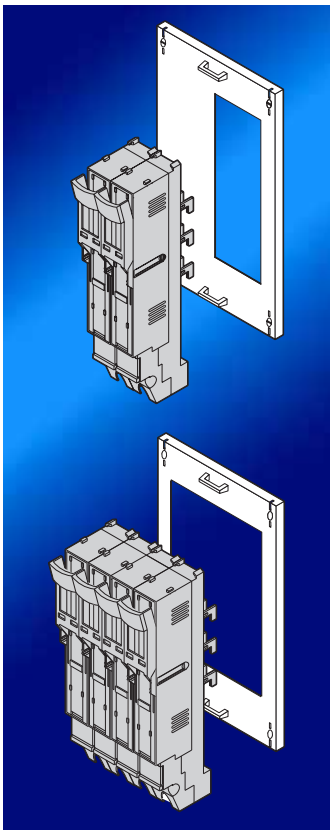
NH fused isolators modules

- With busbars E-Cu (100 mm bar centre distance)
- For NH fused isolators size 00 or busbar connections

Note:
- In order to be able to ensure trouble-free cable connection, a contact hazard protection module (Model No. SV 9665.000, see page 461) must be installed beneath the NH fused isolator modules.
- Busbar connection in accordance with "ISV" assembly instructions.

Mechanical interior installation: Busbar system	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
630 A, 3-pole with busbars E-Cu 30 x 10 mm	1	250 mm	3	450 mm	1	**9665.570**
	2	500 mm	3	450 mm	1	**9665.580**
Assembly components	Model No. SV					Page
NH fused isolator, size 00	3591.010					389
Conductor connection clamps	3455.500 – 3459.500/3555.000					358
Plate clamp	3554.000					358
Also required						
Contact hazard protection cover for						
NH fused isolator, size 00						see below
Conductor connection clamps						468
Plate clamp						468
Accessories						
Laminated copper bars						411

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm



Contact hazard protection covers

For NH fused isolator, size 00

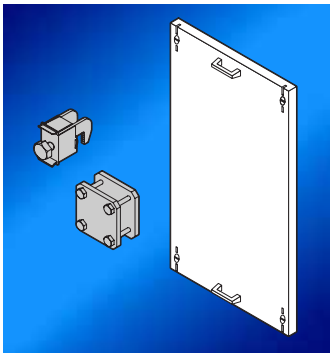
- Cover is prepared for a lead seal
- Insulating material RAL 9002

For	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
2 x size 00	1	250 mm	3	450 mm	1	**9665.620**
4 x size 00	1	250 mm	3	450 mm	1	**9665.630**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

System overview Page 457 **ISV wall-mounted distributors** Page 458 **ISV-TS 8 enclosures** Page 459/460 **ISV accessories** Page 469

ISV distribution enclosure, installation modules



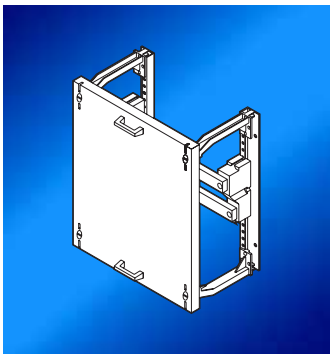
Contact hazard protection cover

for conductor connection clamps and plate clamp

- Cover is prepared for a lead seal
- Insulating material RAL 9002

Design	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
Solid	1	250 mm	3	450 mm	1	**9665.610**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm



Busbar modules

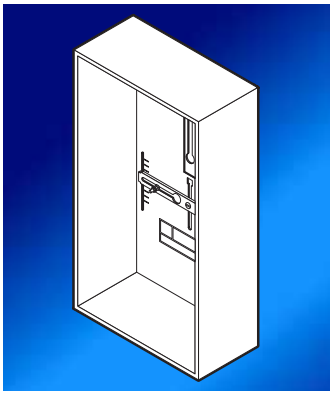
2-pole

- For connecting N and PE
- Contact hazard protection cover included
- Cover is prepared for a lead seal
- Insulating material RAL 9002

Mechanical interior installation: Busbar system	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
2-pole for N and PE with busbars E-Cu 30 x 10 mm	1	250 mm	2	300 mm	1	**9665.590**
	2	500 mm	2	300 mm	1	**9665.600**

Assembly components	Model No. SV	Page
Conductor connection clamps	3455.500 – 3459.500/3555.000	358
Plate clamp	3554.000	358
Accessories		
Laminated copper bars		411

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm



Meter mounting board module

- Open module for internal measurements
- Clearance depth available for meter installation 170 mm
- Insulating material RAL 9002

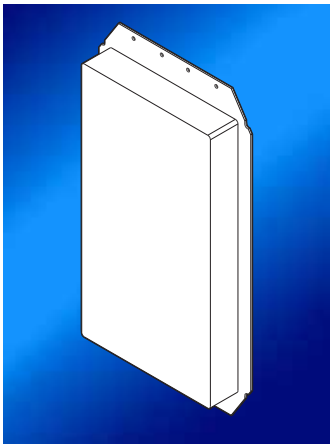
Note:
The meter mounting board module does not comply with meter mounting board standard DIN 43 870/VDE 0603 and does not meet the conditions for total insulation.
Use in unmetered areas only by arrangement with the local electricity supply company.

Mechanical interior installation	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
Attachment rails to accommodate a meter	1	250 mm	3	450 mm	1	**9665.790**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

System overview Page 457 **ISV wall-mounted distributors** Page 458 **ISV-TS 8 enclosures** Page 459/460 **ISV accessories** Page 469

ISV distribution enclosure, accessories

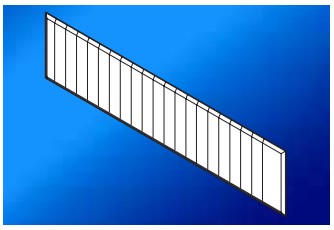


Deep cover

For increasing the usable depth.

- For installation on one-piece contact hazard protection covers
- W x H x D 450 x 250 x 43 mm
- Insulating material RAL 7035

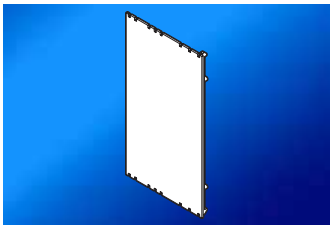
Packs of	Model No. SV
1	**9665.640**



Cover strips

For blanking spare component cut-outs in DIN rail mounted device modules, max. 12 divider units (12 x 18 mm), divisible every 9 mm.

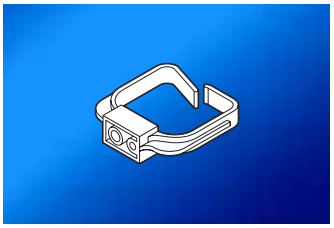
Packs of	Model No. SV
1	**9665.650**



Cover panel

For blanking unnecessary cut-outs for bus-mounting fuse bases, 108 mm wide.

Packs of	Model No. SV
1	**9665.660**

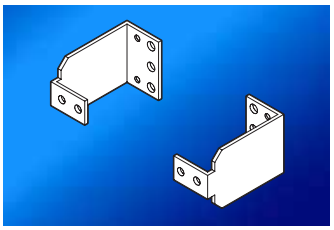


Wiring brackets

for installing

- C rails 30/15 mm
- TS punched sections with mounting flanges
- TS frame section

Packs of	Model No. SV
10	**9665.670**

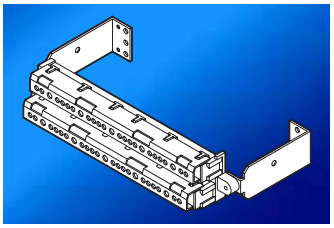


Spacers

For configuring support rails with attachment screws, 53 mm high.

Packs of	Model No. SV
2	**9665.680**

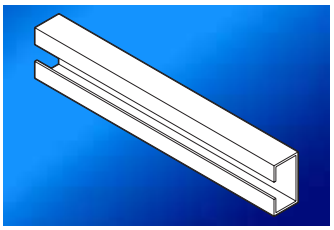
ISV distribution enclosure, accessories



Terminal block

For installation into 250 mm wide contact hazard protection and support rail modules 2-pole for N and PE, each with 20 x 4 mm², 5 x 25 mm².

Packs of	Model No. SV
1	**9665.690**

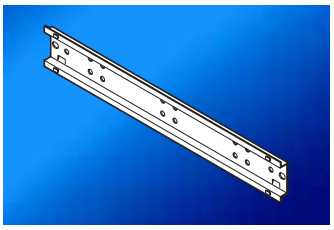


Cable clamp rails

For attaching cable clamps, see page 1064, in

- Connection modules
- Contact hazard protection modules
- Support rail modules

Required width units of the modules	Packs of	Model No. SV
1 WU (250 mm)	1	**9665.700**
2 WU (500 mm)	1	**9665.710**



Support rails

For snap fastening components or terminals, 15 mm high.

Required width units of the modules	Packs of	Model No. SV
1 WU (250 mm)	1	**9665.720**
2 WU (500 mm)	1	**9665.730**





Roof plates

For cable entry gland
In exchange for the standard ISV-TS roof.

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

For ISV-TS enclosures		For no. of cable entry glands	Packs of	Model No. SV
Width mm	Depth mm			
600	400	2	1	**9665.943**
600	600	4	1	**9665.903**
850	400	3	1	**9665.953**
850	600	6	1	**9665.913**
1100	400	4	1	**9665.963**
1100	600	8	1	**9665.923**

Accessories:

Cable entry gland

Design	Model No. SV	Page
14 x M25/32	9665.750	478
2 x M25/32/40 1 x M32/40/50 2 x M40/50/63	9665.760	478
With sealing membranes 32 x Ø 7 – 16 mm 4 x Ø 10 – 20 mm 3 x Ø 14 – 26 mm	9665.770	478
With entry gland up to Ø 66 mm	9665.780	478
Solid	9665.785	478

Systems in four dimensions

Rittal Ri4Power – the structured system solutions for rapid assembly and reliable operation of low-voltage switchgear. Type-tested and also specially tested under accidental arcing conditions, using all standard commercially available switchgear.

Ri4Power Form 2-4 is the perfect solution for power distribution and controller applications in industrial plant, facility management, and many infrastructure installations.

Convincing by safety – the advantages of the RiLine components

- Busbar system engineering with excellent characteristics: effective space utilisation and complete contact hazard protection.
- Insulated, base point-free busbar system.
- Reliable and fast.

Perfect, simple and cost-reducing: High quality, fast assembly

- Solution advantages:
  The system accessories provide simple and perfect solutions to every conceivable practical requirement.
- Cost advantages:
  Standardised series modules are cost-effective and their well-conceived fast installation technology saves expensive time.



High safety



Fully insulated busbar system with finger-safe contact hazard protection.



Preventive avoidance of accidental arcing, thanks to fully insulated busbar systems.

ASTA certified

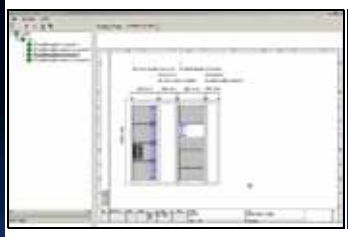
IEC 60439-1

IPH BERLIN

Type-tested and specially tested under accidental arcing conditions in internationally recognised test laboratories. For further tests, please see www.rittal.com.



Easy to use software



Rittal Power Engineering software for planning, preparation of tenders and plant execution.



Rittal Ri4Power Form 2-4 provides plant-specific solutions.



As well as enabling you to optimise your assembly, the tested component adaptors and busbar system also saves valuable installation time.



Time-saving system assembly



Time-saving system installation, divided internal construction, innovative module components, comprehensive accessories.



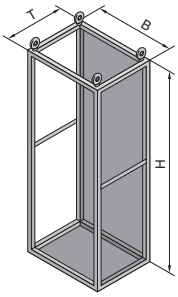
One-person assembly – Locate components into the TS 8 pitch, and release. Both hands are now ready for the next installation step.



Mini-TS profile – the TS pitch in the smallest dimension. For the creation of auxiliary constructions on the TS 8 system pitch pattern.

SV-TS 8 modular enclosures (width: 400, 600)





Enclosure frame for installation with partial doors and the internal separation.

Material:
Sheet steel
Enclosure frame, rear panel and gland plates: 1.5 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Protection category:
Up to IP 54, depending on the roof plate, front trim panels and side panel.

Supply includes:
Enclosure frame with rear panel and gland plates.

Accessories:
Enclosure accessories,
see page 890.

Inspection:
Type-tested to IEC 60 439-1.
For more tests and approvals, see www.rittal.com

Detailed drawings,
see page 1262.

Technical information,
see page 1263.

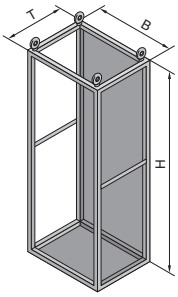
Width (B) mm		Packs of	400	600	400	600	400	600	Page
Height (H) mm			1800	1800	2000	2000	2200	2200	
Depth (T) mm			600	600	600	600	600	600	
Model No. SV		1	**9670.486**	**9670.686**	**9670.406**	**9670.606**	**9670.426**	**9670.626**	
Weight (kg)			45.0	49.0	47.0	51.0	49.0	53.0	
Base/plinth									
Components front and rear	Height 100 mm	1 set	8601.400	8601.600	8601.400	8601.600	8601.400	8601.600	893
	Height 200 mm	1 set	8602.400	8602.600	8602.400	8602.600	8602.400	8602.600	893
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.060	8601.060	8601.060	893
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.060	8602.060	8602.060	893
Also required									
Side panels for protection category	IP 55	2	8186.235	8186.235	8106.235	8106.235	8126.235	8126.235	477
	IP 2X	2	9671.986	9671.986	9671.906	9671.906	9671.926	9671.926	477
Upgrade kit for side panels IP 2X	IP 43	2 sets[1)]	9671.996	9671.996	9671.996	9671.996	9671.996	9671.996	477
Roof plates for protection category	IP 55	1	9671.646	9671.666	9671.646	9671.666	9671.646	9671.666	477
	IP 43	1	9671.746	9671.766	9671.746	9671.766	9671.746	9671.766	477
	IP 2X	1	–	9660.235	–	9660.235	–	9660.235	477
Roof plates for cable entry gland		1	9671.546	9665.903	9671.546	9665.903	9671.546	9665.903	477
Front trim panels for protection category	IP 54	1 set	9671.014	9671.016	9671.014	9671.016	9671.014	9671.016	477
	IP 2X	1 set	9671.034	9671.036	9671.034	9671.036	9671.034	9671.036	477
Upgrade kit for front panels IP 2X	IP 43	1 set	9671.044	9671.046	9671.044	9671.046	9671.044	9671.046	477
Partial doors	for clearance height	1	9671.156	9671.176	9671.158	9671.178	9671.150	9671.170	476
	for modular configuration		■	■	■	■	■	■	476
Angular baying brackets		4	8800.430						930
Baying connectors, external		6	8800.490						929
Accessories									
External installation									476 – 478
Interior installation									479 – 483

[1)] Pack sufficient for 1 pack of side panels.

System overview Page 471 **Accessories** Page 476

SV-TS 8 modular enclosures (width: 800)





Modular enclosure frame for installation with partial doors and internal separation.

Material:
Sheet steel
Enclosure frame, rear panel and gland plates: 1.5 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Protection category:
Up to IP 54,
depending on the roof plate, front trim panels and side panel.

Supply includes:
Enclosure frame with rear panel and gland plates.

Accessories:
Enclosure accessories,
see page 890.

Inspection:
Type-tested to IEC 60 439-1.
For more tests and approvals, see www.rittal.com

Detailed drawings,
see page 1262.

Technical information,
see page 1263.

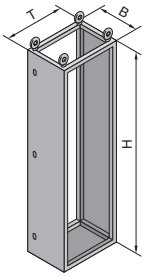
Width (B) mm		Packs of	800	800	800	Page
Height (H) mm			1800	2000	2200	
Depth (T) mm			600	600	600	
Model No. SV		1	**9670.886**	**9670.806**	**9670.826**	
Weight (kg)			58.5	61.0	64.0	
Base/plinth						
Components front and rear	Height 100 mm	1 set	8601.800	8601.800	8601.800	893
	Height 200 mm	1 set	8602.800	8602.800	8602.800	893
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	893
	Height 200 mm	1 set	8602.060	8602.060	8602.060	893
Also required						
Side panels for protection category	IP 55	2	8186.235	8106.235	8126.235	477
	IP 2X	2	9671.986	9671.906	9671.926	477
Upgrade kit for side panels IP 2X	IP 43	2 sets[1)]	9671.996	9671.996	9671.996	477
Roof plates for protection category	IP 55	1	9671.686	9671.686	9671.686	477
	IP 43	1	9671.786	9671.786	9671.786	477
	IP 2X	1	9660.245	9660.245	9660.245	477
Roof plates for cable entry gland		1	9671.586	9671.586	9671.586	477
Front trim panels for protection category	IP 54	1 set	9671.018	9671.018	9671.018	477
	IP 2X	1 set	9671.038	9671.038	9671.038	477
Upgrade kit for front panels IP 2X	IP 43	1 set	9671.048	9671.048	9671.048	477
Partial doors	for clearance height	1	9671.196	9671.198	9671.190	476
	for modular configuration		■	■	■	476
Angular baying brackets		4	8800.430			930
Baying connectors, external		6	8800.490			929
Accessories						
External installation						476 – 478
Interior installation						479 – 483

[1)] Pack sufficient for 1 pack of side panels.

System overview Page 471 **Accessories** Page 476

SV-TS 8 cable chamber enclosures (width: 300, 400)





Enclosure frame for the management of incoming and outgoing cables. The use of a roof plate with cable gland plates allows cables to be fed from above.

Material:
Sheet steel
Enclosure frame, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Protection category:
Up to IP 54, depending on the roof plate and the side panel.

Supply includes:
Enclosure frame with door, rear panel and gland plates.

Accessories:
Enclosure accessories, see page 890.

Inspection:
Type-tested to IEC 60 439-1.
For more tests and approvals, see www.rittal.com

Detailed drawings, see page 1262.

Technical information, see page 1263.

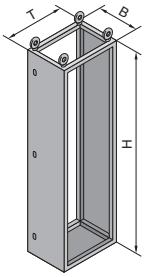
Width (B) mm		Packs of	300	400	300	400	300	400	Page
Height (H) mm			1800	1800	2000	2000	2200	2200	
Depth (T) mm			600	600	600	600	600	600	
Model No. SV		1	**9670.396**	**9670.496**	**9670.316**	**9670.416**	**9670.336**	**9670.436**	
Weight (kg)			48.5	52.0	51.5	54.0	54.0	56.5	
Base/plinth									
Components front and rear	Height 100 mm	1 set	8601.915	8601.400	8601.915	8601.400	8601.915	8601.400	893
	Height 200 mm	1 set	8602.915	8602.400	8602.915	8602.400	8602.915	8602.400	893
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.060	8601.060	8601.060	893
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.060	8602.060	8602.060	893
Also required									
Side panels for protection category	IP 55	2	8186.235	8186.235	8106.235	8106.235	8126.235	8126.235	477
	IP 2X	2	9671.986	9671.986	9671.906	9671.906	9671.926	9671.926	477
Upgrade kit for side panels IP 2X	IP 43	2 sets[1)]	9671.996	9671.996	9671.996	9671.996	9671.996	9671.996	477
Roof plates for protection category	IP 55	1	9671.636	9671.646	9671.636	9671.646	9671.636	9671.646	477
	IP 43	1	9671.736	9671.746	9671.736	9671.746	9671.736	9671.746	477
Roof plates for cable entry gland		1	9671.536	9671.546	9671.536	9671.546	9671.536	9671.546	477
Angular baying brackets		4	8800.430						930
Baying connectors, external		6	8800.490						929
Accessories									
External installation									476 – 478
Interior installation									479 – 483
Lock systems									
Standard double-bit lock may be exchanged for a lock with security cylinder/T handles, see page 955.									

[1)] Pack sufficient for 1 pack of side panels.

System overview Page 471 **Accessories** Page 476

SV-TS 8 cable chamber enclosures (width: 600)





Enclosure frame for the management of incoming and outgoing cables. The use of a roof plate with cable gland plates allows cables to be fed from above.

Material:
Sheet steel
Enclosure frame, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Protection category:
Up to IP 54, depending on the roof plate and the side panel.

Supply includes:
Enclosure frame with door, rear panel and gland plates.

Accessories:
Enclosure accessories, see page 890.

Inspection:
Type-tested to IEC 60 439-1.
For more tests and approvals, see www.rittal.com

Detailed drawings, see page 1262.

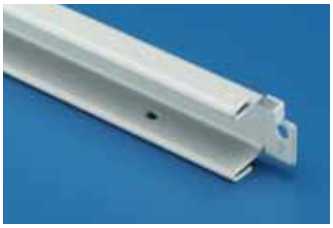
Technical information, see page 1263.

Width (B) mm		Packs of	600	600	600	Page
Height (H) mm			1800	2000	2200	
Depth (T) mm			600	600	600	
Model No. SV		1	**9670.696**	**9670.616**	**9670.636**	
Weight (kg)			56.0	59.0	61.0	
Base/plinth						
Components front and rear	Height 100 mm	1 set	8601.600	8601.600	8601.600	893
	Height 200 mm	1 set	8602.600	8602.600	8602.600	893
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	893
	Height 200 mm	1 set	8602.060	8602.060	8602.060	893
Also required						
Side panels for protection category	IP 55	2	8186.235	8106.235	8126.235	477
	IP 2X	2	9671.986	9671.906	9671.926	477
Upgrade kit for side panels IP 2X	IP 43	1 set[1)]	9671.996	9671.996	9671.996	477
Roof plates for protection category	IP 55	1	9671.666	9671.666	9671.666	477
	IP 43	1	9671.766	9671.766	9671.766	477
	IP 2X	1	9660.235	9660.235	9660.235	477
Roof plates for cable entry gland		1	9665.903	9665.903	9665.903	477
Angular baying brackets		4	8800.430			930
Baying connectors, external		6	8800.490			929
Accessories						
External installation						476 – 478
Interior installation						479 – 483
Lock systems						
Standard double-bit lock may be exchanged for a lock with security cylinder/T handles, see page 955.						

[1)] Pack sufficient for 1 pack of side panels.

System overview Page 471 **Accessories** Page 476

Accessories for external mounting





Cross members

for TS
For use as sealing member between:
- Front trim panels
- Trim panels
- Partial doors

Material:
Sheet steel, 1 mm

Colour:
RAL 7035

Supply includes:
Assembly parts and sealing material.

For enclosure width mm	Packs of	Model No. SV
300	5	**9671.003**
400	5	**9671.004**
600	5	**9671.006**
800	5	**9671.008**





Partial doors

For TS, without lock
Door hinges with non-drilled internal fastening. Door can be optionally hinged on the right or left side.

Material:
Sheet steel, 2 mm

Surface finish:
Textured RAL 7035

Supply includes:
Hinges and assembly parts.

Also required:
Locks,
see below.
Cross members,
see above.

Height mm	Number of required locks	Packs of	Model No. SV		
			For enclosure width		
			400 mm	600 mm	800 mm
150	1	1	**9671.141**	**9671.161**	**9671.181**
200	1	1	**9671.142**	**9671.162**	**9671.182**
250	1	1	**9671.147**	**9671.167**	**9671.187**
300	1	1	**9671.143**	**9671.163**	**9671.183**
400	1	1	**9671.144**	**9671.164**	**9671.184**
600	2	1	**9671.146**	**9671.166**	**9671.186**
800	2	1	**9671.148**	**9671.168**	**9671.188**
1000	3	1	**9671.140**	**9671.160**	**9671.180**
1600	3	1	**9671.156**	**9671.176**	**9671.196**
1800	3	1	**9671.158**	**9671.178**	**9671.198**
2000	3	1	**9671.150**	**9671.170**	**9671.190**





Locks

For the installation in partial doors or for replacement with AE cam locks.

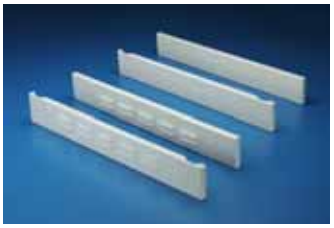
Material:
Housing made of fibreglass-reinforced plastic, bolt made of PA

Supply includes:
Housing, lock insert, bolt including assembly parts.

Design	Packs of	Model No. SV
With double-bit insert	1	**9671.130**
With cylinder insert, lock no. 3524 E	1	**9671.132**
With T handle	1	**9671.134**
With T handle and lock insert, lock no. 3524 E	1	**9671.135**
Fastener lug with end stop[1)]	2	**9671.138**

[1)] Must be used if the twist lock cannot be locked on the TS 8 frame.

Accessories for external mounting





Front trim panels

for TS
Required as upper and lower height filler when partial doors are used.
Height: 100 mm.

Material:
Sheet steel, 2 mm

Surface finish:
Textured RAL 7035

Supply includes:
Two trim panels including assembly parts.

Also required:
Cross members,
see page 476.

Design	Packs of	Model No. SV		
		For enclosure width		
		400 mm	600 mm	800 mm
IP 54 sealed	1 set	**9671.014**	**9671.016**	**9671.018**
IP 2X with ventilation hole	1 set	**9671.034**	**9671.036**	**9671.038**
Accessories				
Upgrade kit IP 43 for front trim panel IP 2X	1 set	**9671.044**	**9671.046**	**9671.048**





Side panels

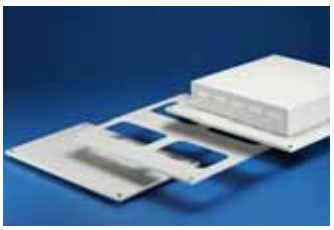
for TS
Easy positioning on the frame with the location aid.
Six enclosure panel holders with earthing insert ensure automatic potential equalisation with superior EMC protection. Earthing bolts with contact surface are integrated.

Material:
Sheet steel, 1.5 mm

Surface finish:
Textured RAL 7035

Supply includes:
Assembly parts.

For enclosures		Design	Packs of	Model No. SV
Height mm	Depth mm			
1800	600	IP 55 sealed	2	**8186.235**
2000	600		2	**8106.235**
2200	600		2	**8126.235**
1800	600	IP 2X with ventilation hole	2	**9671.986**
2000	600		2	**9671.906**
2200	600		2	**9671.926**
2000	800		2	**9671.908**
2200	800		2	**9671.928**
Accessories				
–	600	Upgrade kit IP 43 for side panels IP 2X	2 sets	**9671.996**
–	800		2 sets	**9671.998**





Roof plates

for TS
For SV-TS 8 modular and cable chamber enclosures without roof plate and for replacement with the standard roof plate for other TS enclosures.

Material:
Sheet steel, 1.5 mm

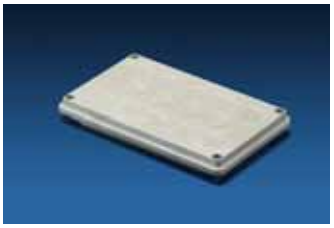
Surface finish:
Textured RAL 7035

Supply includes:
Assembly parts.

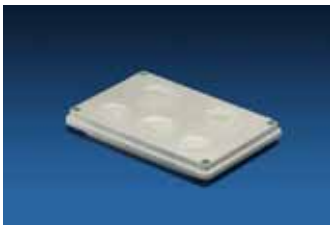
Also required:
Cable entry gland, see page 478.
No. of gland plates required for roof plate
SV 9671.536 = 2
SV 9671.546 = 3
SV 9665.903 = 4
SV 9671.586 = 8

For enclosures		Design	Packs of	Model No. SV
Width mm	Depth mm			
300	600	IP 55 sealed	1	**9671.636**
400	600		1	**9671.646**
600	600		1	**9671.666**
800	600		1	**9671.686**
300	600	IP 43 with ventilation hole	1	**9671.736**
400	600		1	**9671.746**
600	600		1	**9671.766**
800	600		1	**9671.786**
600	600	IP 2X with ventilation hole	1	**9660.235**
800	600		1	**9660.245**
300	600	For cable entry gland	1	**9671.536**
400	600		1	**9671.546**
600	600		1	**9665.903**
800	600		1	**9671.586**

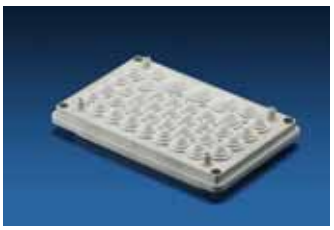
Accessories for external mounting



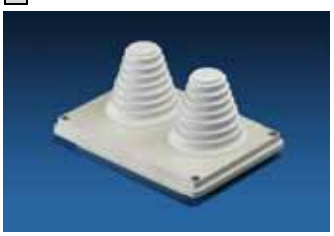
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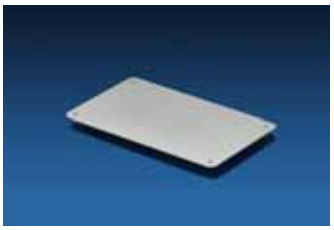
2



3



4



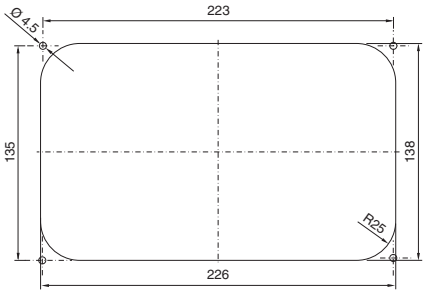
5

Cable entry glands

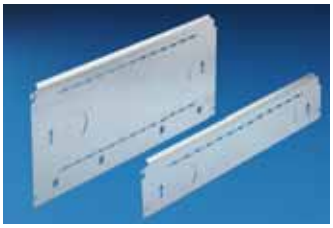
- Including seal
- External dimensions 250 x 160 mm
- Protection category IP 55

Material:
SV 9665.750 to 9665.780
Insulating material RAL 7032
SV 9665.785
Sheet steel, spray-finished RAL 7035

Design	Packs of	Model No. SV
1 14 x M25/32	1	**9665.750**
2 2 x M25/32/40, 1 x M32/40/50, 2 x M40/50/63	1	**9665.760**
3 With sealing membranes 32 x dia. 7 – 16 mm, 4 x dia. 10 – 20 mm, 3 x dia. 14 – 26 mm	1	**9665.770**
4 With entry glands up to 66 mm diameter	1	**9665.780**
5 Solid	4	**9665.785**



Cut-out dimensions for
SV 9665.750 to SV 9665.785





Functional space side panel modules

for TS

For internal separation as a side divider panel for functional spaces, for mounting in the TS pitch pattern. Prepared for the attachment of mounting brackets for horizontal functional space separation or mounting plates with two M40 knockouts for cable entry. Two TS system punchings allow the use of additional TS accessories.
The side panel modules for reduced functional space depth and an auxiliary construction using the Mini-TS profiles can be used to provide a seperate enclosure space in the side panel area, e.g. for the provision of a busbar system.

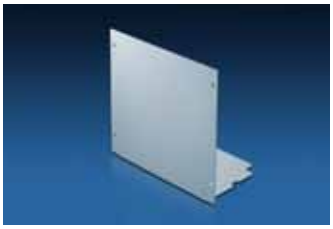
Material:
Sheet steel, zinc-plated

Supply includes:
Assembly parts.

Accessories:

Mini-TS extrusions and connector pieces,
see page 482.

Height mm	Configuration with plastic gland plate	Packs of	Model No. SV	
			For functional space depth	
			425 mm	600 mm
100	–	6	**9673.051**	**9673.061**
150	–	6	**9673.055**	**9673.065**
150	■	6	**9673.155**	**9673.165**
200	–	6	**9673.052**	**9673.062**
200	■	6	**9673.152**	**9673.162**



Cover plates

for cable chamber

For separating an area of the cable chamber enclosure for the busbar space. Attachment requires an auxiliary construction made from the Mini-TS profile in which the covering plates are attached and fastened.

Material:
Sheet steel, zinc-plated

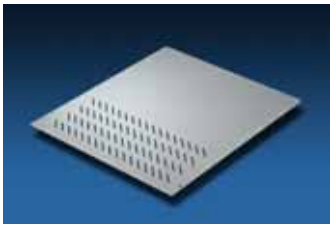
Supply includes:
Two sets of covering plates consisting of an upper and a lower plate.
Including assembly parts.

Also required:

Frame connector piece
(4 x SV 9673.901), see page 482.
Corner connector
(2 x SV 9673.902), see page 483.
Mini-TS extrusions
(2 x SV 9673.915, 2 x SV 9673.953),
see page 482.

Width mm	Height mm	Depth mm	For enclosure width mm	Packs of	Model No. SV
297	541	174	300	2 sets	**9673.530**
397	541	174	400	2 sets	**9673.540**
597	541	174	600	2 sets	**9673.560**

Accessories for internal installation



Functional space divider

For TS, with and without vent slot
For the horizontal separation of functional spaces. In combination with the side panel modules, produces a separation in accordance with Form 3 or 4. Two mounting brackets are required to install the functional space divider.

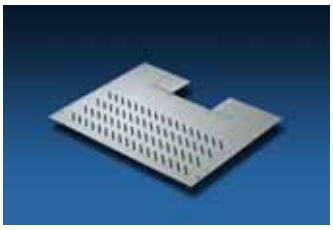
Material:
Sheet steel, zinc-plated

Also required:
Mounting bracket, see below.
Cross members, see page 476.



Width mm	Depth mm	For enclosure width mm	For max. functional space depth mm	Packs of	Model No. SV	
					Vented	Solid
308	445	400	425	4	**9673.444**	**9673.440**[1)]
508	445	600	425	4	**9673.464**	**9673.460**[1)]
708	445	800	425	4	**9673.484**	**9673.480**[1)]
308	588	400	600	4	**9673.445**	**9673.441**[1)]
508	588	600	600	4	**9673.465**	**9673.461**[1)]
708	588	800	600	4	**9673.485**	**9673.481**[1)]

[1)] Derating of 5 % with enclosure protection category IP 2X or less, in relation to the rated currents of the selected busbar system.



Functional space divider

for TS, prepared for RiLine60 bar systems, with and without vent slots
For the horizontal separation of functional space with integrated RiLine60 multi-terminal busbar system. In combination with the side panel modules, produces a separation in accordance with Form 3 or 4. Two mounting brackets are required to install the functional space divider.

Material:
Sheet steel, zinc-plated

Also required:
Mounting bracket, see below.
Cross members, see page 476.

Width mm	Depth mm	For enclosure width mm	For functional space depth mm	Position of the bar system in the functional space	Packs of	Model No. SV	
						Vented	Solid
308	413	400	401	–	4	**9673.434**[1)]	**9673.430**[1) 2)]
508	413	600	401	–	4	**9673.454**	**9673.450**[2)]
708	413	800	401	Right	4	**9673.474**	**9673.470**[2)]
708	413	800	401	Left	4	**9673.475**	**9673.471**[2)]

[1)] Only for use with a 3-pole bar system.
[2)] Derating of 5 % with enclosure protection category IP 2X or less, in relation to the rated currents of the selected busbar system.





Mounting bracket

for functional space divider
The mounting bracket is fastened to the TS frame or between a frame section and an auxiliary construction. The mounting bracket is suitable both for fastening to a side panel module and also directly to the TS frame. The functional space dividers can be inserted in the installation openings provided.

Material:
Sheet steel, zinc-plated

Supply includes:
Assembly parts.

Length mm	For functional space depth mm	Packs of	Model No. SV
427	425	8	**9673.405**[1)]
552	600	8	**9673.406**

[1)] In conjunction with vertical busbar space separation.



Partial mounting plates

With and without duct, for TS

For direct attachment to the functional space side panel modules.

- Universal internal installation with switchgear and control devices.
- Additional mounting levels.

In combination with functional space dividers and side panel modules, internal separation in accordance with Form 2, 3 or 4 is possible.

Material:
Sheet steel, zinc-plated

Supply includes:
Angle brackets and assembly parts.
For the construction with duct: additional square cut-out with insulation material plates for closing the cut-out.

Also required:

Functional space side panel modules,
see page 479.

Width mm	Height mm	With entry	For enclosure width mm	For functional space height mm	Packs of	Model No. SV
302	145	–	400	150	1	**9673.641**
302	195	–	400	200	1	**9673.642**
302	245	–	400	250	1	**9673.647**
302	295	–	400	300	1	**9673.643**
302	395	–	400	400	1	**9673.644**
302	595	–	400	600	1	**9673.646**
302	795	–	400	800	1	**9673.648**
302	995	–	400	1000	1	**9673.640**
502	143	–	600	150	1	**9673.661**
502	193	–	600	200	1	**9673.662**
502	243	–	600	250	1	**9673.667**
502	293	–	600	300	1	**9673.663**
502	393	–	600	400	1	**9673.664**
502	593	–	600	600	1	**9673.666**
502	793	–	600	800	1	**9673.668**
502	993	–	600	1000	1	**9673.660**
502	143	■	600	150	1	**9673.671**
502	193	■	600	200	1	**9673.672**
502	243	■	600	250	1	**9673.677**
502	293	■	600	300	1	**9673.673**
502	393	■	600	400	1	**9673.674**
702	143	–	800	150	1	**9673.681**
702	193	–	800	200	1	**9673.682**
702	243	–	800	250	1	**9673.687**
702	293	–	800	300	1	**9673.683**
702	393	–	800	400	1	**9673.684**
702	593	–	800	600	1	**9673.686**
702	793	–	800	800	1	**9673.688**
702	993	–	800	1000	1	**9673.680**



Support frame

for DIN rail-mounted devices

Supporting frame set for accepting DIN rail-mounted devices (e.g. MCBs). The support rails are fastened with two mounting brackets to the side panel modules. The front trim panel is fastened with knurled screws to the support frame. In combination with functional space dividers, partial mounting plates and side panel modules, separation in accordance with Form 2, 3 or 4 is possible.

Material:
Support frame: Sheet steel, zinc-plated
Front trim panel: Sheet steel, spray-finished

Supply includes:
2 support rails,
2 mounting brackets,
1 front trim panel with cut-out,
assembly parts.

Also required:

Functional space side panel modules,
see page 479.

For enclosure width mm	For functional space height mm	No. of pitch units 17.5 mm	Packs of	Model No. SV
600	150	1 x 24	1 set	**9674.761**
600	300	2 x 24	1 set	**9674.762**
600	600	3 x 24	1 set	**9674.763**
600	600	4 x 24	1 set	**9674.764**
800	150	1 x 36	1 set	**9674.781**
800	300	2 x 36	1 set	**9674.782**
800	600	3 x 36	1 set	**9674.783**
800	600	4 x 36	1 set	**9674.784**

Accessories for internal installation





Mini-TS profiles 17 x 15.5 mm

for TS

Mounting bracket with TS pitch on three sides. Suitable for

- building an auxiliary construction for dividing the busbar space,
- individual use as mounting frame for low and medium loads,
- fastening in the internal or external mounting level of the TS 8 enclosure.

Material:
Sheet steel, zinc-plated

Also required:

Frame connector piece,
see below.
T-connector piece,
see below.
Corner connector,
see page 483.

For horizontal busbar space separation		Packs of	Model No. SV
For functional space depth mm	Length mm		
425	62.5	12	**9673.915**

For vertical busbar space separation		Packs of	Model No. SV
For functional space height mm	Length mm		
350	337.5	12	**9673.942**
400	387.5	12	**9673.943**
450	437.5	12	**9673.952**
500	487.5	12	**9673.953**

For external mounting level		Packs of	Model No. SV
For enclosure width/depth mm	Length mm		
300	162.5	12	**9673.930**
400	262.5	12	**9673.940**
500	362.5	12	**9673.950**
600	462.5	12	**9673.960**
800	662.5	12	**9673.980**

For internal mounting level		Packs of	Model No. SV
For enclosure width/depth mm	Length mm		
300	212.5	12	**9673.931**
400	312.5	12	**9673.941**
500	412.5	12	**9673.951**
600	512.5	12	**9673.961**
800	712.5	12	**9673.981**



Frame connector piece

for Mini-TS profile

Mounting part with integral M4 threads for attaching the Mini-TS profile to the horizontal and vertical TS frame section (external level). The frame adaptor piece can be used as a self-holding construct in the TS pitch and fastened with a screw to the frame. Can also be used for fastening other sections with TS pitch.

Material:
Die-cast zinc

Supply includes:
Assembly parts.

Packs of	Model No. SV
24	**9673.901**



T-connector piece

for Mini-TS profile

Mounting part with integrated M4 threads for fastening the Mini-TS profile to the

- horizontal and vertical TS chassis,
- Mini-TS profile,
- vertical TS frame section (internal level).

The T-connector piece can be used as a self-holding construct in the TS pitch and fastened with a screw to the frame. Can also be used for fastening other sections with TS pitch.

Material:
Die-cast zinc

Supply includes:
Assembly parts.

Packs of	Model No. SV
24	**9673.903**

Accessories for internal installation



Corner connector

for Mini-TS profile
Mounting part with integrated M4 threads for connecting two Mini-TS profiles at an angle of 90° at the corner. Required for building the auxiliary construction for the busbar space separation.

Packs of	Model No. SV
10	**9673.902**

Material:
Die-cast zinc

Supply includes:
Assembly parts.



System attachments

For main busbar system
System attachment with M5 and M6 threads in the 50 mm pitch for the rear installation of a RiLine60 main busbar system up to 1600 A. For locating into the TS frame.

Material:
Sheet steel, zinc-plated

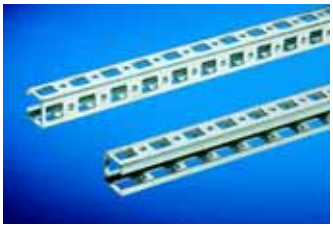
Supply includes:
Assembly parts.

Note:
RiLine60 busbar systems,
see page 350 – 353.

Width mm	Height mm	For enclosure width mm	Packs of	Model No. SV
238.5	362	300	1	**9674.003**
338.5	362	400	1	**9674.004**
538.5	362	600	1	**9674.006**
738.5	362	800	1	**9674.008**

Mounting accessories

for busbar system
The following accessory components must be used for mounting a type-tested vertical multi-terminal busbar system behind the functional space:



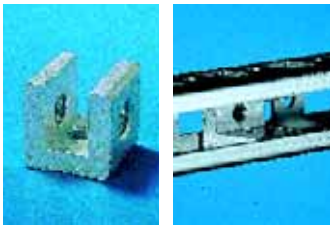
PS punched rails 23 x 23 mm

For installing a vertical RiLine60 multi-terminal busbar system on the vertical enclosure section,
see page 998.



Fastening bracket

For mounting the PS mounting rail on the TS frame,
see page 1006.



U nuts

For fastening the PS mounting rail to the bracket and fastening the busbar support to the PS mounting rail,
see page 1010.



Rittal Electronic Systems offer “complete know-how” in the field of electronic packaging. At a high level – up to Level 5. For CPCI, VME, AdvancedTCA and MicroTCA applications. This translates into plug & play systems for **extremely high data throughputs –** in telecommunications, in the network and server sector, in automation, in traffic guidance systems and in medical technology. System solutions in a modern design, with **super-fast backplanes,** with **integral power modules** and with **effective climate control concepts.**

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Features



RiTCA: Complex system solutions for ATCA, MicroTCA and AMC

From the outset, Rittal was decisively involved in the development of the ATCA standard, and offers a comprehensive product range for this platform: **RiTCA.**

The new product generation comprises complete standard shelf solutions for ATCA and MicroTCA, including shelf management, backplane and cooling concepts, fully wired and function-tested. The range is complemented by filler panels and face plates, as well as AMC/ATCA carriers in two variants.

The 13 U ATCA systems are equipped with the new hot-swap high-performance fans RiCool III. These fans offer added output coupled with a reduced noise level. The backplane is a monolithic version with a high level of signal integrity in full mesh or dual star version. The systems are optionally available in a 2 or 4 PEM version.



ATCA – Advanced Telecom Computing Architecture –

First cross-industry standard developed by PICMG (PCI Industrial Computer Manufacturers Group) to replace telecommunications applications previously developed on a proprietary basis. ATCA – The ideal solution for exacting demands in terms of system availability and performance, in both telecommunications and industrial automation, traffic control technology and medical technology. Rittal's product spectrum includes a range of complete systems in various designs with the corresponding accessories.

System benefits

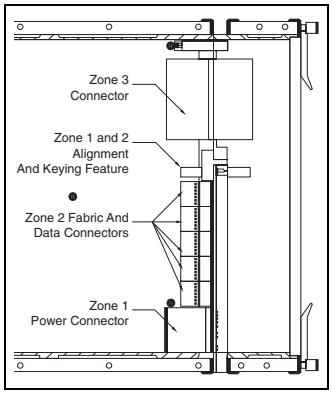
- System availability of at least 99.999 %
- Fail safe maximised, thanks to redundancy
- Hot-swap capability ensures uninterrupted operation
- Transmission rates of up to 2.5 Tbit/s
- Large board formats: 8 U x 280 mm
- Switched fabric architecture
- By reducing proprietary platforms, the high cost of development and training is eliminated
- Available off the shelf
- Specified heat losses of up to 200 W per board
- Support of different protocols (Ethernet, Infiniband, Rapid I/O, PCI-Express)
- Defined performance up to 3.125 Gbit/s



Requirements according to PICMG 3.0

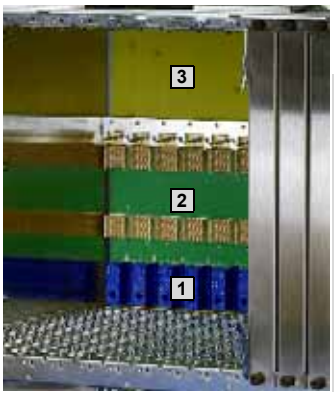
- 1 x system enclosure (mechanical system)
- Fans
- 48 V power entry modules (PEM)
- Installation space for 2 x shelf management controllers
- 1 x backplane for switched fabric and electrical distribution
- One shelf has either 14 or 16 slots
- A shelf with 14 slots is based on 19″
- A shelf with 16 slots is based on 23″ or ETSI
- The height of a shelf is N x U or N x 25 mm (ETSI)
- The shelf depth is suitable for installation in 600 mm deep enclosures

Features



Boards

- Basic dimensions to IEC 60 297 and specific specifications to PICMG 3.0
- The front boards (8 U x 6 HP and 280 mm depth) contain the electronic functions and the connectors. They are offset from the pitch line by 6.61 mm and are 1.6 to 2.4 mm thick
- ESD contact clip on the component side 1
- Attachment holes for the cover of component side 2
- Essentially, a board type plug-in unit consists of a front panel with centering pin, EMC seal, injector/extractor handles with optional microswitch operation for hot swap and M3-knurled screws.
- A cover is obligatory for component side 2 (rear) to reinforce the PCB and/or for EMC protection
- Rear I/O boards (RTM): 8 U x 6 HP x 70 mm



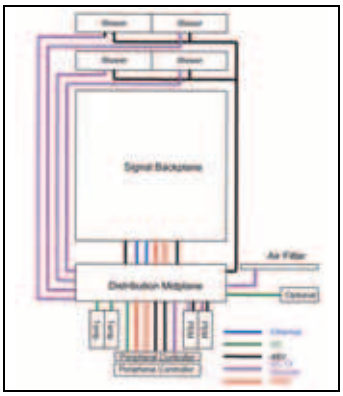
Connector zones

Zone 1:
Power supply and system management

Zone 2:
Data communication

Zone 3:
RTM (rear I/O)

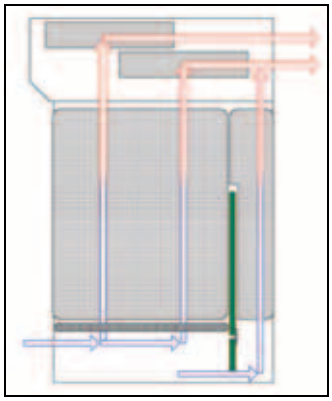
Zone 1 and Zone 2 are equipped with a special centering/keying device.



Shelf management

Interfaces for the monitoring and control of:

- Boards
- PEMs (power entry modules)
- Fans
- Air inlet temperature
- Remote alarm signals
- Air filter available/not available



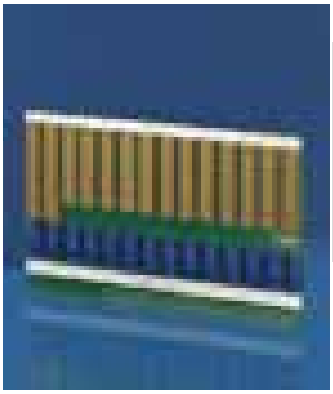
Side view, right

Shelf cooling





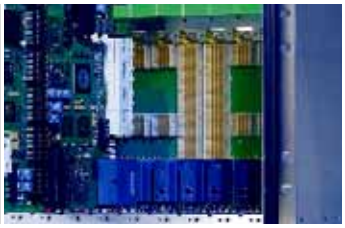
- ATCA specifies heat losses of up to 200 W per front board and 30 W per rear board, which translates into approximately 3 kW for a fully populated shelf with 14 boards.
- The four high-capacity RiCool fans from Rittal with 320 m^3/h ensure optimum climatic conditions.
- Redundancy and hot-swap ensure reliability, even in the event of a fan failure.
- Replaceable dust filter in the air inlet zone.

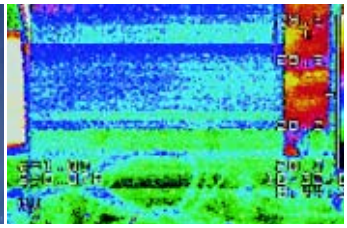


Backplanes

3 times higher performance!

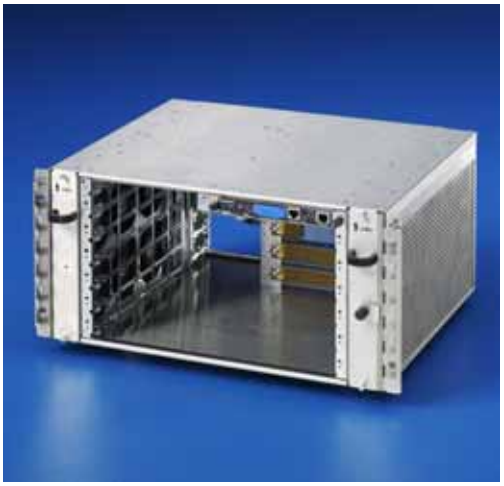
- Full Mesh backplane from Rittal with 10 Gbit/s (acc. to PICMG, 3.125 Gbit/s required).



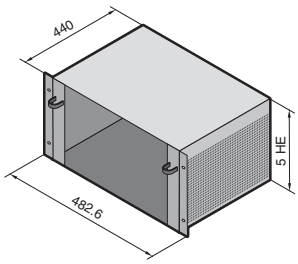


- Dual Intelligent Platform Management Interface (IPMI), bussed or radial (optional).
- Product range: Full Mesh, Dual Star, Dual Star also optionally available with additional Mesh performance.
- Thermal image of a Rittal backplane under full load.

AdvancedTCA shelf HS1, 5 U, 6 slots, horizontal, AC version







HE = U

Due to its compact design, the 5 U shelf version offers optimum application possibilities, e.g. as a test or development system, wherever high performance and a space-saving design is required.

Benefits at a glance:
- Conforms to PICMG 3.0 rev. 2.0
- Hot swap-compatible fan units
- Specified heat loss of at least 200 W/board
- System monitoring using Shelf Management Controllers (ShMC)
- Plug & play-compatible for ShMC, Intel WT or PP 500
- Fully assembled, wired and function tested

Technical specifications:
- 19″, 5 U, 440 mm deep
- 6 slots (horizontal) at the front, including 2 switch slots with RTM
- Cooling of up to 200 W/slot (front area)
- Cooling of up to 30 W/RTM
- Hot-swap fan unit
- Pull-out filter
- Voltage supply 90 – 264 V AC, 1000 W
- Including 1 Shelf Management Controller (ShMC) Pigeon Point 500 or Intel WT
- Full Mesh backplane (replicated Mesh) or Dual Star

Supply includes:
1 rack-mount system 482.6 mm (19″), 5 U, 440 mm deep,
2 fan units each with 7 fans,
1 backplane, 6 slots,
1 ShMC Pigeon Point 500 or Intel WT,
1 AC/DC PSU.

Accessories:

Shelf Management Controller, ATCA face plate kit,
see page 491.

Standard AdvancedTCA Shelf HS1 (ShMC connectable from the front), available off the shelf

Shelf	U	Slots	Backplane	IPMI	ShMC	Switch Slots	PSU	Model No. RP
HS1	5	6	Dual Star	Bus topology	Pigeon Point 500	1 + 2	AC/DC, 1000 W	**9910.732**
HS1	5	6	Full Mesh	Bus topology	Pigeon Point 500	1 + 2	AC/DC, 1000 W	**9911.713**
HS1	5	6	Dual Star	Bus topology	Intel WT	1 + 2	AC/DC, 1000 W	**9911.712**
HS1	5	6	Full Mesh	Bus topology	Intel WT	1 + 2	AC/DC, 1000 W	**9911.714**

Accessories

	Country version	Voltage V	Model No. DK/RP
Mains connection cable C19/IEC320, up to 16 A	D/F/B	230	**7200.216**
	GB	230	**9911.859**
	USA/CDN	115	**9911.860**
	China	230	**9911.861**
IEC320 extension C19/C20	Country-independent	115/230	**7200.217**

Example of possible customised applications available on request

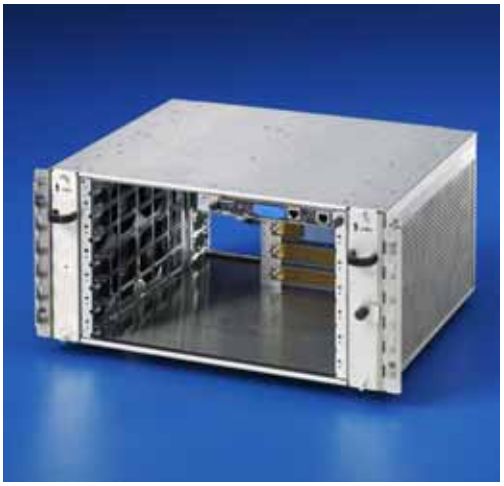
Version	U	System enclosures	ShMC/ Intel WT	ShMC/ Pigeon Point 500	Filler panel	Fan unit	Backplane Full Mesh	Backplane Dual Star
1	5	■	■	–	■	1	■	–
2	5	■	■	–	■	1	–	■
3	5	■	–	■	■	1	■	–
4	5	■	–	■	■	1	–	■

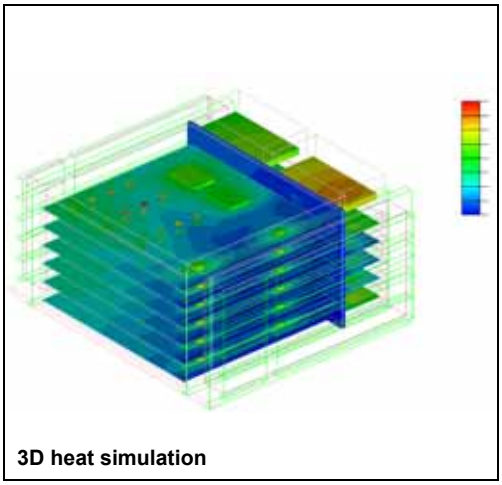
■ Included with the supply.

Note:
The ATCA systems are based on standard components which may be individually combined in accordance with a modular principle.

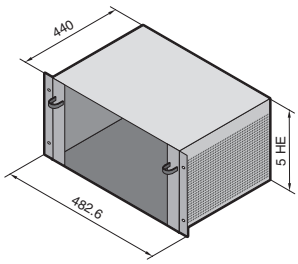
The above matrix provides an overview of additional installation variants based on the described systems which may be implemented in a short lead time.

AdvancedTCA shelf HS1, 5 U, 6 slots, horizontal, DC version





3D heat simulation



HE = U

Due to its compact design, the 5 U shelf version offers optimum application possibilities, e.g. as a test or development system, wherever high performance and a space-saving design is required.

Benefits at a glance:
- Conforms to PICMG 3.0 rev. 2.0
- Hot swap-compatible fan units
- Specified heat loss of at least 200 W/board
- System monitoring using Shelf Management Controllers (ShMC)
- Plug & play-compatible for ShMC, Intel WT or PP 500
- Fully assembled, wired and function tested

Technical specifications:
- 19″, 5 U, 440 mm deep
- 6 slots (horizontal) at the front, including 2 switch slots with RTM
- 5 slots (horizontal), RTM
- Cooling of up to 200 W/slot (front area)
- Cooling of up to 30 W/RTM
- Hot-swap fan unit
- Pull-out filter
- Including 1 Shelf Management Controller (ShMC) Pigeon Point 500 or Intel WT
- Full Mesh backplane (replicated Mesh) or Dual Star
- DC PEM 50 A with filter and controller

Supply includes:
1 rack-mount system 482.6 mm (19″), 5 U, 440 mm deep,
2 fan units each with 7 fans,
1 backplane, 6 slots,
1 ShMC Pigeon Point 500 or Intel WT,
2 PEM 50 A.

Accessories:

Shelf Management Controller, ATCA face plate kit,
see page 491.

Standard AdvancedTCA Shelf HS1 (ShMC connectable from the front), available off the shelf

Shelf	U	Slots	Backplane	IPMI	ShMC	Switch Slots	PEM	Model No. RP
HS1	5	6	Dual Star	Bus topology	Pigeon Point 500	1 + 2	2 x 50 A	**9911.715**
HS1	5	6	Full Mesh	Bus topology	Pigeon Point 500	1 + 2	2 x 50 A	**9911.717**
HS1	5	6	Dual Star	Bus topology	Intel WT	1 + 2	2 x 50 A	**9911.716**
HS1	5	6	Full Mesh	Bus topology	Intel WT	1 + 2	2 x 50 A	**9911.718**

Example of possible customised applications available on request

Version	U	System enclosures	2 x DC PEM 50 A	2 x DC power connection with 50 A fuse switch	ShMC/ Intel WT	ShMC/ Pigeon Point 500	Filler panel	Fan unit	Backplane Full Mesh	Backplane Dual Star
1	5	■	■	–	■	–	■	1	■	–
2	5	■	■	–	■	–	■	1	–	■
3	5	■	■	–	–	■	■	1	■	–
4	5	■	■	–	–	■	■	1	–	■
5	5	■	–	■	■	–	–	2	■	–
6	5	■	–	■	■	–	■	1	■	–
7	5	■	–	■	■	–	–	2	–	■
8	5	■	–	■	■	–	■	1	–	■
9	5	■	–	■	–	■	–	2	■	–
10	5	■	–	■	–	■	■	1	■	–
11	5	■	–	■	–	■	–	2	–	■
12	5	■	–	■	–	■	■	1	–	■

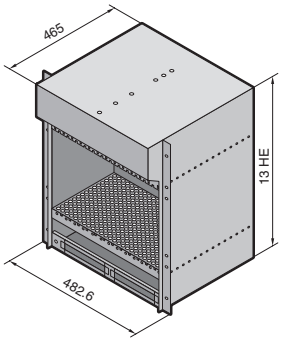
■ Included with the supply.

Note:
The ATCA systems are based on standard components which may be individually combined in accordance with a modular principle.

The above matrix provides an overview of additional installation variants based on the described systems which may be implemented in a short lead time.

AdvancedTCA shelf VS1, 13 U, 14 slots





HE = U

Benefits at a glance:
- Conforms to PICMG 3.0 rev. 2.0
- Hot swap-compatible, redundant fans for cooling of min. 200 W/board
- Plug & play-compatible for ShMC, Intel WT or PP 500
- System monitoring using Shelf Management Controllers (ShMC)
- Fully assembled, wired and function tested

Technical specifications:
- 19″ x 13 U x 465 mm (+ 40 mm projection at the rear for PEM) deep
- 14 x 6 HP slots for front boards and RTM
- 14 slots Dual Star or Full Mesh backplane with “bussed” IPMI (optionally radial)
- 4 x rear-connected PEM, 48 V DC, 50 A
- Prepared for 2 x front-connecting ShMC/Intel WT or Pigeon Point 500 (1 x ShMC is included with the supply)
- Space for rear telecom service connection
- RiCool fans connected via the front (4 fans each with 320 m^3/h, dual IPMI)
- Filter frame connected at the front (with air baffle plate and filter mat)
- Optional cable ducts for front and rear

Supply includes:
1 rack-mount system 482.6 mm (19″), 13 U, 465 mm deep,
4 RiCool fans,
1 backplane, 14 slots,
4 redundant power entry modules (PEM), 48 V,
1 Shelf Management Controller (ShMC).

Accessories:

see page 491.

Detailed drawing,
see page 1264.

Standard AdvancedTCA Shelf VS1 (ShMC connectable from the front), available off the shelf

Shelf	U	Slots	Backplane	IPMI	ShMC	Switch Slots	PEM	PEM-Amp	RiCool-III	Model No. RP
VS1	13	14	Dual Star	Bus topology	Pigeon Point 500	1 + 2	4 x	50 A	4 x 48 V-IPMI	**9910.932**
VS1	13	14	Full Mesh	Bus topology	Pigeon Point 500	1 + 2	4 x	50 A	4 x 48 V-IPMI	**9910.933**
VS1	13	14	Dual Star	Bus topology	Intel WT	1 + 2	4 x	50 A	4 x 48 V-IPMI	**9910.940**
VS1	13	14	Full Mesh	Bus topology	Intel WT	1 + 2	4 x	50 A	4 x 48 V-IPMI	**9910.941**

Example of possible customised applications available on request

Version	System enclosures	4 x PEM 50 A	2 x PEM 100 A	ShMC/Intel WT	ShMC/ Pigeon Point 500	Backplane Full Mesh	Backplane Dual Star
1	■	–	■	■	–	■	–
2	■	–	■	■	–	–	■
3	■	–	■	–	■	■	–
4	■	–	■	–	■	–	■

■ Included with the supply.

Note:
The ATCA systems are based on standard components which may be individually combined in accordance with a modular principle.

The above matrix provides an overview of additional installation variants based on the described systems which may be implemented in a short lead time.



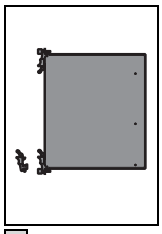
Shelf Management Controller (ShMC)

- Up to 2 Shelf Managers may be used per system
- Technology: Intel Wagontire or Pigeon Point 500

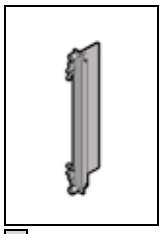
Design	Packs of	Model No. RP
Pigeon Point 500	1	**9910.570**
Intel Wagontire	1	**9910.942**







1



2

ATCA face plate kit

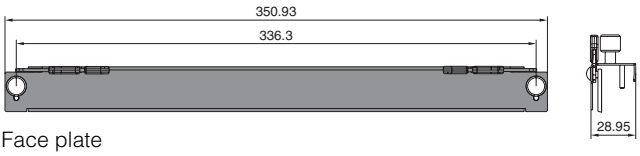
- With integral cover for component side 2 and for board attachment
- Including foam EMC seal (stick-on)
- Including hot-swap injector/extractor handles
- Customer-specific machining and marking available on request

Material:
Stainless steel

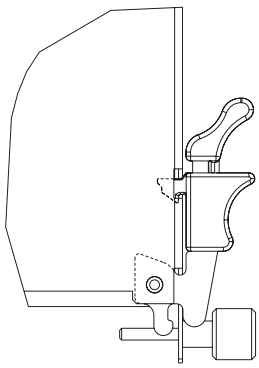
Supply includes:
1 face plate, 2 handles, EMC seal, mounting screws.

Description	U	HP	Packs of	Model No. RP
1 Face plate front	8	6	1	**9906.693**
2 Face plate rear	8	6	1	**9910.379**

EMC



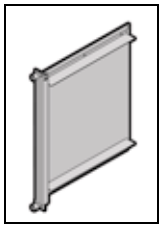
Face plate



Handle/microswitch

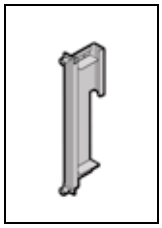


1



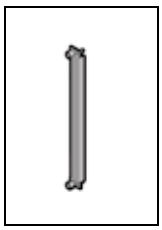


2





3



ATCA filler panel kit

- To conceal unused slots
- Optionally with or without air routing
- Including foam EMC seal (stick-on)

Material:
Stainless steel

Supply includes:
1 face plate, EMC seal, mounting screws.

Description	U	HP	Packs of	Model No. RP
1 Face plate front with air routing	8	6	1	**9906.694**
2 Face plate rear with air routing	8	6	1	**9910.185**
3 Face plate front/rear without air routing	8	6	1	**9910.380**

EMC

ATCA/AMC carrier blade



ATCA/AMC.1 and 2 from Rittal are ATCA carrier blades with 2 – 4 AMC slots depending on the required AMC form factor. With carrier blades, the emphasis is on giving users the maximum possible flexibility with the use of AMC technology. Depending on the required application, various processor AMCs may be combined with memory AMCs and interface AMCs in order to develop and configure individual systems based on the ATCA standard from the various standard AMCs using ATCA/AMC carriers.

2 standard ATCA/AMC carrier blades have been developed for the various applications in telecommunications and the IT industry which support the most widespread communication protocols GbE (AMC.2) and PCIe (AMC.1).
The carriers meet the specifications of PICMG 3.0/3.1.

AdvancedMC carrier ATCA/AMC.1

The serial interfaces for all AMC slots meet the specifications of AMC.2 type E2 (GbE for the Common Option Region) and AMC.1 Type 4 (PCIe for the Fatpipe Region), whereby 1 AMC slot additionally conforms to AMC.1 type 8. The 2 GbE ports for the Common Region (AMC.2 type E2) are used for control functions and data transfer, as well as for backup requirements. Each PCIe and GbE port in the AMCs is connected to a non-blocking switch for maximum performance. Additionally, all AMC slots are likewise AMC.3 compatible (port 2 and 3) to support applications requiring storage media such as SAS/SATA. The ATCA/AMC.1 carrier is designed for CARRIER GRADE SERVICES.

AdvancedMC carrier ATCA/AMC.2

The serial interfaces for all AMC slots conform to the specification AMC.2 type E2 (GbE for the Common Option Region) as well as AMC.2 type 4 (Port 4-7 for the Fatpipe Region). The 2 GbE ports for the Common Region (AMC.2 type E2) are used for control functions and data transfer, as well as for backup requirements. Each GbE port in the AMCs is connected to a non-blocking switch for maximum performance. Additionally, all AMC slots are likewise AMC.3 compatible (Ports 2 and 3) to support applications requiring storage media such as SAS/SATA. The ATCA/AMC.2 carrier is designed for CARRIER GRADE SERVICES.

IPMI (Intelligent Platform Management Interface) & hot swap functionality
The Management Controller on the ATCA/AMC carrier blade supports IPMI functions to Version 1.5 including e-keying, modular power management and distribution, system clocks and hot swap functionality. E-keying allows the carrier to identify which AMC slots are assigned in order to configure the fabric interfaces accordingly. The ATCA/AMC .1 or .2 carrier blade is hot swap-compatible to PICMG 3.0 and may be exchanged with the system operational.

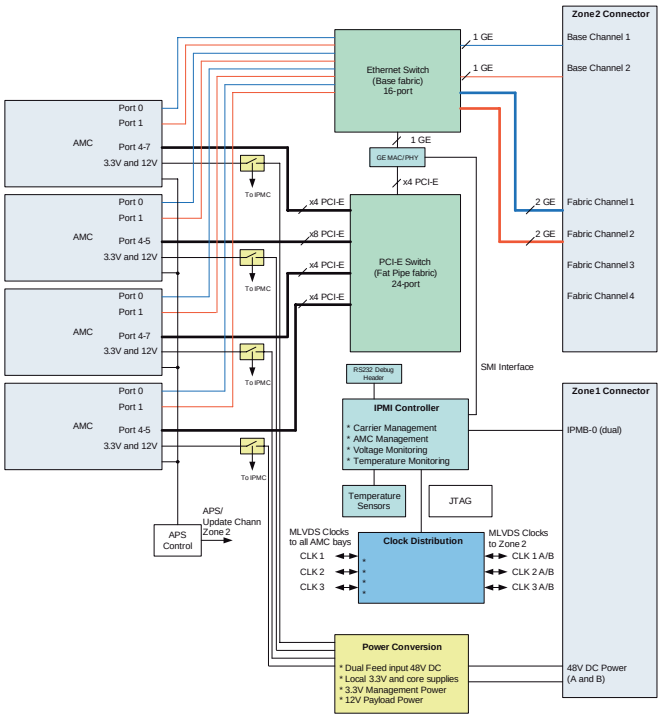
ATCA/AMC carrier blade

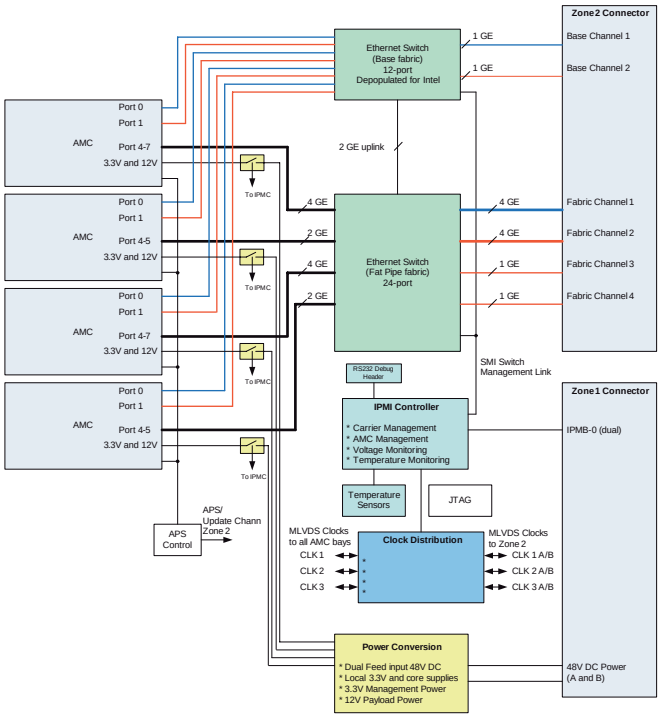
ATCA/AMC.1 carrier

Model No. RP	9908.499
Form factor	PICMG 3.0
AMC slots	4 x AMC single full-size to AMC.0 R2
AMC protocol support	AMC.1 type 4 (Port 4 – 7) AMC.1 type 8 on slot 2 (Port 4 – 11) AMC.2 type E2 (Port 0 – 1) AMC.3 (Port 2 – 3)
IPMI support	IPMI V1.5 upgradeable
ATCA protocol support	2 Port GbE base interfaces 4 Port GbE fabric interfaces
Electricity consumption	max. 160 W for AMC bays max. 40 W for carrier max. 30 W for RTM
Weight	1.6 kg (3.5 lbs)
Operating temperature	–5°C to +55°C
Storage temperature	–40°C to +85°C
Humidity	5 – 95 %
Approvals	CE

ATCA/AMC.2 carrier

Model No. RP	9911.705
Form factor	PICMG 3.0
AMC slots	4 x AMC single full-size to AMC.0 R2, APS and Zone 3 RTM
AMC protocol support	AMC.2 type 4 (Port 4 – 7) AMC.2 type E2 (Port 0 – 1) AMC.3 (Port 2 – 3)
IPMI support	IPMI V1.5 upgradeable
ATCA protocol support	2 Port GbE base interfaces 4 Port GbE fabric interfaces
Electricity consumption	max. 160 W for AMC bays max. 40 W for carrier max. 30 W for RTM
Weight	1.6 kg (3.5 lbs)
Operating temperature	–5°C to +55°C
Storage temperature	–40°C to +85°C
Humidity	5 – 95 %
Approvals	CE





Face plates





AdvancedMC face plate kits

These are used as face plates for AMC cards and ATCA carriers, or as filler panels in MicroTCA systems.

- Installation in µTCA systems or AMC carriers
- Conforms to AMC.0 R2.0
- Height: Single & Double
- Widths: Compact, Mid-Size, Full-Size
- Simple handling when locking and unlocking (no screws)
- Hot swap-compatible injector/extractor handles
- Customer-specific face plates available with a short lead time
- Upgradable with filler sheets and air baffle plates
- Double to Single conversion module (accessory)

Material:
Face plate made from aluminium,
bare (stainless steel available on request)
Holder for light pipe and PCB, die-cast Zn
Light pipe, polycarbonate
Handle, die-cast Zn, spray-finished
EMC seal, foam with metal fabric
(UL 94 V0)

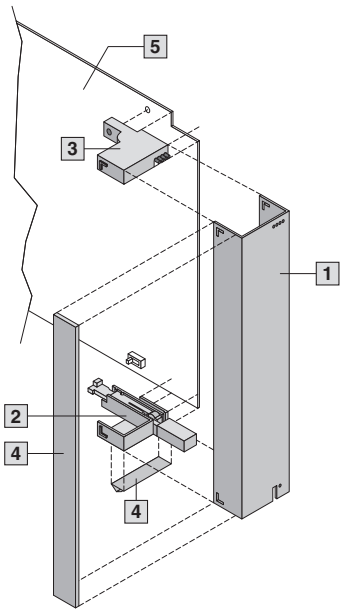
Supply includes:
1 U-channel face plate,
1 holder to accommodate a light pipe and PCB,
1 handle for microswitch,
1 light pipe (for 2 LEDs),
1 EMC gasket, left side and bottom.

Design (H x W)	Packs of	Model No. RP
Single x Compact	1	**9911.885**
Single x Mid-Size	1	**9911.889**
Single x Full-Size	1	**9911.886**
Double x Compact	1	**9911.887**
Double x Mid-Size	1	**9911.890**
Double x Full-Size	1	**9911.888**

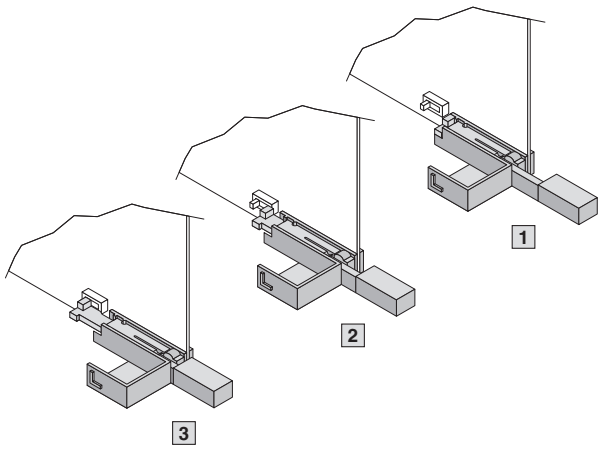
Face plates with 4 LEDs in aluminium and stainless steel available on request (to AMC.0 Spec. R1.0).

Accessories:

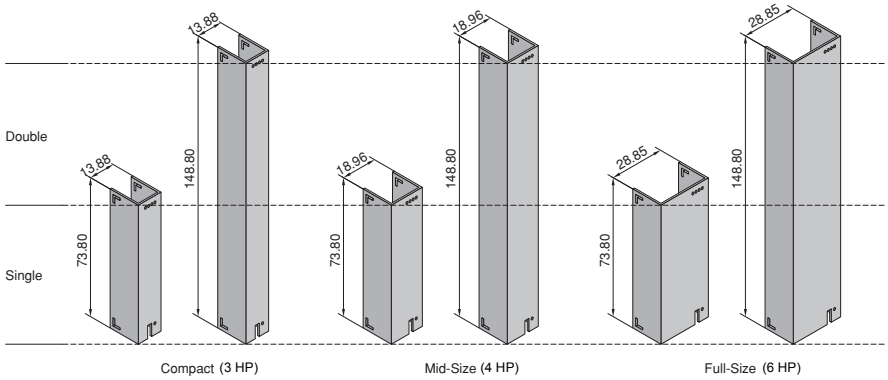
AMC filler sheets, air baffle plates, conversion module,
see page 495.

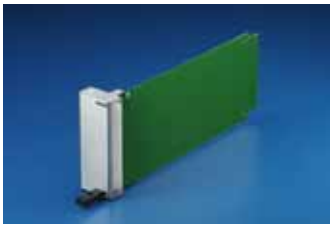


1 Face plate
2 Handle and locator for PCB
3 Holder with LED light pipe and locator for PCB
4 EMC gaskets
5 Filler sheet



1 Modules inserted
2 Switch open, module latched
3 Switch closed, module latched







AMC filler sheets

Filler sheets are mounted on the AMC face plates and are used to route the airflow in ATCA carriers and MicroTCA systems. They may additionally be equipped with air baffle plates to create suitable air resistance in an empty slot.

Material:
FR4

Design	Packs of	Model No. RP
Single	1	**9911.570**
Double	1	**9911.571**





Air baffle plates

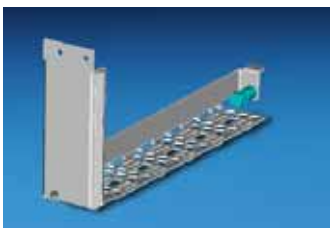
AMC slots must be populated with an empty card in order to ensure adequate air resistance. The air resistance should be adapted to the requirements of the overall system by the user. In all cases, it should be sufficiently high to ensure that the air is forced to flow over active cards into adjacent slots and does not flow unhindered through empty slots. The air baffle plate is used to adjust the air resistance. Up to 2 air baffle plates may be mounted on one filler sheet. Adjustable air resistance from 80 – 50 % thanks to removable membranes.

Material:
Stainless steel

Supply includes:
1 baffle plate, assembly parts

Design	Packs of	Model No. RP
Compact	1	**9911.891**
Mid-Size	1	**9911.892**
Full-Size	1	**9911.893**





Conversion module

The conversion module allows 1 x Double to be converted into 1 x Single slot. Option of installing Compact or Full-Size modules.

Material:
Stainless steel, partially spray-finished

Supply includes:
1 conversion module

Design	Packs of	Model No. RP
Compact	1	**9907.699**
Full-Size	1	**9911.220**

Development systems/rack-mount systems





MicroTCA development systems for hardware and software development or testing of AMC modules

Technical specifications:
- Complies with PICMG MicroTCA.0 R1.0 and AMC.0 R2.0
- 482.6 mm (19″) development systems in 3 and 5 U, 200 mm deep for installing Single or Double AdvancedMC modules
- Integral fan unit for cooling up to 40 W/slot
- Including backplane, 14 slots
- Integral power adaptor
- Fully wired and tested

MicroTCA rack-mounted system for applications in the low-end telecommunications and industry sectors.

Technical specifications:
- Complies with PICMG MicroTCA.0 R1.0 and AMC.0 R2.0
- 482.6 mm (19″) rack-mounted systems in 2 and 4 U, 200 mm deep for installing Single or Double AdvancedMC modules
- Including backplane, 14 slots
- Fully wired and tested
- Order climate control units separately

Material:
Rack-mount systems of sheet steel, zinc-plated, passivated

Supply includes:
1 482.6 mm (19″) system,
200 mm deep,
1 backplane,
1 fan unit,
additional development system,
1 power adaptor,
2 support brackets.

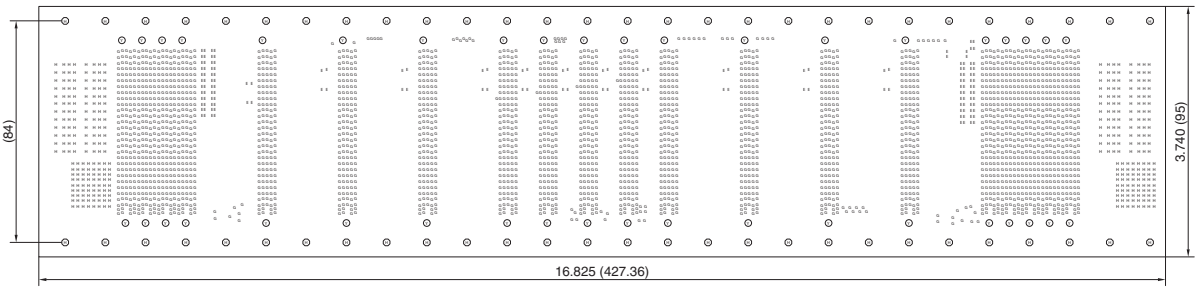
MicroTCA development systems

µTCA system	U	Slots	MCH slots	Power adaptor	Model No. RP
VP 1	3	12	2	1	**9911.297**
VP 1	5	12	2	1	**9911.298**

Power modules available on request.

MicroTCA rack-mount systems

µTCA system	U	Slots	MCH slots	Model No. RP
VP 1	2	12	2	available on request
VP 1	2 + 10 mm	12	2	**9911.758**
VP 1	4	12	2	**9911.760**





Power adaptor

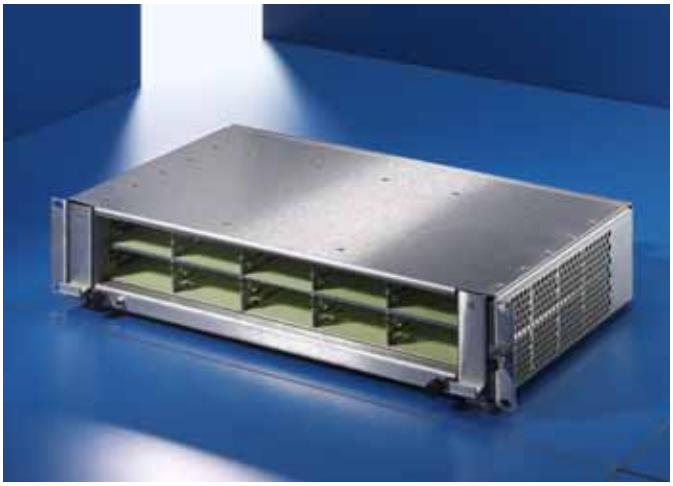
For commissioning or testing µTCA systems, including front connection terminal. Power adaptors may be installed directly in 2 and 3 U µTCA systems. For installation in 4 and 5 U systems, a conversion module is also required.

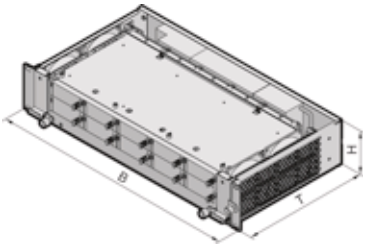
Technical specifications:
- 12 V input
- 12 V output
- 3.3 V output

Packs of	Model No. RP
1	**9911.380**[1)]

[1)] For 4 and 5 U MicroTCA you will additionally need to order a conversion module Model No. RP 9911.220, see page 495.

PicoTCA, 482.6 mm (19″), 2 U





The PicoTCA is a modular 19″ chassis in 2 U design supporting up to 12 AMCs and an MCH (full-size, compact). The chassis is designed such that communication protocols compliant with AMC.1 type 4 (PCIe and Advanced Switching), AMC.2 type 4, AMC.2 E2 (GbE) and AMC.3 (SAS/SATA) can all be handled. For SAS and SATA AMC boards, a point-to-point connection is realised via the backplane, so that each slot is able to communicate directly with its neighbouring slots via ports 2 and 3. In the initial version, an MCH (MicroTCA Carrier Hub) is supported via the backplane. Customer-specific designs and backplanes can be supplied upon request.

Benefits at a glance

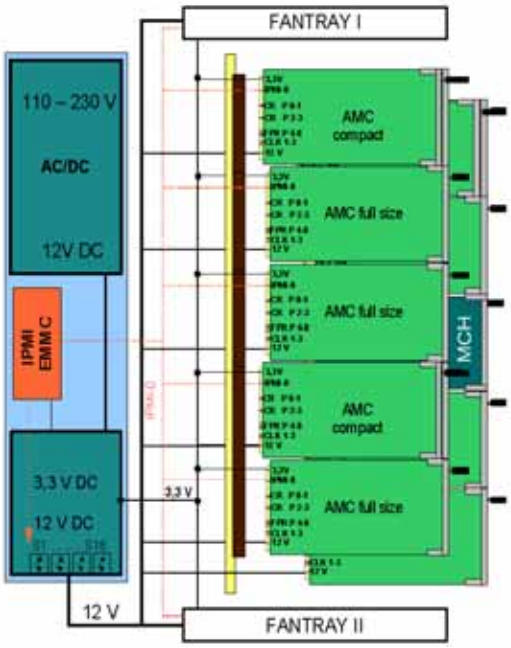
- Conforms to PICMG MicroTCA.0 R1.0
- Extremely compact ready-to-run system
- Chassis depth of 254 mm for installation in 300 mm deep enclosures
- Includes AC/DC power supply
- Support for up to 12.5 Gb/s
- Support for different AMC form factors
- Exchangeable air filters
- High EMC shielding
- Robust industrial design ensures minimum sensitivity to impact and vibration
- NEBS-compliant
- Fully assembled, wired and tested. Ready to run

Technical specifications:

- 19″, 2 U, 254 mm deep
- AC/DC power supply, max. 450 W:
  – Input voltage: min. 90 V AC – max. 264 V AC with PFC
  – Input frequency: min. 47 Hz – max. 63 Hz
  – Output: 3.3 V DC/max. 3 A, 12 V DC/max. 38 A
- Cooling via 2 independent fan trays
- Backplane and AMC connectors in **con:card+** quality from HARTING
- Integrated JTAG connector for debugging and testing
- Supports 12 AMCs (full-size, compact) compliant with AMC.1 type 4 E2S and AMC.2 type 4 E2S, as well as 1 MCH
- Weight: 9 kg
- Operating temperature: 0°C to +45°C
- Storage temperature: –40°C to +85°C

Supply includes:
1 rack-mount system 482.6 mm (19″), 2 U, 254 mm deep,
2 fan tray modules with air filters,
1 power supply,
1 backplane.

	Packs of	2 U
Width (B)		19″
Height (H) mm		89.4
Depth (T) mm		254
Model No. RP	1	**9911.803**



Accessories MicroTCA Page 494 – 495

AdvancedTCA climate control solutions

Features



One of the major challenges posed by AdvancedTCA systems is heat management. The ATCA specification defines a heat loss of 200 W per slot. This means that a single ATCA shelf with 14 populated slots already has a maximum total heat loss of 2.8 kW, and the heat loss in an enclosure with three populated systems may therefore rise to more than 10 kW. Moreover, with clock frequencies likely to rise to the upper two-figure GHz range in the near future, the current methods of air cooling will struggle or even be completely unable to deal with the heat loss arising. In order to find a suitable solution, we need to face up to this situation now.

As one of the leading manufacturers of climate control solutions, Rittal offers holistic concepts, from CPU cooling, to shelf cooling, through to complete rack cooling with an output of up to 12 kW.

Shelf cooling

For the majority of applications, air cooling is the preferred option. A distinction is made between push cooling and pull cooling. In push cooling, axial or diagonal fans press cold air into the system. In pull cooling, fans draw hot air out of the system. Due to the confined space and integration density, the pressure losses caused by ATCA cards are very high. Standard axial fans in a push or pull configuration are less suitable, because they can cave in as the back-pressure rises. By contrast, radial fans specialise in these types of applications, although the throughput is slightly lower in free air.



ATCA specifies heat losses of up to 200 W per front board and 30 W per rear board, which translates into approximately 3 kW for a fully populated shelf with 14 boards.



The four high-capacity RiCool fans from Rittal with 320 m^3/h ensure optimum climatic conditions.
Including IPMB interface.



The redundancy and hot-swap features ensure reliability, even in the event of a fan failure (FRU).
Replaceable dust filter in the air inlet zone.

CPU cooling

Cooling fluids benefit from the physical property of having a specific thermal capacity several times higher than air. As a result, it is possible to design very small cooling systems with a maximum cooling capacity and position them directly at the point of origination (e.g. processors). This helps to minimise the threat of hotspots which dramatically shorten the service life of electronics.



Liquid connection – via simple insertion.
When the card is inserted, board cooling is automatically integrated into the cooling circuit.



Reliable discharge of 70 % of heat loss. Up to 250 W per cm^2 at the hotspot.



Rapid board exchange without hose couplings.
Horizontal distributor integrated into the shelf.

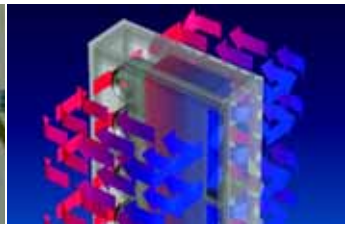
Rack cooling

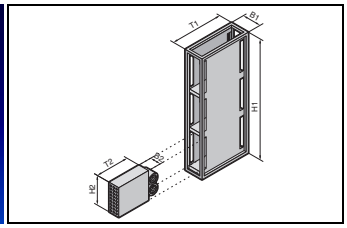
For the climate control of fully configured enclosures, there are several factors which need to be taken into account: The even distribution of chilled air, full accessibility to the 482.6 mm (19″) level, plus the investment safeguards of on-demand expandability and remote monitoring facilities. It should be possible to optimise the cooling output to the actual demand. Fully configured enclosures with ATCA systems can often push air cooling systems to their limits. Instead, complex air/water solutions are needed.



LCP (Liquid Cooling Package)







The Rittal LCP (Liquid Cooling Package) solves the problem of high heat losses with scalable cooling via air/water heat exchangers as a climate control enclosure on the side panel of a rack.

Individual ATCA shelves, as well as fully configured enclosures, can be cooled according to output.

Modular, upgradable and temperature-neutral cooling concept. 12 kW cooling output, with three cooling modules supported per cooling rack.



CCP (Compact Cooling Package)





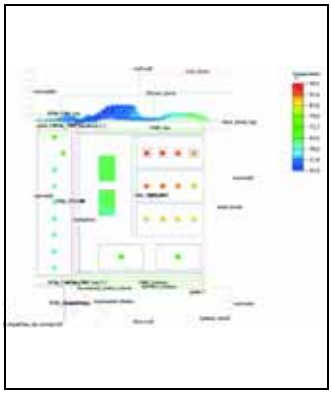
CCP is a full climate control package comprising:

- **Controller-managed 19″ air/water heat exchanger**
- **Rack-mounted fan module**
- **300 mm deep 19″ enclosure**
- **and an optional recooling unit**

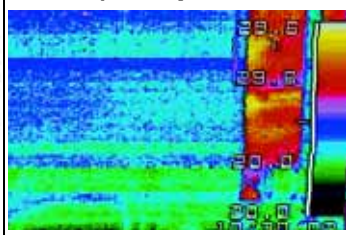
CCP can be configured and adapted individually to match specific application needs. It provides for effective and affordable cooling of the boards installed in vertically mounted electronics racks, and is supplied with a robust controller and sensors for automatic and reliable control of the system.

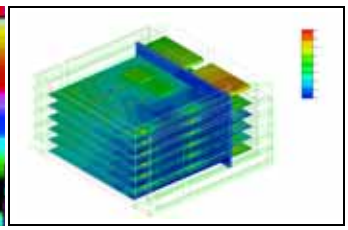
Technical specifications:

- 482.6 mm (19″), 260 mm, 1 U rack-mounted heat exchanger
- PWM-controlled fans
- Cooling unit can be controlled via a processing unit (PU)
- System availability of 99.999 %
- Remains available even in case of a fan failure or temperature deviations (55°C for 96 h)
- Hot swap-compatible fan units
- Fully wired and tested
- Suitable also for altitudes up to 1800 metres above sea level
- Low noise (sound power level 6.0 bels; 2 fan units @Standardair)
- Supports IPMI and CMC-TC protocols



CFD (Computational Fluid Dynamics)





With the aid of CFD, climate control solutions may be optimised even before the first prototype has been built.

The Rittal portfolio of services includes:

- Visualisation of temperature variations
- Visualisation of air flows
- Localisation and elimination of hotspots
- Targeted optimisation of climate control
- Positioning of temperature sensors and smoke alarms

Rack-mount systems for CPCI and VMEbus

Features

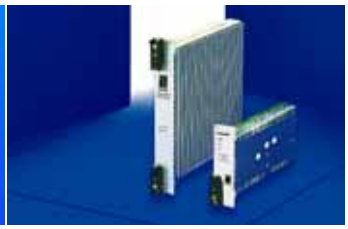


Rittal supplies complete plug & play solutions for VME and CompactPCI applications at a high level – up to Level 5. The systems are based on standardised components which may be individually combined, depending on requirements. They are supplied complete with power supply, backplane, measures for EMC and ESD protection, as well as climate control; fully assembled, pre-wired and tested.



Systems for CompactPCI





- Systems for the configuration of industrial computers to CompactPCI specifications
- Comply with IEC 60 297-3-101, -102, -103 as well as CompactPCI Spec. Rev. 3.0 (PICMG)

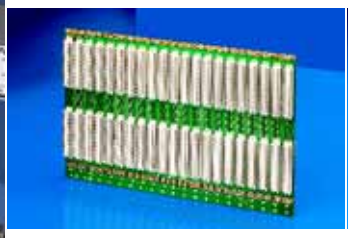
Backplanes
High-speed CompactPCI backplanes. Optionally with H.110 bus and bridges for expansion.

Power supplies in various output categories, plug-in or open frame.

PICMG



Systems for VMEbus





- Systems for the configuration of industrial computers to VME specifications
- Comply with IEC 60 297-3-101, -102, -103

Backplanes
High-speed backplanes to VME/VME64x specifications.

Power supplies in various output categories, plug-in or open frame.



Design features







Side panels and flanges of aluminium, clear-chromated.

10 mm pitch pattern of holes in the side panels allows individual system configuration.

Horizontal rails with 10 mm extension for injector/extractor handles.

Features



EMC measures, ESD protection, keying



U-shaped EMC front panels and EMC gaskets ensure reliable contact of all components.



Potential equalisation
ESD pin and ESD clip in the guide rail to discharge static charges before making contact with the board type plug-in unit.



Keyable guide rails for the installation of coding keys.



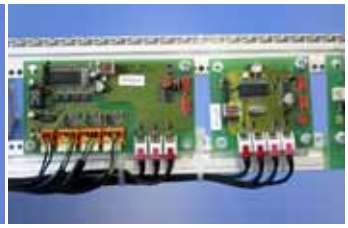
MPS monitoring – The scalable security concept



Controller module
Monitoring of system voltages.



Temperature module
Forwarding of messages from the temperature sensors.



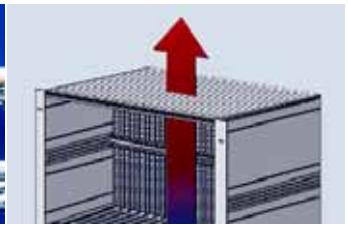
Fan module
Forwarding of fan alarms. Speed control via temperature sensor.



Climate control



Maximum air flow, due to the narrow design of the guide rails and horizontal rails.



Individual air flow management ensures targeted air routing and optimum heat dissipation. Optionally from bottom to top and/or from front to rear.



High-performance RiCool fan ensures optimum ventilation. 1 U, hot swap-compatible 200 m^3/h, including speed control and fault alarm signal.



System configuration



Injector/extractor handles to reliably overcome high insertion/extraction forces.



Live insertion
Microswitches in the injector/extractor handle inactivate the hot-swap circuitry.



Keyable, red guide rails for defined positioning of the CPU.

MPS monitoring



MPS Monitoring electronics
In order to ensure maximum system availability and performance in industrial computers, all hardware components must offer functional reliability. The monitoring electronics for microcomputer packaging systems (MPS) offer a highly flexible, scalable security concept for key parameters such as temperature, voltage and fan speed. At the heart of this concept are intelligent function modules such as controller, temperature, fan and LCD display or LED display modules. The system may be polled, or parameters set via the Internet using remote control functions, thanks to compatibility with the Rittal CMC-TC monitoring system. Alternatively, this may be executed directly on the MPS system, via a PC, or with the aid of CMC-TC, directly from a control point. The monitoring electronics are integrated into all Ripac MPS systems as standard.

Benefits at a glance
- Monitoring of temperature, voltage, fan speed and fan alarm
- Flexible, scalable system concept
- Intelligent function modules
- Adjustable temperature limits
- Remote control via the Internet in conjunction with the Rittal CMC-TC enclosure monitoring system
- Choice of parameter levels
- Internal communications via I^2C bus

Safety



Controller module
Monitoring of the system voltages, PSU status, RiCool alarm and forwarding of messages from the temperature and/or fan module via RS-232 (to PC) or RS-422 interface (to CMC-TC)



Temperature module (up to 2 modules cascadable)
- Forwarding of messages from the individual temperature sensors to the controller module
- Up to 4 temperature sensors
- Internal communications via I^2C



Fan module (up to 2 modules cascadable)
- Speed control via external temperature sensor or PWM
- Forwarding of fan alarms
- Option of connecting up to three further temperature sensors per fan module
- Internal communications via I^2C
- Up to three fans may be connected

Monitoring



Display module
- Operation via 3 keys: Page, Escape, Return
- 3 LEDs: Fan, Temp., Volt for alarm visual display
- Used to display temperature, voltage supply, fan speed
- Brightness and illumination adjustable or may be switched on/off
- Temperature display in °F/°C
- LCD (2 x 20 digits) to display the details



LED display module
- +3.3 V
- +5.0 V
- +12 V
- –12 V
- 2 x alarms (fan, temp.)
- Overvoltage display
- Red: No voltage
- Yellow (1 x flashing): below limit
  Yellow (2 x flashing): Above limit
- Green: Voltage OK



CMC-TC
Remote control via the Internet in conjunction with the Rittal CMC-TC enclosure monitoring system

Features



Slim-Box rack-mount systems 1, 2, 3, 4 U

The 300 mm deep Slim-Box Vario enclosures are designed for horizontal installation of CPCI, CPCI Express/VME64x boards (6 U/160 mm). The technical features offered by the enclosures are truly impressive:

2 front and rear slots per U; excellent heat dissipation from left to right due to a fan tray fitted on the left, installation space for slim CD-ROM and 3.5″ HDD on the right.

The enclosure is supplied fully assembled and includes the power supply and the backplane. Enclosures can be configured individually using standard components as an extra option.



2 slots per U
for CPCI/VME boards at the front and rear.

Keyable plastic guide rail.



Includes backplane for VME64x or CPCI.



Installation space for slim CD-ROM and 3.5″ HDD.



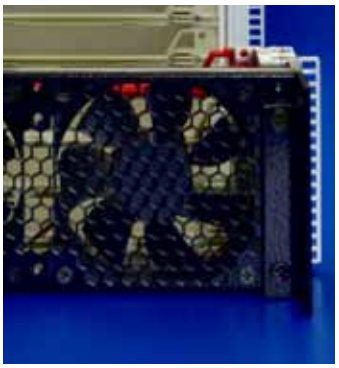
Includes an ATX power supply or . . .



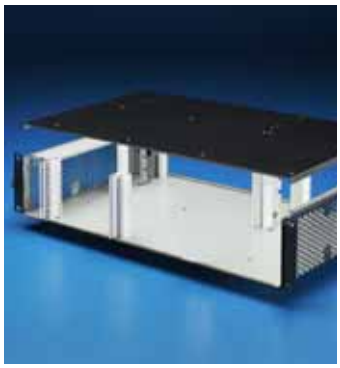
. . . optional plug-in power supply (hot swap capability).



Pull-out fan unit and filter mat.



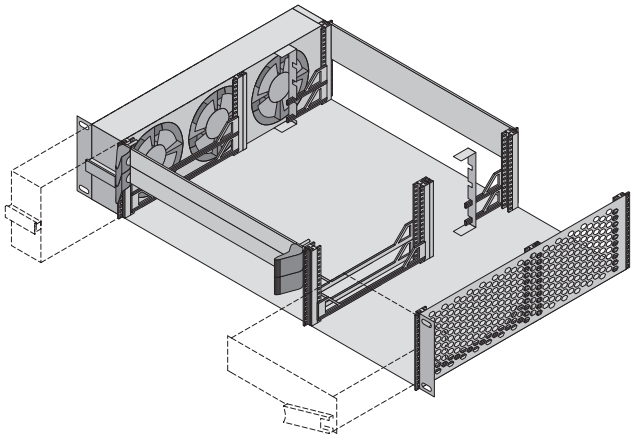
DC fans
for optimum horizontal ventilation.



Optional: Basic enclosure can be upgraded separately.

Rack-mount systems, Slim-Box Vario 1 U, 2 U





Technical specifications:
- Rack-mount enclosure 482.6 mm (19″) for the horizontal installation of boards
- Front and rear 2 slots per U for CPCI boards
- Enclosure cooling from left to right
- EMC and ESD-compatible design
- Includes fan tray
- Complies with IEC 60 297-3-101, -102, -103

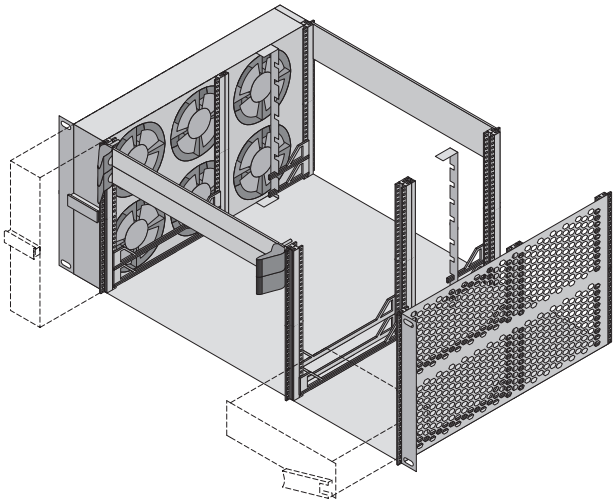
Material:
Sheet steel, spray-finished (black)

Slim-Box Vario CPCI		1 U			2 U		
Model No. RP complete system		With rear I/O **9909.580**	With rear I/O **9909.582**		With rear I/O **9909.586**	Without rear I/O **9909.588**	
Item	Package description			Model No. RP			Model No. RP
1	Basic enclosure, EMC, fully assembled, 300 mm deep	1	1	9912.459	1	1	9912.048
2	ATX PSU control front panel, 3 U x 4 HP, EMC (kit)	–	1	9912.049	–	–	9912.049
3	Rear panel for AC/DC ATX PSU, 1 U, 200 W	–	1	9909.961	–	–	9912.050
4	AC Power Entry Module, 3 U x 8 HP, IEC (kit)	1	–	9910.972	1	1	9912.288
5	Slim drive support (kit)	–	–	–	1	1	9912.289
6	Rails for standard 3 U components (kit)	1	1	9912.464	–	–	9912.056
7	Front sub-division rails in 2 x 3 U (kit)	–	–	9912.920	–	1	9912.053
8	Guide supports, rear I/O	1	1	9912.470	1	–	9912.054
9	Fan tray with fan filter and 12 V DC fan, fully wired	1	1	9912.473	1	–	9909.191
10	Fan tray with fan filter and 12 V DC alarm fan, fully wired	–	–	–	–	1	9909.194
Monitoring							
11	EMC front panel, 3 U x 4 HP with MPS controller module	–	–	–	–	1	9909.193
12	MPS display module, EMC, 3 U x 4 HP	–	–	–	–	1	9912.294
13	EMC front panel, 3 U x 4 HP with MPS fan module	–	–	–	–	1	9912.293
Power supplies/backplanes for plug-in power supplies							
14	ATX PSU, AC/DC, wide range,1 U, 200 W	–	1	9907.585	–	–	–
15	Prepared for plug-in PSU, AC/DC, wide range, 3 U, 200 W[1)]	(1)	–	3688.694	(1)	(1)	3688.694
16	PSU backplane 3 U, single	1	–	9905.105	1	–	9905.105
17	PSU backplane 3 U, dual	–	–	–	–	1	3688.603
Guide rails/filler panels							
18	Keyable guide rails, 160 mm, grey	2	2	3684.669	6	6	3684.669
19	Keyable guide rails, 160 mm, red, for system slots	2	2	3686.063	2	2	3686.063
20	Keyable guide rails, 160 mm, green, with offset, for PSU	2	–	3687.832	2	4	3687.832
21	Guide rails for rear I/O, 80 mm, grey, top	2	2	3687.936	4	–	3687.936
22	Guide rails for rear I/O, 80 mm, grey, bottom	2	2	3687.937	4	–	3687.937
23	Grounding bush + contact spring for rear I/O	4	4	3689.036	8	–	3689.036
24	ESD board contact spring	4	4	3684.978	8	8	3684.978
25	ESD contact spring for front panel	2	2	3684.979	4	4	3684.979
26	Guide rails 4.4″ for drive support	–	–	–	2	2	3686.990
27	Filler panel, EMC, 3 U x 8 HP (kit)	–	–	–	1	1	3685.182
28	Filler panel, EMC, 6 U x 16 HP (kit)	–	–	–	–	1	3685.349
Backplanes							
29	Backplane CPCI, 3 U, 4 slot, system slot on right, 64 bit	–	–	–	–	1	3689.309
30	Backplane CPCI, 6 U, 2 slot, system slot on right, 64 bit	1	1	3689.321	–	–	–
31	Backplane CPCI, 6 U, 4 slot, system slot on right, 64 bit	–	–	–	1	–	3689.323

[1)] Not included in the supply!

Rack-mount systems, Slim-Box Vario 3 U, 4 U





Technical specifications:
- Rack-mount enclosure 482.6 mm (19″) for the horizontal installation of boards
- Front and rear 2 slots per U for CPCI boards
- Enclosure cooling from left to right
- EMC and ESD-compatible design
- Includes fan tray
- Complies with IEC 60 297-3-101, -102, -103

Material:
Sheet steel, spray-finished (black)

Slim-Box Vario CPCI		3 U			4 U		
Model No. RP complete system		With rear I/O **9912.355**	With rear I/O **9912.356**		With rear I/O **9912.357**	With rear I/O **9912.358**	
Item	Package description			Model No. RP			Model No. RP
1	Basic enclosure, EMC, fully assembled, 300 mm deep	1	1	9912.460	1	1	9912.461
2	ATX PSU control front panel, 3 U x 4 HP, EMC (kit)	–	1	9912.049	–	–	9912.049
3	Rear panel for AC/DC ATX PSU, 3 U x 8 HP (kit), 300 W	–	1	9912.921	–	–	9912.921
4	AC Power Entry Module, 3 U x 8 HP, IEC (kit)	1	–	9912.288	1	1	9912.288
5	Slim drive support (kit)	1	1	9912.462	1	1	9912.463
6	Guide supports, rear I/O	1	1	9912.471	1	1	9912.472
7	Fan tray with fan filter and 12 V DC fan	1	1	9912.474	–	–	9912.475
8	Fan tray with fan filter and 12 V DC alarm fan	–	–	–	1	1	9912.478
Monitoring							
9	EMC front panel, 3 U x 4 HP with MPS controller module	–	–	–	1	–	9909.193
10	MPS display module, EMC, 3 U x 4 HP	–	–	–	1	–	9912.294
11	MPS controller module and LCD display module, EMC, 6 U x 8 HP	–	–	–	–	1	9912.483
12	EMC front panel, 3 U x 4 HP with MPS fan module	–	–	–	1	1	9912.293
13	EMC front panel, 3 U x 4 HP with MPS temperature module	–	–	–	1	1	9909.230
14	Red temperature sensor, L = 600 mm	–	–	–	2	2	3397.538
Power supplies/backplanes for plug-in power supplies							
15	ATX PSU, AC/DC, wide range,1 U, 300 W	–	1	9907.584	–	–	–
16	Prepared for plug-in PSU, AC/DC, wide range, 3 U, 200 W[1)]	(1)	–	3688.694	(2)	(1)	3688.694
17	PSU backplane 3 U, single	1	–	9905.105	–	1	9905.105
18	PSU backplane 3 U, dual	–	–	–	1	–	3688.603
Guide rails/filler panels/backplanes							
19	Keyable guide rails, 160 mm, grey	10	10	3684.669	14	10	3684.669
20	Keyable guide rails, 160 mm, red, for system slots	2	2	3686.063	2	2	3686.063
21	Keyable guide rails, 160 mm, green, with offset, for PSU	2	–	3687.832	4	2	3687.832
22	Guide rails for rear I/O, 80 mm, grey, top	6	6	3687.936	8	6	3687.936
23	Guide rails for rear I/O, 80 mm, grey, bottom	6	6	3687.937	8	6	3687.937
24	Grounding bush + contact spring for rear I/O	12	12	3689.036	16	12	3689.036
25	ESD board contact spring	24	24	3684.978	32	24	3684.978
26	ESD contact spring for front panel	12	12	3684.979	16	12	3684.979
27	Guide rails 4.4″ for drive support	2	2	3686.990	2	2	3686.990
28	Filler panel, EMC, 3 U x 8 HP (kit)	1	–	3685.182	–	–	–
29	Filler panel, EMC, 3 U x 12 HP (kit)	–	1	3685.184	–	–	–
30	Filler panel, EMC, 3 U x 16 HP (kit)	1	1	3685.348	1	1	3685.348
31	Filler panel, EMC, 6 U x 8 HP (kit)	–	–	–	–	1	3685.190
32	Backplane CPCI, 6 U, 6 slot, system slot on right, 64 bit	1	1	3689.325	–	1	3689.325
33	Backplane CPCI, 6 U, 8 slot, system slot on right, 64 bit	–	–	–	1	–	3689.327

[1)] Not included in the supply!

Rack-mount systems, Ripac 3 U, 5 slots/4 U, 7 slots horizontal



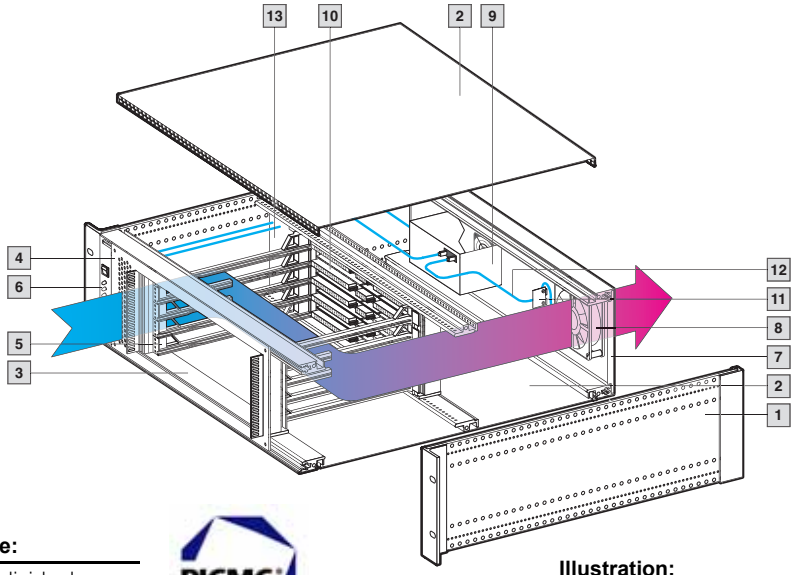


Illustration:
MPS system 3 U for CPCI

Technical specifications:
Subrack, 405 mm deep, for installation in 482.6 mm (19″) enclosures or cases.
Prepared to accommodate CPCI boards and drives.
Includes MPS Monitoring (see page 501/502).
Complies with IEC 60 297-3-101, -102, -103.
Fully assembled, pre-wired and tested.

Rittal service:
Modifications or individual system solutions can be provided at short notice. Rittal's system specialists will be happy to assist you with planning and configuration.

PICMG

U			3	4	Page
Side panel depth mm			405	405	
Wiring space (depth in mm)			210	210	
For PCB			6 U x 160 mm	6 U x 160 mm	
MPS system Model No. RP for CPCI			**9910.944**	**9910.945**	
Mechanical supply includes					
Description		Material	Qty.		
1	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	1	–
2	Top and bottom covers, solid	Aluminium, unplated	2	2	581
13	Air partition	Aluminium	1	1	586
	EMC shielding plate for fan	Aluminium, clear-chromated	1	1	589
3	Horizontal mounting kit	Aluminium, clear-chromated	1	1	574
4	Trim frame for horizontal mounting kit	2.5 mm aluminium, clear-chromated	1	1	575
5	Plastic guide rails, keyable	Polycarbonate UL 94-V0	8	12	576
	Plastic guide rails, keyable, red	Polycarbonate	2	2	576
6	EMC front panel 3 U/5 HP for MPS monitoring	2.5 mm aluminium, clear-chromated	1	–	–
	EMC front panel 4 U/5 HP for MPS monitoring	2.5 mm aluminium, clear-chromated	–	1	–
7	EMC rear panel 3 U/84 HP with fan and connector cut-out	2.5 mm aluminium, clear-chromated	1	–	–
	EMC rear panel 4 U/84 HP with fan and connector cut-out	2.5 mm aluminium, clear-chromated	–	1	–
Electrical/electronic supply includes					
Description		Technical specifications			
8	DC fan	12 V DC, 48 m^3/h, per fan (UL, CSA, VDE) optionally speed-controlled	1	1	588
9	Power supply unit ATX, PS/2 (RP 3687.793)	300 W	1	1	545
10	CPCI backplane	6.5 U, 5 slots	1	–	512
	CPCI backplane	6.5 U, 7 slots	–	1	512
	LED display module for MPS monitoring	for 3.3 V, +5 V, ±12 V, fan failure	1	1	–
11	Fan module for DC fan	–	1	1	–
12	DC cable harness	–	■	■	–
	Controller module	with interface for RS-232 and CMC-TC	1	1	–

■ Included with the supply.

Accessories CPCI/VME Page 529 **Backplanes CPCI** Page 510 **Slide-in systems VME** Page 520 **Backplanes VME** Page 524 **Power supplies** Page 540

Rack-mount systems, Ripac 4 U/7 U, 8 slots



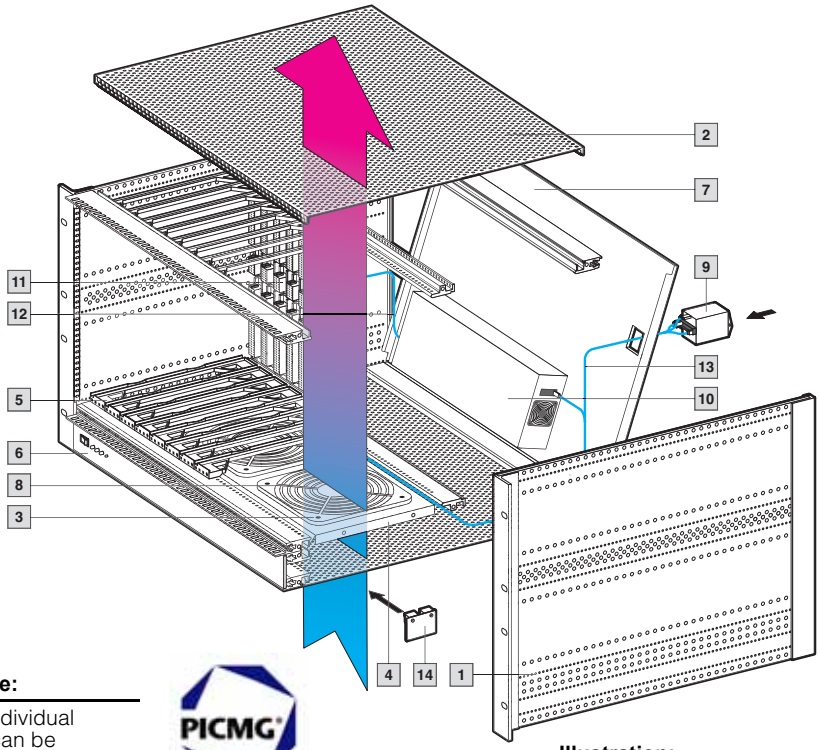


Illustration:
MPS system 7 U for CPCI

Technical specifications:
Subrack, 405 mm deep, for installation in 482.6 mm (19″) enclosures or cases.
Prepared to accommodate CPCI boards and drives.
Includes MPS Monitoring (see page 501/502).
Complies with IEC 60 297-3-101, -102, -103.
Fully assembled, pre-wired and tested.

Rittal service:
Modifications or individual system solutions can be provided at short notice. Rittal's system specialists will be happy to assist you with planning and configuration.

PICMG

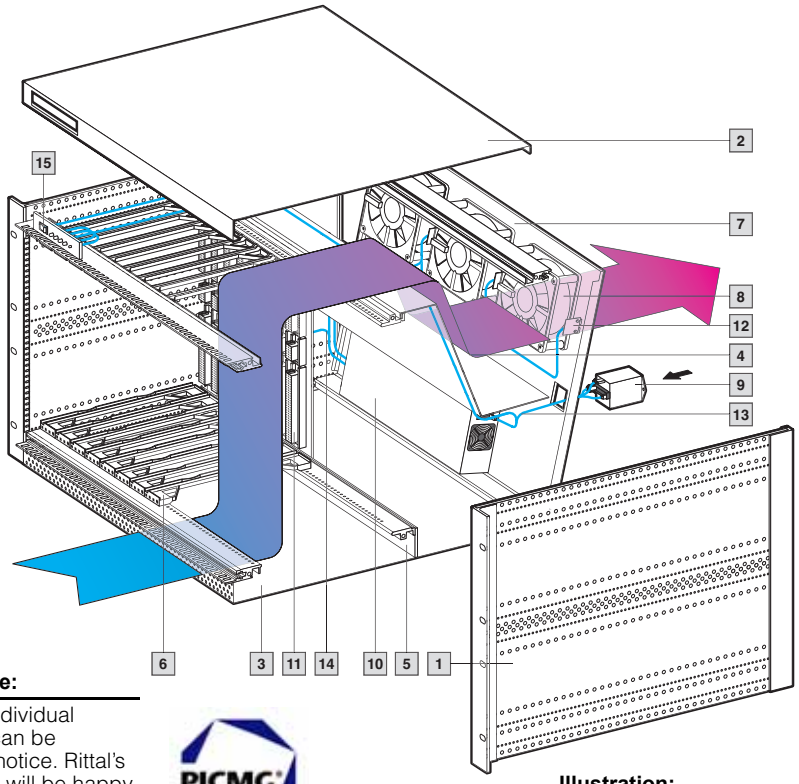
U			4 (3 + 1)	7 (6 + 1)	Page
Side panel depth mm			405	405	
Wiring space (depth in mm)			210	210	
For PCB			3 U x 160 mm	6 U x 160 mm	
MPS system Model No. RP for CPCI			**9910.946**	**9910.948**	
Mechanical supply includes					
Description		Material	Qty.		
1	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	1	–
2	Top and bottom covers, vented	Aluminium, unplated	2	2	581
3	Finger guard	Polyamide	3	3	589
4	Fan mounting plate	1 mm aluminium, anodised	1	1	585
5	Plastic guide rails, keyable	Polycarbonate UL 94-V0	14	14	576
	Plastic guide rails, keyable, red	Polycarbonate	2	2	576
6	EMC front panel 1 U/84 HP for MPS monitoring	2.5 mm aluminium, clear-chromated	1	1	–
	EMC rear panel 4 U/84 HP, horizontally hinged with connector cut-out	2.5 mm aluminium, clear-chromated	1	–	–
7	EMC rear panel 7 U/84 HP, horizontally hinged with connector cut-out	2.5 mm aluminium, clear-chromated	–	1	–
Electrical/electronic supply includes					
Description		Technical specifications			
8	DC fan	24 V DC, 140 m^3/h, per fan (VDE, UL, CSA) optionally speed-controlled	3	3	588
9	IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	529
10	Open frame power supply (RP 3687.695)	400 W, 3.3 V/25 A, 5 V/25 A, 12 V/8 A, –12 V/7 A (VDE, UL, CSA)	–	1	544
	Power supply unit ATX PS/2 (RP 3687.793)	300 W with switch connection cable	1	–	545
	CPCI backplane	3.5 U, 8 slots	1	–	512
11	CPCI backplane	6.5 U, 8 slots	–	1	512
	LED display module for MPS monitoring	for 3.3 V, +5 V, ±12 V, fan failure	1	1	–
12	DC cable harness	–	■	■	–
13	AC cable harness	–	–	■	–
14	Fan module for DC fan	–	1	1	–
	Controller module	with interface for RS-232 and CMC-TC	1	1	–

■ Included with the supply.

Accessories CPCI/VME Page 529 **Backplanes CPCI** Page 510 **Slide-in systems VME** Page 521 **Backplanes VME** Page 524 **Power supplies** Page 540

Rack-mount systems, Ripac 7 U, 8 slots





Technical specifications:
Subrack, 405 mm deep, for installation in 482.6 mm (19″) enclosures or cases.
Prepared to accommodate CPCI boards and drives.
Includes MPS Monitoring (see page 501/502).
Complies with IEC 60 297-3-101, -102, -103.
Fully assembled, pre-wired and tested.

Rittal service:
Modifications or individual system solutions can be provided at short notice. Rittal's system specialists will be happy to assist you with planning and configuration.

Illustration:
MPS system 7 U for CPCI

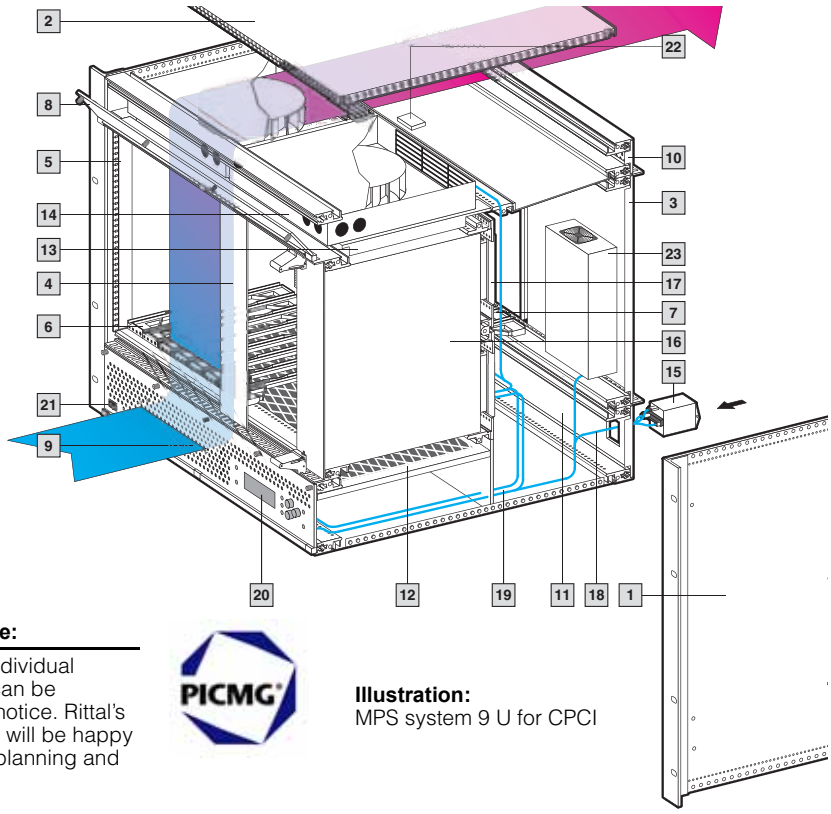
U			7 (6 + 2 x 1/2)	Page
Side panel depth mm			405	
Wiring space (depth in mm)			210	
For PCB			6 U x 160 mm	
MPS system Model No. RP for CPCI			**9910.947**	
Mechanical supply includes				
Description		Material	Qty.	
1	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	–
2	Cover with 1/2 U edge fold and cut-outs for LED/switches	Aluminium, unplated	1	583
3	Bottom cover with 1/2 U edge fold, ventilated at the front	Aluminium, unplated	1	583
	EMC shielding plate for fan	Aluminium, clear-chromated	3	589
4	Air baffle	Aluminium	1	586
5	Air block panel 1/2 U	Epoxy	1	586
6	Plastic guide rails, keyable	Polycarbonate UL 94-V0	14	576
	Plastic guide rails, keyable, red	Polycarbonate	2	576
7	EMC rear panel, horizontally hinged, 7 U, with fan and connector cut-out	2.5 mm aluminium, clear-chromated	1	
Electrical/electronic supply includes				
Description		Technical specifications		
8	DC fan	12 V DC, 140 m³/h, per fan (UL, CSA, VDE) optionally speed-controlled	3	588
9	IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	529
10	Open frame power supply (RP 3687.695)	400 W, 3.3 V/25 A, 5 V/25 A, 12 V/8 A, –12 V/7 A (VDE, UL, CSA)	1	544
11	CPCI backplane	6.5 U, 8 slots	1	512
12	Fan module for DC fan	–	1	–
13	AC cable harness	–	■	–
14	DC cable harness	–	■	–
15	LED display module for MPS monitoring	for 3.3 V, +5 V, ±12 V, fan failure	1	–
	Controller module	with interface for RS-232 and CMC-TC	1	–

■ Included with the supply.

Accessories CPCI/VME Page 529 **Backplanes CPCI** Page 510 **Slide-in systems VME** Page 522 **Backplanes VME** Page 524 **Power supplies** Page 540

Rack-mount systems, Ripac 9 U, 8 slots, with RiCool radial fan





Technical specifications:
Subrack, 290.5 mm deep, for installation in 482.6 mm (19″) enclosures or cases.
Prepared to accommodate CPCI boards and drives.
Includes MPS monitoring (see page 501/502).
Complies with IEC 60 297-3-101, -102, -103.
Fully assembled, pre-wired and tested.

Rittal service:
Modifications or individual system solutions can be provided at short notice. Rittal's system specialists will be happy to assist you with planning and configuration.

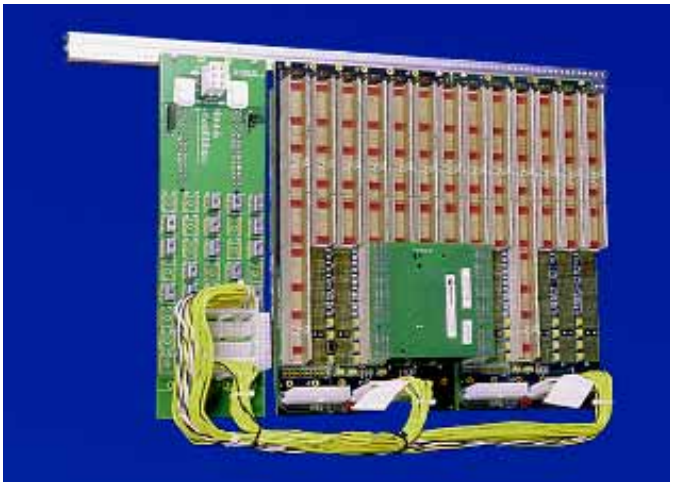
PICMG

Illustration:
MPS system 9 U for CPCI

U		9 (6 + 2 x 1½)	Page
Side panel depth mm		290.5	
Wiring space (depth in mm)		85.5	
For PCB		6 U x 160 mm	
MPS system Model No. RP for CPCI		**9909.483**	
Mechanical supply includes			
Description	Material	Qty.	
1 Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	–
2 Top and bottom covers	Aluminium, unplated	2	581
3 EMC rear panel 6 U/28 HP + 8 HP	2.5 mm aluminium, clear-chromated	1	–
4 EMC front panel	2.5 mm aluminium, clear-chromated	1	605
5 EMC contact strip	Aluminium, clear-chromated	1	573
6 Plastic guide rails, keyable	Polycarbonate UL 94-V0	14	576
Plastic guide rails, keyable, red	Polycarbonate	2	576
7 Guide rails for I/O transition modules	Polycarbonate UL 94-V0	16	577
Guide rails, keyable, green, for power supply	Polycarbonate	2	576
8 Front panel 1½ U/84 HP, horizontally hinged	2.5 mm aluminium, clear-chromated	1	–
9 Front panel 1½ U/84 HP, vented, horizontally hinged, for MPS monitoring	2.5 mm aluminium, clear-chromated	1	–
10 EMC rear panel 1½ U/84 HP, vented	2.5 mm aluminium, clear-chromated	1	–
11 EMC rear panel 1½ U/84 HP with connector cut-out	2.5 mm aluminium, clear-chromated	–	–
12 Filter mat 84 HP, 160 mm, for slide-in attachment	–	1	–
13 Mounting plate for RiCool	1 mm sheet steel, zinc-plated, passivated	1	–
Electrical/electronic supply includes			
Description	Technical specifications		
14 RiCool DC fan, individually removable including fault alarm signal, speed control	24 V DC, 204 m³/h, 48 W	2	–
15 IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	529
16 Power supply, plug-in, 6 U/8 HP	350 W	1	543
CPCI backplane	6.5 U, 8 slots	1	512
17 CPCI backplane for power supply	–	1	–
18 AC cable harness	–	■	–
19 DC cable harness	–	■	–
20 Display module	for 3.3 V, +5 V, ±12 V, fan failure	1	–
21 Mains switch	–	1	–
22 Monitoring module for RiCool	–	1	–
23 Power supply for RiCool	–	1	–
Controller module	with interface for RS-232 and CMC-TC	1	–
Temperature module	–	1	–

Accessories CPCI/VME Page 529 **Backplanes CPCI** Page 510 **Slide-in systems VME** Page 523 **Backplanes VME** Page 524 **Power supplies** Page 540

Backplanes, technical specifications



Rittal offers an extensive range of powerful backplanes for CompactPCI.

- Modular construction facilitates expansion up to a maximum of 21 slots
- Connection between segments via CPCI or H.110 bridge modules
- Power input via ATX-compatible connectors or screw terminal
- Additional 2 x 3 Mate-N-Lock connector for 48 V with H.110 backplane
- Optional development of customer-specific Monolithic backplanes
- 8 layer multi-layer
- System slot on right (left upon request)

Modular assembly

The Ripac backplanes in 32 or 64-bit versions allow the configuration of CPCI systems from 2 to 21 slots. This is possible due to the modular design of the backplanes and connection of the individual segments via CPCI or H.110 bridge modules. Each backplane segment contains between 2 and 8 slots and operates in stand-alone mode in conjunction with a CPU board and a power supply unit.

For assembling larger systems, several segments may be joined together via PCI bridge modules fitted at the rear. In such cases, only one of the segments will run in the system slot with a CPU board. The remaining segments will have a subordinate status without CPU boards. However, the first slot on the right of the backplane is available for a standard 32 or 64 bit CompactPCI host CPU.

Technical specifications

CPU slot
A single 3 U or 6 U CPU board with 32 or 64 bits is required for each system. The system slot on the right-hand side ensures that 2-slot or wider system boards do not conceal other slots, thus rendering them unusable.

Available slots
Each backplane contains two to eight 3 U or 6 U slots (32 or 64 bit).

Data transfer rate
132/264 MBytes for 32/64 bit version
+5 V, 33 MHz PCI bus interface
264/512 MBytes for 32/64 bit version
+3.3 V, 66 MHz (max. 5 Slot) PCI bus interface

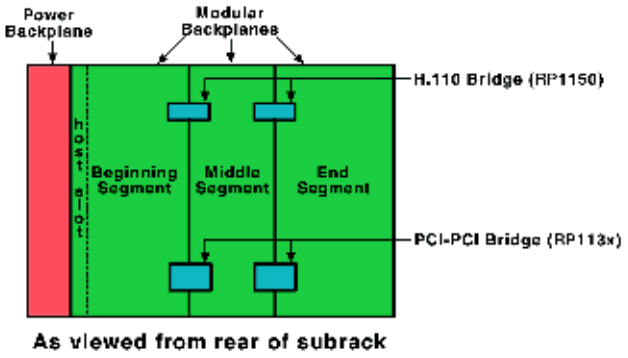
PCI bridges
Single backplanes do not require bridges. For each additional backplane, however, a bridge fitted at the rear is required.

Power supply
Voltage supply via one or more ATX connectors.

Control connector
Each backplane has a control connector where +3.3, +5, ±12 V voltages may be picked off, e.g. for the connection of power LEDs.

I/O modules for J3 – J5
I/O modules can be connected at the rear of each slot.

Standards
- PCI 2.1 (PCI specification)
- PICMG 2.0 (CompactPCI spec.)
- PICMG 2.1 (hot swap spec.)
- IEEE 1101.1, mechanics
- IEEE 1101.10, mechanics
- IEEE 1101.11, mechanics



32-bit pin assignment

P2 connector[9)]

Pin	Z[6)]	A	B	C	D	E	F
22	GND	GA4[5)]	GA3[5)]	GA2[5)]	GA1[5)]	GAO[5)]	GND
21	GND	**BP(I/O)**	**BP(I/O)**	BP(I/O)	BP(I/O)	BP(I/O)	GND
20	GND	**BP(I/O)**	**BP(I/O)**	BP(I/O)	**BP(I/O)**	BP(I/O)	GND
19	GND	**BP(I/O)**	**BP(I/O)**	BP(I/O)	BP(I/O)	BP(I/O)	GND
18	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	GND
17	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	GND
16	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	GND
15	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	GND
14	GND	BP(I/O)	BP(I/O)	BP(I/O)	**BP(I/O)**	BP(I/O)	GND
13	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	BP(I/O)	BP(I/O)	GND
12	GND	BP(I/O)	BP(I/O)	BP(I/O)	**BP(I/O)**	BP(I/O)	GND
11	GND	BP(I/O)	**BP(I/O)**	**BP(I/O)**	BP(I/O)	BP(I/O)	GND
10	GND	BP(I/O)	BP(I/O)	BP(I/O)	**BP(I/O)**	BP(I/O)	GND
9	GND	BP(I/O)	**BP(I/O)**	**BP(I/O)**	BP(I/O)	BP(I/O)	GND
8	GND	BP(I/O)	BP(I/O)	BP(I/O)	**BP(I/O)**	BP(I/O)	GND
7	GND	BP(I/O)	**BP(I/O)**	**BP(I/O)**	BP(I/O)	BP(I/O)	GND
6	GND	BP(I/O)	BP(I/O)	BP(I/O)	**BP(I/O)**	BP(I/O)	GND
5	GND	BP(I/O)	**BP(I/O)**	**BP(I/O)**	BP(I/O)	BP(I/O)	GND
4	GND	**BP(I/O)**	**BP(I/O)**	BP(I/O)	**BP(I/O)**	BP(I/O)	GND
3	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	GND
2	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	GND
1	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	GND

P1 connector[9)]

Pin	Z[6)]	A	B	C	D	E	F
25	GND	5 V	REQ64#	ENUM#	3.3 V	5 V	GND
24	GND	AD(1)	5 V	V(I/O)[3)]	AD(O)	ACK64#	GND
23	GND	3.3 V	AD(4)	AD(3)	5 V	AD(2)	GND
22	GND	AD(7)	GND	3.3 V	AD(6)	AD(5)	GND
21	GND	3.3 V	AD(9)	AD(8)	M66EN[3)]	C/BE(0)#	GND
20	GND	AD(12)	GND	V(I/O)[3)]	AD(11)	AD(10)	GND
19	GND	3.3 V	AD(15)	AD(14)	GND	AD(13)	GND
18	GND	SERR#	GND	3.3 V	PAR	C/BE(1)#	GND
17	GND	3.3 V	SDONE	SBQ#	GND	PERR#	GND
16	GND	DEVSEL	GND	V(I/O)[1)3)]	STOP#	LOCK#	GND
15	GND	3.3 V	FRAME#	IRDY	GND[2)]	TRDY#	GND
12 – 14			KEY AREA				GND
11	GND	AD(18)	AD(17)	AD(16)	GND	C/BE(2)#	GND
10	GND	AD(21)	GND	3.3 V	AD(20)	AD(19)	GND
9	GND	C/BE(3)#	IDSEL	AD(23)	GND	AD(22)	GND
8	GND	AD(26)	GND	V(I/O)[3)]	AD(25)	AD(24)	GND
7	GND	AD(30)	AD(29)	AD(28)	GND	AD(27)	GND
6	GND	REQ#	GND	3.3 V	CLK	AD(31)	GND
5	GND	BRSVP1A5	BRSVP1B5	RST#	GND	GNT#	GND
4	GND	BRSVP1A4	GND	V(I/O)[3)]	INTP	INTS	GND
3	GND	INTA#	INTB#	INTC#	5 V	INTD#	GND
2	GND	TCK	5 V	TMS	TDO	TDI	GND
1	GND	5 V	–12 V	TRST#	+12 V	5 V	GND

32-bit and 64-bit backplane – Technical specifications:
The CPCI specifications define both 32-bit and 64-bit versions. Both versions may be implemented on a 3 U daughterboard. However, the 32-bit version allows the complete P2/J2 connector to be used for user-defined I/O signals (slots 2 – 8). Slot 1 (system slot) uses separate P2/J2 pins for functions such as clock, arbitration, (grant/requests) and other system functions. These pins are printed in bold in the table. In 32-bit systems the P2/J2 connection may optionally be populated at the rear with 16 mm long pins and a transfer frame. Signals can be picked off or I/O boards connected at the rear.

64-bit CompactPCI pin assignments – Technical specifications:
With the 64-bit CompactPCI, both P1 and P2 connectors are fully assigned with signals. User-defined I/O signal pins are not available. I/O signals are only available with 6 U boards on connectors P3, P4 and P5.

64-bit pin assignment

P2 connector[9)]

Pin	Z[7)]	A	B	C	D	E	F
22	GND	GA4[6)]	GA3[6)]	GA2[6)]	GA1[6)]	GAO[6)]	GND
21	GND	**CLK6**	GND	RSV	RSV	RSV	GND
20	GND	**CLK5**	**GND**	RSV	GND[8)]	RSV	GND
19	GND	**GND**	GND[8)]	RSV	RSV	RSV	GND
18	GND	BRSVP2A18	BRSVP2B18	BRSVP2C18	GND[8)]	BRSVP2E18	GND
17	GND	BRSVP2A17	GND[8)]	PRST#	**REQ6#**	**GNT6#**	GND
16	GND	BRSVP2A16	BRSVP2B16	DEG#	GND[8)]	BRSVP2E16	GND
15	GND	BRSVP2A15	GND	FAL#	**REQ5#**	**GNT5#**	GND
14	GND	AD(35)	AD(34)	AD(33)	GND	AD(32)	GND
13	GND	AD(38)	GND	V(I/O)[3)]	AD(37)	AD(36)	GND
12	GND	AD(42)	AD(41)	AD(40)	GND	AD(39)	GND
11	GND	AD(45)	GND	V(I/O)[3)]	AD(44)	AD(43)	GND
10	GND	AD(49)	AD(48)	AD(47)	GND	AD(46)	GND
9	GND	AD(52)	GND	V(I/O)[3)]	AD(51)	AD(50)	GND
8	GND	AD(56)	AD(55)	AD(54)	GND	AD(53)	GND
7	GND	AD(59)	GND	V(I/O)[3)]	AD(58)	AD(57)	GND
6	GND	AD(63)	AD(62)	AD(61)	GND	AD(60)	GND
5	GND	C/BE(5)#	GND	V(I/O)[3)]	C/BE(4)#	PAR64	GND
4	GND	V(I/O)[3)]	BRSVP2B4	C/BE(7)#	–	C/BE(6)#	GND
3[3)]	GND	**CLK4**	GND	**GNT3#**	–	**GNT4#**	GND
2[3)]	GND	**CLK2**	**CLK3**	**SYSEN#[4)]**	–	**REQ3#**	GND
1[3)]	GND	**CLK1**	GND	**REQ1#**	–	**REQ2#**	GND

P1 connector[9)]

Pin	Z[7)]	A	B	C	D	E	F
25	GND	5 V	REQ64#	ENUM#	3.3 V	5 V	GND
24	GND	AD(1)	5 V	V(I/O)[3)]	AD(0)	ACK64#	GND
23	GND	3.3 V	AD(4)	AD(3)	5 V	AD(2)	GND
22	GND	AD(7)	GND	3.3 V	AD(6)	AD(5)	GND
21	GND	3.3 V	AD(9)	AD(8)	M66EN[4)5)]	C/BE(0)	GND
20	GND	AD(12)	GND	V(I/O)[3)]	AD(11)	AD(10)	GND
19	GND	3.3 V	AD(15)	AD(14)	GND	AD(13)	GND
18	GND	SERR#	GND	3.3 V	PAR	C/BE(1)#	GND
17	GND	3.3 V	SDONE	SBO#	GND	PERR#	GND
16	GND	DEVSEL#	GND	V(I/O)[1)3)]	STOP#	LOCK#	GND
15	GND	3.3 V	FRAME#	IRDY#	GND[2)3)]	TRDY#	GND
12 – 14			KEY AREA				
11	–	AD(18)	AD(17)	AD(16)	GND	C/BE(2)#	GND
10	GND	AD(21)	GND	3.3 V	AD(20)	AD(19)	GND
9	GND	C/BE(3)#	IDSEL	AD(23)	GND	AD(22)	GND
8	GND	AD(26)	GND	V(I/O)	AD(25)	AD(24)	GND
7	GND	AD(30)	AD(29)	AD(28)	GND	AD(27)	GND
6	GND	REQ#	GND	3.3 V	CLK	AD(31)	GND
5	GND	BRSVA5	BRSVB 5	RST#	GND	GNT#	GND
4	GND	BRSVA4	GND	V(I/O)	INTP	INTS	GND
3	GND	INTA#	INTB#	INTC	5 V	INTD#	GND
2	GND	TCK	5 V	TMS	TDO	TDI	GND
1	GND	5 V	–12 V	TRST#	+12 V	5 V	GND

The signals printed in bold are only assigned in the system slot
[1)] "Early mate" pin [2)] "Late mate" pin [3)] +3.3 V or 5 V [4)] Earthed with system slot [5)] GND for 33 MHz backplane, bussed in 66 MHz systems
[6)] Each slot may have its own address code (see CPCI specifications) [7)] Not for daughtercards [8)] Not for CPCI cards after version 1.0
[9)] All Rittal standard CPCI backplanes are designed for 64-bit applications on the layout side. With 32-bit versions, the P2/J2 connectors are populated on request.

Backplanes



Front view, 3.5 U



Rear view, 3.5 U

Backplanes 3 U, 3.5 U

Number of layers	8, 10 (with 3 U)
Layer structure	2 GND layers
PCB thickness	3.2 mm
Data transfer rate	132/264 MBytes/32, 64-bit version
Power inlets	3 U: Via screws and busbars 3.5 U: 2 – 4 slots: 1 x ATX connector 5 – 7 slots: 2 x ATX connector 8 slots: 3 x ATX connector
Control connector	+3.3 V, +5 V, +12 V, –12 V
VI/O (3 U)	Adjustable to +5 V or +3.3 V
CPU slot	on right (left upon request)
Standards	PCI 2.1 (PCI specification) PICMG 2.0 (CompactPCI) PICMG 2.1 (hot swap) IEEE 1101.1/10/11
Installation height	3 U, 3.5 U (150.9 mm)
Distance between slots	4 HP
Connectors	J1, J2 32 or 64 bit No rear I/O
Operating temperature range	0° – 70°C
Relative humidity	90 %, non-condensing
Geographic addressing	64-bit versions

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

Backplanes 3 U for low profile bridge

Slots	Design	Model No. RP	
		32-bit	64-bit
2	S	**3689.300**	**3689.307**
3	SE	**3689.301**	**3689.308**
4	SBME	**3689.302**	**3689.309**
5	SBME	**3689.303**	**3689.310**
6	SBME	**3689.304**	**3689.311**
7	SBE	**3689.305**	**3689.312**
8	S	**3689.306**	**3689.313**

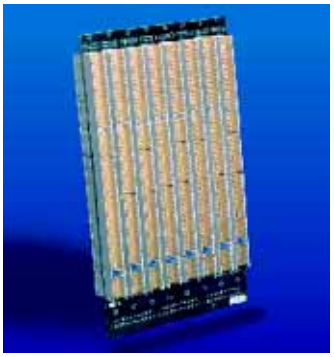
Backplanes 3.5 U

Slots	Design	Model No. RP	
		32-bit	64-bit
2	SBE	**–**	**3687.864**
3	SE	**3687.865**	**3686.578**
4	SE	**3687.863**	**3686.576**
5	SE	**3687.862**	**3686.575**
6	SBME	**3687.861**	**3686.548**
7	SBE	**3687.860**	**3686.547**
8	S	**3687.859**	**3686.546**

S = Stand alone
B = Beginning segment
M = Middle segment
E = Ending segment

Accessories:

CPCI/CPCI bridge, RP 3686.571, (for 3.5 U backplanes), see page 515.
CPCI/CPCI low profile bridge (for 3 U backplanes), see page 515.
Accessories for backplane mounting:
Conductive strips, see page 571.
Insulating strips, see page 571.



Front view, 6.5 U



Rear view, 6.5 U

Backplanes 6 U, 6.5 U

Number of layers	8, 10 (with 6 U)
Layer structure	2 GND layers
PCB thickness	3.2 mm
Data transfer rate	132/264 MBytes/32, 64-bit version
Power inlets	6 U: Via screws and busbars 6.5 U: 2 – 4 slots: 1 x ATX connector 5 – 7 slots: 2 x ATX connector 8 slots: 3 x ATX connectors
Control connector	+3.3 V, +5 V, +12 V, –12 V
VI/O (6 U)	Adjustable to +5 V or +3.3 V
CPU slot	on right (left upon request)
Standards	PCI 2.1 (PCI Spec) PICMG 2.0 (CompactPCI) PICMG 2.1 (hot swap) IEEE 1101.1/10/11
Installation height	6 U, 6.5 U (284.3 mm)
Distance between slots	4 HP
Connectors	J1, J2 32 or 64 bit J3, J4, J5 for rear I/O (64 bit only)
Operating temperature range	0° – 70°C
Relative humidity	90 %, non-condensing
Geographic addressing	64-bit versions

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

Backplanes 6 U for low profile bridge

Slots	Design	Model No. RP	
		32-bit	64-bit
2	S	**3689.314**	**3689.321**
3	SE	**3689.315**	**3689.322**
4	SBME	**3689.316**	**3689.323**
5	SBME	**3689.317**	**3689.324**
6	SBME	**3689.318**	**3689.325**
7	SBE	**3689.319**	**3689.326**
8	S	**3689.320**	**3689.327**

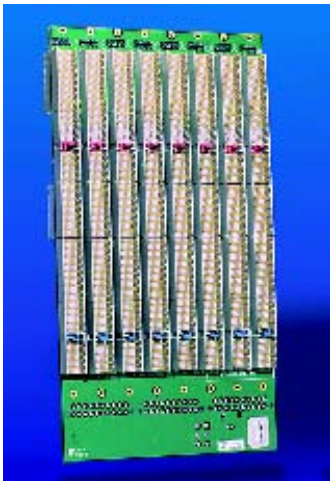
Backplanes 6.5 U for low profile bridge

Slots	Design	Model No. RP
		64-bit
3	SE	**3689.209**
4	SE	**3689.208**
5	SE	**3689.207**
6	SBME	**3689.206**
7	SBE	**3689.205**

S = Stand alone
B = Beginning segment
M = Middle segment
E = Ending segment

Accessories:

CPCI/CPCI low profile bridge, see page 515.
Accessories for backplane mounting:
Conductive strips, see page 571.
Insulating strips, see page 571.
Stiffening kit: RP 3688.088.


Front view


Rear view

Backplanes 7 U with H.110

Number of layers	10
Layer structure	2 GND layers
PCB thickness	3.2 mm
Data transfer rate	132/264 MBytes/32, 64-bit (for CPCI)
Power inlets	Power 'bugs' plus up to 4 slots: 1 x ATX connector 5 – 7 slots: 2 x ATX connector 8 slots: 3 x ATX connector
CPU slot	Right
Standards	PCI 2.1 (PCI specification) PICMG 2.0 or 3.0 (CompactPCI) PICMG 2.1 (hot swap) PICMG 2.5 (CPCI Computer Telephony) IEEE 1101.1/10/11
Installation height	7 U
Distance between slots	4 HP
Connectors	J1, J2 64 bit J3 rear I/O J4 H.110
Operating temperature range	0° – 70°C
Relative humidity	90 %, non-condensing
Geographic addressing	Yes

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

H.110 connected to system slot

Slots	CPCI design	H.110 design	Model No. RP
3	SE	SE	**3688.508**
4	SE	SBME	**3688.507**
5	SE	SBME	**3687.875**
6	SBME	SBME	**3687.874**
7	SBE	SBME	**3687.873**
8	S	SBME	**3687.877**

H.110 not connected to system slot

Slots	CPCI design	H.110 design	Model No. RP
3	S	S	**3688.427**
4	S	SB	**3688.426**
5	S	SB	**3688.506**
6	SB	SB	**3688.505**
7	SBE	SB	**3688.504**
8	S	SB	**9805.494**

Extendible using low profile bridges, see page 515.

S = Stand alone
M = Middle segment
B = Beginning segment
E = Ending segment

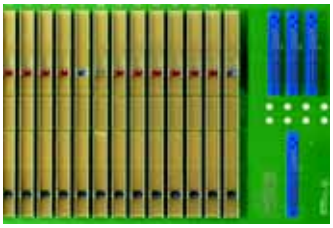
J4 pin assignment

No.	Row Z	Row A	Row B	Row C	Row D	Row E	Row F
25	NP	SGA4	SGA3	SGA2	SGA1	SGA0	FG
24	NP	GA4	GA3	GA2	GA1	GA0	FG
23	NP	+12 V	/CT reset	/CT EN	–12 V	CT_MC	FG
22	NP	PFSO#	RSVD	RSVD	RSDV	RSDV	FG
21	NP	-SEL Vbat	PFS1#	RSDV	RSDV	SEL VbatRtn	FG
20	NP	NP	NP	NP	NP	NP	NP
19	NP	NP	NP	NP	NP	NP	NP
18	NP	VRG	IN/C	IN/C	IN/C	VRGRtn	NP
17	NP	NP	NP	NP	NP	NP	NP
16	NP	NP	NP	NP	NP	NP	NP
15	NP	-Vbat	IN/C	IN/C	IN/C	Vbat Rtn	NP
14	KEY AREA						
13							
12							
11	NP	CT_D29	CT_D30	CT_D31	V(I/O)	/CT_FRAME	GND
10	NP	CT_D27	+3.3 V	CT_D28	+5 V	/C_FRAME B	GND
9	NP	CT_D24	CT_D25	CT_D26	GND	/FR_COMP	GND
8	NP	CT_D21	CT_D22	CT_D23	+5 V	CT_C8 A	GND
7	NP	CT_D19	+5 V	CT_D20	GND	CT_C8 B	GND
6	NP	CT_D16	CT_D17	CT_D18	GND	CT_NETREF	GND
5	NP	CT_D13	CT_D14	CT_D15	+3.3 V	CT_NETREF	GND
4	NP	CT_D11	+5 V	CT_D12	+3.3 V	SCLK	GND
3	NP	CT_D8	CT_D9	CT_D10	GND	SCLK-D	GND
2	NP	CT_D4	CT_D5	CT_D6	CT_D7	GND	GND
1	NP	CT_D0	+3.3 V	CT_D1	CT_D2	CT_D3	GND

Key to J4 pin assignment

CT_name	=	H.110 TDM bus signals
+5 V	=	+5 V power
+3.3 V	=	+3.3 V power
GND	=	logic ground
V(I/O)	=	I/O cell power
FG	=	frame ground
RSVD	=	reserved for future use
NP	=	a pin and pad REQUIRED to be not populated to meet safety regulations
IN/C	=	No connect required for safety agency insulation requirements

-SELVbat	= short loop battery
SELVbatRtn	= short loop battery return
-Vbat	= telecom power distribution bus
VbatRtn	= return bus pin for -Vbat
SGA0-SGA4	= shelf enumeration bus signals
GA0-GA4	= slot ID signals: not bussed
VRG	= bus for ringing voltage
VRGRtn	= bus for ringing voltage
PFSO#-PFS1#	= busses for power fail sense
KEY AREA	= area utilized for key



Backplanes 7 U, Switch Fabric to PICMG 2.16

The “Switch Fabric” backplanes comply with PICMG specification 2.16. They support telephony applications and a high level of system availability in which CompactPCI is combined with Ethernet for high-speed applications.

Power inlets	Positronic 47-pole, or ATX
CPU slot	Right
Standards	PCI 2.1 (PCI specification) PICMG 2.0 (CompactPCI) PICMG 2.1 (hot swap) PICMG 2.5 (CPCI Computer Telephony) IEEE 1101.1/10/11 PICMG 2.16
Installation height	7 U (6 U for RP 3686.396 and RP 3689.186)
Distance between slots	4 HP
Operating temperature range	0° – 70°C
Relative humidity	90 %, non-condensing
Geographic addressing	Yes

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

Technical specifications:

- 7 U, 84 HP/32 HP
- Comply with PICMG 2.1, fully hot swap-compatible
- Selectable voltage V (I/O) (3.3 V or 5 V) where configured for 33 MHz CompactPCI
- Integral Schottky diode bus terminator
- Prepared for up to four backplane reinforcements to avoid bending during card insertion
- H.110 CT bus complies with specification PICMG 2.5 at all node slots
- Support 8 HP CPU boards when one node slot is relinquished
- Twin redundant support for Switch Fabric (2 fabric and 12 basic nodes), as specified in PICMG 2.16
- Support rear transition modules with all board slots
- Configurable for power supply with either two 6 U x 8 HP, three 6 U x 4 HP, three 3 U x 4 HP, three 3 U x 8 HP or four 3 U x 4 HP
- All power supply slots conform to PICMG 2.11
- Power supply connectors for H.110-Vbat, -SELVbat and VRG power signals
- ATX power connector for auxiliary power inlet/outlet
- Two fan power connectors for 12 V and system management support
- System control bus (SMBus) complies with PICMG 2.9 and supports all boards, power supplies, power entry modules, fans and alarm cards
- Support of I^2C bridge function on the alarm card for >19 SMBus nodes

Width	Number of slots	Description of slots	Model No. RP
32 HP	8	1 Fabric slot 6 node slots with CPCI and H.110 1 host slot	**3689.188**
		see RP 3689.188, but without H.110	**3686.414**
64 HP	16	1 Fabric slot 6 node slots with CPCI and H.110 1 host slot 1 Fabric slot 6 node slots with CPCI and H.110 1 host slot 3 slots for power supplies	**3686.396**
		see RP 3686.396, but without H.110	**3689.186**
84 HP	21	7 node slots with CPCI and H.110 1 host slot 1 node slot with H.110 without CPCI 1 Fabric slot 7 node slots with CPCI and H.110 1 host slot 1 node slot with H.110 without CPCI 1 Fabric slot 1 Alarm slot	**3686.397**
		see RP 3686.397, but without H.110	**3689.190**
		see RP 3686.397, but without CPCI	**3689.191**

3686.396 configuration as follows:

Front

1	System (CPU) card	12	Node card
2	Node card	13	Node card
3	Node card	14	Node card
4	Node card	15	Node card
5	Node card	16	Fabric card B
6	Node card	17	Blank
7	Node card	18	Power supply 1
8	Fabric card A	19	Power supply 2
9	System (CPU) card	20	Power supply 3
10	Node card	21	Blank
11	Node card		

Rear

1	System RTC	12	Node RTC
2	Node RTC	13	Node RTC
3	Node RTC	14	Node RTC
4	Node RTC	15	Node RTC
5	Node RTC	16	Fabric B RTC
6	Node RTC	17	Alarm card
7	Node RTC	18	PEM 1
8	Fabric A RTC	19	
9	System RTC	20	PEM 2
10	Node RTC	21	
11	Node RTC		



1



2

Modular CPCI bridge

CPCI bridge may be connected to the rear to extend the bus by a maximum of 7 additional slots. The CPCI bridge handles all communications between the individual bus segments. The front slots are freely available for CPCI boards. It supports the 64-bit PCI bus and may be used in conjunction with CPCI backplanes 3.5 U and 6.5 U.

Technical specifications:

- May be connected to the rear of CPCI backplanes
- PCI bridge
- 64 bit “high performance” Intel 21 154
- For use with Rittal CPCI backplanes (not with low profile backplanes)
- Corresponding to PCI specifications 2.1
- Conforms to CPCI
- CPCI bridge connects CPCI backplanes from right to left (as viewed from the front) – i.e. the “left-hand” connector acts as the host board

Material:
Fibreglass epoxy to IEC 60 249 (FR4)

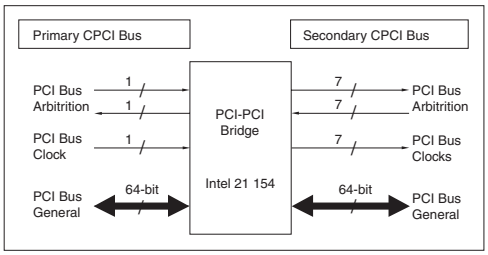
Supply includes:
Bridge, fully populated.

1 Front view

2 Rear view

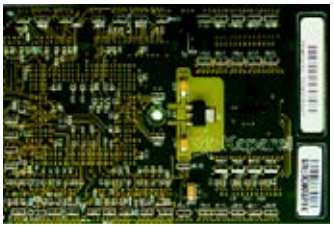
Description	Model No. RP
64-bit CPCI bridge	**3686.571**

Extended delivery times.





1



2

Modular low profile bridge

CPCI bridge may be connected to the rear to extend the bus by a maximum of 7 additional slots, **without any loss of slots:** Optionally available as a 32-bit or 64-bit version. Only suitable for use in conjunction with low profile backplanes. Enables full use of RTM facilities.

Material:
Fibreglass epoxy to IEC 60 249 (FR4)

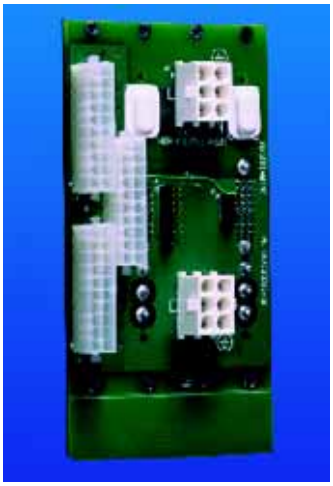
Supply includes:
Bridge, fully populated.

1 32-bit version

2 64-bit version

Design	Bits	Model No. RP
left-right	32	**3689.210**
right-left	32	**3689.211**
left-right	64	**9810.637**
right-left	64	**9812.625**
right-left	64	**3687.880**[1)]

[1)] For backplane H.110



Power supply board 3 U/3.5 U

- Board 3 U/3.5 U, 16 HP
- For use in conjunction with Rittal CPCI backplanes
- Accommodation of up to two power supplies up to 250 W each
- AC/DC connection is made via two 2 x 3-pole connectors
- Outgoing voltages to supply one or more CPCI backplanes are available at 3 ATX-compatible connectors
- Complies with PICMG 2.0, PICMG 2.11

Technical specifications:
Accommodation of 2 x 3 U, 8 HP CPCI power supplies of up to 250 W.

The second power supply unit may be used for redundancy (with power distribution) or, via parallel connection, to increase the current.

Input voltages:
- AC input via 2 x 3-pole AMP Mate-N-Lock (AMP # 350732-1), connector J12
- Connected via pin 45, 46, 47, type Positronic
- Maximum current load per pin is 25 A, matching counter-connector for cable harness AMP # 350715
- DC input via 2 x 3-pole AMP Mate-N-Lock (AMP # 350732-1), connector J5 connected via pin 46, 47, type Positronic
- Maximum current load per pin is 25 A, matching counter-connector for cable harness AMP # 350715

Output voltage:
- Three 20-pole ATX-compatible connectors for ATX cable harness (connection of power supply board to CPCI backplane)

Description	Model No. RP
Board for plug-in power supply with Positronic connector, 47-pin	**3688.603**
ATX (12″) cable harness	**9810.337**
ATX (16″) cable harness	**3686.570**
ATX (20″) cable harness	**9810.338**

Material:
Fibreglass epoxy to IEC 60 249 (FR4)

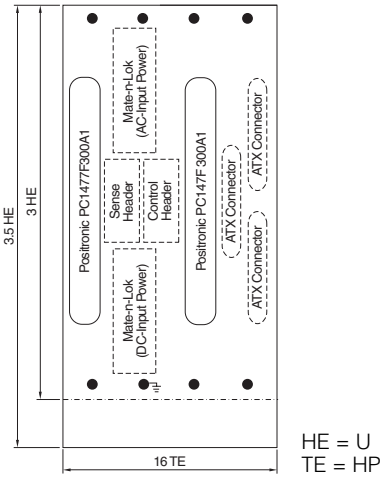
Supply includes:
Board, fully populated.

Note:
Plug-type power supplies,
see page 543.

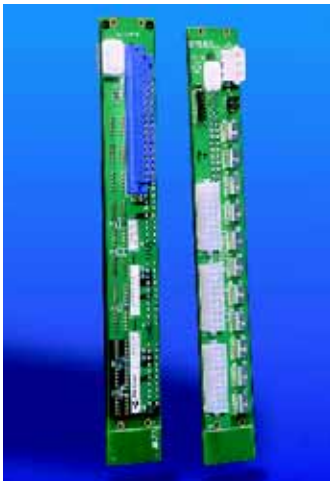
Connector assignment

Pin		Pin		Pin		Pin	
1	+5 V	13	+3.3 V	25	Not used	37	Not used
2	+5 V	14	+3.3 V	26	Not used	38	DEG#
3	+5 V	15	+3.3 V	27	R/EN	39	INH#
4	+5 V	16	+3.3 V	28	Not used	40	Not used
5	0 V (shared)	17	+3.3 V	29	Not used	41	Not used
6	0 V (shared)	18	+3.3 V	30	+5 V Sense	42	FAL#
7	0 V (shared)	19	0 V (shared)	31	Not used	43	Not used
8	0 V (shared)	20	+12 V	32	Not used	44	Not used
9	0 V (shared)	21	–12 V	33	+3.3 V Sense	45	Chassis GND
10	0 V (shared)	22	0 V (shared)	34	0 V Sense	46	AC neutral/+DC
11	0 V (shared)	23	Not used	35	Not used	47	AC line/–DC
12	0 V (shared)	24	0 V (shared)	36	+12 V Sense		

RP 3688.603



HE = U
TE = HP



Power supply board 6 U/6.5 U, 8 HP

- Board 6 U/6.5 U, 8 HP
- For use in conjunction with Rittal CPCI backplanes 3.5 U, 6.5 U, H.110
- Accommodation of a power supply with up to 500 W
- AC/DC connection is made via 3-pole connectors
- Outgoing voltages to supply one or more CPCI backplanes are available at 3 ATX-compatible connectors or at special power terminals
- Complies with PICMG 2.0, PICMG 2.11

Technical specifications:
Accommodation of a 6 U CPCI power supply of up to 500 W.

Input voltages:
- AC input via 3-pole AMP Mate-N-Lock connector Max. current capacity per pin 25 A
- DC input via 3-pole AMP Mate-N-Lock connector Max. current capacity per pin 25 A

Output voltage:
- Three 20-pole ATX-compatible connectors for ATX cable harness (connection of power supply board to CPCI backplane) and/or special power terminals

Description	Model No. RP
Board for plug-in power supply with Positronic connector, 47-pin	**3688.607**
ATX (12″) cable harness	**9810.337**
ATX (16″) cable harness	**3686.570**
ATX (20″) cable harness	**9810.338**

Extended delivery times.

Material:
Fibreglass epoxy to IEC 60 249 (FR4)

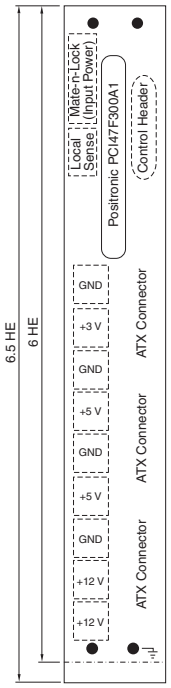
Supply includes:
Board, fully populated.

Note:
Plug-type power supplies,
see page 543.

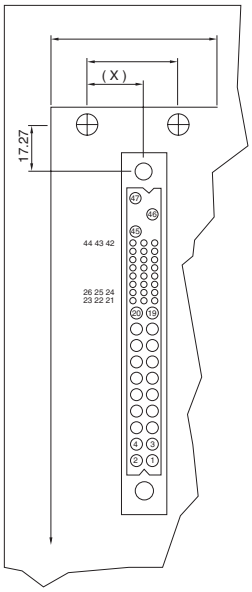
Connector assignment

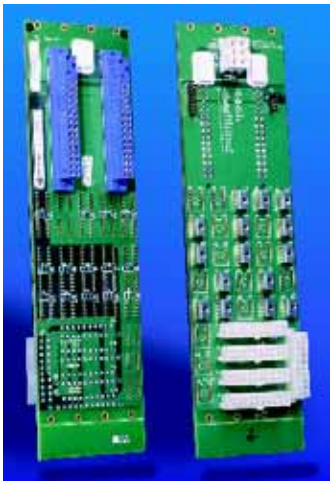
Pin		Pin		Pin		Pin	
1	+5 V	13	+3.3 V	25	Not used	37	Not used
2	+5 V	14	+3.3 V	26	Not used	38	DEG#
3	+5 V	15	+3.3 V	27	R/EN	39	INH#
4	+5 V	16	+3.3 V	28	Not used	40	Not used
5	0 V (shared)	17	+3.3 V	29	V1-ADJ	41	ISHR-2
6	0 V (shared)	18	+3.3 V	30	+5 V Sense	42	FAL#
7	0 V (shared)	19	0 V (shared)	31	Not used	43	Not used
8	0 V (shared)	20	+12 V	32	V2-ADJ	44	ISHR-3
9	0 V (shared)	21	–12 V	33	+3.3 V Sense	45	Chassis GND
10	0 V (shared)	22	0 V (shared)	34	0 V Sense	46	AC neutral/+DC
11	0 V (shared)	23	Not used	35	ISHR-1	47	AC line/–DC
12	0 V (shared)	24	0 V (shared)	36	+12 V		

RP 3688.607



HE = U





Power supply board 6 U/6.5 U, 16 HP

- Board 6 U/6.5 U, 16 HP
- For use in conjunction with Rittal CPCI backplanes
- Accommodation of two power supplies with up to 500 W
- AC/DC connection is made via two 2 x 3-pole connectors
- Outgoing voltages to supply one or more CPCI backplanes are available at 5 ATX-compatible connectors or at special power terminals
- Complies with PICMG 2.0, PICMG 2.11

Technical specifications:
Accommodation of 2 x 6 U CPCI power supplies of up to 500 W

Input voltages:
- AC input via 2 x 3-pole AMP Mate-N-Lock connector
  Max. current capacity per pin 25 A
- DC input via 2 x 3-pole AMP Mate-N-Lock connector
  Max. current capacity per pin 25 A

Output voltage:
- Five 20-pole ATX-compatible connectors for ATX cable harness (connection of power supply board to CPCI backplane) and/or special power terminals

Description	Model No. RP
Board for 2 x plug-in power supplies with Positronic connector, 47-pin	**3688.608**
ATX (12″) cable harness	**9810.337**
ATX (16″) cable harness	**3686.570**
ATX (20″) cable harness	**9810.338**

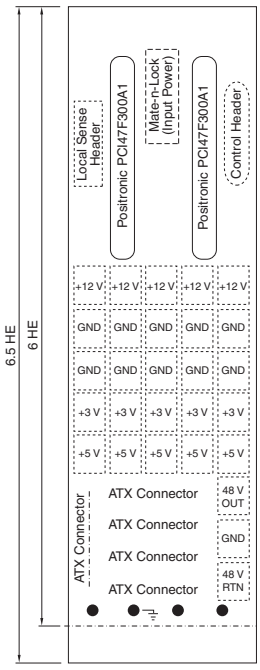
Extended delivery times.

Material:
Fibreglass epoxy to IEC 60 249 (FR4)

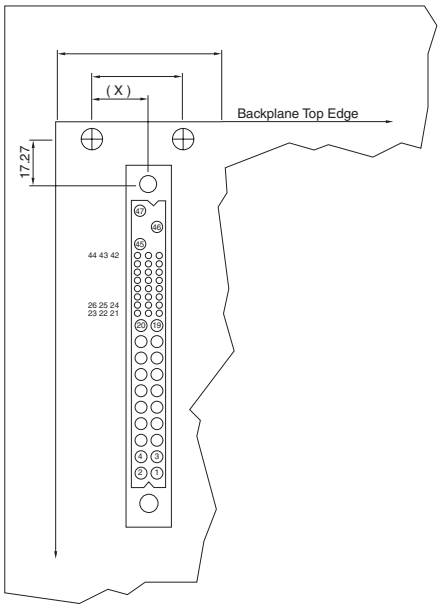
Supply includes:
Board, fully populated.

Note:
Plug-in power supplies,
see page 543.

RP 3688.608

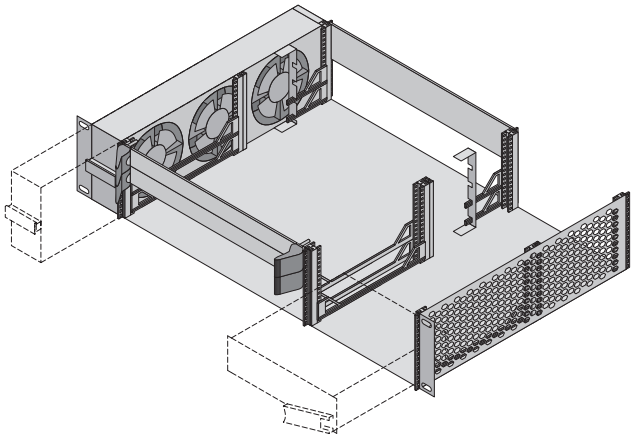


HE = U



Rack-mount systems, Slim-Box Vario 2 U, 4 U





Technical specifications:
- Rack-mount enclosure 482.6 mm (19″) for the horizontal installation of boards
- Front and rear 2 slots per U for VME64x boards
- Enclosure cooling from left to right
- EMC and ESD-compatible design
- Includes fan tray
- Complies with IEC 60 297-3-101, -102, -103

Material:
Sheet steel, spray-finished (black)

Slim-Box Vario VME64x		2 U		4 U	
Model No. RP complete system		VME64x without rear I/O **9912.354**		VME64x without rear I/O **9912.484**	
Item	Package description		Model No. RP		Model No. RP
1	Basic enclosure, EMC, fully assembled, 300 mm deep, black	1	9912.048	1	9912.461
2	ATX PSU control front panel, 3 U x 4 HP, EMC (kit)	1	9912.049	1	9912.049
3	Rear panel for AC/DC ATX PSU, 3 U x 8 HP (kit), 200 W/300 W	1	9912.050	1	9912.921
4	Slim drive support (kit)	1	9912.289	–	9912.463
5	Rails for standard 3 U components (kit)	–	9912.056	1	9912.466
6	Fan tray with fan filter and 12 V DC fan, fully wired	1	9909.191	1	9912.475
Power supply units					
7	ATX PSU, AC/DC, wide range, 1 U, 200 W	1	9907.585	–	–
8	ATX PSU, AC/DC, wide range, 1 U, 300 W	–	–	1	9907.584
Guide rails					
9	Keyable guide rails, 160 mm, grey	8	3684.669	16	3684.669
10	ESD board contact spring	8	3684.978	32	3684.978
11	ESD contact spring for front panel	4	3684.979	16	3684.979
12	Guide rails 4.4″ for drive support	2	3686.990	–	–
Filler panels					
13	Filler panel, EMC, 3 U x 4 HP (kit)	–	–	1	3685.178
14	Filler panel, EMC, 3 U x 8 HP (kit)	1	3685.182	1	3685.182
15	Filler panel, EMC, 3 U x 16 HP (kit)	–	–	1	3685.348
16	Filler panel, EMC, 6 U x 16 HP (kit)	1	3685.349	–	–
17	Filler panel, EMC, 6 U x 28 HP (kit)	–	–	1	3684.260
Backplanes					
18	VME64x backplane, with P0, 6 U, 4 Slot, active/passive	1	9912.362	–	–
19	VME64x backplane, with P0, 6 U, 8 Slot, active/passive	–	–	1	9912.413

Accessories CPCI/VME Page 529 **Backplanes VME** Page 524 **Rack-mount systems CPCI** Page 504/505 **Backplanes CPCI** Page 510
Power supplies Page 540

Rack-mount systems, Ripac 3 U, 5 slots/4 U, 7 slots horizontal



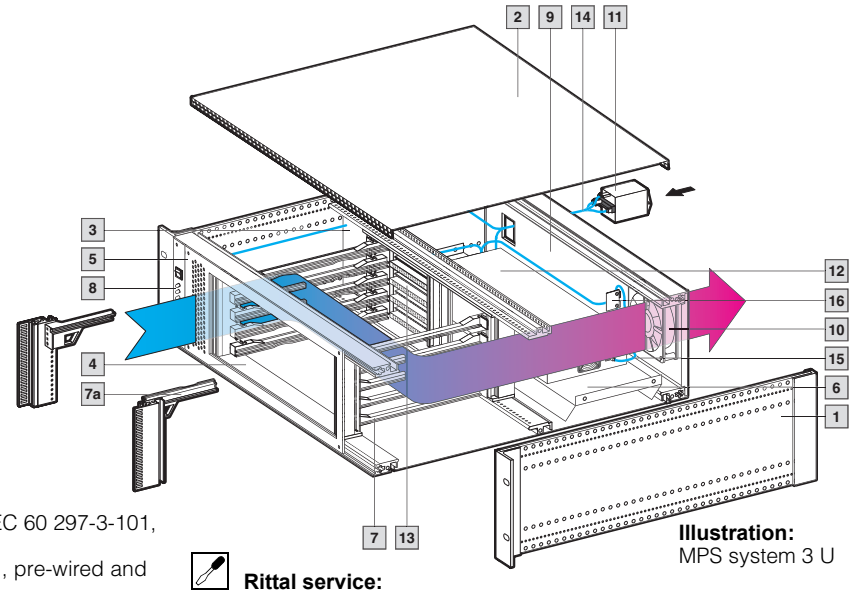


Illustration:
MPS system 3 U

Technical specifications:
Subrack, 405 mm deep, for installation in 482.6 mm (19″) enclosures or cases. Prepared to accommodate VMEbus boards and drives.
Includes MPS monitoring (see page 501/502).

Complies with IEC 60 297-3-101, -102, -103.
Fully assembled, pre-wired and tested.

Rittal service:

Modifications or individual system solutions can be provided at short notice.

Rittal's system specialists will assist you with planning and configuration.

U			3	3	4	4	Page
Side panel depth mm			405	405	405	405	
Wiring space (depth in mm)			210	210	210	210	
For PCB			6 U x 160 mm	6 U x 160 mm	6 U x 160 mm	6 U x 160 mm	
MPS system Model No. RP for VME			**9910.949**	**–**	**9910.954**	**–**	
MPS system Model No. RP for VME64x			**–**	**9910.950**	**–**	**9910.955**	
Mechanical supply includes							
Description		Material	Qty.				
1	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/ stainless steel	1	1	1	1	–
2	Top and bottom covers, solid	Aluminium, unplated	2	2	2	2	581
3	Air partition	Aluminium	1	1	1	1	586
4	Horizontal mounting kit	Aluminium, clear-chromated	1	1	1	1	574
5	Trim frame for horizontal mounting kit	2.5 mm aluminium, clear-chromated	1	1	1	1	575
6	Mounting base for power supply unit	2 mm aluminium, anodised	1	1	1	1	547
	EMC shielding plate for fan	Aluminium, clear-chromated	1	1	1	1	589
7	Guide rails	Polycarbonate UL 94-V0	10	–	14	–	575
7a	Plastic guide rails, keyable	Polycarbonate UL 94-V0	–	10	–	14	576
8	EMC front panel 3 U or 4 U/5 HP, with MPS monitoring	2.5 mm aluminium, clear-chromated	1	1	1	1	–
9	EMC rear panel 3 U/84 HP with fan and connector cut-out	2.5 mm aluminium, clear-chromated	1	1	–	–	–
	EMC rear panel 4 U/84 HP with fan and connector cut-out	2.5 mm aluminium, clear-chromated	–	–	1	1	–
Electrical/electronic supply includes							
Description		Technical specifications					
10	DC fan	12 V DC, 48 m³/h per fan (UL, CSA, VDE) optionally speed-controlled	1	1	1	1	588
11	IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	1	1	529
12	Switch mode power supply unit	250 W, 5 V/35 A, +12 V/8 A, –12 V/8 A (VDE, UL, CSA)	1	1	1	1	541
13	VME backplane	J1, 5 slots, IN-board, passive, ADC	1	–	–	–	528
	VME64x backplane	J1/J2, 5 slots (without P0)	–	1	–	–	526
	VME backplane	J1, 7 slots, IN-board, passive, ADC	–	–	1	–	528
	VME64x backplane	J1/J2, 7 slots	–	–	–	1	526
	LED display module for MPS monitoring	for +5 V, ±12 V, fan failure	1	1	1	1	–
14	AC cable harness	–	■	■	■	■	–
15	DC cable harness	–	■	■	■	■	–
16	Fan module for DC fan	–	1	1	1	1	–
	Controller module	with interface for RS-232 and CMC-TC	1	1	1	1	–

Accessories CPCI/VME Page 529 **Backplanes VME** Page 524 **Rack-mount systems CPCI** Page 506 **Backplanes CPCI** Page 510 **Power supplies** Page 540

Rack-mount systems, Ripac 4 U/7 U, 12 slots



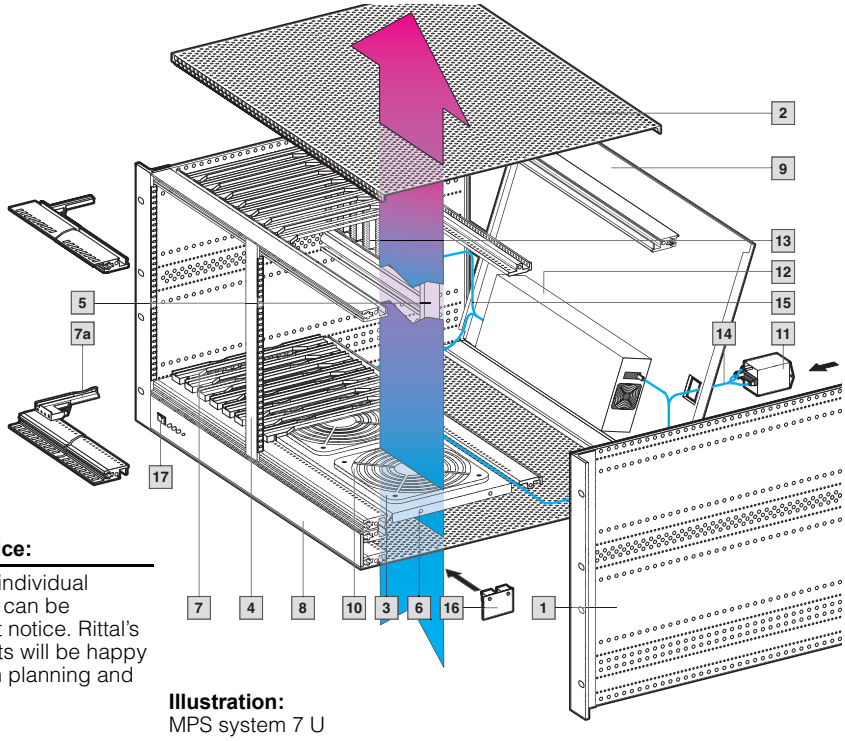


Illustration:
MPS system 7 U

Technical specifications:
Subrack, 405 mm deep, for installation in 482.6 mm (19″) enclosures or cases. Prepared to accommodate VMEbus boards and drives. Includes MPS Monitoring (see page 501/502). Complies with IEC 60 297-3-101, -102, -103.
Fully assembled, pre-wired and tested.

Rittal service:

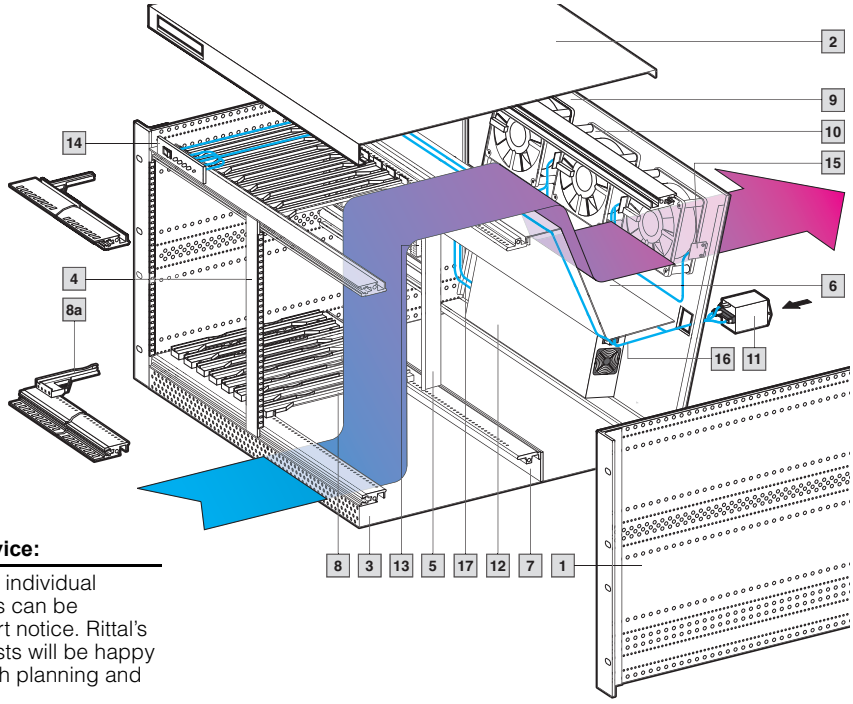
Modifications or individual system solutions can be provided at short notice. Rittal's system specialists will be happy to assist you with planning and configuration.

U		**4 (3 + 1)**	**7 (6 + 1)**	**7 (6 + 1)**	Page
Side panel depth mm		405	405	405	
Wiring space (depth in mm)		210	210	210	
For PCB		3 U x 160 mm	6 U x 160 mm		
MPS system Model No. RP for VME		**9909.484**	**9910.956**	**–**	
MPS system Model No. RP for VME64x		**–**	**–**	**9910.957**	
Mechanical supply includes					
Description	Material	Qty.			
1 Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	1	1	–
2 Top and bottom covers, vented	Aluminium, unplated	2	2	2	581
3 Finger guard	Polyamide	3	3	3	589
4 EMC front panel, 6 U/4 HP (with 7 U)	Aluminium, clear-chromated	–	1	–	–
5 Support, vertical (with 7 U)	Aluminium, clear-chromated	–	1	–	574
6 Fan mounting plate	1 mm aluminium, anodised	1	1	1	585
7 Guide rails	Polycarbonate UL 94-V0	24	24	–	575
7a Plastic guide rails, keyable	Polycarbonate UL 94-V0	–	–	24	576
8 EMC front panel 1 U/84 HP for switches/LED	2.5 mm aluminium, clear-chromated	1	1	1	–
Rear panel 4 U/84 HP, horizontally hinged with connector cut-out	2.5 mm aluminium, clear-chromated	1	–	–	–
9 EMC rear panel 7 U/84 HP, horizontally hinged with connector cut-out	2.5 mm aluminium, clear-chromated	–	1	1	–
Electrical/electronic supply includes					
Description	Technical specifications				
10 DC fan	12 V DC, 140 m³/h per fan (VDE, UL, CSA) optionally speed-controlled	3	3	3	588
11 IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	1	529
12 Switch mode power supply unit (RP 3686.629)	400 W, 5 V/80 A, +12 V/8 A, –12 V/8 A (VDE, UL, CSA)	1	1	–	541
Open frame power supply (RP 3687.695)	400 W, 3.3 V/25 A, +5 V/25 A, +12 V/8 A, –12 V/7 A (VDE, UL, CSA)	–	–	1	544
13 VME backplane	J1, 12 slots, IN-board, passive, ADC	1	1	–	528
VME64x backplane	J1/J2, 12 slots	–	–	1	526
17 LED display module for MPS monitoring	for (3.3 V), +5 V, ±12 V, fan failure	1	1	1	–
14 AC cable harness	–	■	■	■	–
15 DC cable harness	–	■	■	■	–
16 Fan module for DC fan	–	1	1	1	–
Controller module	with interface for RS-232 and CMC-TC	1	1	1	–

Accessories CPCI/VME Page 529 **Backplanes VME** Page 524 **Rack-mount systems CPCI** Page 507 **Backplanes CPCI** Page 510 **Power supplies** Page 540

Rack-mount systems, Ripac 7 U, 12 slots





Technical specifications:
Subrack, 405 mm deep, for installation in 482.6 mm (19″) enclosures or cases. Prepared to accommodate VMEbus boards and drives. Includes MPS Monitoring (see page 501/502). Complies with IEC 60 297-3-101, -102, -103.
Fully assembled, pre-wired and tested.

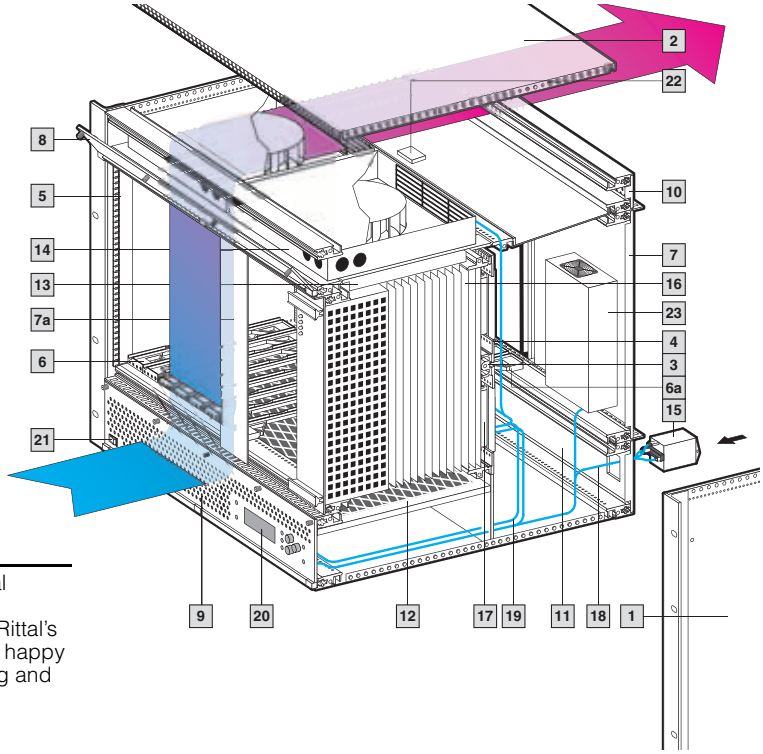
Rittal service:
Modifications or individual system solutions can be provided at short notice. Rittal's system specialists will be happy to assist you with planning and configuration.

U			7 (6 + 2 x 1/2)	7 (6 + 2 x 1/2)	Page
Side panel depth mm			405	405	
Wiring space (depth in mm)			210	210	
For PCB			6 U x 160 mm	6 U x 160 mm	
MPS system Model No. RP for VME			**9910.958**	**–**	
MPS system Model No. RP for VME64x			**–**	**9910.959**	
Mechanical supply includes					
Description		Material	Qty.		
1	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/ stainless steel	1	1	–
2	Cover with 1/2 U edge fold and cut-outs for switches/LEDs	Aluminium, unplated	1	1	583
3	Bottom cover with 1/2 U edge fold, ventilated at the front	Aluminium, unplated	1	1	583
4	EMC front panel, 6 U / 4 HP	2.5 mm aluminium, clear-chromated	1	–	–
	EMC shielding plate for fan	Aluminium, clear-chromated	3	3	589
5	Vertical support	Aluminium, clear-chromated	1	–	574
6	Air baffle	1 mm aluminium, anodised	1	1	586
7	Air block panel, 1/2 U	Epoxy	1	1	586
8	Guide rails	Polycarbonate UL 94-V0	24	–	575
8a	Plastic guide rails, keyable	Polycarbonate UL 94-V0	–	24	576
9	EMC rear panel, horizontally hinged, 7 U, with fan and connector cut-out	2.5 mm aluminium, clear-chromated	1	1	–
Electrical/electronic supply includes					
Description		Technical specifications			
10	DC fan	12 V DC, 140 m³/h per fan, (UL, CSA, VDE) optional speed control	3	3	588
11	IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	529
12	Switch mode power supply unit (RP 3686.629)	400 W, 5 V/80 A, +12 V/8 A, –12 V/8 A (VDE, UL,CSA)	1	–	541
	Open frame power supply (RP 3687.695)	400 W, 3.3 V/25 A, 5 V/25 A, 12 V/8 A, –12 V/7 A (VDE, UL, CSA)	–	1	544
13	VME backplane	J1, 12 slots, IN-board passive, ADC	1	–	528
	VME64x backplane	J1/J2, 12 slots (without P0)	–	1	526
14	LED display module for MPS monitoring	for (3.3 V), +5 V, ±12 V, fan failure	1	1	–
15	Fan module for DC fan	–	1	1	–
16	AC cable harness	–	■	■	–
17	DC cable harness	–	■	■	–
	Controller module	with interface for RS-232 and CMC-TC	1	1	–

Accessories CPCI/VME Page 529 **Backplanes VME** Page 524 **Rack-mount systems CPCI** Page 508 **Backplanes CPCI** Page 510 **Power supplies** Page 540

Rack-mount systems, Ripac 9 U, 12 slots, with RiCool radial fan





Technical specifications:
Subrack, 290.5 mm deep, for installation in 482.6 mm (19″) enclosures or cases. Prepared to accommodate VMEbus boards and drives. Includes MPS Monitoring (see page 501/502). Complies with IEC 60 297-3-101, -102, -103.
Fully assembled, pre-wired and tested.

Rittal service:
Modifications or individual system solutions can be provided at short notice. Rittal's system specialists will be happy to assist you with planning and configuration.

U			**9 (6 + 2 x 1 1/2)**	Page
Side panel depth mm			290.5	
Wiring space (depth in mm)			85.5	
For PCB			6 U x 160 mm	
MPS system Model No. RP for VME64x			**9910.960**	
Mechanical supply includes				
Description		Material	Qty.	
1	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	–
2	Top and bottom covers, solid	1 mm aluminium, unplated	2	581
3	Centre horizontal rail 12 HP	1 mm aluminium, clear-chromated	1	–
4	Z rail 12 HP	Aluminium, clear-chromated	4	–
5	EMC contact strip	Aluminium, clear-chromated	2	573
6	Plastic guide rails, keyable	Polycarbonate UL 94-V0	24	576
	Guide rails, keyable, green, for power supply	Polycarbonate UL 94-V0	2	576
6a	Guide rails for I/O transition modules	Polycarbonate UL 94-V0	24	–
7	EMC rear panel 6 U/36 HP	2.5 mm aluminium, clear-chromated	1	–
7a	EMC front panel	2.5 mm aluminium, clear-chromated	1	–
8	Front panel 1 1/2 U/84 HP, horizontally hinged	2.5 mm aluminium, clear-chromated	1	–
9	Front panel 1 1/2 U/84 HP, vented, horizontally hinged, for MPS monitoring	2.5 mm aluminium, clear-chromated	1	–
10	EMC rear panel 1 1/2 U/84 HP, vented	2.5 mm aluminium, clear-chromated	1	–
11	EMC rear panel, 1 1/2 U/84 HP, with connector cut-out	2.5 mm aluminium, clear-chromated	1	–
12	Filter mat 160 mm, 84 HP, for slide-in attachment	–	1	–
13	Mounting plate for RiCool	1 mm sheet steel, zinc-plated, passivated	1	–
Electrical/electronic supply includes				
Description		Technical specifications		
14	RiCool DC fan, individually removable. Including fault alarm signal, speed control	24 V DC, 204 m³/h, 48 W	2	–
15	IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	529
16	Power supply, plug-in, 6 U/12 HP	270 W, 5 V/35 A, +12 V/6 A, –12 V/2 A (VDE, IEC)	1	542
	Backplane VME64x, without P0	J1/J2, 12 slots	1	526
17	Female connector for power supply unit	H15	2	–
18	AC cable harness	–	■	–
19	DC cable harness	–	■	–
20	Display module	for +5 V, ±12 V, fan failure	1	–
21	Mains switch	–	1	–
22	Monitoring module for RiCool and backplane	–	2	–
23	Power supply for RiCool	–	1	–
	Controller module	–	1	–
	Temperature module	–	1	–

Accessories CPCI/VME Page 529 **Backplanes VME** Page 524 **Rack-mount systems CPCI** Page 509 **Backplanes CPCI** Page 510 **Power supplies** Page 540

Backplanes, technical specifications

General technical specifications VMEbus

The VMEbus, based on standard IEEE 1014 and IEC 821, has become established worldwide as an industry standard.
The VME64 is a new addition to the VME family to ANSI/VITA 1-1994 and supports 64-bit data traffic. The VME64x extends the VME family to ANSI/VITA 1.1-1997 and is available with the optional 133-pole 2 mm connector J0. 160-pole connectors are used with VME64x. This system remains backward compatible, so that assemblies with 96-pole connectors to IEC 60 603-2 may still be used. All Rittal VMEbus boards are of a **HIGH SPEED DESIGN**. Minimal reflections are achieved, due to even surge impedance of the signal track. The consistent shielding of every signal track ensures minimum coupling and hence guarantees interference-free operation even when extended to 64 bit mode with the **2e protocol** (160 Mbyte/s).

Daisy-chain circuit

With the daisy-chain circuit, a distinction is made between manual daisy-chaining and automatic daisy-chaining. Automatic daisy-chaining renders the connection of jumpers superfluous, and users are saved the time-consuming task of insertion and extraction. What is more, possible misconnections are avoided. Automatic daisy-chaining can be achieved in two ways. Rittal VME backplanes are generally supplied with automatic daisy-chaining.

Termination

In order to avoid malfunctions on signal tracks that may arise as a result of reflections on the exposed track end, these must be terminated with the VMEbus. Termination may be either ON-/IN-board (on the backplane) or OFF-board (external). With regard to the type of termination, a distinction is made between passive and active termination. The benefit of active termination lies in the lower closed-circuit current consumption. Passive termination is distinguished by superior frequency response and a broader temperature range.

Pin assignment J1 and J2

Pin assignment J1

Pin assignment for J1 connector VME64x					
		Pin assignment for J1 connector VME			
Pin no.	Row z	Row a	Row b	Row c	Row d
1	MPR	D00	BBSY	D08	VPC
2	GND	D01	BCLR	D09	GND
3	MCLK	D02	ACFAIL	D10	+ V1
4	GND	D03	BG0IN	D11	+ V2
5	MSD	D04	BG0OUT	D12	RsvU
6	GND	D05	BG1IN	D13	– V1
7	MMD	D06	BG1OUT	D14	– V2
8	GND	D07	BG2IN	D15	RsvU
9	MCTL	GND	BG2OUT	GND	GAP
10	GND	SYSCLK	BG3IN	SYSFAIL	GAO
11	RTRY1	GND	BG3OUT	BERR	GA1
12	GND	DS1	BR0	SYSRESET	+3.3 V
13	RsvBus	DS0	BR1	LWORD	GA2
14	GND	WRITE	BR2	AM5	+3.3 V
15	RsvBus	GND	BR3	A23	GA3
16	GND	DTACK	AM0	A22	+3.3 V
17	RsvBus	GND	AM1	A21	GA4
18	GND	AS	AM2	A20	+3.3 V
19	RsvBus	GND	AM3	A19	RsvBus
20	GND	IACK	GND	A18	+3.3 V
21	RsvBus	IACKIN	SERCLK (1)	A17	RsvBus
22	GND	IACKOUT	SERDAT (1)	A16	+3.3 V
23	RsvBus	AM4	GND	A15	RsvBus
24	GND	A07	IRQ7	A14	+3.3 V
25	RsvBus	A06	IRQ6	A13	RsvBus
26	GND	A05	IRQ5	A12	+3.3 V
27	RsvBus	A04	IRQ4	A11	LI/I
28	GND	A03	IRQ3	A10	+3.3 V
29	SBB	A02	IRQ2	A09	LI/O
30	GND	A01	IRQ1	A08	+3.3 V
31	SBA	–12 V	+5 V STDBT	+12 V	GND
32	GND	+5 V	+5 V	+5 V	VPC

Pin assignment J2

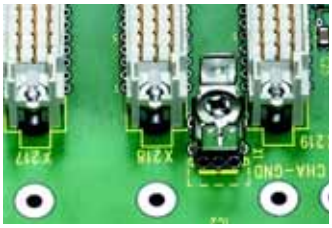
Pin assignment for J2 connector VME64x					
		Pin assignment for J2 connector VME			
Pin no.	Row z	Row a	Row b	Row c	Row d
1	UD	User def.	+5 V	User def.	UD
2	GND	User def.	GND	User def.	UD
3	UD	User def.	Retry	User def.	UD
4	GND	User def.	A24	User def.	UD
5	UD	User def.	A25	User def.	UD
6	GND	User def.	A26	User def.	UD
7	UD	User def.	A27	User def.	UD
8	GND	User def.	A28	User def.	UD
9	UD	User def.	A29	User def.	UD
10	GND	User def.	A30	User def.	UD
11	UD	User def.	A31	User def.	UD
12	GND	User def.	GND	User def.	UD
13	UD	User def.	+5 V	User def.	UD
14	GND	User def.	D16	User def.	UD
15	UD	User def.	D17	User def.	UD
16	GND	User def.	D18	User def.	UD
17	UD	User def.	D19	User def.	UD
18	GND	User def.	D20	User def.	UD
19	UD	User def.	D21	User def.	UD
20	GND	User def.	D22	User def.	UD
21	UD	User def.	D23	User def.	UD
22	GND	User def.	GND	User def.	UD
23	UD	User def.	D24	User def.	UD
24	GND	User def.	D25	User def.	UD
25	UD	User def.	D26	User def.	UD
26	GND	User def.	D27	User def.	UD
27	UD	User def.	D28	User def.	UD
28	GND	User def.	D29	User def.	UD
29	UD	User def.	D30	User def.	UD
30	GND	User def.	D31	User def.	UD
31	UD	User def.	GND	User def.	UD
32	GND	User def.	+5 V	User def.	UD



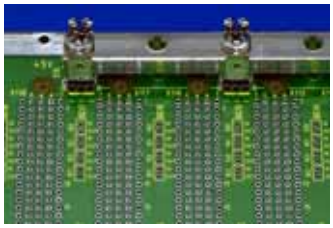
Automatic daisy-chaining J1 and J1/J2
Via the use of connectors with integral mechanical switches, the contact is automatically opened when the daughterboard is inserted, and closed again when it is extracted.



Automatic daisy-chaining VME64x
The second option for automatic daisy-chaining is achieved here by an “or” logic integrated onto the backplane. If the daughterboard is extracted, the logic closes the daisy-chain.



Chassis GND connection
An electrically conductive chassis GND surface is attached to the subracks in the mounting section of the backplane. This facilitates EMC-sealed mounting of the backplane on the subracks. With VME64x, RF linking of the subracks and system earth is achieved via capacitors (10nF, 200 V at each slot). Static charges are discharged via a resistor (≥ 1 MΩ). A combined connection component (screw M4 and Faston 2.8 or 6.3 x 0.8 mm) is provided for connection of the enclosure earth.



Power connections
Infeed of the main operating voltage +5 V/+3.3 V and GND is provided via busbars with M6 screw terminal. The auxiliary operating voltages are supplied via double Fastons with additional M4 screw thread. Optimum supply of the daughterboards and hence problem-free operation is ensured, thanks to the arrangement of the infeed modules on the backplane.

Utility connector
The special signals to the power pack and to external LEDs are routed on a separate connector on the backplanes.

A 7-pole, a 10-pole or a 14-pole connector with 2.54 mm spacing is provided, depending on the backplane type.

Pin assignment, 10/14 pins

GND	1	2	GND sense (5 V)
+5 V	3	4	+5 V sense
ACFAIL-	5	6	ACFAIL-
SYSFAIL-	7	8	SYSFAIL-
SYSRESET-	9	10	SYSRESET-
+3.3 V	11	12	+3.3 V sense
GND	13	14	GND sense (3.3 V)

J1, J1/J2: 10 pins, VME64x: 14 pins

Geographical address pin assignments (VME64x)

Slot no.	GAP Pin J1-D9	GA4 Pin J1-D17	GA3 Pin J1-D15	GA2 Pin J1-D13	GA1 Pin J1-D11	GA0 Pin J1-D10
1	Open	Open	Open	Open	Open	GND
2	Open	Open	Open	Open	GND	Open
3	GND	Open	Open	Open	GND	GND
4	Open	Open	Open	GND	Open	Open
5	GND	Open	Open	GND	Open	GND
6	GND	Open	Open	GND	GND	Open
7	Open	Open	Open	GND	GND	GND
8	Open	Open	GND	Open	Open	Open
9	GND	Open	GND	Open	Open	GND
10	GND	Open	GND	Open	GND	Open
11	Open	Open	GND	Open	GND	GND
12	GND	Open	GND	GND	Open	Open
13	Open	Open	GND	GND	Open	GND
14	Open	Open	GND	GND	GND	Open
15	GND	Open	GND	GND	GND	GND
16	Open	GND	Open	Open	Open	Open
17	GND	GND	Open	Open	Open	GND
18	GND	GND	Open	Open	GND	Open
19	Open	GND	Open	Open	GND	GND
20	GND	GND	Open	GND	Open	Open
21	Open	GND	Open	GND	Open	GND

Pin assignments J0

Pin no.	ROW Z	ROW A	ROW B	ROW C	ROW D	ROW E	ROW F
1 – 19	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND





Backplanes VME64x

Technical specifications:

Number of layers	10
Layer structure	Optimised for optimum RF performance. Outer layers designed as shielding surface.
PCB thickness	4.5 mm ± 10 %
Ohmic resistance of the signal tracks	< 1 Ohm
Surge impedance Z of the signal tracks	55 Ohm
Basic power consumption, terminated at both ends	Active: < 200 mA, Passive: < 2 A
Power supply: – Busbar with M6 screw terminal – M4 screw terminal and FASTON 6.3 x 0.8 mm – < 5 slots	+5 V, +3.3 V and 0 V ±12 V, +5 V STBY, ±V1, ±V2 and case FASTON 6.3 x 0.8 mm
Current carrying capacity of busbar	max. 200 A
Current carrying capacity of a combined double flat-pin connector/screw terminal	25 A
Current carrying capacity of a FASTON flat connector	10 A
Current carrying capacity of the assembly, per slot	+3.3 V 12.5 A +5 V 9.0 A +12 V 1.5 A –12 V 1.5 A +5 VSTDBY 1.5 A +48 V (38 – 75 V) 3.0 A
Termination ON-/IN-board	6 U: active, 6.5 U: active (passive/changeover)
Installation height	6 U/6.5 U
Distance between slots	4 HP
Connectors	Press-fit technique quality class 2, 400 connection cycles 160 pins compatible with C96 P0 spacing 2 mm, 95/133 pins
Operating temperature range	Active termination 0° . . . +70°C Passive termination –40° . . . +85°C
Relative humidity	90 %, non-condensing

VME64x 6 U

Slot	Dimensions		Model No. RP	
	Height mm	Width mm	without P0 connector	with P0 connector
2	261.7	39.5	**9912.423**	**9912.410**
3	261.7	59.5	**9912.424**	**9912.411**
4	261.7	80	**9912.425**	**9912.362**
5	261.7	100	**3687.608**	**3687.609**
6	261.7	120.5	**9912.426**	**9912.412**
7	261.7	141	**3687.610**	**3687.611**
8	261.7	161.5	**9912.427**	**9912.413**
9	261.7	181.5	**9904.930**	**9904.932**
10	261.7	202	**9904.931**	**9904.933**
11	261.7	222.5	**9912.428**	**9912.414**

Slot	Dimensions		Model No. RP	
	Height mm	Width mm	without P0 connector	with P0 connector
12	261.7	242.5	**3686.634**	**3686.473**
13	261.7	263	**9912.429**	**9912.415**
14	261.7	283	**9912.430**	**9912.416**
15	261.7	303.5	**9912.431**	**9912.417**
16	261.7	324	**9912.432**	**9912.418**
17	261.7	344	**9912.433**	**9912.419**
18	261.7	364.5	**9912.434**	**9912.420**
19	261.7	385	**9912.435**	**9912.421**
20	261.7	405	**9912.436**	**9912.422**
21	261,7	425.5	**3686.635**	**3686.474**

VME64x 6.5 U

Slot	Dimensions		Model No. RP	
	Height mm	Width mm	without P0 connector	with P0 connector
5	283.7	100	**9910.012**	**9910.007**
7	283.7	141	**9910.013**	**9910.008**
9	283.7	181.5	**9910.014**	**9910.009**
10	283.7	202	**9904.928**	**9904.929**
12	283.7	242.5	**9910.015**	**9910.010**
21	283.7	425.5	**9910.016**	**9910.011**

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

Accessories:

For backplane mounting:
Conductive strips, see page 571.
Insulating strips, see page 571.



Backplanes VME J1/J2 Monolithic

Technical specifications:

Number of layers	6
Layer structure	Optimised for optimum RF performance. Outer layers designed as shielding surface.
PCB thickness	3.2 mm ±10 %
Ohmic resistance of the signal tracks	< 1 Ohm
Surge impedance Z of the signal tracks	60 Ohm
Basic power consumption, terminated at both ends	Active: < 200 mA Passive: < 1.5 A
Power supply: – Busbar with screw terminal M6 – Screw terminal M4 and FASTON 6.3 x 0.8 mm – < 5 slots	 +5 V and 0 V ±12 V, +5 V STBY and case FASTON 6.3 x 0.8 mm
Current carrying capacity of busbar	max. 200 A
Current carrying capacity of a combined double flat-pin connector/screw terminal	25 A
Current carrying capacity of a FASTON flat connector	10 A
Current carrying capacity of the assembly, per slot	+5 V 9.0 A +12 V 1.5 A –12 V 1.5 A +5 VSTDBY 1.5 A
Termination ON-/IN-board	active (may be switched to passive)
Installation height	6 U
Distance between slots	4 HP
Connectors	Press-fit technique quality class 2, 400 connection cycles C96
Operating temperature range	Active termination 0° . . . +70°C Passive termination –40° . . . +85°C
Relative humidity	90 %, non-condensing

Slot	Dimensions		Model No. RP
	Height mm	Width mm	
2	261.7	39.5	**3686.495**
3	261.7	59.5	**3686.496**
4	261.7	80	**3686.497**
5	261.7	100	**3686.498**
6	261.7	120.5	**3686.499**
7	261.7	141	**3686.500**
8	261.7	161.5	**3686.501**
9	261.7	181.5	**3686.502**
10	261.7	202	**3686.503**
11	261.7	222.5	**3686.504**
12	261,7	242.5	**3686.505**
13	261.7	263	**3686.506**
14	261.7	283	**3686.507**
15	261.7	303.5	**3686.508**
16	261.7	324	**3686.509**
17	261.7	344	**3686.510**
18	261.7	364.5	**3686.511**
19	261.7	385	**3686.512**
20	261.7	405	**3686.513**
21	261.7	425.5	**3686.514**

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

Accessories:

For backplane mounting:
Conductive strips, see page 571.
Insulating strips, see page 571.

Backplanes



VME J1 system bus

Technical specifications:

	VME J1	VME J2
Number of layers	6	2
Layer structure	Optimised for optimum RF performance. Outer layers designed as shielding surface.	
PCB thickness	3.2 mm ±10 %	3.2 mm ±10 %
Ohmic resistance of the signal tracks	< 1 Ohm	< 1 Ohm
Surge impedance Z of the signal tracks	60 Ohm	60 Ohm
Basic power consumption, terminated at both ends	Active: < 150 mA Passive: < 1.2 A	Passive: < 0.6 A
Power supply: – M4 screw terminal and FASTON 6.3 x 0.8 mm – < 5 slots	+5 V, 0 V, ±12 V, ±5 V STBY and case FASTON 6.3 x 0.8 mm	x FASTON 6.3 x 0.8 mm
Current carrying capacity of a combined double flat-pin connector/ screw terminal	25 A	25 A
Current carrying capacity of a FASTON flat connector	10 A	10 A
Current carrying capacity of the assembly, per slot	+5 V 4.5 A +12 V 1.5 A –12 V 1.5 A +5 VSTDBY 1.5 A	+5 V 4.5 A
Termination ON-/IN-board	active/passive (changeover)	active/passive (changeover)
Installation height	3 U	3 U
Distance between slots	4 HP	4 HP
Connectors	Press-fit technique quality class 2, 400 connection cycles C96	Press-fit technique quality class 2, 400 connection cycles C96
Operating temperature range	Active termination 0° . . . +70°C Passive termination –40° . . . +85°C	Passive termination –40° . . . +85°C
Relative humidity	90 %, non-condensing	90 %, non-condensing

Slot	Dimensions		Model No. RP
	Height mm	Width mm	
3	128.4	59.5	**3686.555**
4	128.4	80	**3686.556**
5	128.4	100	**3686.557**
6	128.4	120.5	**3686.558**
7	128.4	141	**3686.559**
8	128.4	161.5	**3686.560**
9	128.4	181.5	**3686.561**
10	128.4	202	**3686.562**

Slot	Dimensions		Model No. RP
	Height mm	Width mm	
12	128.4	242.5	**3686.563**
13	128.4	263	**3686.564**
14	128.4	283	**3686.565**
15	128.4	303.5	**3686.566**
18	128.4	364.5	**3686.567**
20	128.4	405	**3686.568**
21	128.4	425.5	**3686.569**

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

Accessories:

For backplane mounting:
Conductive strips, see page 571.
Insulating strips, see page 571.



VME J2 expansion bus

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

Accessories:

For backplane mounting:
Conductive strips, see page 571.
Insulating strips, see page 571.

Slot	Dimensions		Model No. RP
	Height mm	Width mm	
3	128.4	59.5	**3686.585**
4	128.4	80	**3686.586**
5	128.4	100	**3686.587**
6	128.4	120.5	**3686.588**
7	128.4	141	**3686.589**
8	128.4	161.5	**3686.590**
9	128.4	181.5	**3686.591**
10	128.4	202	**3686.592**

Slot	Dimensions		Model No. RP
	Height mm	Width mm	
12	128.4	242.5	**3686.593**
13	128.4	263	**3686.594**
14	128.4	283	**3686.595**
15	128.4	303.5	**3686.596**
18	128.4	364.5	**3686.597**
20	128.4	405	**3686.598**
21	128.4	425.5	**3686.599**



Mains switch

- Rocker switch 6 A/250 V, 2-pole, FASTON connections, (4.7 x 0.8 mm)
- VDE, UL, CSA, TÜV, SEMKO, DEMCO, SEV, NEMKO, SETI, BEAB approvals
- Insulation resistance: > 10 MΩ
- Test voltage: 1 kV
- Front panel: 21 x 15 mm
- Cut-out: 19.2 x 12.9 mm
- Installation depth: 17 mm

Max. current	Packs of	**Model No. RP**
6 A	1	**3687.711**

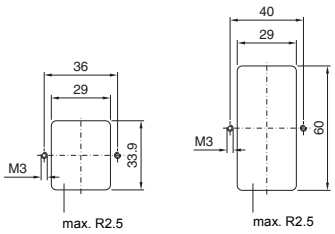


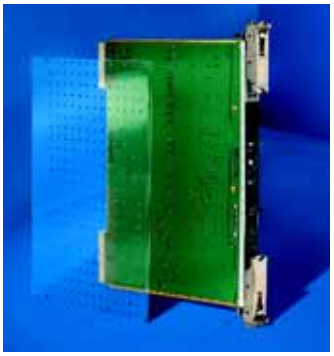
Filtered IEC mains inlet

for mains input
Combination module consisting of an IEC 320 socket to IEC 60 320 and IEC 60 950 with line filter and 5 x 20 mm G fuse holder.

Technical specifications:
Metal enclosure for screw mounting
Mains input: via IEC 320 socket
Mains output: via 3 FASTON contacts (L, N, PE, 6.3 x 0.8)
Variants available with or without switch
Temperature range: –25°C to +85°C

	Model No. RP	
	with switch	without switch
	3687.709	**3687.710**
Mains voltage max.	250 V AC	250 V AC
Leakage current	2 x 0.32 mA	ð 500 µA
Max. current	6 A	6 A
Mounting holes	40 mm	36 mm
Installation depth	90 mm	56 mm
Cut-out	60 x 29 mm	33.9 x 29 mm
Approvals	VDE, SEMKO, SEV, UL, CSA	VDE

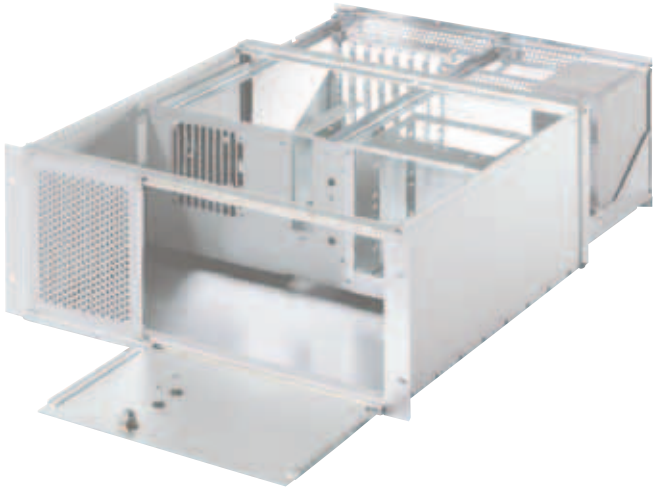




Plastic covers

for PCBs,
see page 597.

Features



We offer an extensive range of products for industrial PCs to the ATX standard, from 482.6 mm (19″) rack-mount version in 4 U, through to solutions for direct mounting on mounting plates.

Shown opposite is an aluminium version with pull-out inner housing and integrated electronics for automatic restart following a mains failure.



ATX Ripac, aluminium



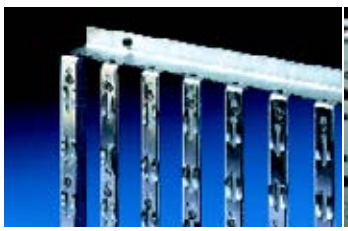
The top-of-the-range model with outstanding maintenance-friendliness: The inner housing can be pulled out like a drawer.



Enclosure body of clear-chromated aluminium, conductive.



Horizontally hinged, lockable front panel offers rapid access to drives and control components, as well as protecting against unauthorised access.



EMC gaskets – for unused slot covers – and conductive attachment of the motherboard.



Option of externally mounting 3 x $5^1/_4$″ and 1 x $3^1/_2$″ drives for internal installation. Drive covers (accessory) for unused positions.



Integral electronics for automatic restart following a mains failure.

Features



ATX 4 U, sheet steel



Lockable front panel protects against unauthorised access.



Slide rail mounting with no loss of height, due to reduced side panel height.



Unpainted contact points ensure reliable contact.



AT/ATX (Vario) Economy with front door



ATX Economy: Fully assembled and prewired.
AT/ATX Vario Economy: The basic case for individual installation and self-assembly.



Enclosure made from sheet steel zinc-plated/spray-finished, for demanding requirements in terms of stability and safety.



Easy removal of the drive module for external population.



ATX with front connections



As a 482.6 mm (19″) version for mounting in the enclosure, or for mounting directly onto the **mounting plate.**

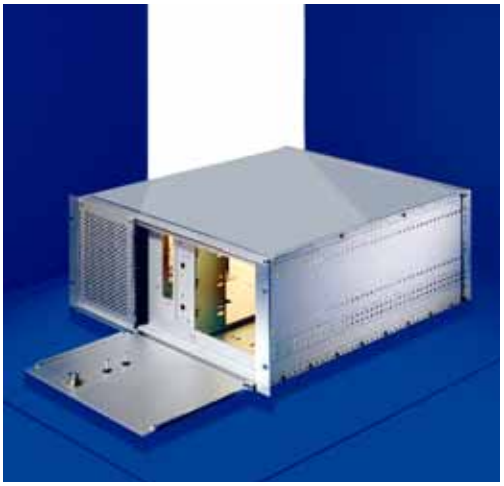


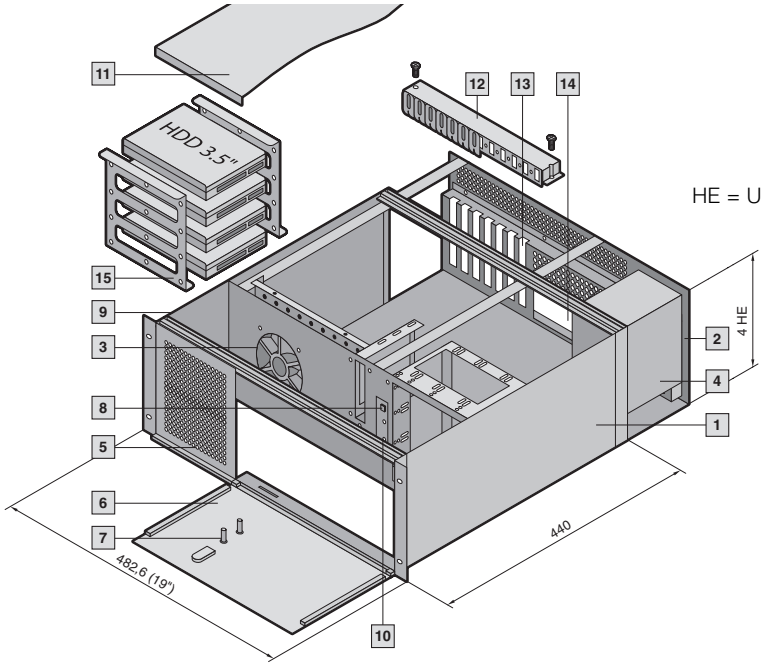
I/O connections at the front guarantee access from the front and flexibility, e.g. with minimal space available for connections to other systems.



Rear panel with cut-out for PS/2 power pack.

ATX Ripac 4 U, aluminium





Technical specifications:
482.6 mm (19″) rack-mount system for the installation of ATX/ Mini-ATX or Micro-ATX boards and 3 x 5¼″ and 1 x 3½″ drives.
Width: 482.6 mm (19″)
Height: 4 U (177.0 mm)
Total depth: 440 mm
EMC prepared.

Material/surface finish:
Side panels, front panels: Aluminium, clear-chromated
Covers:
1.0 mm aluminium, clear-chromated
PC internal cassette:
Sheet steel, zinc-plated, passivated

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01

Special designs available on request.

Supply includes:

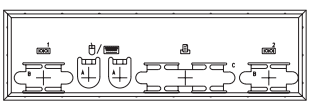
1 Rack-mount system 4 U, including drive holder
2 PC cassette
3 1 fan 120 mm with filter
4 ATX power pack 300 W (Technical specifications, see RP 3688.129, page 545)
5 Front door, horizontally hinged
6 Front door, horizontally hinged, lockable
7 LED displays
8 Reset button
9 EMC gaskets, all round
10 ON/OFF switch with electronics for automatic restart following a mains failure (activation/deactivation of the electronics via jumper)
11 Cover

	Packs of		Page
U		**4**	
Width mm		482.6 (19″)	
Height mm		177.0	
Depth mm		440.0	
Model No. RP basic system fully assembled	1	**3659.000**	
Accessories			
12 Card retainer	7	3659.010	539
Mounting bar for card retainer	1	3659.090	539
13 Unused slot cover	5	3659.030	538
Cover for 5¼″ drive space	1	3659.050	538
15 Drive support	1 set	3659.060	538
Spare filter mat	1	**3659.070**	–
Uninterruptible power supply Output: 300 VA/180 W	1	3659.080	544
14 **ATX I/O covers, sheet steel**[1)]			
Type “Aurora Marl”	1	**3659.040**	–
Type “Tucson”/“Venus”	1	**3659.130**	–
Type “Providence”	1	**3659.140**	–

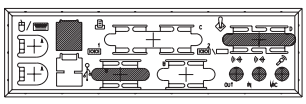
[1)] Other versions available on request; please specify the type of mainboard.

ATX I/O covers:

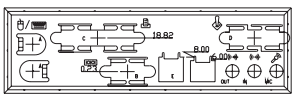
Type “Aurora Marl”



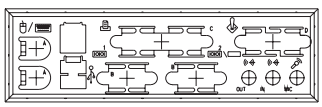
Type “Venus”



Type “Providence”



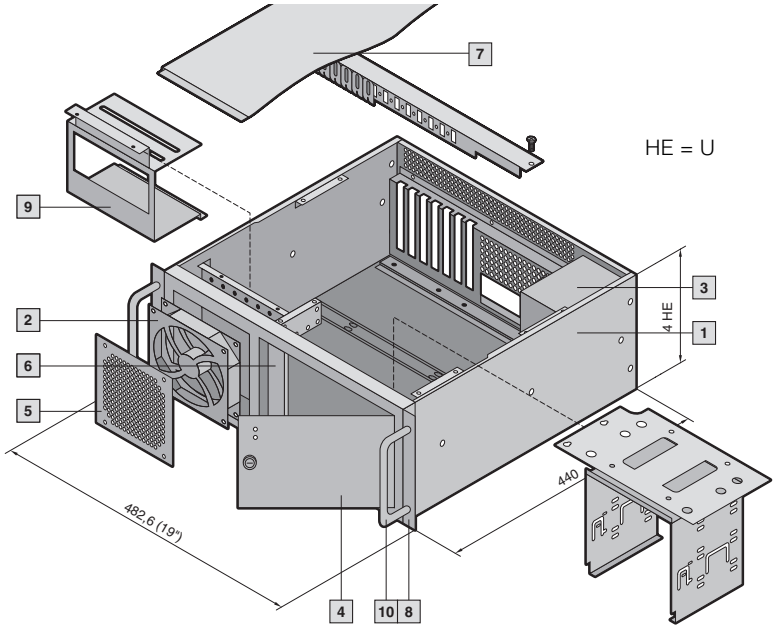
Type “Tucson”



Accessories Page 538 **Keyboard rack 482.6 mm (19″)** Page 1141 **TFT display 15″** Page 1141

ATX 4 U, sheet steel





Technical specifications:
482.6 mm (19″) rack-mount system for the installation of ATX/ Mini-ATX or Micro-ATX boards and 3 x 5¼″ and 1 x 3½″ drives.
Width: 482.6 mm (19″)
Height: 4 U (177.0 mm)
Side panels: 174.0 mm
Total depth: 442.5 mm
Suitable for mounting on slide rails.

Material/surface finish:
Case, covers, front panels: 1.2 mm sheet steel, spray-finished in RAL 7035, unpainted contact points

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01

Special designs available on request.

Supply includes:

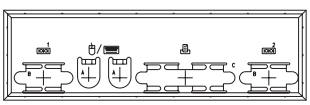
1 Rack-mount system 4 U, including drive holder
2 1 x 120 mm fan and filter mat, exchangeable from the front
3 ATX power pack 300 W (Technical specifications, see RP 3688.129, page 545)
4 Front door, vertically hinged, lockable
5 Front panel with ventilation holes and filter mat
6 LED displays, speakers, Reset switch, on/off switch
7 Cover
8 Two 482.6 mm (19″) flanges
9 Drive holder for 4 x 3½″ hard drives

	Packs of		Page
U		**4**	
Width mm		482.6 (19″)	
Height of flanges/side panels, mm		177.0/174.0	
Depth mm		442.5/440.0	
Model No. RP basic system fully assembled	1	**3659.900**	
Accessories			
Card retainer	7	3659.010	539
Mounting bar for card retainer	1	3659.090	539
Unused slot cover	5	3659.030	538
Cover for 5¼″ drive space	1	3659.110	538
Cover for 3½″ drive space	1	3659.410	538
Uninterruptible power supply	1	3659.080	544
Telescopic slides for 600 mm enclosure depth	1 set	3659.180	538
Telescopic slides for 800 mm enclosure depth	1 set	3659.190	538
10 Front handles for ATX 4 U	2	3659.240	538
ATX I/O covers, sheet steel[1)]			
Type “Aurora Marl”	1	**3659.040**	–
Type “Tucson”/“Venus”	1	**3659.130**	–
Type “Providence”	1	**3659.140**	–

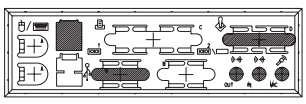
[1)] Other versions available on request; please specify the type of mainboard.

ATX I/O covers:

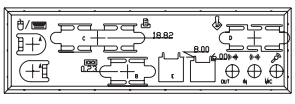
Type “Aurora Marl”



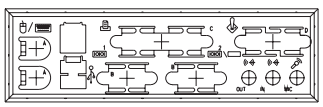
Type “Venus”



Type “Providence”

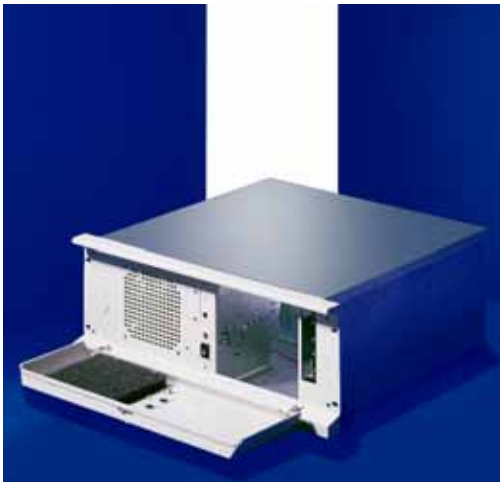


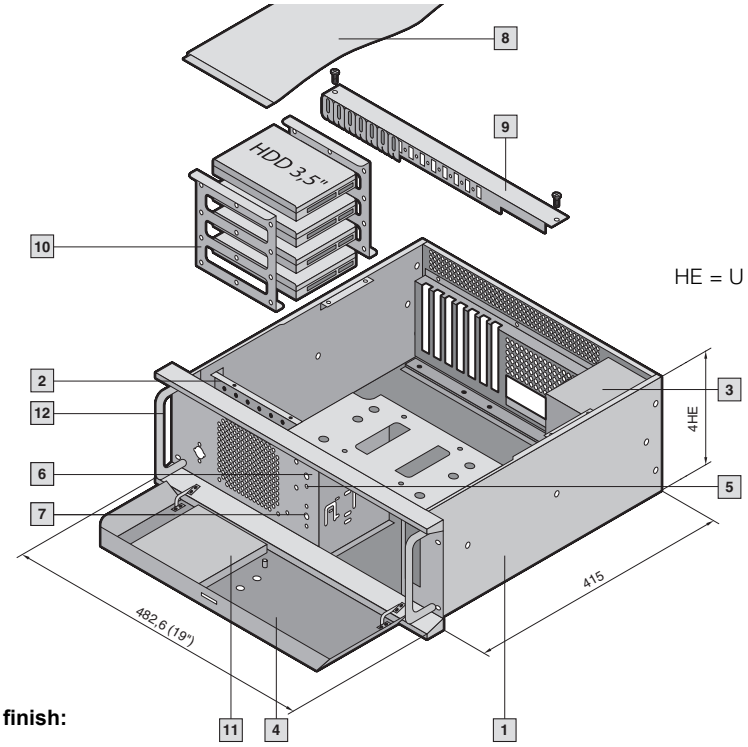
Type “Tucson”



Accessories Page 538 **Keyboard rack 482.6 mm (19″)** Page 1141 **TFT display 15″** Page 1141

ATX Economy with front door, 4 U, sheet steel





Technical specifications:
482.6 mm (19″) rack-mount system for the installation of ATX/ Mini-ATX or Micro-ATX boards and 3 x 5¼″ and 1 x 3½″ drives.
Width: 482.6 mm (19″)
Height: 4 U (177.0 mm)
Total depth: 430 mm
EMC prepared.

Material/surface finish:
Case, cover:
1.2 mm sheet steel, zinc-plated, passivated
Front door: 1.2 mm sheet steel, spray-finished in RAL 7035, unpainted contact points

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01

Special designs available on request.

Supply includes:

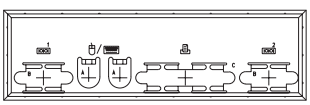
1 Rack-mount system 4 U, including drive holder
2 1 x 120 mm fans and filter mat
3 ATX power pack 300 W (Technical specifications, see RP 3688.121, page 545)
4 Front door, horizontally hinged, lockable
5 LED displays, speakers
6 Reset button
7 On/off switch
8 Cover

	Packs of		Page
U		**4**	
Width mm		482.6 (19″)	
Height of flanges/side panels, mm		177.0/174.0	
Depth mm		430.0/415.0	
Model No. RP basic system fully assembled	1	**3659.100**	
Accessories			
9 Card retainer	7	3659.010	539
Mounting bar for card retainer	1	3659.090	539
Unused slot cover	5	3659.030	538
Cover for 5¼″ drive space	1	3659.110	538
Cover for 3½″ drive space	1	3659.410	538
10 Drive holder	1 set	3659.230	538
11 Spare filter mat	1	**3659.120**	–
Uninterruptible power supply	1	3659.080	544
Telescopic slides for 600 mm enclosure depth	1 set	3659.180	538
Telescopic slides for 800 mm enclosure depth	1 set	3659.190	538
12 Front handles for ATX 4 U	2	3659.240	538
ATX I/O covers, sheet steel[1]			
Type “Aurora Marl”	1	**3659.040**	–
Type “Tucson”/“Venus”	1	**3659.130**	–
Type “Providence”	1	**3659.140**	–

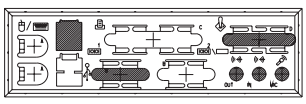
[1] Other versions available on request; please specify the type of mainboard.

ATX I/O covers:

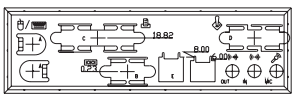
Type “Aurora Marl”



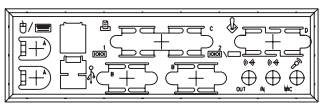
Type “Venus”



Type “Providence”

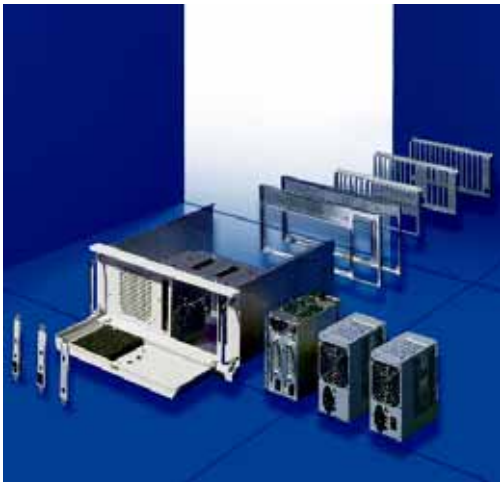


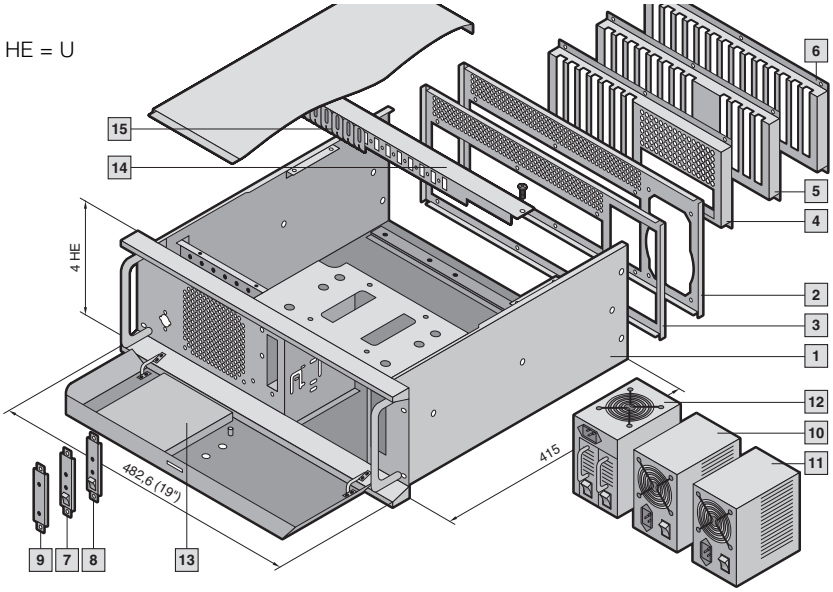
Type “Tucson”



Accessories Page 538 **Keyboard rack 482.6 mm (19″)** Page 1141 **TFT display 15″** Page 1141

Modular system AT/ATX Vario Economy with front door, 4 U, sheet steel





The modular principle of AT/ATX Vario Economy allows installation to accommodate individual requirements. The basic case may be fitted for both AT and ATX applications with the appropriate selection of rear panels, power packs and front trim panels. For self-assembly, or on request fully assembled and wired.

Technical specifications:
482.6 mm (19″) rack-mount system for the installation of ATX/ Mini-ATX. Micro-ATX or Baby AT boards and 3 x 5¼″ and 1 x 3½″ drives.
Width: 482.6 mm (19″)
Height: 4 U (177.0/174.0 mm)
Total depth: 430 mm

Material/surface finish:
Case, cover:
1.2 mm sheet steel, zinc-plated, passivated
Front door: 1.2 mm sheet steel, spray-finished in RAL 7035, unpainted contact points

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01

Special designs available on request.

Basic enclosure supply includes:

1 Case 4 U, 430 mm deep including assembly parts, covers, drive holder, fan, horizontally hinged front door, and air filter.

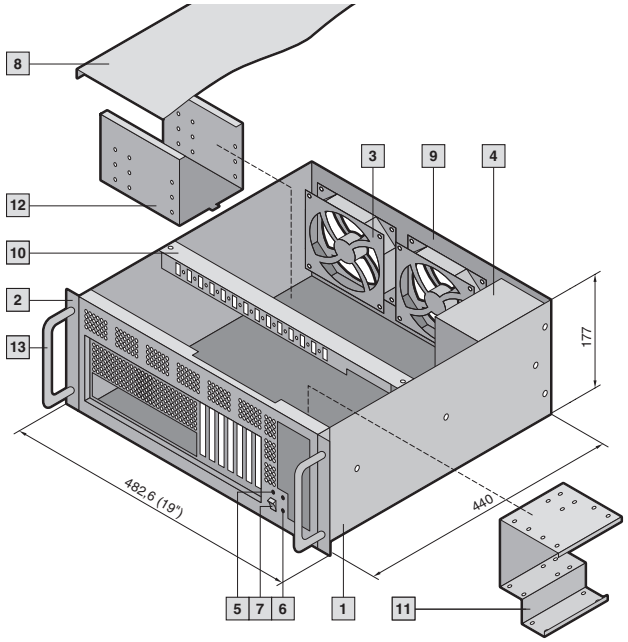
Note:
Rear panel, front trim panel and power pack should be ordered separately (for self-assembly).

	Packs of							Page
U		4						
		Installation for AT/ATX power pack (PS/2)			Installation for redundant power pack (PS/2)			
		ATX	AT 8 + 4 slots	AT 14 slots	ATX	AT 8 + 4 slots	AT 14 slots	
Model No. RP basic enclosure fitted	1	**3659.400**						
Installation, rear								
2 Rear panel for AT/ATX power pack	1	3659.290	3659.290	3659.290	–	–	–	539
3 Rear panel for redundant power pack	1	–	–	–	3659.310	3659.310	3659.310	539
4 Slotted rear panel for ATX 7 slots	1	3659.320	–	–	3659.320	–	–	539
5 Slotted rear panel 8 + 4 slots for AT	1	–	3659.330	–	–	3659.330	–	539
6 Slotted rear panel 14 slots for AT	1	–	–	3659.340	–	–	3659.340	539
Installation, front								
7 Front trim panel ATX with 2 x LED, reset switch	1	3659.350	–	–	3659.350	–	–	539
8 Front trim panel AT with 2 x LED, reset switch	1	–	3659.360	3659.360	–	3659.360	3659.360	539
9 Front trim panel ATX with automatic restart, 2 x LED, reset, Power On switch	1	3659.370	–	–	3659.370	–	–	539
Power packs								
10 ATX power pack 300 W, PFC passive	1	3688.121	–	–	–	–	–	545
ATX power pack 300 W, PFC active	1	3688.129	–	–	–	–	–	545
ATX power pack 400 W, PFC active	1	3688.128	–	–	–	–	–	545
11 AT power pack 300 W, PFC passive	1	–	3688.118	3688.118	–	–	–	545
12 Redundant power pack (PS/2), 2 x 300 W	1	–	–	–	3688.123	–	–	546
Fan 12 V DC, 60 mm, for the rear panel	2	3659.250	3659.250	3659.250	3659.250	3659.250	3659.250	539
13 Spare filter mat	1	**3659.120**	**3659.120**	**3659.120**	**3659.120**	**3659.120**	**3659.120**	–
Accessories								
14 Mounting bar for card retainer	1	3659.090	3659.090	3659.090	3659.090	3659.090	3659.090	539
15 Card retainer	7	3659.010	3659.010	3659.010	3659.010	3659.010	3659.010	539

Accessories Page 538 **Keyboard rack 482.6 mm (19″)** Page 1141 **TFT display 15″** Page 1141

ATX with front connections for 482.6 mm (19″) installation, 4 U





Technical specifications:
482.6 mm (19″) rack-mount system for the installation of ATX/ Mini-ATX or Micro-ATX boards and 1 x 5¼″ and 1 x 3½″ drives.
Width: 482.6 mm (19″)
Height: 4 U
Flanges: 177.0 mm
Side panels: 174.0 mm
Total depth: 442.5 mm
Connections for I/Os, front
EMC prepared.
Suitable for mounting on slide rails.

Material/surface finish:
Case, covers:
1.2 mm sheet steel, spray-finished in RAL 7035, unpainted contact points

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01

Special designs available on request.

Supply includes:

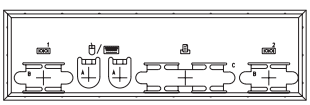
1 Rack-mount system 4 U, including drive holder
2 19″ flanges
3 2 x 120 mm fans
4 ATX power pack 300 W (Technical specifications, see RP 3688.129, page 545)
5 LED displays
6 Reset button
7 On/off switch
8 Cover
9 Rear panel with cutout and connection for power pack
10 Mounting bar for card retainer
11 Drive holder for 1 x 5¼″ and 1 x 3½″
12 Drive holder for 3 x 3½″ hard drives

	Packs of		Page
U		**4**	
Width mm		482.6 mm (19″)	
Height of flanges/side panels, mm		177.0/174.0	
Depth mm		442.5/440.0	
Model No. RP basic system fully assembled	1	**3659.700**	
Accessories			
Card retainer	7	3659.010	539
Unused slot cover	5	3659.030	538
Cover for 5¼″ drive space	1	3659.110	538
Cover for 3½″ drive space	1	3659.410	538
Telescopic slides for 600 mm enclosure depth	1 set	3659.180	538
Telescopic slides for 800 mm enclosure depth	1 set	3659.190	538
13 Front handles for ATX 4 U	2	3659.240	538
ATX I/O covers, sheet steel[1]			
Type “Aurora Marl”	1	**3659.040**	–
Type “Tucson”/“Venus”	1	**3659.130**	–
Type “Providence”	1	**3659.140**	–

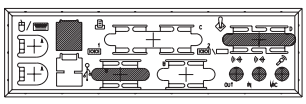
[1] Other versions available on request; please specify the type of mainboard.

ATX I/O covers:

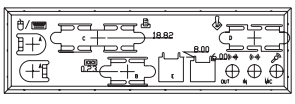
Type “Aurora Marl”



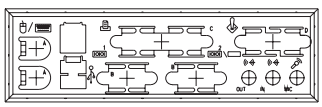
Type “Venus”



Type “Providence”



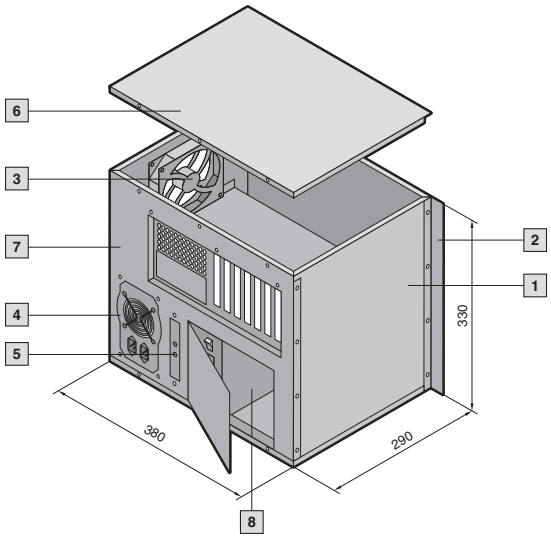
Type “Tucson”



Accessories Page 538 **Keyboard rack 482.6 mm (19″)** Page 1141 **TFT display 15″** Page 1141

ATX with front connections for wall mounting





Technical specifications:
System for the installation of ATX/Mini-ATX or Micro-ATX boards and 3 x 5¼″ and 1 x 3½″ drives, vertical.
Width: 380 mm
Height: 330 mm
Total depth: 292.5 mm
Connections for I/Os, front
EMC prepared.
Suitable for mounting on mounting plates.

Material/surface finish:
Case, covers:
1.2 mm sheet steel, zinc-plated, passivated, unpainted, unpainted contact points

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01

Special designs available on request.

Supply includes:

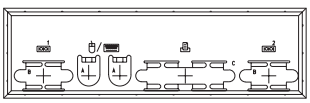
1 Rack-mount system, including drive holder
2 Flanges for wall mounting
3 1 x 120 mm fan
4 ATX power pack 300 W (Technical specifications, see RP 3688.129, page 545)
5 LED displays
6 Cover
7 Front panel
8 Drive holder for 3 x 5¼″ and 1 x 3½″

	Packs of		Page
Width mm		380.0	
Height mm		330.0	
Depth mm		292.5/290.0	
Model No. RP basic system fully assembled	1	**3659.710**	
Accessories			
Unused slot cover	5	3659.030	538
Cover for 5¼″ drive space	1	3659.110	538
Cover for 3½″ drive space	1	3659.410	538
Uninterruptible power supply	1	3659.080	544
ATX I/O covers, sheet steel[1)]			
Type “Aurora Marl”	1	**3659.040**	–
Type “Tucson”/“Venus”	1	**3659.130**	–
Type “Providence”	1	**3659.140**	–

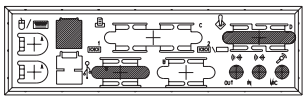
[1)] Other versions available on request; please specify the type of mainboard.

ATX I/O covers:

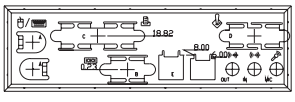
Type “Aurora Marl”



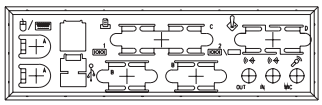
Type “Venus”



Type “Providence”

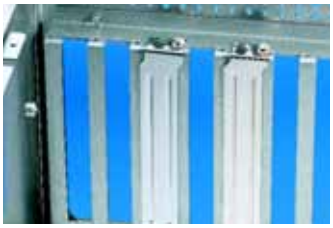


Type “Tucson”



Accessories Page 538 **Keyboard rack 482.6 mm (19″)** Page 1141 **TFT display 15″** Page 1141

Accessories



Unused slot cover

Screw-on cover to conceal slot cut-outs which are not required.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. RP
5	**3659.030**



Cover for drives

To conceal the 3 1/2″ or 5 1/4″ drive slots.

Material:
Sheet steel, zinc-plated/spray-finished in RAL 7035

Supply includes:
Assembly parts.

Design	Packs of	Model No. RP
3 1/2″	1	**3659.410**
5 1/4″	1	**3659.110**

For ATX Ripac

Design	Packs of	Model No. RP
5 1/4″	1	**3659.050**



Telescopic slides

Facilitate optimum accessibility to the units, even when built-in.
For up to a maximum enclosure width of 426 mm.

Load capacity:
30 kg

Material:
Sheet steel

Supply includes:
1 set = 2 telescopic slides,
installation kit,
assembly parts.

For enclosure depth mm	Maximum extension mm	Model No. RP
600	511.2	**3659.180**
800	596.4	**3659.190**

Note:
May only be fitted in conjunction with L-shaped 482.6 mm (19″) sections!



Front handles

The handles are fitted onto the 482.6 mm (19″) flange. They allow easy withdrawal of the cases from the enclosure.

Material:
Sheet steel, plated

Supply includes:
Assembly parts.

For enclosure height (U)	Packs of	Model No. RP
1	2	**3659.540**
2	2	**3659.020**
4	2	**3659.240**



Drive holder

The drive holder will accommodate a maximum of 4 additional 3 1/2″ hard disks. They are mounted inside the enclosure behind the fan.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For system	Packs of	Model No. RP
ATX Economy	1 set	**3659.230**
Ripac ATX	1 set	**3659.060**

Accessories



Card retainer

For secure attachment and stabilisation of slot cards up to 327 mm depth. The card retainers are height-adjustable so that even cards of different heights may be securely attached.
A mounting bar is needed to fit the card retainer (already included with ATX Ripac).

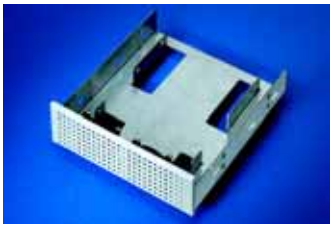
Material:
Card retainer: Plastic
Mounting bar: Sheet steel, zinc-plated, passivated

Card retainer

Packs of	Model No. RP
7	**3659.010**

Mounting bar

Packs of	Model No. RP
1	**3659.090**



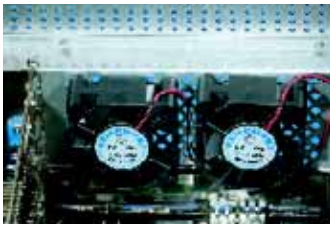
Adaptor

For the installation of $3^1/_2$″ hard disks or floppies in $5^1/_4$″ installation slots.

Material:
Sheet steel, zinc-plated
Front panel: Spray-finished in RAL 7035

Supply includes:
Assembly parts.

Design	Packs of	Model No. RP
for $3^1/_2$″ hard disk	1	**3659.270**
for $3^1/_2$″ floppy	1	**3659.280**

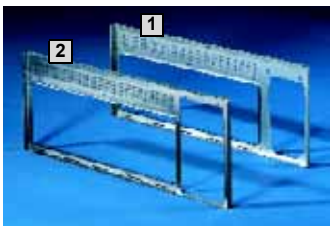


DC fan for rear panel

Fan 12 V DC, 60 mm, for mounting on the rear panel. Including two 4-pole connectors with terminal.

Supply includes:
2 fans with connection cable, including assembly parts.

Packs of	Model No. RP
2	**3659.250**



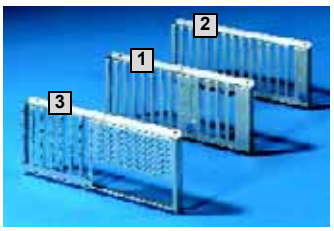
Rear panels

For the installation of AT/ATX Economy. Optionally with cut-out for AT/ATX power pack or redundant power pack.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Design	Packs of	Model No. RP
1 for AT/ATX power pack (PS/2)	1	**3659.290**
2 for redundant power pack PS/2	1	**3659.310**



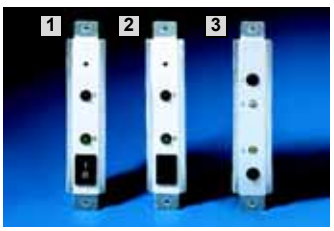
Slotted rear panels

For the installation of AT/ATX Economy. Mounted on the rear panels. Optionally for AT (8 + 4 or 14 slots) or ATX (7 slots).

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Design	Packs of	Model No. RP
1 AT 4 + 8 slots	1	**3659.330**
2 AT 14 slots	1	**3659.340**
3 ATX 7 slots	1	**3659.320**



Front trim panels

For the installation of AT/ATX Economy. Mounted in the front of the enclosure.

Optionally for:
- AT (2 x LED, reset button)
- ATX (2 x LED, reset button)
- ATX (2 x LED, reset button), electronics for automatic restart following mains failure

Design	Packs of	Model No. RP
1 AT	1	**3659.360**
2 ATX	1	**3659.350**
3 ATX (with electronics)	1	**3659.370**

Features



Rittal offers an extensive range of power supply units in various designs.

The range includes 482.6 mm (19″) compatible, Open Frame and PS/2 variants to supply DC voltage to controllers, systems and plant in many different areas.



Open Frame (VME)

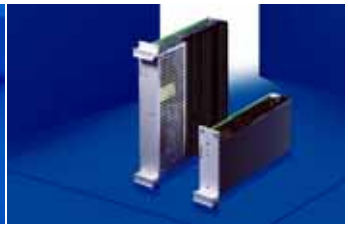


250/600/400/1000 W

Design features
- Open Frame design
- Mounting on mounting base or subrack rear panel
- Cooling via fans
- Wide range input
- Aluminium housing
- 3 outputs

User benefits
- Minimal space requirements with a high power output
- Universal applications
- Approvals: UL 1950, IEC 60 950 and CSA 22.2 No. 234

3 U, 6 U (VME)

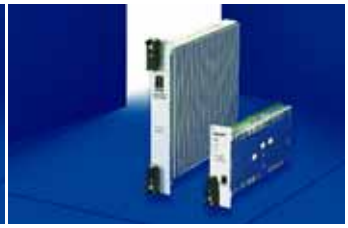


130/160 W, plug-in, integral VMEbus signalling

Design features
- 482.6 mm (19″) module to IEC 60 297-3
- Mounting in the subrack with the aid of guide rails
- Connection via connectors H15, IEC 60 603-2
- 3 outputs

User benefits
- 482.6 mm (19″) compatible
- Quick exchange
- Approvals: IEC 60 950

3 U, 6 U (CPCI)



175/200/250/350 W, plug-in

Design features
- 482.6 mm (19″) module to IEC 60 297-3
- Mounting in the subrack with the aid of guide rails
- Positronic connector 47-pole PICMG 2.11
- 4 outputs

User benefits
- 482.6 (19″) compatible
- Quick exchange
- Approvals: IEC 60 950 A1 – A4, CSA 22.2, UL 1950, CE
- PICMG specification



PS/2 (AT/ATX)



250/300/400 W
Power supplies for ATX and CPCI systems

Design features
- Open Frame design
- Mounting on a mounting plate or subrack rear panel
- Integral fan
- Sheet steel enclosure
- PFC active or passive
- Optional redundant design

User benefits
- Universal applications
- Approvals: CSA

UPS



Uninterruptible power supply unit for installation in 5¼″ vertical drive mountings. Guarantees power supply in the event of a mains failure (6 minutes).

Design features
- Installation in 1 or 2 standard 5¼″ drive holders
- Integral batteries

User benefits
- Minimal space requirements
- Approvals: CE, IEC 60 950

Redundant



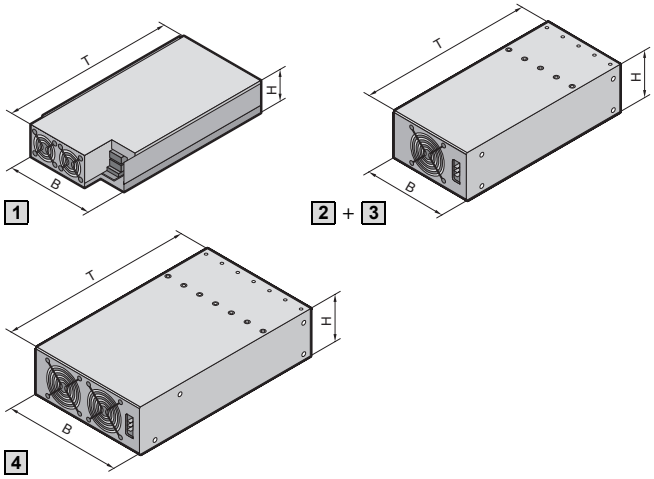
2 x 300 W power supplies for RAID or ATX.

Design features
- Hot-swap version
- PFC active

User benefits
- Universal applications
- Hot swap-compatible

Ripac power supplies – Open Frame





Note:
Power supply 1000 W:
48 V DC input on request.

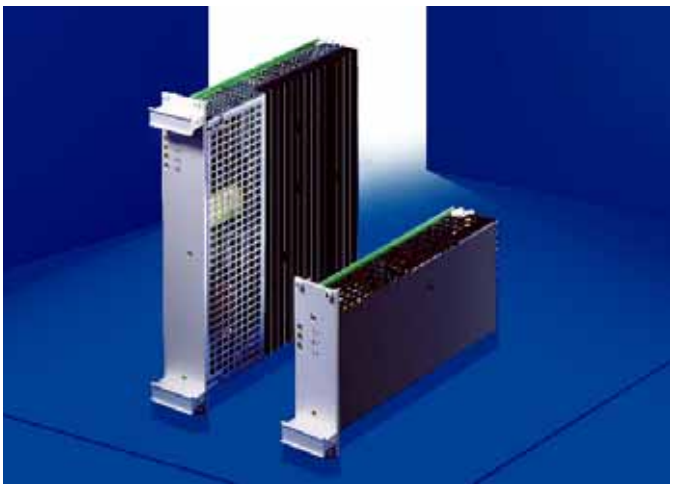
Detailed drawing,
see page 1265/1266.

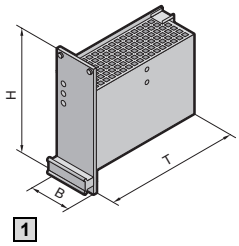
	1 250 W			2 400 W			3 600 W			4 1000 W		
Height (H) mm	49.5			63.0			63.0			63.0		
Width (B) mm	126.5			126.5			126.5			175.5		
Depth (T) mm	259.5			279.0			323.0			283.5		
Model No. RP 35 A	**3686.622**			**–**			**–**			**–**		
Model No. RP 60 A	**–**			**3686.623**			**–**			**–**		
Model No. RP 85 A	**–**			**3686.629**			**3686.624**			**–**		
Model No. RP 110 A	**–**			**–**			**–**			**3686.625**		
Output sizes												
Output	1	2	3	1	2	3	1	2	3	1	2	3
Output voltage	5 V	+12 V	–12 V	5 V	+12 V	–12 V	5 V	+12 V	–12 V	5 V	+12 V	–12 V
Output current	35 A	8 A		60 A 85 A	8 A		85 A	8 A		110 A	16 A	8 A
Maximum power output	250 W			400 W			600 W			1000 W		
Setting range of output voltage	5 – 5.5 V	9 – 15 V		2.5 – 5.7 V	5 – 16 V		± 10 %			4.5 – 5.5 V	9 – 15 V	5 – 15 V
Load compensation (load variation 0 – 100 %)	50 mV	± 3 %		< 0.5 %			< 0.5 %			< 0.5 %		
Line regulation ($U_{e\,min.} – U_{e\,max.}$)	± 50 mV or ± 3 %			< 25 mV	< 60 mV		< 25 mV	< 60 mV		< 0.5 %		
Base load	10 %	–		–			–			–		
Infeed compensation (Sense)	0.5 V	0.5 V	–	0.5 V	–		0.5 V	–		max. 0.5 V	1 V	
Residual ripple (max.)	1 %			1 %	2 %		1 %	2 %		1 %	2 %	
Temperature coefficient	0.02 %/° C			0.03 %/° C			0.03 %/° C			0.03 %/°C		
Overvoltage protection	Yes											
Overload protection[1)]	Yes			Thermal current limiting			Yes					
Overload protection, thermal	–						In case of fan failure or overtemperature					
Overload protection, electronic	–						At 132 % U_{rated} or short-circuit			Yes, each module separately		
Input variables												
Mains voltage U_e	85 – 264 V AC; 120 – 340 V DC			90 – 264 V AC						150 – 264 V AC		
Mains frequency	45 – 65 Hz			47 – 63 Hz						–		
Power factor	EN 61 000-3-2			> 0.95						–		
Startup current limitation	< 40 A (cold start)			< 50 A						–		
Efficiency (typ.)	70 %			75 %						72 %		

General specifications, see page 1265/1266.

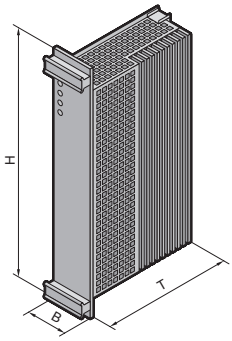
[1)] All outputs short-circuit resistant to a maximum of 30 sec.

Ripac power supplies for VME, plug-in





1



2

Connector assignment,
see page 1267.

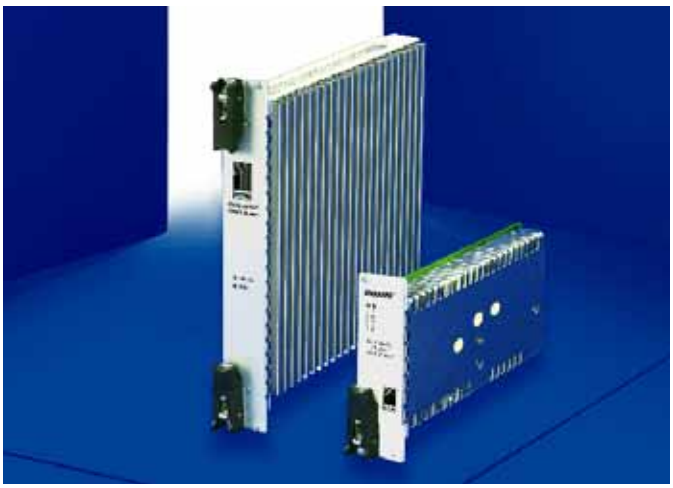
Detailed drawing,
see page 1267.

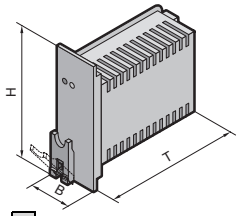
Characteristic curve diagram,
see page 1267.

	1			2		
Height (H)	3 U			6 U		
Width (B)	10 HP		12 HP	8 HP		12 HP
Depth (T) mm	170.0		170.0	170.0		170.0
Model No. RP power supply	**3686.469**		**3686.470**	**3686.471**		**3685.306**
Model No. RP front panel	**3685.304**		**3685.305**	**3686.472**		**3685.307**
Output sizes						
Output	1	2	3	1	2	3
Output voltage	5 V	+12 V	–12 V	5 V	+12 V	–12 V
Output current 3 U, 10 HP/6 U, 8 HP	14 A	5 A	2 A	20 A	5 A	2 A
Output current 3 U, 12 HP/6 U, 12 HP	20 A	5 A	2 A	35 A	6 A	2 A
Maximum power output	130 W (10 HP), 160 W (12 HP)			160 W (8 HP), 270 W (12 HP)		
Setting range of output voltage	± 5 %	–		± 5 %	–	
Load compensation (load variation 0 – 100 %)	< 0.1 %	< 1 %		< 0.1 %	< 1 %	
Line regulation ($U_{e\,min.}$ – $U_{e\,max.}$)	< 0.2 % at 99 – 138/187 – 264 V AC			< 0.2 % at 230 V AC + 15 % – 19 %		
Base load	–					
Compensation time	< 1 ms at I_a 20 – 80 %					
Infeed compensation (Sense)	± 0.25 V	–		± 0.25 V	–	
Residual ripple (max.)	< 35 mV		< 20 mV	< 45 mVss	< 30 mVss	< 15 mVss
Interference voltage	50 mV typ. (bandwidth 20 MHz)			< 80 mV typ. (bandwidth 20 MHz)		
Temperature coefficient	0.025 %/K					
Overvoltage protection (automatically recovery)	125 % + 5 %	125 % + 10 %		125 % ± 5 %	120 % ± 10 %	
Overload protection	typ. 110 % $I_{a\,rated}$, U/I characteristic curve acting on all outputs, outputs short circuit-resistant					
Overtemperature protection	Cuts out if the internal temperature is too high, cuts in again with hysteresis					
AC-FAIL, SYSRESET	TTL signals with 48 mA drive current, active low					
ON delay	< 0.5 s			–		
Ramp-up time	< 30 ms			50 ms		
Input variables						
Mains voltage U_e	AC 187 – 264 V, 50/60 Hz with automatic changeover to AC 90 – 138 V (in the range 90 – 94 V AC only 85 % rated load) or 264 – 347 V DC			AC 187 – 264 V, 50/60 Hz with automatic changeover to AC 99 – 138 V		
Mains frequency	47 – 63 Hz					
Efficiency (typ.)	80 %					
Startup current limitation	< 10 As typ. – in cold state < 15 As typ. – in warm state			< 25 As typ. – in cold state < 35 As typ. – in warm state		
Fuse	4 AT			8 AT		

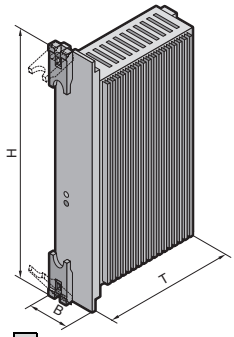
General specifications, see page 1267

Ripac power supplies for CPCI, plug-in





1



2

Connector assignment,
see page 1268.

Detailed drawing,
see page 1268.

	1												2			
Height (H)	3 U												6 U			
Width (B)	8 HP												8 HP			
Depth (T) mm	170.0												170.0			
Model No. RP AC power supply	**3688.534**				**3688.694**				**3688.695**				**3688.528**			
Model No. RP DC power supply	**3688.537**				**3688.655**				**3688.696**				**3688.530**			
Output sizes																
Output	U_1	U_2	U_3	U_4	U_1	U_2	U_3	U_4	U_1	U_2	U_3	U_4	U_1	U_2	U_3	U_4
Output voltage	5 V	3.3 V	12 V	–12 V	5 V	3.3 V	12 V	–12 V	5 V	3.3 V	12 V	–12 V	5 V	3.3 V	12 V	–12 V
Output current	25 A	20 A	5 A	0.5 A	30 A	25 A	5 A	0.5 A	33 A	33 A	6 A	1.5 A	40 A	40 A	9 A	1 A
Outpu current U_1 and U_2	30 A max.				38 A max.								80 A max.			
Maximum power output	175 W				200 W				250 W				350 W			
Base load (only U_1)	5 %	–			5 %	–			5 %	–			10 %			
Load compensation (dyn.)	< 3 % at 25 % load variation (1A/µs) 1 % after 300 µs															
Line regulation	< ± 1% (90 – 264 V AC)												< ± 1% (90 – 264 V AC) U_1, U_2, U_3			
Infeed compensation (Sense)	0.25 V	0.25 V	0.25 V	–	0.25 V	0.25 V	0.25 V	–	–	–	–	–	0.25 V	0.25 V	0.25 V	–
Residual ripple (PARD)	50 mV or 1 % (bandwidth 20 MHz)															
Temperature coefficient	< ± 0.02 %/K (0° – 50°C) after 20 min. start-up time															
Overvoltage protection	125 % ± 10 %, reset by switching on again															
Overload protection	Current limiting of all outputs, automatic return at normal load															
Overtemperature protection	At overtemperature switches off all outputs, automatic return at normal temperature															
Input variables																
Mains voltage or DC input	90 – 264 V AC, 47 – 63 Hz, 3.2 A max. 36 – 72 V DC, 7.9 A												90 – 264 V AC, 47 – 63 Hz, 7 A 40 – 72 V DC, 14 A			
Power Factor	0.99 at V AC 115 V, full load															
Starting current	15 A (115 V AC) cold start, 30 A (230 V AC) cold start															
Fuse	3.15 A, 250 V AC or 10 A, DC												10 A, 250 V AC or 20 A, DC			
Signals and control cables																
Power Fail (pin 42)	In the event of a mains failure > 4 ms before output voltages exit control range. Power fail also triggered by failure or under-voltage of V1 or V2 (3 U) or any output (6 U)															
DEG (pin 38)	In case of overtemperature												–			
Remote enable	Use logic “0” (TTL level)															
Remote inhibit	Use logic “1” (TTL level)															
LED displays, two-colour	Green: “Power ON” and output voltages present Red: Error															

General specifications, see page 1268

CPCI power supplies, uninterruptible power supply



CPCI power supply

Open Frame 400 W

- Wide-range input (90 – 253 V AC)
- Power factor to EN 61 000-3-2
- Radio interference suppressed to EN 55 022 curve B
- Immunity to interference to EN 61 000-4-2/4/5 Level 3 (formerly IEC 801-2/4/5)
- Quick installation due to “Fast On” connectors (approx. 30 sec.)
- Tested to IEC 60 950, UL 1950 and CSA 22.2 No. 234

Technical specifications:
400 W max.
3.3 V/25 A
5.0 V/25 A
12.0 V/8 A
–12.0 V/7 A

Height mm	Width mm	Depth mm	Model No. RP
126	63	279	**3687.695**



CPCI power supply

Plug-type, 180 W

- Module, 3 U, 12 HP, plug-in
- Connector M24/8/DIN 41 612
- Automatic changeover 120/230 V AC
- All outputs permanently short-circuit resistant
- SELV outputs to EN 60 950
- Overvoltage protection on the primary and secondary circuits
- Overtemperature protection
- Control inputs: ENABLE, INHIBIT
- Signal output: DERATE
- EMC standards EN 50 081-1 and EN 50 082-2
- IEC 60 950/VDE 0805-SELV, protection category I, VDE 0100

Technical specifications:
180 W max.
5.1 V/20 A
3.3 V/14 A
12.0 V/2 A
–12.0 V/1 A

Detailed data specification sheet available on request.

Height U	Width HP	Model No. RP	
		Power supply	Front panel for power supply
3	12	**3686.682**	**3685.330**

Accessories:

Female connector type M24/8,
see page 547.
Guide rails,
see page 575.



Uninterruptible power supply

- Ensures power continuity in the event of a mains failure
- Suitable for installation in a 5¼″ drive holder
- Floating contacts (DB-9) for UPS communication: Indicates the operating states: mains ok/ mains failure/end of battery capacity/input for UPS deactivation signal
- Integral maintenance-free batteries
- CE certified, IEC 60 950 tested (LVD/EMC)

Note:
The UPS does not have an RS232 interface. Upon request you can obtain an adaptor cable including CD-ROM with shutdown drivers for automatic termination of program routines and shutdown of the system for Windows, Netware and Linux.
Additional battery (5¼″) to extend to 500 VA available on request.

Packs of	Model No. RP
1	**3659.080**

Technical specifications:
Output 300 VA/180 W
Input/output voltage:
220, 230, 240 V AC ± 15 %
Input frequency: 50 Hz ± 5 %
Output frequency: 50 Hz ± 1 %
Switch-over time: < 4 ms
Charging time: 6 – 8 hours
(to 90 % capacity)
Operating environment:
Temperature 0°C – 40°C
Humidity 0 – 90 %
Status displays:
LED for mains operation, back-up, low battery, over-temperature
Acoustic alarms:
Mains interruption (sounds every 5 sec.),
Low battery (sounds every sec.)
Test function:
Test switch on the front panel to check the UPS function
Approvals:
CE, EN 60 950 tested (LVD/EMC)
Hold-up time: 6 min.

AT/ATX power supplies, redundant power supplies



ATX power supply

for external switches

- PS/2 model
- Built-in fan
- Short circuit-protected
- CSA-approved
- Connection cable for $5^1/_4$″ and $3^1/_2$″ disk drives, hard drive and motherboard
- PFC passive

Technical specifications:
300 W/230 V AC
+3.3 V, 0.2 A/16.0 A
+5.0 V, 30.0 A/19.5 A
+12.0 V, 11.0 A
–12.0 V, 0.8 A
–5.0 V, 0.3 A
+5.0 VSB, 2.0 A
+3.3 V and +5 V, total max. 150 W
if 3.3 V/0.2 A, target +5 V/30 A
if 3.3 V/16 A, target +5 V/19.5 A

Packs of	Model No. RP
1	**3687.793**

Supply includes:
Connection cable.

Accessories:

Front panel for ATX power supply,
see page 545.



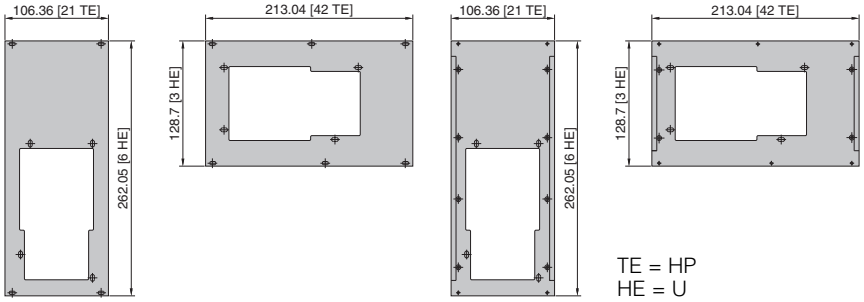
Front panel

for ATX power supply
Front panel with cut-outs for mounting the ATX power supply units in the subrack.

Material:
Aluminium, clear-chromated

Supply includes:
Assembly parts,
EMC gaskets (with EMC version).

U	HP	Model No. RP	
		EMC	Non-EMC
3	42	**3685.331**	**3685.328**
6	21	**3685.332**	**3685.329**





AT/ATX power supply

- PS/2 model
- Built-in fan
- Short circuit-protected
- CSA-approved
- On/off switch
- PFC active/passive
- W x H x D = 86 x 150 x 140 mm
- 47 – 63 Hz

Supply includes:
Connection cable.

Design	Power	Packs of	Model No. RP
AT	300 W	1	**3688.118**
AT for RAID	300 W	1	**3688.119**
ATX	300 W	1	**3688.121**
ATX	250 W	1	**3688.127**
ATX	300 W	1	**3688.129**
ATX	400 W	1	**3688.128**

Technical specifications:

3688.118	3688.119	3688.121	3688.127	3688.129	3688.128
300 W max./ 230 V AC 5.0 V/30.0 A –5.0 V/0.5 A 12.0 V/12.0 A –12.0 V/0.5 A PFC passive	300 W/ 230 V AC 5.0 V/16.0 A –5.0 V/1.0 A 12.0 V/18.0 A –12.0 V/1.0 A PFC passive	300 W max./ 115/230 V AC 3.3 V/15.0 A 5.0 V/30.0 A –5.0 V/0.3 A 12.0 V/15.0 A –12.0 V/0.8 A +5 VSB/2.0 A 3.3 V plus 5 V total max. 200 W 3.3 V, 5 V plus 12 V total max. 280 W PFC passive	250 W max./ 100 – 240 V AC 3.3 V/20.0 A 5.0 V/25.0 A –5.0 V/0.3 A 12.0 V/13.0 A –12.0 V/0.8 A +5 VSB/2.0 A 3.3 V plus 5 V total max. 150 W 3.3 V, 5 V plus 12 V total max. 230 W PFC active	300 W max./ 110 – 240 V AC 3.3 V/28.0 A 5.0 V/30.0 A –5.0 V/0.3 A +5 VSB/2 A 12.0 V/13.0 A –12.0 V/0.8 A 3.3 V plus 5 V total max. 180 W 3.3 V, 5 V plus 12 V total max. 280 W PFC active	400 W max./ 110 – 240 V AC 3.3 V/28.0 A 5.0 V/40.0 A –5.0 V/0.3 A 12.0 V/15.0 A –12.0 V/0.8 A +5 VSB/2.0 A 3.3 V plus 5 V total max. 235 W 3.3 V, 5 V plus 12 V total max. 380 W PFC active

AT/ATX power supplies, redundant power supplies



ATX power supply 1 U

- 2 built-in fans
- Short circuit-protected
- On/off switch
- PFC active
- W x H x D = 85 x 40 x 230 mm

Technical specifications:
200 W max./
100 – 240 V AC
47 – 63 Hz
3.3 V/14.0 A
5.0 V/20.0 A
–5.0 V/0.3 A
12.0 V/6.0 A
–12.0 V/0.8 A
+5 VSB/2 A
+3.3 V plus 5 V total max. 120 W
+3.3, 5 V, 12 V total max. 180 W

Design	Packs of	Model No. RP
ATX	1	**3688.130**

Supply includes:
Connection cable.



Redundant power supply

for ATX

- PS/2 model, 2 switches, 1 connector
- Built-in fan
- Hot-swap version
- PFC active
- Individual power pack module available (separately)
- W x H x D = 86 x 150 x 185 mm

Technical specifications:
2 x 300 W
90 – 264 V AC
47 – 63 Hz
3.3 V/20.0 A
5.0 V/25.0 A
5 VSB/1.5 V
12.0 V/16.0 A max. 20 A
–12.0 V/0.5 A
5 V, 3.3 V plus 12 V total max. 285 W

Design	Packs of	Model No. RP
ATX version	1	**3688.123**

Supply includes:
Connection cable.



Redundant power supply

for ATX

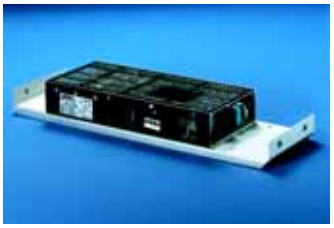
- PS/2 model, 2 switches, 2 connector
- Built-in fan
- Hot-swap version
- PFC active
- Individual power pack module available (separately)
- W x H x D = 86 x 160 x 220 mm

Technical specifications:
2 x 300 W
90 – 264 V AC
47 – 63 Hz
3.3 V/18.0 A
5.0 V/26.0 A
5.0 VSB/1.2 A
12.0 V/16.0 A max. 20 A
–12.0 V/1.0 A
+5 V, 3.3 V plus 12.0 V total max. 285 W

Design	Packs of	Model No. RP
ATX version	1	**3688.120**
Power pack module (spare)	1	**3688.122**

Supply includes:
Connection cable.

AT/ATX power supplies, redundant power supplies



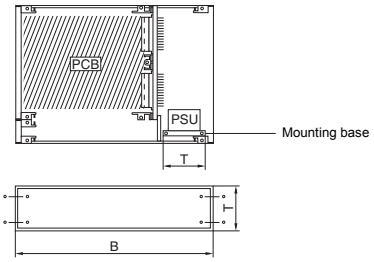
Mounting base for power supplies

- Attaches to the subrack side panel

Material:
2 mm aluminium, clear-chromated

Supply includes:
Assembly parts.

Width (B) mm	Depth (T) mm	Model No. RP
431.8	100	**3684.323**
431.8	130	**3684.324**





Female connector type M24/8

IEC 60 603-2

- Female connector for plug-in CPCI power supplies
- Quality level 2 to IEC 60 603-2 (DIN 41 612)
- Optional 20 A high current contacts for straight conductor connection either crimp or solder
- Volume resistance max. 1.5 mΩ
- Max. rated current: 40 A

Supply includes:
5 connection sockets (crimping or soldering method)

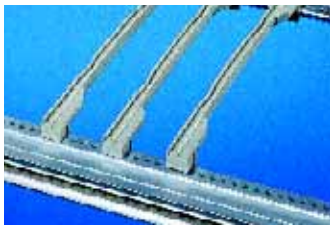
Type of connection	Packs of	Model No. RP
Soldering	1	**3687.665**
Crimping	1	**3687.666**

Also required:

For mounting in the subrack, a Z rail is required, see page 570.



Female connector type H15 IEC 60 603-2 (DIN 41 612)
for plug-in power supplies.



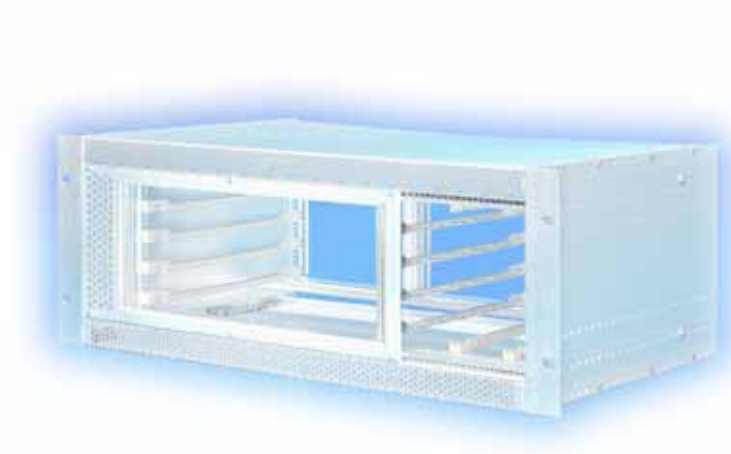
Plastic guide rails
for routing the plug-in power supply,
see page 575.



Keyable guide rails, plastic,
see page 576/577.

Note:
The CompactPCI specification prescribes green guide rails with $^1/_2$ HP offset for power supply installation (PICMG 2.11).

Features

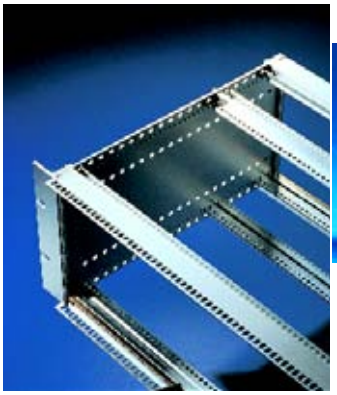


The modular concept of Ripac subracks facilitates a wide range of application options with a minimum of components.

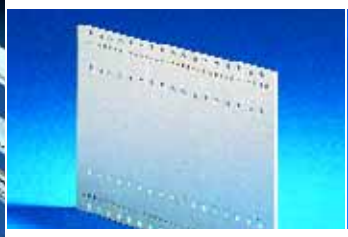
All Ripac subracks are based on the same horizontal rails and system components.

The difference lies in the design of the side panels and installation options.

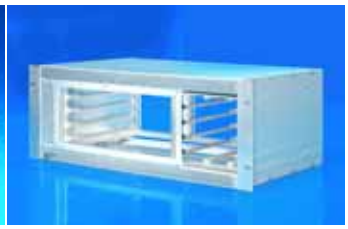
The subracks are shock and vibration-tested and comply with IEC 60 297-3-101, -102, -103.



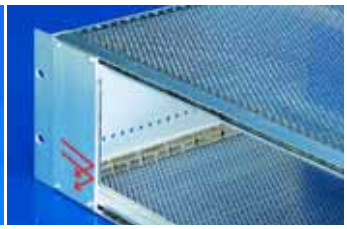
Design features, Ripac Vario and Vario EMC



Depth-variable system installation is supported by the 10 mm pitch pattern of holes in the side panels.



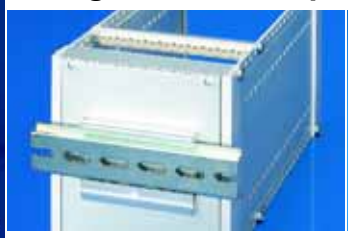
Complex applications thanks to numerous size variants and system accessories.



EMC shielding via horizontal and vertical EMC gaskets. May also be retrofitted.



Design features, Ripac Compact



Top-hat rail mounting
Rear adaptors allow simple snap-mounting directly onto the top-hat rail.



Mounting on mounting plates
Machined keyholes for direct mounting on mounting plates.



EMC version optional.



Design features, Ripac Vario Mobil



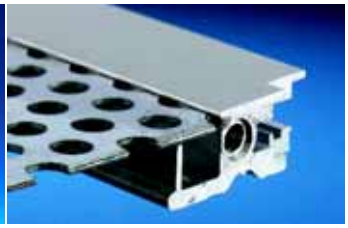
- The subracks have been tested for use in the German national railway. Testing was conducted in accordance with standard EN 50 155 (electronic equipment in rail vehicles). Construction of the tested subracks conforms to IEC 60 297-3 and IEC 61 587.
- Vibration and shock-tested to: IEC 600-68-2-6, test Fc IEC 600-68-2-27, test Ea
- Supply includes: Subrack, fully assembled.

Features



Design features, Ripac ECO





Side panels of sheet steel, zinc-plated. Flanges of aluminium, clear-chromated. Mounting positions for 160 and 220 mm board formats.

Simple cover mounting: Slides easily into the horizontal rails.



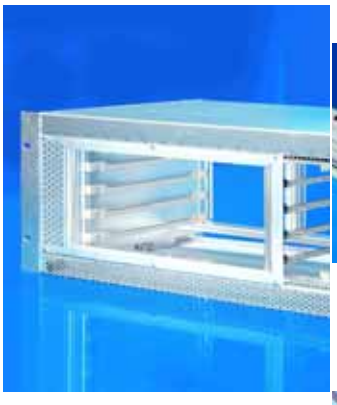
Design features, Ripac Solid





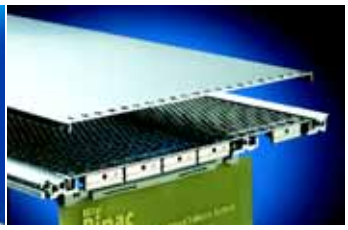
The **Ripac Solid** subracks ensure the protection of high-quality electronics even under extreme loads.
This is made possible thanks to the double screw fastening of the horizontal rails.
Mechanical load test to IEC 61 587-1, requirement level SL 1.

Shock- and vibration-tested to IEC 61 373 (DIN EN 60 155), category 1, class B.



System installation, accessories





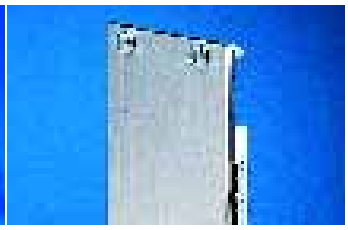


Guide rails of plastic or aluminium, also keyable.

Covers vented or solid, snap-fastening or screw-fastening.

ESD contacts for guide rails, to remove electrostatic charges.







Keys for keying the board-type plug-in units.

Front panels in various versions, e.g. with handles, vented or for EMC applications.

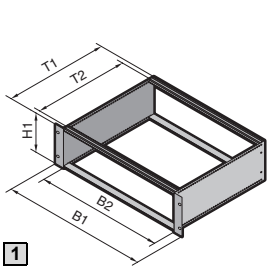
Injector/extractor handles self-latching, of plastic or aluminium.



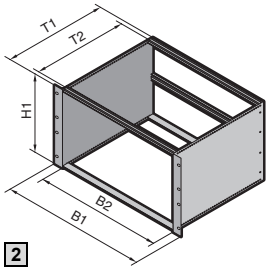
Mounting kits for combined installation of Euroboards and double Euroboards, horizontal or vertical.

Ripac ECO 3 U, 6 U, sheet steel





1



2

Material/surface finish:
Side panels:
1.5 mm sheet steel, zinc-plated
Flanges/horizontal rails:
Extruded aluminium section, clear-chromated

Supply includes:
Side panels, flanges, horizontal rails, threaded inserts.

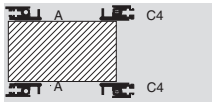
Detailed parts lists,
see page 1269.

Tests:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea

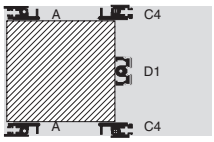
Standards:
Ripac subracks are based on the system dimensions of IEC 60 297-3.

Also required:
Insulating strips and contact strips (for installing backplanes), see page 571.
Z rail (for installing connectors), see page 570.

Detailed drawing,
see page 1269.



1 For backplane



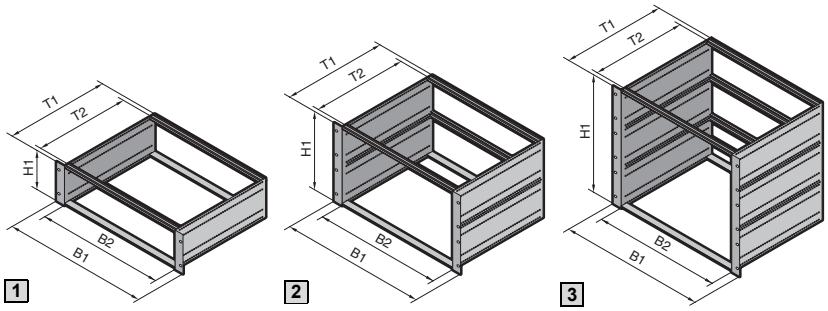
2 For backplane

					Model No. RP 1	Model No. RP 2	Page
U (H1)					**3**	**6**	
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For backplane	
482.6 (19″)	84	175	150	160	**3688.114**	**3688.116**	
		235	210	220	**3688.115**	**3688.117**	
Accessories							
Trim section rear, 3 U					3688.112		562
Trim section rear, 6 U					3688.113		562
Z rail					3684.602		570
Insulating strips					3684.611		571
Cover, perforated, for 175 mm depth					3688.105		581
Cover, perforated, for 210 mm depth					3688.106		581
Cover, solid, for 175 mm depth					3688.107		581
Cover, solid, for 210 mm depth					3688.108		581
Mounting clips for covers					3688.109		581
Assembly screw for mounting clips					9902.188		581
Guide rails							575
Horizontal rails							558

Subrack components Page 558 **Accessories** Page 572 **Assembly parts** Page 610 **Ripac Vario** Page 551 **Ripac Compact** Page 555
Ripac Vario Mobil Page 556

Ripac Vario 3 U, 6 U, 9 U





EMC **upgradeable**

Material/surface finish:
Side panels:
2.5 mm aluminium, clear-chromated 482.6 mm (19″) flanges and horizontal rails: Extruded aluminium section, clear-chromated

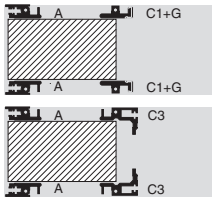
Supply includes:
Flanges, side panels, horizontal rails, threaded inserts, insulating strips or Z rails.

Detailed parts lists,
see page 1270.

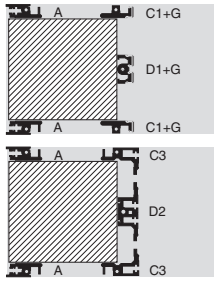
Tests:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea

Standards:
Ripac subracks are based on the system dimensions of IEC 60 297-3.

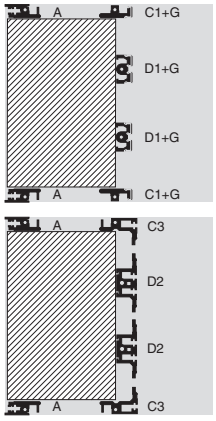
Detailed drawing,
see page 1269.



1 Top: for backplane
Bottom: for connector



2 Top: for backplane
Bottom: for connector



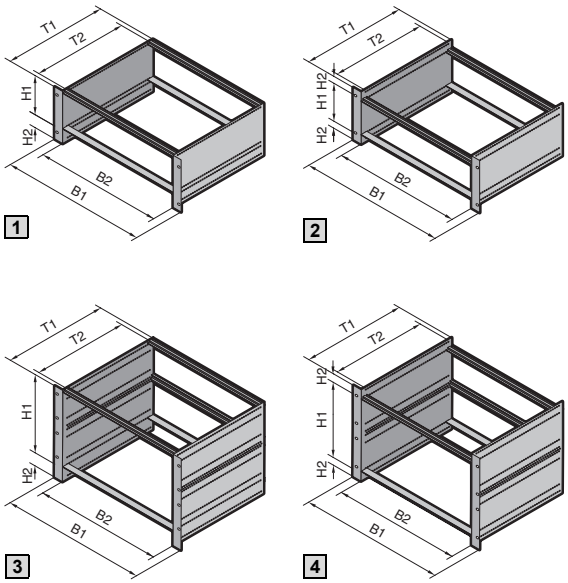
3 Top: for backplane
Bottom: for connector

					Model No. RP					
					1		2		3	
U					3	3	6	6	9	9
Height (H1) mm					132		265.35		398.70	
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2
482.6 (19″)	84	185	160	160	**3684.020**	**3684.034**	**3684.043**	**3684.056**	–	–
		225	200	160	**3684.021**	**3684.035**	**3684.044**	**3684.057**	–	–
		245	220	220	**3684.022**	**3684.036**	**3684.045**	**3684.058**	–	–
		285	260	220	**3684.023**	**3685.281**	**3684.046**	–	–	–
		305	280	280	**3685.231**	**3685.233**	**3685.238**	**3685.240**	–	–
		345	320	280	**3684.024**	–	**3684.047**	–	**3684.051**	**3684.059**
		365	340	340	**3685.232**	**3685.234**	**3685.239**	–	–	–
		405	380	340	**3684.025**	–	**3684.048**	–	**3684.052**	**3684.060**
		465	440	400	**3684.026**	–	**3684.049**	–	**3684.053**	**3684.061**
		525	500	400	**3684.027**	–	**3684.050**	–	**3684.054**	–
		585	560	400	–	–	–	–	**3684.055**	–

Covers Page 581 **Guide rails** Page 575 **Mounting kits** Page 574 **Horizontal rails** Page 558 **EMC accessories** Page 572 **Front panels** Page 591

Ripac Vario 4 U, 7 U





Material/surface finish:
Side panels:
2.5 mm aluminium, clear-chromated 482.6 mm (19″) flanges and horizontal rails: Extruded aluminium section, clear-chromated

Supply includes:
Flanges, side panels, horizontal rails, threaded inserts, insulating strips or Z rails.

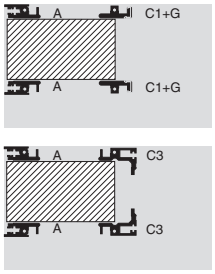
Detailed parts lists,
see page 1270.

Tests:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea

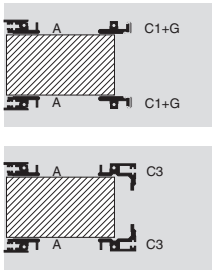
Standards:
Ripac subracks are based on the system dimensions of IEC 60 297-3.

Detailed drawing,
see page 1269.

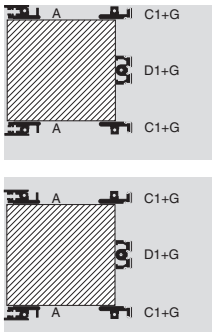
EMC **upgradeable**



1 Top: for backplane
Bottom: for connector
(3 U + 1 U)



2 Top: for backplane
Bottom: for connector
(3 U + 2 x 1/2 U)



3 Top: for backplane
(6 U + 1 U)

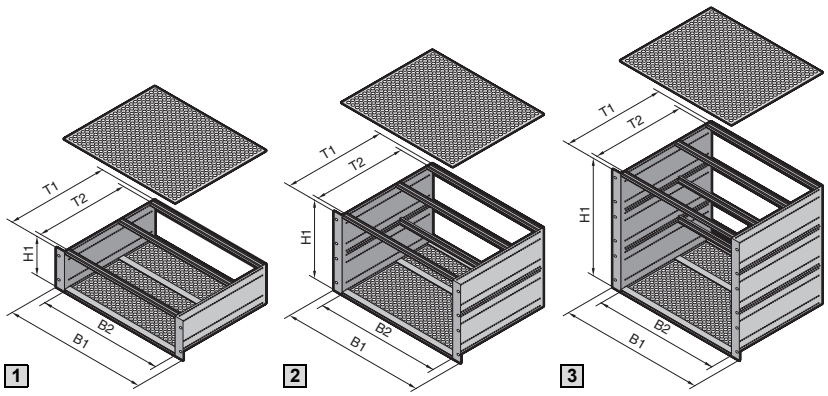
4 Bottom: for backplane
(6 U + 2 x 1/2 U)

					Model No. RP					
					1		2		3	4
U (H1 + H2)					**4 (3 + 1)**	**4 (3 + 1)**	**4 (3 + 2 x 1/2)**	**4 (3 + 2 x 1/2)**	**7 (6 + 1)**	**7 (6 + 2 x 1/2)**
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2	For backplane	For backplane
482.6 (19″)	84	245	220	220	**3685.235**	–	–	–	–	–
		285	260	220	**3684.028**	**3684.037**	**3684.031**	**3684.040**	–	–
		305	280	280	**3685.236**	–	–	–	–	–
		345	320	280	**3684.029**	**3684.038**	**3684.032**	**3684.041**	–	–
		365	340	340	**3685.237**	–	–	–	–	–
		405	380	340	**3684.030**	**3684.039**	**3684.033**	**3684.042**	**3684.064**	**3684.062**
		465	440	400	–	–	–	–	**3684.065**	**3684.063**

Covers Page 581 **Guide rails** Page 575 **Mounting kits** Page 574 **Horizontal rails** Page 558 **EMC accessories** Page 572 **Front panels** Page 591

Ripac Vario EMC 3 U, 6 U, 9 U





Material/surface finish:
Side panels:
2.5 mm aluminium, clear-chromated
Flanges and horizontal rails:
Extruded aluminium section, clear-chromated
Covers: Aluminium, unplated

Supply includes:
Flanges, rear trim, side panels, EMC gaskets, covers, mounting blocks, horizontal rails, insulating strips.

Detailed parts lists,
see page 1270.

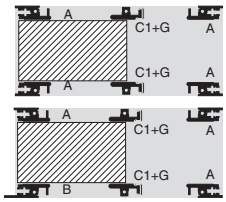
Tests:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea

Standards:
Ripac subracks are based on the system dimensions of IEC 60 297-3.

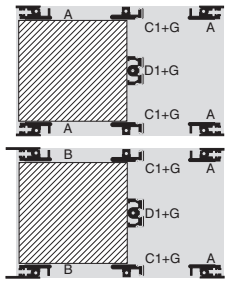
Detailed drawing,
see page 1269.

EMC diagram,
see page 331.

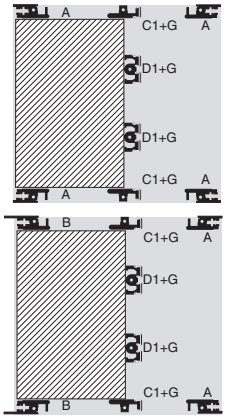
EMC



1
Top: for backplane
Bottom: for backplane/ front horizontal rail with 10 mm extension



2
Top: for backplane
Bottom: for backplane/ front horizontal rail with 10 mm extension



3
Top: for backplane
Bottom: for backplane/ front horizontal rail with 10 mm extension

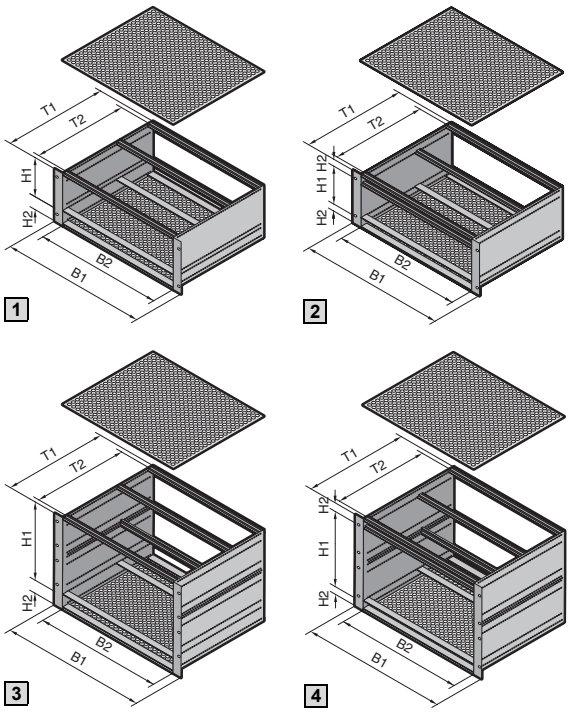
					Model No. RP					
					1		2		3	
U					**3**		**6**		**9**	
Height (H1) mm					132		265.35		398.70	
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For backplane[1)]	For backplane	For backplane[1)]	For backplane	For backplane[1)]
482.6 (19″)	84	245	220	160	**3684.128**	**3684.142**	**3684.156**	**3684.169**	–	–
		285	260	220	**3684.129**	**3684.143**	**3684.157**	**3684.170**	–	–
		305	280	220	**3685.241**	**3685.243**	**3685.242**	**3685.244**	–	–
		345	320	280	**3684.130**	**3684.144**	**3684.158**	**3684.171**	**3684.162**	**3684.175**
		405	380	340	**3684.131**	**3684.145**	**3684.159**	**3684.172**	**3684.163**	**3684.176**
		465	440	400	**3684.132**	**3684.146**	**3684.160**	**3684.173**	**3684.164**	**3684.177**
		525	500	400	**3684.133**	**3684.147**	**3684.161**	**3684.174**	**3684.165**	**3684.178**
		585	560	400	–	–	–	–	**3684.166**	**3684.179**

[1)] Front horizontal rails with 10 mm extension for injector/extractor handles (B).

Guide rails Page 575 **Mounting kits** Page 574 **Horizontal rails** Page 558 **EMC accessories** Page 572 **Front panels** Page 591

Ripac Vario EMC 4 U, 7 U





Material/surface finish:
Side panels:
2.5 mm aluminium, clear-chromated
Flanges and horizontal rails:
Extruded aluminium section, clear-chromated
Covers: Aluminium, unplated

Supply includes:
Flanges, rear trims, side panels, EMC gaskets, covers, mounting blocks, horizontal rails, threaded inserts, insulating strips.

Detailed parts lists,
see page 1270.

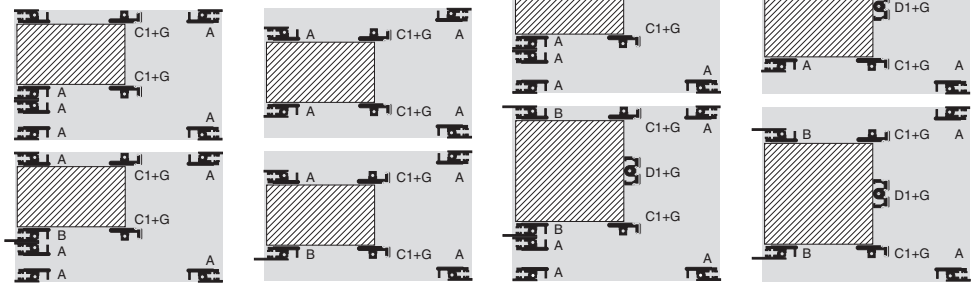
Tests:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea

Standards:
Ripac subracks are based on the system dimensions of IEC 60 297-3.

Detailed drawing,
see page 1269.

EMC diagram,
see page 331.

EMC



1 Top: for backplane bottom: for backplane/ front horizontal rail with 10 mm extension

2 Top: for backplane Bottom: for backplane/ front horizontal rail with 10 mm extension

3 Top: for backplane Bottom: for backplane/ front horizontal rail with 10 mm extension

4 Top: for backplane Bottom: for backplane/ front horizontal rail with 10 mm extension

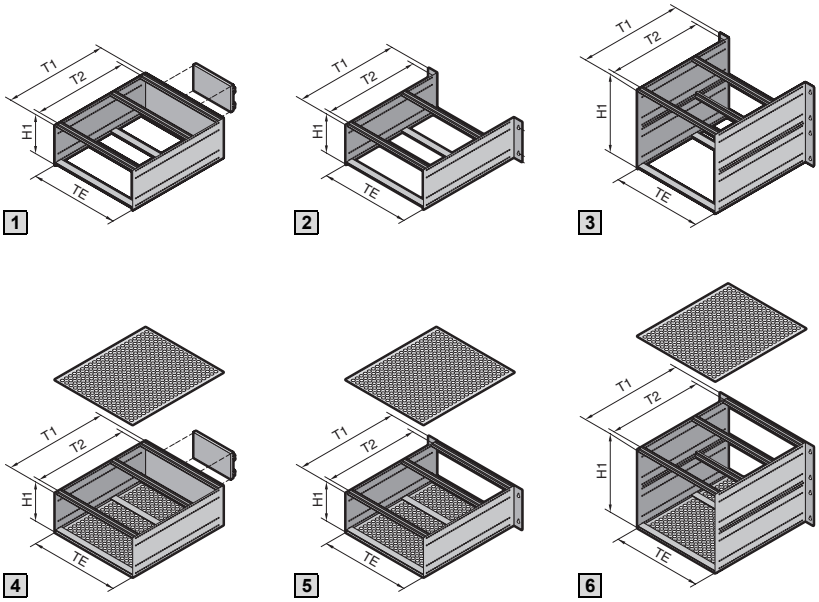
					Model No. RP							
					1		2		3		4	
U (H1 + H2)					4 (3 + 1)	4 (3 + 1)	4 (3 + 2 x 1/2)	4 (3 + 2 x 1/2)	7 (6 + 1)	7 (6 + 1)	7 (6 + 2 x 1/2)	7 (6 + 2 x 1/2)
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For backplane[1)]	For backplane	For backplane[1)]	For backplane	For backplane[1)]	For backplane	For backplane[1)]
482.6 (19″)	84	285	260	220	**3684.134**	**3684.148**	**3684.137**	**3684.151**	**3684.187**	**3684.192**	–	–
		345	320	280	**3684.135**	**3684.149**	**3684.138**	**3684.152**	**3684.188**	**3684.193**	**3684.189**	**3684.196**
		405	380	340	**3684.136**	**3684.150**	**3684.139**	**3684.153**	**3684.180**	**3684.194**	**3684.190**	**3684.197**
		465	440	400	–	–	–	–	**3684.181**	**3684.195**	**3684.191**	**3684.198**

[1)] Front horizontal rails with 10 mm extension for injector/extractor handles (B).

Guide rails Page 575 **Mounting kits** Page 574 **Horizontal rails** Page 558 **EMC accessories** Page 572 **Front panels** Page 591

Ripac Compact 3 U, 6 U





Material/surface finish:
Side panels:
2.5 mm aluminium, clear-chromated
Flanges and horizontal rails:
Extruded aluminium section, clear-chromated

Supply includes:
Side panels, rear trims, flanges for mounting plates or top-hat rail adaptors, EMC front/rear panels, EMC gaskets, covers, horizontal rails, threaded inserts, insulating strips.

Detailed parts lists,
see page 1271.

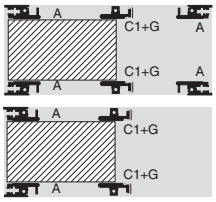
Tests:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea

Standards:
Ripac subracks are based on the system dimensions of IEC 60 297-3.

Detailed drawing,
see page 1269/1271.

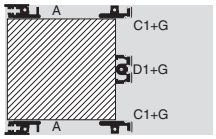
1 4
Ripac Compact 3 U for top-hat rail

2 3 5 6
Ripac Compact 3 U for mounting plate

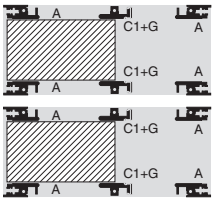


1 Top:
for top-hat rail

2 Bottom:
for mounting plate

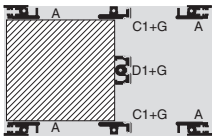


3 For mounting plate



4 Top:
EMC for top-hat rail

5 Bottom:
EMC for mounting plate



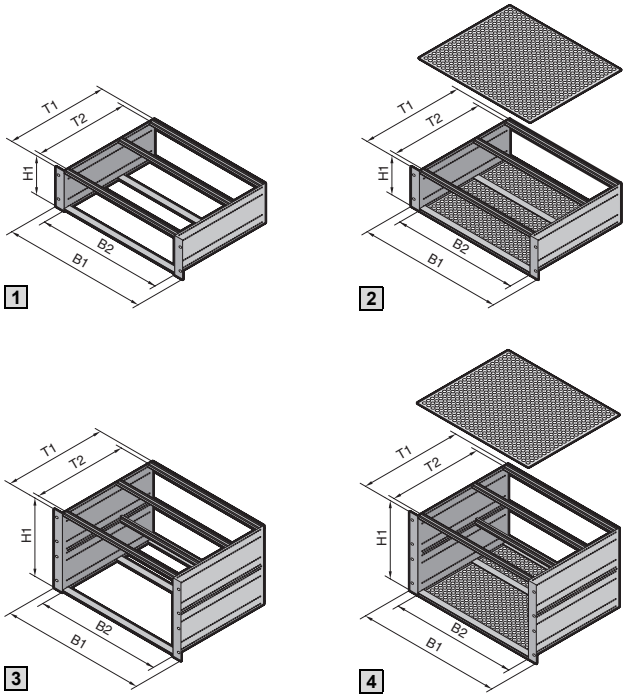
6 EMC for mounting plate

			Model No. RP					Model No. RP EMC				
			1	2	1	2	3	4	5	4	5	6
U			**3**	**3**	**3**	**3**	**6**	**3**	**3**	**3**	**3**	**6**
Height (H1) mm			132				265.35	132				265.35
HP			21	21	42	42	42	21	21	42	42	42
Attachment			Top-hat rail	Mounting plate	Top-hat rail	Mounting plate	Mounting plate	Top-hat rail	Mounting plate	Top-hat rail	Mounting plate	Mounting plate
Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane									
225	200	160	**3687.667**	**3687.669**	**3687.671**	**3687.673**	**3687.680**	**3687.682**	**3687.684**	**3687.686**	**3687.688**	**3687.690**
285	260	220	**3687.668**	**3687.670**	**3687.672**	**3687.674**	**3687.681**	**3687.683**	**3687.685**	**3687.687**	**3687.689**	**3687.691**

Covers Page 581 **Guide rails** Page 575 **Mounting kits** Page 574 **Horizontal rails** Page 558 **EMC accessories** Page 572 **Front panels** Page 591

Ripac Vario Mobil 3 U, 6 U, for mobile use





Material/surface finish:
Side panels:
2.5 mm aluminium, clear-chromated 482.6 mm (19″) flanges and horizontal rails: Extruded aluminium section, clear-chromated
Covers: Aluminium, unplated

Supply includes:
Flanges, rear trims, side panels, EMC gaskets, covers, mounting blocks, horizontal rails, threaded inserts, insulating strips, fully assembled

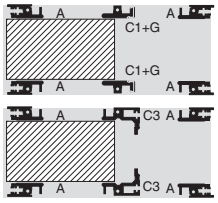
Detailed parts lists,
see page 1272.

Tests:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea
The subracks have been tested for use in the German national railway. Testing was conducted in accordance with standard EN 50 155, 1996 (Electronic Equipment in Rail Vehicles).
The configuration of the tested subracks conforms to IEC 48 D.

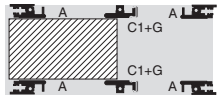
Standards:
Ripac subracks are based on the system dimensions of IEC 60 297-3.

Note:
The subracks are supplied fully assembled.

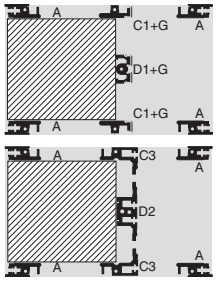
Detailed drawing,
see page 1269/1272.



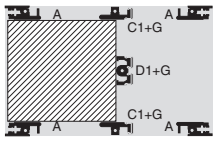
1 Top:
for backplane
Bottom:
for connector



2 EMC for backplane



3 Top:
for backplane
Bottom:
for connector



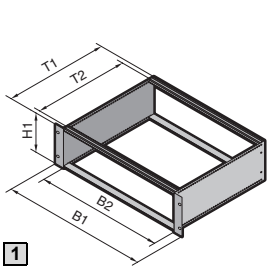
4 EMC for backplane

					Model No. RP 1		Model No. RP EMC 2	Model No. RP 3		Model No. RP EMC 4
U					3	3	3	6	6	6
Height (H1) mm					132			265.35		
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For connectors IEC 60 603-2	For backplane	For backplane	For connectors IEC 60 603-2	For backplane
482.6 (19″)	84	245	220	220	**3687.782**	**3687.780**	**3687.784**	**3687.783**	**3687.781**	**3687.785**

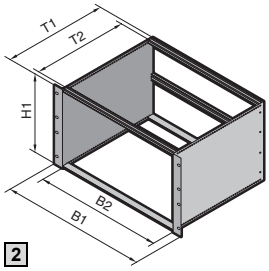
Covers Page 581 **Guide rails** Page 575 **Mounting kits** Page 574 **EMC accessories** Page 572

Ripac Solid 3 U, 6 U, for extreme loads





1



2

EMC **upgradeable**

A Ripac Solid subrack ensures that your top quality electronics are well protected, even with extreme loads, by using horizontal rails with dual screw fastening.

Material/surface finish:
Side panels:
2.5 mm aluminium, clear-chromated 482.6 mm (19″) flanges and horizontal rails:
Extruded aluminium section, clear-chromated

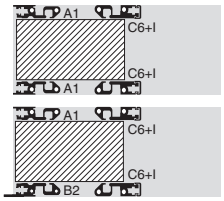
Supply includes:
Flanges, side panels, horizontal rails, threaded inserts.

Detailed parts lists,
see page 1272.

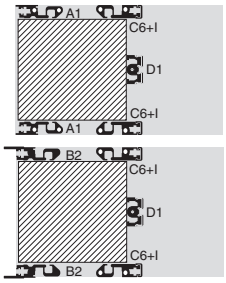
Tests:
- Mechanical load tests undertaken as per IEC 61 587-1, requirement level SL1.
  Result: Passed (the measured static bowing under load rating is less than the standard rating of 0.4 mm)
- Shock and vibration tests undertaken as per IEC 61 373 (DIN EN 50 155), Category 1, Class B.
  Result: No damage occurred.

Standards:
Ripac Solid subracks are based on system dimensions stipulated in IEC 60 297-3-101.

Detailed drawing,
see page 1269/1272.



1
Top: Horizontal rails at front with short lip
Bottom: Horizontal rails at front with 10 mm extension



2
Top: Horizontal rails at front with short lip
Bottom: Horizontal rails at front with 10 mm extension



Horizontal rails
with dual screw fastening

Also required:
Insulating strips (for installing backplanes), see page 571.
Z rails (for installing connectors), see page 570.

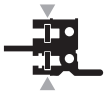
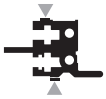
					Model No. RP			
					1		2	
U					**3**	**3**	**6**	**6**
Height (H1) mm					132		265.35	
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	Front rail with short lip	Front rail with 10 mm extension	Front rail with short lip	Front rail with 10 mm extension
482.6 (19″)	84	245	220	220	**9908.517**	**9908.518**	**9908.521**	**9908.520**

Guide rails Page 575 **Mounting kits** Page 574 **Horizontal rails** Page 558 **EMC accessories** Page 572 **Front panels** Page 591

Table of horizontal rails

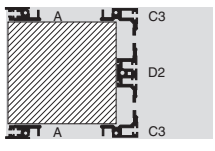
Ripac extrusion system: Complete, simple and easy to manage

To fit all subrack systems as well as the Ripac Vario-Module instrument case/system enclosure range

Main sections / Additional sections	**A** Front horizontal rail	**A1** Front horizontal rail, with double screw fastening	**B** Front horizontal rail, with 10 mm extension, for extractor handle type IV or VII	**B1** Double front horizontal rail, with 10 mm extension	**B2** Front horizontal rail, with 10 mm extension, with double screw fastening	**C1** Rear horizontal rail	**C2** Rear horizontal rail, reinforced version
	Page 563	Page 563	Page 564	Page 564	Page 565	Page 565	Page 566
							
E Rear adaptor rail, centre, to accommodate guide rails  Page 569	–	–	–	–	–	–	–
F Z rail for connector  Page 570	–	–	–	–	–		
G Insulating strips[1] Page 571	–	–	–	–	–		
H Conductive strips[1]  Page 571	–	–	–	–	–		
I Threaded insert Page 570						–	
J Identification strips Page 570							
K EMC gaskets, horizontal  Page 573						–	–

[1] For conductive or insulated attachment of backplanes.

All system requirements may be covered with just a few basic types of horizontal rail. A cost-effective, easy-to-manage range.



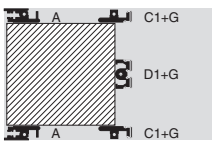
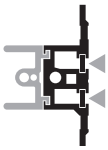


Table of horizontal rails

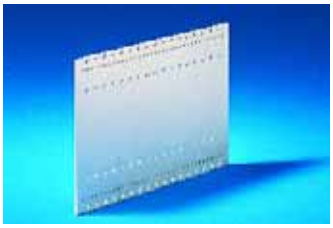
Ripac extrusion system: Complete, simple and easy to manage

To fit all subrack systems as well as the Ripac Vario-Module instrument case/system enclosure range

Main sections / Additional sections	C3 Rear horizontal rail, with integral Z rail	C4 Rear horizontal rail, with channel, for Ripac ECO	C5 Rear horizontal rail, with integral Z rail, for Ripac ECO	C6 Rear horizontal rail, with double screw fastening	D1 Rear horizontal rail, centre	D2 Rear horizontal rail, centre, with integral Z rail	
	Page 568	Page 567	Page 567	Page 566	Page 568	Page 569	
							
E Rear adaptor rail, centre, to acommodate guide rails  Page 569	–	–	–	–			
F Z rail for connector  Page 570	–		–			–	
G Insulating strips[1]  Page 571	–		–			–	
H Conductive strips[1]  Page 571	–		–			–	
I Threaded insert Page 570					–		
J Identification strips Page 570			–		–	–	
K EMC gaskets, horizontal  Page 573	–		–	–	–	–	

[1] For conductive or insulated attachment of backplanes.

Side panels and flanges



Side panels

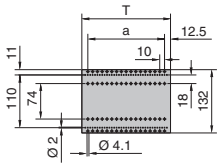
For Ripac Vario, Ripac Vario EMC, Ripac Compact, Ripac Vario Mobil and Ripac Solid
Mounting holes and anti-twist half-shears on a 10 mm pitch pattern.

Material:
2.5 mm aluminium, clear-chromated

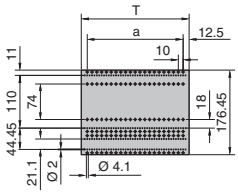
U			Model No. RP								
			3	4 (3 + 1)	4 (3 + 2 x 1/2)	6	7 (6 + 1)	7 (6 + 2 x 1/2)	9	10	11
D (T) mm	a[1] mm	Packs of									
185	160	1	**3684.511**	–	–	**3684.529**	–	–	–	–	–
225	200	1	**3684.512**	**3685.793**	**3685.890**	**3684.530**	**3685.896**	**3685.893**	**3685.797**	–	–
245	220	1	**3684.513**	**3685.850**	**3685.891**	**3684.531**	**3685.897**	**3685.894**	–	–	–
285	260	1	**3684.514**	**3684.523**	**3684.526**	**3684.532**	**3685.743**	**3685.895**	–	–	–
305	280	1	**3684.515**	**3685.794**	–	**3684.533**	–	–	**3685.798**	–	–
345	320	1	**3684.516**	**3684.524**	**3684.527**	**3684.534**	**3685.744**	**3685.745**	**3684.547**	–	–
365	340	1	**3684.517**	**3685.795**	–	**3684.535**	–	–	**3685.799**	–	–
405	380	1	**3684.518**	**3684.525**	**3684.528**	**3684.536**	**3684.541**	**3684.543**	**3684.548**	**3684.545**	–
425	400	1	**3684.519**	–	–	**3684.537**	–	–	–	–	–
465	440	1	**3684.520**	**3685.796**	**3685.892**	**3684.538**	**3684.542**	**3684.544**	**3684.549**	**3684.546**	**3684.552**
525	500	1	**3684.521**	–	–	**3684.539**	**3685.898**	**3685.959**	**3684.550**	**3685.899**	**3684.553**
585	560	1	**3684.522**	–	–	**3684.540**	–	–	**3684.551**	–	**3684.554**

[1] a = Distance between the first and last mounting hole.

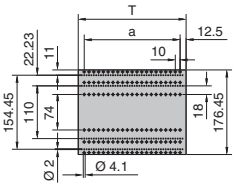
3 U



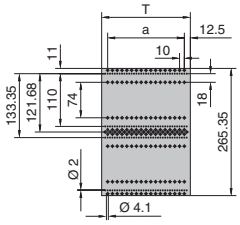
4 U (3 U + 1 U)



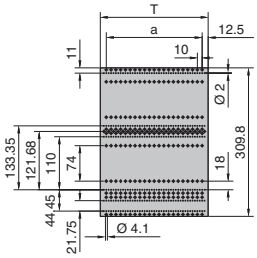
4 U (3 U + 2 x 1/2 U)



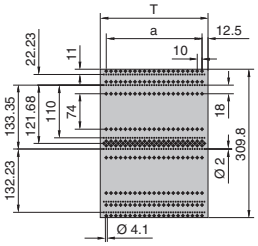
6 U



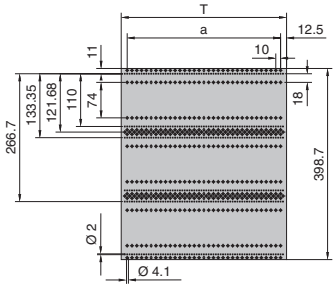
7 U (6 U + 1 U)



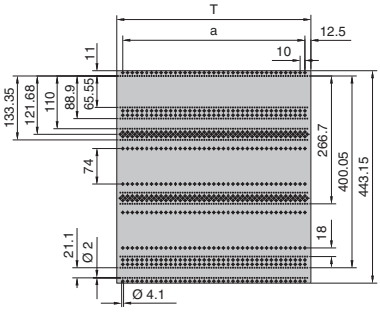
7 U (6 U + 2 x 1/2 U)



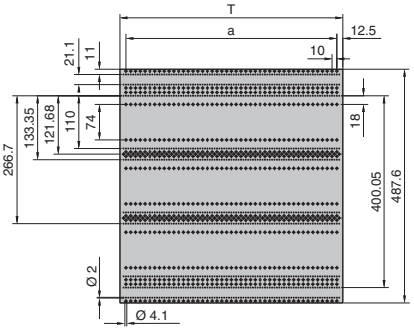
9 U



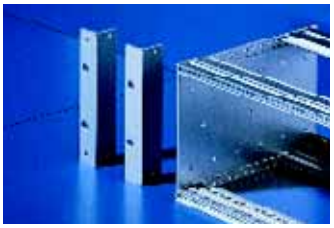
10 U



11 U



Side panels and flanges

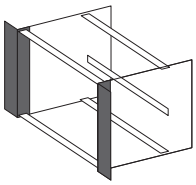


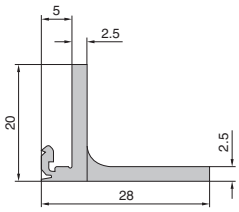
Flange, 482.6 mm (19″)

To fit all Ripac Vario, Ripac Vario EMC, Ripac Compact, Ripac Vario Mobil and Ripac Solid subracks. With integral channel to accommodate EMC gaskets.

Material:
Extruded aluminium section

Surface finish:
Clear-chromated





U	Packs of	Model No. RP	
		with handle holes	without handle holes
2	1	–	**3684.614**
3	1	**3684.622**	**3684.615**
4	1	**3684.623**	**3684.616**
6	1	**3684.624**	**3684.617**
7	1	**3684.625**	**3684.618**
9	1	–	**3684.619**
10	1	–	**3684.620**
11	1	–	**3684.621**

Accessories:

EMC gaskets, vertical,
see page 572.

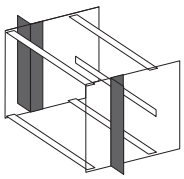


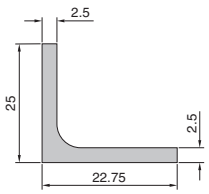
Flange, 482.6 mm (19″)

set-back
To fit all Ripac Vario, Ripac Vario EMC and Ripac Vario Mobil subracks.

Material:
Extruded aluminium section

Surface finish:
Clear-chromated





U	Packs of	Model No. RP
3	1	**3684.626**
4	1	**3684.627**
6	1	**3684.628**
7	1	**3684.629**
9	1	**3684.630**
10	1	**3684.631**
11	1	**3684.632**

Also required:

Assembly screws, nuts and washers,
packs of 4 sets, Model No. RP 3687.015,
see page 611.



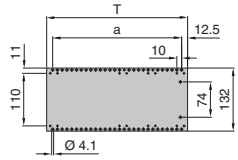
Side panels

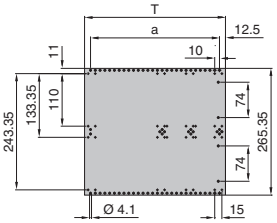
for Ripac ECO
Mounting holes for 160/220 mm PCB installation. Consistent pitch pattern of holes top and bottom for cover attachment.

Material:
1.5 mm sheet steel, zinc-plated, passivated

D (T) mm	a[1] mm	Packs of	Max. PCB depth mm	Model No. RP	
				3 U	6 U
175	150	1	160	**3688.100**	**3688.102**
235	210	1	220	**3688.101**	**3688.103**

[1] a = Distance between the first and last mounting hole.

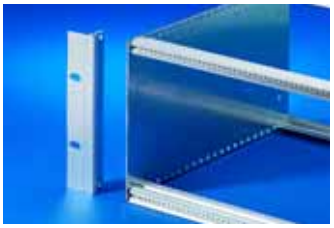




Accessories:

Flange for Ripac ECO,
see page 562.

Side panels and flanges

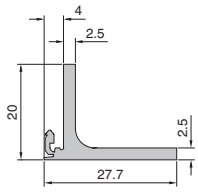


Flange, 482.6 mm (19″)

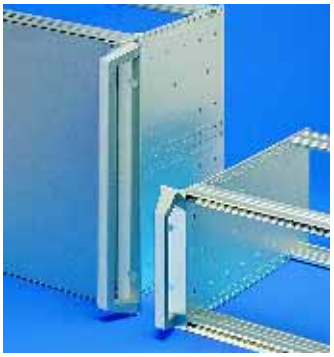
for Ripac ECO

Material:
Extruded aluminium section

Surface finish:
Clear-chromated



U	Packs of	Model No. RP
3	1	**3688.110**
6	1	**3688.111**



Handles

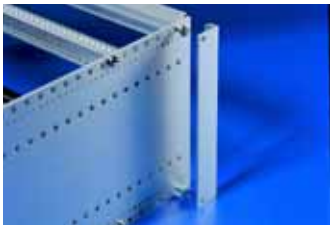
for subracks and component shelves
For fitting on the subrack flange with handle holes and on all component shelves.

Material:
Die-cast zinc

Surface finish:
Spray-finished, silver-grey

Supply includes:
Assembly parts.

For	Packs of	Model No. RP
Subracks 3 U and 4 U	2	**3636.010**
Component shelves		
Subracks 6 U and 7 U	2	**3666.010**

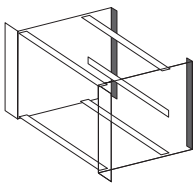


Trim section, rear

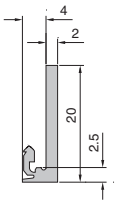
To fit all subrack versions. Ensures 84 HP fit at the rear of the subrack. With integral channel to accommodate EMC gaskets.

Material:
Extruded aluminium section

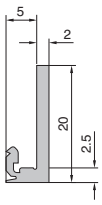
Surface finish:
Clear-chromated



Ripac ECO



Ripac Vario



For all Ripac Vario, Ripac Vario EMC, Ripac Compact, Ripac Vario Mobil and Ripac Solid subracks

U	Model No. RP	
	Packs of 1	Packs of 2
2	**3684.633**	**–**
3	**3684.634**	**3685.276**
4	**3684.635**	**–**
6	**3684.636**	**3685.277**
7	**3684.637**	**–**
9	**3684.638**	**–**
10	**3684.639**	**–**
11	**3684.640**	**–**

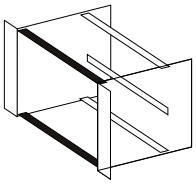
For Ripac ECO subracks

U	Packs of	Model No. RP
3	1	**3688.112**
6	1	**3688.113**

Accessories:

EMC gaskets, vertical,
see page 572.





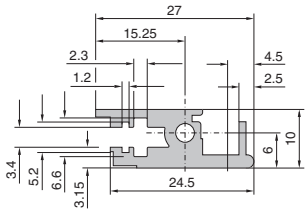
Front horizontal rail (A)

To accommodate guide rails and for the attachment of front panels.

- Front projection 2.5 mm corresponding to IEC 60 297-3
- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole
- Horizontal rail 192 HP without machining on the end faces. Suitable for cutting to length

Material:
Extruded aluminium section

Surface finish:
Clear-chromated or anodised



Usable width (HP)	Packs of	Model No. RP
4 (left)	1	**3684.592**
4 (right)	1	**3684.955**
8 (left)	1	**3684.593**
8 (right)	1	**3684.956**
12	1	**3684.594**
16	1	**3684.595**
20	1	**3684.596**
21	1	**3685.985**
40	1	**3684.960**
42	1	**3684.560**
63	1	**3684.561**
84	1	**3684.562**
84	2	**3685.267**[1)]
192	1	**3688.000**[2)]

[1)] Including 4 assembly screws
[2)] Anodised

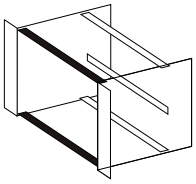
Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 610.

Accessories:

Threaded inserts (packs of 1),
see page 570.





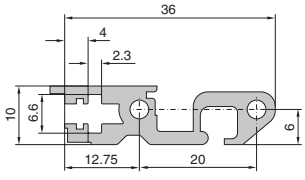
Front horizontal rail, with double screw fastening (A1)

To accommodate guide rails and for the attachment of front panels. The double screw fastening ensures a high level of stability even under extreme loads.

- Load test to DIN EN/IEC 61 587-1, requirement level SL1
- Shock and vibration tests undertaken as per IEC 61 373 (DIN EN 50 155), Category 1, Class B
- Front projection 2.5 mm corresponding to IEC 60 297-3-101
- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole

Material:
Extruded aluminium section

Surface finish:
Clear-chromated



Usable width (HP)	Packs of	Model No. RP
84	1	**9908.721**

Also required:

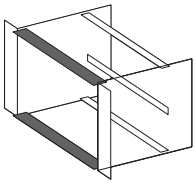
Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 610.

Accessories:

Threaded inserts, Model No. RP 3684.610
(packs of 1), see page 570.

Horizontal rails





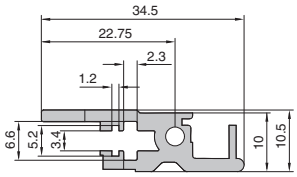
Front horizontal rail, with 10 mm extension (B)

for type IV, IVs and VII injector/extractor handle
To accommodate guide rails and for the attachment of front panels.

- Front projection and pitch pattern of holes based on IEEE 1101.10 and IEC 60 297-3-101, for the use of injector/extractor handles type IV and VII
- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole
- Horizontal rail 192 HP without machining on the end faces. Suitable for cutting to length

Material:
Extruded aluminium section

Surface finish:
Clear-chromated or anodised



Usable width (HP)	Packs of	Model No. RP
40	1	**3684.961**
42	1	**3684.565**
63	1	**3684.566**
84	1	**3684.567**
84	2	**3685.269**[1]
192	1	**3688.001**[2]

[1] Including 4 assembly screws
[2] Anodised

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 610.

Accessories:

Threaded inserts (packs of 1),
see page 570.



Double front horizontal rail, with 10 mm extension (B1)

To accommodate guide rails and for the attachment of front panels.

- Front projection and pitch pattern of holes based on IEEE 1101.10 and IEC 60 297-3-101, for the use of injector/extractor handles type IV and VII
- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole

Material:
Extruded aluminium section

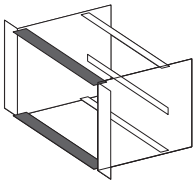
Surface finish:
Clear-chromated

Usable width (HP)	Packs of	Model No. RP
84	1	**3687.724**

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 610.





Front horizontal rail, with 10 mm extension (B2), with double screw fastening

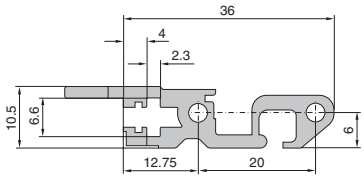
for type IV, IVs and VII injector/extractor handle

To accommodate guide rails and for the attachment of front panels. The double screw fastening ensures a high level of stability even under extreme loads.

- Load test to DIN EN/IEC 61 587-1, requirement level SL1
- Shock and vibration tests undertaken as per IEC 61 373 (DIN EN 50 155), Category 1, Class B
- Front projection and pitch pattern of holes based on IEC 60 297-3-101, for the use of injector/extractor handles type IV and VII
- HP pitch pattern of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole

Material:
Extruded aluminium section

Surface finish:
Clear-chromated



Usable width (HP)	Packs of	Model No. RP
84	1	**9908.722**

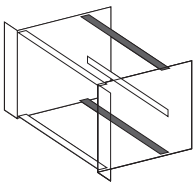
Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 610.

Accessories:

Threaded inserts, Model No. RP 3684.610
(packs of 1), see page 570.





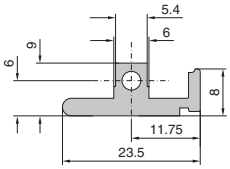
Rear horizontal rail (C1)

To accommodate guide rails and for the attachment of Z rails, insulating strips or conductive strips and backplanes.

- Tapped holes M2.5 on a 1 HP pitch pattern
- HP pitch pattern of holes for the precise installation of guide rails
- M2.5 thread for the installation of Z rails or backplanes
- M4 thread on end face
- Straight-through core hole
- Horizontal rail 192 HP without machining on the end faces. Suitable for cutting to length

Material:
Extruded aluminium section

Surface finish:
Clear-chromated or anodised



Usable width (HP)	Packs of	Model No. RP
21	1	**3685.991**
40	1	**3684.962**
42	1	**3684.570**
63	1	**3684.571**
84	1	**3684.572**
84	2	**3685.268**[1)]
192	1	**3688.002**[2)]

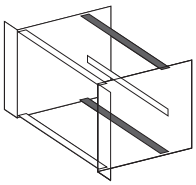
[1)] Including 4 assembly screws
[2)] Anodised

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 610.

Horizontal rails



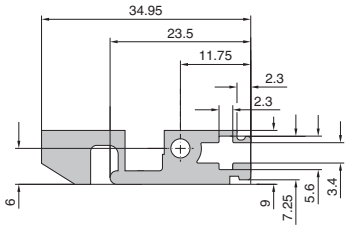


Rear horizontal rail, reinforced version (C2)

For use with high loads.

Material:
Extruded aluminium section

Surface finish:
Clear-chromated



Usable width (HP)	Packs of	Model No. RP
42	1	**3687.604**
63	1	**3687.605**
84	1	**3687.606**

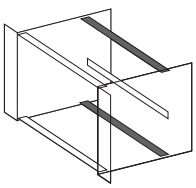
Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 610.

Accessories:

Threaded inserts (packs of 2),
see page 570.





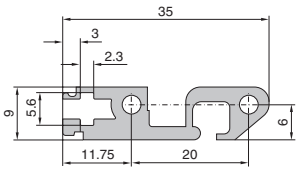
Rear horizontal rail, with double screw fastening (C6)

To accommodate guide rails and for the attachment of Z rails, insulating strips or conductive strips and backplanes. The double screw fastening ensures a high level of stability even under extreme loads.

- Load test to DIN EN/IEC 61 587-1, requirement level SL1
- Shock and vibration tests undertaken as per IEC 61 373 (DIN EN 60 155), Category 1, Class B
- Tapped holes M2.5 on an HP pitch pattern
- HP pitch pattern of holes for the precise installation of guide rails
- M2.5 thread for the installation of Z rails or backplanes
- M4 thread on end face
- Straight-through core hole

Material:
Extruded aluminium section

Surface finish:
Clear-chromated or anodised



Usable width (HP)	Packs of	Model No. RP
84	1	**9908.723**

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 610.

Accessories:

Threaded inserts, Model No. RP 3604.830
(packs of 2), see page 570.



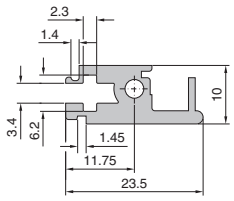
Rear horizontal rail, with channel, for Ripac ECO (C4)

To accommodate guide rails and for the attachment of Z rails, insulating strips or conductive strips and backplanes.

- HP pitch pattern of holes for the precise installation of guide rails
- Channel for slide-in covers
- For mounting backplanes/Z rails, threaded inserts (RP 3684.610) are additionally required
- M4 thread on end face
- Straight-through core hole
- Not suitable for mounting under covers

Material:
Extruded aluminium section

Surface finish:
Clear-chromated



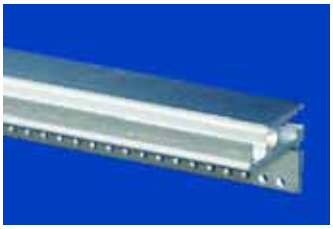
Usable width (HP)	Packs of	Model No. RP
84	1	**3688.104**

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 610.

Accessories:

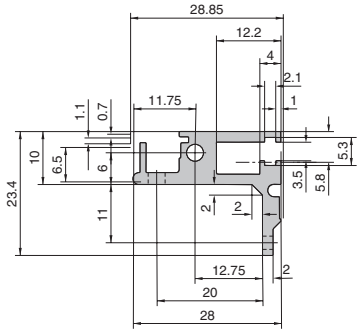
Threaded inserts, Model No. RP 3684.610
(packs of 1), see page 570.



Rear horizontal rail, with integral Z rail, for Ripac ECO (C5)

To accommodate guide rails. Integral Z rail for mounting connectors to IEC 60 603-2.

- HP pitch pattern of holes for the precise installation of guide rails
- 84 tapped holes M2.5 for connector mounting
- M4 thread on end face
- Straight-through core hole



Usable width (HP)	Packs of	Model No. RP
84	1	**9901.991**

Material:
Extruded aluminium section

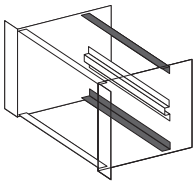
Surface finish:
Clear-chromated

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 610.

Horizontal rails





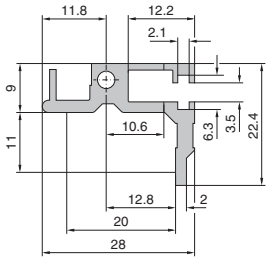
Rear horizontal rail, with integral Z rail (C3)

To accommodate guide rails. Integral Z rail for mounting connectors to IEC 60 603-2.

- HP pitch pattern of holes for the precise installation of guide rails
- 84 tapped holes M2.5 for connector mounting
- M4 thread on end face
- Straight-through core hole

Material:
Extruded aluminium section

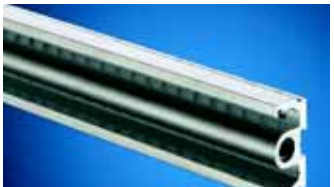
Surface finish:
Clear-chromated

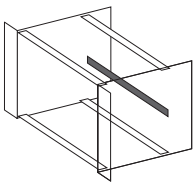


Usable width (HP)	Packs of	Model No. RP
42	1	**3686.191**
63	1	**3686.919**
84	1	**3686.159**

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 610.





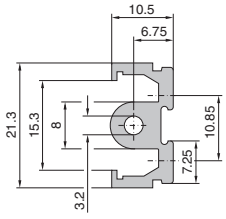
Rear horizontal rail, centre (D1)

When using 6 U PCBs or box-type plug-in units. Facility for the attachment of Z rails, insulating strips or conductive strips.

- 84 tapped holes M2.5
- M4 thread on end face
- Straight-through core hole
- Horizontal rail 192 HP for cutting to the required length

Material:
Extruded aluminium section

Surface finish:
Clear-chromated or anodised



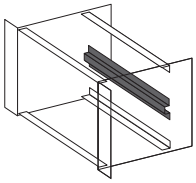
Usable width (HP)	Packs of	Model No. RP
40	1	**3684.963**
42	1	**3684.580**
63	1	**3684.581**
84	1	**3684.582**
84	1	**3685.270**[1)]
858.5 mm	1	**3684.579**
192	1	**3688.003**[2)]

[1)] Including 2 assembly screws
[2)] Anodised

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 610.





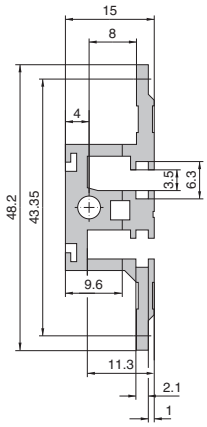
Rear horizontal rail, centre, with integral Z rail (D2)

When using 6 U PCBs or box-type plug-in units. Integral Z rail for mounting connectors to IEC 60 603-2.

- 84 tapped holes M2.5
- M4 thread on end face
- Straight-through core hole

Material:
Extruded aluminium section

Surface finish:
Clear-chromated

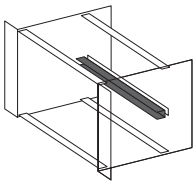


Usable width (HP)	Packs of	Model No. RP
42	1	**3687.600**
63	1	**3687.601**
84	1	**3687.602**
858.5 mm	1	**3687.603**

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 610.





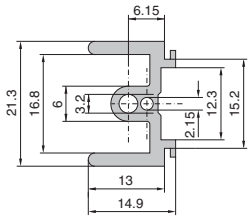
Rear adaptor rail, centre (E)

When subdividing 6 U into 2 x 3 U, the adaptor rail accommodates the guide rails when fastened to the centre horizontal rail.

- HP pitch pattern of holes for the precise installation of guide rails
- M4 and M2.5 thread on the end face
- Straight-through core hole
- Horizontal rail 192 HP without machining on the end faces. Suitable for cutting to length

Material:
Extruded aluminium section

Surface finish:
Clear-chromated or anodised



Usable width (HP)	Packs of	Model No. RP
12	1	**3684.587**
16	1	**3684.588**
20	1	**3684.589**
40	1	**3684.964**
42	1	**3684.590**
63	1	**3686.005**
84	1	**3684.591**
84	1	**3685.272**[1)]
858.5 mm	1	**3684.584**
192	1	**3688.004**[2)]

[1)] Including 2 assembly screws
[2)] Anodised

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 610.

Horizontal rails

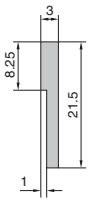


Z rail for connector IEC 60 603-2 (F)

With 84 x M2.5 threaded holes.

Material:
Extruded aluminium section

Surface finish:
Clear-chromated



Usable width (HP)	Packs of	Model No. RP
4	1	**3684.597**
8	1	**3684.598**
20	1	**3684.599**
40	1	**3684.965**
42	1	**3684.600**
63	1	**3684.601**
84	1	**3684.602**
84	2	**3685.271**

Also required:

Assembly screws M2.5 x 6,
packs of 100, Model No. RP 3654.340,
see page 610.



Threaded insert (I)

With M2.5 threaded holes on an HP pitch pattern. For sliding into the horizontal rail. There are two threaded insert versions, which are distinguished by their height.

Material:
Sheet steel, zinc-plated

Usable width (HP)	Packs of	Model No. RP	
		6 mm	5 mm
		for horizontal rails	
		Type A, A1, B, B2, C4	Type C2, C6
4	1	**3684.603**	**–**
8	1	**3684.604**	**–**
12	1	**3684.605**	**–**
16	1	**3684.606**	**–**
20	1	**3684.607**	**–**
21	1	**3686.149**	**–**
40	1	**3684.966**	**–**
42	1	**3684.608**	**3687.616**
63	1	**3684.609**	**3687.617**
84	1	**3684.610**	**–**
84	2	**–**	**3604.830**



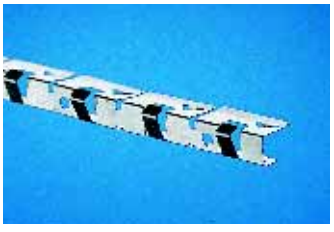
Identification strip (J)

To identify the slots on the subrack, self-adhesive. The following versions are available.

4 mm wide:
- for horizontal rails
- for rear horizontal rails

2 mm wide:
- for front horizontal rails (channel on front face)

For horizontal rail	Width mm	Label	Packs of	Model No. RP
Front	4	1 ... 84	1	**3687.575**
Rear	4	1 ... 168	1	**3687.577**
Front	4	84 ... 1	1	**3687.574**
Front	2	1 ... 84	1	**3687.576**



EMC gaskets, horizontal (K)

see page 573.

Horizontal rails



Conductive strip (H)

For conductive mounting of backplanes.

- 84 HP
- Slides onto the rear horizontal rail

Material:
Aluminium



Usable width (HP)	Packs of	Model No. RP
84	1	**3684.612**
84	2	**3685.273**



Insulating strip (G)

For insulated mounting of backplanes.

- 21 HP
- Slides onto the rear horizontal rail

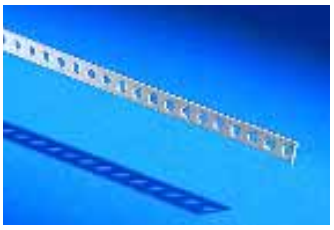
Material:
Plastic, self-extinguishing to UL 94-V0

Usable width (HP)	Packs of	Model No. RP
21	1	**3684.611**
21	8	**3685.274**



Rear horizontal rail, centre, fitted with insulating strips (top) and conductive strips (bottom).





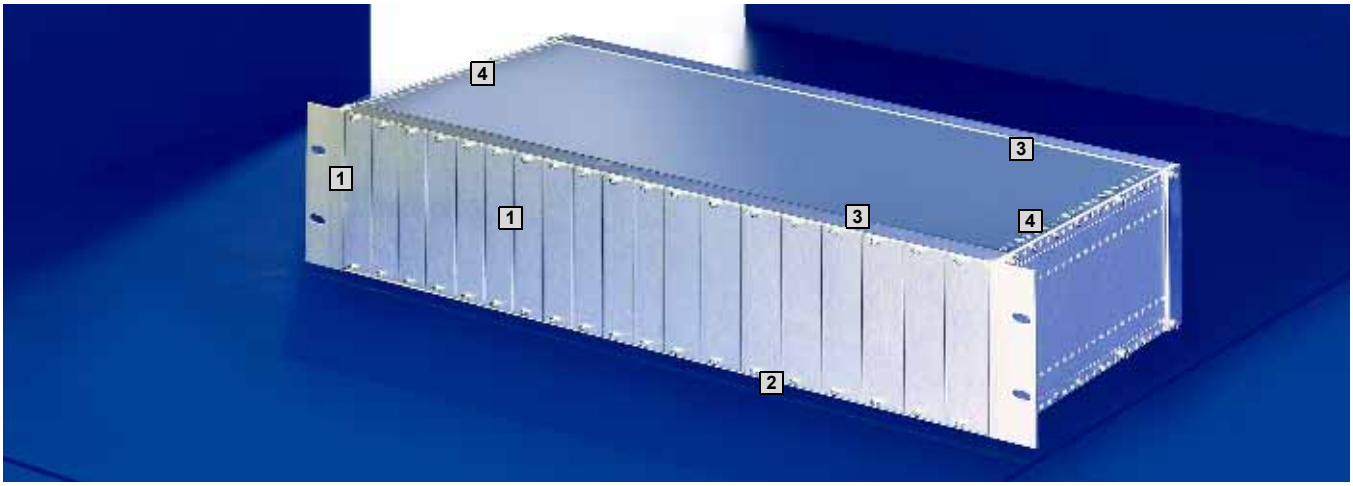
Punched strip

Material:
Aluminium



Usable width (HP)	Packs of	Model No. RP
84	2	**3685.275**

Components for EMC installation

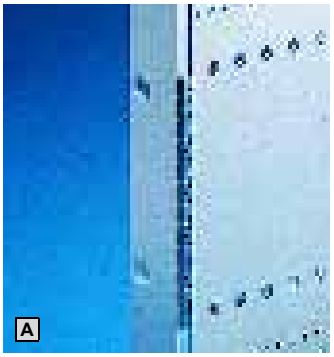


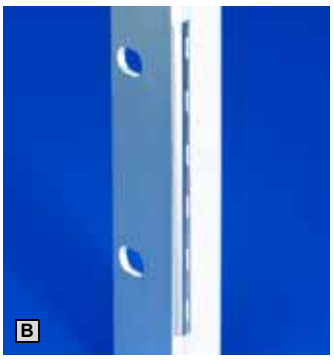
EMC (electromagnetic compatibility) refers to the ability of an electrical device to function satisfactorily in its electromagnetic environment without influencing or being influenced by this environment more than is admissible.

These requirements were taken into account when developing the Rittal subracks. They are made entirely from metal and coated with a conductive surface finish.

Stainless steel EMC gaskets ensure conductive connection of the separate parts.

1 EMC gaskets, vertical
2 EMC gaskets, horizontal
3 EMC gaskets for covers
4 Mounting blocks





EMC gaskets, vertical

To ensure EMC protection between the subrack side panel and the front/rear panels. There are two versions available.

Suitable for mounting on:
- 482.6 mm (19″) flanges for subracks
- Corner trims, rear
- EMC contact strip
- U-channel front panels
- Trim panels for Ripac Vario-Module
- Flanges for Ripac Vario-Module

Material:
Stainless steel

German patent
no. 101 15 525 and
no. 198 46 627
US patent no. 6,500,012
US patent no. 7,044,753

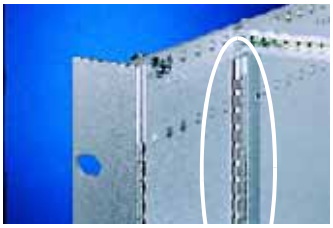
EMC

A Version 1: Segmented

U	Model No. RP Packs of 1	Model No. RP Packs of 10
1	**3686.973**	**3684.236**
2	**3686.974**	**3684.237**
3	**3686.975**	**3684.238**
4	**3686.976**	**3684.239**
6	**3686.977**	**3684.240**
7	**3686.978**	**3684.241**
9	**3686.979**	**3684.242**
10	**3686.980**	**3684.243**
11	**3686.981**	**3684.244**

B Version 2: One-piece

U	Model No. RP Packs of 1
2	**3688.610**
3	**3688.611**
4	**3688.612**
5	**3688.613**
6	**3688.614**
7	**3688.615**
8	**3688.634**
9	**3688.616**
10	**3688.609**
11	**3688.633**
12	**3688.606**

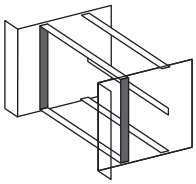


EMC contact strip

To ensure EMC protection when horizontal rails are set-back.
Integral channel to accommodate EMC gaskets.

Material:
Extruded aluminium section, clear-chromated

Note:
2 sections are required for each subrack.



EMC

U	Packs of	Model No. RP
3	1	**3684.643**
6	1	**3684.644**
9	1	**3684.645**

Also required:

EMC gaskets, vertical, see page 572.
Assembly screws M3 x 6, packs of 100,
Model No. RP 3684.233,
see page 610.





EMC gaskets, horizontal (K)

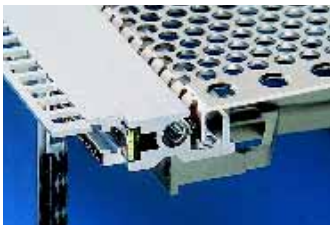
For horizontal EMC protection. For snap-fastening onto the front horizontal rails.

Material:
Stainless steel

European patent no. 0 937 375
with validity for DE
US patent no. 6,137,052
Chinese patent
no. ZL 97 1 98582.0

EMC

Usable width (HP)	Packs of	Model No. RP
For top/bottom horizontal rail		
40	1	**3684.974**
84	1	**3684.808**
84	10	**3684.246**
For sub-division of 6 U into 2 x 3 U, between 2 horizontal rails		
84	1	**3685.789**
84	10	**3685.229**



EMC gaskets

for covers
For EMC shielding between the horizontal rails and covers.

Material:
Stainless steel

EMC

HP	Packs of	Model No. RP
84	10	**3684.245**

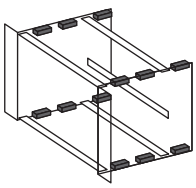


Mounting blocks

For mounting covers, versions 1 – 4, on the subrack side panel.

Material:
Die-cast zinc, nickel-plated

Note:
For EMC applications, mounting blocks must be fitted across the entire subrack depth.
The table here shows the number of mounting blocks required to install 1 cover plate with EMC shielding.



EMC

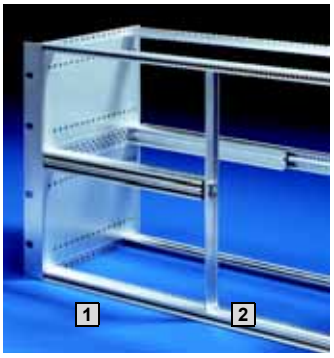
	Packs of	Model No. RP
Mounting blocks 28.5 mm long	10	**3684.234**

Also required:

Assembly screws M3 x 6, packs of 100,
Model No. RP 3684.233,
see page 610.

Number of mounting blocks for max. EMC protection	Cover plate depth mm
4	142
8	192
10	212
12	252
14	272
16	312
18	332
20	372
24	432
28	492
32	552

Mounting kits



Vertical divider kit

For the combined installation of single and double Euroboards in 6 U and 9 U subracks.

Material:
Aluminium, clear-chromated

Supply includes:
2 front horizontal rails,
1 adaptor rail,
2 threaded inserts,
1 vertical support (from 12 HP),
assembly parts.

Accessories:

Front panel, see page 574.
EMC gaskets, horizontal, see page 573.

6 U (2 x 3 U)

HP [1] (2 x 3 U)	HP [2] (6 U)	Model No. RP
14	68	**3684.220**
21	61	**3684.221**
28	54	**3684.222**
40	42	**3684.223**
42	40	**3684.224**

9 U (1 x 6 U + 1 x 3 U)

HP (9 U)	HP (1 x 6 + 1 x 3 U)	Model No. RP
80	4	**3684.225**
76	8	**3684.226**
70	12	**3684.227**
66	16	**3684.228**
62	20	**3684.229**



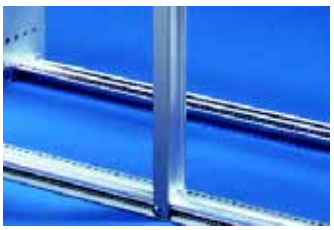
Vertical support

Required for the combined installation of single, double and triple Euroboards in one subrack.

Material:
Aluminium, extruded

Surface finish:
Clear-chromated

U	Packs of	Model No. RP
6	1	**3684.678**
9	1	**3684.679**



Front panel

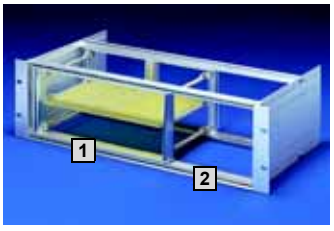
To conceal the vertical support of the vertical divider kit.

Material:
Aluminium, anodised

Supply includes:
Assembly parts.

U	HP	Packs of	Model No. RP
6	2	1	**3685.176**
9	2	1	**3685.286**

EMC version,
see page 604.



Horizontal mounting kit

For the horizontal installation of 6 U/9 U PCBs in 3 U/4 U subracks.

[1] Horizontal installation space:
3 U subrack: 20 HP (5 slots)
4 U subrack: 28 HP (7 slots)

[2] Vertical installation space:
(when installing double Eurocards)
31 HP (without trim frame)
28 HP (with trim frame)

Material:
Aluminium, clear-chromated

Supply includes:
2 horizontal rails, front,
2 horizontal rails, rear,
1 or 2 horizontal rails, rear, centre,
2 threaded inserts,
4 or 6 insulating strips,
4 connecting parts,
assembly parts.

For backplane assembly
with standard horizontal rail, front

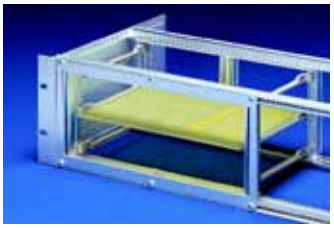
U horizontal	Model No. RP	
	For 3 U subrack	For 4 U subrack
6	**3684.206**	**3684.208**
9	**3684.207**	**3684.209**

For backplane assembly,
front horizontal rail with 10 mm extension

U horizontal	Model No. RP	
	For 3 U subrack	For 4 U subrack
6	**3684.210**	**3684.212**
9	**3684.211**	**3684.213**

Accessories:

Trim frame,
see page 575.



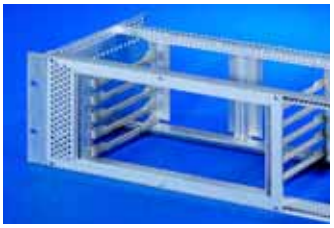
Trim frame

for horizontal mounting kit
To conceal the front sections of the horizontal mounting kit.

Material:
Aluminium, anodised

U horizontal	HP	Model No. RP	
		For 3 U subrack	For 4 U subrack
6	56	**3685.783**	**3685.785**
9	84	**3685.784**	**3685.786**

Also required:
Collar screws and plastic collars,
packs of 100 sets, Model No. RP 3658.160,
see page 610.



Trim frame, vented

for horizontal mounting kit
To conceal the front sections of the horizontal mounting kit.

Material:
Aluminium

Surface finish:
Anodised,
clear-chromated (EMC version)

Supply includes:
EMC accessories
(with EMC version).

EMC

U horizontal	HP	Model No. RP	
		For 3 U subrack	For 4 U subrack
6	63	**3685.787**	**3685.788**

Also required:
Collar screws and plastic collars,
packs of 100 sets, Model No. RP 3658.160,
see page 610.

EMC version

U horizontal	HP	Model No. RP	
		For 3 U subrack	For 4 U subrack
6	63	**3685.291**	**3685.292**

Also required:
Centering screws,
packs of 100, Model No. RP 3687.050,
see page 611.



Plastic guide rails

For 160, 220 and 280 mm PCBs up to 2 mm nominal thickness.

2 versions are available:
- Snap-in fastening and screw-fastening
- Snap-in fastening

Material:
Polycarbonate, base material to UL 94-V0

PCB depth mm	Packs of	Model No. RP	
		Snap-in fastening/ screw-fastening[1)]	Snap-in fastening
160	1	**3684.657**	**3684.654**
220	1	**3684.658**	**3684.655**
280	1	**3684.659**	**3684.656**

Also required:
[1)] Assembly screws,
packs of 100, Model No. RP 3654.360,
see page 610.



Plastic guide rails

for contact spring fitting
For 160, 220 and 280 mm PCBs up to 2 mm nominal thickness. By installing contact springs, an electrical connection can be made between the PCB and the assembly.

Material:
Polycarbonate, base material to UL 94-V0

PCB depth mm	Packs of	Model No. RP
160	1	**3684.660**
220	1	**3684.661**
280	1	**3684.662**

Accessories:
Contact springs,
see page 576.

Guide rails



Contact springs

For electrical connection between the PCB and the subrack, or to discharge static charges from the PCB.
Suitable for installation in “guide rails for contact spring fitting” and “end pieces for guide rails”.

Packs of	Model No. RP
10	**3687.726**



1



2

Guide rails, aluminium

For high loads. Suitable for nominal PCB thicknesses from 1.6 mm. A distinction is made between guide rails for and without end pieces. The guide rails without end pieces are screw-fastened directly into the horizontal rail.

Material:
Aluminium

PCB depth mm	Packs of	Model No. RP	
		1 Without end piece[1)]	2 For end pieces
160	1	**3687.526**	**3684.663**
220	1	**3687.527**	**3684.664**
280	1	**3687.528**	**3684.665**
1000	1	**3684.666**	–

Also required:

[1)] Screw M2.5 x 6, packs of 100,
Model No. RP 3654.340, see page 610.
[1)] Nut M2.5, packs of 100,
Model No. RP 3654.370, see page 610.
[1)] Retaining cage M2.5, packs of 100,
Model No. RP 9901.417, see page 610.



End pieces

for guide rails, aluminium
To discharge static charges, contact springs RP 3687.726 may be used.

Material:
Polycarbonate, base material UL 94-V1

	Packs of	Model No. RP
End piece, front	1	**3684.668**
End piece, rear	1	**3685.759**

Accessories:

Contact springs,
see page 576.



Keyable guide rails, plastic,

Guide rails 4 HP, keyable, to IEEE 1101.10.

- For 1.6 – 2.0 mm nominal thickness
- Chambers for the installation of keys
- Option of installing ESD contacts to discharge static charges
- Narrow design for maximum air flow
- Various colour variants to identify the slots:
  – Red for system slot
  – Green for power supply
  – Yellow and grey for board-type plug-in units

1 ESD contact for guide rails
2 ESD contact for front panel
3 Keys

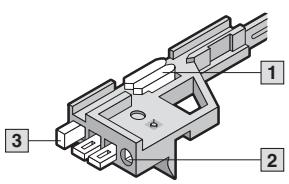
Material:
Polycarbonate, base material to UL 94-V0

Note:
Only for use in conjunction with type IV, IVs, VII injector/extractor handles.

Accessories:

Keys,
see page 580.
ESD contact,
see page 579.
Extractor handles type IV, IVs, VII,
see page 594 – 596.





For PCB depth mm	Packs of	Model No. RP			
		Grey	Red	Green	Yellow
160	10	**3685.257**	–	–	–
220	10	**3685.258**	–	–	–
280	10	**3685.259**	–	–	–
160	1	**3684.669**	**3686.063**	**3688.055**	**3689.089**
220	1	**3684.953**	**9902.240**	–	**3689.091**
280	1	**3684.954**	–	–	**3689.093**



Keyable guide rails

with $^1/_2$ HP offset

Guide rails with $^1/_2$ HP offset for use in telecom applications. This allows PCBs to be populated on both sides. Green guide rails with offset are prescribed in the CompactPCI specification (PICMG 2.11) for the installation of power supply units.

- For 1.6 – 2.0 mm PCB thickness
- 4 HP x 160/220 mm
- Narrow design for maximum air flow
- Chambers for the installation of keys
- Option of installing ESD contacts to discharge static charges

Material:
Polycarbonate, base material to UL 94-V0

Note:
Only suitable for use in conjunction with extractor handles type IV, IVs, VII with $^1/_2$ HP offset.

For PCB depth mm	Packs of	Colour	Model No. RP
160	1	Grey	**3686.137**
		Yellow	**3689.090**
		Green	**3687.832**
220	1	Grey	**3686.136**
		Yellow	**3689.092**

Accessories:

Keys, see page 580.
ESD contact, see page 579.
Extractor handles type IVs, VII with $^1/_2$ HP offset, see page 595 – 596.



Keyable guide rails

for rear I/O assemblies

Guide rails 4 HP, keyable, to IEEE 1101.10. Prepared to accommodate a ground contact for assembly of a plug-type connection.

- For 1.6 – 2.0 mm nominal thickness
- For 80 mm deep PCBs
- Chambers for the installation of keys
- Option of installing ESD contacts to discharge static charges
- Narrow design for maximum air flow
- For CPCI or VME applications

Material:
Polycarbonate, base material to UL 94-V0

Note:
Only for use in conjunction with type IV, IVs, VII injector/extractor handles.

Colour	For PCB depth mm	Packs of	Model No. RP	
			Guide rails	
			Top	Bottom
Grey	80	1	**3687.936**	**3687.937**
Yellow	80	1	**3689.097**	**3689.098**

Accessories:

Keys, see page 580.
ESD contact, see page 579.
Ground contact, see page 577.
Extractor handles type IV, IVs, VII, see page 594 – 596.





Ground contact

Ensures a plug-in ground connection. UL-approved.

Material:
Die-cast zinc

Supply includes:
Grounding bush, contact spring.

Note:
Only suitable for use in conjunction with keyable guide rails for rear I/O assemblies.

	Model No. RP	
	1 set	50 sets
Grounding bush and contact spring	**3689.036**	**3687.951**

Also required:

Assembly screws 3.5 x 12 mm, packs of 50, Model No. RP 3684.109, see page 610.

Guide rails



Keyable guide rails, aluminium, three-part

Keyable guide rails with aluminium centre part, for high mechanical loads.
Suitable for 1.6 – 2.0 mm PCB thickness.

The guide rails are compiled from the following individual components:

1 2 end pieces,
2 1 aluminium centre part,
3 Insulating centre part(s)



1 End pieces

for three-part guide rails
For 1.6 – 2.0 mm PCB thickness.

Material:
Polycarbonate, base material to UL 94-V0

	Packs of	Model No. RP
	10 pairs	**3685.265**
Front end piece	1	**3685.790**
Rear end piece	1	**3684.670**

Note:
A front and a rear end piece is required for each guide rail.

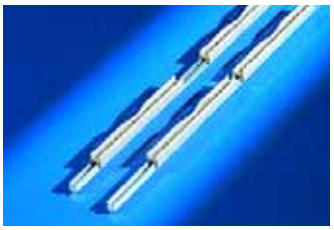


2 Aluminium centre part

for three-part guide rails
For 1.6 – 2.0 mm PCB thickness.

Material:
Aluminium, unplated

For PCB depth mm	Model No. RP	
	Packs of 1	Packs of 10
220	**3684.673**	**3685.260**
280	**3684.674**	**3685.261**
340	**3684.675**	**3685.262**
400	**3684.676**	**3685.263**
1000	**3684.672**	**–**



3 Insulated centre part

for three-part guide rails
The insulating centre part is pushed onto the aluminium centre piece.
Length: 60 mm.

Material:
Plastic, self-extinguishing to UL 94-V0

Packs of	Model No. RP
1	**3684.677**
10	**3685.264**

For PCB depth mm	Number of insulating strips required
160	1
220	2
280	3
340	4
400	5



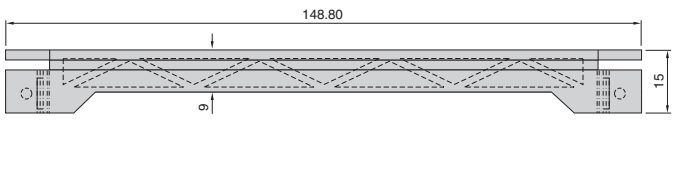
Guide rails for 4.4″

Snap-fastening guide rails to accommodate PCBs and assemblies with a height of 4.4″.

Material:
Macrolon

Colour:
Dark grey

For PCB depth mm	Packs of	Model No. RP
160	1	**3686.990**





Guide rails

for box type plug-in units
For PCB thickness 1.6 mm.
For insertion into covers with vent slots (from 12 HP), see page 608.

Material:
Noryl

For PCB depth mm	Packs of	Model No. RP
160	10	**3606.140**
220	10	**3606.200**





Air block panel

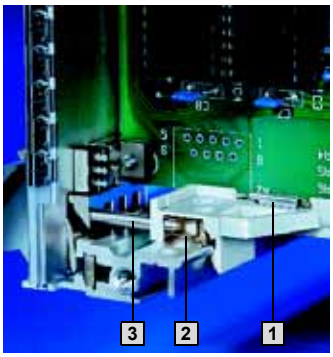
for unused slots
To conceal unused slots and prevent unwanted airflow. The air block panel simply snaps into position on the guide rails.

Material:
Polycarbonate, self-extinguishing to UL 94-V0

Colour:
Blue

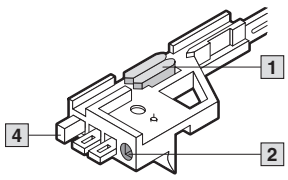
Note:
Not suitable for use in conjunction with guide rails with $^1/_2$ HP offset.

For guide rail	Packs of	Model No. RP
160 mm	1	**3687.924**









ESD contacts

for installation in keyable guide rails.
To discharge static charges.

1 **ESD clip in the guide rail**
For permanent direct discharge from the PCB.

2 **ESD contact for front panel**
To discharge static charges in conjunction with the ESD pin. For insertion into the end piece of the guide rail.

3 **ESD pin**

4 **Keys**

Material:

1 Stainless steel

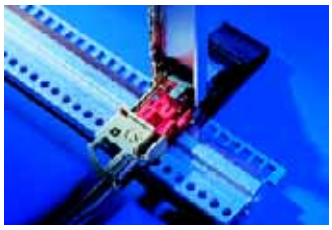
2 Tin bronze, tin-plated

ESD contact for	Packs of	Model No. RP
Guide rail	50	**3684.204**
Front panel	50	**3684.205**

Note:
Only for use in conjunction with extractor handle with ESD pin (type IV, IVs, VII), see page 594 – 596.

Keying/PCB ejectors





Keys

Keys are used for coding of board-type plug-in units and prevent the use of assemblies in incorrect slots. The keys are inserted into the chambers of the keyable guide rails and the injector/extractor handles, types IV, IVs and VII (4 positions are possible). This produces 64 keying combinations per guide rail. When keying the top and bottom guide rail, 4096 potential combinations are possible.

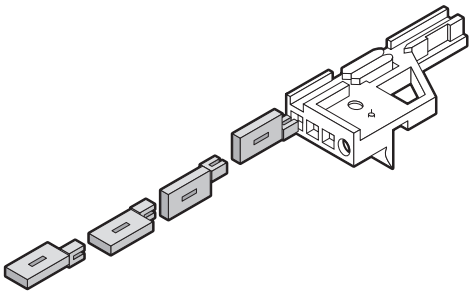
Standards:
IEEE 1101.10, IEC 60 297-5-104

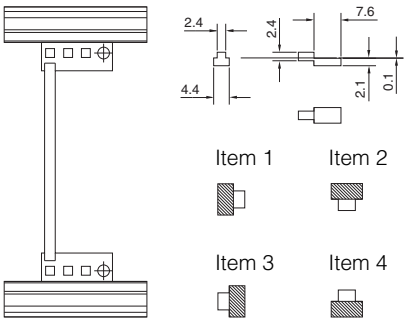
Material:
Plastic, PBTP, basic material to UL 94-V0

Colour	Packs of	Model No. RP
Grey	100	**3684.325**
Red	100	**3684.326**

Accessories:

Keying tool,
see below.







Keying tool

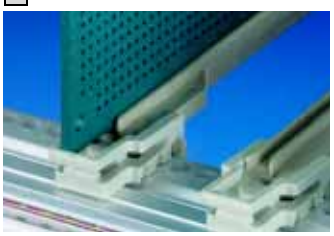
For simple assembly of keys. Up to 3 coding keys may be fitted simultaneously. An integral alignment pin makes positioning easier.

Material:
Polycarbonate, base material to UL 94-V0

Packs of	Model No. RP
1	**3687.956**



1



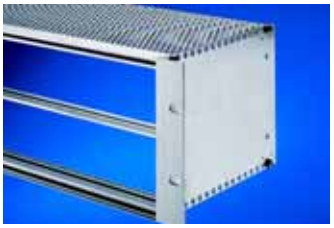
2

PCB ejector/retainer

The two-piece PCB ejector is used for securing and extracting PCBs without front panels. The base section may also be used separately for board retention only.

Material:
Polycarbonate, base material to UL 94-V0

	Packs of	Model No. RP
1 PCB ejector/retainer	10	**3687.014**
2 PCB retainer	10	**3687.052**





Covers

For Ripac ECO subracks
To cover the overall subrack depth.

- Optionally perforated or solid
- The plates slide into the horizontal rails
- Mounting clips may optionally be used for additional support.

Material:
Sheet steel, zinc-plated, passivated

HP	For side panel depth mm	Model No. RP	
		Perforated	Solid
84	175	**3688.105**	**3688.107**
84	235	**3688.106**	**3688.108**

Accessories:

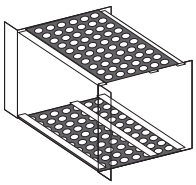
Mounting clips

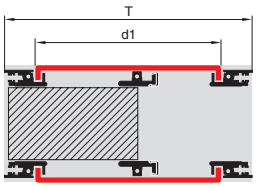
Packs of	Model No. RP
1	**3688.109**

Assembly screws for mounting clips

Packs of	Model No. RP
1	**9902.188**







Covers version 1

For all Ripac Vario, Ripac Vario EMC, Ripac Compact, Ripac Vario Mobil and Ripac Solid subracks
To cover the overall subrack depth
(EMC application) or as connector protection.

- Flat design for top and bottom
- Optionally solid or perforated
- For mounting on the subrack side panel with the aid of mounting blocks.

Material:
1.0 mm aluminium, unplated, hole diameter 4 mm in perforated version.

Each set includes:
2 cover plates,
8 mounting blocks @ 28.5 mm,
24 assembly screws.

Each individual unit includes:
1 cover.

Note:
For EMC applications, additional mounting blocks must be fitted across the entire subrack depth.

HP	For side panel depth (T) mm	Cover depth (d1) mm	Model No. RP			
			Single piece[1)]		Set	
			Perforated	Solid	Perforated	Solid
21	225	192	**3687.618**	**3687.620**	–	–
21	285	252	**3687.619**	**3687.621**	–	–
42	175	142	**3684.957**	**3687.626**	–	–
42	225	192	**3687.623**	**3687.627**	–	–
42	245	212	**3684.958**	**3687.628**	–	–
42	285	252	**3685.642**	**3687.629**	–	–
84	175	142	**3684.681**	**3684.680**	**3685.245**	**3685.250**
84	225	192	**3684.694**	**3684.683**	–	–
84	235	202	**3685.851**	**3685.813**	–	–
84	245	212	**3684.695**	**3684.684**	**3685.246**	**3685.251**
84	285	252	**3684.696**	**3684.685**	–	–
84	295	262	**3685.855**	**3685.814**	–	–
84	305	272	**3685.852**	**3684.686**	**3685.247**	**3685.252**
84	345	312	**3684.698**	**3684.687**	–	–
84	365	332	**3685.853**	**3684.688**	**3685.248**	**3685.253**
84	405	372	**3684.700**	**3684.689**	**3685.249**	**3685.254**
84	465	432	**3684.701**	**3684.691**	–	–
84	525	492	**3684.702**	**3684.692**	–	–
84	585	552	**3684.703**	**3684.693**	–	–

Also required:

[1)] Mounting blocks,
see page 573.
[1)] EMC gaskets for cover plates,
see page 573.
[1)] Assembly screws,
packs of 100, Model No. RP 3684.233,
see page 610.

Covers



Covers version 2

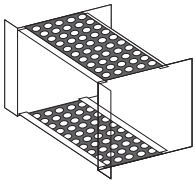
For all Ripac Vario, Ripac Vario EMC, Ripac Compact, Ripac Vario Mobil and Ripac Solid subracks
To cover the PCB depth.

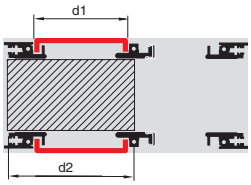
- Flat design for top and bottom
- Optionally solid or perforated
- For mounting on the subrack side panel with the aid of mounting blocks.

Material:
1.0 mm aluminium, unplated, hole diameter 4 mm in perforated version.

Each set includes:
2 cover plates,
8 mounting blocks @ 28.5 mm,
24 assembly screws.

Each individual unit includes:
1 cover.

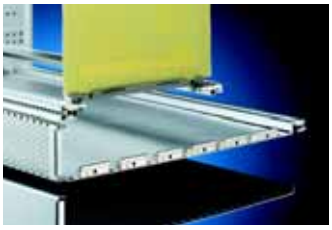




HP	For PCB depth (d2) mm	Cover depth (d1) mm	Model No. RP			
			Single piece[1)]		Set	
			Perforated	Solid	Perforated	Solid
21	160	142	**3687.630**	**3687.634**	–	–
21	220	202	**3687.631**	**3687.635**	–	–
42	160	142	**3684.957**	**3687.626**	–	–
42	220	202	**3687.633**	**3687.637**	–	–
42	280	262	**3687.638**	**3687.639**	–	–
84	160	142	**3684.681**	**3684.680**	**3685.245**	**3685.250**
84	220	202	**3685.851**	**3685.813**	–	–
84	280	262	**3685.855**	**3685.814**	–	–
84	340	322	**3685.856**	–	–	–
84	400	382	**3685.857**	–	–	–

Also required:

[1)] Mounting blocks,
see page 573.
[1)] Assembly screws,
packs of 100, Model No. RP 3684.233,
see page 610.



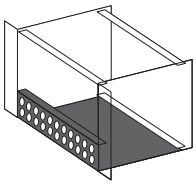
Covers version 3

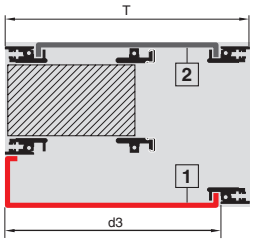
For all Ripac Vario, Ripac Vario EMC and Ripac Vario Mobil subracks.
To cover the overall subrack depth
(EMC application).

- Cover with 1 U edge fold (item 1), to conceal the 1 U area in the subrack
- A version 1 flat cover (item 2) is additionally required.
- Optionally perforated or solid on the front
- Suitable for subracks 4 U (3 + 1), 7 U (6 + 1)
- For mounting on the subrack side panel with the aid of mounting blocks.

Material:
1.0 mm aluminium, unplated, hole diameter 4 mm in perforated version.

Note:
For EMC applications, mounting blocks must be fitted across the entire subrack depth.

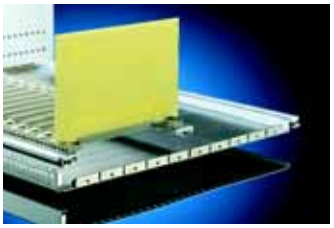


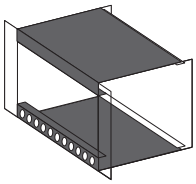


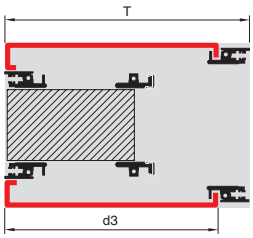
HP	For side panel depth (T) mm	Cover depth (d3) mm	Model No. RP	
			Perforated	Solid
84	285	270	**3684.720**	**3684.714**
84	345	330	**3684.721**	**3684.715**
84	405	390	**3684.722**	**3684.716**
84	465	450	**3684.723**	**3684.717**
84	525	510	**3684.724**	**3684.718**
84	585	570	**3684.725**	**3684.719**

Also required:

Mounting blocks, see page 573.
EMC gaskets for covers, see page 573.
Assembly screws,
packs of 100, Model No. RP 3684.233,
see page 610.
Cover, version 1, see page 581.







Covers version 4

For all Ripac Vario, Ripac Vario EMC and Ripac Vario Mobil subracks.
To cover the overall subrack depth
(EMC application).

- Cover top/bottom with $^1/_2$ U edge fold to cover the $^1/_2$ U section in the subrack
- Optionally perforated or solid on the front
- Suitable for subracks 4 U (3 + 2 x $^1/_2$), 7 U (6 + 2 x $^1/_2$)
- For mounting on the subrack side panel with the aid of mounting blocks.

Material:
1.0 mm aluminium, unplated, hole diameter 4 mm in perforated version.

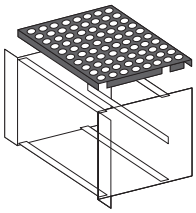
Note:
For EMC applications, mounting blocks must be fitted across the entire subrack depth.

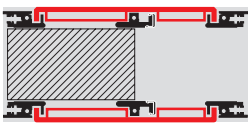
HP	For side panel depth (T) mm	Cover depth (d3) mm	Model No. RP	
			Perforated	Solid
84	285	270	**3684.732**	**3684.726**
84	345	330	**3684.733**	**3684.727**
84	405	390	**3684.734**	**3684.728**
84	465	450	**3684.735**	**3684.729**
84	525	510	**3684.736**	**3684.730**
84	585	570	**3684.737**	**3684.731**

Also required:

Mounting blocks,
see page 573.
EMC gaskets for covers,
see page 573.
Assembly screws,
packs of 100, Model No. RP 3684.233,
see page 610.







Covers version 5

(snap-fastening)
For all Ripac Vario, Ripac Vario EMC and Ripac Vario Mobil subracks.
To cover the overall subrack depth or PCB depth.

Simple assembly:
- Side edge fold with half shears facilitates fast assembly (without mounting blocks) by simply snap-fastening.
- Side notches for fitting horizontal rails in 160, 220 or 280 mm depth.
- Optionally solid or perforated.

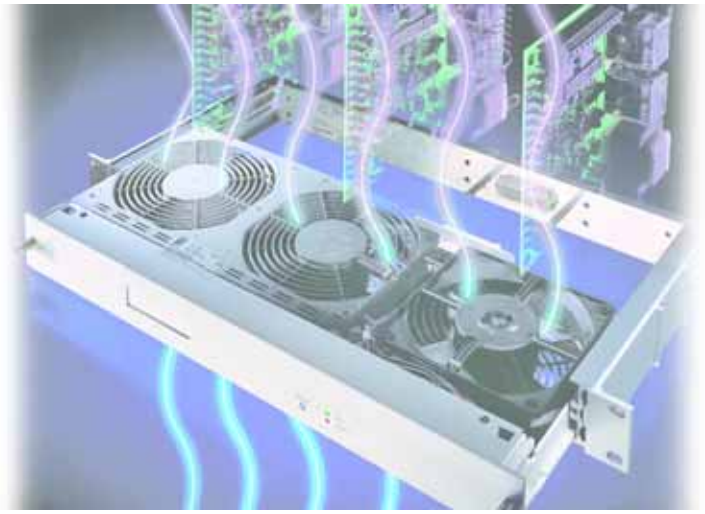
Material:
1.0 mm aluminium, unplated, hole diameter 4 mm in perforated version.

Supply includes:
2 gaskets

HP	Position of side notches for horizontal rails mm	For side panel depth mm	Model No. RP	
			Perforated	Solid
21	160	175/185	**3687.624**	**–**
21	160/220	235	**3687.692**	**–**
42	160	175/185	**3687.625**	**–**
42	160/220	235	**3687.677**	**–**
42	160	245	**3687.640**	**–**
84	160	175/185	**3687.641**	**3687.647**
84	160	245	**3687.642**	**3687.648**
84	160/220	235	**3687.643**	**3687.649**
84	160/220	285	**3687.644**	**3687.650**
84	160/220	305	**3687.645**	**3687.651**
84	160/220/280	345	**3687.646**	**3687.652**

Subrack climate control

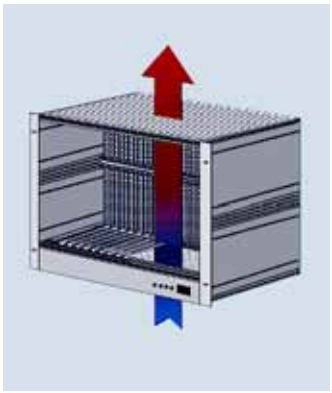
Features



Heat shortens the service life of equipment leading to failure, and also diminishes the high performance of electronics. The problem lies in high heat losses and compact installation spaces. For this reason, effective heat dissipation is vital to ensure long service life and operational reliability.

As well as the components shown below, Rittal system climate control also offers a range of other 482.6 mm (19″) cooling systems and rack-mounted fans.

System climate control, see from page 628.



Vertical ventilation



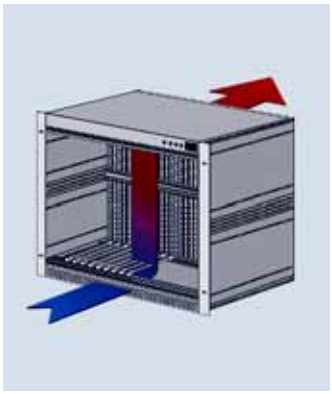
Rack-mounted fans are installed below the subrack in the enclosure. This ensures permanent air circulation to prevent the formation of hotspots.



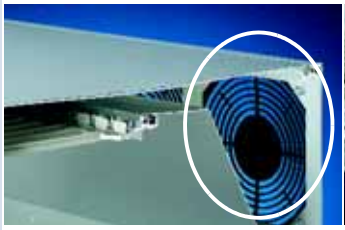
Fans are installed directly in the subrack, below or above the PCBs, with the aid of fan mounting plates, thereby preventing heat accumulation.



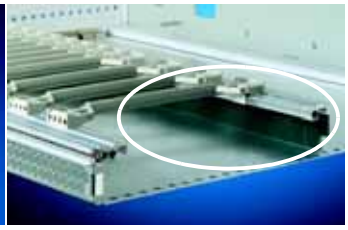
AC and DC fans in various output categories, can be retrofitted.



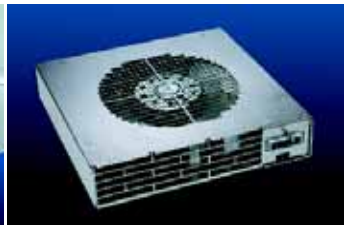
Diagonal cooling



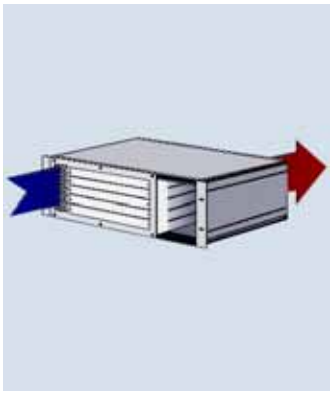
The air baffle plate in combination with . . .

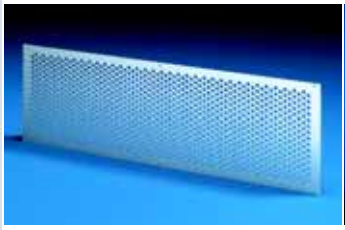


. . . the air block panel ensures targeted air routing inside the subrack.



RiCool high-capacity fan for heat losses of 700 W or more.

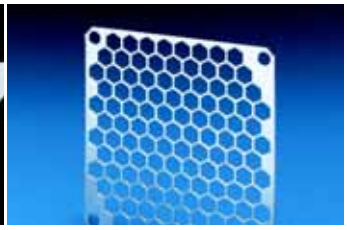




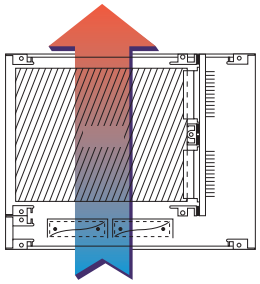
Front and rear panels for ventilation – also available in an EMC version.



Rear panels with cut-outs for the installation of 80 or 120 mm fans.

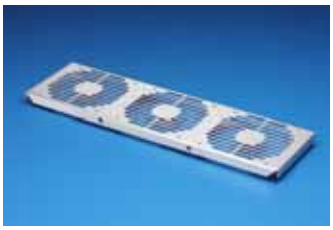


A finger guard or EMC shielding plate may be used to cover the fan cut-outs.



Vertical cooling from bottom to top

- Air flow via normal convection or forced cooling devices in the enclosure or housing outside of the subrack.
- Vertical forced air flow, supported by fans installed at the bottom of the subrack (1 U). For the cooling of enclosures and housings, rack-mounted fans, see page 699 and rack-mounted cooling units, see page 698, are available.





Fan mounting plate

For the installation of 120 mm fans and filter modules in 4 U and 7 U subracks.
For mounting on the subrack side panels.

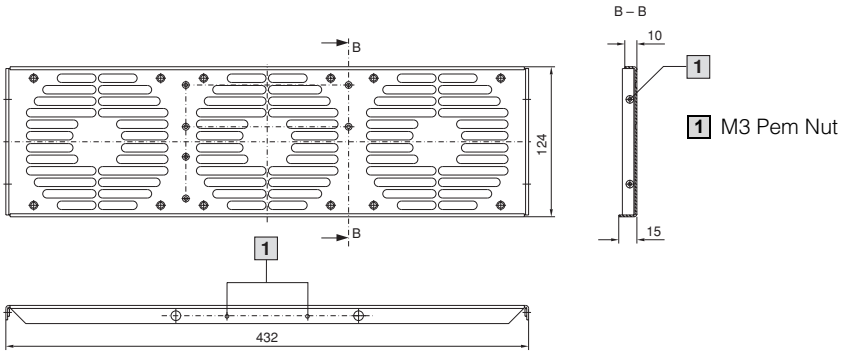
Material:
1.5 mm aluminium, anodised

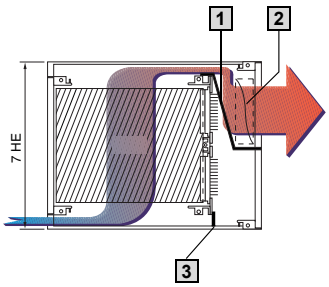
U	For PCB depth mm	No. of fan mounting plates required	HP	Model No. RP
1	160	1	84	3684.317
	220	1		
	280	2		
	340	2		
	400	3		

Also required:

1 terminal block is required for each subrack.

Packs of	Model No. RP
1	3686.805





Diagonal cooling from front to back

Diagonal air flow from front to back allows individual cooling of PCBs in vertical installation position. An air baffle and air partition ensure controlled air flow.

1 Air baffle, see page 586.
2 Fan (mounted on the rear panel), see page 588.
3 Air partition, see page 586.



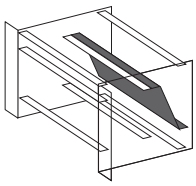
Air baffle

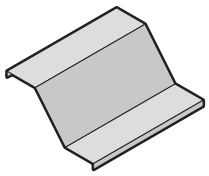
For controlled air flow in 7 U subracks.
For mounting on subrack side panels with the aid of mounting blocks.

Material:
1 mm aluminium

Supply includes:
Assembly parts.

Subrack depth mm	Model No. RP
285	**3685.302**
345	**3685.303**
405	**3684.320**
465	**3684.321**
525	**3684.322**





Also required:

Mounting blocks,
see page 573.

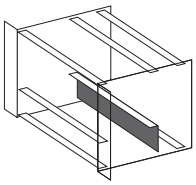


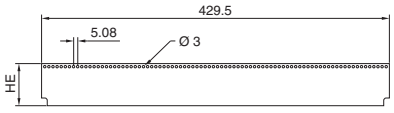
Air partition

For controlled air flow in the subrack. The partitions are mounted on the horizontal rails together with the backplanes.

Material:
Epoxy

U	Model No. RP
1/2	**3684.870**
1	**3684.871**
3	**3684.872**

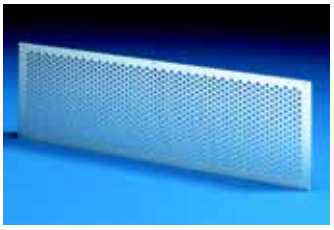




HE = U

Also required:

Fastening screws and washers, packs of 100,
Model No. RP 3684.019,
see page 610.

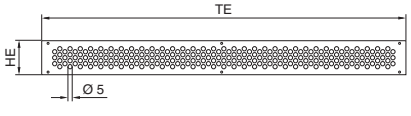


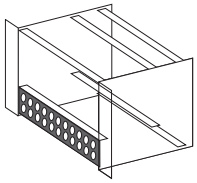
Front/rear panels for ventilation

Material:
2.5 mm aluminium

Surface finish:
Anodised,
clear-chromated (EMC version)

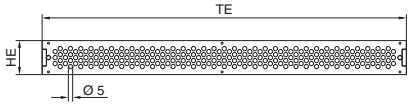
U	HP	Packs of	Model No. RP
1	84	1	**3684.812**
2	84	1	**3684.813**
3	84	1	**3684.814**





Scope of supply of the EMC version:
1 front panel,
1 contact strip,
1 gasket strip,
1 vertical EMC gasket,
assembly parts.

EMC



HE = U
TE = HP

Also required:

Screws and collars,
packs of 100 sets, Model No. RP 3658.160,
see page 610.

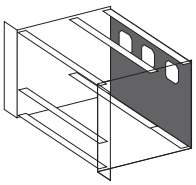
EMC version:

U	HP	Packs of	Model No. RP
1	84	1	**3684.281**
2	84	1	**3684.282**
3	84	1	**3684.283**

Also required:

For EMC centering screws,
see page 611.





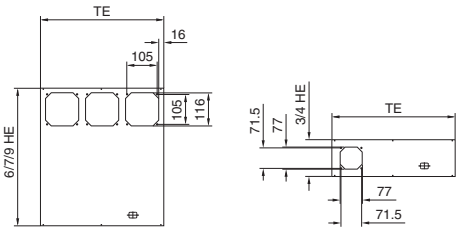
Rear panels for fan installation

Material:
2.5 mm aluminium

Surface finish:
Anodised,
clear-chromated (EMC version)

EMC version supply includes:
1 rear panel,
1 contact strip,
1 gasket strip,
1 vertical EMC gasket,
assembly parts.

EMC



HE = U
TE = HP

U	HP	For fans mm	Packs of	Model No. RP
3	85	80	1	**3684.839**
4	85	80	1	**3684.840**
6	85	120	1	**3684.841**
7	85	120	1	**3684.842**

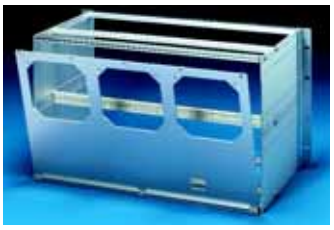
Also required:
Screws and collars,
packs of 100 sets, Model No. RP 3658.160,
see page 610.

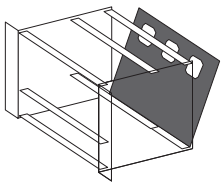
EMC version:

U	HP	For fans mm	Packs of	Model No. RP
3	84	80	1	**3684.284**
4	84	80	1	**3684.285**
6	84	120	1	**3684.286**
7	84	120	1	**3684.287**

Also required:
For EMC centering screws,
see page 611.

Accessories:
Fans,
see page 588.





Rear panels, horizontally hinged for fan installation

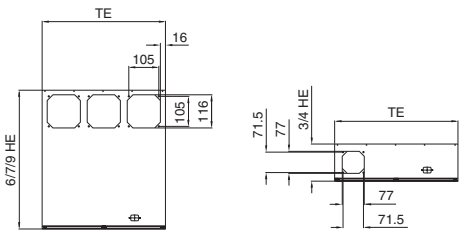
Material:
2.5 mm aluminium

Surface finish:
Anodised,
clear-chromated (EMC version)

Supply includes:
1 rear panel,
1 set of hinges,
assembly parts.

EMC version supply includes:
1 rear panel,
1 contact strip,
1 gasket strip,
1 vertical EMC gasket,
1 set of hinges,
assembly parts.

EMC



HE = U
TE = HP

U	HP	For fans mm	Packs of	Model No. RP
3	85	80	1	**3684.304**
4	85	80	1	**3684.305**
6	85	120	1	**3684.306**
7	85	120	1	**3684.307**

Also required:
Screws and collars,
packs of 100 sets, Model No. RP 3658.160,
see page 610.

EMC version:

U	HP	For fans mm	Packs of	Model No. RP
3	84	80	1	**3684.311**
4	84	80	1	**3684.312**
6	84	120	1	**3684.313**
7	84	120	1	**3684.314**

Also required:
For EMC centering screws,
see page 611.

Accessories:
Fans,
see page 588.



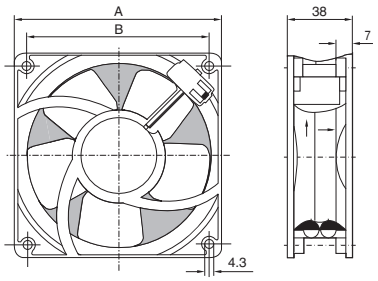
AC fans

For subracks and microcomputer systems.

Supply includes:
1 fan without connection cable.

Also required:

Assembly screws,
packs of 1 set, Model No. RP 3685.197,
see page 611.



AC fans

Dimensions			Bearing	Rated voltage V/Hz	Power watts	Noise level dB (A)	Temperature range °C	Volume flow m³/h	**Model No. RP**
Fan mm	A mm	B mm							
80	79.5	71.5	Ball bearing	115/60	11.0	42	–40 to +95	57	**3686.645**
80	79.5	71.5	Ball bearing	230/50	12.0	37	–40 to +90	48	**3686.646**
120	119.0	105.0	Ball bearing	115/60	18.0	51	–40 to +90	180	**3686.643**
120	119.0	105.0	Ball bearing	230/50	19.0	47	–40 to +85	160	**3686.644**

Connection cable

Cable length mm	Packs of	**Model No. RP**
610	1	**3686.658**
1000	1	**3686.659**



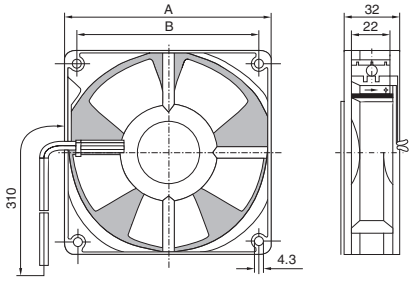
DC fans

Optionally available with temperature-dependent speed control via additional temperature sensor.

Supply includes:
1 fan with connection cable (310 mm).

Also required:

Assembly screws,
packs of 1 set, Model No. RP 3685.197,
see page 611.
Temperature sensor for DC fans with speed control, see page 589.



DC fan with speed control and alarm signal

Dimensions			Bearing	Rated voltage V (DC)	Voltage range Volt	Power watts	Noise level dB (A)	Temperature range °C	Temperature max. °C	Volume flow m³/h	**Model No. RP**
Fan mm	A mm	B mm									
80	79.5	71.5	Ball bearing	12	8.0 – 14.0	2.2	34	–20 to +65	65	48	**3686.649**
80	79.5	71.5	Ball bearing	24	21.6 – 26.4	2.4	36	–20 to +65	65	54	**3686.650**
120	119.0	104.8	Ball bearing	12	8.0 – 12.6	5.4	45	–20 to +65	65	170	**3686.647**
120	119.0	104.8	Ball bearing	24	21.0 – 27.0	5.4	45	–20 to +65	65	170	**3686.648**

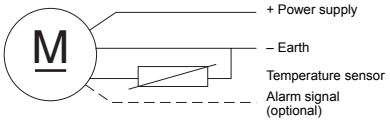
DC fan without speed control and without alarm signal

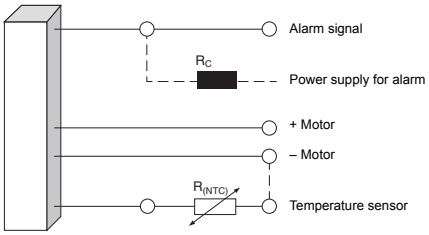
Dimensions			Bearing	Rated voltage V (DC)	Voltage range Volt	Power watts	Noise level dB (A)	Temperature range °C	Temperature max. °C	Volume flow m³/h	**Model No. RP**
Fan mm	A mm	B mm									
80	79.5	71.5	Ball bearing	12	6.0 – 15.0	1.8	34	–20 to +75	75	48	**3687.612**
80	79.5	71.5	Ball bearing	24	12.0 – 28.0	2.1	34	–20 to +75	75	48	**3687.613**
120	119.0	104.8	Ball bearing	12	6.0 – 15.0	2.6	39	–20 to +75	75	140	**3687.614**
120	119.0	104.8	Ball bearing	24	12.0 – 28.0	2.6	39	–20 to +75	75	140	**3687.615**

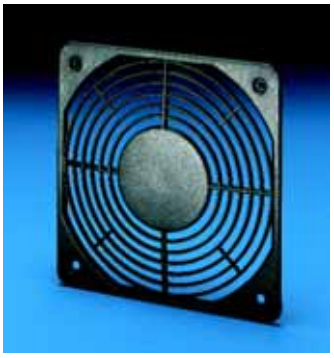
Temperature sensor

For DC fans 12/24 V with speed control.

Voltage	Packs of	Model No. RP
12 V/24 V (DC)	1	**3686.657**







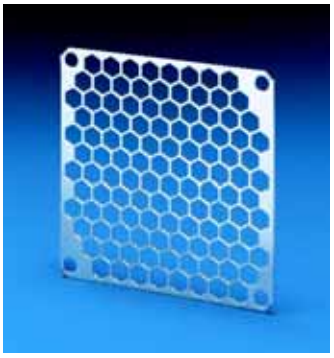
Finger guard

For AC fans and DC fans.

Material:
Polyamide, self-extinguishing to UL 94-V0

Colour:
Black

For fans mm	Packs of	Model No. RP
80	1	**3686.656**
120	1	**3686.655**

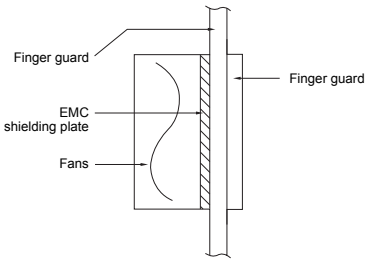


EMC shielding plate

For AC fans and DC fans.

Material:
1 mm aluminium, clear-chromated

For fans mm	Packs of	Model No. RP
80	1	**3686.359**
120	1	**3686.329**





Air block panel

for unused slots
see page 579.

Front panel service/Laminated front panels



Front panels are structural elements which need to be designed individually depending on the application. Particularly for small quantities (1 – 50 units), this entails a high time input in terms of development and production. With this in mind, Rittal offers its customers a service which covers the entire machining process, right through to assembly.

Services in detail:

- Machining: Drilling, milling, thread tapping, countersinking
- Surface finishing: Labelling, surface printing
- Assembly: EMC gaskets, handles, PCB holders.



Laminated front panels

Front panels are used in the front area of subracks. They are used to conceal empty spaces or as a complete plug-in assembly. In order to guarantee high requirements in terms of design, surface finish and electrical conductivity, chemical treatments such as etching or chromating are required. These are time-consuming and expensive procedures which also adversely affect the environment.

Rittal has developed a new technique which offers optimum surface quality plus conductivity without the need for chemical treatments.

The front panels are coated with an aluminium film in a special technique. The surface is hardened, making it particularly scratch-resistant.

Benefits at a glance:

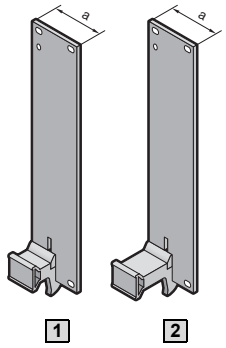
- **Eco-friendly,** because no chemical processes such as etching or chromating are required.
- Surface finishes are insensitive to touch (e. g. fingerprints).
- Overall an even, homogenous appearance.
- Customer-specific colours as an alternative to surface printing or spray-finishing.
- Machining such as punching or milling is easily achieved.

Good EMC properties.

Order information,
from page 592.

Tests:
Climate test to
IEC 61 587 class C2 and A2
Cold test to
DIN EN 60 068-2-1 Ab
Dry heat to
DIN EN 60 068-2-2 Bb
Moist heat to
DIN EN 60 068-2-30 Db
Pollutant testing to
IEC 60 068-2-42/-43
Complies with the requirements of RoHS and WEEE





Flat front panels

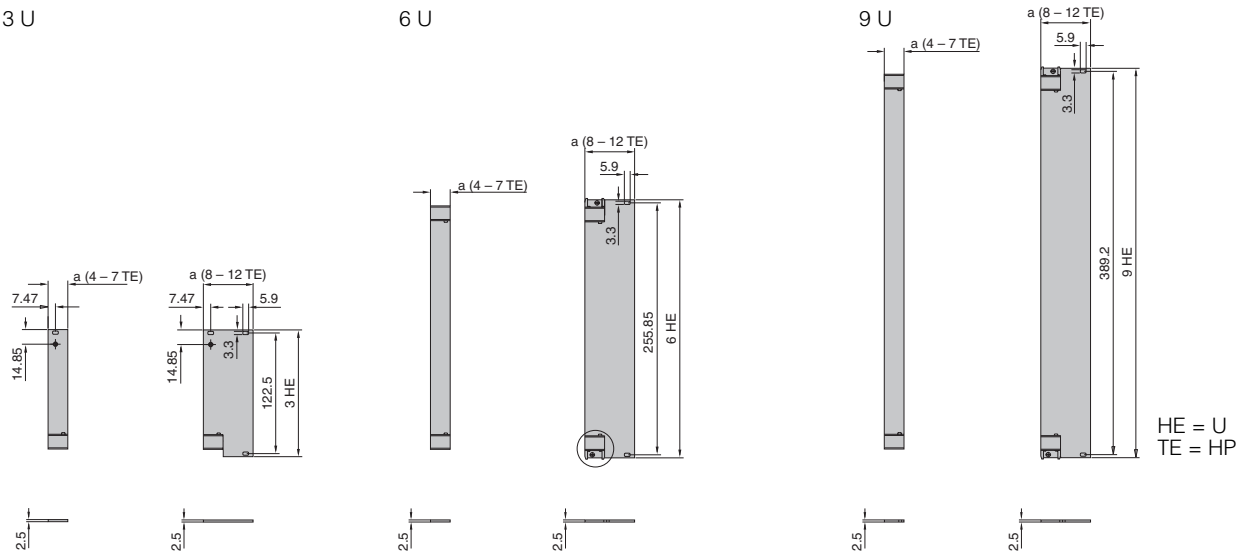
with type I or II extractor handle
Complete modular systems

Material:
Front panel: 2.5 mm aluminium, anodised
Handle: Plastic, black

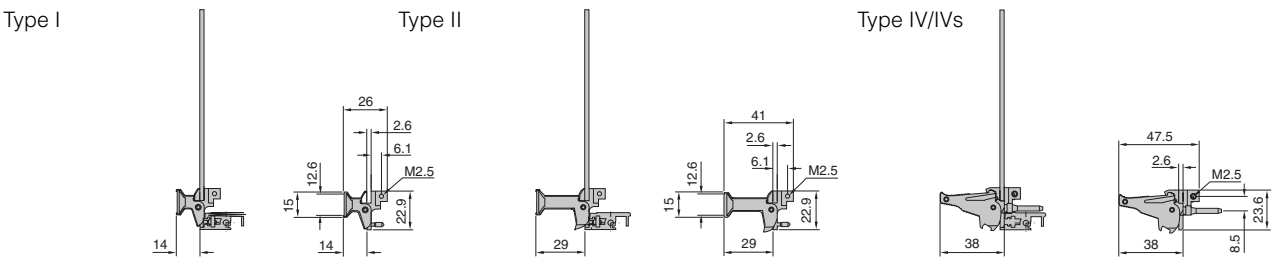
Supply includes:
1 front panel,
2 handles (1 with 3 U),
1 set of assembly parts,
1 PCB holder (for 3 U).

U	HP	a mm	Model No. RP 1 Type I	Model No. RP 2 Type II
3	4	20.0	**3684.330**	**3684.358**
3	5	25.1	**3684.331**	**3684.359**
3	6	30.2	**3684.332**	**3684.360**
3	7	35.3	**3684.333**	**3684.361**
3	8	40.3	**3684.334**	**3684.362**
3	10	50.5	**3684.335**	**3684.363**
3	12	60.7	**3684.336**	**3684.364**
6	4	20.0	**3684.337**	**3684.365**
6	5	25.1	**3684.338**	**3684.366**
6	6	30.2	**3684.339**	**3684.367**
6	7	35.3	**3684.340**	**3684.368**
6	8	40.3	**3684.341**	**3684.369**
6	10	50.5	**3684.342**	**3684.370**
6	12	60.7	**3684.343**	**3684.371**
9	4	20.0	–	**3684.372**
9	8	40.3	–	**3684.373**

Front panels with type I, II or IV, IVs, VII extractor handles

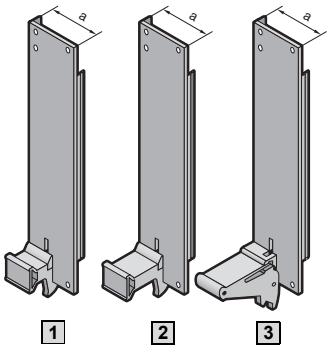


Extractor handles



Front panels, handles





U-channel front panels

with type I, II extractor handle or type IV injector/extractor handle
Complete modular systems

Material:
Front panel: Extruded aluminium section, clear-chromated, or aluminium film
Handle: Plastic, black

Supply includes:
1 front panel,
2 handles (1 with 3 U),
1 EMC gasket, vertical, version 1
1 set of assembly parts,
1 PCB holder (for 3 U).

EMC

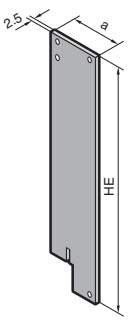
Note:
Detailed description of the laminated front panels, see page 590.

U	HP	a mm	Model No. RP				
			1 Type I		2 Type II	3 Type IV[1]	
			Clear-chromated	Laminated		Clear-chromated	Laminated
3	4	20.0	**3684.344**	**9909.268**	**3684.374**	**3684.413**	**9909.280**
3	5	25.1	**3684.345**	**9909.269**	**3684.375**	**3684.414**	**9909.281**
3	6	30.2	**3684.346**	**9909.270**	**3684.376**	**3684.415**	**9909.282**
3	7	35.3	**3684.347**	**–**	**3684.377**	**3684.416**	**–**
3	8	40.3	**3684.348**	**9909.271**	**3684.378**	**3684.417**	**9909.283**
3	10	50.5	**3684.349**	**9909.272**	**3684.379**	**3684.418**	**9909.284**
3	12	60.7	**3684.350**	**9909.273**	**3684.380**	**3684.419**	**9909.285**
6	4	20.0	**3684.351**	**9909.274**	**3684.381**	**3684.420**	**9909.286**
6	5	25.1	**3684.352**	**9909.275**	**3684.382**	**3684.421**	**9909.287**
6	6	30.2	**3684.353**	**9909.276**	**3684.383**	**3684.422**	**9909.288**
6	7	35.3	**3684.354**	**–**	**3684.384**	**3684.423**	**–**
6	8	40.3	**3684.355**	**9909.277**	**3684.385**	**3684.424**	**9909.289**
6	10	50.5	**3684.356**	**9909.278**	**3684.386**	**3684.425**	**9909.290**
6	12	60.7	**3684.357**	**9909.279**	**3684.387**	**3684.426**	**9909.291**
9	4	20.0	**–**	**–**	**3684.388**	**3684.427**	**9909.292**
9	5	25.1	**–**	**–**	**–**	**3684.428**	**9909.293**
9	6	30.2	**–**	**–**	**–**	**3684.429**	**9909.294**
9	7	35.3	**–**	**–**	**–**	**3684.430**	**–**
9	8	40.3	**–**	**–**	**3684.389**	**3684.431**	**9909.295**
9	10	50.5	**–**	**–**	**–**	**3684.432**	**9909.296**
9	12	60.7	**–**	**–**	**–**	**3684.433**	**9909.297**

[1] Can only be inserted in conjunction with front horizontal rails, with 10 mm roof (B), see page 564.

Detailed drawing,
see page 593.





HE = U

Flat front panels

for type I, II, IV, IVs or VII handles

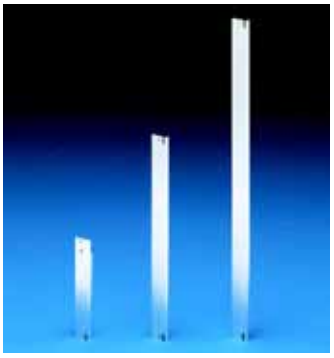
Material:
2.5 mm aluminium, anodised

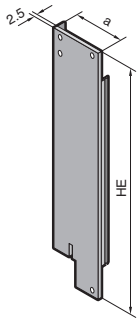
HP	a mm	Model No. RP		
		3 U	6 U	9 U
4	20.0	**3685.500**	**3685.508**	**3685.516**
5	25.1	**3685.501**	**3685.509**	**3685.517**
6	30.2	**3685.502**	**3685.510**	**3685.518**
7	35.3	**3685.503**	**3685.511**	**3685.519**
8	40.3	**3685.504**	**3685.512**	**3685.520**
10	50.5	**3685.505**	**3685.513**	**3685.521**
12	60.7	**3685.506**	**3685.514**	**3685.522**

Detailed drawing,
see page 591.

! Also required:

From front panel widths of 4 HP (at 3 U) and 7 HP (at 6 U):
Collar screws and plastic collars,
packs of 100 sets, Model No. RP 3658.160,
see page 610.
For 3 U front panels:
PCB holder set, see page 602.





U-channel front panels

for type I, II, IV, IVs or VII handles

EMC

Material:
2.5 mm extruded aluminium section, clear-chromated or with aluminium film.

Note:
Detailed description of the laminated front panels, see page 590.

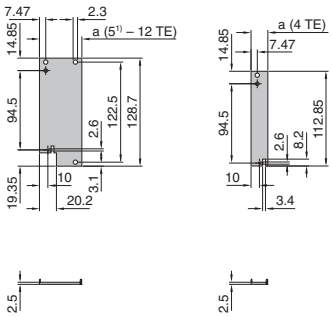
HP	a mm	Model No. RP					
		3 U		6 U		9 U	
		Clear-chromated	Laminated	Clear-chromated	Laminated	Clear-chromated	Laminated
4	20.0	**3685.524**	**9909.298**	**3685.532**	**9909.304**	**3685.540**	**9909.310**
5	25.1	**3685.525**	**9909.299**	**3685.533**	**9909.305**	**3685.541**	**9909.311**
6	30.2	**3685.526**	**9909.300**	**3685.534**	**9909.306**	**3685.542**	**9909.312**
7	35.3	**3685.527**	**–**	**3685.535**	**–**	**3685.543**	**–**
8	40.3	**3685.528**	**9909.301**	**3685.536**	**9909.307**	**3685.544**	**9909.313**
10	50.5	**3685.529**	**9909.302**	**3685.537**	**9909.308**	**3685.545**	**9909.314**
12	60.7	**3685.530**	**9909.303**	**3685.538**	**9909.309**	**3685.546**	**9909.315**

Also required:

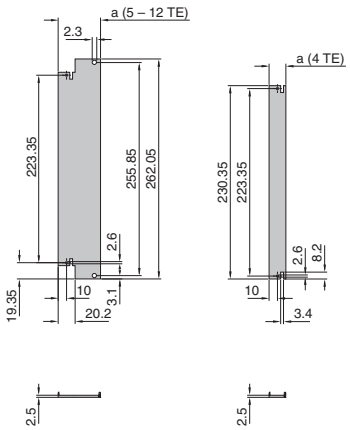
From front panel width 4 HP (for 3 U) and 8 HP (for 6 U):
Slotted centering screws,
packs of 100, Model No. RP 3687.050,
see page 611.
Posidrive centering screws,
packs of 100, Model No. RP 3687.051,
see page 611.
EMC gaskets,
see page 572.
For 3 U front panels:
PCB holder set,
see page 602.

Front panels for type I, II, IV, IVs or VII handles

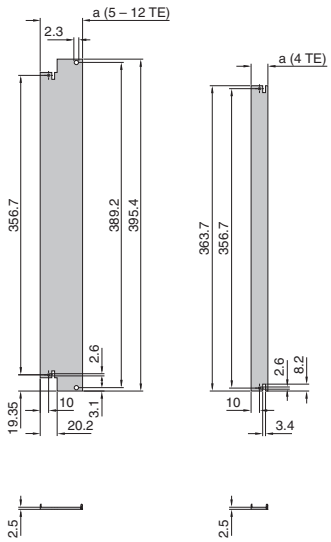
3 U



6 U



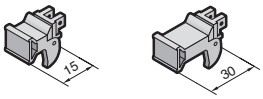
9 U



[1] 2.3 mm drilled hole not contained in versions 5 – 7 HP.

HE = U
TE = HP





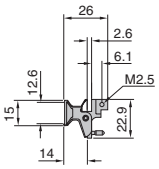
1 2

Extractor handle type I and type II

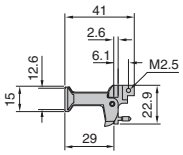
- Suitable for flat front panels/U-channel front panels
- With removal function
- May be used in combination with horizontal rails with 10 mm extension.

Supply includes:
Assembly parts.

Note:
With 3 U, only one extractor handle is required.



1



2

1 Type I extractor handle, 15 mm

Colour	Packs of	Model No. RP
Grey	1	**3685.587**
Black	1	**3685.589**

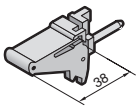
2 Type II extractor handle, 30 mm

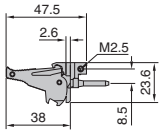
Colour	Packs of	Model No. RP
Grey	1	**3685.588**
Black	1	**3685.590**

Accessories:

Identification strips for extractor handles,
see page 595.







Injector/extractor handle type IV

Handles with micro-switch
For inserting and removing connectors with a large number of pins.

- Insertion/removal function
- Integral microswitch for “live insertion” applications
- Self-activation of the micro-switch during insertion/removal
- ESD pin to dissipate static charges before contacting the connectors and for precise positioning of the board type plug-in unit
- Keyable
- Integral PCB attachment
- Self-locking
- Bayable

Handle without micro-switch
Description see above. Micro-switch, may be retrofitted.

Supply includes:
1 handle without or with micro-switch, assembly parts.

Note:

- Insertion only when used with front horizontal rails, with 10 mm extension (B, B1, B2), see page 564.
- With 3 U front panels, only one extractor handle is required.

Handles with micro-switch

Colour	Installation	Packs of	Model No. RP
Grey	Top	1	**3686.905**
Grey	Bottom	1	**3686.904**
Black	Top	1	**3686.907**
Black	Bottom	1	**3686.906**

Handle without micro-switch

Colour	Installation	Packs of	Model No. RP
Grey	Top	1	**3686.901**
Grey	Bottom	1	**3686.900**
Black	Top	1	**3686.903**
Black	Bottom	1	**3686.902**

Accessories:

Keys,
see page 580.
Keyable guide rails,
siee page 576.
Micro-switches,
see page 596.
Connector pin for baying,
see page 595.



Injector/extractor handle type IV

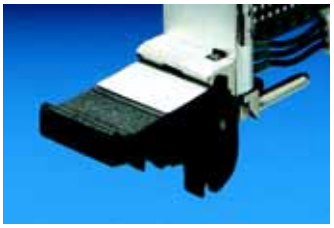
8 HP, bayed
Suitable for front panels 4 HP that must be connected to another mechanically.

Supply includes:
2 bayed handles,
fully assembled.

Colour	Installation	Packs of	Model No. RP
Black	Bottom	1	**3686.908**
Black	Top	1	**3686.909**

Accessories:

Connector pin for baying,
see page 595.



Identification strips

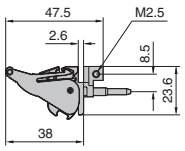
for type I, II extractor handle and type IV injector/extractor handle
Width 4 HP

Packs of	Model No. RP
100	**3684.328**



Injector/extractor handle type IVs

with push-button
For inserting and removing connectors with a large number of pins. A metal insert ensures reliable functioning, even at forces of up to 815 N.



- Insertion/removal function
- Push-button for locking and unlocking the board type plug-in unit (cannot be extracted in the locked position)
- Optionally with 1/2 HP offset PCB attachment, e. g. for component mounting on both sides
- Optional integral micro-switch for “live insertion” applications
- ESD pin to dissipate static charges before contacting the connectors and for precise positioning of the board type plug-in unit
- Keyable
- Integral PCB attachment
- Bayable

Material:
Plastic/metal

Supply includes:
Assembly parts.

Note:
- Insertion only when used with front horizontal rails, with 10 mm extension (B), see page 564.
- With 3 U front panels, only one extractor handle is required.

Handles without offset

Installation	Packs of	Model No. RP
Top	1	**3688.770**
Bottom	1	**3688.771**

Handles with 1/2 HP offset

Installation	Packs of	Model No. RP
Top	1	**3688.772**
Bottom	1	**3688.773**

Accessories:

Keys,
see page 580.
Keyable guide rails,
see page 576.
Keyable guide rails with 1/2 HP offset,
see page 577.
Micro-switches,
see page 596.
Connector pin for baying,
see page 595.



Connection pin

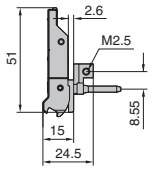
for injector/extractor handles, types IV, IVs and VII
The connection pin can be used to connect injector/extractor handles, types IV, IVs and VII.

Material:
Steel

Packs of	Model No. RP
20	**3685.319**

Front panels, handles





Injector/extractor handle type VII

Plastic (telecom)
For inserting and removing connectors with a large number of pins. This handle was specifically designed for use in telecom applications.

- Insertion/removal function
- Optionally with 1/2 HP offset PCB attachment, e. g. for component mounting on both sides
- Minimum front space requirements, due to fold-up handle
- Keyable
- Optional integral micro-switch for “live insertion” applications
- ESD pin to dissipate static charges prior to making contact with the connectors and for precise positioning of the board type plug-in unit
- Large labelling area on the front

Material:
Plastic

Supply includes:
Assembly parts.

Note:
Insertion only when used with front horizontal rails, with 10 mm extension (B),
see page 564.

Handles without offset

Installation	Packs of	Model No. RP
Top	1	**3688.784**
Bottom	1	**3688.785**

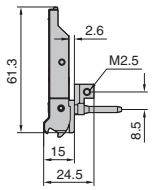
Handles with 1/2 HP offset

Installation	Packs of	Model No. RP
Top	1	**3688.780**
Bottom	1	**3688.781**

Accessories:

Keys,
see page 580.
Keyable guide rails,
see page 576.
Keyable guide rails with 1/2 HP offset,
see page 577.
Micro-switches,
see page 596.
Connector pin for baying,
see page 595.





Injector/extractor handle type VII

Metal (telecom)
For inserting and removing PCBs with a high connector pin-count (up to 815 N). This handle was specifically designed for use in telecom applications.

- Insertion/removal function
- Optionally with 1/2 HP offset PCB attachment, e. g. for component mounting on both sides
- Minimum front space requirements, due to fold-up handle
- Codeable
- Optional integral micro-switch for “live insertion” applications
- ESD pin to dissipate static charges prior to making contact with the connectors and for precise positioning of the board type plug-in unit
- Metal design for use in aggressive atmospheres

Material:
Die-cast zinc

Supply includes:
Assembly parts.

Note:
Insertion only when used with front horizontal rails, with 10 mm extension (B),
see page 564.

Handles without offset

Installation	Packs of	Model No. RP
Top	1	**3688.790**
Bottom	1	**3688.791**

Handles with 1/2 HP offset

Installation	Packs of	Model No. RP
Top	1	**3688.786**
Bottom	1	**3688.787**

Accessories:

Keys,
see page 580.
Keyable guide rails,
see page 576.
Keyable guide rails with 1/2 HP offset,
see page 577.
Micro-switches,
see page 596.
Connector pin for baying,
see page 595.



Micro-switch

For “live insertion” applications.
Installation in injector/extractor handles, types IV, IVs and VII. May also be retrofitted.

Technical specifications:
Switching load: 50 mA 30 V DC
Service life:
At nominal load: 30.000
mechanical: 50.000

Packs of	Model No. RP
10	**3684.410**

Also required:

Micro-switch mounting clip,
see page 597.



Micro-switch

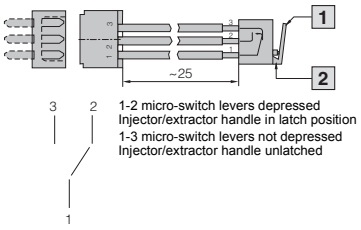
with cable and connector
For “live insertion” applications.
Installation in injector/extractor handles, types IV, IVs and VII.

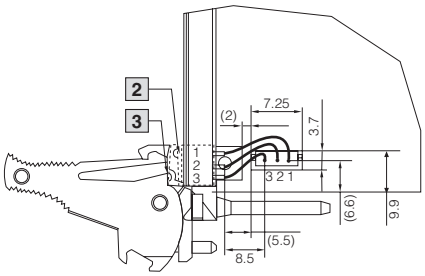
Supply includes:
Micro-switch, connector type Molex 51021-0300, mounting clips, 3 cables,
25 mm x #32 AWG,
fully assembled.

Packs of	Model No. RP
1 set	**3686.536**

Also required:
Micro-switch mounting clip,
see page 597.

1 Lever not depressed
2 Lever hinge
3 Lever contact point





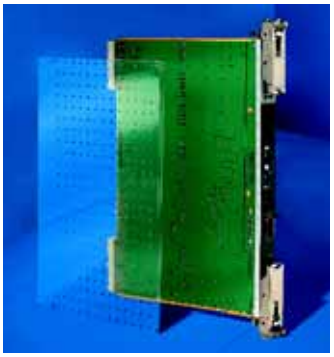


Micro-switch mounting clip

For mounting micro-switches in handles.

Packs of	Model No. RP
10	**3684.411**





Plastic covers

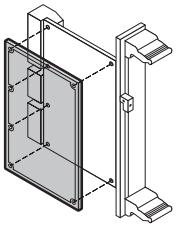
for PCBs
For mechanical protection of the component side and of the EMC gaskets.
Attachment holes as per CPCI or VME-specifications. Optionally available as perforated or solid version.

Material:
0.3 mm plastic, anti-static
Maximum temperature up to 65°C

1) 0.5 mm plastic, anti-static UL 94-V0, maximum temperature up to 65°C

2) 0.5 mm plastic, anti-static UL 94-V0, maximum temperature up to 120°C

For PCBs	Packs of	Model No. RP			
		for CPCI			for VME
		Perforated1)	Solid1)	Solid	Solid
3 U x 160 mm	1	**3687.932**	**3686.572**	**3685.966**	**3685.626**
	5	–	–	–	**3685.279**
3 U x 220 mm	1	–	–	–	**3685.805**
	5	–	–	–	**3685.266**
6 U x 80 mm	1	**3687.933**	**3686.573**	**3686.037**	**3686.146**
6 U x 160 mm	1	**3687.934**	**3686.574**	**3685.967**	**3685.627**
	1	**9905.5742)**	**9905.9902)**	–	–
	5	–	–	–	**3685.280**
6 U x 220 mm	1	–	–	–	**3685.824**
	5	–	–	–	**3685.000**

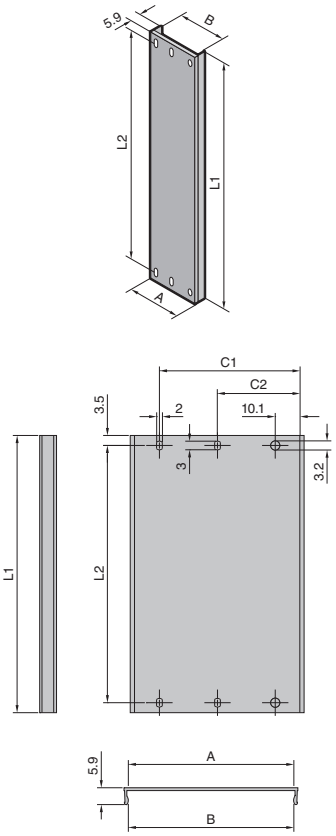


Also required:
Required for mounting the perforated CPCI covers:

Mounting clips

Packs of	Model No. RP
100	**3687.955**

Front panels, handles



Front panels

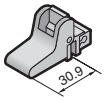
for type III extractor handle

Material:
1.0 mm extruded aluminium section

Surface finish:
Untreated

HP	A mm	B mm	C1 mm	C2 mm	Model No. RP		
					3 U	6 U	9 U
3	15.20	12.20	–	–	**3685.548**	**3685.555**	**–**
4	20.22	17.20	–	–	**3685.549**	**3685.556**	**3685.562**
5	25.28	22.28	–	22.68	**3685.550**	**3685.557**	**3685.563**
6	30.36	27.36	–	25.22	**3685.551**	**3685.558**	**3685.564**
8	40.52	37.52	–	30.30	**3685.552**	**3685.559**	**3685.566**
10	50.68	47.68	40.46	25.22	**3685.553**	**3685.560**	**3685.567**
12	60.84	57.84	50.62	30.30	**3685.554**	**3685.561**	**3685.568**
L1 mm					97.00	230.35	363.70
L2 mm					90.00	223.35	356.70

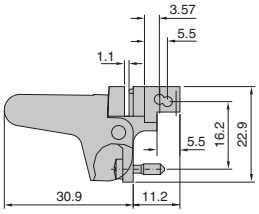




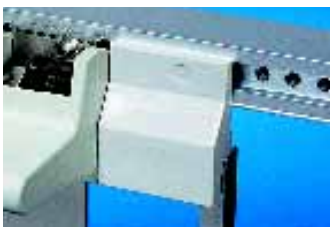
Type III handle, extractor

Material:
Fibreglass-reinforced polycarbonate
Base section nickel-plated ABS

Colour:
Grey



HP	Packs of	Model No. RP
3	1	**3685.591**
4	1	**3685.592**

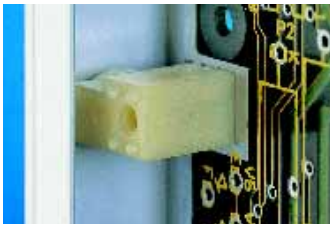


Covers

for panel end spaces

Material:
Fibreglass-reinforced polycarbonate

HP	Width mm	Packs of	Model No. RP
1	5	1	**3687.529**
2	10.08	1	**3687.530**
4	20.24	1	**3687.531**



Universal holder

for front panel support

Material:
Nickel-plated plastic

HP	Packs of	Model No. RP
4	1	**3687.545**



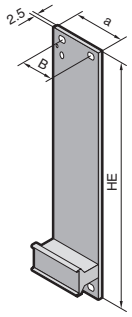
Flat front panels

with type V handle and PCB holder
Complete modular systems

Material:
Front panel: 2.5 mm aluminium, natural-anodised
Handle: Aluminium, natural-anodised
PCB holder: Polycarbonate

Supply includes:
1 front panel,
1 handle (2 with 6 U),
1 PCB holder (2 with 6 U),
assembly parts.

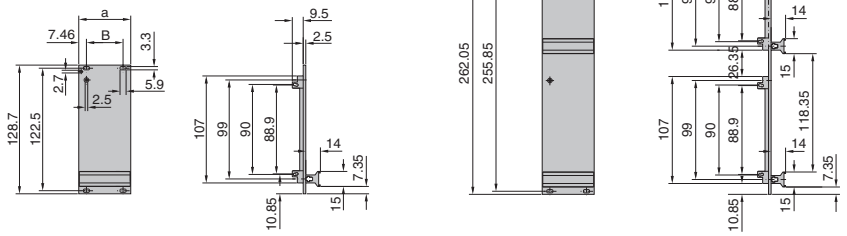
HP	a mm	W (B) mm	Model No. RP	
			3 U H = 128.7	6 U H = 262.05
3	14.9	–	**3652.000**	**3652.200**
4	20.0	–	**3652.010**	**3652.210**
5	25.1	–	**3652.020**	**3652.220**
6	30.1	–	**3652.030**	**3652.230**
7	35.2	–	**3652.040**	**3652.240**
8	40.3	–	**3652.050**	**3652.250**
10	50.5	35.6	**3652.060**	**3652.260**
12	60.6	45.7	**3652.070**	**3652.270**
14	70.8	55.9	**3652.080**	**–**



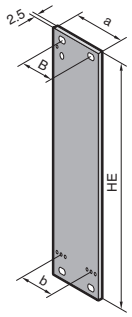
HE = U

Accessories:

Identification strips for handles,
see page 601.



Front panels, handles

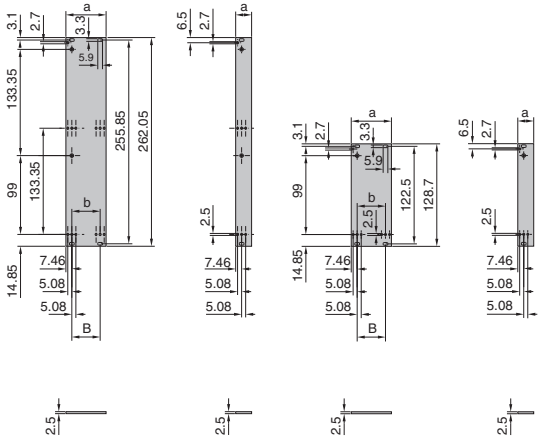


HE = U

Flat front panels

for type V and VI handle

Material:
2.5 mm aluminium, anodised



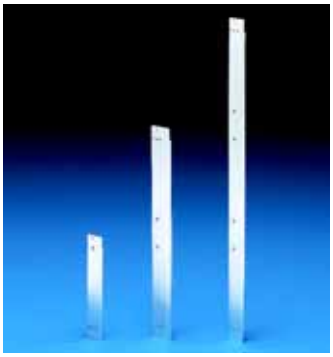
HP	a mm	W (B) mm	b mm	Packs of	Model No. RP 3 U	Model No. RP 6 U
3	14.9	–	–	1	**3685.569**	**3685.578**
4	20.0	–	–	1	**3685.570**	**3685.579**
5	25.1	–	–	1	**3685.571**	**3685.580**
6	30.2	–	15.2	1	**3685.572**	**3685.581**
7	35.2	–	20.3	1	**3685.573**	**3685.582**
8	40.3	–	25.4	1	**3685.574**	**3685.583**
10	50.5	35.6	35.6	1	**3685.575**	**3685.584**
12	60.6	45.7	45.7	1	**3685.576**	**3685.585**
14	70.8	55.9	55.9	1	**3685.577**	**3685.586**

Also required:

Collar screws and plastic collars,
packs of 100 sets, Model No. RP 3658.160,
see page 610.

Accessories:

Handles type V,
see page 601.
Handles type VI,
see page 602.



U-channel front panels

for type V and VI handle

Material:
2.5 mm aluminium, clear-chromated

Supply includes:
1 vertical EMC gasket, version 1.

EMC

HP	a mm	W (B) mm	Packs of	Model No. RP 3 U	Model No. RP 6 U
4	20.0	–	1	**3687.655**	**3687.660**
6	30.2	–	1	**3687.656**	**3687.661**
8	40.3	–	1	**3687.657**	**3687.662**
10	50.5	35.6	1	**3687.658**	**3687.663**
12	60.6	45.7	1	**3687.659**	**3687.664**

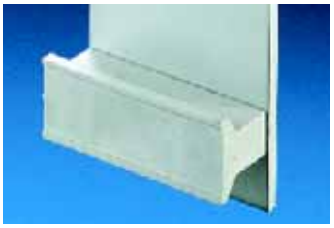
Also required:

Slotted centering screws,
packs of 100, Model No. RP 3687.050,
see page 611.

Accessories:

Handles type V,
see page 601.
Handles type VI,
see page 602.

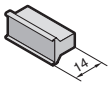
Detailed drawing,
see above.



Type V handle

Plastic

Material:
Plastic



HP	Colour	Packs of	Model No. RP
3	Grey	1	**3685.490**
4	Grey	1	**3685.491**
8	Grey	1	**3685.492**
12	Grey	1	**3685.493**
20	Grey	1	**3685.494**
3	Black	1	**3685.495**
4	Black	1	**3685.496**
8	Black	1	**3685.497**
12	Black	1	**3685.498**
20	Black	1	**3685.499**

Also required:

Mounting kit,
packs of 1 set, Model No. RP 3687.519,
see page 610.

Identification strips

for type V handle, plastic
self-adhesive

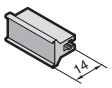
HP	Packs of	Model No. RP
24	1	**3687.693**

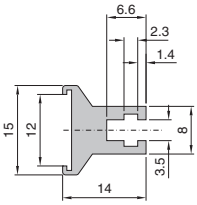


Type V handle

Aluminium

Material:
Aluminium, anodised.

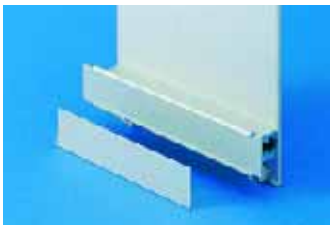




HP	Model No. RP	HP	Model No. RP
3	**3685.595**	12	**3685.602**
4	**3685.596**	14	**3685.603**
5	**3685.597**	21	**3685.761**
6	**3685.598**	28	**3685.762**
7	**3685.599**	42	**3685.763**
8	**3685.600**	1 m	**3685.604**
10	**3685.601**		

Also required:

Mounting kit,
packs of 1 set, Model No. RP 3687.146,
(from 6 HP 2 packs required),
see page 611.



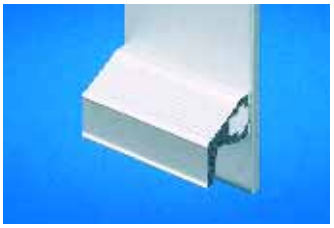
Identification strips

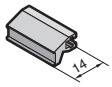
for type V handle, aluminium
For individual labelling of the handles.

Material:
0.5 mm aluminium, anodised

HP	Packs of	Model No. RP
3	1	**3685.746**
4	1	**3685.747**
5	1	**3685.748**
6	1	**3685.749**
7	1	**3685.750**
8	1	**3685.751**
10	1	**3685.752**
12	1	**3685.753**
14	1	**3685.754**
21	1	**3685.755**
28	1	**3685.756**
42	1	**3685.757**
1 m	1	**3685.758**
0.5 m	5	**3606.300**

Front panels, handles

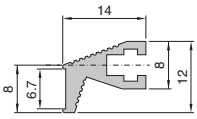




Type VI handle

Aluminium

Material:
Aluminium, anodised.



HP	Model No. RP	HP	Model No. RP
3	**3685.605**	12	**3685.612**
4	**3685.606**	14	**3685.613**
5	**3685.607**	21	**3685.614**
6	**3685.608**	28	**3685.615**
7	**3685.609**	42	**3685.616**
8	**3685.610**	84	**3685.617**
10	**3685.611**	1 m	**3685.618**

Also required:

Mounting kit,
packs of 1 set, Model No. RP 3687.146,
(from 6 HP 2 packs required),
see page 611.



PCB holder kit

For attaching the PCB to front panels with handle types I, II, IV, IVs, VII.

Material:
Die-cast

Note:
Only required at the top with 3 U front panels.

Packs of	Model No. RP
10	**3685.198**

Also required:

For attaching the PCB to the PCB holder:
Pan-head screws,
packs of 100, Model No. RP 3654.320,
see page 610.
For attaching the front panel to the PCB holder:
Pan-head screws,
packs of 100, Model No. RP 3685.282,
see page 611.



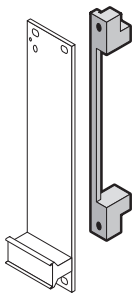
PCB holder

For front panels
For attaching PCBs to front panels (handle type V, VI).

Material:
Noryl

Supply includes:
Assembly parts.

Packs of	Model No. RP
10	**3606.330**

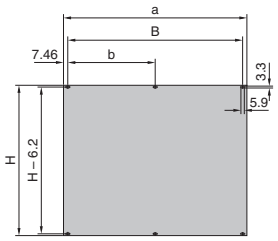


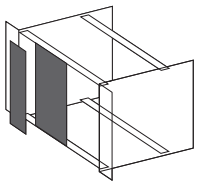


Front panels

as filler panel, flat

Material:
2.5 mm aluminium, natural-anodised.





Also required:

Collar screws and plastic collars,
packs of 100 sets, Model No. RP 3658.160,
see page 610.

HP	a mm	W (B) mm	b mm	Model No. RP						
				1 U H = 39.8	2 U H = 84.25	3 U H = 128.7	4 U H = 173.15	6 U H = 262.05	7 U H = 306.5	9 U H = 395.4
2	9.8	–	–	–	–	**3684.889**	–	**3684.911**	–	**3684.738**
3	14.9	–	–	–	–	**3684.890**	–	**3684.912**	–	–
4	20.0	–	–	–	–	**3684.891**	–	**3684.913**	–	**3684.739**
5	25.1	–	–	–	–	**3684.892**	–	**3684.914**	–	–
6	30.1	–	–	–	–	**3684.893**	–	**3684.915**	–	–
7	35.2	–	–	–	–	**3684.894**	–	**3684.916**	–	–
8	40.3	–	–	–	–	**3684.895**	–	**3684.917**	–	**3684.740**
10	50.5	35.6	–	–	–	**3684.896**	–	**3684.918**	–	–
12	60.6	45.7	–	–	–	**3684.897**	–	**3684.919**	–	**3684.741**
14	70.8	55.9	–	–	–	**3684.898**	–	**3684.920**	–	–
20	101.3	86.4	–	–	–	**3684.899**	–	**3684.921**	–	–
21	106.4	91.4	–	–	**3685.350**	**3684.900**	–	**3684.922**	–	–
24	121.7	106.7	–	–	**3685.429**	–	–	–	–	–
27	136.8	121.9	–	–	–	**3684.901**	–	**3684.923**	–	–
28	141.9	127.0	–	–	–	**3684.902**	–	**3684.924**	–	–
40	202.9	188.0	–	–	–	**3684.903**	–	**3684.976**	–	**3684.977**
42	213.0	198.1	–	**3684.885**	**3684.887**	**3684.904**	**3684.908**	**3684.925**	**3684.928**	**3684.742**
60	304.5	289.6	–	–	–	**3684.905**	–	–	–	–
63	319.7	304.8	152.4	–	–	**3684.906**	**3684.909**	**3684.926**	**3684.929**	–
84	426.4	411.5	203.2	**3684.886**	**3684.888**	**3684.907**	**3684.910**	**3684.927**	**3684.930**	**3684.743**
85	431.5	431.5	203.2	–	–	**3684.744**	**3684.745**	**3684.746**	**3684.747**	**3684.748**

Front panels, handles



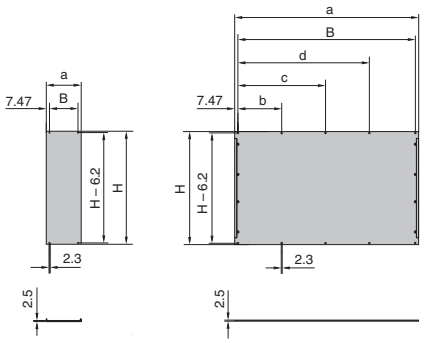
Front panels

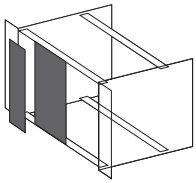
as filler panels, U-shaped

Material:
2.5 mm extruded aluminium section,
clear-chromated or with aluminium film.

Supply includes:
1 front panel, one-piece (with 2 – 14 HP version)
or three-piece (with > 14 HP version),
1 vertical EMC gasket, version 1,
1 contact strip (three-piece only)
1 gasket strip (three-piece only).

Note:
Detailed description of the laminated front panels,
see page 590.





EMC

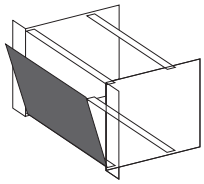
! Also required:

Slotted centering screws,
packs of 100, Model No. RP 3687.050,
see page 611.

HP	a mm	W (B) mm	b mm	c mm	d mm	Model No. RP								
						1 U H = 39.8	2 U H = 84.25	3 U H = 128.7		4 U H = 173.15	6 U H = 262.05		7 U H = 306.5	9 U H = 395.4
								Clear-chromated	Laminated		Clear-chromated	Laminated		
2	9.8	–	–	–	–	**–**	**–**	**3685.177**	**9909.316**	**–**	**3685.185**	**9909.325**	**–**	**3685.193**
3	14.9	–	–	–	–	**–**	**–**	**3686.138**	**9909.317**	**–**	**3686.139**	**9909.326**	**–**	**3686.140**
4	20.0	–	–	–	–	**–**	**–**	**3685.178**	**9909.318**	**–**	**3685.186**	**9909.327**	**–**	**3685.194**
5	25.1	–	–	–	–	**–**	**–**	**3685.179**	**9909.319**	**–**	**3685.187**	**9909.328**	**–**	**–**
6	30.1	–	–	–	–	**–**	**–**	**3685.180**	**9909.320**	**–**	**3685.188**	**9909.329**	**–**	**–**
7	35.2	–	–	–	–	**–**	**–**	**3685.181**	**–**	**–**	**3685.189**	**–**	**–**	**–**
8	40.3	25.4	–	–	–	**–**	**–**	**3685.182**	**9909.321**	**–**	**3685.190**	**9909.330**	**–**	**3685.195**
10	50.5	35.6	–	–	–	**–**	**–**	**3685.183**	**9909.322**	**–**	**3685.191**	**9909.331**	**–**	**–**
12	60.6	45.7	–	–	–	**–**	**–**	**3685.184**	**9909.323**	**–**	**3685.192**	**9909.332**	**–**	**3685.196**
14	70.8	55.9	–	–	–	**–**	**–**	**3684.249**	**9909.324**	**–**	**3684.258**	**9909.333**	**–**	**3684.278**
16	80.9	66.0	–	–	–	**–**	**–**	**3685.348**	**–**	**–**	**3685.349**	**–**	**–**	**–**
20	101.3	86.4	–	–	–	**–**	**–**	**3684.250**	**–**	**–**	**3684.259**	**–**	**–**	**3684.279**
21	106.4	91.4	–	–	–	**–**	**–**	**3684.272**	**–**	**–**	**3684.275**	**–**	**–**	**–**
28	141.9	127.0	61.0	–	–	**–**	**–**	**3684.251**	**–**	**–**	**3684.260**	**–**	**–**	**–**
40	202.9	188.0	91.5	–	–	**–**	**–**	**3684.273**	**–**	**–**	**3684.276**	**–**	**–**	**3684.280**
42	213.0	198.1	96.5	–	–	**–**	**–**	**3684.252**	**–**	**3684.255**	**3684.261**	**–**	**3684.264**	**3684.267**
60	304.5	289.6	96.5	193.0	–	**–**	**–**	**3684.274**	**–**	**–**	**3684.277**	**–**	**–**	**–**
63	319.7	304.8	101.6	203.2	–	**–**	**–**	**3684.253**	**–**	**3684.256**	**3684.262**	**–**	**3684.265**	**3684.268**
84	426.4	411.5	101.6	203.2	304.8	**3684.247**	**3684.248**	**3684.254**	**–**	**3684.257**	**3684.263**	**–**	**3684.266**	**3684.269**

Front panels, handles





Front panels

Hinged

Material:
2.5 mm aluminium, anodised

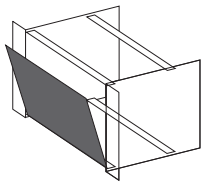
Supply includes:
1 set of hinges,
assembly parts.

U	HP	Model No. RP	
		vertically hinged	horizontally hinged
3	42[1)]	**3652.600**	**3652.500**
3	84[1)]	**3652.610**	**3652.510**
3	85	**–**	**3684.291**
4	85	**–**	**3684.292**
6	42[1)]	**3652.620**	**3652.520**
6	84[1)]	**3652.630**	**3652.530**
6	85	**–**	**3684.293**
7	85	**–**	**3684.294**
9	85	**–**	**3684.295**

Also required:

[1)] With rear mounting of 42 HP and 84 HP front panels, additonal trim sections must be attached at the rear of the subrack.
Rear trim sections, see page 562.





EMC front panels

Hinged

Material:
2.5 mm aluminium,
clear-chromated

Supply includes:
1 front panel,
1 set of hinges,
1 contact strip,
1 gasket strip,
1 vertical EMC gasket, version 1,
assembly parts.

EMC

U	HP	Model No. RP horizontally hinged
3	84	**3684.298**
4	84	**3684.299**
6	84	**3684.300**
7	84	**3684.301**
9	84	**3684.302**



Mezzanine front panels

Die-cast zinc
For PCI mezzanine cards (PMC).

Conforms to IEEE 1386

Material:
Die-cast zinc

Packs of	Model No. RP
1	**3688.659**

Accessories:

EMC seals,
see page 606.
Assembly screws M2.5 x 6,
packs of 100, Model No. RP 3654.340,
see page 610.

Front panels, handles



Mezzanine front panels

Extruded aluminium section
For PCI mezzanine cards (PMC).

Conforms to IEEE 1386

Material/surface finish:
Extruded aluminium section, clear-chromated

Packs of	Model No. RP
1	**3688.658**

Accessories:

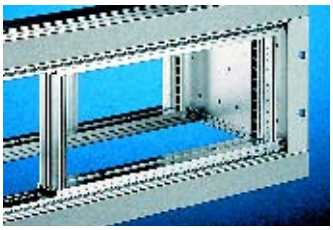
EMC seals,
see page 606.
Assembly screws M2.5 x 6,
packs of 100, Model No. RP 3654.340,
see page 610.



Support spacers

for mezzanine cards
10 mm, for mounting mezzanine cards.

Packs of	Model No. RP
1	**3688.663**



Door cut-out trim

for subracks installed indoors

Material:
Aluminium

Width	Packs of	Model No. UN
269.2 mm (1/2 19″)	2	**3634.060**
482.6 mm (19″)	2	**3634.070**



Covers

for mezzanine cut-outs
To conceal unused mezzanine cut-outs. The covers are simply clipped into the cut-outs.

Material:
Stainless steel

Packs of	Model No. RP
1	**3688.660**



EMC seals

for mezzanine front panels
can be inserted into the all-round channel of the mezzanine front panels.

Material/surface finish:
Sealing ring made of conductive carbon filled silicon, sealing gasket made from stainless steel.

Design	Packs of	Model No. RP
Sealing ring	1	**3688.661**
Sealing gasket	1	**3688.662**

Ripac box type plug-in units – individual components



Vertical drive chassis

For the installation of drives or CD-ROMs.
May be installed in all Ripac subracks.

- Optionally prepared for EMC or non-EMC
- Accomodation for $3^1/_2$″ or $5^1/_4$″ drives or CD-ROM, vertical
- Front panel and support plate integrated

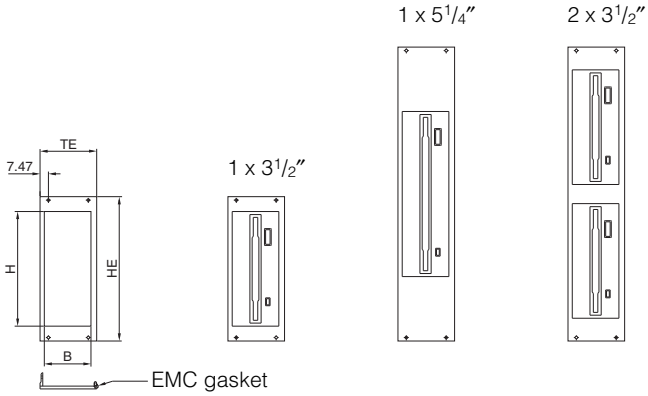
Material:
Front panel: 2.5 mm aluminium
Support plate: Aluminium

Surface finish:
Clear-chromated

EMC

Supply includes:
1 front panel with support plate,
1 EMC gasket (with EMC modules),
assembly parts.

Installation drives	Font panel		Depth drive approx. mm	Front panel cut-out		Model No. RP	
	U (HE)	HP (TE)		Height (H) mm	Width (B) mm	EMC	Non-EMC
1 x $3^1/_2$″	3	8	160	102	26	**3684.469**	**3685.078**
1 x $5^1/_4$″	6	10	220	147	41.5	**3684.481**	**3685.090**
1 x $3^1/_2$″	3	8	160	–	–	**–**	**3685.091**
	3	10	160	–	–	**–**	**3685.092**
2 x $3^1/_2$″	6	8	160	–	–	**–**	**3685.095**
	6	10	160	–	–	**–**	**3685.096**





Guide rails

for drive chassis
For routing drive chassis in the subrack.

Material:
Aluminium

Supply includes:
Press-fit pin.

For installation depth mm	Packs of	Model No. RP
160	1	**3686.989**

Note:
Two guide rails are required for each drive chassis.
Guide rails 4.4″ for plastic drives, see page 578.

Also required:
Assembly screws,
packs of 100, Model No. RP 3654.340,
see page 610.



PCB holder

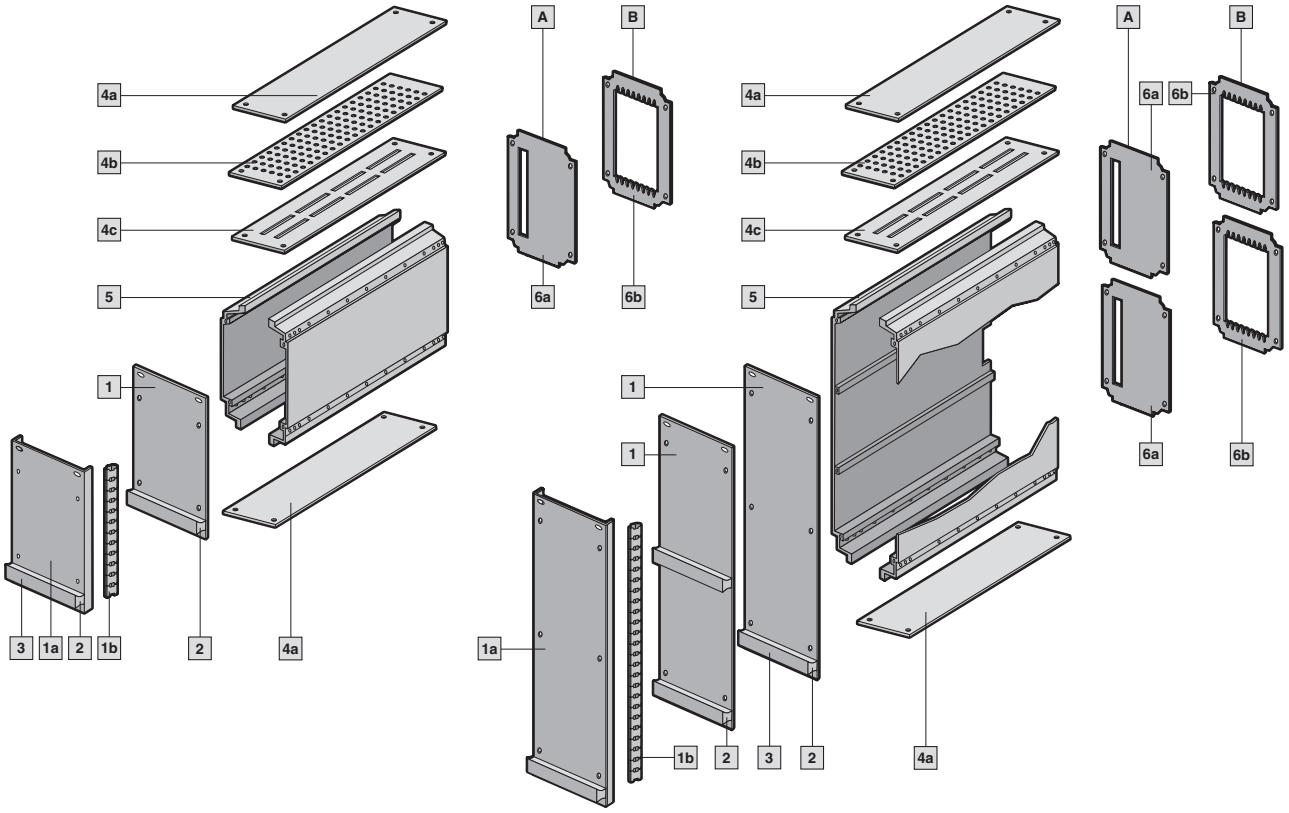
for box type plug-in units
For fastening PCBs in box type plug-in units.

Material:
PBTP, basic material to UL 94-V0

Supply includes:
Assembly parts.

Packs of	Model No. RP
2	**3606.321**

Ripac box type plug-in units – individual components



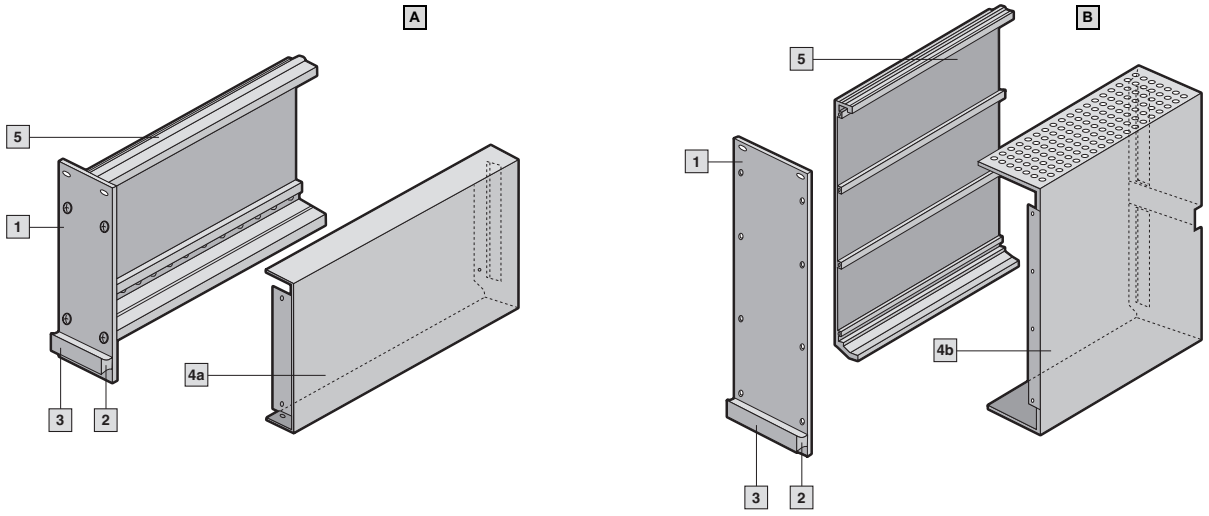
Ripac box type plug-in units, types I and II in 3 U and 6 U, individual components

Box type plug-in units, individual components		A Type I	B Type II	Packs of	8 HP	10 HP	12 HP	14 HP	21 HP	28 HP	42 HP	Page
Type I for one connector/type II for several connectors												
Front panels of 2.5 mm aluminium, anodised surface finish												
1	for 3 U	■	■	1	**3685.769**	**3685.629**	**3685.630**	**3685.631**	**3685.636**	**3685.637**	**3685.638**	–
1	for 6 U (for 1 handle)	■	■	1	**3685.767**	**3685.633**	**3685.634**	**3685.635**	**3685.639**	**3685.640**	**3685.641**	–
1	for 6 U (for 2 handles)	■	■	1	**–**	**3687.520**	**3687.521**	**3687.522**	**3687.523**	**3687.524**	**3687.525**	–
EMC front panels of 2.5 mm aluminium, surface finish clear-chromated (only for use in conjunction with 10 HP box type plug-in unit)												
1a	for 3 U/10 HP box type plug-in units	■	■	1	–	–	**3687.587**	–	–	–	–	–
1a	for 6 U/10 HP box type plug-in units	■	■	1	–	–	**3687.588**	–	–	–	–	–
EMC gaskets, vertical, for front panels												
1b	for 3 U	■	■	1	–	–	3686.975	–	–	–	–	572
1b	for 6 U	■	■	1	–	–	3686.977	–	–	–	–	572
Handle type V												
2	of aluminium, anodised surface finish	■	■	1	3685.600	3685.601	3685.602	3685.603	3685.761	3685.762	3685.763	601
2	of plastic	■	■	1	3685.492	–	3685.493	–	3685.494	–	–	601
Identification strips												
3	of 0.5 mm aluminium, anodised surface finish	■	■	1	3685.751	3685.752	3685.753	3685.754	3685.755	3685.756	3685.757	601
Covers 4a 4b of 1 mm aluminium, untreated 4c of 1.2 mm sheet steel, painted, RAL 9006 (with vent slots)												
4a	unvented, for board depth 160 mm	■	■	1	3687.555	3685.689	3685.690	3685.691	3685.692	3685.693	3685.694	–
4a	unvented, for board depth 220 mm	■	■	1	3687.562	3685.701	3685.702	3685.703	3685.704	3685.705	3685.706	–
4b	vented, for board depth 160 mm	■	■	1	3687.585	3685.683	3685.684	3685.685	3685.686	3685.687	3685.688	–
4b	vented, for board depth 220 mm	■	■	1	–	3685.695	3685.696	3685.697	3685.698	3685.699	3685.700	–
4c	vent slots for guide rails, for board depth 160 mm	■	■	1	–	3687.556	3687.557	3687.558	3687.559	3687.560	3687.561	–
4c	vent slots for guide rails, for board depth 220 mm	■	■	1	–	3687.563	3687.564	3687.565	3687.566	3687.567	3687.568	–
Side panel of extruded aluminium section, anodised surface finish												
5	3 U, for board depth 160 mm	■	■	1				**3685.645**				–
5	6 U, for board depth 160 mm	■	■	1				**3685.648**				–
5	3 U, for board depth 220 mm	■	■	1				**3685.646**				–
5	6 U, for board depth 220 mm	■	■	1				**3685.649**				–
Rear panel 6a of 2.0 mm aluminium, untreated 6b of 1.2 mm sheet steel, spray-finished												
6a	for 1 connector	■	–	1	**3687.536**	**3685.707**	**3685.708**	**3685.709**	**3685.710**	**3685.711**	**3685.712**	–
6b	for several connectors	–	■	1	**–**	**–**	**–**	**–**	**3687.537**	**3687.538**	**3687.539**	–

Assembly parts for box type plug-in units, see page 609

PCB holder for box type plug-in units, see page 607

Ripac box type plug-in units – individual components



Ripac box type plug-in units, types V and VI in 3 U and 6 U, individual components

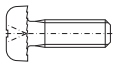
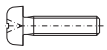
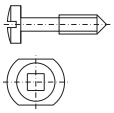
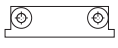
Box type plug-in units, individual components		A Type V	B Type VI	Packs of	6 HP	7 HP	8 HP	10 HP	12 HP	14 HP	Page
Type V with cover (unvented)/type VI with cover (vented)											
Front panels of 2.5 mm aluminium, anodised surface finish											
1	for 3 U	■	■	1	**3685.768**	**3685.628**	**3685.769**	**3685.629**	**3685.630**	**3685.631**	–
	for 6 U	■	■	1	**3685.766**	**3685.632**	**3685.767**	**3685.633**	**3685.634**	**3685.635**	–
Handle type V											
2	of aluminium, anodised surface finish	■	■	1	3685.598	3685.599	3685.600	3685.601	3685.602	3685.603	601
	of plastic	■	■	1	–	–	3685.492	–	3685.493	–	601
Identification strips for 3 U											
3	of 0.5 mm aluminium, anodised surface finish	■	■	1	3685.749	3685.750	3685.751	3685.752	3685.753	3685.754	601
Cover of 1 mm aluminium, clear-chromated surface finish											
4a	unvented, 3 U, for board depth 160 mm	■	–	1	**3685.774**	**3685.658**	**3685.776**	**3685.659**	**3685.660**	**3685.661**	–
	unvented, 3 U, for board depth 220 mm	■	–	1	**3685.775**	**3685.674**	**3685.777**	**3685.675**	**3685.676**	**3685.677**	–
	unvented, 6 U, for board depth 160 mm	■	–	1	**3685.717**	**3685.662**	**3685.764**	**3685.663**	**3685.664**	**3685.665**	–
	unvented, 6 U, for board depth 220 mm	■	–	1	**3685.718**	**3685.678**	**3685.765**	**3685.679**	**3685.680**	**3685.681**	–
4b	vented, 3 U, for board depth 160 mm	–	■	1	**3685.770**	**3685.650**	**3685.772**	**3685.651**	**3685.652**	**3685.653**	–
	vented, 3 U, for board depth 220 mm	–	■	1	**3685.771**	**3685.666**	**3685.773**	**3685.667**	**3685.668**	**3685.669**	–
	vented, 6 U, for board depth 160 mm	–	■	1	**3685.713**	**3685.654**	**3685.715**	**3685.655**	**3685.656**	**3685.657**	–
	vented, 6 U, for board depth 220 mm	–	■	1	**3685.714**	**3685.670**	**3685.716**	**3685.671**	**3685.672**	**3685.673**	–
Side panel of extruded aluminium section, anodised surface finish											
5	3 U, for board depth 160 mm	■	■	1	**3685.645**						–
	6 U, for board depth 160 mm	■	■	1	**3685.648**						–
	3 U, for board depth 220 mm	■	■	1	**3685.646**						–
	6 U, for board depth 220 mm	■	■	1	**3685.649**						–

Assembly parts for box type plug-in unit types I, II, V, VI				
Description	for installation of:	Packs of	**Model No. RP**	
Assembly kit for box type plug-in unit I/II, 3 U	Box type plug-in units, type I/II, 3 U	1 set	**3687.589**	–
Assembly kit for box type plug-in unit I/II, 6 U	Box type plug-in units, type I/II, 6 U	1 set	**3687.590**	–
Assembly kit for box type plug-in unit type V/VI	Box type plug-in units, type V/VI	1 set	**3685.294**	–
Assembly kit for box type plug-in unit with EMC front panel	Box type plug-in unit with EMC front panel	1 set	**3687.591**	–
Assembly kit for plastic handles	Plastic handles on box type plug-in units	1 set	**3687.519**	610

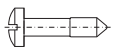
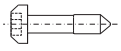
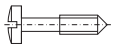
Guide rails for box type plug-in units, see page 579

For more screws, see page 610

Assembly parts

For the attachment of	Description	Dimensions	Model No.	Packs of
Front panels to unit side panels	Oval csk-screw ISO 7047-4.8-Z-A2K	M3 x 8 	**3606.550**	100
Rear panels to box-type plug-in units	Panhead screw ISO 7045-4.8-Z-A2K	M3 x 8 	**3606.560**	100
PCB holders (plastic) to front panels, top	Oval csk-screw ISO 7047-4.8-Z-A2K	M2.5 x 10 	**3606.610**	100
– Horizontal rails to side panels – Divider panels to horizontal rails – Horizontal rails to vertical supports	Panhead self-locking screw similar to DIN ISO 7045-8.8-Z-A2K	M4 x 12 	**3654.300**	100
– PCBs to PCB holders (die-cast for 3 U), top – PCBs to extractor handles with 6 U	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 8 	**3654.320**	100
– PCB holder (plastic) to type V/VI handles, bottom – PCBs to PCB holders (plastic) – Backplanes to threaded inserts	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 10 	**3654.330**	100
– Connectors to Z rails – Z rails to horizontal rails – Type V/VI handles to partial front panels, bottom right for ≥ 5 HP – Aluminium guide rails to horizontal rails – Mezzanine front panels	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 6 	**3654.340**	100
Aluminium guide rails to horizontal rails (fastening of square nuts)	Retaining cage	M2.5	**9901.417**	100
Handle type V (plastic) to front panels and box type plug-in units	Mounting kit for type V handle (plastic): Cover black Cover grey Hex nut Screw Screw Square nut DIN 562-04-A2K	 M2.5 M2.5 x 16 M2.5 x 12 M2.5	**3687.519**	1 set
Connectors to PCBs	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 12 	**3654.350**	100
Guide rails (plastic) to horizontal rails	Screw for plastic WN 1413	M2.2 x 6 	**3654.360**	100
– Flat front panels to handles type V, VI – Aluminium guide rails to horizontal rails	Square nut DIN 562-A2K	M2.5 	**3654.370**	100
– Flat front panels to horizontal rails – Trim frame to conceal the front sections of the horizontal mounting kit	Captive screws (cheese-head) and plastic collars	M2.5 x 11 	**3658.160**	100 sets
Flat front panels	Plastic collars		**3687.021**	100
PCB to type III handle	Screw for plastic WN 1412	3.0 x 8 	**3658.190**	100
– PCBs to PCB holders (plastic) – PCB holders to front panels, top	Hex nut ISO 4032-8	M2.5	**3658.210**	100
– Backplanes to threaded inserts – Air partitions to horizontal rails	Mounting kit for backplanes: Panhead posidrive screw ISO 7045-4.8-Z-A2K Washer PE, natural DIN 125	 M2.5 x 6  2.7 	**3684.019**	100
– Covers to mounting blocks – EMC contact strips	Flat csk-screw ISO 7046-1-4.8-Z-A2K	M3 x 6 	**3684.233**	100
Covers to side panels	Mounting block		**3684.234**	10
Type V/VI handle to front panels	Bracket		**3684.435**	100
Female connector to PCB attachment	Pop rivet DIN 7340-B-CuZn	2.5 x 0.3 x 10	**3684.482**	100
Ground contact to keyable guide rails	Fastening screw for ground contact	3.5 x 12	**3684.109**	50

Assembly parts

For the attachment of	Description	Dimensions	Model No.	Packs of
Fans to fan mounting plate	Mounting kit for fans:		**3685.197**	1 set
	Flat csk-screw ISO 7046-1-4.8-Z-A2K	M4 x 12 		
	Hex nut ISO 4032-8	M4 		
	Serrated washer DIN 6798-A-Fst-A2K	4.3 		
Covers to side panels	Mounting kit for covers:		**3685.256**	24 sets
	Mounting block			
	Flat csk-screw ISO 7046-1-4.8-Z-A2K	M3 x 6 		
PCB holders (die-cast) to front panels, top	Oval csk-screw ISO 7047-4.8-Z-A2K	M2.5 x 8 	**3685.282**	100
– Covers box type plug-in units type I/II – Contact/spring sections for 3-part front panels	Flat csk-screw ISO 7046-1-4.8-Z-A2K	M2.5 x 5 	**3685.289**	100
– Handles on front panels for box type plug-in units – Front panels to hinge strip	Flat csk-screw ISO 7046-1-4.8-Z-A2K	M2.5 x 6 	**3685.290**	100
Holder (horizontal assembly kit) to horizontal rail	Flat csk-screw similar to ISO 7046-1-4.8-Z-A2K	M2.5 x 5 	**3686.916**	100
Holder (horizontal assembly kit) to horizontal rail	Flat csk-screw similar to ISO 7046-1-4.8-Z-A2K	M2.5 x 8 	**3686.917**	100
Contact and spring sections on 3-part front panels without countersink	Panhead posidrive screw ISO 7046-4.8-Z-A2K	M2.5 x 5 	**3686.924**	100
Set back flanges to side panels	Mounting kit for set back flanges:		**3687.015**	4 sets
	Panhead self-locking screw similar to DIN ISO 7045-8.8-Z-A2K	M4 x 8 		
	Hex nut ISO 4032-8	M4 		
	Washer	4.3 		
Fastening the threaded inserts in horizontal rails	Grub screw ISO 7434-14H	M2.5 x 8 	**3687.020**	100
– EMC front panels to horizontal rails – EMC trim frame to conceal the front sections of the horizontal mounting kit	Centering screw, slotted	M2.5 x 11 	**3687.050**	100
EMC front panels to horizontal rails	Centering screw, posidrive	M2.5 x 11 	**3687.051**	100
EMC front panels to horizontal rails	Centering screw, hex screws	M2.5 x 11 	**3688.709**	100
Front panels and rear panels to horizontal rails	Collar screw, cheese-head, slotted	M2.5 x 11 	**3685.097**	100
Type V/VI handles (aluminium) to front panels	Mounting kit for type V/VI handles:		**3687.146**	1 set
	Panhead posidrive screw ISO 7045-4.8-Z-A2K	M2.5 x 6 		
	Bracket			
	Square nut DIN 562-11H-A2K	M2.5 		

Instrument cases/system enclosures

Features

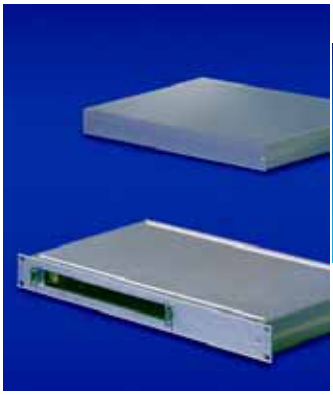


The RiCase instrument case impresses with its modern design and high functionality.

Particular features include the numerous colour variants and the all-metal enclosure construction.

The Ripac Vario-Module system enclosure (desktop or rack-mounted enclosure) is fully compatible with the latest Ripac subrack range, making it ideal for individual configuration and assembly as a microcomputer system.

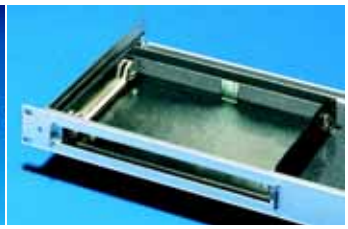
At just 1 U, the RiBox system enclosure offers a high packaging density in the smallest space.



RiBox



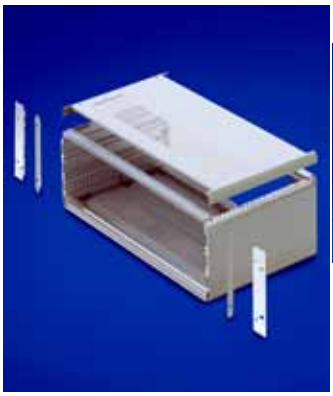
System enclosure for horizontal installation of individual boards, hubs, routers and modems.



Mounting plate of sheet steel for individual population.



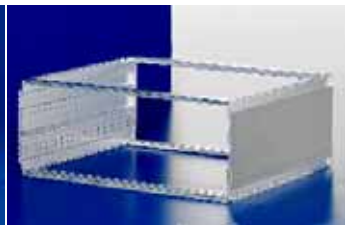
Mounting kit for horizontal installation of boards.



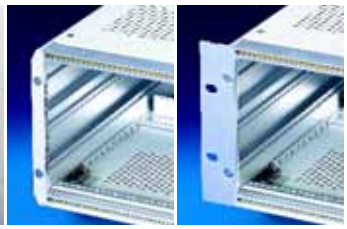
Ripac Vario-Module



System enclosure for direct installation of PCBs or board-type plug-in units.



Basic enclosure optionally for EMC or non-EMC applications and suitable for individual configuration, e. g. with cover plates.



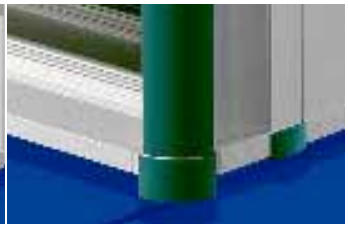
Optionally with **corner trim** for configuration as an instrument case or with **482.6 mm (19)″ flanges** for configuration as a rack-mounted enclosure.



Rittal RiCase



All-metal instrument case for 482.6 mm (19″) slide-in equipment
The perfect “safe” for valuable electronics. Extruded aluminium sections and die-cast elements form an extremely robust yet lightweight enclosure.

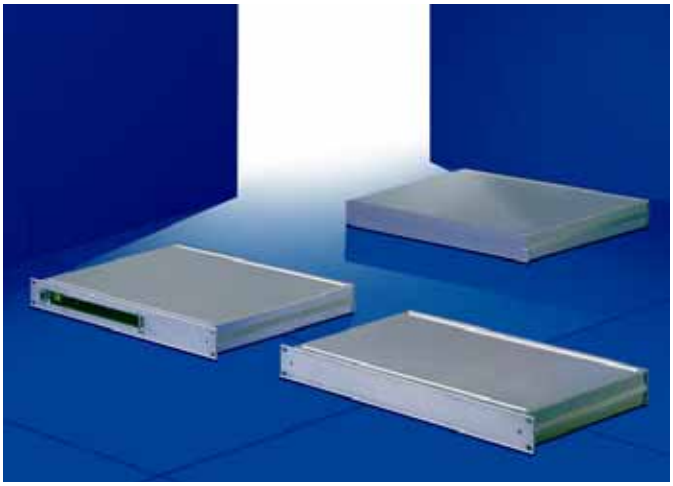


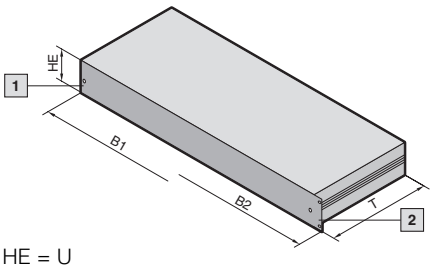
Stability and non-slip properties are guaranteed by 10 mm high corner caps. The distance from the desktop or from the lower enclosure offers excellent ventilation conditions.



Slide-in strips simply slide into the required profile channel, for the support of any required attachment.

RiBox system enclosures 1 U





HE = U

Technical specifications:
System enclosures 1 U, 150, 200, 250, 300, 350 mm deep
Easy to assemble with just 4 screws.
Optionally for use as an instrument case or 19″ rack-mounted enclosure.
Front panel to hold an overlay to conceal the screws.
Maximum possible useful interior space.
Optional EMC upgrades with additional EMC gaskets.
Option of installing 1 VME or CPCI board horizontally.

Design:
System enclosure 1 U, to IEC 60 297-1.
Optionally available for 19″ rack-mounting in the enclosure or as an instrument case version.

1 Equipped as an instrument case

2 Equipped as a rack-mounted unit

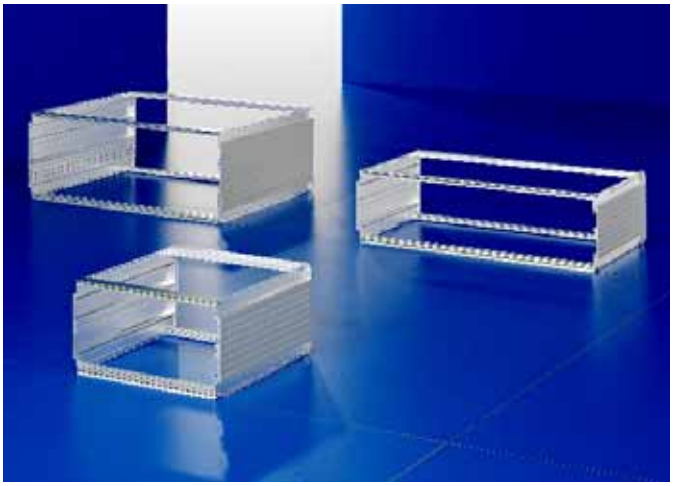
Material/surface finish:
Side panels:
Extruded aluminium section, untreated
Base/cover trays:
Aluminium, clear-chromated
Front/rear panel:
Extruded aluminium section, clear-chromated
Mounting plate:
Sheet steel

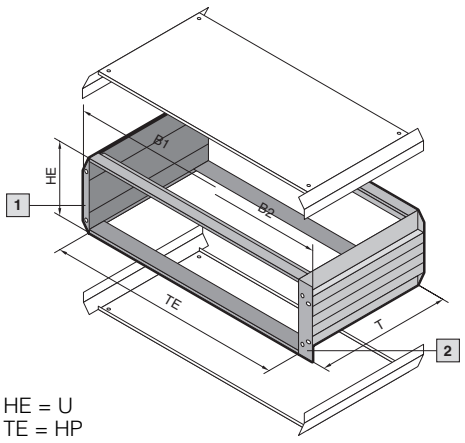
Detailed drawing,
see page 1273.

U	1	1	1	1	1	–	–
Width (B1) mm	447	447	447	447	447	–	–
Width (B2) mm	19″ (482.6)	19″ (482.6)	19″ (482.6)	19″ (482.6)	19″ (482.6)	19″ (482.6)	19″ (482.6)
Depth (T) mm	150	200	250	300	350	250	350
Model No. RP instrument case	**3687.819**	**3687.820**	**3687.821**	**3687.822**	**3687.823**	**–**	**–**
Model No. RP rack case	**3687.814**	**3687.815**	**3687.816**	**3687.817**	**3687.818**	**–**	**–**
Model No. RP rack-mount including mounting kit for double Euroboards	**–**	**–**	**–**	**–**	**–**	**3684.072**	**3684.073**
Supply includes							
Side panel	2	2	2	2	2	2	2
Font panel	1	1	1	1	1	1	1
Rear panel	1	1	1	1	1	1	1
Base/cover tray	2	2	2	2	2	2	2
Mounting kit	–	–	–	–	–	1	1
Accessories							
EMC set	**3684.080**	**3684.080**	**3684.080**	**3684.080**	**3684.080**	**3684.080**	**3684.080**
Mounting plate	**3684.074**	**3684.075**	**3684.076**	**3684.077**	**3684.078**	**–**	**–**

Ripac Vario-Module Page 614 **RiCase** Page 621

Ripac Vario-Module 3 U, 4 U





HE = U
TE = HP

Technical specifications:
May be used as a rack-mounted enclosure or instrument case.
External dimensions to IEC 60 297-1 for installation in 482.6 mm (19″) racks.
Installation dimensions for board type plug-in assemblies to IEC 60 297-3-101.

Material/Surface finish:
Side panels:
Extruded aluminium section, spray finished in RAL 7035
Horizontal rails:
Extruded aluminium section, clear-chromated
Corner trims:
Die-cast zinc, spray-finished in RAL 7035
Side trims:
Extruded aluminium section, spray-finished in RAL 7035

Protection category:
IP 40 for non-vented version.

Supply includes:
2 side panels,
4 horizontal rails,
4 threaded inserts,
2 corner trims,
assembly parts.

1 Equipped as an instrument case

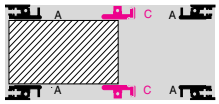
2 Equipped as a rack-mounted unit

Note:
Corner trims, mounting flanges and top and bottom covers must be ordered separately.

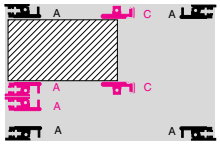
Horizontal rails for further configuration must be ordered separately,
see page 558.

Detailed drawing,
see page 1274.

Horizontal rail configuration



3 U



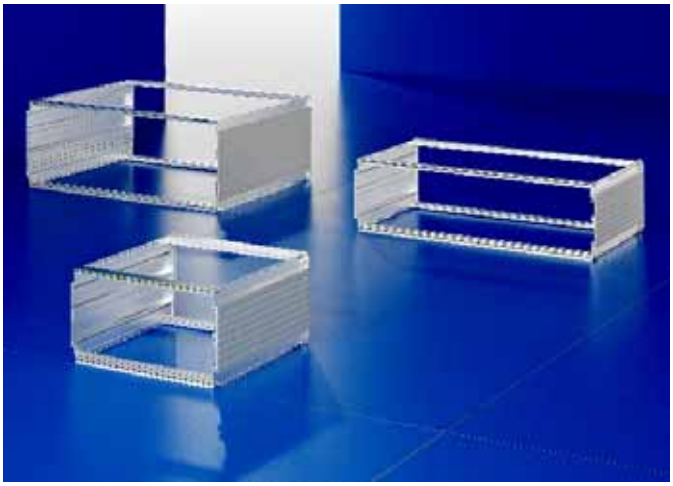
4 U (3 + 1)

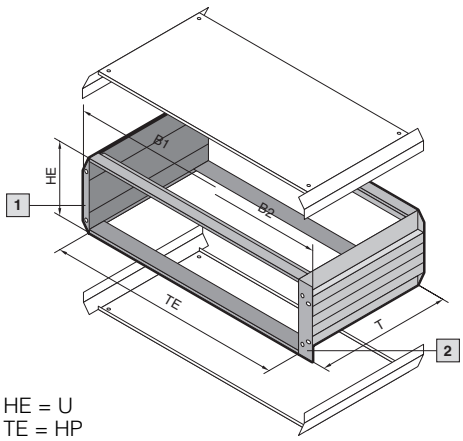
Ripac Vario-Module	Packs of	3 U							4 U (3 + 1)			Page
Installation width (TE)		42	42	63	63	84	84	84	84	84	84	
Width (B1) mm		235.6	235.6	342.3	342.3	449.0	449.0	449.0	449.0	449.0	449.0	
Width (B2) mm		251.6	251.6	358.3	358.3	465.1	465.1	465.1	465.1	465.1	465.1	
Depth (T) mm		250.4	310.4	250.4	310.4	250.4	310.4	370.4	250.4	310.4	370.4	
Model No. VM Basic enclosure	1	**3982.040**	**3982.070**	**3982.050**	**3982.080**	**3982.060**	**3982.090**	**3982.100**	**3982.110**	**3982.120**	**3982.130**	
Also required												
Top covers												
– with vent holes	1	3982.941	3982.951	3982.942	3982.952	3982.940	3982.950	3982.960	3982.940	3982.950	3982.960	618
– without vent holes	1	3982.901	3982.911	3982.902	3982.912	3982.900	3982.910	3982.920	3982.900	3982.910	3982.920	618
Bottom covers												
– with vent holes	1	3982.741	3982.751	3982.742	3982.752	3982.740	3982.750	3982.760	3982.740	3982.750	3982.760	618
– without vent holes	1	3982.701	3982.711	3982.702	3982.712	3982.700	3982.710	3982.720	3982.700	3982.710	3982.720	618
Front corner trims for assembly as instrument case	2	3981.310	3981.310	3981.310	3981.310	3981.310	3981.310	3981.310	3981.320	3981.320	3981.320	619
Flanges for configuration as rack-mount												
– without handle holes	2	3981.210	3981.210	3981.210	3981.210	3981.210	3981.210	3981.210	3981.220	3981.220	3981.220	619
– with handle holes	2	3981.260	3981.260	3981.260	3981.260	3981.260	3981.260	3981.260	3981.270	3981.270	3981.270	619
Accessories												
Front/rear panels		see page 591 – 606										
Carrying handles	2	3981.350	3981.360	3981.350	3981.360	3981.350	3981.360	3981.370	3981.350	3981.360	3981.370	619
Front handles[1)]	2	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	562
Acrylic front door	1	3981.420	3981.420	3981.430	3981.430	3981.440	3981.440	3981.440	3981.450	3981.450	3981.450	620
Rear adjustable feet	4	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	620

[1)] Only in conjunction with mounting flanges with handle holes.

Accessories Ripac Vario-Module Page 618 **RiBox** Page 613 **RiCase** Page 621

Ripac Vario-Module 3 U, 4 U, EMC





HE = U
TE = HP

Technical specifications:
May be used as a rack-mounted enclosure or instrument case.
External dimensions to IEC 60 297-1 for installation in 482.6 mm (19″) racks.
Installation dimensions for board type plug-in assemblies to IEC 60 297-3-101.

Material/Surface finish:
Side panels:
Extruded aluminium section, spray-finished in RAL 7035
Horizontal rails:
Extruded aluminium section, clear-chromated
Corner trims:
Die-cast zinc, spray-finished in RAL 7035
Side trims:
Extruded aluminium section, spray-finished in RAL 7035
Contact points: Conductive

Protection category:
IP 40 for non-vented version.

Supply includes:
2 side panels,
4 horizontal rails,
4 threaded inserts,
2 rear corner trims,
assembly parts.

1 Equipped as an instrument case

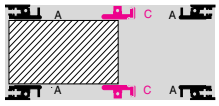
2 Equipped as a rack-mounted unit

Note:
Corner trims, mounting flanges and top and bottom covers must be ordered separately.

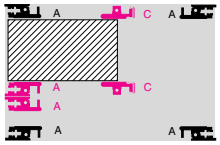
Horizontal rails for further configuration must be ordered separately,
see page 558.

Detailed drawing,
see page 1274.

Horizontal rail configuration



3 U



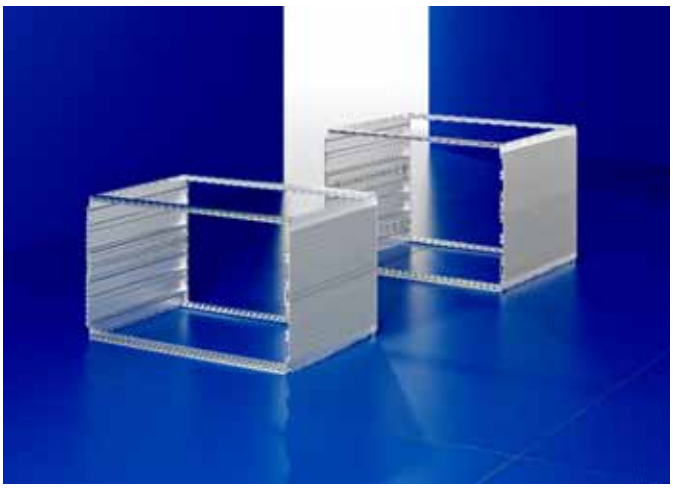
4 U (3 + 1)

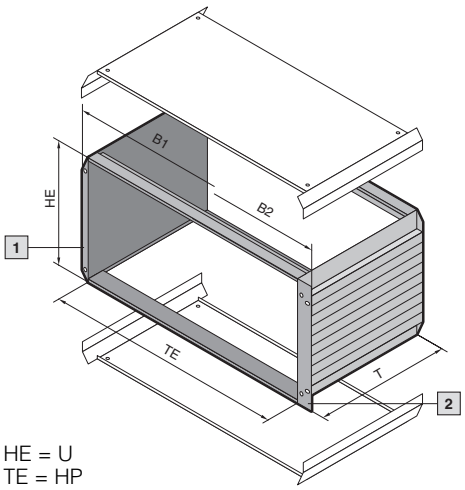
Ripac Vario-Module	Packs of	3 U							4 U (3 + 1)			Page
Installation width (TE)		42	42	63	63	84	84	84	84	84	84	
Width (B1) mm		235.6	235.6	342.3	342.3	449.0	449.0	449.0	449.0	449.0	449.0	
Width (B2) mm		251.6	251.6	358.3	358.3	465.1	465.1	465.1	465.1	465.1	465.1	
Depth (T) mm		250.4	310.4	250.4	310.4	250.4	310.4	370.4	250.4	310.4	370.4	
Model No. VM Basic enclosure EMC	1	**3983.040**	**3983.070**	**3983.050**	**3983.080**	**3983.060**	**3983.090**	**3983.100**	**3983.110**	**3983.120**	**3983.130**	
Also required												
EMC top covers – with vent holes – without vent holes	 1 1	 3981.941 3981.901	 3981.951 3981.911	 3981.942 3981.902	 3981.952 3981.912	 3981.940 3981.900	 3981.950 3981.910	 3981.960 3981.920	 3981.940 3981.900	 3981.950 3981.910	 3981.960 3981.920	 618 618
EMC bottom covers – with vent holes – without vent holes	 1 1	 3981.741 3981.701	 3981.751 3981.711	 3981.742 3981.702	 3981.752 3981.712	 3981.740 3981.700	 3981.750 3981.710	 3981.760 3981.720	 3981.740 3981.700	 3981.750 3981.710	 3981.760 3981.720	 618 618
Front corner trims for assembly as instrument case	2	3981.310	3981.310	3981.310	3981.310	3981.310	3981.310	3981.310	3981.320	3981.320	3981.320	619
Flanges for configuration as rack-mount – without handle holes – with handle holes	 2 2	 3981.210 3981.260	 3981.210 3981.260	 3981.210 3981.260	 3981.210 3981.260	 3981.210 3981.260	 3981.210 3981.260	 3981.210 3981.260	 3981.220 3981.270	 3981.220 3981.270	 3981.220 3981.270	 619 619
EMC installation												
EMC gaskets, horizontal – for upper/lower horizontal rail – between covers and horizontal rails	 1 10	 3684.808 3684.245	 3684.808 3684.245	 3684.808 3684.245	 3684.808 3684.245	 3684.808 3684.245	 3684.808 3684.245	 3684.808 3684.245	 3684.808 3684.245	 3684.808 3684.245	 3684.808 3684.245	 573 573
EMC gaskets, vertical	1	3686.975	3686.975	3686.975	3686.975	3686.975	3686.975	3686.975	3686.976	3686.976	3686.976	572
Front/rear panels EMC	see page 591 – 606											
Accessories												
Front/rear panels	see page 591 – 606											
Carrying handles	2	3981.350	3981.360	3981.350	3981.360	3981.350	3981.360	3981.370	3981.350	3981.360	3981.370	619
Front handles[1)]	2	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	562
Acrylic front door	1	3981.420	3981.420	3981.430	3981.430	3981.440	3981.440	3981.440	3981.450	3981.450	3981.450	620
Rear adjustable feet	4	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	620

[1)] Only in conjunction with mounting flanges with handle holes.

Accessories Ripac Vario-Module Page 618 **RiBox** Page 613 **RiCase** Page 621

Ripac Vario-Module 6 U, 7 U





HE = U
TE = HP

Technical specifications:
May be used as a rack-mounted enclosure or instrument case.
External dimensions to IEC 60 297-1 for installation in 482.6 mm (19″) racks.
Installation dimensions for board type plug-in assemblies to IEC 60 297-3-101.

Material/surface finish:
Side panels:
Extruded aluminium section, spray-finished in RAL 7035
Horizontal rails:
Extruded aluminium section, clear-chromated
Corner trims:
Die-cast zinc, spray-finished in RAL 7035

Protection category:
IP 40 for non-vented version.

Supply includes:
2 side panels,
4 horizontal rails,
4 threaded inserts,
2 rear corner trims,
2 side trims centre,
assembly parts.

1 Equipped as an instrument case

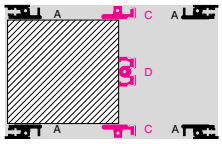
2 Equipped as a rack-mounted unit

Note:
Corner trims, mounting flanges and top and bottom covers must be ordered separately.

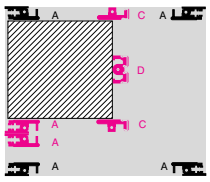
Horizontal rails for further configuration must be ordered separately,
see page 558.

Detailed drawing,
see page 1274.

Horizontal rail configuration



6 U



7 U (6 + 1)

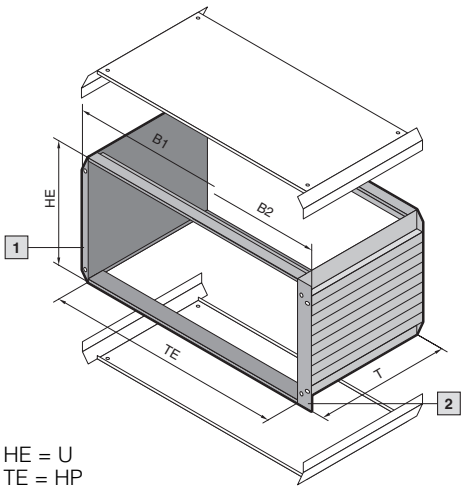
Ripac Vario-Module	Packs of	6 U			7 U (6 + 1)		Page
Installation width (TE)		84	84	84	84	84	
Width (B1) mm		449.0	449.0	449.0	449.0	449.0	
Width (B2) mm		465.1	465.1	465.1	465.1	465.1	
Depth (T) mm		310.4	370.4	430.4	310.4	430.4	
Model No. VM Basic enclosure	1	**3982.140**	**3982.150**	**3982.160**	**3982.170**	**3982.190**	
Also required							
Top covers – with vent holes – without vent holes	 1 1	 3982.950 3982.910	 3982.960 3982.920	 3982.970 3982.930	 3982.950 3982.910	 3982.970 3982.930	 618 618
Bottom covers – with vent holes – without vent holes	 1 1	 3982.750 3982.710	 3982.760 3982.720	 3982.770 3982.730	 3982.750 3982.710	 3982.770 3982.730	 618 618
Front corner trims for assembly as instrument case	2	3981.330	3981.330	3981.330	3981.340	3981.340	619
Flanges for configuration as rack-mount – without handle holes – with handle holes	 2 2	 3981.230 3981.280	 3981.230 3981.280	 3981.230 3981.280	 3981.240 3981.290	 3981.240 3981.290	 619 619
Accessories							
Front/rear panel		see page 591 – 606					
Carrying handles	2	3981.360	3981.370	3981.380	3981.360	3981.370	619
Front handles[1)]	2	3666.010	3666.010	3666.010	3666.010	3666.010	562
Acrylic front door	1	3981.460	3981.460	3981.460	3981.470	3981.470	620
Rear adjustable feet	4	3901.000	3901.000	3901.000	3901.000	3901.000	620

[1)] Only in conjunction with mounting flanges with handle holes.

Accessories Ripac Vario-Module Page 618 **RiBox** Page 613 **RiCase** Page 621

Ripac Vario-Module 6 U, 7 U, EMC





HE = U
TE = HP

Technical specifications:
May be used as a rack-mounted enclosure or instrument case.
External dimensions to IEC 60 297-1 for installation in 482.6 mm (19″) racks.
Installation dimensions for board type plug-in assemblies to IEC 60 297-3-101.

Material/surface finish:
Side panels:
Extruded aluminium section, spray-finished in RAL 7035
Horizontal rails:
Extruded aluminium section, clear-chromated
Corner trims:
Die-cast zinc, spray-finished in RAL 7035
Contact points: Conductive

Protection category:
IP 40 for non-vented version.

Supply includes:
2 side panels,
4 horizontal rails,
4 threaded inserts,
2 rear corner trims,
2 side trims centre,
assembly parts.

1 Equipped as an instrument case

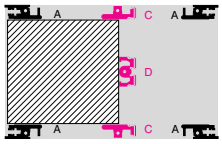
2 Equipped as a rack-mounted unit

Note:
Corner trims, mounting flanges and top and bottom covers must be ordered separately.

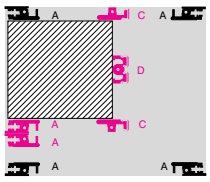
Horizontal rails for further configuration must be ordered separately,
see page 558.

Detailed drawing,
see page 1274.

Horizontal rail configuration



6 U



7 U (6 + 1)

Ripac Vario-Module	Packs of	6 U			7 U (6 + 1)		Page
Installation width (TE)		84	84	84	84	84	
Width (B1) mm		449.0	449.0	449.0	449.0	449.0	
Width (B2) mm		465.1	465.1	465.1	465.1	465.1	
Depth (T) mm		310.4	370.4	430.4	310.4	430.4	
Model No. VM Basic enclosure EMC	1	**3983.140**	**3983.150**	**3983.160**	**3983.170**	**3983.190**	
Also required							
EMC top covers – with vent holes – without vent holes	 1 1	 3981.950 3981.910	 3981.960 3981.920	 3981.970 3981.930	 3981.950 3981.910	 3981.970 3981.930	 618 618
EMC bottom covers – with vent holes – without vent holes	 1 1	 3981.750 3981.710	 3981.760 3981.720	 3981.770 3981.730	 3981.750 3981.710	 3981.770 3981.730	 618 618
Front corner trims for assembly as instrument case	2	3981.330	3981.330	3981.330	3981.340	3981.340	619
Flanges for configuration as rack-mount – without handle holes – with handle holes	 2 2	 3981.230 3981.280	 3981.230 3981.280	 3981.230 3981.280	 3981.240 3981.290	 3981.240 3981.290	 619 619
EMC installation							
EMC gaskets, horizontal – for upper/lower horizontal rail – between covers and horizontal rails	 1 10	 3684.808 3684.245	 3684.808 3684.245	 3684.808 3684.245	 3684.808 3684.245	 3684.808 3684.245	573
EMC gaskets, vertical	1	3686.977	3686.977	3686.977	3686.978	3686.978	572
Front/rear panels EMC	see page 591 – 606						
Accessories							
Front/rear panel	see page 591 – 606						
Carrying handles	2	3981.360	3981.370	3981.380	3981.360	3981.370	619
Front handles[1)]	2	3666.010	3666.010	3666.010	3666.010	3666.010	562
Acrylic front door	1	3981.460	3981.460	3981.460	3981.470	3981.470	620
Rear adjustable feet	4	3901.000	3901.000	3901.000	3901.000	3901.000	620

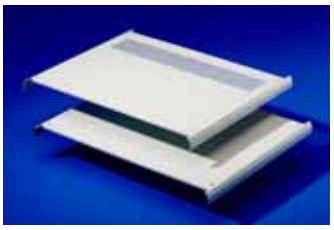
[1)] Only in conjunction with mounting flanges with handle holes.

Accessories Ripac Vario-Module Page 618 **RiBox** Page 613 **RiCase** Page 621

Ripac Vario-Module accessories

Enclosure population

For individual interior installation of the enclosures, system components from the Ripac range may be used (see page 563 – 571).



Top covers

for Ripac Vario-Module

Standard version
Material:
Sheet steel, spray-finished

Colour:
RAL 7035

EMC version
Material:
Sheet steel, spray-finished
Contact points: Conductive

HP	Depth mm	Model No. VM standard		Model No. VM EMC	
		with vent holes	without vent holes	with vent holes	without vent holes
42	250.4	**3982.941**	**3982.901**	**3981.941**	**3981.901**
	310.4	**3982.951**	**3982.911**	**3981.951**	**3981.911**
63	250.4	**3982.942**	**3982.902**	**3981.942**	**3981.902**
	310.4	**3982.952**	**3982.912**	**3981.952**	**3981.912**
84	250.4	**3982.940**	**3982.900**	**3981.940**	**3981.900**
	310.4	**3982.950**	**3982.910**	**3981.950**	**3981.910**
	370.4	**3982.960**	**3982.920**	**3981.960**	**3981.920**
	430.4	**3982.970**	**3982.930**	**3981.970**	**3981.930**



Bottom covers

for Ripac Vario-Module

Standard version
Material:
Sheet steel, spray-finished

Colour:
RAL 7035

EMC version
Material:
Sheet steel, spray-finished
Contact points: Conductive

HP	Depth mm	Model No. VM standard		Model No. VM EMC	
		with vent holes	without vent holes	with vent holes	without vent holes
42	250.4	**3982.741**	**3982.701**	**3981.741**	**3981.701**
	310.4	**3982.751**	**3982.711**	**3981.751**	**3981.711**
63	250.4	**3982.742**	**3982.702**	**3981.742**	**3981.702**
	310.4	**3982.752**	**3982.712**	**3981.752**	**3981.712**
84	250.4	**3982.740**	**3982.700**	**3981.740**	**3981.700**
	310.4	**3982.750**	**3982.710**	**3981.750**	**3981.710**
	370.4	**3982.760**	**3982.720**	**3981.760**	**3981.720**
	430.4	**3982.770**	**3982.730**	**3981.770**	**3981.730**



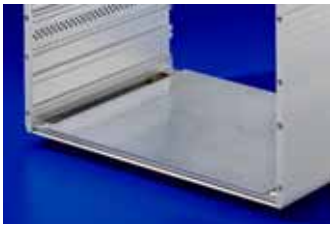
Feet

with fold-out support stand.
Load capacity up to 20 kg.

Material:
Plastic

Colour:
RAL 7035

Packs of	Model No. VM
2	**3919.000**



Mounting plate

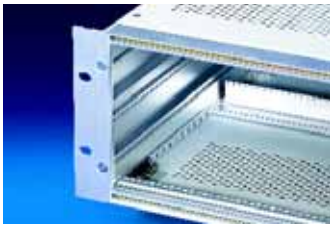
For mounting heavy components.

Material:
Aluminium

Supply includes:
Assembly parts.

HP	Depth mm	Packs of	Model No. VM
42	250	1	**3982.370**
63	250	1	**3982.380**
84	250	1	**3982.390**

Ripac Vario-Module accessories



Front flanges

Required when the Ripac Vario-Module is to be used as a rack-mounted enclosure.
The flanges have a channel to accommodate vertical EMC gaskets.

Material:
Aluminium, clear-chromated

U	Packs of	Model No. VM	
		without handle hole	with handle hole
3	2	**3981.210**	**3981.260**
4	2	**3981.220**	**3981.270**
6	2	**3981.230**	**3981.280**
7	2	**3981.240**	**3981.290**

Accessories:

Vertical EMC gasket,
see page 572.
Front handles for mounting on front flanges,
see page 562.



Front corner trims

Required when the Ripac Vario-Module is to be used as a desk-top instrument case.
The corner trims have a channel to accommodate vertical EMC gaskets.

Material:
Aluminium, spray-finished

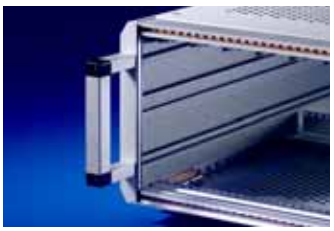
Colour:
RAL 7035

U	Packs of	Model No. VM
3	2	**3981.310**
4	2	**3981.320**
6	2	**3981.330**
7	2	**3981.340**

1, 2 and 8 U available on request.

Accessories:

Vertical EMC gasket,
see page 572.
Front handles for mounting on front corner trim pieces, see page 619.



Front handles

for mounting on front corner trims

Maximum load capacity: 500 N

Material:
Cover: ABS
Handle part: Aluminium, clear-anodised.

Supply includes:
2 handle parts, 4 covers, assembly parts.

U	Packs of	Model No. VM
3	2	**3982.350**
4	2	**3982.360**
6	2	**3982.400**
7	2	**3982.410**



Carrying handles

For ergonomic transportation, even with stacked enclosures.
May also be used as a support stand.

Max. load capacity: 350 N.

Material:
Die-cast zinc and extruded aluminium section

Colour:
RAL 7035

Note:
Only for use with front and rear trims.

For enclosure depth mm	Packs of	Model No. VM
250.4	2	**3981.350**
310.4	2	**3981.360**
370.4	2	**3981.370**
430.4	2	**3981.380**

Ripac Vario-Module accessories



Rear feet

For mounting on the rear of the enclosure.
Dual function:
- Mechanical protection of the connection components.
- Also act as a cable tidy during transportation.

Material:
PA,
self-extinguishing to UL 94-V0

Colour:
RAL 7035

Packs of	Model No. VM
4	**3901.000**

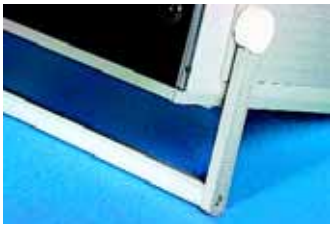


Earthing set

For connecting the top and bottom covers to the side panels with PE conductors.

Supply includes:
Conductor cable green/yellow, 1.5 mm^2, with washer, flat-pin connector and assembly parts.

Packs of	Model No. RP
5	**3900.000**



Support stand/carrying handle

To fit Ripac Vario Module 3 U, 4 U and 6 U, adjustable on a 30° pitch pattern.

Material:
Extruded aluminium section/die-cast

Colour:
RAL 7035

Supply includes:
Assembly parts.

Note:
Corner trim for support stands/carrying handles should be ordered separately.

For Ripac Vario-Module	Packs of	Model No. VM
42 HP	1	**3981.390**
63 HP	1	**3981.400**
84 HP	1	**3981.410**

German patent no. 41 10 873

Corner trim for support stand	Packs of	Model No. VM
3 U	2	**3981.310**
4 U	2	**3981.500**
6 U	2	**3981.510**



Front doors

of acrylic glazing, horizontally hinged
For protection of built-in control components.

Material:
Side parts: Aluminium, spray-finished in RAL 7035
Window: Smoked acrylic

Supply includes:
Assembly parts.

U	For Ripac Vario-Module	Packs of	Model No. VM
3	42 HP	1	**3981.420**
3	63 HP	1	**3981.430**
3	84 HP	1	**3981.440**
4	84 HP	1	**3981.450**
6	84 HP	1	**3981.460**
7	84 HP	1	**3981.470**

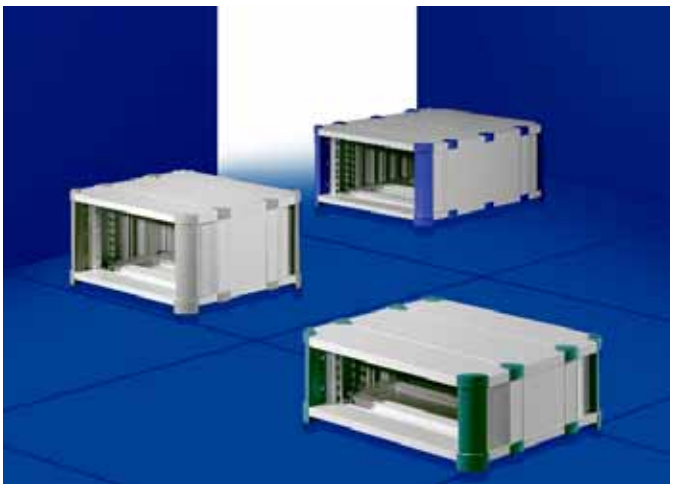
German patent no. 41 10 872

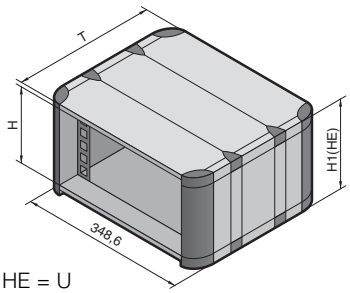


Front panels/rear panels

To cover the enclosures front and rear.
Also available as a hinged or EMC version.
Model No. see page 605.

Rittal RiCase 269.2 mm ($^1/_2$ 19″)





HE = U

Technical specifications:
Depth:
300 mm, 420 mm, 540 mm
Installation width:
269.2 mm ($^1/_2$ 19″)
Installation options:
269.2 mm ($^1/_2$ 19″) slide-in equipment to IEC 60 297-3

Material/surface finish:
Covers:
Extruded aluminium section/ die-cast, spray-finished
Side panels:
Extruded aluminium section, spray-finished
Corner caps: Plastic
482.6 mm (19″) mounting Bracket:
Extruded aluminium section, clear-chromated

Colour:
RAL 7035 (pale grey)

Decorative colours and corner caps:
RAL 5018 (turquoise)
RAL 5012 (pale blue)
RAL 7030 (stone grey)

Protection category:
IP 42 for unvented version.

Supply includes:
2 side panels,
2 covers,
8 corner caps,
8/12/16 cover caps (300/420/540 mm depth),
4 482.6 mm (19″) mounting brackets,
4 threaded inserts,
2 plain inserts,
1 rear panel.

Special sizes and colours available on request.

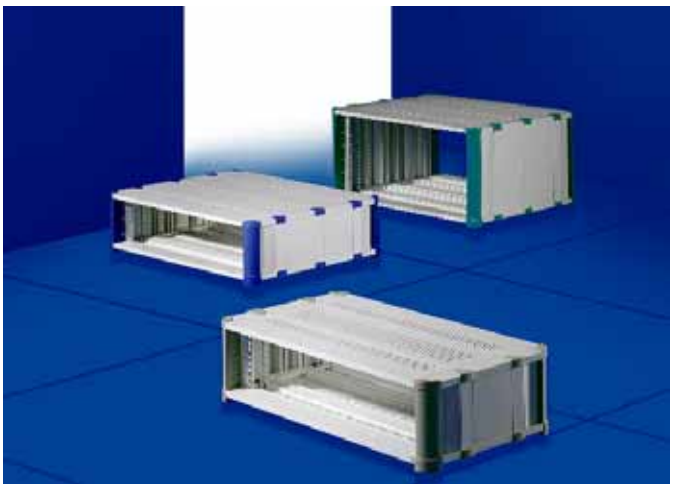
Property rights:
German registered design no. 96 09 457
IR reg. design no. DM/039 974 with validity for FR, IT
UK reg. design no. 2064682
US design patents Des. 402,640 and Des. 423,464
Japan. reg. designs no. 1045507 and 1045508

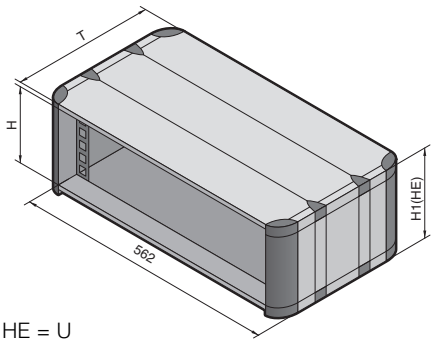
Detailed drawing,
see page 1275.

Enclosures for subrack width 269.2 mm ($^1/_2$ 19″)		Packs of	1 U		2 U		3 U			4 U		Page
Height (H) mm			77.5	77.5	121.9	121.9	166.4	166.4	166.4	210.8	210.8	
H1 (HE) mm			45.0	45.0	89.4	89.4	133.8	133.8	133.8	178.3	178.3	
Depth (T) mm			300.0	420.0	300.0	540.0	300.0	420.0	540.0	420.0	540.0	
Unvented												
Model No. RC, RAL 5018		1	**3750.100**	**–**	**3750.200**	**–**	**3750.210**	**3750.300**	**–**	**3750.400**	**–**	
Model No. RC, RAL 5012		1	**3750.102**	**–**	**3750.202**	**–**	**3750.212**	**3750.302**	**–**	**3750.402**	**–**	
Model No. RC, RAL 7030		1	**3750.104**	**–**	**3750.204**	**–**	**3750.214**	**3750.304**	**–**	**3750.404**	**–**	
Vented												
Model No. RC, RAL 5018		1	**–**	**3750.110**	**–**	**3750.220**	**–**	**3750.350**	**3750.360**	**–**	**3750.450**	
Model No. RC, RAL 5012		1	**–**	**3750.112**	**–**	**3750.222**	**–**	**3750.352**	**3750.362**	**–**	**3750.452**	
Model No. RC, RAL 7030		1	**–**	**3750.114**	**–**	**3750.224**	**–**	**3750.354**	**3750.364**	**–**	**3750.454**	
Weight (kg)	Vented/ unvented		3.3 3.4	4.2 4.4	3.7 3.8	5.4 6.1	4.1 4.2	5.2 5.4	6.1 6.8	5.8 6.0	6.8 7.5	
Accessories												
Carrying handles, horizontal		2	3751.250	3751.260	3751.250	3751.270	3751.250	3751.260	3751.270	3751.260	3751.270	624
Support stand/ carrying handle	RAL 5018	1	3751.200	3751.200	3751.200	3751.200	3751.200	3751.200	3751.200	3751.200	3751.200	625
	RAL 5012	1	3751.202	3751.202	3751.202	3751.202	3751.202	3751.202	3751.202	3751.202	3751.202	625
	RAL 7030	1	3751.204	3751.204	3751.204	3751.204	3751.204	3751.204	3751.204	3751.204	3751.204	625
Blanking plates (rear panel)		3	3746.000	3746.000	3747.000	3747.000	3748.000	3748.000	3748.000	3749.000	3749.000	1100
Front door, vertically hinged		1	–	–	–	–	3751.300	3751.300	3751.300	3751.310	3751.310	625
Slide rails		2	3751.500	3751.510	3751.500	3751.520	3751.500	3751.510	3751.520	3751.510	3751.520	624
Mounting angles 482.6 mm (19″)		2	3751.650	3751.650	3751.660	3751.660	3751.670	3751.670	3751.670	3751.680	3751.680	623
Threaded inserts with M4 thread		8	3751.700	3751.700	3751.710	3751.710	3751.720	3751.720	3751.720	3751.730	3751.730	623
End section		2	–	–	–	–	3751.900	3751.900	3751.900	3751.910	3751.910	624

RiCase accessories Page 623 **Subracks** Page 548 **RiBox** Page 613 **Ripac Vario-Module** Page 614

Rittal RiCase 482.6 mm (19″)





HE = U

Technical specifications:
Depth:
300 mm, 420 mm, 540 mm
Installation width:
482.6 mm (19″)
Installation options:
482.6 mm (19″) slide-in equipment to IEC 60 297-3

Material/surface finish:
Covers:
Extruded aluminium section/ die-cast, spray-finished
Side panels:
Extruded aluminium section, spray-finished
Corner caps: Plastic
482.6 mm (19″) mounting Bracket:
Extruded aluminium section, clear-chromated

Colour:
RAL 7035 (pale grey)

Decorative colours and corner caps:
RAL 5018 (turquoise)
RAL 5012 (pale blue)
RAL 7030 (stone grey)

Protection category:
IP 42 for unvented version.

Supply includes:
2 side panels,
2 covers,
8 corner caps,
8/12/16 cover caps (300/420/540 mm depth),
2 482.6 mm (19″) mounting brackets,
2 threaded inserts,
2 plain inserts.

Note:
For rear installation, order back panel/door separately.

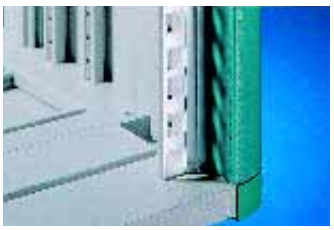
Special sizes and colours available on request.

Detailed drawing,
see page 1275.

Enclosure for subrack width 482.6 mm (19″)		Packs of	3 U		4 U		6 U			7 U		9 U		12 U	Page
Height (H) mm			166.4	166.4	210.8	210.8	299.7	299.7	299.7	344.2	344.2	433.1	433.1	566.5	
H1 (HE) mm			133.8	133.8	178.3	178.3	267.2	267.2	267.2	311.7	311.7	400.6	400.6	534.0	
Depth (T) mm			300.0	420.0	300.0	420.0	300.0	420.0	540.0	420.0	540.0	420.0	540.0	540.0	
Not vented															
Model No. RC, RAL 5018		1	**3750.310**	**3750.320**	**3750.410**	**3750.420**	**3750.600**	**3750.610**	**3750.620**	**3750.700**	**3750.710**	**3750.900**	**3750.910**	**3750.000**	
Model No. RC, RAL 5012		1	**3750.312**	**3750.322**	**3750.412**	**3750.422**	**3750.602**	**3750.612**	**3750.622**	**3750.702**	**3750.712**	**3750.902**	**3750.912**	**3750.002**	
Model No. RC, RAL 7030		1	**3750.314**	**3750.324**	**3750.414**	**3750.424**	**3750.604**	**3750.614**	**3750.624**	**3750.704**	**3750.714**	**3750.904**	**3750.914**	**3750.004**	
Vented															
Model No. RC, RAL 5018		1	**3750.330**	**3750.340**	**3750.430**	**3750.440**	**3750.630**	**3750.640**	**3750.650**	**3750.720**	**3750.730**	**3750.920**	**3750.930**	**3750.030**	
Model No. RC, RAL 5012		1	**3750.332**	**3750.342**	**3750.432**	**3750.442**	**3750.632**	**3750.642**	**3750.652**	**3750.722**	**3750.732**	**3750.922**	**3750.932**	**3750.032**	
Model No. RC, RAL 7030		1	**3750.334**	**3750.344**	**3750.434**	**3750.444**	**3750.634**	**3750.644**	**3750.654**	**3750.724**	**3750.734**	**3750.924**	**3750.934**	**3750.034**	
Weight (kg)	Vented/ unvented		5.3 5.4	6.9 7.1	5.7 7.2	7.5 7.7	6.5 6.6	8.5 8.7	10.8 12.2	9.1 9.3	11.5 12.9	10.1 10.3	12.9 14.3	15.0 16.4	
Accessories															
Carrying handles, horizontal		2	3751.250	3751.260	3751.250	3751.260	3751.250	3751.260	3751.270	3751.260	3751.270	3751.260	3751.270	3751.270	624
Support stand/ carrying handle	RAL 5018	1	3751.210	3751.210	3751.210	3751.210	3751.210	3751.210	3751.210	3751.210	3751.210	3751.210	3751.210	3751.210	625
	RAL 5012	1	3751.212	3751.212	3751.212	3751.212	3751.212	3751.212	3751.212	3751.212	3751.212	3751.212	3751.212	3751.212	625
	RAL 7030	1	3751.214	3751.214	3751.214	3751.214	3751.214	3751.214	3751.214	3751.214	3751.214	3751.214	3751.214	3751.214	625
Back panel, screw-fastened		1	3751.600	3751.600	3751.610	3751.610	3751.620	3751.620	3751.620	3751.630	3751.630	3751.530	3751.530	3751.540	627
Rear door, vertically hinged		1	3751.100	3751.100	3751.110	3751.110	3751.120	3751.120	3751.120	3751.130	3751.130	–	–	–	627
Rear door for fan installation		1	3751.150	3751.150	3751.160	3751.160	3751.170	3751.170	3751.170	3751.180	3751.180	–	–	–	627
Front door, vertically hinged		1	3751.320	3751.320	3751.330	3751.330	3751.340	3751.340	3751.340	3751.350	3751.350	–	–	–	625
Slide rails		2	3751.500	3751.510	3751.500	3751.510	3751.500	3751.510	3751.520	3751.510	3751.520	3751.510	3751.510	3751.520	624
Mounting angles 482.6 mm (19″)		2	3751.670	3751.670	3751.680	3751.680	3751.690	3751.690	3751.690	3751.640	3751.640	3751.780	3751.780	3751.790	623
Threaded inserts with M4 thread		8	3751.720	3751.720	3751.730	3751.730	3751.740	3751.740	3751.740	3751.750	3751.750	3751.760	3751.760	3751.770	623
End section		2	3751.900	3751.900	3751.910	3751.910	3751.920	3751.920	3751.920	3751.930	3751.930	3751.820	3751.820	3751.830	624

RiCase accessories Page 623 **Subracks** Page 548 **RiBox** Page 613 **Ripac Vario-Module** Page 614

Rittal RiCase accessories



Mounting angles for 482.6 mm (19″)

For front/rear installation of subracks and blanking plates.

Material:
Extruded aluminium section, clear-chromated

Supply includes:
Assembly parts.

Note:
1 pack of threaded inserts and 2 packs of mounting rails and spacers are required for depth-adjustable installation.

For enclosure height	Packs of	Model No. RC
1 U	2	**3751.650**
2 U	2	**3751.660**
3 U	2	**3751.670**
4 U	2	**3751.680**
6 U	2	**3751.690**
7 U	2	**3751.640**
9 U	2	**3751.780**
12 U	2	**3751.790**

Also required:

Threaded inserts, see page 623.
Mounting rails, see page 623.
Spacers, see page 623.



Threaded inserts

with M4 thread
for RiCase

For the installation of mounting angles, slide rails, mounting kits, cable ducts etc. Simply slide into the channels in the side panels.

Material:
Extruded aluminium section, clear-chromated

For enclosure height	Packs of	Model No. RC
1 U	8	**3751.700**
2 U	8	**3751.710**
3 U	8	**3751.720**
4 U	8	**3751.730**
6 U	8	**3751.740**
7 U	8	**3751.750**
9 U	8	**3751.760**
12 U	8	**3751.770**

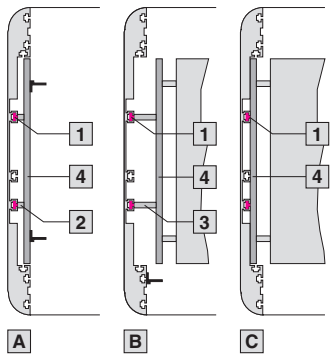


Mounting rails

- For depth-variable installation of mounting angles
- For the installation of component shelves, static or pull-out

Material:
Aluminium, clear-chromated

Supply includes:
Assembly parts.



A Version for depth-variable mounting angles
B Component shelf installation for 482.6 mm (19″) (width 409 mm, also with telescopic slides)
C Direct component shelf installation (width 471 mm)

1 Threaded inserts
2 Short spacers
3 Long spacers
4 Mounting rails

For enclosure depth mm	Packs of	Model No. RC
300	2	**3751.400**
420	2	**3751.410**
540	2	**3751.420**

Also required:

Threaded inserts, see page 623.
Spacers, see page 623.

Accessories:

Component shelf, see page 1017.
Component shelf, 482.6 mm (19″), see page 1013.



Spacers

For the attachment of mounting rails.

Design	Packs of	Model No. RC
Short for depth-variable mounting bracket	4	**3751.450**
Long for component shelf installation (width 409 mm)	4	**3751.460**

Rittal RiCase accessories



Slide rails

To support heavy installed equipment.

Material:
1.5 mm sheet steel, passivated

Supply includes:
Assembly parts.

For enclosure depth mm	Packs of	Model No. RC
300	2	**3751.500**
420	2	**3751.510**
540	2	**3751.520**

Also required:

Threaded inserts,
see page 623.



Earthing set

for RiCase
To meet electrical protective measures;
fits all RiCase enclosures.

Supply includes:
Threaded insert, screw, green/yellow connection cable, serrated washer, nut.

Packs of	Model No. VC
4	**3798.000**



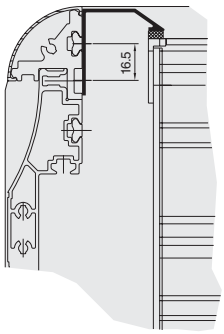
Rear trim

To cover the sides to the left and right of the subrack when no rear door or rear panel is used.

Material:
Extruded aluminium section, spray-finished

Colour:
RAL 7035

Supply includes:
Assembly parts.



For enclosure height	Packs of	Model No. RC
3 U	2	**3751.900**
4 U	2	**3751.910**
6 U	2	**3751.920**
7 U	2	**3751.930**
9 U	2	**3751.820**
12 U	2	**3751.830**



Carrying handles

horizontal
For easy, secure transportation.
- May be retrofitted
- Load capacity 30 kg/pair

Material:
Side parts: Die-cast, spray-finished
Centre part: Extruded aluminium section, spray-finished

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosure depth mm	Packs of	Model No. RC
300	2	**3751.250**
420	2	**3751.260**
540	2	**3751.270**



1



2



3

Support stand/carrying handle

- Support stand/carrying handle adjustable in 30° increments
- Suitable for retrofitting to 2 – 7 U.
- For 269.2 mm ($^1/_2$ 19″) and 482.6 mm (19″) wide enclosures
- Load capacity 30 kg

Material:
Hinged part: Die-cast, spray-finished
Centre part: Extruded aluminium section, spray-finished with plastic cover

Colour:
RAL 7035

Decorative colours:

1 RAL 7030 (stone grey)

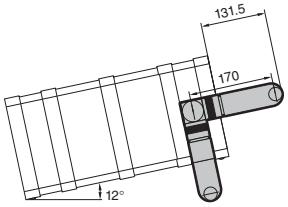
2 RAL 5018 (turquoise)

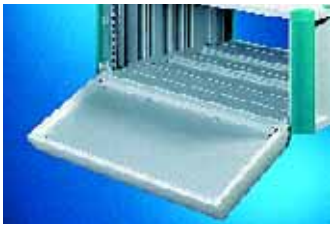
3 RAL 5012 (pale blue)

Supply includes:
Assembly parts.

For enclosure width mm	Decorative colour RAL	W mm	Model No. RC
269.2 ($^1/_2$ 19″)	5018	392	**3751.200**
269.2 ($^1/_2$ 19″)	5012	392	**3751.202**
269.2 ($^1/_2$ 19″)	7030	392	**3751.204**
482.6 (19″)	5018	605	**3751.210**
482.6 (19″)	5012	605	**3751.212**
482.6 (19″)	7030	605	**3751.214**

W = Overall width of handle





Keyboard lid

Suitable for the installation of 482.6 mm (19″) keyboards.
- Horizontally hinged with security lock
- Removable cover plate

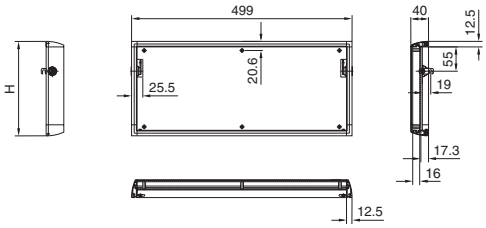
Material:
Frame section: Extruded aluminium section/ die-cast, spray-finished
Base and cover plate: Aluminium, spray-finished

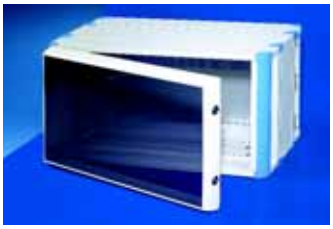
Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosure width mm	H (U)	Packs of	Model No. RC
482.6 (19″)	4	1	**3751.800**
482.6 (19″)	6	1	**3751.810**

Note:
Use only in conjunction with support stand/ carrying handle.





Front door

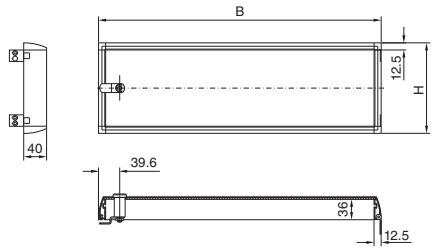
vertically hinged
For mechanical protection of built-in control components.
- Optionally hinged on the right or left
- With security lock

Material:
Frame section: Extruded aluminium section, spray-finished
Corner pieces: Die-cast aluminium, spray-finished
Glazed pane: Smoked acrylic

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosure width mm	W (B) mm	H (U)	Model No. RC
269.2 ($^1/_2$ 19″)	289	3	**3751.300**
269.2 ($^1/_2$ 19″)	289	4	**3751.310**
482.6 (19″)	503	3	**3751.320**
482.6 (19″)	503	4	**3751.330**
482.6 (19″)	503	6	**3751.340**
482.6 (19″)	503	7	**3751.350**



Rittal RiCase accessories



Aluminium front door

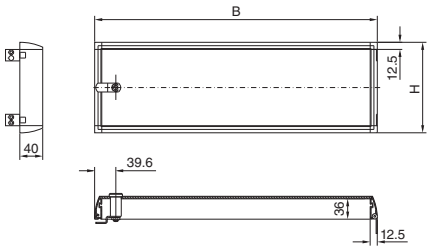
vertically hinged
For mechanical protection of built-in control components.
- Optionally hinged on the right or left
- With security lock

Material:
Frame section: Extruded aluminium section, spray-finished
Corner pieces: Die-cast aluminium, spray-finished
Aluminium plate

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosure width mm	W (B) mm	H (U)	Model No. RC
482.6 (19″)	503	3	**3751.360**
482.6 (19″)	503	4	**3751.370**
482.6 (19″)	503	6	**3751.380**





Front door

for tower enclosure
For mechanical protection of built-in control components.
- Optionally hinged on the right or left
- With security lock

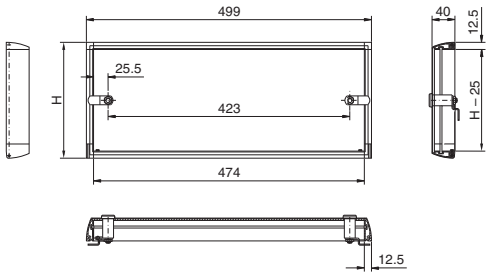
Material:
Frame section: Extruded aluminium section, spray-finished
Corner pieces: Die-cast aluminium, spray-finished
Glazed pane: Smoked acrylic

Colour:
RAL 7035

Supply includes:
Assembly parts.

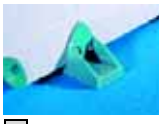
For enclosure width mm	W mm	H (U)	Model No. RC
482.6 (19″)	503	3	**3751.390**
482.6 (19″)	503	4	**3751.430**

W = Overall width of front door





1



2



3

Tower feet

For vertical siting of enclosures.
May be retrofitted.

Material:
Plastic to UL 94-V0, self-extinguishing

Decorative colours:

1 RAL 7030 (stone grey)

2 RAL 5018 (turquoise)

3 RAL 5012 (pale blue)

Supply includes:
4 tower feet,
assembly parts.

Decorative colour RAL	Packs of	Model No. RC
5018	1 set	**3751.850**
5012	1 set	**3751.852**
7030	1 set	**3751.854**

Rittal RiCase accessories

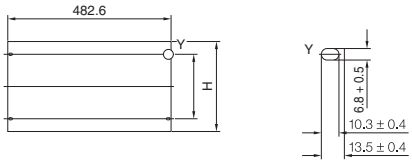


Back panel

screw-fastened
To close off the rear.

Material:
2/3 mm aluminium, natural-anodised

Supply includes:
Two 482.6 mm (19″) mounting brackets, assembly parts.



For enclosure width mm	H (U)	Packs of	Model No. RC
482.6 (19″)	3	1	**3751.600**
482.6 (19″)	4	1	**3751.610**
482.6 (19″)	6	1	**3751.620**
482.6 (19″)	7	1	**3751.630**
482.6 (19″)	9	1	**3751.530**
482.6 (19″)	12	1	**3751.540**



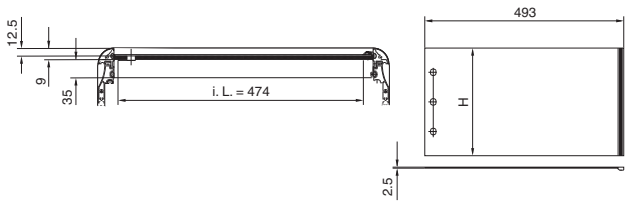
Rear door

vertically hinged
To close off the rear.
- Hinged, with security lock
- Optionally hinged on the left or right

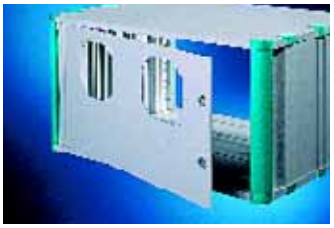
Material:
Aluminium, spray-finished

Colour:
RAL 7035

Supply includes:
Assembly parts.



For enclosure width mm	H (U)	Packs of	Model No. RC
482.6 (19″)	3	1	**3751.100**
482.6 (19″)	4	1	**3751.110**
482.6 (19″)	6	1	**3751.120**
482.6 (19″)	7	1	**3751.130**



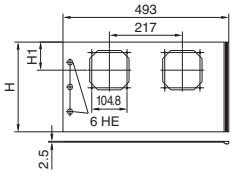
Rear door

for fan installation
To close off the rear.
- With security lock
- Optionally hinged on the left or right
- For the installation of 120 mm fans

Material:
Aluminium, spray-finished

Colour:
RAL 7035

Supply includes:
Assembly parts.



For enclosure width mm	H (U)	H1 mm	Model No. RC
482.6 (19″)	3	66.65	**3751.150**
482.6 (19″)	4	88.90	**3751.160**
482.6 (19″)	6	83.50	**3751.170**
482.6 (19″)	7	83.50	**3751.180**

Accessories:

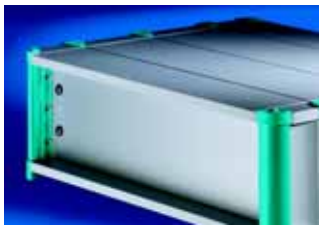
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see page 706.



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see page 1105.
Captive nuts M6,
see page 1105.



Fan expansion kit,
see page 706.



Blanking plates,
see page 1100.
Hinged blanking plates,
see page 1100.



Ventilation front panels,
see page 1100.



Everyone talks about the future, but Rittal helps shape it – and that includes the field of climate control. Development work focuses on the holistic **protection of process control with the minimum possible energy consumption.** Modern cooling units with favourable operating ratios and **high tech recooling systems** open up brand new perspectives for energy-saving, efficient cooling of electronic components and machines. This is crucial to the availability and reliability of production systems and IT technology.
For this reason, Rittal collaborates closely with you to develop customised climate control concepts.

RITTAL®

System Climate Control

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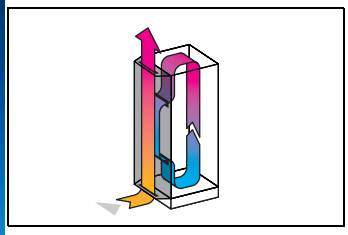
Features

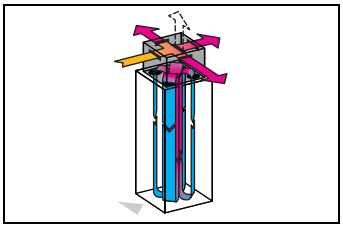


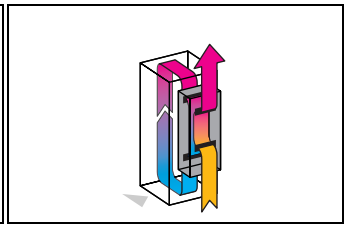
Rittal System Climate Control offers holistic process protection. This includes the cooling of sensitive electronics in enclosures and cases for industrial process control, as well as server and network technology, regardless of the respective ambient conditions. But these are not isolated solutions – with Rittal, everything is interconnected. Perfectly linked and controlled cooling technology with eco-friendly, energy-efficient equipment.



Selection criteria







Modular climate control door concept
The unity of enclosure and cooling components achieves particularly effective cooling. Assembly time is eliminated. The investment costs for the complete unit offer exceptionally good value for money.

Roof-mounted cooling units
Requirement-oriented routing of cooling air in the internal circuit is possible, with up to four cold air outlet openings and the optional use of ducts. In the external circuit, the heated air is expelled to the rear, left and right, and optionally upwards. This facilitates bayed installation, and siting close to the wall.

Wall-mounted cooling units
Depending on the space and design requirements, internal mounting, partial internal mounting and external mounting are all possible. Thanks to large distances between the air intake and outlet openings, effective cold air throughput of the enclosure is achieved.



Intelligent control

The two controller variants for operational reliability offer a comprehensive range of functions.
Essential control electronics are well protected and cooled in the inner circuit.

Both variants have the following properties:
- Three voltage options: 115 V, 230 V, 400/460 V 3~
- Integral start-up delay and door limit switch function
- Icing protection function
- Monitoring of all motors
- Phase monitoring for three-phase units



Basic controller:
- Visualisation of the operating status via LED display
- Switching hysteresis: 5 K
- Floating fault signal contact in case of overtemperature
- Setpoint setting may be made externally via potentiometer

Comfort controller:
- Switching hysteresis: 2 – 10 K preset to 5 K
- System alarm, individually configurable for 2 floating fault signal contacts
- Visualisation of the current enclosure internal temperature and all system messages on the display
- Storage of all system states in the log file
- Optional extension card for integration into superordinate remote monitoring systems e. g. with CMC

Benefits:

- Useful cooling output from 225 W to 4000 W
- Extensive control and monitoring features, even with the basic version
- Three-phase cooling units support multiple voltages as standard
- Uniform, output-related, cross-system mounting cut-outs, to match TopTherm air/air and air/water heat exchangers
- Targeted, individual air routing
- No assembly work and low investment costs, thanks to the complete solution consisting of an enclosure and integral cooling unit[1)]
- May be integrated directly into TS 8 bayed enclosure suites[1)]

Important:

- Use a base/plinth of at least 100 mm height to ensure uninhibited air entry[1)]
- Avoid overloading the roof plate by using stays (see TS 8 system accessories)
- Air inlet and outlet openings in the internal and external circuit must not be obstructed.

1) Only for modular climate control door concept.

Features



Energy-efficient and resource-conserving



For those who place their trust in Rittal, value-added comes as standard. What is more, Rittal is a global trendsetter in the field of climate control.



A host of pioneering concepts bear witness to this fact: Rittal TopTherm cooling units are **equipped as standard with innovative RiNano-coating and**



integral electronic condensate evaporation.

RITTAL TOP THERM PLUS



Roof-mounted cooling units



Flexible output
Only 3 mounting cut-outs for 6 different output categories.



Targeted air routing in the enclosure
The heated air is centrally extracted. Targeted air occurs via optional channels in the four corners, depending on requirements.



Electronic condensate evaporation as standard
Condensate is effectively evaporated.

RITTAL TOP THERM PLUS



Wall-mounted cooling units



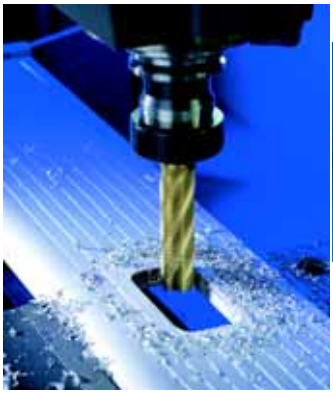
Wall-mounted cooling units – practical and stylish
Whether external, internal or partial internal mounting, optimum use is made of the available space.



Effective air routing inside the enclosure
Thanks to the large distance between air inlet and outlet in the internal circuit, optimum through-flow of the enclosure is ensured, thereby avoiding air short-circuits.



Electronic condensate evaporation as standard
Condensate is effectively evaporated.



Cooling units for special applications



Wall-mounted cooling units for machine tools with high acceleration rates and increased sensitivity to vibration.



Explosion-proof wall-mounted cooing units for Zone 22 (dust).



Roof-mounted cooling units – specifically for office applications with a considerably lower noise level.

Modular climate control concept

Features



Less is more! With only six cooling modules and eight door modules, we are now able to provide you with a virtually infinite variety of applications. The best cooling technology, complete and ready for use – without having to make mounting cut-outs. The existing sheet steel doors can simply be changed for the section doors with the cooling modules. These can also be exchanged or upgraded during operation.

RITTAL TOP THERM PLUS

New modular climate control concept



Modularity
Your individual climate control solution can be produced from the section door and the climate control module in just a few steps.



Infinite possibilities
Seamless baying and perfect integration. The TS base/plinth is required for operation.



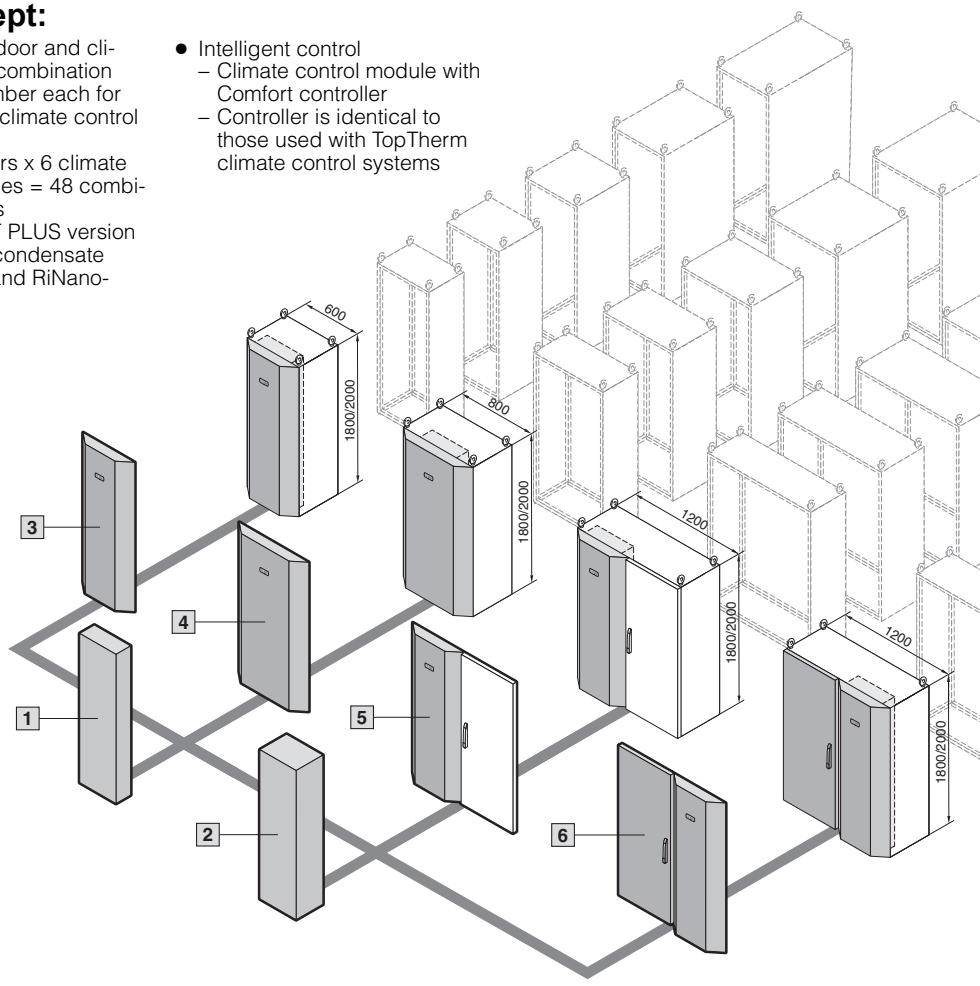
Comfort controller
Optimum function and control monitoring.

Your benefits:

- Modular design – for individual size, cooling power and voltage combinations
- Simple, fast mounting
- Service-friendly (front rack-mounted filter and removable cover)
- Quick delivery

Our concept:

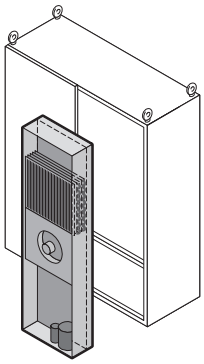
- TS 8 section door and climate control combination
- One item number each for the door and climate control module
- 8 section doors x 6 climate control modules = 48 combination options
- Standard RTT PLUS version with integral condensate evaporation and RiNano-coating
- Intelligent control
  – Climate control module with Comfort controller
  – Controller is identical to those used with TopTherm climate control systems



1 Climate control module, 1500 W useful cooling output
2 Climate control module, 2500 W useful cooling output
3 Section doors for installing climate control modules in 600 mm wide enclosures
4 Section doors for installing climate control modules in 800 mm wide enclosures
5 Section doors for installing climate control modules in 1200 mm wide enclosures; climate control module fitted on the left
6 Section doors for installing climate control modules in 1200 mm wide enclosures; climate control module fitted on the right, including lockable door on the left

Cooling module, useful cooling output 1500/2500 W





Supply includes:
Cooling module prepared for installation in section door, with RiNano coating and integrated condensation evaporation.

Also required:

Section door, fits TS 8 enclosures, 600, 800, 1200 mm widths and 1800, 2000 mm widths, see page 634.

Base/plinth, 100 or 200 mm high,
see page 893.

Detailed drawing,
see page 1276.

Performance diagrams,
available on the Internet.

New modular climate control concept

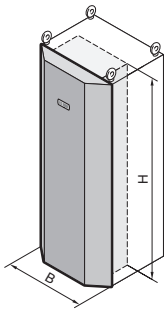
Model No. SK with Comfort controller		3307.700	3307.710	3307.740	3310.700	3310.710	3310.740
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35**	**1500 W/1550 W**			**2500 W/2720 W**		**2500 W/2700 W**
	L 35 L 50	**950 W/1000 W**			**1620 W/1730 W**		**1900 W/1950 W**
Rated current max.		4.7 A/6.3 A	9.4 A/12.6 A	2.6 A/2.8 A	7.8 A/8.8 A	14.8 A/16.7 A	3.2 A/3.5 A
Start-up current		22.0 A/24.0 A	36.0 A/39.0 A	8.5 A/9.2 A	22.0 A/24.0 A	36.0 A/39.0 A	12.4 A/13.5 A
Pre-fuse gG		16.0 A/16.0 A	16.0 A/16.0 A	6.3 – 10.0 A[1]	16.0 A/16.0 A	20.0 A/20.0 A	6.3 – 10.0 A[1]
Power consumption P_{el} as per DIN 3168	L 35 L 35	910 W/1100 W	940 W/1130 W	850 W/910 W	1410 W/1620 W	1460 W/1670 W	1380 W/1580 W
	L 35 L 50	1100 W/1250 W	1140 W/1280 W	920 W/980 W	1580 W/1950 W	1630 W/2000 W	1620 W/1920 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.6	1.6	1.7	1.7		1.8
Refrigerant		R134a, 700 g			R134a, 900 g		
Permissible operating pressure p. max.		28 bar					
Temperature and setting range		+20°C to +55°C					
Protection category to EN 60 529/09.2000	External circuit	IP 34					
	Internal circuit	IP 54					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight[2]		72 kg	72 kg	75 kg	74 kg	74 kg	76 kg
Colour		RAL 7035					
Air throughput of fans	External circuit	1100 m³/h			1100 m³/h		
	Internal circuit	520 m³/h			1100 m³/h		
Temperature control		Comfort controller (factory setting +35°C)					

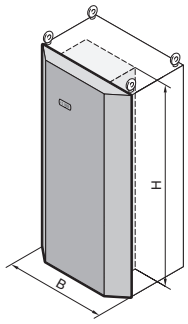
Accessories	Packs of		Page
Door-operated switch	1	4127.000	1030
Filter media	1	see accessories section door	634
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716

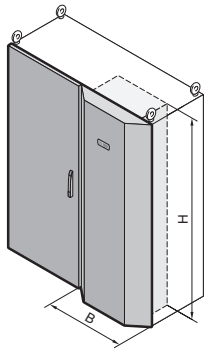
Special voltages available on request. We reserve the right to make technical modifications.
[1] Motor circuit-breaker
[2] Includes section door weight

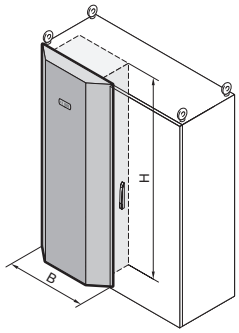
Accessories Page 710 **TS 8 enclosures** From page 142 **Configuration software** Page 1154

Section doors for installing cooling modules









Colour:
RAL 7035

Supply includes:
Section door unit without pre-fitted cooling module, including TS 8 hinges, door opening angle approx. 110°.

Note for 1200 mm wide TS 8 enclosures:
With the device positioned on the “right”, one pack consists of a section door for installing in the right-hand half of the enclosure plus a special lockable door for the left-hand half.

With the device positioned on the “left”, one pack consists of a section door for installing in the left-hand half of the enclosure. The existing lockable door on the right may be used.

Also required:

Cooling module,
see page 633.

Base/plinth, 100 or 200 mm high,
see page 893.

Detailed drawing,
see page 1276.

New modular climate control concept

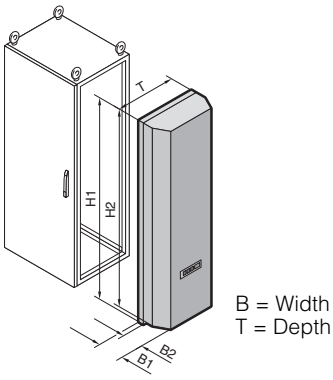
Model No. SK for 1800 mm high TS enclosures		**3300.040**	**3300.060**	**3300.080**	**3300.110**
Model No. SK for 2000 mm high TS enclosures		**3300.050**	**3300.070**	**3300.090**	**3300.120**
Dimensions to fit TS enclosures	Width (B) mm	600	800	1200 (unit positioned on the left)	1200 (unit positioned on the right)
Accessories	Packs of				
Filter media	1	3284.210	3284.210	3284.210	3284.210

All SK 3307.700/.710/.740 or 3310.700/.710/.740 cooling module models, see page 633, can be integrated in the section doors mentioned above.

Accessories Page 710 **TS 8 enclosures** From page 142 **Configuration software** Page 1155

Panels, for installing on 600 mm deep TS 8 enclosures, useful cooling output 1100/1400 W





B = Width
T = Depth

Supply includes:
Climate control side panel with pre-fitted cooling module.

Also required:
Base/plinth, 100 or 200 mm high,
see page 893.

Optionally available:
Microcontroller control with
- digital temperature indicator,
- floating contact for collective fault signal,
- connection for door operated switch for start-up delay.

Automatic condensate evaporation.

Approvals,
see page 72.

Performance diagrams,
available on the Internet.

Model No. SK		**3331.116**	**3331.316**	**3331.140**[1)]	**3331.340**[1)]	**3331.216**[1)]	**3331.416**	**3331.240**[1)]	**3331.440**[1)]
Rated operating voltage V, Hz		230, 50/60		400, 2~, 50/60		230, 50/60		400, 2~, 50/60	
Dimensions	B1	171	171	171	171	171	171	171	171
	B2	157	157	157	157	157	157	157	157
	H1	1797	1997	1797	1997	1797	1997	1797	1997
	H2	1782.5	1982.5	1782.5	1982.5	1782.5	1982.5	1782.5	1982.5
	T	562	562	562	562	562	562	562	562
Dimensions to fit TS enclosures mm	H	1800	2000	1800	2000	1800	2000	1800	2000
	T	600	600	600	600	600	600	600	600
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35**	**1100 W/1200 W**				**1400 W/1450 W**			
	L 35 L 50	**730 W/830 W**				**1010 W/1060 W**			

Rated current max.		4.0 A/4.6 A	2.3 A/2.7 A	4.0 A/4.6 A	2.3 A/2.7 A
Start-up current		11.0 A/12.0 A	6.4 A/6.9 A	11.0 A/12.0 A	6.4 A/6.9 A
Pre-fuse T		6.0 A/6.0 A		6.0 A/6.0 A	
Power consumption P_{el} as per DIN 3168	L 35 L 35	670 W/850 W	690 W/870 W	710 W/910 W	725 W/930 W
	L 35 L 50	800 W/1000 W	820 W/1020 W	810 W/1030 W	830 W/1050 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.6		2.0	1.9
Refrigerant		R134a, 825 g		R134a, 875 g	
Permissible operating pressure p. max.		25 bar		24 bar	
Temperature and setting range		+20°C to +50°C			
Protection category to EN 60 529/09.2000	External circuit	IP 34			
	Internal circuit	IP 54			
Duty cycle		100 %			
Type of connection		Terminal strip			
Weight		58 kg	62 kg	58 kg	62 kg
Colour		RAL 7035			
Air throughput of fans	External circuit	550 m^3/h			
	Internal circuit	275 m^3/h			
Temperature control		Internal thermostat (factory setting +35°C)			

Accessories	Packs of		Page
Metal filters	1	3289.200	724
Door-operated switch	1	4127.000	1030
Temperature indicator	1	3114.100	714
Air diverter	1	3213.300	713

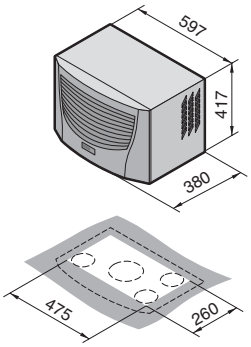
[1)] Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Accessories Page 710 **TS 8 enclosures** From page 142 **Configuration software** Page 1155

Roof-mounted cooling units

Useful cooling output 500/750 W





Property rights:
German registered design no. 402 02 324
German registered design no. 402 02 325

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation.
Fully wired ready for connection, including drilling template and assembly parts.

Accessories:
Roof plate for TS 8 with mounting cut-out,
see page 718.

Approvals,
see page 73.

Detailed drawing,
see page 1277.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

Model No. SK with Basic controller, RAL 7035		**3382.100**	**3382.110**	**3359.100**	**3359.110**	**3359.140**
Model No. SK with Comfort controller, RAL 7035		**3382.500**	**3382.510**	**3359.500**	**3359.510**	**3359.540**
Model No. SK with Basic controller, stainless steel[1)]		**3382.200**	**3382.210**	**3359.200**	**3359.210**	**3359.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3382.600**	**3382.610**	**3359.600**	**3359.610**	**3359.640**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60
Dimensions in mm	WHD	597 x 417 x 380				
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35**	**500 W/510 W**		**750 W/810 W**		
	L 35 L 50	**270 W/370 W**		**545 W/590 W**		
Rated current max.		3.3 A/3.5 A	6.7 A/7.2 A	3.6 A/4.5 A	7.2 A/9.0 A	2.1 A/2.6 A
Start-up current		9.2 A/10.2 A	18.4 A/18.4 A	10.0 A/10.7 A	20.0 A/21.4 A	5.8 A/6.2 A
Pre-fuse T		10.0 A	10.0 A	10.0 A	16.0 A	6.3 A – 10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35	500 W/550 W	510 W/560 W	550 W/660 W	560 W/675 W	
	L 35 L 50	550 W/590 W	560 W/610 W	630 W/740 W	640 W/750 W	
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.0		1.4		
Refrigerant		R134a, 250 g		R134a, 300 g		
Permissible operating pressure p. max.		25 bar				
Temperature and setting range		+20°C to +55°C				
Protection category to EN 60 529/09.2000	External circuit	IP 34				
	Internal circuit	IP 54				
Duty cycle		100 %				
Type of connection		Plug-in terminal strip				
Weight		30 kg	35 kg	32 kg	37 kg	
Air throughput of fans (unimpeded air flow)	External circuit	910 m^3/h				
	Internal circuit	440 m^3/h				
Temperature control		Basic or Comfort controller (factory setting +35°C)				

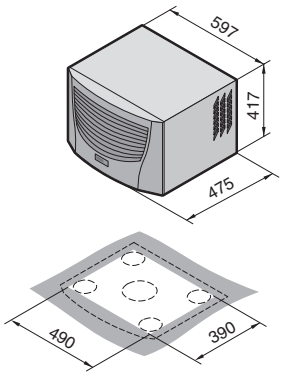
Accessories	Packs of		Page
Filter mats	3	3286.500	723
Metal filters	1	3286.510	724
Quick-change frame	1	3286.700	719
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Air ducting system	1	3286.870	711
Cover stoppers for interior air outlet	2	3286.780	712
Condensate hose	1	3301.612	720

[1)] Delivery times available on request. [2)] Transformer protection switch.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710

Useful cooling output 1000 W





Property rights:
German registered design no. 402 02 324
German registered design no. 402 02 325

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation.
Fully wired ready for connection, including drilling template and assembly parts.

Accessories:
Roof plate for TS 8 with mounting cut-out, see page 718.

Approvals,
see page 73.

Detailed drawing,
see page 1277.

Performance diagrams,
available on the Internet.

Model No. SK with Basic controller, RAL 7035		**3383.100**	**3383.110**	**3383.140**
Model No. SK with Comfort controller, RAL 7035		**3383.500**	**3383.510**	**3383.540**
Model No. SK with Basic controller, stainless steel[1)]		**3383.200**	**3383.210**	**3383.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3383.600**	**3383.610**	**3383.640**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60
Dimensions in mm	WHD	597 x 417 x 475		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1000 W/1080 W** **760 W/820 W**		
Rated current max.		4.9 A/5.1 A	9.5 A/10.0 A	2.8 A/2.8 A
Start-up current		15.5 A/15.5 A	25.3 A/24.3 A	8.0 A/8.8 A
Pre-fuse T		10.0 A	16.0 A	6.3 A – 10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	690 W/790 W 800 W/890 W	720 W/800 W 810 W/900 W	
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.4		
Refrigerant		R134a, 500 g		
Permissible operating pressure p. max.		25 bar		
Temperature and setting range		+20°C to +55°C		
Protection category to EN 60 529/09.2000	External circuit	IP 34		
	Internal circuit	IP 54		
Duty cycle		100 %		
Type of connection		Plug-in terminal strip		
Weight		40 kg	46 kg	46 kg
Air throughput of fans	External circuit	1760 m^3/h		
	Internal circuit	440 m^3/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)		

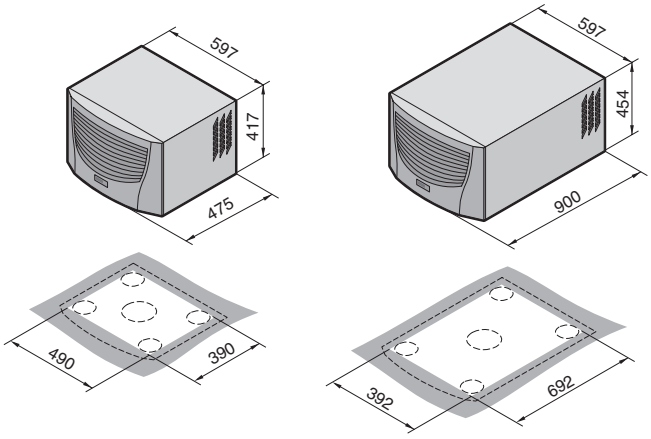
Accessories	Packs of		Page
Filter mats	3	3286.500	723
Metal filters	1	3286.510	724
Quick-change frame	1	3286.800	719
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Air ducting system	1	3286.870	711
Cover stoppers for interior air outlet	2	3286.880	712
Condensate hose	1	3301.612	720

[1)] Delivery times available on request. [2)] Transformer protection switch.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710

Useful cooling output 1100 W/3000 W





Especially for office applications. Low noise level (considerably quieter than cooling units for industrial applications).

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template and assembly parts.

Property rights:
(Not with SK 3301.800)
German registered design no. 402 02 324
German registered design no. 402 02 325

Accessories:

Roof plate for TS 8 with mounting cut-out,
see page 718.

Approvals,
see page 73.

Detailed drawing,
see page 1277.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

Model No. SK with Comfort controller		**3273.500**	**3273.515[1)]**	**3301.800**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	230, 1~, 50
Dimensions in mm	WHD	597 x 417 x 475		515 x 400 x 990/597 x 454 x 900
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1100 W/1200 W** **850 W/870 W**		**3100 W/3200 W** **2400 W/2550 W**
Rated current max.		5.2 A/5.4 A	11.0 A/11.5 A	9.7 A
Start-up current		15.5 A/16.5 A	32.0 A/35.0 A	19.0 A
Pre-fuse T gG		10.0 A	20.0 A	Motor circuit breaker 10.0 A/10.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	890 W/910 W 960 W/1100 W	920 W/940 W 990 W/1140 W	1200 W/1500 W 1400 W/1750 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.2		3.1
Refrigerant		R134a, 700 g		R134a, 1200 g
Permissible operating pressure p. max.		25 bar		
Temperature and setting range		+20°C to +55°C		
Protection category to EN 60 529/09.2000	External circuit	IP 34		
	Internal circuit	IP 54[2)]		
Duty cycle		100 %		
Type of connection		Plug-in terminal strip		
Weight		42 kg	47 kg	72 kg
Colour		RAL 7035		
Air throughput of fans	External circuit	1760 m³/h		2000 m³/h
	Internal circuit	440 m³/h		1420 m³/h
Temperature control		Basic or Comfort controller (factory setting +35°C)		

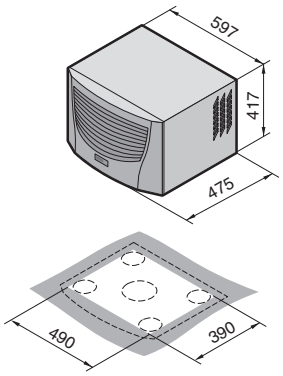
Accessories	Packs of			Page
Filter mats	3	3286.500	3286.600	723
Metal filters	1	3286.510	3286.610	724
Door-operated switch	1	4127.000		1030
SK bus system for Comfort controller	1	3124.100		717
RiDiag II including cables for Comfort controller	1	3159.100		1154
Interface card for Comfort controller	1	3124.200		716
Air ducting system	1	3286.870	3286.970	711
Cover stoppers for interior air outlet	2	3286.880	3286.980	712
Condensate hose	1	3301.612		720

[1)] Delivery times on request. [2)] In order to avoid increased condensation, we recommend enclosures with a protection category of at least IP 54.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710

Useful cooling output 1500/2000 W





Property rights:
German registered design no. 402 02 324
German registered design no. 402 02 325

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template and assembly parts.

Accessories:
Roof plate for TS 8 with mounting cut-out, see page 718.

Approvals,
see page 73.

Detailed drawing,
see page 1277.

Performance diagrams,
available on the Internet.

Model No. SK with Basic controller, RAL 7035		**3384.100**	**3384.110**	**3384.140**	**3385.100**	**3385.110**	**3385.140**
Model No. SK with Comfort controller, RAL 7035		**3384.500**	**3384.510**	**3384.540**	**3385.500**	**3385.510**	**3385.540**
Model No. SK with Basic controller, stainless steel[1)]		**3384.200**	**3384.210**	**3384.240**	**3385.200**	**3385.210**	**3385.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3384.600**	**3384.610**	**3384.640**	**3385.600**	**3385.610**	**3385.640**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60	230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60
Dimensions in mm	WHD	597 x 417 x 475			597 x 417 x 475		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1500 W/1520 W** **1100 W/1210 W**			**2000 W/2130 W** **1570 W/1670 W**		
Rated current max.		6.3 A/7.4 A	13.7 A/15.3 A	3.8 A/4.4 A	6.3 A/7.2 A	14.2 A/15.4 A	3.7 A/4.2 A
Start-up current		16.6 A/17.1 A	30.7 A/29.1 A	9.8 A/9.6 A	16.8 A/18.4 A	36.0 A/32.0 A	10.0 A/12.0 A
Pre-fuse T		10.0 A	20.0 A	6.3 A – 10.0 A[2)]	10.0 A	20.0 A	6.3 A – 10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	955 W/1070 W 1090 W/1230 W	990 W/1090 W 1140 W/1290 W		1140 W/1310 W 1240 W/1450 W	1190 W/1390 W 1300 W/1520 W	
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.6	1.5		1.8	1.7	
Refrigerant		R134a, 500 g			R134a, 950 g		
Permissible operating pressure p. max.		25 bar					
Temperature and setting range		+20°C to +55°C					
Protection category to EN 60 529/09.2000	External circuit	IP 34					
	Internal circuit	IP 54					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight		41 kg	47 kg	47 kg	42 kg	48 kg	48 kg
Air throughput of fans	External circuit	1760 m³/h			1820 m³/h		
	Internal circuit	470 m³/h					
Temperature control		Basic or Comfort controller (factory setting +35°C)					

Accessories	Packs of		Page
Filter mats	3	3286.500	723
Metal filters	1	3286.510	724
Quick-change frame	1	3286.800	719
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Air ducting system	1	3286.870	711
Cover stoppers for interior air outlet	2	3286.880	712
Condensate hose	1	3301.612	720

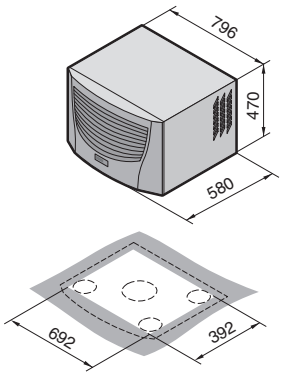
[1)] Delivery times available on request. [2)] Transformer protection switch.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710

Roof-mounted cooling units

Useful cooling output 3000/4000 W





Property rights:
German registered design no. 402 02 324
German registered design no. 402 02 325

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation.
Fully wired ready for connection, including drilling template, eyebolt and assembly parts.

Accessories:
Roof plate for TS 8 with mounting cut-out, see page 718.

Approvals,
see page 73.

Detailed drawing,
see page 1277.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

Model No. SK with Basic controller, RAL 7035		**3386.140**	**3387.140**
Model No. SK with Comfort controller, RAL 7035		**3386.540**	**3387.540**
Model No. SK with Basic controller, stainless steel[1)]		**3386.240**	**3387.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3386.640**	**3387.640**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60	400, 3~, 50/460, 3~, 60
Dimensions in mm	WHD	796 x 470 x 580	796 x 470 x 580
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**3000 W/3300 W** **2200 W/2500 W**	**4000 W/4200 W** **3250 W/3490 W**
Rated current max.		3.4 A/3.4 A	3.9 A/3.9 A
Start-up current		8.0 A/9.0 A	17.0 A/19.0 A
Pre-fuse T		Motor circuit breaker 6.3 A – 10.0 A	
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	1320 W/1630 W 1570 W/1910 W	1760 W/2200 W 2010 W/2480 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	2.3	
Refrigerant		R134a, 1600 g	R134a, 1800 g
Permissible operating pressure p. max.		25 bar	
Temperature and setting range		+20°C to +55°C	
Protection category to EN 60 529/09.2000	External circuit	IP 34	
	Internal circuit	IP 54	
Duty cycle		100 %	
Type of connection		Plug-in terminal strip	
Weight		70 kg	77 kg
Air throughput of fans	External circuit	3450 m³/h	3870 m³/h
	Internal circuit	1280 m³/h	1420 m³/h
Temperature control		Basic or Comfort controller (factory setting +35°C)	

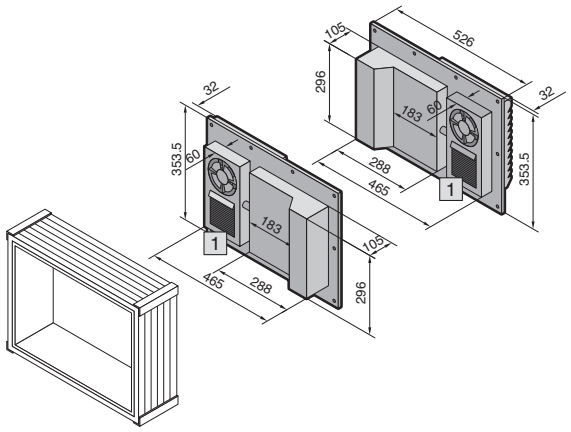
Accessories	Packs of		Page
Filter mats	3	3286.600	723
Metal filters	1	3286.610	724
Quick-change frame	1	3286.900	719
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Air ducting system	1	3286.970	711
Cover stoppers for interior air outlet	2	3286.980	712
Condensate hose	1	3301.612	720

[1)] Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710

VIP small cooling units, useful cooling output 225 W





The new VIP SK small cooling units were developed especially for cooling the VIP 6000 command panel. In addition, VIP small cooling units also offer a space-saving, economical solution for the climate control of small enclosures where small heat loads are generated by the system.

Supply includes:
Fully wired ready for connection and pre-mounted on an aluminium rear panel to fit VIP 6000 operating housing 7 U.

Property rights:
German patent no. 198 17 917

1 **Distance from installed equipment at least 60 mm**

Approvals,
see page 74.

Performance diagrams,
available on the Internet.

Model No. SK		**3201.100**	**3202.100**
Condenser version		Left	Right
Rated operating voltage V, Hz		230, 50/60	
Dimensions in mm	W H D	526 353.5 105	
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 45**	**225 W/270 W** **160 W/200 W**	

Rated current max.		1.5 A/1.5 A
Start-up current		1.9 A/2.0 A
Pre-fuse T		4.0 A/4.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 45	285 W/300 W 315 W/325 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	0.8/0.9
Refrigerant		R134a, 170 g
Permissible operating pressure p. max.		27 bar
Temperature and setting range		+20°C to +45°C
Protection category to EN 60 529/09.2000	External circuit	IP 24
	Internal circuit	IP 54
Duty cycle		100 %
Type of connection		Terminal strip
Weight		10.5 kg
Colour		Rear panel aluminium, vent grille RAL 7035
Air throughput of fans	External circuit	235 m^3/h / 270 m^3/h
	Internal circuit	160 m^3/h / 180 m^3/h
Temperature control		Electronic control (factory setting +35°C)

Accessories	Packs of		Page
Temperature indicator	1	3114.100	714
Condensate hose	1	3301.608	720

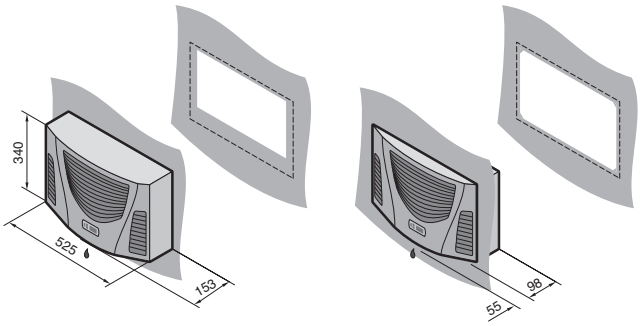
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

Wall-mounted cooling units

Mini in horizontal format, useful cooling output 300 W





Mini cooling units in horizontal format, ideal for cooling small enclosures and operating housings with optimum space utilisation.

Supply includes:
Nano-coated condenser. Fully wired ready for connection, including drilling template and assembly parts.

Approvals,
see page 74.

Detailed drawing,
see page 1278.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

Model No. SK		**3302.300**	**3302.310**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 60
Dimensions in mm	W H D	525 340 153	
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**300 W/320 W** **150 W/160 W**	**300 W** **150 W**

Rated current max.		1.6 A/1.7 A	4.0 A
Start-up current		4.3 A/5.3 A	12.0 A
Pre-fuse T		10.0 A	10.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	285 W/300 W 320 W/340 W	290 W 340 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.1	
Refrigerant		R134a, 100 g	R134a, 95 g
Permissible operating pressure p. max.		25 bar	
Temperature and setting range		+20°C to +55°C	
Protection category to EN 60 529/09.2000	External circuit	IP 34	
	Internal circuit	IP 54	
Duty cycle		100 %	
Type of connection		Plug-in terminal strip	
Weight		13 kg	
Colour		RAL 7035	
Air throughput of fans	External circuit	345 m^3/h	
	Internal circuit	310 m^3/h	
Temperature control		Basic controller	

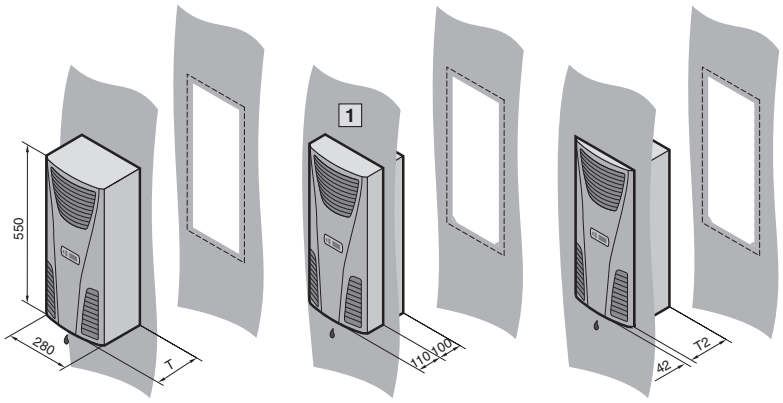
Accessories	Packs of		Page
Temperature indicator	1	3114.100	714
Condensate hose	1	3301.608	720
Filter mats	3	3286.110	723
Metal filters	1	3286.120	724

Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

Useful cooling output 300/500 W





B = Width
T = Depth

Supply includes:
Nano-coated condenser. Fully wired ready for connection, including drilling template and assembly parts.

1 Partial internal mounting possible with 3303.XXX only.

Approvals,
see page 75.

Detailed drawing,
see page 1278.

Performance diagrams,
available on the Internet.

Property rights:
German registered design
no. 402 02 324 and
no. 402 02 325
Japanese registered design
no. 1 187 896
Indian registered design
no. 189 953
US design patent no. D 488,480
IR reg. design no. DM/061 967
with validity for FR, IT, ES

RITTAL TOP THERM PLUS

Model No. SK with Basic controller, RAL 7035		**3302.100**	**3302.110**	**3303.100**	**3303.110**
Model No. SK with Comfort controller, RAL 7035		**–**	**–**	**3303.500**	**3303.510**
Model No. SK with Basic controller, stainless steel[1)]		**3302.200**	**3302.210**	**3303.200**	**3303.210**
Model No. SK with Comfort controller, stainless steel[1)]		**–**	**–**	**3303.600**	**3303.610**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 60	230, 1~, 50/60	115, 1~, 60
Dimensions in mm	B H T T2	280 550 140 98		280 550 210 164	
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**300 W/320 W** **150 W/170 W**	**300 W** **150 W**	**500 W/610 W** **280 W/350 W**	**500 W** **280 W**
Rated current max.		1.6 A/1.7 A	3.3 A	2.6 A/2.6 A	5.7 A
Start-up current		3.0 A/3.4 A	8.0 A	5.1 A/6.4 A	11.5 A
Pre-fuse T		10.0 A	10.0 A	10.0 A	10.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	245 W/255 W 255 W/275 W	290 W 340 W	360 W/380 W 420 W/390 W	470 W 500 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.2		1.4	
Refrigerant		R134a, 100 g		R134a, 170 g	
Permissible operating pressure p. max.		25 bar		28 bar	
Temperature and setting range		+20°C to +55°C			
Protection category to EN 60 529/09.2000	External circuit	IP 34			
	Internal circuit	IP 54			
Duty cycle		100 %			
Type of connection		Plug-in terminal strip			
Weight		13 kg		17 kg	
Air throughput of fans	External circuit	310 m³/h		345 m³/h	
	Internal circuit	345 m³/h		310 m³/h	
Temperature control		Basic or Comfort controller (factory setting +35°C)			

Accessories	Packs of			Page
Filter mats	3	3286.300		723
Metal filters	1	3286.310		724
Door-operated switch	1	4127.000		1030
SK bus system for Comfort controller	1	–	3124.100	717
RiDiag II including cables for Comfort controller	1	–	3159.100	1154
Interface card for Comfort controller	1	–	3124.200	716
Condensate hose	1	3301.608	3301.610	720

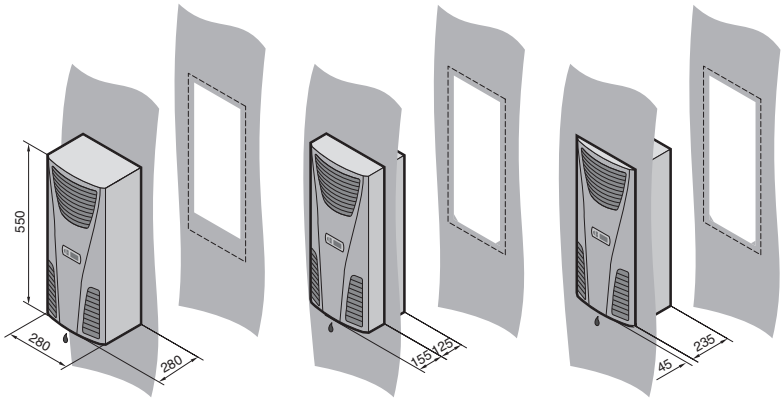
[1)] Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

Wall-mounted cooling units

Useful cooling output 750 W





Supply includes:
Nano-coated condenser. Fully wired ready for connection, including drilling template and assembly parts.

Approvals,
see page 75.

Detailed drawing,
see page 1278.

Performance diagrams,
available on the Internet.

Property rights:
German registered design no. 402 02 324 and no. 402 02 325
Japanese registered design no. 1 187 896
Indian registered design no. 189 953
US design patent no. D 488,480
IR reg. design no. DM/061 967
with validity for FR, IT, ES

RITTAL TOP THERM PLUS

Model No. SK with Basic controller, RAL 7035		**3361.100**	**3361.110**	**3361.140**
Model No. SK with Comfort controller, RAL 7035		**3361.500**	**3361.510**	**3361.540**
Model No. SK with Basic controller, stainless steel[1)]		**3361.200**	**3361.210**	**3361.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3361.600**	**3361.610**	**3361.640**
Rated operating voltage V, Hz		230, 1~, 50/60[3)]	115, 1~, 60[3)]	400[2)], 2~, 50/60[3)]
Dimensions in mm	W H D	280 550 280		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**750 W/780 W** **510 W/540 W**	**750 W** **500 W**	**750 W/780 W** **510 W/540 W**
Rated current max.		2.3 A/2.4 A	5.3 A	1.2 A/1.4 A
Start-up current		5.6 A/5.6 A	12.0 A	3.1 A/3.3 A
Pre-fuse T		10.0 A	10.0 A	6.3 A – 10.0 A[4)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	480 W/550 W 530 W/640 W	570 W 670 W	480 W/550 W 530 W/640 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.5		
Refrigerant		R134a, 280 g	R134a, 260 g	R134a, 280 g
Permissible operating pressure p. max.		28 bar		
Temperature and setting range		+20°C to +55°C		
Protection category to EN 60 529/09.2000	External circuit	IP 34		
	Internal circuit	IP 54		
Duty cycle		100 %		
Type of connection		Plug-in terminal strip		
Weight		22 kg		
Air throughput of fans (unimpeded air flow)	External circuit	480 m^3/h		
	Internal circuit	600 m^3/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)		

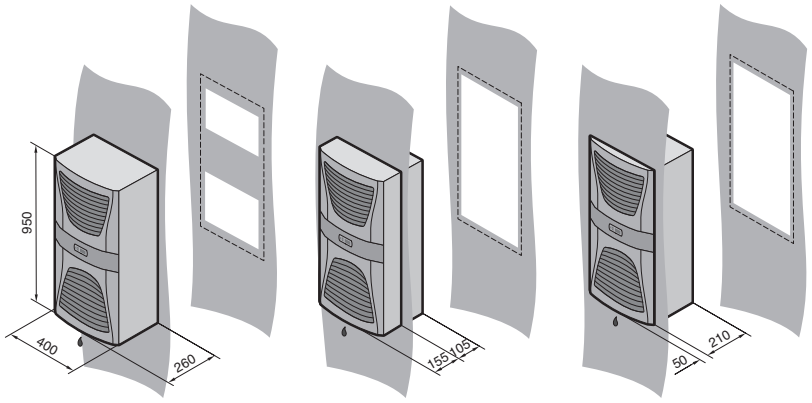
Accessories	Packs of		Page
Filter mats	3	3286.300	723
Metal filters	1	3286.310	724
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.610	720

[1)] Delivery times on request. [2)] External toroidal core transformer Ø 126 x 65 mm deep for mounting in the enclosure. [3)] T_u max. = 52°C/60 Hz.
[4)] Transformer protection switch.
Special voltages available on request. Technical modifications reserved.

Accessories Page 710 **Configuration software** Page 1155

Useful cooling output 1000/1500 W





Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template and assembly parts.

Approvals,
see page 75.

Detailed drawing,
see page 1279.

Performance diagrams,
available on the Internet.

Property rights:
German registered design no. 402 02 325
IR reg. design no. DM/062 557 with validity for FR, IT, ES
Indian registered design no. 190 269
Japanese registered design no. 1 187 905

RITTAL TOP THERM PLUS

Model No. SK with Basic controller, RAL 7035		**3304.100**	**3304.110**	**3304.140**	**3305.100**	**3305.110**	**3305.140**
Model No. SK with Comfort controller, RAL 7035		**3304.500**	**3304.510**	**3304.540**	**3305.500**	**3305.510**[1]	**3305.540**
Model No. SK with Basic controller, stainless steel[1]		**3304.200**	**3304.210**	**3304.240**	**3305.200**	**3305.210**	**3305.240**
Model No. SK with Comfort controller, stainless steel[1]		**3304.600**	**3304.610**	**3304.640**	**3305.600**	**3305.610**	**3305.640**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60
Dimensions in mm	W H D	400 950 260			400 950 260		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1000 W/1060 W** **790 W/840 W**			**1500 W/1510 W** **1230 W/1250 W**		
Rated current max.		5.4 A/5.0 A	10.6 A/11.1 A	2.8 A/2.9 A	6.0 A/6.5 A	12.1 A/13.6 A	2.6 A/2.9 A
Start-up current		12.0 A/14.0 A	26.0 A/28.0 A	11.5 A/12.7 A	22.0 A/24.0 A	42.0 A/46.0 A	12.2 A/11.3 A
Pre-fuse T		10.0 A	16.0 A	6.3 A – 10.0 A[2]	16.0 A	20.0 A	6.3 A – 10.0 A[2]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	825 W/775 W 875 W/835 W	850 W/800 W 900 W/875 W	700 W/675 W 785 W/800 W	975 W/1125 W 1125 W/1285 W	1000 W/1175 W 1165 W/1325 W	925 W/1100 W 1085 W/1275 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.2		1.4	1.5		1.6
Refrigerant		R134a, 325 g		R134a, 500 g	R134a, 600 g		
Permissible operating pressure p. max.		25 bar					
Temperature and setting range		+20°C to +55°C					
Protection category to EN 60 529/09.2000	External circuit	IP 34					
	Internal circuit	IP 54					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight		39 kg	44 kg	40 kg	41 kg	46 kg	42 kg
Air throughput of fans	External circuit	900 m³/h					
	Internal circuit	600 m³/h			800 m³/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)					

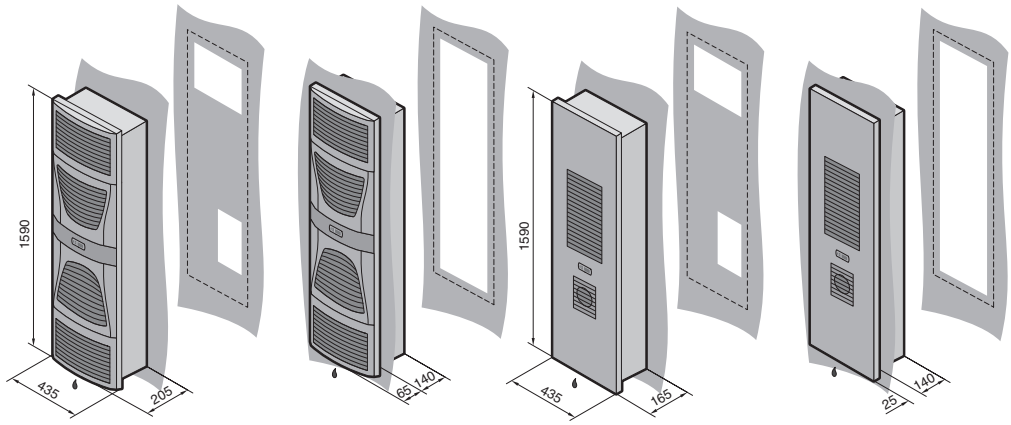
Accessories	Packs of		Page
Filter mats	3	3286.400	723
Metal filters	1	3286.410	724
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720

[1] Delivery times available on request. [2] Motor circuit-breaker.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

Slimline, useful cooling output 1500 W





- Simple, fast assembly without the need to drill additional holes
- Ideal for restricted mounting locations
- Super-slimline design
- Minimal installation depth and build height.

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template and assembly parts.

Approvals,
see page 75.

Detailed drawing,
see page 1280.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

Model No. SK with Basic controller, RAL 7035		**3366.100**	**3377.100[1)]**	**3366.110**	**3377.110[1)]**	**3366.140**	**3377.140[1)]**
Model No. SK with Comfort controller, RAL 7035		**3366.500**	**3377.500[1)]**	**3366.510**	**3377.510[1)]**	**3366.540**	**3377.540[1)]**
Model No. SK with Basic controller, stainless steel		**3366.200[1)]**	**3377.200[1)]**	**3366.210[1)]**	**3377.210[1)]**	**3366.240[1)]**	**3377.240[1)]**
Model No. SK with Comfort controller, stainless steel		**3366.600[1)]**	**3377.600[1)]**	**3366.610[1)]**	**3377.610[1)]**	**3366.640[1)]**	**3377.640[1)]**
Rated operating voltage V, Hz		230, 1~, 50/60		115, 1~, 50/60		400, 3~, 50/460, 3~, 60	
Dimensions in mm	W H D	435 1590 205	435 1590 165	435 1590 205	435 1590 165	435 1590 205	435 1590 165
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1500 W/1500 W** **1050 W/1100 W**				**1500 W/1500 W** **980 W/1080 W**	

Rated current max.		7.1 A/7.3 A	14.3 A/14.7 A	3.0 A/3.1 A
Start-up current		22.0 A/24.0 A	43.0 A/47.0 A	8.0 A/8.8 A
Pre-fuse T		10.0 A	20.0 A	6.3 A – 10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	1045 W/1175 W 1220 W/1335 W	1075 W/1200 W 1265 W/1375 W	1090 W/1240 W 1260 W/1430 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.4		1.3
Refrigerant		R134a, 700 g		
Permissible operating pressure p. max.		28 bar		
Temperature and setting range		+20°C to +55°C		
Protection category to EN 60 529/09.2000	External circuit	IP 34		
	Internal circuit	IP 54		
Duty cycle		100 %		
Type of connection		Plug-in terminal strip		
Weight		45 kg	50 kg	46 kg
Air throughput of fans (unimpeded air flow)	External circuit	910 m³/h		
	Internal circuit	860 m³/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)		

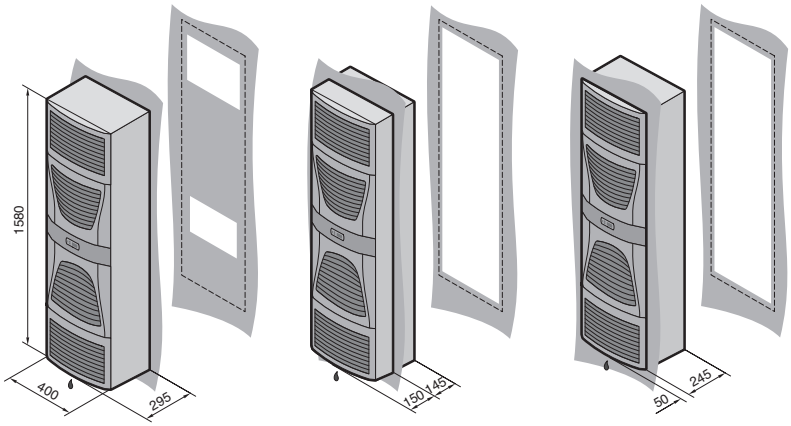
Accessories	Packs of							Page
Filter mats	3	3286.400	3253.010	3286.400	3253.010	3286.400	3253.010	723
Metal filters	1	3286.410	3253.220	3286.410	3253.220	3286.410	3253.220	724
Trim frame for external device mounting	1	3377.000						719
Door-operated switch	1	4127.000						1030
SK bus system for Comfort controller	1	3124.100						717
RiDiag II including cables for Comfort controller	1	3159.100						1154
Interface card for Comfort controller	1	3124.200						716
Condensate hose	1	3301.612						720

[1)] Delivery times available on request. [2)] Motor circuit-breaker.
Special voltages available on request. Technical modifications reserved.

Accessories Page 710 **Configuration software** Page 1155

Useful cooling output 2000/2500 W





Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template, eyebolt and assembly parts.

Also required:
For installation in the door, we recommend the use of the ride-up roller and 180° hinges (TS 8800.710), see page 961, and for use in the side panel we recommend the use of the TS enclosure panel fasteners (TS 8800.071), see page 918.

Approvals,
see page 75.

Detailed drawing,
see page 1279.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

Model No. SK with Basic controller, RAL 7035		**3328.100**	**3328.110**	**3328.140**	**3329.100**	**3329.110**	**3329.140**
Model No. SK with Comfort controller, RAL 7035		**3328.500**	**3328.510**	**3328.540**	**3329.500**	**3329.510**	**3329.540**
Model No. SK with Basic controller, stainless steel[1)]		**3328.200**	**3328.210**	**3328.240**	**3329.200**	**3329.210**	**3329.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3328.600**	**3328.610**	**3328.640**	**3329.600**	**3329.610**	**3329.640**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60
Dimensions in mm	W H D	400 1580 295			400 1580 295		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**2000 W/2350 W** **1450 W/1690 W**			**2500 W/2750 W** **1600 W/1750 W**		**2500 W/2700 W** **1900 W/1950 W**
Rated current max.		7.5 A/9.1 A	14.7 A/17.3 A	2.8 A/3.3 A	8.6 A/10.6 A	17.0 A/22.0 A	3.7 A/3.8 A
Start-up current		22.0 A/26.0 A	36.0 A/39.0 A	6.8 A/7.8 A	21.0 A/21.0 A	44.0 A/42.0 A	6.8 A/7.6 A
Pre-fuse T		16.0 A	25.0 A	6.3 A – 10.0 A[2)]	16.0 A	25.0 A	6.3 A – 10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	1025 W/1200 W 1250 W/1350 W	1085 W/1250 W 1300 W/1410 W	1050 W/1275 W 1275 W/1525 W	1450 W/1675 W 1625 W/2000 W	1500 W/1725 W 1675 W/2065 W	1425 W/1625 W 1675 W/1975 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	2.0	1.8	1.9	1.7		1.8
Refrigerant		R134a, 950 g					
Permissible operating pressure p. max.		28 bar					
Temperature and setting range		+20°C to +55°C					
Protection category to EN 60 529/09.2000	External circuit	IP 34					
	Internal circuit	IP 54					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight		66 kg	73 kg	67 kg	69 kg	76 kg	70 kg
Air throughput of fans	External circuit	640 m³/h			710 m³/h		
	Internal circuit	550 m³/h			640 m³/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)					

Accessories	Packs of		Page
Filter mats	3	3286.400	723
Metal filters	1	3286.410	724
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720

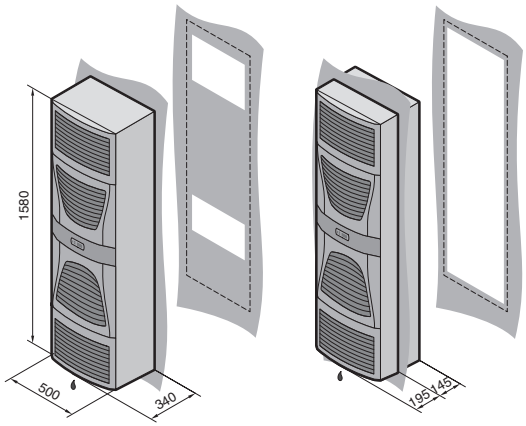
[1)] Delivery times available on request. [2)] Motor circuit-breaker. Special voltages available on request. Technical modifications reserved.

Accessories Page 710 **Configuration software** Page 1155

Wall-mounted cooling units

Useful cooling output 4000 W





RITTAL TOP THERM PLUS

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template, eyebolt and assembly parts.

Note:
External mounting and partial internal mounting of the cooling unit are available as standard. Partial internal mounting not possible with:
– 600 mm wide TS enclosures and
– 1200 mm wide TS enclosures in the lockable door.

Also required:
When mounting in the door: Ride-up roller (TS 4538.000), see page 967.
When fitted with 180° hinges (TS 8800.710), see page 961.
When mounting in the side panel: Enclosure panel fasteners (TS 8800.071), see page 918.

Approvals,
see page 75.

Detailed drawing,
see page 1279.

Performance diagrams,
available on the Internet.

Model No. SK with Basic controller, RAL 7035		**3332.140**
Model No. SK with Comfort controller, RAL 7035		**3332.540**
Model No. SK with Basic controller, stainless steel[1)]		**3332.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3332.640**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60
Dimensions in mm	W H D	500 1580 340
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**4000 W/4400 W** **3070 W/3570 W**

Rated current max.		4.2 A/4.2 A
Start-up current		9.2 A/11.0 A
Pre-fuse T		Motor circuit breaker 6.3 A – 10.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	1850 W/2250 W 2120 W/2590 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	2.1
Refrigerant		R134a, 3000 g
Permissible operating pressure p. max.		28 bar
Temperature and setting range		+20°C to +55°C
Protection category to EN 60 529/09.2000	External circuit	IP 34
	Internal circuit	IP 54
Duty cycle		100 %
Type of connection		Plug-in terminal strip
Weight		91 kg
Air throughput of fans	External circuit	2000 m³/h
	Internal circuit	1500 m³/h
Temperature control		Basic or Comfort controller (factory setting +35°C)

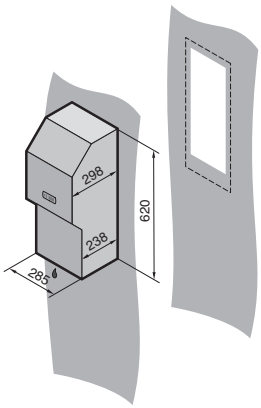
Accessories	Packs of		Page
Filter mats	3	3286.400	723
Metal filters	1	3286.410	724
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720

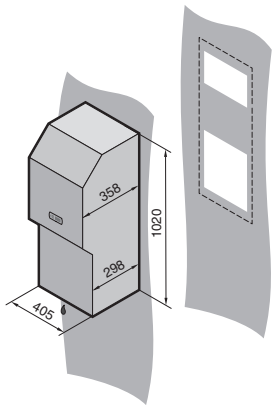
[1)] Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Accessories Page 710 **Configuration software** Page 1155

Design NEMA 4x, useful cooling output 500/1000/1500 W







Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template and assembly parts.

Approvals,
see page 77.

Detailed drawing,
see page 1280.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

Model No. SK with Basic controller[1)]		**3303.104**	**3303.114**	**3304.104**	**3304.114**	**3304.144**	**3305.104**	**3305.114**	**3305.144**
Model No. SK with Comfort controller[1)]		**3303.504**	**3303.514**	**3304.504**	**3304.514**	**3304.544**	**3305.504**	**3305.514**	**3305.544**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 60	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/460, 3~, 60	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/460, 3~, 60
Dimensions in mm	W H D	285 620 298		405 1020 358			405 1020 358		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**500 W/610 W** **280 W/350 W**	**500 W** **280 W**	**1000 W/1060 W** **790 W/840 W**			**1500 W/1510 W** **1230 W/1250 W**		
Rated current max.		2.6/2.6 A	5.7 A	5.4/5.0 A	10.6/11.1 A	2.8/2.9 A	6.0/6.5 A	12.1/13.6 A	2.6/2.9 A
Start-up current		5.1/6.4 A	11.5 A	12.0/14.0 A	26.0/28.0 A	11.5/12.7 A	22.0/24.0 A	42.0/46.0 A	12.2/11.3 A
Pre-fuse T		10.0 A	10.0 A	10.0 A	16.0 A	6.3 A – 10.0 A[2)]	16.0 A	20.0 A	6.3 A – 10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	360/380 W 420/390 W	470 W 500 W	825/775 W 875/835 W	850/800 W 900/875 W	700/675 W 785/800 W	975/1125 W 1125/1285 W	1000/1175 W 1165/1325 W	925/1100 W 1085/1275 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.4				1.7	1.8	1.7	1.9
Refrigerant		R134a, 170 g		R134a, 325 g		R134a, 500 g	R134a, 600 g		
Permissible operating pressure p. max.		28 bar		25 bar			25 bar		
Temperature and setting range		+20°C to +55°C							
Protection rating		NEMA 4x							
Duty cycle		100 %							
Type of connection		Plug-in terminal strip							
Weight		25 kg		49 kg	54 kg	50 kg	51 kg	56 kg	52 kg
Material		Stainless steel 1.4404 (V4A) (AISI 316L)							
Air throughput of fans	External circuit	345 m^3/h		900 m^3/h			900 m^3/h		
	Internal circuit	310 m^3/h		600 m^3/h			800 m^3/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)							

Accessories	Packs of				Page
Door-operated switch	1	4127.000			1030
SK bus system for Comfort controller	1	3124.100	–	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100			1154
Interface card for Comfort controller	1	3124.200			716
Condensate hose	1	3301.610	3301.612		720

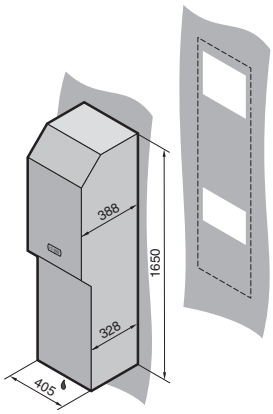
[1)] Delivery times available on request. [2)] Motor circuit-breaker.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

Wall-mounted cooling units

Design NEMA 4x, useful cooling output 2000/2500 W





Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template and assembly parts.

Approvals,
see page 77.

Detailed drawing,
see page 1281.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

Model No. SK with Basic controller[1)]		**3328.104**	**3328.114**	**3328.144**	**3329.104**	**3329.114**	**3329.144**
Model No. SK with Comfort controller[1)]		**3328.504**	**3328.514**	**3328.544**	**3329.504**	**3329.514**	**3329.544**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60
Dimensions in mm	W H D	405 1650 388					
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**2000 W/2350 W** **1450 W/1690 W**			**2500 W/2750 W** **1600 W/1750 W**		**2500 W/2700 W** **1900 W/1950 W**
Rated current max.		7.5 A/9.1 A	14.7 A/17.3 A	2.8 A/3.3 A	8.6 A/10.6 A	17.0 A/22.0 A	3.7 A/3.8 A
Start-up current		22.0 A/26.0 A	36.0 A/39.0 A	6.8 A/7.8 A	21.0 A/21.0 A	44.0 A/42.0 A	6.8 A/7.6 A
Pre-fuse T		16.0 A	25.0 A	6.3 A – 10.0 A[2)]	16.0 A	25.0 A	6.3 A – 10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	1025/1200 W 1250/1350 W	1085/1250 W 1300/1410 W	1050/1275 W 1275/1525 W	1450/1675 W 1625/2000 W	1500/1725 W 1675/2065 W	1425/1625 W 1675/1975 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.7		2.3	1.9		2.0
Refrigerant		R134a, 900 g					
Permissible operating pressure p. max.		28 bar					
Temperature and setting range		+20°C to +55°C					
Protection rating		NEMA 4x					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight		80 kg	87 kg	80 kg	83 kg	90 kg	83 kg
Material		Stainless steel 1.4404 (V4A) (AISI 316L)					
Air throughput of fans	External circuit	640 m³/h			710 m³/h		
	Internal circuit	550 m³/h			640 m³/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)					

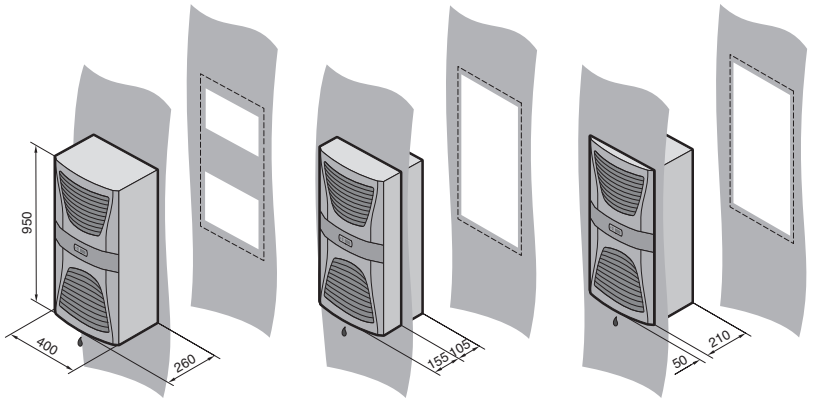
Accessories	Packs of		Page
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720

[1)] Delivery times available on request. [2)] Motor circuit-breaker.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

for precision machine tools, useful cooling output 1000/1500 W





RITTAL TOP THERM PLUS

These new devices meet the current requirements of precision machine tools. This includes high acceleration values and a massive reduction in weight. The associated increased sensitivity to vibration also places greater demands on supply equipment such as cooling units.

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template and assembly parts.

Detailed drawing,
see page 1279.

Performance diagrams,
available on the Internet.

Property rights:
German registered design
no. 402 02 325
IR reg. design no. DM/062 557
with validity for FR, IT, ES
Indian registered design
no. 190 269
Japanese registered design
no. 1 187 905

Model No. SK with Basic controller, RAL 7035[1)]		**3304.142**	**3305.142**
Model No. SK with Comfort controller, RAL 7035[1)]		**3304.542**	**3305.542**
Rated operating voltage V, Hz		400, 3~, 50/ 460, 3~, 60	400, 3~, 50/ 460, 3~, 60
Dimensions in mm	W H D	400 950 260	400 950 260
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1000 W/1060 W** **790 W/840 W**	**1500 W/1510 W** **1230 W/1250 W**

Rated current max.		2.8 A/2.9 A	2.6 A/2.9 A
Start-up current		11.5 A/12.7 A	12.2 A/11.3 A
Pre-fuse T		Motor circuit breaker 6.3 A – 10.0 A	
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	700 W/675 W 785 W/800 W	925 W/1100 W 1085 W/1275 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.4	1.9
Refrigerant		R134a, 500 g	R134a, 600 g
Permissible operating pressure p. max.		25 bar	
Temperature and setting range		+20°C to +55°C	
Protection category to EN 60 529/09.2000	External circuit	IP 34	
	Internal circuit	IP 54	
Duty cycle		100 %	
Type of connection		Plug-in terminal strip	
Weight		40 kg	42 kg
Air throughput of fans	External circuit	900 m³/h	
	Internal circuit	600 m³/h	800 m³/h
Temperature control		Basic or Comfort controller (factory setting +35°C)	

Accessories	Packs of		Page
Filter mats	3	3286.400	723
Metal filters	1	3286.410	724
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720

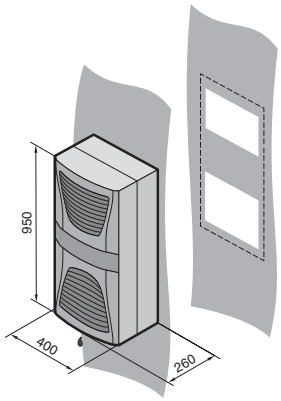
[1)] Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

Wall-mounted cooling units

Zone 22 (dust) explosion-proof cooling units, useful cooling output 1000/1500 W





These cooling units have been especially developed for controlling the climate in potentially explosive dust Zone 22 sectors.

Supply includes:
Fully wired ready for connection, including drilling template and assembly parts.

Detailed drawing,
see page 1279.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

Model No. SK with Basic controller, RAL 7035		**3304.130**	**3304.160**	**3305.130**	**3305.160**
Model No. SK with Comfort controller, RAL 7035		**3304.530**	**3304.560**	**3305.530**	**3305.560**
Rated operating voltage V, Hz		230, 50/60	400, 3~, 50/400, 3~, 60	230, 50/60	400, 3~, 50/400, 3~, 60
Dimensions in mm	W H D	400 950 260		400 950 260	
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1000 W/1060 W** **790 W/840 W**		**1500 W/1510 W** **1230 W/1250 W**	
Rated current max.		4.8 A/4.4 A	2.5 A/2.6 A	5.4 A/6.0 A	2.3 A/2.6 A
Start-up current		12.0 A/14.0 A	11.5 A/12.7 A	22.0 A/24.0 A	12.2 A/11.3 A
Pre-fuse T		10.0 A/10.0 A	6.3 A – 10.0 A[1)]	16.0 A/16.0 A	6.3 A – 10.0 A[1)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	700 W/650 W 750 W/710 W	580 W/550 W 660 W/680 W	850 W/1000 W 1000 W/1160 W	800 W/980 W 960 W/1150 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.4	1.7	1.8	1.9
Refrigerant		R134a, 325 g	R134a, 500 g	R134a, 600 g	
Permissible operating pressure p. max.		25 bar			
Temperature and setting range		+20°C to +55°C			
Protection category to EN 60 529/09.2000	External circuit	IP 34			
	Internal circuit	IP 54			
Duty cycle		100 %			
Type of connection		Plug-in terminal strip			
Weight		39 kg		41 kg	
Air throughput of fans	External circuit	900 m³/h			
	Internal circuit	600 m³/h		800 m³/h	
Temperature control		Basic or Comfort controller (factory setting +35°C)			

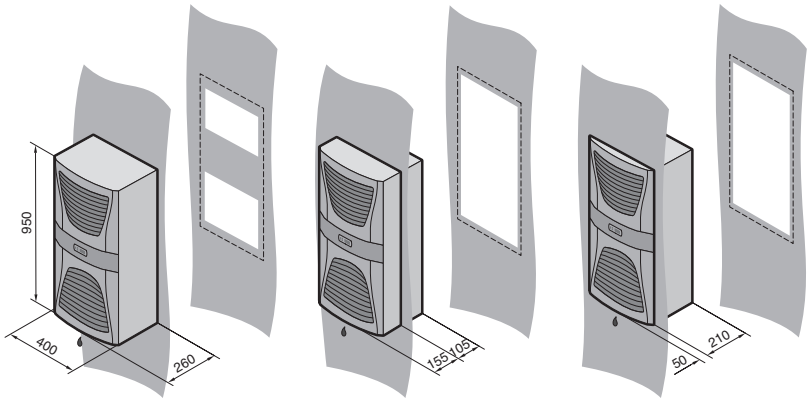
Accessories	Packs of		Page
Filter mats	3	3286.400	723
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720

Delivery times available on request. Other ATEX version cooling units as well as special voltages available upon request.
We reserve the right to make technical modifications without giving prior notice.
[1)] Motor circuit breaker

Accessories Page 710

with CO_2 as the coolant, useful cooling output 1000 W





Environmentally friendly coolant
This generation of cooling units already uses the alternative CO_2 as the coolant for generating the cooling power.

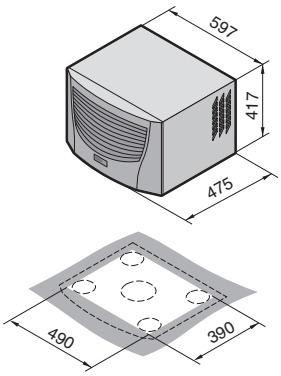
Supply includes:
Fully wired ready for connection, including automatic condensate evaporation, drilling template and assembly parts.

Accessories:

Roof plate for TS 8 with mounting cut-out,
see page 718.

Detailed drawing,
see page 1277 or page 1279.

RITTAL TOP THERM PLUS



Model No. SK with Comfort controller		3383.740 (roof-mounting)	3304.740 (wall-mounting)
Rated operating voltage V, Hz		230, 50/60	
Dimensions in mm	WHD	597 x 417 x 475	400 x 950 x 260
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35**	**1000 W**	

Temperature and setting range		+20°C to +55°C	
Protection category to EN 60 529/09.2000	External circuit	IP 34	
	Internal circuit	IP 54	
Duty cycle		100 %	
Type of connection		Plug-in terminal strip	
Weight		42 kg	47 kg
Colour		RAL 7035	
Air throughput of fans	External circuit	1760 m³/h	900 m³/h
	Internal circuit	440 m³/h	600 m³/h
Temperature control		Basic or Comfort controller (factory setting +35°C)	

Accessories	Packs of			Page
Filter mats	3	3286.500	3286.400	723
Metal filters	1	3286.510	3286.410	724
Door-operated switch	1	4127.000		1030
Air ducting system	1	3286.870	–	711
Cover stoppers for interior air outlet	2	3286.880	–	712
Condensate hose	1	3301.612		720

We reserve the right to make technical modifications without giving prior notice. Other specifications available upon request.

Accessories Page 710

Recooling systems

Features



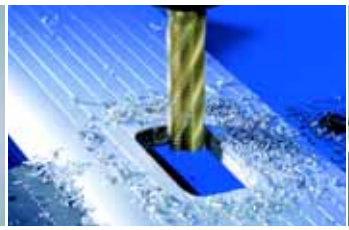
Recooling systems ensure centralised, efficient cooling and provision of the cooling medium (generally water). For example, all cooling tasks on a system or machine can be solved via a single pipeline system. Spatial separation between cooling production and process cooling can be achieved with recooling systems.



Application diversity of centralised cooling technology



Enclosure cooling
In conjunction with air/water heat exchangers, optimum dissipation of high heat loads is guaranteed, even under extreme ambient temperatures and air contamination levels.



Cooling of liquid media
Direct and indirect cooling of liquids are the prerequisite for ensuring essential machine precision and speed.

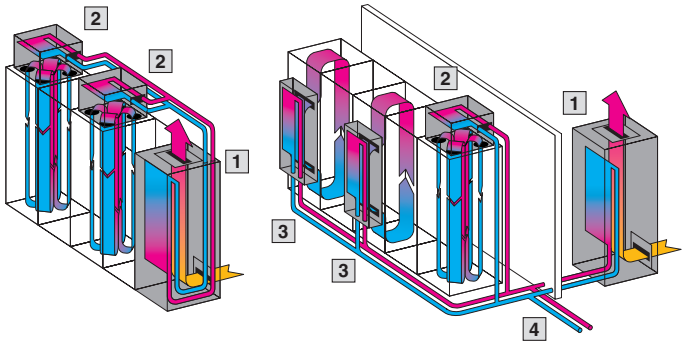


Process cooling
High-quality material processing, such as laser cutting, necessitates high levels of temperature precision with simultaneous cooling of the peripheral technology.

Siting conditions

Unity with enclosures
For example, recooling systems may be connected directly to a bayed enclosure suite, providing effective, centralised cooling of all cases and enclosures on a machine or plant.

1 Recooling system
2 Air/water heat exchanger, roof-mounted
3 Air/water heat exchanger, wall-mounted
4 Other components, e. g. machine cooling



Spatially separated
High heat loads can even be dissipated in confined and awkward spaces, thanks to the spatial separation of the recooling system from the enclosures and machine. In all cases, as well as enclosure cooling, cooling water may also be produced for process and machine cooling or for cooling liquid media.



Standard RiNano-coating

Mini recooling systems (roof/wall mounted) with RiNano-coating as standard.

The heat exchanger lamella's ultra-thin, glass-like seals prevent dirt from settling on the condenser.

Benefits:

- A single system for enclosure cooling, process and machine cooling, and the cooling of liquid media.
- Integration into bayed enclosure suites
- Individual project planning
- Commissioning and servicing

Important:

- Cooling output calculated at an ambient temperature of 32°C and an inlet temperature of 10°C and 18°C (water)/20°C (oil)

Project planning examples



Example 1

Production line

High-quality material processing requires a high degree of temperature precision with simultaneous cooling of the peripheral technology. This task – the cost-effective cooling of various equipment in the production line – is performed centrally by the recooling system in an industrial enclosure. It supplies the machine and process cooling with the required cooling water, as well as supplying the control enclosures via air/water heat exchangers.

Example 2

Test laboratory

Every single product is subjected to in-depth functional and quality testing at the in-house test laboratory. In order to ensure that the test process runs smoothly, the control enclosures are cooled via air/water heat exchangers, and the three test benches are supplied with the required cooling water in line with requirements. These diverse cooling tasks are performed by the recooling system integrated into the TS 8 Top enclosure system. Visually, they form a single unit with the TS 8 control cabinets.

Example 3

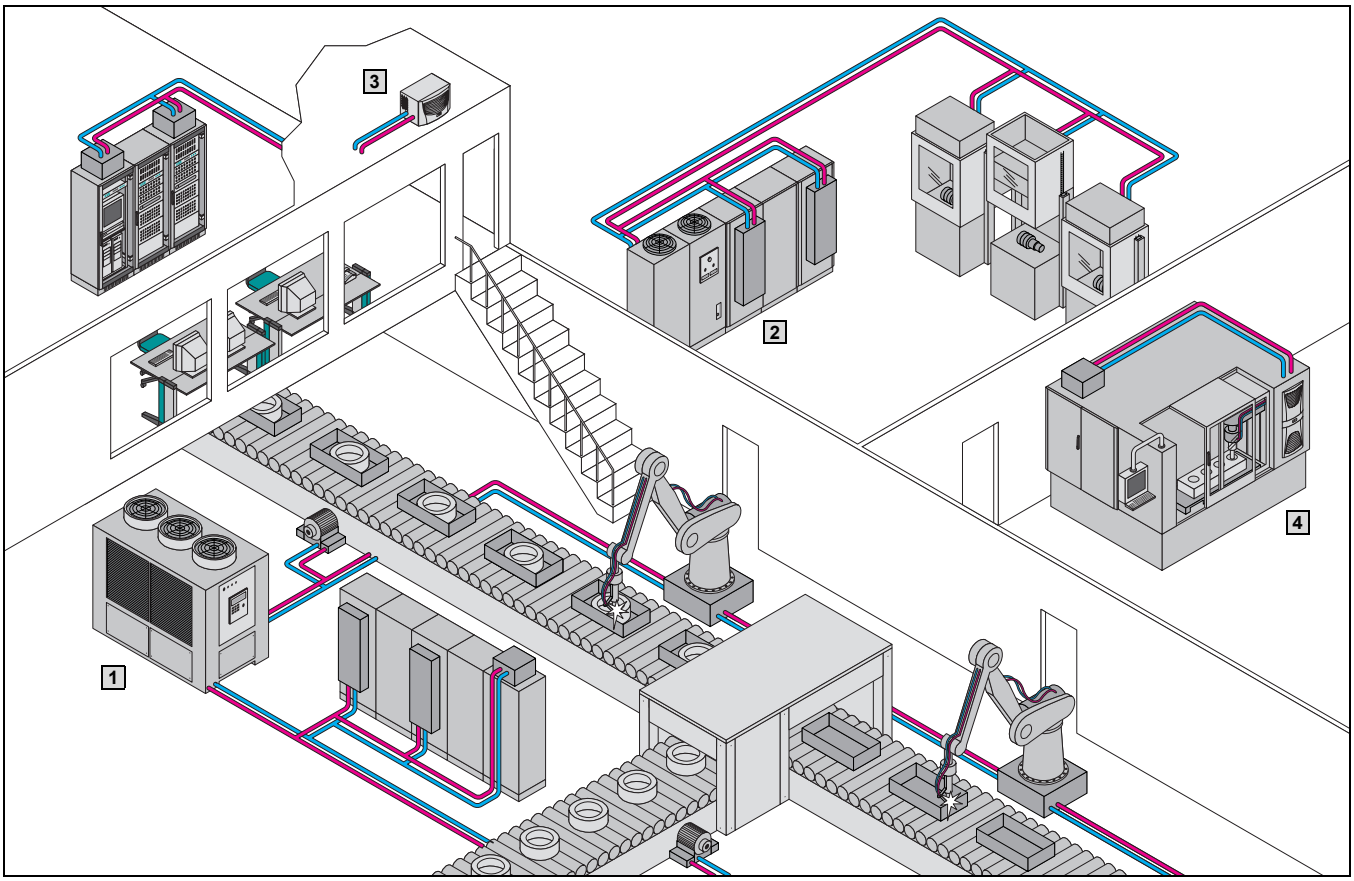
Control room

In conjunction with air/water heat exchangers, the server and network enclosures installed in the production control room are cooled by a Mini recooling system. To avoid contaminating the room air, and to facilitate optimum dissipation of the heat loss generated by the recooling systems, this is installed outside of the production control room.

Example 4

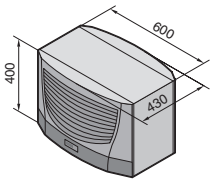
Tool production

The heat loss generated during tool machining (e. g. by water-cooled motor spindles with high-frequency drives) must be dissipated efficiently. In such cases, this task is performed by a wall-mounted Mini recooling system which at the same time ensures cooling of the control unit, likewise integrated into the machine.



Mini, cooling output 960/1490 W





RITTAL TOP THERM PLUS

Technical design:
- Compact, modular structure of the cooling components on a base plate designed as a collecting tray.
- Medium-flow pumps.
- Precise temperature control, based on microprocessor technology.
- Collective fault signal with floating contact.
- Application-specific special equipment available on request.
- Pressure-sealed system (.600) or open system with tank (.610).

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1284.

Characteristic curves of pump,
see page 1284.

Options,
see page 1282.

Model No. SK		**3318.600**	**3318.610**	**3319.600**	**3319.610**
Rated operating voltage V, Hz		230, 50/60			
Dimensions in mm	W H D	600 400 430			
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**780 W/870 W** **960 W/1070 W**		**1200 W/1330 W** **1490 W/1660 W**	
Power consumption		630 W/780 W		845 W/1050 W	
Rated current max.		4.2 A		5.4 A	
Refrigerant		R134a			
$P_{max.}$ Cooling circuit		25 bar			
Temperature range	Environment	+15°C to +43°C			
	Liquid media	+15°C to +25°C			
Pump capacity		See characteristic curve			
Tank		Pressure-sealed	Made from PP plastic	Pressure-sealed	Made from PP plastic
Tank capacity		–	2.5 l	–	2.5 l
Water connections		1/2″ internal thread			
Weight		48 kg		51 kg	
Colour		RAL 7035			
Protection category (electrics)		IP 44			
Air throughput of fans		900 m³/h			
Temperature control		Microcontroller control, setting range +10°C to +25°C (factory setting +18°C)			

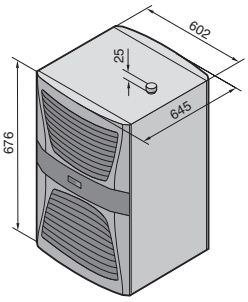
Accessories	Packs of		Page
Metal filter mat	1	3286.510	724

Special voltages and technical modifications available on request.

Air/water heat exchangers From page 676 **Overflow valve** Page 722 **Additives** Page 722

Mini, cooling output 3000/4500 W





RITTAL TOP THERM PLUS

Technical design:
- Compact, modular configuration of the cooling components with integral water tank.
- Integral tank level display.
- Medium-flow pumps.
- Precise temperature control, based on microprocessor technology.
- Collective fault signal with floating contact.
- Application-specific special equipment available on request.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1284.

Characteristic curves of pump,
see page 1284.

Options,
see page 1282.

Model No. SK		**3320.600**	**3334.600**
Rated operating voltage V, Hz		400, 3~, 50/60/460, 3~, 60[1)]	
Dimensions in mm	W H D	602 676 645	
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**2650 W/3000 W** **3000 W/3400 W**	**3900 W/4700 W** **4500 W/5400 W**

Power consumption		1716 W/1953 W	2001 W/2505 W
Rated current max.		3.8 A/4.6 A/3.9 A	4.9 A/5.9 A/5.0 A
Refrigerant		R134a	
$P_{max.}$ cooling circuit		25 bar	
Temperature range	Environment	+15°C to +43°C	
	Liquid media	+15°C to +25°C	
Pump capacity		See characteristic curve	
Tank		Made from stainless steel 1.4301 (AISI 304)	
Tank capacity		30 l	
Water connections		1/2″ internal thread	
Weight		88 kg	94 kg
Colour		RAL 7035	
Protection category (electrics)		IP 44	
Air throughput of fans		1785 m³/h	
Temperature control		Microcontroller control, setting range +10°C to +25°C (factory setting +18°C)	

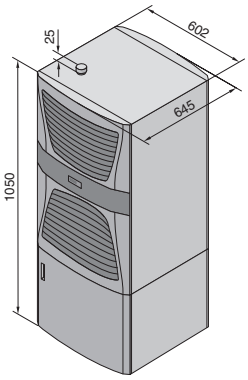
Accessories	Packs of		Page
Metal filter mat	1	3286.520	724

[1)] Supports multiple voltages without rewiring.
Special voltages and technical modifications available on request.

Air/water heat exchangers From page 676 **Overflow valve** Page 722 **Additives** Page 722

Mini, cooling output 6000 W





RITTAL TOP THERM PLUS

Technical design:
- Compact, modular configuration of the cooling components with integral water tank.
- Integral tank level display.
- Medium-flow pumps.
- Precise cooling control based on microprocessor technology.
- Collective fault signal with floating contact.
- Application-specific special equipment available on request.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1284.

Characteristic curves of pump,
see page 1284.

Model No. SK		**3334.660**
Rated operating voltage V, Hz		400, 3~, 50/60/460, 3~, 60[1)]
Dimensions in mm	W H D	602 1050 645
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		 **4800 W/5150 W/5150 W** **6000 W/6600 W/6600 W**

Power consumption		4280 W/5140 W/5080 W
Rated current max.		8.09 A/9.7 A/8.04 A
Refrigerant		R134a
$P_{max.}$ cooling circuit		25 bar
Temperature range	Environment	+15°C to +43°C
	Liquid media	+15°C to +25°C
Pump capacity		See characteristic curve
Tank		Made from stainless steel 1.4301 (AISI 304)
Tank capacity		30 l
Water connections		3/4″ internal thread
Weight		120 kg
Colour		RAL 7035
Protection category (electrics)		IP 44
Air throughput of fans		2200/2500 m³/h
Temperature control		Microcontroller control, setting range +10°C to +25°C (factory setting +18°C)

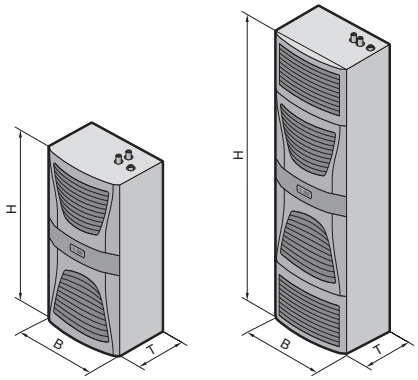
Accessories	Packs of		Page
Metal filter mat	1	3286.520	724

[1)] Supports multiple voltages without rewiring.
Special voltages and technical modifications available on request.

Air/water heat exchangers From page 676 **Overflow valve** Page 722 **Additives** Page 722

Mini, for wall mounting, cooling output 1000/2500/4000 W





B = Width
T = Depth

Technical design:
- Compact, modular configuration of the cooling components with integral water tank.
- Application-specific special equipment available on request.
- Open system with tank.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1285.

Characteristic curves of pump,
see page 1285.

Options,
see page 1282.

Model No. SK		**3360.100**	**3360.250**	**3360.470**
Rated operating voltage V, Hz		400, 3~, 50/60/460, 3~, 60[1]		
Dimensions in mm	W H D	400 950 310	400 1580 290	500 1580 390
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**830 W/930 W** **1000 W/1120 W**	**2100 W/2350 W** **2500 W/2800 W**	**3300 W/3700 W** **4000 W/4500 W**
Power consumption		700 W/760 W	1550 W/2000 W	1850 W/2740 W
Rated current max.		2.7 A/3.0 A	3.7 A/3.8 A	4.6 A/5.2 A
Refrigerant		R134a		
$P_{max.}$ cooling circuit		23 bar		
Temperature range	Environment	+15°C to +43°C		
	Liquid media	+10°C to +25°C		
Pump capacity		See characteristic curve		
Tank		Made from PP plastic		
Tank capacity		5 l	10 l	15 l
Water connections		Quick-release coupling (counterpart included in accessory bag)		$^3/_4$″ internal thread
Weight		47 kg	78 kg	103 kg
Colour		RAL 7035		
Protection category (electrics)		IP 44		
Air throughput of fans		500 m³/h	710 m³/h	2000 m³/h
Temperature control		Microcontroller control, setting range +10°C to +30°C (factory setting +18°C)		

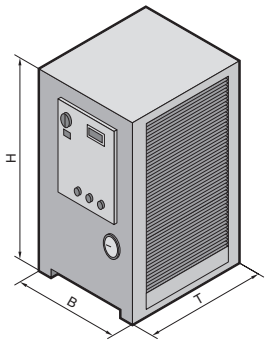
Accessories	Packs of		Page
Filter mat	1	3286.400	723
Metal filter mat	1	3286.410	724

[1] Supports multiple voltages without rewiring.
Special voltages and technical modifications available on request.

Air/water heat exchangers From page 676 **Overflow valve** Page 722 **Additives** Page 722

In floor-standing enclosure, cooling output 2100 to 7700 W





B = Width
T = Depth

Technical design:
- Robust industrial standard in 3 enclosure sizes.
- Identical basic enclosure for oil and water recooling systems.
- Spare space for the integration of special equipment
- Variable air routing is possible via the l/h or r/h side panel
- Floating contact for collective fault signal.
- Anti-frost sensor.
- Multi-coil vaporiser in the tank.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mats, castors and bypass valve available on request.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1285.

Characteristic curves of pump,
see page 1285.

Options,
see page 1282.

Model No. SK		**3336.100**	**3336.200**	**3336.300**	**3336.500**	**3336.600**	**3336.650**
Rated operating voltage V, Hz		400, 3~, 50					
Dimensions in mm	W H D	470 725 540	485 965 650		595 1180 800		
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**1700 W** **2100 W**	**2100 W** **2580 W**	**2300 W** **3360 W**	**3550 W** **5040 W**	**4800 W** **6160 W**	**5200 W** **7700 W**

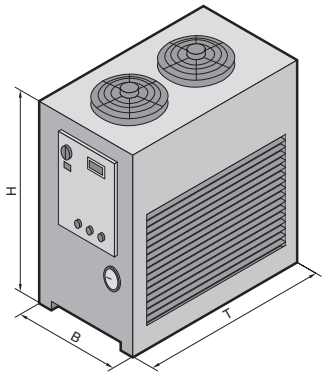
Power consumption		1.5 kW	1.7 kW	2.3 kW	2.9 kW	3.7 kW	3.9 kW
Rated current max.		3.4 A	3.0 A	4.2 A	5.5 A	6.2 A	7.3 A
Refrigerant		R134a					
$P_{max.}$ cooling circuit		24 bar					
Temperature range	Environment	+15°C to +43°C					
	Liquid media	+15°C to +25°C					
Pump capacity		See characteristic curve					
Tank		Made from stainless steel 1.4301 (AISI 304)					
Tank capacity		17 l	33 l		57 l		
Water connections		3/4″ internal thread			1″ internal thread		
Weight		75 kg	97 kg	99 kg	141 kg	143 kg	147 kg
Colour		RAL 7035					
Protection category (electrics)		IP 54					
Air throughput of fans		700 m³/h	1250 m³/h	1785 m³/h	3140 m³/h		
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +18°C)					

Delivery times available on request.
Special voltages, other frequencies, and technical modifications available on request.

Air/water heat exchangers From page 676 **Overflow valve** Page 722 **Additives** Page 722

In floor-standing enclosure, cooling output 10000 to 25200 W





B = Width
T = Depth

Technical design:
- Robust industrial housing in 2 enclosure sizes.
- Identical basic enclosure for oil and water recooling systems.
- Integration of application-specific special equipment on request.
- Variable air routing is possible via the l/h or r/h side panel.
- Optimum accessibility for servicing purposes by removing the side panel.
- Floating contact for collective fault signal.
- Flow monitor.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mats, castors, eyebolts and bypass valve available on request.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1286.

Characteristic curves of pump,
see page 1286.

Options,
see page 1282.

Model No. SK		**3336.700**	**3336.710**	**3336.720**	**3336.730**	**3336.740**	**3336.750**
Rated operating voltage V/Hz		400, 3~, 50					
Dimensions in mm	W H D	615 1178 1160			715 1178 1360		
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**8250 W** **10000 W**	**11900 W** **14350 W**	**13450 W** **16300 W**	**15000 W** **18500 W**	**17000 W** **20900 W**	**20600 W** **25200 W**

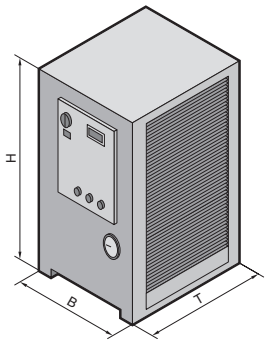
Power consumption		3800 W	4800 W	5300 W	6400 W	7100 W	13120 W
Rated current max.		10.6 A	13.1 A	14.1 A	16.2 A	18.2 A	23.7 A
Refrigerant		R407C					
$P_{max.}$ cooling circuit		27 bar					
Temperature range	Environment	+15°C to +43°C[1)]					
	Liquid media	+15°C to +25°C					
Pump capacity		See characteristic curve					
Tank		Made from stainless steel 1.4301 (AISI 304)					
Tank capacity		60 l			100 l		
Water connections		1″ internal thread					
Weight		215 kg	225 kg	235 kg	240 kg	250 kg	260 kg
Colour		RAL 7035					
Protection category (electrics)		IP 54					
Air throughput of fans		6280 m³/h			10880 m³/h		
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +18°C)					

[1)] SK 3336.720 and SK 3336.750 +15°C to +40°C.
Delivery times available on request.
Special voltages and technical modifications available on request.

Air/water heat exchangers From page 676 **Overflow valve** Page 722 **Additives** Page 722

In floor-standing enclosure for oil, cooling output 2550 to 7900 W





B = Width
T = Depth

Technical design:
- Robust industrial standard in 2 enclosure sizes.
- Identical basic enclosure for oil and water recooling systems.
- Variable air routing is possible via the l/h or r/h side panel.
- High-capacity gear pump.
- Floating contact for collective fault signal.
- Integration of application-specific special equipment on request.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mats and castors available on request.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1286.

Options,
see page 1282.

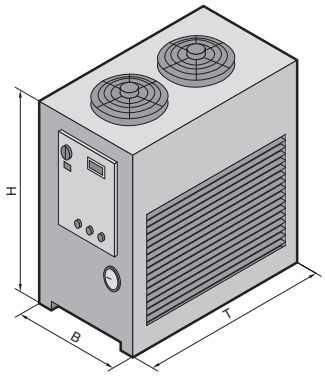
Model No. SK		**3337.200**	**3337.300**	**3337.500**	**3337.600**	**3337.650**
Rated operating voltage V, Hz		400, 3~, 50				
Dimensions in mm	W H D	485 965 650		595 1180 800		
Cooling output with oil ISO VG 32 **T_{oil} = 20°C** **T_u = 32°C**		**2550 W**	**3400 W**	**5150 W**	**6700 W**	**7900 W**
Power consumption		1.4 kW	1.9 kW	3.0 kW	3.9 kW	4.9 kW
Rated current max.		3.1 A	3.5 A	5.0 A	7.0 A	7.8 A
Refrigerant		R134a				
$P_{max.}$ cooling circuit		24 bar				
Temperature range	Environment	+15°C to +43°C				
	Liquid media	+15°C to +25°C				
Pump capacity at 10 bar		10 l/min		24 l/min		
Optional tank		Made from stainless steel 1.4301 (AISI 304)				
Optional tank capacity		33 l		57 l		
Connections		3/4″ internal thread		1″ internal thread		
Weight		103 kg	105 kg	148 kg	150 kg	154 kg
Colour		RAL 7035				
Protection category (electrics)		IP 54				
Air throughput of fans		1250 m³/h	1785 m³/h	3140 m³/h		
Temperature control		Electronic control with digital display, setting range +15°C to +35°C (factory setting +20°C)				

Delivery times available on request.
Special voltages, other frequencies, and technical modifications available on request.

Layout diagram Page 1286

In floor-standing enclosure for oil, cooling output 10600 to 26100 W





B = Width
T = Depth

Technical design:
- Robust industrial housing in 2 enclosure sizes.
- Identical basic enclosure for oil and water recooling systems.
- Variable air routing is possible via the l/h or r/h side panel.
- Optimum accessibility for servicing purposes by removing the side panel.
- High-capacity gear pump.
- Floating contact for collective fault signal.
- Integration of application-specific special equipment on request.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mats and castors available on request.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1287.

Options,
see page 1282.

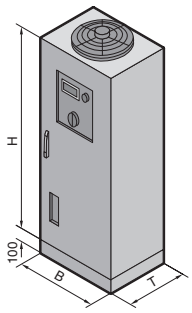
Model No. SK		**3337.700**	**3337.710**	**3337.720**	**3337.730**	**3337.740**	**3337.750**
Rated operating voltage V, Hz		400, 3~, 50					
Dimensions in mm	W H D	615 1178 1160			715 1178 1360		
Cooling output with oil ISO VG 32 **T_{oil} = 20°C** **T_u = 32°C**		**10600 W**	**15150 W**	**17200 W**	**19250 W**	**21600 W**	**26100 W**
Power consumption		5300 W	6400 W	7100 W	8700 W	9600 W	10500 W
Rated current max.		12.0 A	15.0 A	16.0 A	19.0 A	21.0 A	22.0 A
Refrigerant		R407C					
$P_{max.}$ cooling circuit		28 bar					
Temperature range	Environment	+15°C to +43°C[1)]					
	Liquid media	+15°C to +25°C					
Pump capacity at 10 bar		45 l/min			68 l/min		
Optional tank		Made from stainless steel 1.4301 (AISI 304)					
Optional tank capacity		60 l			100 l		
Connections		1″ internal thread					
Weight		222 kg	232 kg	242 kg	248 kg	258 kg	268 kg
Colour		RAL 7035					
Protection category (electrics)		IP 54					
Air throughput of fans		6280 m³/h			10880 m³/h		
Temperature control		Electronic control with digital display, setting range +15°C to +35°C (factory setting +20°C)					

[1)] SK 3337.720 and SK 3337.750 +15°C to +40°C.
Delivery times available on request.
Special voltages, other refrigerants, and technical modifications available on request.

Layout diagram Page 1287

In TS 8 Top enclosure system, cooling output 6000/7500 W





B = Width
T = Depth

Technical design:
- Compact structure with control components in the front and air intake via the rear.
- Suitable for bayed siting.
- Special fittings and options available on request.
- Float-actuated switch as protection against running dry.
- Floating collective fault signal.
- Equipped with Grundfos pumps and Siemens components.
- Service accessibility from all sides.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mat and bypass valve available on request.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1287.

Characteristic curves of pump,
see page 1287.

Options,
see page 1282.

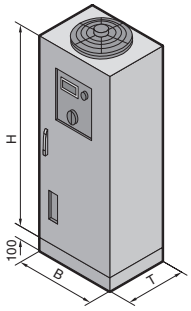
Model No. SK		**3335.060**	**3335.075**
Rated operating voltage V, Hz		400, 3~, 50	
Dimensions in mm	W H D	600 2000 600	
Base/plinth height mm		100	
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		 **4800 W** **6000 W**	 **6000 W** **7500 W**
Power consumption		2.4 kW	3.0 kW
Rated current max.		7.6 A	8.1 A
Refrigerant		R407C	
$P_{max.}$ cooling circuit		24 bar	
Temperature range	Environment	+10°C to +43°C	
	Liquid media	+15°C to +25°C	
Pump capacity		See characteristic curve	
Tank		Made from PP plastic	
Tank capacity		80 l	
Water connections		3/4″ internal thread	
Weight		180 kg	190 kg
Colour		RAL 7035	
Protection category (electrics)		IP 54	
Air throughput of fans		4000 m³/h	
Temperature control		Electronic control with digital display, setting range +10°C to +30°C (factory setting +18°C)	

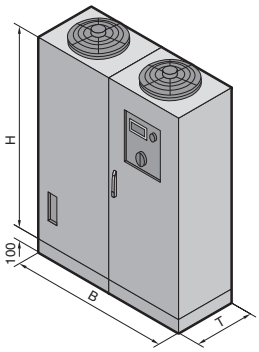
Delivery times available on request.
Special voltages, other frequencies and refrigerants, and technical modifications available on request.

Air/water heat exchangers From page 676 **TS 8 lock systems** From page 947 **TS 8 baying system** From page 138 **Overflow valve** Page 722
Additives Page 722

In TS 8 Top enclosure system, cooling output 10000 to 25000 W







B = Width
T = Depth

Technical design:
- Compact structure with control components in the front and air intake via the rear.
- Suitable for bayed siting.
- Special fittings and options available on request.
- Float-actuated switch as protection against running dry.
- Floating collective fault signal.
- Magnetic valve in the cooling circuit.
- Equipped with Grundfos pumps and Siemens components.
- Service accessibility from all sides.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:
Metal filter mat and bypass valve available on request.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1287.

Characteristic curves of pump,
see page 1287.

Options,
see page 1282.

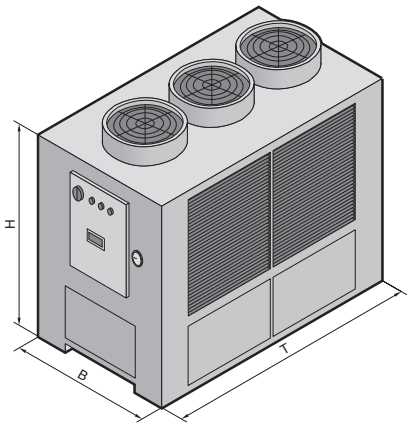
Model No. SK		**3335.100**	**3335.120**	**3335.150**	**3335.200**	**3335.250**
Rated operating voltage V, Hz		400, 3~, 50				
Dimensions in mm	W H D	800 2000 600			1200 2000 600	
Base/plinth height mm		100				
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**8000 W** **10000 W**	**10000 W** **12000 W**	**11500 W** **15000 W**	**17000 W** **20000 W**	**22000 W** **25000 W**
Power consumption		4.0 kW	4.8 kW	6.0 kW	8.0 kW	10.0 kW
Rated current max.		12.5 A	17.3 A	18.5 A	23.5 A	27.5 A
Refrigerant		R407C				
$P_{max.}$ cooling circuit		24 bar				
Temperature range	Environment	+15°C to +43°C				
	Liquid media	+15°C to +25°C				
Pump capacity		See characteristic curve				
Tank		Made from PP plastic				
Tank capacity		120 l			240 l	
Water connections		3/4″ internal thread			1″ internal thread	
Weight		250 kg	270 kg	380 kg	530 kg	560 kg
Colour		RAL 7035				
Protection category (electrics)		IP 54				
Air throughput of fans		6000 m³/h			8000 m³/h	
Temperature control		Electronic control with digital display, setting range +10°C to +30°C (factory setting +18°C)				

Delivery times available on request.
Special voltages, other frequencies, and technical modifications available on request.

Air/water heat exchangers From page 676 **TS 8 lock systems** From page 947 **TS 8 baying system** From page 138 **Overflow valve** Page 722
Additives Page 722

In industrial enclosure, cooling output 32 kW to 172 kW





B = Width
T = Depth

Technical design:
- Robust industrial enclosure.
- Optimum service accessbility by removing the panels.
- Floating contact for collective fault signal.
- Integration of application-specific special equipment on request.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mat
available on request.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1288.

Characteristic curves of pump,
see page 1288.

Options,
see page 1282.

Model No. SK		**3339.100**	**3339.200**	**3339.250**	**3339.280**	**3339.300**	**3339.400**	**3339.450**	**3339.500**
Rated operating voltage V, Hz		400, 3~, 50							
Dimensions in mm	W H D	815 1400 1560		1000 1800 2000		1550 2000 2500		1550 2000 3400	1630 2200 3400
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**26150/31350 W** **32025/38430 W**	**29550/35450 W** **36225/43480 W**	**40000 W** **46750 W**	**52000 W** **59000 W**	**54700 W** **66700 W**	**62200 W** **75900 W**	**100000 W** **110000 W**	**141000 W** **172200 W**

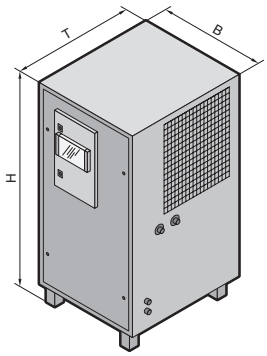
Power consumption		18300 W	18600 W	20600 W	36800 W	27000 W	28300 W	50000 W	61000 W
Rated current max.		29.2 A	30.7 A	36.8 A	46.1 A	67.0 A	74.0 A	108.0 A	108.0 A
Refrigerant		R407C							
$P_{max.}$ cooling circuit		28 bar							
Temperature range	Environment	+15°C to +43°C		+15°C to +40°C		+15°C to +43°C			
	Liquid media	+15°C to +25°C							
Pump capacity		See characteristic curve							
Tank		Made from stainless steel 1.4301 (AISI 304)				Pressure-sealed		Made from stainless steel 1.4301 (AISI 304)	Pressure-sealed
Tank capacity		150 l		220 l		500 l			
Water connections		1 1/4″ internal thread		1 1/2″ internal thread		2″ internal thread		3″ internal thread	
Weight		280 kg	300 kg	680 kg	740 kg	800 kg	850 kg	950 kg	2100 kg
Colour		RAL 7035							
Protection category (electrics)		IP 44							
Air throughput of fans		18000 m³/h		32000 m³/h				40000 m³/h	48000 m³/h
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +18°C)							

Delivery times available on request.
Special voltages, other frequencies and refrigerants, and technical modifications available on request.

Air/water heat exchangers From page 676 **Overflow valve** Page 722 **Additives** Page 722

Chiller for IT cooling, cooling output 4000 to 36000 W





B = Width
T = Depth

Application:
Especially for cooling IT applications, such as LCP or air/water heat exchangers. Safety-relevant options such as redundant pumps, emergency cooling or buffer store are the distinguishing features of these atmospherically sealed systems.

Technical design:
- Compact design with control components on the front and air intake via the right-hand side panel, air outlet via the left-hand side panel.
- Pressure-sealed system.
- Digital thermostat for temperature control with setpoint and actual value display.
- Integral automatic bypass valve.
- Flow monitor.
- Roof plate of stainless steel 1.4301 (AISI 304), spray-finished in RAL 7035.
- Integration of application-specific special equipment on request.

Supply includes:
Chiller wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows a unit with customer-specific options.

Options:
- Aluminium filter
- Contamination monitoring for aluminium filter
- Reinforced pump
- Double pump unit
- Heat recovery
- Vibration components
- Free cooling
- Buffer store for separate siting
- Control unit for redundancy operation
- Emergency cooling with mains water infeed
- Special voltages
- Special spray finish

Layout diagram,
see page 1289.

Characteristic curves of pump,
see page 1289.

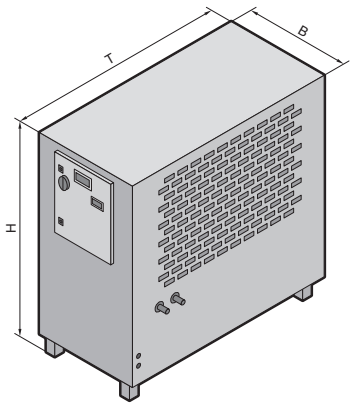
Model No. SK		**3300.900**	**3300.901**	**3300.902**	**3300.905**	**3300.910**
Rated operating voltage V, Hz		400, 3~, 50				
Dimensions in mm	W H D	670 1220 720	750 1600 880		900 1970 1450	
Base/plinth height mm		100				
Cooling output at T_w = 15°C/T_u = 32°C		**4000 W**	**8000 W**	**12000 W**	**24000 W**	**36000 W**
Power consumption		2300 W	3900 W	6100 W	10500 W	16000 W
Rated current max.		5.2 A	8.0 A	12.0 A	20.0 A	29.0 A
Refrigerant		R407C				
$P_{max.}$ cooling circuit		28 bar				
Temperature range	Environment	–20°C to +43°C				
	Liquid media	+10°C to +20°C				
Pump capacity		See characteristic curve				
Number of cooling circuits		1				
Tank with 10 mm condensate insulation		Steel				
Tank capacity		60 l	130 l		300 l	
Water connections		3/4″ external thread			1 1/4″ external thread	
Operating weight		160 kg	195 kg	380 kg	740 kg	860 kg
Colour		RAL 7035				
Protection category (electrics)		IP 54				
Air throughput of fans		2400 m³/h	2800 m³/h	6000 m³/h	10000 m³/h	11000 m³/h
Temperature control		Electronic control with digital display, setting range +10°C to +20°C (factory setting +15°C)				

Delivery times available on request. Technical modifications reserved.

Accessories Page 710

Chiller for IT cooling, cooling output 48000 to 150000 W





B = Width
T = Depth

Application:
Especially for cooling IT applications, such as LCP or air/water heat exchangers. Safety-relevant options such as redundant pumps, emergency cooling or buffer store are the distinguishing features of these atmospherically sealed systems.

Technical design:
- Compact design with control components on the front and air intake via the right-hand side panel, air outlet via the left-hand side panel.
- Pressure-sealed system.
- Digital thermostat for temperature control with setpoint and actual value display.
- Integral automatic bypass valve.
- Flow monitor.
- Roof plate of stainless steel 1.4301 (AISI 304), spray-finished in RAL 7035.
- Integration of application-specific special equipment on request.

Supply includes:
Chiller wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows a unit with customer-specific options.

Options:
- Aluminium filter
- Contamination monitoring for aluminium filter
- Reinforced pump
- Double pump unit
- Heat recovery
- Vibration components
- Free cooling
- Buffer store for separate siting
- Control unit for redundancy operation
- Emergency cooling with mains water infeed
- Special voltages
- Special spray finish

Layout diagram,
see page 1289.

Characteristic curves of pump,
see page 1289.

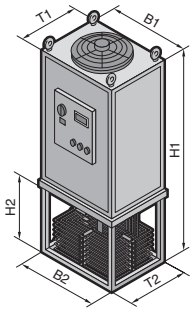
Model No. SK		**3300.912**	**3300.915**	**3300.920**	**3300.925**	**3300.930**
Rated operating voltage V, Hz		400, 3~, 50				
Dimensions in mm	W H D	900 2000 2400	900 2000 2400	900 2000 2800	1000 2400 3300	
Base/plinth height mm		100				
Cooling output at T_w = 15°C/T_u = 32°C		**48000 W**	**60000 W**	**84000 W**	**120000 W**	**150000 W**
Power consumption		20500 W	24500 W	37000 W	50000 W	62000 W
Rated current max.		38.0 A	41.0 A	63.0 A	81.0 A	103.0 A
Refrigerant		R407C				
$P_{max.}$ cooling circuit		28 bar				
Temperature range	Environment	–20°C to +43°C				
	Liquid media	+10°C to +20°C				
Pump capacity		See characteristic curve				
Number of cooling circuits		2				
Tank with 10 mm condensate insulation		Steel				
Tank capacity		600 l			750 l	
Water connections		1 1/2″ external thread		2″ external thread	2 1/2″ external thread	
Operating weight		1350 kg	1400 kg	1950 kg	2500 kg	2700 kg
Colour		RAL 7035				
Protection category (electrics)		IP 54				
Air throughput of fans		22000 m³/h		40000 m³/h	44000 m³/h	
Temperature control		Electronic control with digital display, setting range +10°C to +20°C (factory setting +15°C)				

Delivery times available on request. Technical modifications reserved.

Accessories Page 710

for oil, cooling output 2400 to 5600 W





B = Width
T = Depth

Application:
Ideal for cooling contaminated cooling lubricants, such as drilling, cutting and grinding oils in machine tools. The units are placed on top of the oil tank and immersed in the fluid.

Technical design:
- For the cooling of oil.
- Robust industrial standard in 3 enclosure sizes.
- Flat evaporator coil insensitive to dirt.
- Bi-frequency components (50/60 Hz).

Supply includes:
Immersible recooling system wired ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1290.

Options,
see page 1283.

Model No. SK for oil		**3338.020**	**3338.040**	**3338.060**	**3338.080**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60			
Cooling output at T_{oil} = 20°C/T_u = 32°C		**2400 W/2700 W**	**3200 W/3600 W**	**4600 W/5200 W**	**5600 W/6300 W**
Dimensions in mm	B1 H1 T1	785 1650 785			
Dimensions of immersible part mm	B2 T2	719 719			
Immersion depth mm	H2	550			
Minimum media level with flat evaporator coil mm		205		280	

Power consumption		1.6 kW/1.9 kW	1.8 kW/2.2 kW	2.4 kW/3.0 kW	2.6 kW/3.3 kW
Rated current max.		3.5 A/3.7 A	3.8 A/4.0 A	5.5 A/5.9 A	5.6 A/5.8 A
Refrigerant		R134a			
$P_{max.}$ cooling circuit		24 bar			
Temperature range	Environment	+15°C to +42°C			
	Liquid media	+10°C to +25°C			
Weight		133 kg	143 kg	158 kg	173 kg
Colour		RAL 7035			
Protection category (electrics)		IP 44			
Air throughput of fans		1500/1560 m^3/h		2200/2350 m^3/h	
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)			

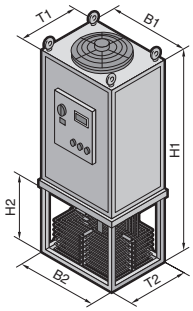
Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Layout diagram Page 1290

Immersible recooling systems

for oil, cooling output 8500 to 17300 W





B = Width
T = Depth

Application:
Ideal for cooling contaminated cooling lubricants, such as drilling, cutting and grinding oils in machine tools. The units are placed on top of the oil tank and immersed in the fluid.

Technical design:
- For the cooling of oil.
- Robust industrial standard in 3 enclosure sizes.
- Flat evaporator coil insensitive to dirt.
- Bi-frequency components (50/60 Hz).

Supply includes:
Immersible recooling system wired ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1290.

Options,
see page 1283.

Model No. SK for oil		**3338.100**	**3338.120**	**3338.140**	**3338.160**	**3338.180**	**3338.200**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60					
Cooling output at T_{oil} = 20°C/T_u = 32°C		**8500 W/ 9500 W**	**10500 W/ 11800 W**	**12000 W/ 13400 W**	**13600 W/ 15200 W**	**15300 W/ 17100 W**	**17300 W/ 19400 W**
Dimensions in mm	B1 H1 T1	785 1650 785					
Dimensions of immersible part mm	B2 T2	719 719					
Immersion depth mm	H2	550					
Minimum media level with flat evaporator coil mm		330	380		430		

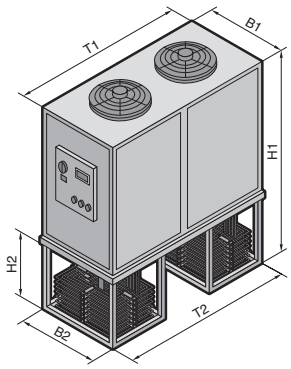
Power consumption		4.6 kW/5.5 kW	5.0 kW/6.0 kW	5.6 kW/6.6 kW	6.1 kW/7.3 kW	6.7 kW/8.1 kW	7.5 kW/9.0 kW
Rated current max.		8.4 A/8.6 A	9.2 A/9.3 A	10.1 A/10.5 A	11.1 A/11.5 A	12.1 A/12.4 A	13.3 A/13.7 A
Refrigerant		R407C					
$P_{max.}$ cooling circuit		27 bar					
Temperature range	Environment	+15°C to +42°C					
	Liquid media	+10°C to +25°C					
Weight		183 kg	203 kg	228 kg	248 kg	253 kg	263 kg
Colour		RAL 7035					
Protection category (electrics)		IP 54					
Air throughput of fans		7200/7480 m³/h			7900/8480 m³/h		
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)					

Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Layout diagram Page 1290

for oil, cooling output 20700 to 77900 W





B = Width
T = Depth

Application:
Ideal for cooling contaminated cooling lubricants, such as drilling, cutting and grinding oils in machine tools. The units are placed on top of the oil tank and immersed in the fluid.

Technical design:
- For the cooling of oil.
- Robust industrial standard in 3 enclosure sizes.
- Flat evaporator coil insensitive to dirt.
- Bi-frequency components (50/60 Hz).

Supply includes:
Immersible recooling system wired ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1290.

Options,
see page 1283.

Model No. SK for oil		**3338.220**	**3338.240**	**3338.260**	**3338.280**	**3338.300**	**3338.320**	**3338.340**	**3338.360**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60							
Cooling output at T_{oil} = 20°C/T_u = 32°C		**20700 W/ 23200 W**	**30800 W/ 34500 W**	**34900 W/ 39100 W**	**44500 W/ 49800 W**	**48600 W/ 54400 W**	**60600 W/ 67900 W**	**72600 W/ 81300 W**	**77900 W/ 87200 W**
Dimensions in mm	B1 H1 T1	785 1650 1830			1830 1650 1830				
Dimensions of immersible part mm	B2 T2	719 1764			1764 1764				
Immersion depth mm	H2	550							
Minimum media level with flat evaporator coil mm		380	430		380		430		

Power consumption		9.7 kW/ 9.9 kW	13.0 kW/ 16.2 kW	14.6 kW/ 18.2 kW	18.8 kW/ 22.6 kW	20.0 kW/ 24.1 kW	23.6 kW/ 28.5 kW	27.3 kW/ 32.9 kW	29.0 kW/ 34.9 kW
Rated current max.		17.3 A/ 17.8 A	21.6 A/ 23.0 A	24.3 A/ 25.5 A	35.5 A/ 35.2 A	35.4 A/ 35.8 A	42.7 A/ 42.9 A	50.0 A/ 50.0 A	53.0 A/ 53.0 A
Refrigerant		R407C							
$P_{max.}$ cooling circuit		27 bar							
Temperature range	Environment	+15°C to +45°C							
	Liquid media	+10°C to +25°C							
Weight		305 kg	380 kg		425 kg			435 kg	455 kg
Colour		RAL 7035							
Protection category (electrics)		IP 54							
Air throughput of fans		15000/15600 m³/h			30000/31200 m³/h				
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)							

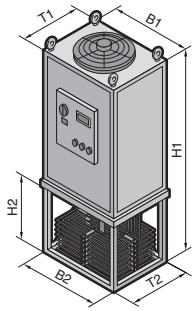
Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Layout diagram Page 1290

Immersible recooling systems

for emulsion, cooling output 2400 to 5600 W





B = Width
T = Depth

Application:
Ideal for cooling contaminated cooling lubricants, such as drilling, cutting and grinding oils in machine tools. The units are placed on top of the emulsion tank and immersed in the fluid.

Technical design:
- For the cooling of emulsion.
- Robust industrial standard in 3 enclosure sizes.
- Flat evaporator coil insensitive to dirt.
- Bi-frequency components (50/60 Hz).

Supply includes:
Immersible recooling system wired ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1290.

Options,
see page 1283.

Model No. SK for emulsion		**3338.500**	**3338.520**	**3338.540**	**3338.560**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60			
Cooling output at T_{EM} = 20°C/T_u = 32°C		**2400 W/2700 W**	**3200 W/3600 W**	**4600 W/5200 W**	**5600 W/6300 W**
Dimensions in mm	B1 H1 T1	785 1650 785			
Dimensions of immersible part mm	B2 T2	719 719			
Immersion depth mm	H2	550			
Minimum media level with flat evaporator coil mm		180		205	

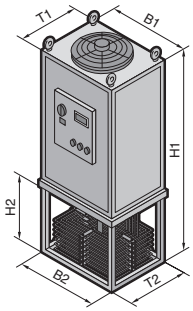
Power consumption		1.8 kW/2.1 kW	2.0 kW/2.5 kW	2.6 kW/3.2 kW	2.8 kW/3.6 kW
Rated current max.		3.8 A/4.0 A	4.1 A/4.3 A	5.9 A/6.3 A	6.0 A/6.3 A
Refrigerant		R134a			
$P_{max.}$ cooling circuit		24 bar			
Temperature range	Environment	+15°C to +42°C			
	Liquid media	+10°C to +25°C			
Weight		130 kg	140 kg	155 kg	170 kg
Colour		RAL 7035			
Protection category (electrics)		IP 44			
Air throughput of fans		1500/1560 m^3/h		2200/2350 m^3/h	
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)			

Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Layout diagram Page 1290

for emulsion, cooling output 8500 to 17300 W





B = Width
T = Depth

Application:
Ideal for cooling contaminated cooling lubricants, such as drilling, cutting and grinding oils in machine tools. The units are placed on top of the emulsion tank and immersed in the fluid.

Technical design:
- For the cooling of emulsion.
- Robust industrial standard in 3 enclosure sizes.
- Flat evaporator coil insensitive to dirt.
- Bi-frequency components (50/60 Hz).

Supply includes:
Immersible recooling system wired ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1290.

Options,
see page 1283.

Model No. SK for emulsion		**3338.580**	**3338.600**	**3338.620**	**3338.640**	**3338.660**	**3338.680**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60					
Cooling output at T_{EM} = 20°C/T_u = 32°C		**8500 W/ 9500 W**	**10500 W/ 11800 W**	**12000 W/ 13400 W**	**13600 W/ 15200 W**	**15300 W/ 17100 W**	**17300 W/ 19400 W**
Dimensions in mm	B1	785					
	H1	1650					
	T1	785					
Dimensions of immersible part mm	B2	719					
	T2	719					
Immersion depth mm	H2	550					
Minimum media level with flat evaporator coil mm		280			330		

Power consumption		4.8 kW/5.7 kW	5.3 kW/6.3 kW	5.8 kW/6.8 kW	6.3 kW/7.6 kW	6.6 kW/8.5 kW	7.7 kW/9.3 kW
Rated current max.		8.9 A/9.0 A	9.6 A/9.9 A	10.6 A/11.2 A	11.5 A/12.0 A	12.5 A/13.2 A	13.7 A/14.1 A
Refrigerant		R407C					
P_{max}. cooling circuit		27 bar					
Temperature range	Environment	+15°C to +42°C					
	Liquid media	+10°C to +25°C					
Weight		180 kg	200 kg	225 kg	245 kg	250 kg	260 kg
Colour		RAL 7035					
Protection category (electrics)		IP 54					
Air throughput of fans		7200/7480 m³/h			7900/8480 m³/h		
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)					

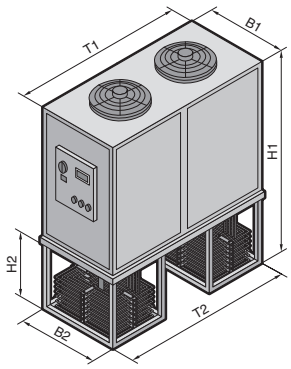
Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Layout diagram Page 1290

Immersible recooling systems

for emulsion, cooling output 20700 to 77900 W





B = Width
T = Depth

Application:
Ideal for cooling contaminated cooling lubricants, such as drilling, cutting and grinding oils in machine tools. The units are placed on top of the emulsion tank and immersed in the fluid.

Technical design:
- For the cooling of emulsion.
- Robust industrial standard in 3 enclosure sizes.
- Flat evaporator coil insensitive to dirt.
- Bi-frequency components (50/60 Hz).

Supply includes:
Immersible recooling system wired ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1290.

Options,
see page 1283.

Model No. SK for emulsion		**3338.700**	**3338.720**	**3338.740**	**3338.760**	**3338.780**	**3338.800**	**3338.820**	**3338.840**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60							
Cooling output at T_{EM} = 20°C/T_u = 32°C		**20700 W/ 23200 W**	**30800 W/ 34500 W**	**34900 W/ 39100 W**	**44500 W/ 49800 W**	**48600 W/ 54400 W**	**60600 W/ 67900 W**	**72600 W/ 81300 W**	**77900 W/ 87200 W**
Dimensions in mm	B1 H1 T1	785 1650 1830			1830 1650 1830				
Dimensions of immersible part mm	B1 T2	719 1764			1764 1764				
Immersion depth mm	H2	550							
Minimum media level with flat evaporator coil mm		280	330		280			330	380

Power consumption		10.1 kW/ 12.6 kW	13.4 kW/ 16.7 kW	14.0 kW/ 18.7 kW	19.5 kW/ 23.5 kW	20.8 kW/ 25.0 kW	24.4 kW/ 29.5 kW	28.0 kW/ 33.9 kW	29.8 kW/ 35.9 kW
Rated current max.		17.9 A/ 18.4 A	22.2 A/ 23.6 A	24.9 A/ 26.1 A	36.7 A/ 36.5 A	36.6 A/ 37.0 A	43.9 A/ 44.1 A	51.2 A/ 51.1 A	54.2 A/ 54.2 A
Refrigerant		R407C							
$P_{max.}$ cooling circuit		27 bar							
Temperature range	Environment	+15°C to +45°C							
	Liquid media	+10°C to +25°C							
Weight		300 kg	375 kg		420 kg		420 kg	430 kg	450 kg
Colour		RAL 7035							
Protection category (electrics)		IP 54							
Air throughput of fans		15000/15600 m³/h			30000/31200 m³/h				
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)							

Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Layout diagram Page 1290

Features



Even suitable for use in extreme conditions

The air of the enclosure interior may also be cooled to below the level of the external temperature by using **air/water heat exchangers** with a central recooling system. Dust is unable to penetrate the enclosure. The waste heat from the enclosure does not raise the temperature of the ambient air, provided the cold water supply system is spatially separated.



Variants:



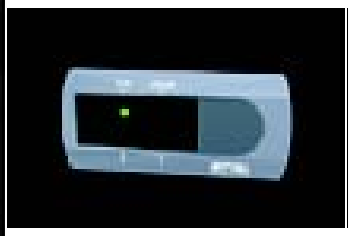
Roof-mounting
Especially for bayed enclosures, where wall-mounted devices would obstruct the door.



Wall-mounting
For mounting on the wall or any sufficiently large vertical surface.



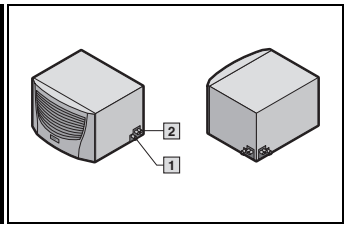
Controller



Basic controller:
- Visualisation of the operating status via LED display
- Switching hysteresis: 5 K
- Floating fault signal contact in case of overtemperature
- Setpoint adjustable from outside via potentiometer (setting range 20°C – 55°C)



Comfort controller:
- Switching hysteresis: 2 – 10 K preset to 5 K
- System alarm, individually configurable for 2 floating fault signal contacts
- Visualisation of the current enclosure internal temperature and all system messages on the display
- Storage of all system states in the log file
- Optional extension card for integration into superordinate remote monitoring systems e. g. with CMC



Flexible water logistics and condensate management
Any condensate arising is discharged via one of the two tube connectors ($^1/_2$″) and a discharge hose, which should be laid with a gradient ensuring that there are no kinks. In order to avoid increased condensation, the cooling water temperature should be adapted to match the required cooling output.

1 Condensate discharge (flexible)

2 Cooling water connection (flexible)

Benefits:

- Useful cooling output from 300 W to 7000 W
- Suitable for use even in extreme conditions and ambient temperatures up to +70°C
- Also available with all water-carrying parts made from V4A
- System for TS 8 integrated into the side panel

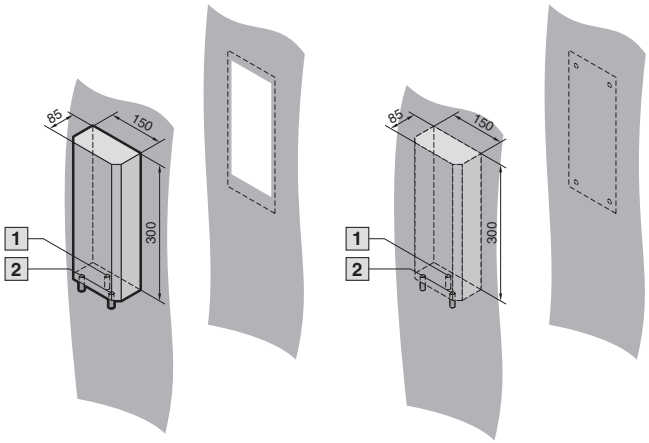
Important:

- Air/water heat exchangers should always be used in conjunction with recooling systems or a cooling water circuit

For calculation formulae and water quality requirements, refer to our website: www.rittal.com

Micro, wall-mounted, useful cooling output 300 W





Especially for selective cooling of hotspots in small enclosures.

Supply includes:
Fully wired ready for connection, including drilling template and assembly parts.

1 Condensate discharge $^3/_8$″
2 Cooling water connection $^3/_8$″

Approvals,
see page 82.

Detailed drawing,
see page 1290.

Performance diagrams,
available on the Internet.

Model No. SK		**3212.230**	**3212.115**[1)]	**3212.024**
Rated operating voltage V, Hz		230, 50/60	115, 50/60	24 V (DC)
Dimensions in mm	W H D	150 300 85		
Useful cooling output	**L 35 W 10, 200 l/h**	**300 W**		

Rated current max.	0.11 A/0.13 A	0.23 A/0.24 A	1.20 A
Pre-fuse T	4.0 A		
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 12)		
Water inlet temperature	> +1°C to +30°C		
Permissible operating pressure p. max.	1 to 10 bar		
Temperature range	+1°C to +70°C		
Protection category to EN 60 529/09.2000	IP 55[2)]		
Duty cycle	100 %		
Type of connection	Connection clamp		
Weight	3 kg		
Colour	RAL 7035		
Air throughput of fans (unimpeded air flow)	280 m^3/h		250 m^3/h

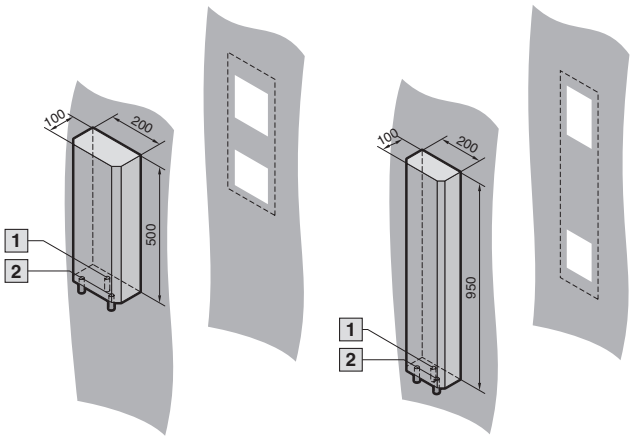
Accessories	Packs of		Page
Temperature indicator	1	3114.100	714
Door-operated switch	1	4127.000	1030
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

[1)] Delivery times available on request.
[2)] IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Wall-mounted, useful cooling output 600/1250 W





Supply includes:
Fully wired ready for connection with terminal strip, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, see page 656 onwards.

1 Condensate discharge 1/2″
2 Cooling water connection 1/2″

Approvals,
see page 83.

Detailed drawing,
see page 1291.

Performance diagrams,
available on the Internet.

Model No. SK		**3214.100**	**3215.100**
Rated operating voltage V, Hz		230, 50/60	
Dimensions in mm	W H D	200 500 100	200 950 100
Useful cooling output	**L 35 W 10, 200 l/h** **L 35 W 10, 400 l/h**	**600 W** **650 W**	**1250 W** **1300 W**

Rated current max.	0.17 A/0.18 A	0.38 A/0.4 A
Pre-fuse T	2.0 A	4.0 A
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 12)	
Water inlet temperature	> +1°C to +30°C	
Permissible operating pressure p. max.	1 to 10 bar	
Temperature range	+1°C to +70°C	
Protection category to EN 60 529/09.2000	IP 55[1)]	
Duty cycle	100 %	
Type of connection	Terminal strip	
Weight	7 kg	13 kg
Colour	RAL 7035	
Air throughput of fans	120 m^3/h	200 m^3/h
Temperature control	Thermostat-controlled magnetic valve	
Temperature monitoring	Internal thermostat, with change-over contact, switching load 16 A, setting range +20°C to +60°C (factory setting +35°C)	

Accessories	Packs of		Page
Temperature indicator	1	3114.100	714
Door-operated switch	1	4127.000	1030
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

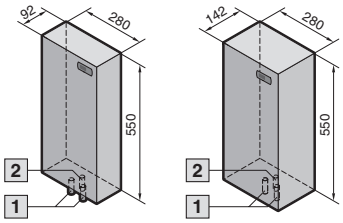
[1)] IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Air/water heat exchangers

Wall-mounted, useful cooling output 500 W/1000 W





Supply includes:
Fully wired ready for connection with connector, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, from page 656.

Detailed drawing,
see page 1291.

Performance diagrams,
available on the Internet.

1 Cooling water connection 1/2″
2 Condensate discharge 1/2″

	Water-carrying parts						
Model No. SK Basic controller	**CuAL**	**3363.100**	**3363.110[1]**	**3363.140[1]**	**3364.100**	**3364.110[1]**	**3364.140[1]**
Model No. SK Comfort controller	**CuAL**	**3363.500**	**3363.510[1]**	**3363.540[1]**	**3364.500**	**3364.510[1]**	**3364.540[1]**
Useful cooling output CuAL	**L 35 W 10, 400 l/h**	**500 W**			**1000 W**		
Model No. SK Basic controller	**V4A (stainless steel)**	**3363.104[1]**	**3363.114[1]**	**3363.144[1]**	**3364.104[1]**	**3364.114[1]**	**3364.144[1]**
Model No. SK Comfort controller	**V4A (stainless steel)**	**3363.504[1]**	**3363.514[1]**	**3363.544[1]**	**3364.504[1]**	**3364.514[1]**	**3364.544[1]**
Useful cooling output V4A	**L 35 W 10, 400 l/h**	**375 W**			**750 W**		
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60	230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60
Dimensions in mm	W H D	280 550 92			280 550 142		

Rated current max.	0.17 A/0.18 A	0.35 A/0.40 A	0.1 A/0.12 A	0.2 A/0.19 A	0.4 A/0.38 A	0.12 A/0.11 A
Pre-fuse T	4.0 A		4.0 A[3]	4.0 A		4.0 A[3]
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 13)					
Water inlet temperature	+1°C to +30°C					
Permissible operating pressure p. max.	1 to 10 bar					
Temperature range	+1°C to +70°C					
Protection category to EN 60 529/09.2000	IP 55[2]					
Duty cycle	100 %					
Type of connection	Plug-in terminal strip					
Weight	12 kg			15 kg		
Colour	RAL 7035					
Air throughput of fans (unimpeded air flow)	270/320 m³/h					
Temperature control	Basic or Comfort controller (factory setting +35°C)					

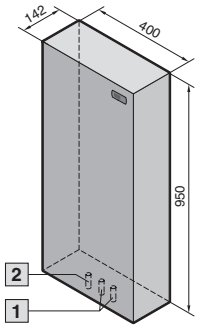
Accessories	Packs of		Page
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

[1] Delivery times available on request.
[2] IP 65 available on request.
[3] 2-pole miniature circuit breaker.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Wall-mounted, useful cooling output 2000 W/3000 W





Supply includes:
Fully wired ready for connection with connector, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, from page 656.

Detailed drawing,
see page 1292.

Performance diagrams,
available on the Internet.

1 Cooling water connection 1/2″
2 Condensate discharge 1/2″

	Water-carrying parts						
Model No. SK Basic controller	**CuAL**	**3373.100**	**3373.110[1]**	**3373.140[1]**	**3374.100**	**3374.110[1]**	**3374.140[1]**
Model No. SK Comfort controller	**CuAL**	**3373.500**	**3373.510[1]**	**3373.540[1]**	**3374.500**	**3374.510[1]**	**3374.540[1]**
Useful cooling output CuAL	**L 35 W 10, 400 l/h**	**2000 W**			**3000 W**		
Model No. SK Basic controller	**V4A (stainless steel)**	**3373.104[1]**	**3373.114[1]**	**3373.144[1]**	**3374.104[1]**	**3374.114[1]**	**3374.144[1]**
Model No. SK Comfort controller	**V4A (stainless steel)**	**3373.504[1]**	**3373.514[1]**	**3373.544[1]**	**3374.504[1]**	**3374.514[1]**	**3374.544[1]**
Useful cooling output V4A	**L 35 W 10, 400 l/h**	**1500 W**			**2250 W**		
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60	230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60
Dimensions in mm	W H D	400 950 142					

Rated current max.	0.38 A/0.43 A	0.75 A/0.85 A	0.22 A/0.25 A	0.57 A/0.78 A	1.15 A/1.55 A	0.35 A/0.45 A
Pre-fuse T	4.0 A		4.0 A[3]	4.0 A		4.0 A[3]
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 13)					
Water inlet temperature	+1°C to +30°C					
Permissible operating pressure p. max.	1 to 10 bar					
Temperature range	+1°C to +70°C					
Protection category to EN 60 529/09.2000	IP 55[2]					
Duty cycle	100 %					
Type of connection	Plug-in terminal strip					
Weight	20 kg					
Colour	RAL 7035					
Air throughput of fans (unimpeded air flow)	600/625 m³/h			700/730 m³/h		
Temperature control	Basic or Comfort controller (factory setting +35°C)					

Accessories	Packs of		Page
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

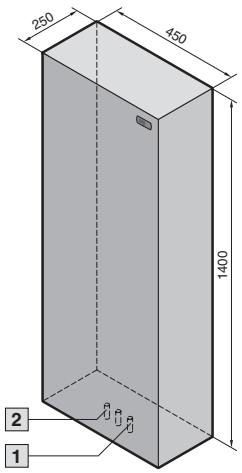
[1] Delivery times available on request.
[2] IP 65 available on request.
[3] 2-pole miniature circuit breaker.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Air/water heat exchangers

Wall-mounted, useful cooling output 5000 W





Supply includes:
Fully wired ready for connection with connector, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, from page 656.

Detailed drawing,
see page 1292.

Performance diagrams,
available on the Internet.

1 Cooling water connection 1/2″
2 Condensate discharge 1/2″

RITTAL TOP THERM

	Water-carrying parts			
Model No. SK Basic controller	**CuAL**	**3375.100**	**3375.110[1)]**	**3375.140[1)]**
Model No. SK Comfort controller	**CuAL**	**3375.500**	**3375.510[1)]**	**3375.540[1)]**
Useful cooling output CuAL	**L 35 W 10, 400 l/h**	**5000 W**		
Model No. SK Basic controller	**V4A (stainless steel)**	**3375.104[1)]**	**3375.114[1)]**	**3375.144[1)]**
Model No. SK Comfort controller	**V4A (stainless steel)**	**3375.504[1)]**	**3375.514[1)]**	**3375.544[1)]**
Useful cooling output V4A	**L 35 W 10, 400 l/h**	**3750 W**		
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60
Dimensions in mm	W H D	450 1400 250		

Rated current max.	1.0 A/1.35 A	2.0 A/2.7 A	0.6 A/0.8 A
Pre-fuse T	4.0 A		4.0 A[3)]
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 13)		
Water inlet temperature	+1°C to +30°C		
Permissible operating pressure p. max.	1 to 10 bar		
Temperature range	+1°C to +70°C		
Protection category to EN 60 529/09.2000	IP 55[2)]		
Duty cycle	100 %		
Type of connection	Plug-in terminal strip		
Weight	56 kg		59 kg
Colour	RAL 7035		
Air throughput of fans (unimpeded air flow)	2365/2750 m^3/h		
Temperature control	Basic or Comfort controller (factory setting +35°C)		

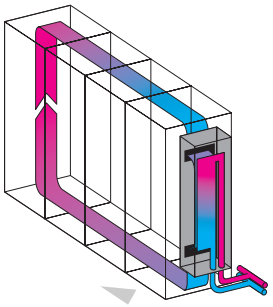
Accessories	Packs of		Page
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

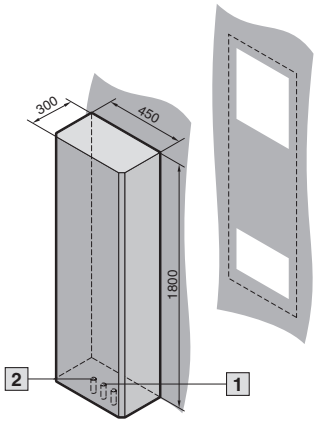
[1)] Delivery times available on request.
[2)] IP 65 available on request.
[3)] 2-pole miniature circuit breaker.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Wall-mounted, useful cooling output 7000 W







Supply includes:
Fully wired ready for connection with terminal strip, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, from page 656.

1 Condensate discharge 1/2″
2 Cooling water connection 1/2″

Detailed drawing,
see page 1293.

Performance diagrams,
available on the Internet.

Model No. SK		**3216.480**[1]	
Rated operating voltage V, Hz		400, 3~, 50/60	480, 3~, 60
Dimensions in mm	W H D	450 1800 300	
Useful cooling output	**L 35 W 10, 500 l/h** **L 35 W 20, 500 l/h**	**7000 W** **4500 W**	
Rated current max.		1.4 A/1.6 A	1.2 A
Pre-fuse T		4.0 A, 3-pole	
Power consumption P_{el}		450 W/700 W	630 W
Cooling medium		Water (refer to specifications on the Internet; assembly instructions chapter 12)	
Water inlet temperature		+1°C to +30°C	
Permissible operating pressure p. max.		1 to 10 bar	
Temperature range		+1°C to +70°C	
Protection category to EN 60 529/09.2000		IP 55	
Duty cycle		100 %	
Type of connection		Terminal strip	
Weight		79 kg	
Colour		RAL 7035	
Air throughput of fans		2400 m³/h	
Temperature control		Thermostat-controlled magnetic valve	

Accessories	Packs of		Page
Temperature indicator	1	3114.100	714
Door-operated switch	1	4127.000	1030
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

[1] Delivery times available on request.
IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.



Adaptor frame

for mounting the air/water heat exchanger SK 3216.480 on side panels of 500 mm deep TS enclosures.

Material:
Sheet steel

Colour:
RAL 7035

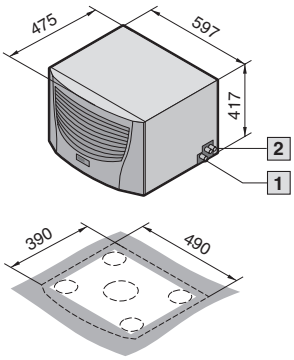
Packs of	**Model No. SK**
1	**3216.470**

Detailed drawing,
see page 1293.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Roof-mounted, useful cooling output 2500 W





Supply includes:
Fully wired ready for connection with connector, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, from page 656.

1 Condensate discharge 1/2″ (flexible)

2 Cooling water connection 1/2″ (flexible)

Approvals,
see page 84.

Detailed drawing,
see page 1293.

Performance diagrams,
available on the Internet.

Property rights:
German registered designs
no. 402 02 324 and
no. 402 02 325
US design patent
no. US D 492,319S
Indian registered design
no. 189 956
Chinese registered design
no. ZL 0330 6415.6

	Water-carrying parts			
Model No. SK Basic controller	**CuAL**	**3209.100**	**3209.110**	**3209.140[1)]**
Model No. SK Comfort controller	**CuAL**	**3209.500**	**3209.510**	**3209.540[1)]**
Useful cooling output CuAL	**L 35 W 10, 400 l/h**	**2500 W**		
Model No. SK Basic controller	**V4A (stainless steel)**	**3209.104[1)]**	**3209.114[1)]**	**3209.144[1)]**
Model No. SK Comfort controller	**V4A (stainless steel)**	**3209.504[1)]**	**3209.514[1)]**	**3209.544[1)]**
Useful cooling output V4A	**L 35 W 10, 400 l/h**	**1875 W**		
Rated operating voltage V, Hz		230, 50/60	115, 50/60	400, 2~, 50/60
Dimensions in mm	W H D	597 417 475		

Rated current max.	0.40 A/0.48 A	0.85 A/0.95 A	0.25 A/0.30 A
Pre-fuse T	4.0 A		
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 13)		
Water inlet temperature	> +1°C to +30°C		
Permissible operating pressure p. max.	1 to 10 bar		
Temperature range	+1°C to +70°C		
Protection category to EN 60 529/09.2000	IP 55[2)]		
Duty cycle	100 %		
Type of connection	Plug-in terminal strip		
Weight	23.5 kg	27.5 kg	27.5 kg
Colour	RAL 7035		
Air throughput of fans (unimpeded air flow)	1030 m^3/h		
Temperature control	Basic or Comfort controller (factory setting +35°C)		

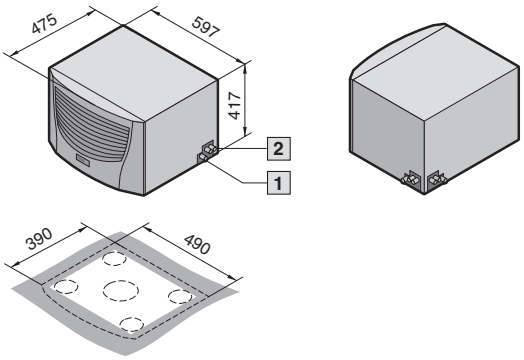
Accessories	Packs of		Page
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
Interface card for Comfort controller	1	3124.200	716
Air ducting system	1	3286.870	711
Cover stoppers for interior air outlet	1	3286.880	712
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

[1)] Delivery times available on request.
[2)] IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Roof-mounted, useful cooling output 4000 W





Supply includes:
Fully wired ready for connection with connector, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, from page 656.

1 Condensate discharge 1/2″ (flexible)

2 Cooling water connection 1/2″ (flexible)

Approvals,
see page 84.

Detailed drawing,
see page 1293.

Performance diagrams,
available on the Internet.

Property rights:
German registered designs
no. 402 02 324 and
no. 402 02 325
US design patent
no. US D 492,319S
Indian registered design
no. 189 956
Chinese registered design
no. ZL 0330 6415.6

	Water-carrying parts			
Model No. SK Basic controller	**CuAL**	**3210.100**	**3210.110**	**3210.140[1)]**
Model No. SK Comfort controller	**CuAL**	**3210.500**	**3210.510**	**3210.540[1)]**
Useful cooling output CuAL	**L 35 W 10, 400 l/h**	**4000 W**		
Model No. SK Basic controller	**V4A (stainless steel)**	**3210.104[1)]**	**3210.114[1)]**	**3210.144[1)]**
Model No. SK Comfort controller	**V4A (stainless steel)**	**3210.504[1)]**	**3210.514[1)]**	**3210.544[1)]**
Useful cooling output V4A	**L 35 W 10, 400 l/h**	**3000 W**		
Rated operating voltage V, Hz		230, 50/60	115, 50/60	400, 2~, 50/60
Dimensions in mm	W H D	597 417 475		

Rated current max.	0.44 A/0.5 A	0.9 A/1.0 A	0.25 A/0.3 A
Pre-fuse T	4.0 A		
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 13)		
Water inlet temperature	> +1°C to +30°C		
Permissible operating pressure p. max.	1 to 10 bar		
Temperature range	+1°C to +70°C		
Protection category to EN 60 529/09.2000	IP 55[2)]		
Duty cycle	100 %		
Type of connection	Plug-in terminal strip		
Weight	25.5 kg	29.5 kg	29.5 kg
Colour	RAL 7035		
Air throughput of fans (unimpeded air flow)	925 m^3/h		
Temperature control	Basic or Comfort controller (factory setting +35°C)		

Accessories	Packs of		Page
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
Interface card for Comfort controller	1	3124.200	716
Air ducting system	1	3286.870	711
Cover stoppers for interior air outlet	1	3286.880	712
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

[1)] Delivery times available on request.
[2)] IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Water/water heat exchangers

Features



Design features:

6 performance categories for cooling outputs ranging from 25 to 250 kW.

Application:

Use of an in-house water circuit which is not suitable for direct enclosure climate control.

Examples include water circuits with cooling tower, process and well water etc., and aggressive or contaminated water.

Also suitable for direct enclosure cooling (DCP) where higher water inlet temperatures are required.



Water/water heat exchangers



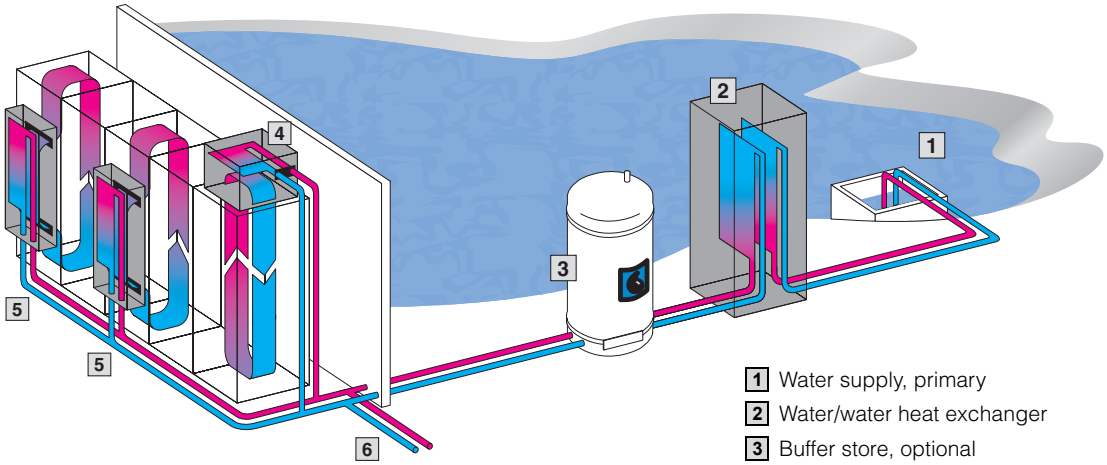




Interrogate operating statuses
and make settings via the Web (TCP/IP).

Redundancy
Double pump, speed-controlled, with alternating 24 h operation.

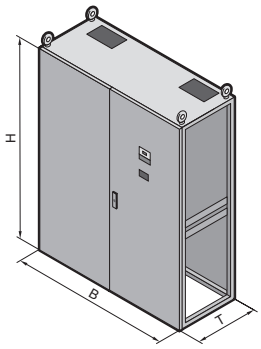
Maintenance-friendly
The complete interior may be removed from the enclosure as a single unit.



1 Water supply, primary
2 Water/water heat exchanger
3 Buffer store, optional
4 Air/water heat exchanger, roof-mounted
5 Air/water heat exchangers, roof-mounted/wall-mounted
6 Other cooling options, e. g. machine cooling

Cooling output 25 to 250 kW





Application:
Water/water heat exchangers are primarily used to hydraulically and physically separate a definable primary water circuit (dirt, pressure fluctuations) from a defined secondary water circuit.

Technical design:
- Compact construction mounted in a tubular frame
- Integrated in a TS 8 enclosure
- Digital controller
- Floating contact for collective fault signal
- Flow rate display and monitoring
- Water connection in base
- Double pump unit fitted with linear speed controller
- Linear controlled 3-way valve (4 – 20 mA)

Supply includes:
Water/water heat exchanger wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:
- Buffer store 1000 – 3000 l
- Standard pump with automatic bypass
- Emergency water infeed
- Secondary flow monitor
- Ethernet, BACnet and SNMP link
- Magnetic filter
- Pipework in stainless steel 1.4401 (AISI 316)
- Tubular frame, without TS 8 enclosure

Layout diagram,
see page 1290.

Model No. SK		**3232.900**	**3232.910**	**3232.920**	**3232.930**	**3232.940**	**3232.950**	**3232.960**
Rated operating voltage V, Hz		400, 3~, 50						
Dimensions including base/plinth in mm	W H D	1200 1900 800	1200 1900 800	1200 1900 800	1600 1900 800	1600 1900 800	2000 1900 800	2000 1900 800
Cooling output at T_{wp} = 6°C/T_{ws} = 15°C		**25000 W**	**50000 W**	**75000 W**	**100000 W**	**150000 W**	**200000 W**	**250000 W**
Power consumption		3.54 kW	5.7 kW	5.7 kW	10.4 kW	10.4 kW	13.6 kW	13.6 kW
Rated current max.		3.5 A	5.9 A	5.9 A	10.2 A	10.2 A	10.8 A	10.8 A
Temperature range	Environment	+5°C to +45°C						
	Tp primary side	+6°C to +30°C						
	Ts secondary side	+6°C to +30°C						
Pump capacity (l/min.)	primary/secondary	62	125	187	250	375	500	625
Pump pressure (bar)	primary	1.5 – 6.0						
Pump pressure (bar)	secondary (equipment)	2.5						
Water connections	primary/secondary	RP 1″	RP 1 1/4″	RP 1 1/2″	RP 2″	RP 2″	RP 2 1/2″	RP 2 1/2″
Weight		400 kg	450 kg	450 kg	700 kg	700 kg	900 kg	900 kg
Colour		RAL 7035						
Protection category (electrics)		IP 54						
Temperature control		Electronic control with digital display, setting range +5°C to +50°C						

Delivery times available on request.
Special voltages, other frequencies, and technical modifications available on request.

Air/water heat exchangers From page 676 **TS 8 lock systems** From page 947 **TS 8 baying system** From page 138 **Overflow valve** Page 722
Additives Page 722

Air/air heat exchangers

Features



The requirement for use of **air/air heat exchangers** is that the ambient temperature must be below the enclosure internal temperature. Dust and any aggressive ambient air is unable to ingress the enclosure interior, thanks to the two separate air circuits.



Platform strategy/installation



Identical installation cut-outs
for various output categories.

Easily retro-fitted
Thanks to the low weight, simple assembly cut-outs and problem-free attachment of the heat exchangers, a cabinet or enclosure is easily retro-fitted.



Servicing/security



Simple maintenance
The heat exchanger module is very easily removed, for effortless cleaning. The cleverly thought-out structure enables fast, economical maintenance.

Benefits:

- Specific thermal output from 17.5 W/K to 90 W/K
- External and internal circuit may be controlled separately
- Mounting cut-outs and enclosure dimensions identical to TopTherm wall-mounted cooling units
- Suitable for external and internal mounting
- Top design identical to TopTherm wall-mounted cooling units

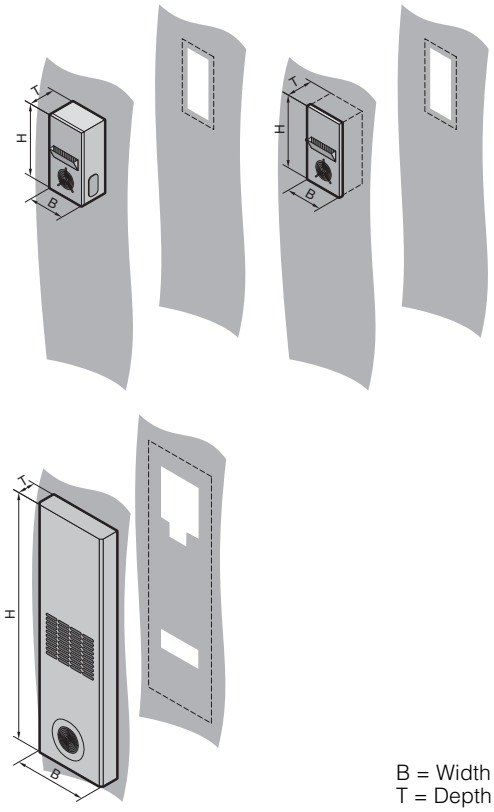
Important:

- The temperature difference between the room temperature and enclosure internal temperature will have a decisive effect on the heat loss that may be dissipated.

For calculation bases, refer to our website: www.rittal.com

Wall-mounted





B = Width
T = Depth

Supply includes:
Fully wired unit ready for connection.

Detailed drawing,
see page 1295.

Performance diagrams,
available on the Internet.

SK 3125.800
Compact wall-mounted air/air heat exchanger. Ideal for small enclosures and command panels. Suitable for external and internal mounting.

SK 3129.800
Super-slimline air/air heat exchangers. Ideal for external/ internal door mounting.

Model No. SK		**3125.800**	**3129.800**
Rated operating voltage V, Hz		230, 1~, 50/60	
Dimensions in mm	W H D	200 400 146	400 1360 110
Specific thermal output		**12 W/K**	**62 W/K**

Fans		2 per heat exchanger	
Max. rated current per fan		0.11 A/0.13 A	0.45 A/0.55 A
Pre-fuse T		2.0 A	
Power per fan		25 W/30 W	100 W/130 W
Air throughput of fans	External circuit	265 m³/h / 315 m³/h	860 m³/h / 900 m³/h
	Internal circuit	265 m³/h / 315 m³/h	860 m³/h / 900 m³/h
Temperature range		–5°C to +55°C	
Type of connection		Connection cable	
Weight		8 kg	30 kg
Colour		RAL 7035	
Protection category to EN 60 529/09.2000	Internal circuit	IP 54	

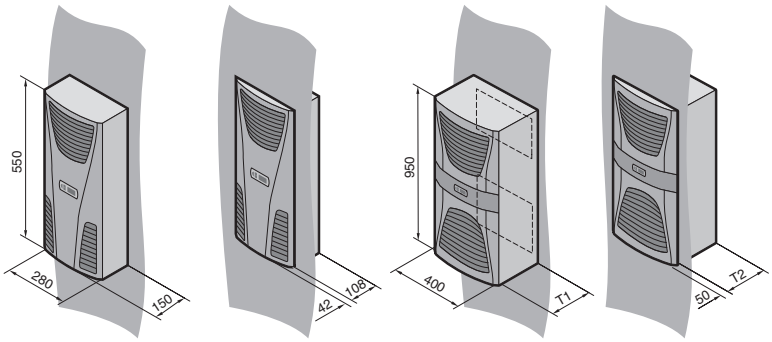
Accessories	Packs of		Page
Thermostat	1	3110.000	715
Temperature indicator	1	3114.100	714
Speed control	1	3120.000	716

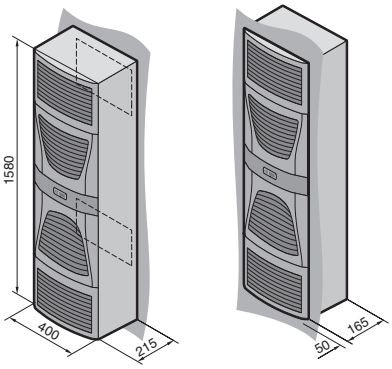
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Wall-mounted with controller







T = Depth

- **With controller and digital temperature indicator**
- **Floating fault signal contact in case of overtemperature**

Supply includes:
Fully wired unit ready for connection.

Approvals,
see page 85.

Detailed drawing,
see page 1295.

Performance diagrams,
available on the Internet.

Model No. SK		**3126.100**	**3127.100**	**3128.100**	**3129.100**	**3130.100**
Rated operating voltage V, Hz		230, 1~, 50/60				
Dimensions in mm	W H T1 T2	280 550 150 –	400 950 205 155		400 950 225 175	400 1580 215 –
Specific thermal output		**17.5 W/K**	**30 W/K**	**45 W/K**	**60 W/K**	**90 W/K**

Fans		2 per heat exchanger				
Max. rated current per fan		0.11 A/0.13 A	0.28 A/0.34 A	0.3 A/0.4 A	0.38 A/0.4 A	0.67 A/0.88 A
Pre-fuse T		2.0 A				4.0 A
Power per fan		23 W/27 W	60 W/75 W	70 W/90 W	85 W/90 W	150 W/200 W
Air throughput of fans	External circuit	265 m^3/h / 315 m^3/h	480 m^3/h / 525 m^3/h	600 m^3/h / 625 m^3/h	860 m^3/h / 900 m^3/h	850 m^3/h / 945 m^3/h
	Internal circuit	265 m^3/h / 315 m^3/h	480 m^3/h / 525 m^3/h	600 m^3/h / 625 m^3/h	860 m^3/h / 900 m^3/h	850 m^3/h / 945 m^3/h
Temperature range		–5°C to +55°C				
Type of connection		Plug-in terminal strip				
Weight		10 kg	18 kg	19 kg	21 kg	34 kg
Colour		RAL 7035				
Protection category to EN 60 529/09.2000	Internal circuit	IP 54				

Accessories	Packs of			Page
Filter mats	3	3286.300	3286.400	723
Metal filters	1	3286.310	3286.410	724
Speed control	1	3120.000		716

Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Features



Fan-and-filter units are ideal for dissipating heat loads cost-effectively. The pre-requisite is that the ambient air must be relatively clean and with a temperature below the desired enclosure internal temperature.

The entire range of fan-and-filter units is now also available with EMC shielding and all required rated voltages.



Fast assembly







Super-fast clip-on mounting
This guarantees fast, completely secure attachment of the fan-and-filter unit. The pre-requisites for protection category IP 54 are met as standard.

Screws are not required. Removal of the louvred grille, likewise without any screws, means that filter mat changes can be achieved in next to no time.

Draw-in or extract?
The air direction may be quickly reversed from draw-in (default setting) to extracting. Simply rotate the fan through 180°.



Application diversity and functions







Not always full power!
At lower ambient temperatures, the air throughput may be reduced. By adapting the fan-and-filter speed to match the temperature using a controller, noise generation is reduced.

Also with EMC shielding
All fan-and-filter units and outlet filters are alternatively available with EMC shielding.
The required conductive connection is achieved via a metallic coating on the fan-and-filter unit housing and a special sealing frame.

Hose-proof
Particularly for applications in the food industry, the hose-proof hood prevents the ingress of damp. The protection category of IP 56 is achieved in conjunction with filter mats.

Benefits:

- Air throughput from 20 m^3/h to 700 m^3/h
- Super-fast assembly
- IP 54 as standard
- Air flow direction may be reversed from draw-in (default setting) to extracting
- All fans also available with EMC shielding
- Minimal installation depth
- Fan also bayable

Important:

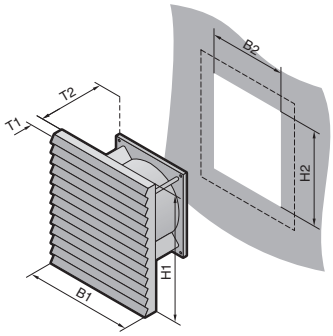
- The prescribed heat loss and the maximum anticipated ambient temperature define the required volumetric flow
- Always use the fan-and-filter units and outlet filters together

Calculation formulae refer to website: www.rittal.com

Fan-and-filter units

Air throughput 20/55 m³/h





B = Width
T = Depth

Supply includes:
Fan-and-filter units ready for installation, including filter mats.

German registered design no. M 93 04 846

Approvals,
see page 85.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3321.107**	**3321.117**	**3321.027**	**3321.047**[1]	**3322.107**	**3322.117**	**3322.027**	**3322.047**[1]
Rated operating voltage V, Hz		230, 50/60	115, 50/60	24 (DC)	48 (DC)	230, 50/60	115, 50/60	24 (DC)	48 (DC)
Dimensions in mm	B1/H1	116.5				148.5			
	B2/H2	92 + 0.8[2]				124[2]			
	T1	10				10.5			
Max. installation depth mm	T2	42				57			
Air throughput, unimpeded air flow		**20/25 m³/h**		**20 m³/h**		**55/66 m³/h**		**55 m³/h**	
Air throughput with outlet filter including standard filter mat		1 x SK 3321.207: **15/18 m³/h**				1 x SK 3322.207: **43/50 m³/h**			

Axial fan	Self-starting shaded pole motor		DC motor		Self-starting shaded pole motor		DC motor	
Rated current max.	69 mA 58 mA	138 mA 115 mA	125 mA	90 mA	0.12 A 0.11 A	0.24 A 0.23 A	0.35 A	90 mA
Power	12.5 W/10.3 W		3.0 W	4.1 W	19.0 W/18.0 W		7.7 W	4.4 W
Noise level	41/46 dB (A)		41 dB (A)		46/49 dB (A)		46 dB (A)	
Temperature range	–10°C to +55°C							
Colour	RAL 7035[3]							
Protection category to EN 60 529/09.2000	IP 54 standard IP 56 when using a hose-proof hood							
Model No. outlet filter SK	**3321.207**				**3322.207**			

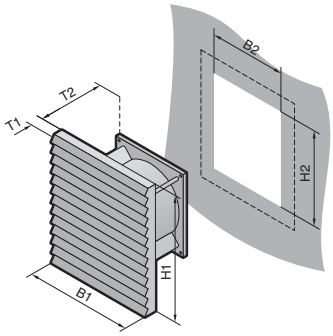
Accessories	Packs of									Page
Spare filter mats	5	3321.700				3322.700				725
Thermostat	1	3110.000								715
Temperature indicator	1	3114.100	3114.115	3114.024	–	3114.100	3114.115	3114.024	–	714
Speed control	1	3120.000	3120.115	–	–	3120.000	3120.115	–	–	716
Hose-proof hood	1	3321.800				3322.800				721

[1] Delivery times on request.
[2] For metal thickness > 2.5 mm the cut-out B2/H2 must be 1 mm larger.
[3] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **EMC-protected design** Page 694 **Configuration software** Page 1155

Air throughput 105/180 m³/h





B = Width
T = Depth

Supply includes:
Fan-and-filter units ready for installation, including filter mats.

German registered design no. M 93 04 846

Approvals,
see page 85.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3323.107**	**3323.117**	**3323.027**	**3323.047**[1]	**3324.107**	**3324.117**	**3324.027**	**3324.047**[1]
Rated operating voltage V, Hz		230, 50/60	115, 50/60	24 (DC)	48 (DC)	230, 50/60	115, 50/60	24 (DC)	48 (DC)
Dimensions in mm	B1/H1	204				255			
	B2/H2	177[2]				224[2]			
	T1	12.5				12.5			
Max. installation depth mm	T2	82.5				105			
Air throughput, unimpeded air flow		**105/120 m³/h**		**105 m³/h**		**180/160 m³/h**		**180 m³/h**	
Air throughput with outlet filter including standard filter mat		1 x SK 3323.207: **71/82 m³/h** 2 x SK 3323.207: **85/98 m³/h** 1 x SK 3325.207: **78/90 m³/h**				1 x SK 3325.207: **115/95 m³/h** 2 x SK 3325.207: **165/140 m³/h** 1 x SK 3326.207: **155/130 m³/h**			

Axial fan	Self-starting shaded pole motor		DC motor		Self-starting shaded pole motor		DC motor	
Rated current max.	0.12 A 0.11 A	0.24 A 0.23 A	0.35 A	90 mA	0.19 A 0.20 A	0.38 A 0.40 A	0.3 A	0.34 A
Power	19.0 W/18.0 W		8.0 W	4.3 W	30.0 W/35.0 W		7.2 W	14.0 W
Noise level	46/49 dB (A)		46 dB (A)		52/48 dB (A)		52 dB (A)	
Temperature range	–10°C to +55°C							
Colour	RAL 7035[3]							
Protection category to EN 60 529/09.2000	IP 54 standard IP 55 when using an additional fine filter mat IP 56 when using an additional fine filter mat and hose-proof hood							
Model No. outlet filter SK	**3323.207**				**3325.207**			

Accessories	Packs of									Page
Spare filter mats	5	3171.100				3172.100				725
Fine filter mats	5	3181.100				3182.100				725
Thermostat	1	3110.000								715
Temperature indicator	1	3114.100	3114.115	3114.024	–	3114.100	3114.115	3114.024	–	714
Speed control	1	3120.000	3120.115	–	–	3120.000	3120.115	–	–	716
Hose-proof hood	1	3323.800				3324.800				721

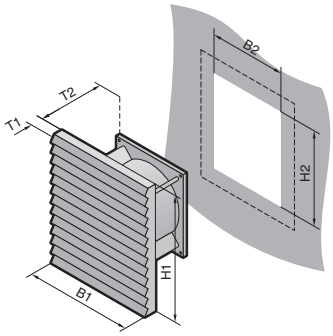
[1] Delivery times available on request.
[2] For metal thickness > 2.5 mm, the cut-out B2/H2 must be 1 mm larger.
[3] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **EMC-protected design** Page 694 **Configuration software** Page 1155

Fan-and-filter units

Air throughput 230 m³/h





B = Width
T = Depth

Supply includes:
Fan-and-filter units ready for installation, including filter mats.

German registered design no. M 93 04 846

Approvals,
see page 85.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3325.107**	**3325.117**	**3325.027**	**3325.047**[1]
Rated operating voltage V, Hz		230, 50/60	115, 50/60	24 (DC)	48 (DC)
Dimensions in mm	B1/H1	255			
	B2/H2	224[2]			
	T1	12.5			
Max. installation depth mm	T2	105			
Air throughput, unimpeded air flow		**230/265 m³/h**		**230 m³/h**	
Air throughput with outlet filter including standard filter mat		1 x SK 3325.207: **170/205 m³/h** 2 x SK 3325.207: **200/230 m³/h** 1 x SK 3326.207: **190/215 m³/h**			

Axial fan	Self-starting shaded pole motor		DC motor	
Rated current max.	0.28 A 0.24 A	0.53 A 0.49 A	0.59 A	0.31 A
Power	41.0 W/38.0 W		14.0 W	15.0 W
Noise level	54/56 dB (A)		54 dB (A)	
Temperature range	–10°C to +55°C			
Colour	RAL 7035[3]			
Protection category to EN 60 529/09.2000	IP 54 standard IP 55 when using an additional fine filter mat IP 56 when using an additional fine filter mat and hose-proof hood			
Model No. outlet filter SK	**3325.207**			

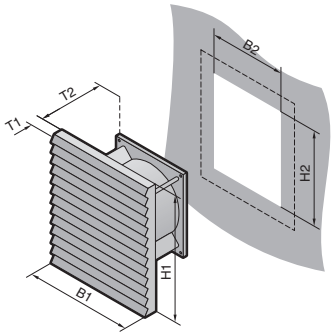
Accessories	Packs of					Page
Spare filter mats	5	3172.100				725
Fine filter mats	5	3182.100				725
Thermostat	1	3110.000				715
Temperature indicator	1	3114.100	3114.115	3114.024	–	714
Speed control	1	3120.000	3120.115	–	–	716
Hose-proof hood	1	3324.800				721

[1] Delivery times available on request.
[2] For metal thickness > 2.5 mm, the cut-out B2/H2 must be 1 mm larger.
[3] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **EMC-protected design** Page 694 **Configuration software** Page 1155

Air throughput 550/700 m³/h





B = Width
T = Depth

Supply includes:
Fan-and-filter units ready for installation, including filter mats.

German registered design no. M 93 04 846

Approvals,
see page 85.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3326.107**	**3326.117**	**3327.107**	**3327.117**	**3327.147**
Rated operating voltage V, Hz		230, 50/60	115, 50/60	230, 50/60	115, 50/60	400/460, 3~, 50/60
Dimensions in mm	B1/H1	323				
	B2/H2	292[1]				
	T1	12.5				
Max. installation depth mm	T2	129		145		
Air throughput, unimpeded air flow		**550/600 m³/h**		**700/720 m³/h**		
Air throughput with outlet filter including standard filter mat		1 x SK 3326.207: **360/390 m³/h** 2 x SK 3326.207: **440/495 m³/h**		1 x SK 3326.207: **525/575 m³/h**		

Axial fan	Capacitor motor				Rotary current motor
Rated current max.	0.29 A 0.35 A	0.58 A 0.70 A	0.65 A 0.95 A	1.5 A 2.0 A	0.27 A 0.37 A
Power	64.0 W/80.0 W		115.0 W/212.0 W	167.0 W/230.0 W	146.0 W/220.0 W
Noise level	59/61 dB (A)		75/76 dB (A)		
Temperature range	–10°C to +55°C				
Colour	RAL 7035[2]				
Protection category to EN 60 529/09.2000	IP 54 standard IP 55 when using an additional fine filter mat IP 56 when using an additional fine filter mat and hose-proof hood				
Model No. outlet filter SK	**3326.207**				

Accessories	Packs of						Page
Spare filter mats	5	3173.100		3327.700			725
Fine filter mats	5	3183.100					725
Thermostat	1	3110.000				–	715
Temperature indicator	1	3114.100	3114.115	3114.100	3114.115	–	714
Speed control	1	3120.000	3120.115	3120.000	–	–	716
Hose-proof hood	1	3326.800					721

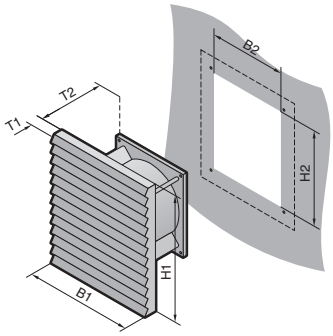
[1] For metal thickness > 2.5 mm, the cut-out B2/H2 must be 1 mm larger.
[2] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **EMC-protected design** Page 694 **Configuration software** Page 1155

Fan-and-filter units – EMC

Air throughput 20 – 105 m³/h





B = Width
T = Depth

Supply includes:
Complete fan-and-filter units ready for installation, including drilling template, filter mat and assembly parts.

Approvals,
see page 86.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3321.607**	**3321.617**[1]	**3322.607**	**3322.617**[1]	**3323.607**	**3323.617**[1]
Rated operating voltage V, Hz		230, 50/60	115, 50/60	230, 50/60	115, 50/60	230, 50/60	115, 50/60
Dimensions in mm	B1/H1	116,5		148,5		204	
	B2/H2	92 + 0.8[2]		124[2]		177[2]	
	T1	10		10.5		12.5	
Max. installation depth mm	T2	42		57		82.5	
Air throughput, unimpeded air flow		**20/25 m³/h**		**55/66 m³/h**		**105/120 m³/h**	
Air throughput with outlet filter including standard filter mat		1 x 3321.267: **15/18 m³/h**		1 x 3322.267: **43/50 m³/h** 2 x 3322.267: **48/55 m³/h** 1 x 3323.267: **48/55 m³/h**		1 x 3323.267: **71/82 m³/h** 2 x 3323.267: **85/98 m³/h** 1 x 3325.267: **78/90 m³/h**	

Axial fan		Self-starting shaded pole motor					
Rated current max.		69 mA/ 58 mA	138 mA/ 115 mA	0.12 A/ 0.11 A	0.24 A/ 0.23 A	0.12 A/ 0.11 A	0.24 A/ 0.23 A
Power		12.5 W/10.3 W		19.0 W/18.0 W			
Noise level		41/46 dB (A)		46/49 dB (A)			
Temperature range		–10°C to +55°C					
Colour		RAL 7035[3]					
Protection category to EN 60 529/09.2000		IP 54 standard					
Model No. outlet filter – EMC SK		**3321.267**		**3322.267**		**3323.267**	

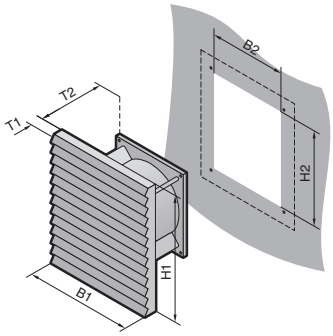
Accessories	Packs of							Page
Spare filter mats	5	3321.700		3322.700		3171.100		725
Fine filter mats	5	–				3181.100		725
Thermostat	1	3110.000						715
Temperature indicator	1	3114.100	3114.115	3114.100	3114.115	3114.100	3114.115	714
Speed control	1	3120.000	3120.115	3120.000	3120.115	3120.000	3120.115	716
Hose-proof hood	1	3321.800		3322.800		3323.800		721

[1] Delivery times available on request.
[2] For metal thickness > 2.5 mm, the cut-out B2/H2 must be 1 mm larger.
[3] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

Air throughput 180 – 700 m³/h





B = Width
T = Depth

Supply includes:
Complete fan-and-filter units ready for installation, including drilling template, filter mat and assembly parts.

Approvals,
see page 86.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3324.607**	**3324.617**[1]	**3325.607**	**3325.617**	**3326.607**	**3326.617**[1]	**3327.607**	**3327.617**[1]
Rated operating voltage V, Hz		230, 50/60	115, 50/60	230, 50/60	115, 50/60	230, 50/60	115, 50/60	230, 50/60	115, 50/60
Dimensions in mm	B1/H1	255				323			
	B2/H2	224[2]				292[2]			
	T1	12.5				12.5			
Max. installation depth mm	T2	105				129		145	
Air throughput, unimpeded air flow		**180/160 m³/h**		**230/265 m³/h**		**550/600 m³/h**		**700/720 m³/h**	
Air throughput with outlet filter including standard filter mat		1 x 3325.267: **115/95 m³/h** 2 x 3325.267: **165/140 m³/h** 1 x 3326.267: **155/130 m³/h**		1 x 3325.267: **170/205 m³/h** 2 x 3325.267: **200/230 m³/h** 1 x 3326.267: **190/215 m³/h**		1 x 3325.267: **170/205 m³/h** 2 x 3325.267: **200/230 m³/h** 1 x 3326.267: **360/390 m³/h**		1 x 3326.267: **525/575 m³/h**	

Axial fan	Self-starting shaded pole motor				Capacitor motor			
Rated current max.	0.19 A/ 0.20 A	0.38 A/ 0.40 A	0.28 A/ 0.24 A	0.53 A/ 0.49 A	0.29 A/ 0.35 A	0.58 A/ 0.70 A	0.65 A/ 0.95 A	1.50 A/ 2.00 A
Power	30.0 W/ 35.0 W		41.0 W/ 38.0 W		64.0 W/ 80.0 W		155.0 W/ 212.0 W	167.0 W/ 230.0 W
Noise level	52/48 dB (A)		54/56 dB (A)		59/61 dB (A)		75/76 dB (A)	
Temperature range	–10°C to +55°C							
Colour	RAL 7035[3]							
Protection category to EN 60 529/09.2000	IP 54 standard							
Model No. outlet filter – EMC SK	**3325.267**				**3326.267**			

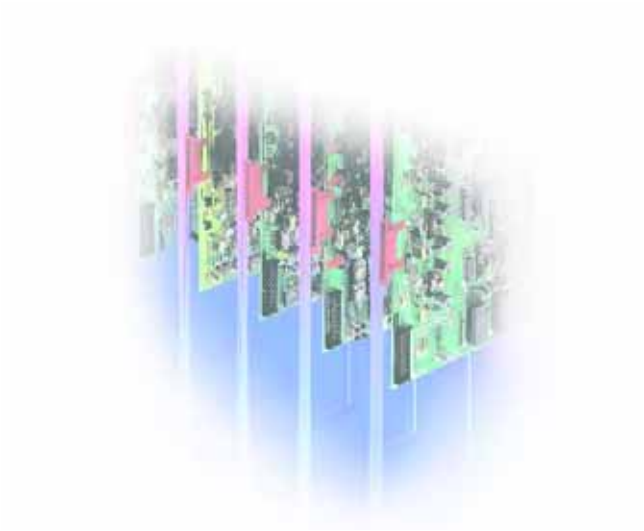
Accessories	Packs of									Page
Spare filter mats	5	3172.100				3173.100		3327.700		725
Fine filter mats	5	3182.100				3183.100				725
Thermostat	1	3110.000								715
Temperature indicator	1	3114.100	3114.115	3114.100	3114.115	3114.100	3114.115	3114.100	3114.115	714
Speed control	1	3120.000	3120.115	3120.000	3120.115	3120.000	3120.115	3120.000	3120.115	716
Hose-proof hood	1	3324.800				3326.800				721

[1] Delivery times available on request.
[2] For metal thickness > 2.5 mm, the cut-out B2/H2 must be 1 mm larger.
[3] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

Climate control tailored to enclosures

Features

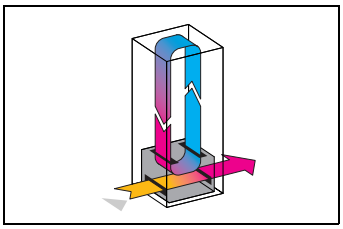


All rack-mounted climate control components are fitted directly onto the 482.6 mm (19″) mounting level for subracks. Positioning directly beneath the electronic components ensures effective cooling, and prevents the formation of hotspots.



Rack-mounted cooling units





Useful cooling output 1000 W, 6 U
The heated air is drawn in, cooled, and blown beneath the rack-mounted electronics to be cooled.

Simple attachment to the 482.6 mm (19″) mounting angles
Sealed enclosures require a door cut-out for the external air circuit. With open enclosures, a fully equipped front is essential. The setpoint of the temperature controller is set via a service flap.



Rack-mounted fan







Vario rack-mounted fan
The rack-mounted fan slides into the guide frame like a drawer. Connectors on the rear ensure immediate contact.

Installation options for the guide frame: Directly in the subrack, via two mounting brackets on the 482.6 mm (19″) mounting angles.

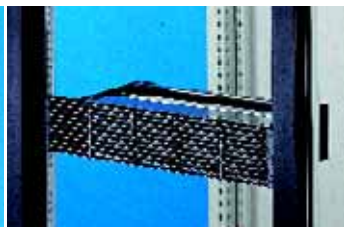
Ideal for avoiding hotspots in fully populated enclosures.



Centrifugal fan







320 m³/h air throughput, 2 U
The high air throughput means that Rittal centrifugal fans are capable of dissipating large heat losses from the enclosure. The minimal noise generation of 52 dB creates a pleasant working environment.

Front outlet grille 2 U for hot air outlet to the outside in the upper section of the enclosure.

Features



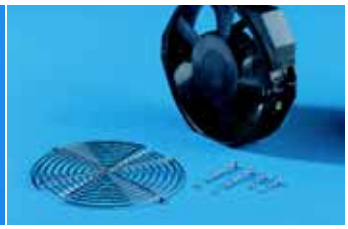
Ready-to-use, wired modules equipped with fans for numerous Rittal enclosure system platforms offer effective air throughput and minimal assembly work. Fan roofs, fan cross members for server enclosures (door installation), internal fan mounting panels and enclosure internal fans are all available.



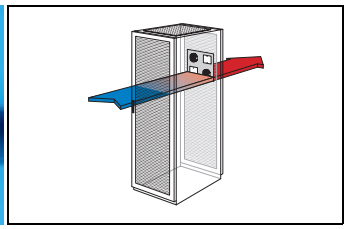
Fans for integration into the door



For TS 8: Door-mounted fans for server enclosures
Specifically for installation in the tubular door frame of perforated doors.



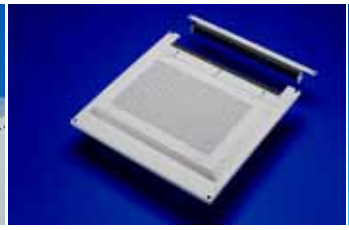
Door-mounted fans for TS 8 server enclosures
Specifically for installing in perforated doors. The growing packaging density in data communications and network enclosures make active, direct ventilation of the enclosure indispensable. The door-mounted fans, attached to the rear or front door, support horizontal air routing of the servers.



Fans for integration into the roof



For all enclosures: Roof-mounted fans, passive or active
May be integrated into any enclosure roof area with suitable dimensions for the mounting cut-out.



For TS 8: Fan roof, modular
In exchange for the existing roof plate. Fan and cable entry are pre-integrated.

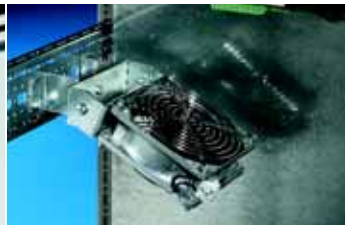


For the office sector: Roof-mounted fan
Low noise generation and high performance for sensitive office areas. Unit consisting of TS roof plate and fan.

Air baffle systems



For TS 8: Internal fan mounting panel
Twin-walled side panel for targeted air routing.



Enclosure internal fan
Supports active climate control components and thereby selectively avoids hotspots.

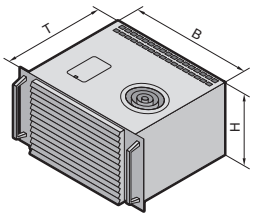


For TS 8: Air baffle system
Cold air from the hollow base is routed to the twin-walled door and distributed in a targeted manner.

Rack-mounted cooling units

for 482.6 mm (19″), useful cooling output 1000 W





B = Width
T = Depth

Supply includes:
Wired ready for connection with connection cable (3 m), including drilling template.

Also required:
For installation in a closed enclosure: Adaptor for front air supply and air duct for waste air, see accessories.

Approvals,
see page 86.

Detailed drawing,
see page 1295.

Performance diagrams,
available on the Internet.

Model No. SK		**3278.134**[1]	**3292.134**
Rated operating voltage V, Hz		115, 50/60	230, 50/60
Dimensions in mm	W H D	445 265.9 (6 U) 542	
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1000 W/1050 W** **660 W/770 W**	
Rated current max.		8.4 A/10.8 A	3.8 A/4.5 A
Start-up current		21.0 A/22.0 A	10.0 A/11.8 A
Pre-fuse T		10.0 A/16.0 A	6.0 A/6.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	615 W/710 W 680 W/800 W	585 W/650 W 650 W/720 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.6	1.7
Refrigerant		R134a, 700 g	
Permissible operating pressure p. max.		25 bar	
Temperature and setting range		+20°C to +55°C	
Protection category to EN 60 529/09.2000	External circuit	IP 34	
	Internal circuit	IP 54	
Duty cycle		100 %	
Type of connection		Connection cable 3 m	
Weight		38 kg	35 kg
Colour		RAL 7032	
Air throughput of fans	External circuit	620 m³/h	
	Internal circuit	460 m³/h	
Temperature control		Internal thermostat (factory setting +35°C)	

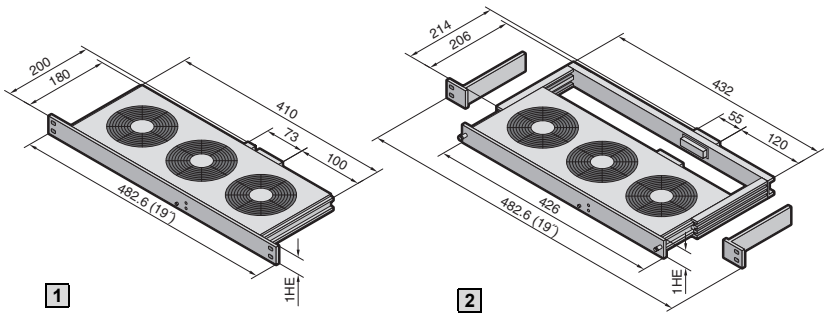
Accessories	Packs of			Page
Filter mats	3	3286.000		723
Adaptor for front air supply	1	3259.000		713
Air duct	10	3220.000		713
Temperature indicator	1	3114.115	3114.100	714
Door-operated switch	1	4127.000		1030

[1] Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

for 482.6 mm (19″), air throughput 320/480 m³/h





1 2

HE = U

Rack-mounted fan/Vario rack-mounted fan supply includes:
Wired unit ready for connection, including terminal strip and assembly parts.

Guide frame supply includes:
Guide frame including connector and fitted connection cable (3 m), bracket for optional attachment to the 482.6 mm (19″) system, assembly parts.

Also required:
Remember to order the appropriate guide frame for your chosen application.

Approvals,
see page 86.

Detailed drawing,
see page 1295.

Performance diagrams,
available on the Internet.

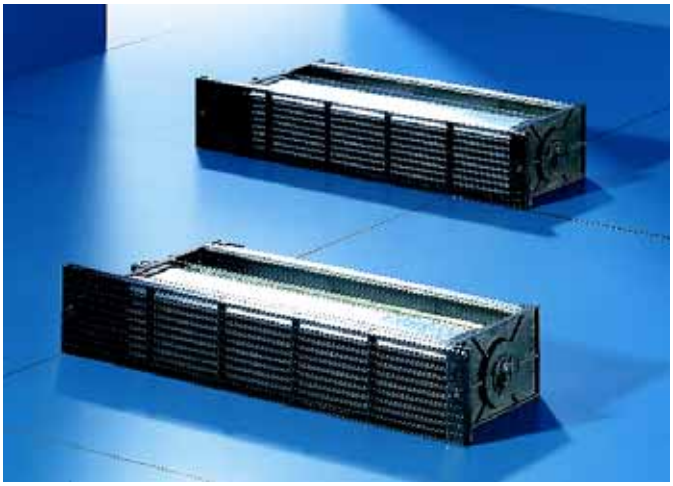
		1 Rack-mounted fans					2 Vario rack-mounted fans			
		Model No. SK					**Model No. SK**			
2 fans Distance between axes 85 mm		**3340.024**[1]	**3340.115**[1]	**3340.230**	**–**	**–**	**3350.024**[1]	**3350.115**[1]	**3350.230**	**–**
3 fans Distance between axes 85 mm		**3341.024**[1]	**3341.115**	**3341.230**	**–**	**9769.002**[1)2)]	**3351.024**[1]	**3351.115**[1]	**3351.230**	**–**
3 fans Distance between axes 105 mm		**3342.024**	**3342.115**[1]	**3342.230**	**3342.500**[2)3)]	**–**	**3352.024**[1]	**3352.115**[1]	**3352.230**	**3352.500**[1)3)]
Rated operating voltage V		24 V (DC)	115 V (AC)	230 V (AC)	24 V (DC) 115 – 230 V (AC)	36 V (DC) up to 72 V (DC)	24 V (DC)	115 V (AC)	230 V (AC)	24 V (DC) 115 – 230 V (AC)
Model No. SK matching guide frame		**–**	**–**	**–**	**–**	**–**	**3356.100**[1]	**3355.100**	**3355.100**	**3357.100**[1]
Accessories	Page									
Temperature indicator 230 V (AC)	714	3114.100	3114.115	3114.100	3114.024	–	3114.100	3114.115	3114.100	3114.024
Thermostat	715	3110.000								
Speed control	716	3120.000	3120.115	3120.000	–	–	3120.000	3120.115	3120.000	–

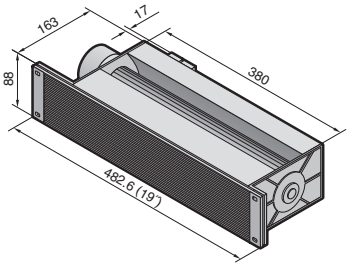
Technical specifications								
Model No. SK/CS	**3340.230** **3350.230**	**3340.115** **3350.115**	**3340.024** **3350.024**	**3341.230** **3351.230** **3342.230** **3352.230**	**3341.115** **3351.115** **3342.115** **3352.115**	**3341.024** **3351.024** **3342.024** **3352.024**	**3342.500**[2)] **3352.500**[2)]	**9769.002**
Rated operating voltage V, Hz	AC 230 V 50/60 Hz	AC 115 V 50/60 Hz	DC 24 V –	AC 230 V 50/60 Hz	AC 115 V 50/60 Hz	DC 24 V –	DC 24 V AC 115 – 230 V 50/60 Hz	36 V (DC) up to 72 V (DC)
Rated current max.	0.24 A/ 0.22 A	0.46 A/ 0.46 A	0.49 A	0.36 A/ 0.33 A	0.69 A/ 0.69 A	0.74 A	0.85 A	0.28 A
Pre-fuse T	6.0 A							6.0 A
Number of fans	2			3				3
Air throughput, unimpeded air flow	320 m³/h			480 m³/h				250 m³/h
Temperature range	–10°C to +55°C							–33°C to +55°C
Noise level	51 dB (A)	52 dB (A)	51 dB (A)	51 dB (A)	52 dB (A)	51 dB (A)		52 dB (A)

1) Delivery times available on request.
2) Rack-mounted fan for metric mounting angles available on request.
3) Version with monitoring.

Accessories Page 710 **Configuration software** Page 1155

Air throughput 320 m³/h





Supply includes:
Fully assembled and wired unit, ready for connection, including filter mat.

Approvals,
see page 87.

Detailed drawing,
see page 1295.

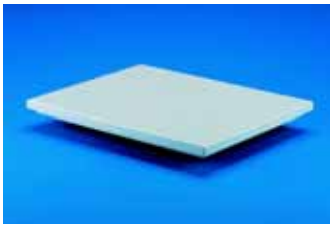
Performance diagrams,
available on the Internet.

Model No. SK		**3145.000**	**3144.000**
Rated operating voltage V, Hz		115, 50/60	230, 50/60
Dimensions in mm	W H D	482.6 (19″) 88 (2 U) 158	
Air throughput, unimpeded air flow		**320 m³/h**	

Rated current max.		0.32 A	0.16 A	
Power		37 W		
Noise level		52 dB (A)		
Speed		2245 rpm^{-1}		
Temperature range		–10°C to +55°C		
Maximum static pressure difference		65 – 70 Pa		
Accessories	Packs of			Page
Temperature indicator	1	3114.115	3114.100	714
Thermostat	1	3110.000		715
Filter mats	5	3177.000		723
Front outlet grille 2 U	1	3176.000		721
Roof vent	1	3148.007		701
Speed control	1	3120.115	3120.000	716

Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155



RTT roof-mounted fan and vent attachment

for TS

The active roof-mounted fan and the passive vent attachment (TS 8801.380) integrate perfectly into the system-wide mounting concept of the Rittal TopTherm platform. They fit precisely onto the cut-outs of the small and medium performance category of TopTherm roof-mounted cooling units.

Of course, they may also be mounted on any sufficiently large roof surface.

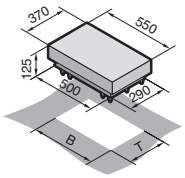
TS roof plates with prepared mounting cut-outs are additionally available.

Roof-mounted fan supply includes:
Unit ready to connect with built-in radial fan, sealing material and assembly parts.

Vent attachment:
see page 719.

Protection category:
IP 43 as per EN 60 529/09.2000

Detailed drawing,
see page 1296.



B = Width
T = Depth

Model No. SK	3149.410	3149.420	3149.440	3149.810	3149.820	3149.840	8801.380	Page
Rated operating voltage V, Hz	115, 50/60	230, 50/60	400, 3~, 50/60 460, 3~, 60	115, 50/60	230, 50/60	400, 3~, 50/60 460, 3~, 60	Roof vent	
Air throughput, unimpeded air flow	**400 m³/h**			**800 m³/h**			**Without motor**	
Required mounting cut-out W x D mm	475 x 260						490 x 390	
Power consumption of fan	120 W/170 W		95 W/140 W	170 W/225 W		180 W/310 W		
Rated current of fan	1.1/1.6 A	0.55/0.88 A	0.35/0.35 A	1.5/2.2 A	0.75/1.1 A	0.35/0.55 A		
Temperature range	–10°C to +55°C							
Noise level	68/69 dB (A)			69/70 dB (A)				
Weight	10 kg			11 kg			9 kg	
Colour shade	RAL 7035							
Accessories								
Roof plate 600 x 600 mm for TS 8 with cut-out	8801.300						8801.310	718
Roof plate 600 x 800 mm for TS 8 with cut-out	8801.320						8801.330	718
Roof plate 1200 x 600 mm for TS 8 with cut-out	–						8801.350	718
Temperature indicator	3114.115	3114.100	–	3114.115	3114.100	–	–	714
Speed control	3120.115	3120.100	–	3120.115	3120.100	–	–	716



Roof-mounted fan

- The roof-mounted fan is easily installed using 6 screws. The sealing tape supplied can be used to seal it against the enclosure.
- The assembly screws are invisible from the outside.
- The roof-mounted fan casing has a large air outlet surface and labyrinthine air ducting.

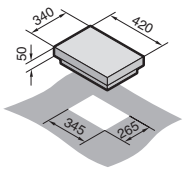
Protection category:
IP 43 to EN 60 529/09.2000. By additionally installing the filter holder with filter mat SK 3175.000, with roof vent SK 3148.000
a protection category of IP 44 is achieved.

Fully wired unit ready for connection with built-in radial fan, sealing material and assembly parts, connection cable (3 m), drilling template.

Accessories:

Filter holder,
see page 722.

Detailed drawing,
see page 1296.



Model No. SK	3149.007	3169.007	3148.007
Rated operating voltage V, Hz	230, 50/60	115, 50/60	Without fan motor
Air throughput	**360 m³/h**		
Rated current max.	0.2 A	0.55 A	
Power consumption	42 W	65 W	
Temperature range	–10°C to +60°C		
Noise level	53 dB (A)		
Weight	7.8 kg		
Colour[1)]	RAL 7035, textured enamel		

[1)] To order the version in RAL 7032, please add extension .000 to the Model No.
Special voltages available on request. We reserve the right to make technical modifications.

Roof-mounted fan



Roof-mounted fan

for TS/FR(i) for the office sector

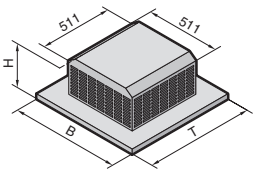
This new roof ventilation concept offers a wealth of performance, assembly and cost benefits associated with the use of integrated ventilation systems. This roof-mounted fan may be ordered with and without a roof plate. Another outstanding feature is the enormous volumetric flow in proportion to exceptionally low noise levels, making it ideal for use in sensitive office areas.

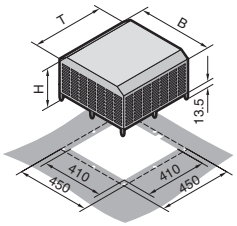
Technical specifications:
- Fitted onto a roof plate based on TS.
- Easy assembly; mounting cut-outs have been provided.
- Radial fan.

Supply includes:
Fully wired ready for connection, including assembly parts.

Model No. SK	3164.610	3164.620	3164.810	3164.820	3164.115	3164.230	Page
Rated operating voltage V, Hz	115, 50/60	230, 50/60	115, 50/60	230, 50/60	115, 50/60	230, 50/60	
Air throughput (unimpeded air flow)	**1500 m³/h[1)]**						
Design	with roof plate				without roof plate		
Dimensions in mm W H D	800 240 800		800 240 900		511 227 511		
Power consumption	68 W/81 W						
Rated current	0.6 A/0.7 A	0.3 A/0.35 A	0.6 A/0.7 A	0.3 A/0.35 A	0.6 A/0.7 A	0.3 A/0.35 A	
Radial fan	–						
Noise level	40 dB (A)						
Temperature range	+20°C to +55°C						
Colour	RAL 7035						
Accessories							
Temperature indicator in 1 U patch panel	7109.035						714
Temperature indicator	3114.115	3114.100	3114.115	3114.100	3114.115	3114.100	714
Thermostat	3110.000						715

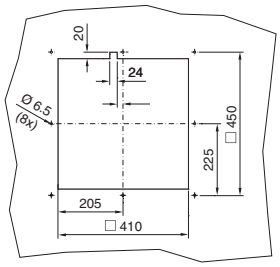
[1)] 800 m³/h at 40 Pa counterpressure using two integrated louvres, type DK 7580.500, in the enclosure base/plinth.
Special voltages available on request. We reserve the right to make technical modifications.





B = Width
T = Depth

Mounting cut-out
only required for fans wtihout roof plate





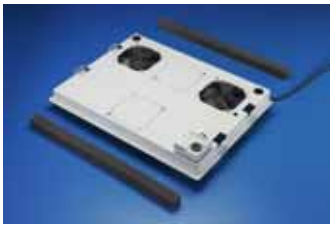
TS 8 air baffle system

The system has an air inlet nozzle in the base frame. In this way, cold air may be drawn in from below. The air is routed into the twin-walled door. The cold air can then be distributed inside the rack with special covers. 15 covers are supplied with every door.

Colour:
RAL 7035

	Packs of	Model No. DK
TS 8 sheet steel door, twin-walled W 600 x H 2000 mm	1	**7766.520**
TS 8 sheet steel door, twin-walled W 600 x H 2200 mm	1	**7766.522**
Air inlet nozzle W 600 mm	1	**7766.500**

Delivery times available on request.



Fan mounting plate

for TS

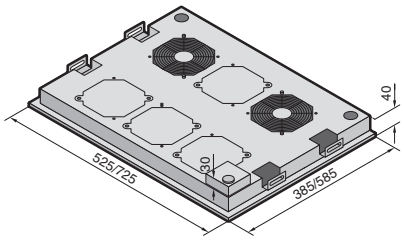
The fan mounting plate may be retro-fitted in all TS 8 network enclosures from above. The plate is mounted at the front of the enclosure, whilst the rear section is left free for cable entry. A rubber cable clamp strip is supplied loose for optional sealing at the rear.

The following combinations are also possible:

- Solid roof plate raised with 20 or 50 mm roof spacers.
- Roof plate for cable entry raised with 20 or 50 mm roof spacers.
- Vented roof plate for cable entry.

In conjunction with the large swing frame, usage is only possible from an enclosure depth of 800 mm, in conjunction with a roof plate for cable entry from 900 mm.

Note:
Not suitable for crane transportation!
Not suitable for combination with 482.6 mm (19″) mounting frame.



For enclosures		Number of fans	Max. number of fans	Model No. DK
Width mm	Depth mm			
600	600	2	4	**7966.035**
600	800 900 1000 1200	2	6	**7968.035**
800	600	2	6	**7986.035**
800	800 900 1000 1200	2	6	**7988.035**

The air throughput can be increased with the fan expansion kit DK 7980.000.

Technical specifications for one fan:
Rated operating voltage: 230 V
Power consumption: 15/14 W at 50/60 Hz
Air throughput (unimpeded air flow):
160/180 m^3/h, 50/60 Hz
Temperature range: –10°C to +55°C

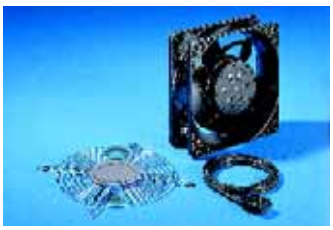
Technical specifications of thermostat:
Rated operating voltage: 250 V
Temperature range: +5°C to +55°C

Colour:
RAL 7035

Supply includes:
2 fans, 2/4 cut-outs to extend to 4/6 fans, thermostat, rubber cable clamp strip. Thermostat and fan fully wired to connection cable (2.5 m).

Accessories:

Fan expansion kit,
see page 703.
Rubber cable clamp strip SZ 2573.000 for sealing at the sides and targeted air routing when bayed,
see page 1047.



Fan expansion kit

For retro-fitting various fan units or to supplement the fan mounting plate and modular fan roof.

Technical specifications DK 7980.000:
Rated operating voltage: 230 V~
Power consumption: 15/14 W at 50/60 Hz
Air throughput (unimpeded air flow):
160/180 m^3/h, 50/60 Hz
Noise level (unimpeded air flow): 37 dB (A)
Temperature range: –10°C to +55°C

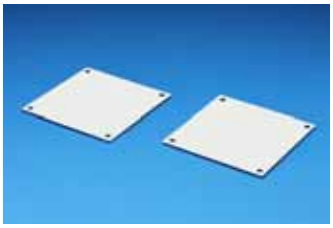
Technical specifications DK 7980.100:
Rated operating voltage: 230 V~
Power consumption: 14/12 W at 50/60 Hz
Air throughput (unimpeded air flow):
108/120 m^3/h, 50/60 Hz
Noise level (unimpeded air flow): 34 dB (A)
Temperature range: –20°C to +70°C

Technical specifications DK 7980.148:
Rated operating voltage: 48 V (DC)
Power consumption: 7.7 W
Air throughput (unimpeded air flow): 184 m^3/h
Noise level (unimpeded air flow): 43 dB (A)
Temperature range: –20°C to +70°C

Dimensions W x H x D mm	Packs of	Model No. DK
119 x 119 x 38	1 set	**7980.000**
119 x 119 x 25	1 set	**7980.100**
119 x 119 x 25	1 set	**7980.148**

Supply includes:
Fan, including assembly parts and connection cable (0.61 m).

DC fan mounting plate



Cover plates for fan panels

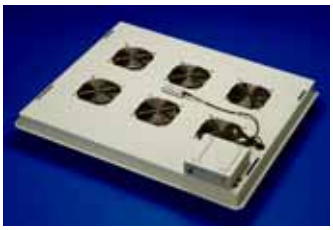
for FlatBox
To cover unused fan panels when using fans in the FlatBox.

Material:
Sheet steel

Surface finish:
Powder-coated in RAL 7035

Supply includes:
Assembly parts.

Packs of	Model No. DK
6	**7507.760**





Fan mounting plate DC

for TS

Exceptionally low-noise thanks to FCS speed control, fully fitted
Suitable for TS 8 enclosures with a raised roof (> 20 mm) or TS 8 roof plate, vented. The fan mounting plate may be used as an alternative to fan mounting plate 7988.035. It is installed from above. Cable entry is prepared in the rear section of the plate.
Not suitable for combination with 482.6 mm (19″) mounting frame.

Advantages of the DC fan mounting plate with FCS technology:

- Exceptionally low-noise thanks to speed control.
- All fans are individually monitored for failure.
- High air throughput thanks to DC technology (unimpeded air flow 6 x 175 m^3/h = 990 m^3/h).
- EMC compatibility.
- Temperature monitoring and control.
- High level of safety (low safety voltage with 24 V DC power supply).
- Visual and acoustic alarm messages, plus relay alarm output.
- Freely selectable installation location for the FCS control unit (included with the supply of the fan mounting plate, in 482.6 mm (19″) with 7320.440 or on the frame with 7320.450).
- Suitable for international use, thanks to wide-range power supply 100 – 240 V AC and socket to IEC 320.
- Pre-configured.
- Network-compatible via CMC-TC Processing Unit II 7320.100 (all relevant data such as temperature etc. are displayed in the web browser, or alarms are sent in the form of an SNMP trap).

For enclosures width mm	For enclosures depth mm	Number of DC fans	Model No. DK
800	800 900 1000	6	**7858.488**

Technical specifications:
Power supply rated voltage:
100 – 240 V AC, 50/60 Hz
Power supply rated current: Max. 1.5 A
Power supply secondary range: 24 V DC, 3 A
Temperature range: +5°C to +40°C
Total air throughput (unimpeded air flow):
6 x 175 m^3/h = 990 m^3/h

Technical specifications for one fan:
Rated voltage: 24 V DC
Rated current: Max. 0.28 A
Rated output: Max. 6.72 W
Air throughput (unimpeded air flow): 175 m^3/h
Speed: 2650 rpm
Noise level: Up to 45 dB (A)
at maximum speed activation

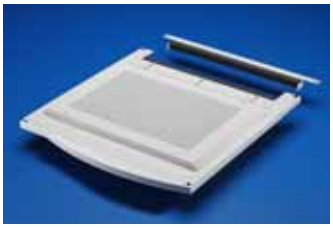
Also required:

Connection cable 230/115 V.
Example D version, Model No. 7200.210,
see page 818.

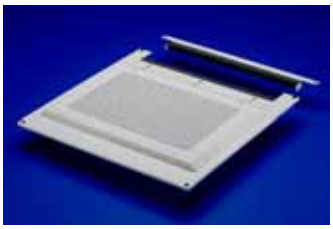
Accessories:

1 U mounting unit, Model No. 7320.440,
see page 821.
Mounting module, Model No. 7320.450,
see page 821.

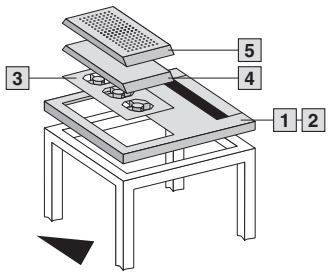
Note:
For more information on the FCS system,
see page 813.



1



2



Fan roof, modular, two-piece

for TS, FR(i)

The modular roof plate consists of individual components and can be configured for the ventilation of the enclosures in various ways.
The modules consist of:

Roof plate, two-piece with cut-out
For fan mounting and cable entry at the rear via a sliding angular bracket with rubber cable clamp strip. Replacing the existing roof plate. The two-piece design allows convenient retrofitting of cables at any time.

Cover plate
To cover the cut-out, optionally solid or vented options. The top-mounted cover plate may be raised for extra air throughput using the supplied spacers.

Fan insert
For active ventilation:
A fully pre-wired fan tray including 2.5 m connection cable, with two fan motors and additional cut-outs. The air throughput may be increased with a fan expansion kit.

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Technical specifications for one fan:
Rated operating voltage: 230 V
Power consumption: 15/14 W at 50/60 Hz
Air throughput (unimpeded air flow):
160/180 m^3/h at 50/60 Hz
Temperature range: –10°C to +55°C

Detailed drawing,
see page 1296.

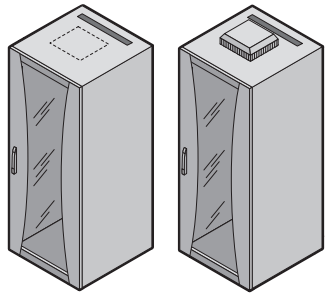
Accessories:

Fan expansion kit DK 7980.000,
see page 703.
Thermostat SK 3110.000,
see page 715.
Speed control SK 3120.000,
see page 716.

For enclosures		Model No. DK					Fan insert	
		Roof plate FR(i)	Roof plate TS	Cover plate				
Width mm	Depth mm	1 With cut-out	2 With cut-out	4 Solid	5 Vented	3 Fan insert	Fans pre-wired	Maximum no. of fans
600	600	**7856.366**[1)]	**7826.366**	**2102.180**[1)]	**2102.400**	**2102.320**	2	2
600	800	**7856.368**[1)]	**7826.368**	**2102.190**[1)]	**2102.410**	**2102.490**	2	6
600	900	–	**7826.369**	**2102.190**[1)]	**2102.410**	**2102.490**	2	6
600	1000	**7856.360**[1)]	**7826.360**	**2102.190**[1)]	**2102.410**	**2102.490**	2	6
600	1200	**7856.362**[1)]	**7826.362**	**2102.190**[1)]	**2102.410**	**2102.490**	2	6
800	600	–	**7826.486**	**7885.100**	**7885.200**	**7885.000**	2	3
800	800	**7856.388**[1)]	**7826.488**	**7886.100**	**7886.200**	**7886.000**	2	8
800	900	–	**7826.489**	**7886.100**	**7886.200**	**7886.000**	2	8
800	1000	**7856.380**[1)]	**7826.480**	**7886.100**	**7886.200**	**7886.000**	2	8
800	1200	–	**7826.382**	**7886.100**	**7886.200**	**7886.000**	2	8

[1)] Delivery times available on request.
Design panel FR(i) already included with the supply of the standard roof plate.





Fan unit, active

for TE

For active ventilation of the TE 7000. The fan unit is installed in the prepunched cut-out.
An additional fan may optionally be integrated.

Supply includes:
Fan unit including assembly parts, 2 fans, 1 thermostat and open connection cable.

Technical specifications for one fan:
Fan extension kit, 7980.000,
see page 703.

Technical specifications of thermostat:
Rated operating voltage: 250 V
Temperature range: +5°C to +55°C

For enclosures W x D mm	Number of pre-wired fans	Possible number of fans	Model No. TE
All dimensions	2	3	**7000.670**

Note:
Connection via junction box or country-specific connector.

Accessories:

Fan expansion kit,
see page 703.

Active kit

for TE

consisting of fan unit including thermostat, complete, wired ready for connection, socket strip (DK 7000.630) for up to 8 earthing pin plugs, version D and open connection cable (DK 7200.210).

Packs of	Model No. DK
1 set	**7000.680**

Fan cross member



Door-mounted fan

for server enclosures TS, TE

Specifically for installing in perforated doors.
The growing packaging density in data communications and network enclosures make active, direct ventilation of the enclosure indispensable. The door mounted fan, which is attached to the rear or front door, supports horizontal air routing via the servers and therefore facilitates faster heat dissipation from active components.

Technical specifications:
- Standard assembly with two fans.
- Air throughput, unimpeded air flow 600 m³/h.
- By adding two fan extension kits, the air throughput is increased to 1200 m³/h.
- The direction of air flow is easily reversed by rotating the fan.
- Several units may be positioned in a cascade arrangement.
- Simple mounting on the tubular door frame.

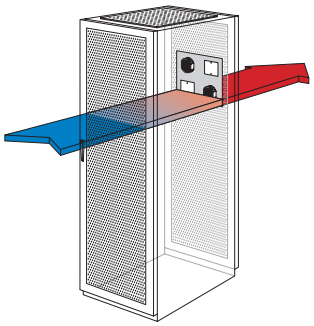
Supply includes:
Wired ready for connection with 2.5 m connection cable, including assembly parts.

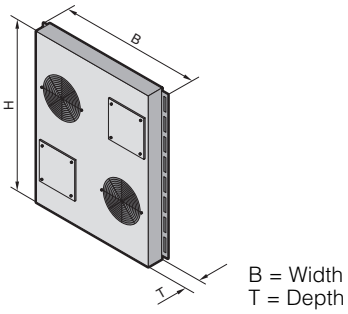
Accessories:

Fan expansion kit,
see page 703.

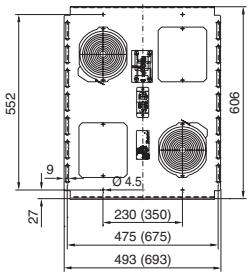
Note:
Only for mounting on the tubular door frame!

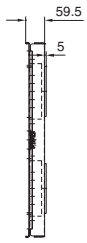
Door configuration for installation in 2 and 4-door ISP racks available on request.





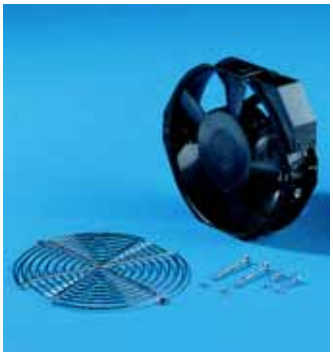
B = Width
T = Depth





Model No. SK	3165.624[1)]	3165.648[1)]	3165.615[1)]	3165.630[1)]	3165.824[1)]	3165.848[1)]	3165.815[1)]	3165.830[1)]	Page
Rated operating voltage V, Hz	24 (DC)	48 (DC)	115, 50/60	230, 50/60	24 (DC)	48 (DC)	115, 50/60	230, 50/60	
Air throughput (unimpeded air flow)	**600 m³/h**								
Power consumption for two fans	40 W	48 W	70 W/64 W	70 W/70 W	40 W	48 W	70 W/64 W	70 W/70 W	
Rated current of fan	1.5 A	1.0 A	0.76 A/0.72 A	0.38 A/0.36 A	1.5 A	1.0 A	0.76 A/0.72 A	0.38 A/0.36 A	
Dimensions in mm W H D	493 606 64.5				693 606 64.5				
For doors with width (mm)	600				800				
Noise level	55 dB (A)								
Temperature range	+20°C to +55°C								
Colour	RAL 7035								
Accessories									
Temperature indicator	3114.024	–	3114.115	3114.100	3114.024	–	3114.115	3114.100	714
Thermostat	3110.000								715

[1)] Delivery times on request.
Special voltages available on request. Technical modifications reserved.



Fan expansion kit

for door-mounted fan
To increase the air throughput of the door mounted fan.

To fit door-mounted fan	Model No. SK
SK 3165.624, SK 3165.824	**3165.024**
SK 3165.648, SK 3165.848	**3165.048**
SK 3165.615, SK 3165.815	**3165.115**
SK 3165.630, SK 3165.830	**3165.230**



Internal fan mounting panel

for TS

A fan unit integrated into the TS 8 twin wall for targeted air routing in the lower part of the enclosure. A second fan unit may optionally be mounted to reinforce air circulation. Optional air routing design may be achieved retrospectively by simply inserting or exchanging cover plates

Technical specifications:

- Rated operating voltage: 230 V, 50/60 Hz
- Air throughput (3 fans): 200/230 m^3/h (unimpeded air flow)
- Power consumption (3 fans): 57/54 W
- Rated current (3 fans) 0.36/0.33 A

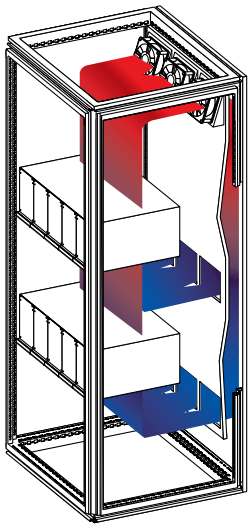
Supply includes:

1 pack =
1 internal fan mounting panel,
3 fan cross-members,
3 cover plates.

Property rights:

German patent no. 198 04 902
European patent no. 1 053 581
with validity for ES, FR, GB, IT
Australian patent no. 737 950
US patent no. 6,494,779

For TS enclosure		Height of internal panel mm	Model No. SK
Width mm	Height mm		
600	1800	1548	**3347.180**
600	2000	1748	**3347.200**
800	1800	1548	**3348.180**
800	2000	1748	**3348.200**





Fan cross member

for internal fan mounting panel

May be additionally installed to increase the air circulation.

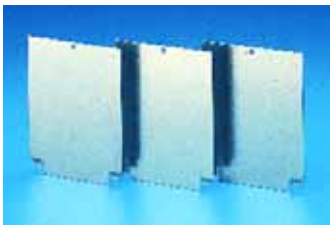
Technical specifications:

- Rated operating voltage: 230 V, 50/60 Hz
- Air throughput (3 fans): 200/230 m^3/h (unimpeded air flow)

Packs of	Model No. SK
3	**3349.100**

Property rights:

German patent no. 198 04 906
European patent no. 1 053 662
with validity for ES, FR, GB, IT
Australian patent no. 737 485
US patent no. 6,315,656
Chinese patent no. ZL 988 13378.4



Cover plates

for internal fan mounting panel

For optional design of the air routing.

Packs of	Model No. SK
3	**3349.300**



Enclosure internal fan

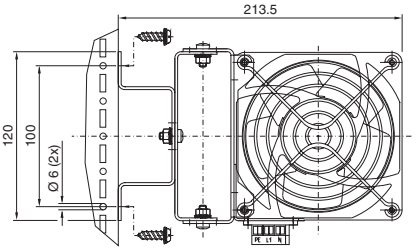
for TS

To prevent hotspots and support the air routing of active enclosure climate control components. Adjustable in two axes. Attached to the TS 8 frame section. Several fans may be cascaded using the quick-release clamping strip.

Supply includes:

Fully wired unit ready for connection with radial fan and lockable swivel device, as well as assembly parts.

Air throughput, unimpeded air flow	Power consumption W	Rated current A	Rated voltage V, Hz	Model No. SK
160 m^3/h	19.0/18.0	0.12/0.11	230, 50/60	**3108.100**
160 m^3/h	19.0/18.0	0.24/0.23	115, 50/60	**3108.115**
160 m^3/h	3.5	0.15	24 V (DC)	**3108.024**



Features



Condensation poses a particular risk for control electronics, especially with outdoor siting, but also indoors. Various different output categories ensure that the correct thermal output is always available. In this way, the total required thermal output can be distributed with complete accuracy within an enclosure.

Simple assembly and perfect control









Fast assembly
This is achieved with a screw or snap fastening on the mounting plate or 35 mm EN 50 022 support rails.

No condensation, and always the right temperature
The heater is controlled as required via a hygrostat or enclosure internal thermostat.

Maximum performance in the outdoor sector



Fully wired unit ready for connection
Compact power with 800 W thermal output.

19″ rack mount
For seamless integration into the 482.6 mm (19″) structure, with 3 thermal components and 3 fan units. This creates circulation, so that condensation is reliably avoided.

Benefits:

- Continuous thermal output of 10 to 1000 W
- Self-regulating PTC technology
- Quick-assembly system

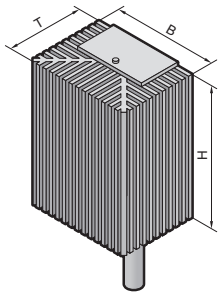
Important:

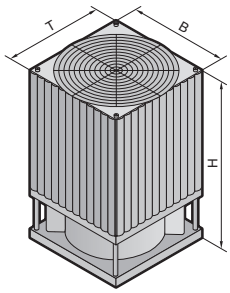
- For the correct temperature and to avoid condensation, use a thermostat or hygrostat, see page 715.
- The thermal output is increased with fans.
- Heaters should always be installed in an upright position. Leave a distance of 50 mm at the top and bottom to allow convection.
- Heat is distributed evenly in large enclosures by using several low-output heaters.

General remarks and calculation formulae can be found on our website: www.rittal.com

Continuous thermal output 10 – 300 W







B = Width
T = Depth

Supply includes:
Unit ready to install with permanently attached connection cable (0.3 m). SK 3102.000 with fitted fan including terminal strip.

Note:
- Thermostat SK 3110.000 (see accessories) is recommended for precise temperature control in the enclosure.
- In order to prevent condensation on assemblies, hygrostat SK 3118.000 (see accessories) is recommended to regulate heating.
- In larger enclosures, even heat distribution is best achieved by installing several low-output heaters.
- Installation in the enclosure is generally advisable, even when using heat exchangers and cooling units, in order to prevent condensation.

Approvals,
see page 88.

Detailed drawing,
see page 1296.

Performance diagrams,
available on the Internet.

Model No. SK		**3105.000**	**3106.000**	**3115.000**	**3116.000**	**3107.000**	**3107.000 + 3108.000**	**3102.000 (incl. fan)**	**3102.115 (incl. fan)**
Dimensions in mm	W	45	45	64	64	80	80	120	
	H	75	125	110	185	140	178	148	
	D	35	35	45	45	118	118	120	
Rated operating voltage V, Hz		110 – 240 V AC/DC					230 V, 50/60		115 V, 50/60
Continuous thermal output at T_u = 20°C		**10 W**	**20 W**	**30 W**	**50 W**	**130 W**	**200 W[1)]**	**300 W[1)]**	
Pre-fuse T		2.0 A		4.0 A					

Accessories	Packs of		Page
Thermostat	1	3110.000	715
Hygrostat	1	3118.000	715
Temperature indicator	1	3114.000	714
Axial fan	1	**3108.000[2)]**	

[1)] Output with fan.
[2)] Detailed drawing, see page 1297.
Special voltages available on request. We reserve the right to make technical modifications.



Enclosure heater, 800 W

Heater for free positioning inside the enclosure. Simply snap onto top-hat rails and screw fasten to the frame section or punched section with mounting flange. The heater may be operated in 400 W or 800 W output stages:
With protective grille in front of the air inlet and outlet.
Supplied without top-hat rail.

Technical specifications:
Rated operating voltage:
230 V AC 50/60 Hz
Power consumption: 400 W/800 W
Installation: In the enclosure
Dimensions:
Cross-section 82 x 110 mm
Length 150 mm
Rated current of fan: 6 A
Volumetric flow of fan: 35 m^3/h
Connection: Via terminal panel

Packs of	**Model No. CS**
1	**9769.080**

Accessories:

Support rail TS 35/15, see page 1002.
Thermostat, see page 715.

Accessories Page 710 **Configuration software** Page 1155

Accessories for System Climate Control

Features



Finding the perfect climate control solution is now even easier, with matching system accessories. Perfectly coordinated components adapt the climate control components superbly to your specific requirements.

Be it targeted air routing or precise control of the equipment, Rittal has the perfect solution for everything.



Air routing



Air duct system for TopTherm roof-mounted cooling unit and air/water heat exchanger
It is possible to route the cold air directly to specific areas of the enclosure using the air duct system.



Air diverter
For targeted, downward cold air routing in climate controlled enclosures, climate control doors and TopTherm wall-mounted cooling units.



Adaptor
For unhindered front air infeed when using rack-mounted cooling units in enclosures with front doors.



Control/regulation



Enclosure internal thermostat and hygrostat
Constant temperature and humidity to protect sensitive electronics.



Speed control
Temperature-dependent speed control to minimise noise and save energy in part-load operation.



SK Bus system
SK bus system with master/slave function to enable several cooling units to communicate with one another.



Installation/maintenance



Fast assembly
Easy installation with prepared TS roof plates.



Hose-proof hoods
For protection category IP 55 to EN 60 529/09.2000 with fan-and-filter units and outlet filters.



Filter mats
For use in cooling units under exterme conditions.





Air duct system

for TopTherm roof-mounted cooling units

It is possible to route the cold air directly to specific areas of the enclosure using the air duct system. The risk of “short circuits” in the air circulation due to self-ventilated installed devices is therefore eliminated.
The length of the shallow duct is 1500 mm, and it may be cut to any required length.

Material:
Flame-resistant plastic to DIN 4102/B1

Supply includes:
Shallow duct, compensating hose.

Accessories:

Deflector, 90°,
see page 711.
Stopper,
see page 712.

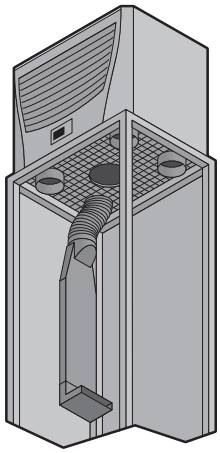
Also required:

TS support strips for securing the shallow duct in a vertical direction,
see page 997.

For cooling unit	Packs of	Model No. SK Air duct system
SK 3209. . . ./SK 3210. . . ./SK 3273. . . ./SK 3359. . . ./SK 3382. . . ./ SK 3383. . . ./SK 3384. . . ./SK 3385. . . .	1	**3286.870**
SK 3386. . . ./SK 3387. . . .	1	**3286.970**



Note:
Do not direct cold air straight at active components. When using the ducting system, the performance of the cooling unit may be reduced, depending on the application in question.





Deflector, 90°

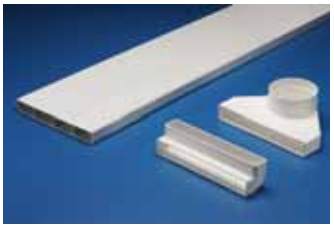
For air duct system

For targeted air deflection at the end of the shallow channel.

Material:
Flame-resistant plastic to DIN 4102/B1

Packs of	Model No. SK
1	**3286.990**

Air routing





Shallow air duct system

for TopTherm roof-mounted cooling units and air/water heat exchangers, to fit TS 8 enclosures from a width of 800 mm.
It is possible to route the cold air directly to specific areas of the enclosure using the air duct system. The risk of "short circuits" in the air circulation due to self-ventilated installed devices is therefore eliminated.
The length of the shallow duct is 1500 mm, and it may be cut to any required length.

Material:
Flame-resistant plastic to DIN 4102/B1

Supply includes:
Shallow duct, adaptor, compensating piece, deflector 90°.

Accessories:

Deflector, 90°,
see page 711.
Stopper,
see page 712.

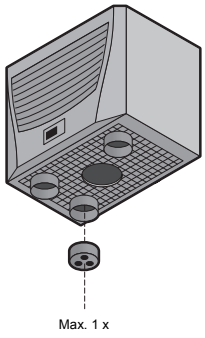
Also required:

Shallow duct extension SK 3286.860 to compensate for the enclosure width and height.
TS support strips for securing the shallow duct in a vertical direction,
see page 997.

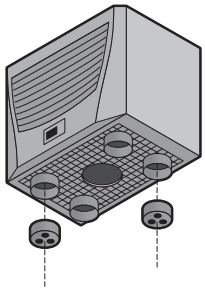
Note:
Do not direct cold air straight at active components. When using the ducting system, the performance of the cooling unit may be reduced, depending on the application in question.

For units	Packs of	Model No. SK Shallow air duct system
SK 3209. . . ./SK 3210. . . ./SK 3273. . . ./SK 3359. . . ./SK 3382. . . ./ SK 3383. . . ./SK 3384. . . ./SK 3385. . . .	1	**3286.850**

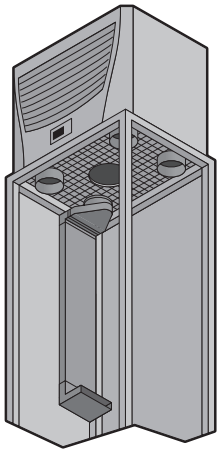
SK 3359. . . .
SK 3382. . . .
SK 3386. . . .
SK 3387. . . .

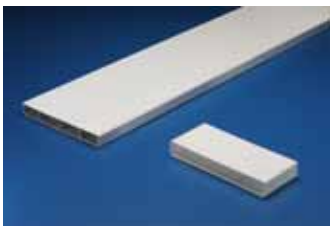


SK 3383. . . .
SK 3384. . . .
SK 3385. . . .



Note:
Max. no. of stoppers per unit.





Shallow duct extension

Extension kit for shallow air duct system SK 3286.850 for width, depth or height length extensions in TS 8 enclosures.

Material:
Flame-resistant plastic to DIN 4102/B1

Supply includes:
1500 mm shallow duct, connection piece.

Packs of	Model No. SK
1	**3286.860**



Cover bungs

for TopTherm roof-mounted cooling units
To cover unneeded cold air outlets in TopTherm roof-mounted cooling units.

Material:
Polyurethane foam

For units	Max. no. of stoppers per unit	Packs of	Model No. SK
SK 3359. . . ./SK 3382. . . .	1	2	**3286.780**
SK 3209. . . ./SK 3210. . . ./SK 3273. . . ./SK 3383. . . ./ SK 3384. . . ./SK 3385. . . .	2	2	**3286.880**
SK 3386. . . ./SK 3387. . . .	1	2	**3286.980**

Air routing

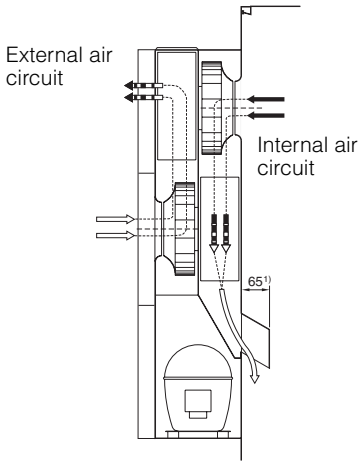


Air diverter

For use in climate controlled enclosures, climate control doors, climate control side panels and TopTherm wall-mounted cooling units.
For targeted air routing of the cold air in a downward direction.
Particularly well-suited for densely-packed electrical components in the lower section of the enclosure.

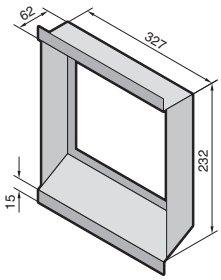
Material:
Sheet steel

For units	Model No. SK
SK 8607. . . ./SK 8687. . . . SK 3306. . . ./SK 3331. . . .	**3213.300**
SK 3304. . . ./SK 3305. . . .	**3213.310**
SK 3328. . . ./SK 3329. . . .	**3213.320**
SK 3332. . . .	**3213.330**[1)]



[1)] 115 mm for SK 3213.330





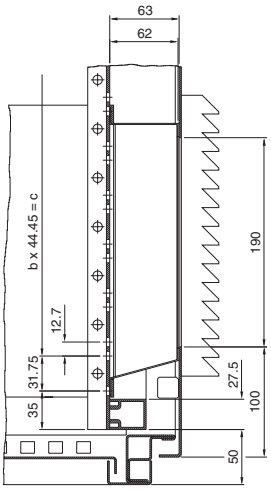
Adaptor

for front air infeed
When using rack-mounted cooling units SK 3278.134/SK 3292.134 in enclosures with front doors (sheet steel or acrylic), this adaptor must be used. It enables ambient air to be extracted unhindered from outside, which is essential for correct functioning of the cooling unit.

Material:
Sheet steel

Supply includes:
Adaptor, sealing gasket, foamed plastic gasket, assembly parts.

Packs of	Model No. SK
1	**3259.000**





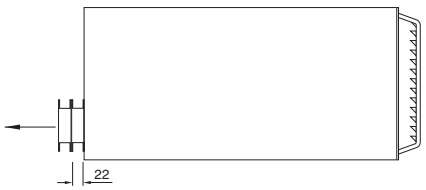
Air duct

for discharge of waste air
For use of rack-mounted cooling units SK 3292.134/SK 3278.134 in enclosures with a depth > 600 mm.
The heated ambient air is blown backwards out of the enclosure through the air duct. The air duct may be extended as required.

Material:
ABS plastic

Supply includes:
Air duct including attachment clamps.

Packs of	Model No. SK
10	**3220.000**



Air duct, may be extended to any length

Control/regulation



Digital enclosure internal temperature display and thermostat

For installing on the enclosure door or wall and in a cooling unit or heat exchanger.

Technical specifications:

- Small dimensions.
- Depth: 100 mm.
- The 3-digit 7-segment display is 13 mm high and clearly legible.
- Can be switched from °C/°F.
- The display can be used in a temperature range from +5°C to +70°C.
- Includes 1500 mm long NTC sensor.
- Two relay outputs as change-over contact and normally open contact (maximum contact load 230 V, 6 A).
- Freely selectable switching difference.
- The freely adjustable setpoint values can be adjusted via the membrane keyboard at the front.
  Setting range: +5°C to +55°C.
- Display and switching accuracy +/– 2 K.
- Mounting cut-out 68 x 33 mm.
- The minimum and maximum recorded temperatures are stored until it is next reset.

Rated operating voltage	Model No. SK
230 V (AC)	**3114.100**
115 V (AC)	**3114.115**[1)]
24 V (DC)	**3114.024**[1)]

[1)] Delivery times available on request.
Special requirements accommodated on request.



Digital enclosure internal temperature display and thermostat

Integrated into a patch panel 1 U.
Including cable attachment for connection cable and label holder.

Rated operating voltage:
230 V (AC)
Special voltages available on request.

Technical specifications:

- Small dimensions.
- Depth: 100 mm.
- The 3-digit 7-segment display is 13 mm high and clearly legible.
- Can be switched from °C/°F.
- The display can be used in a temperature range from +5°C to +70°C.
- Includes 1500 mm long NTC sensor.
- Two relay outputs as change-over contact and normally open contact (maximum contact load 230 V, 6 A).
- Freely selectable switching difference.
- The freely adjustable setpoint values can be adjusted via the membrane keyboard at the front.
  Setting range: +5°C to +55°C.
- Display and switching accuracy +/– 2 K.
- Mounting cut-out 68 x 33 mm.
- The minimum and maximum recorded temperatures are stored until it is next reset.

Supply includes:
Patch panel, temperature display and thermostat, identification strip.

Colour	Model No. DK
RAL 7035	**7109.035**



Enclosure internal thermostat

Especially suitable for controlling fan-and-filter units, heaters and heat exchangers, this thermostat can also be used as a signal generator for monitoring the enclosure internal temperature.

Technical specifications:

- Bi-metal sensor as a temperature-sensitive element with thermal feedback.
- Contact population: Single-pole change-over contact as a quick-break contact.
- Permissible contact load:
  Cat. 5 – 3 (heating)
  AC 10 (4)[1)] A,
  DC = 30 W
  cat 5 – 4 (cooling)
  AC 5 (4)[1)] A,
  DC = 30 W
  ([1)]) = inductive load at cos φ = 0.6
- Setting range: +5°C to +60°C
- Weight: Approx. 105 g
- Dimensions: 71 x 71 x 33.5 mm
- Switching difference: Approx. 1 K ± 0.8 K.

Rated operating voltage	Model No. SK
230/115/60/48/24 V (AC)	3110.000
60/48/24 V (DC)	

- A broad voltage spectrum i. e. just one model covers 24 to 230 V.
- Time-saving connection technique using a terminal strip with a screw connection from the outside.
- Flexible mounting on a vertical or horizontal 35 mm support rail to EN 50 022, and snap fastening in the TS/ES enclosure section using the supplied adaptor.



Hygrostat

The hygrostat switches on the heater and/or fan when a preset relative humidity in the enclosure is exceeded.
In this way, the relative humidity is raised above the dew point, and condensation on assemblies or electronic components is avoided.

Technical specifications:

- Contact population: Single-pole change-over contact as a quick-break contact.
- Permissible contact load:
  AC ~ 5 (0.2)[1)] A
  DC = max. 20 W
  ([1)]) = inductive load at cos φ = 0.6
- Setting range: 50 – 100 % relative humidity
- Weight: Approx. 100 g
- Dimensions: 71 x 71 x 33.5 mm
- Switching difference: Approx. 4 %

Rated operating voltage	Model No. SK
24 – 230 V (AC/DC)	3118.000

- A broad voltage spectrum i. e. just one model covers 24 to 230 V.
- Time-saving connection technique using a terminal strip with a screw connection from the outside.
- Flexible mounting on a vertical or horizontal 35 mm support rail to EN 50 022, and snap fastening in the TS/ES enclosure section using the supplied adaptor.



Bottom-mounted adaptor

for enclosure internal thermostat SK 3110.000 and hygrostat SK 3118.000

Bottom-mounted adaptor with mounting option for screwed cable glands, for targeted cable infeed from appropriate equipment such as SK fan-and-filter units and enclosure heaters. In conjunction with screwed cable glands, it is also suitable for use as strain relief.

Packs of	Model No. SK
1	3110.200

Control/regulation



Speed control

Temperature-dependent speed control for Rittal fan-and-filter units and air/air heat exchangers with a rated operating voltage of 230 V AC, for noise reduction and to save energy in part-load operation.

Technical specifications:

- For mounting on a 35 mm support rail DIN EN 50 022
- Dimensions (W x H x D): 94 x 57 x 180 mm
- Rated operating voltage: 230 V (AC)/115 V (AC)
- Setting range: +20°C to +55°C
- Phase cross-over with microcontroller
- Maximum fan output 250 W or 1.2 A at 230 V (AC)
- Maximum fan output 100 W or 1.2 A at 115 V (AC)

Rated operating voltage	Model No. SK
230 V (AC)	**3120.000**
115 V (AC)	**3120.115**[1)]

[1)] Delivery times available on request.

Supply includes:
Speed control, built into a PK enclosure 9512.100, NTC sensor, length 1.80 m.



Mounting adaptor

for speed control

The mounting adaptor enables direct attachment of the speed control SK 3120.000/.115 to the vertical frame sections of network enclosures.

Material:
Sheet steel, zinc-plated, passivated.

Packs of	Model No. DK
1 set	**7526.964**

Supply includes:
Mounting adaptor including assembly parts.



Interface card

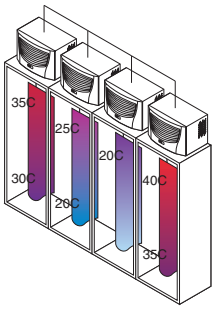
for TopTherm cooling units with Comfort controller

The interface card is an extension for TopTherm cooling units with Comfort controller. In this way it is possible, e. g. to monitor a master/slave combination of up to 10 cooling units. Control is via standardised interfaces: RS-232 (DB9) or RS-485, one PLC interface (DB9). RS-422 (RJ 45 jack) is the connection to the Rittal CMC-TC. Remote monitoring via TCP-IP, graphical interfaces. Connection of additional sensors for access control and monitoring is therefore possible. The extension card is built into a 1 U plastic housing.
A voltage supply of 24 V DC is needed. This may be supplied from the CMC-TC via a wide-range power pack DK 7320.425 (100 to 240 V AC, 50/60 Hz) or externally via a Kycon connector.

Packs of	Model No. SK
1	**3124.200**

Supply includes:
Interface card integrated into a plastic box
W x H x D (mm): 136 x 44 (1 U) x 129.
Serial SUB-D cable 1.5 m.

Note:
Networking and monitoring plan may be found on the relevant product page on the Internet, under “Download”.



SK bus system

The SK bus system facilitates communications between several enclosure cooling units, Rittal TopTherm .500/.510/.540, production date 05/02 or later, via a master/slave construction such as that required e.g. in complex bayed enclosure systems for optimum operating conditions.

Technical specifications:
The master/slave construction facilitates common activation and deactivation via door limit switches, parallel activation and deactivation via a temperature setpoint, and common collective fault signals and temperature logging, thereby eliminating the need for intricate wiring.

For	Model No. SK
TopTherm	**3124.100**
Climate controlled enclosures	**3124.000**

Supply includes:
3 m shielded interface cable, including operating manual on programming the cooling units.

Note:
$n_B = n_K - 1$
n_B: Number of order units (SK bus system)
n_K: Number of cooling units to be linked.

Networking and monitoring plan may be found on the relevant product page on the Internet, under “Download”.

Property rights:
German patent no. 196 15 469



Cable connection kit

for CS Outdoor cooling units
For simple connection of CS cooling units.
All cables preassembled with the corresponding connectors.
Length of cables approx. 2500 mm.

Supply includes:
1 set = 3 cables for AC, door operated switch and alarm connection.

Packs of	Model No. CS
1 set	**9765.105**



Cable connection kit

for CS Outdoor heat exchangers
For simple connection of CS heat exchangers.
All cables preassembled with the corresponding connectors.
Length of cables approx. 2500 mm.

Design	Model No. CS
3 cables for AC/DC and alarm connection	**9765.110**
2 cables for AC/DC and alarm connection	**9765.115**



Test adaptor

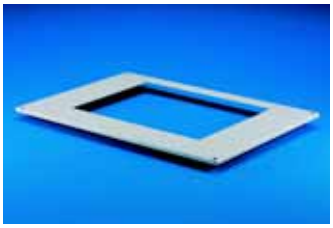
for CS Outdoor climate control equipment
The 9-pole sub-D interface allows testing of all CS climate control equipment. Alternatively supports automatic or manual test procedures.

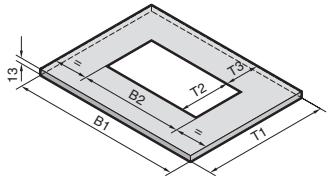
Supply includes:
1 set = Test adaptor including 2 m connection cable.

Note:
Not suitable for CS 9776.XXX.

Packs of	Model No. CS
1 set	**9765.050**

General





B = Width
T = Depth

Roof plates TS

For mounting:
- TopTherm roof-mounted cooling units
- TopTherm roof-mounted fan
- Vent attachment TS

The cut-outs in the roof plate are arranged in such a way that the TopTherm roof-mounted cooling units are positioned centrally on the enclosure.

Material:
Sheet steel

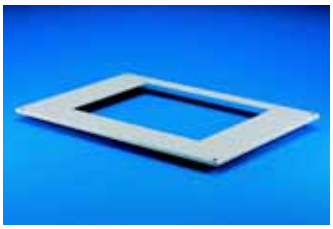
Supply includes:
Assembly parts.

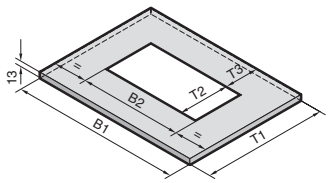
Colour:
RAL 7035

For enclosures W x D mm	Suitable for mounting TopTherm	Model No. TS
600 x 600	SK 3359. . . . SK 3382. . . . SK 3149.4 . . SK 3149.8 . .	**8801.300**[1]
800 x 600		**8801.320**
600 x 600	SK 3273.5. . SK 3383. . . . SK 3384. . . . SK 3385. . . . SK 3209. . . . SK 3220. . . . TS 8801.380	**8801.310**[1]
800 x 600		**8801.330**
1200 x 600		**8801.350**
800 x 800		**8801.920**
800 x 600		**8801.340**[2]
1200 x 600		**8801.360**

[1] When mounting the cooling units, there may be a collision with the eyebolts of the enclosure; for this reason, roof fastening screws are supplied loose with the roof plates.
[2] Attachment is from the inside using metal brackets and retaining clamps.

For mounting TopTherm	B1	B2	T1	T2	T3	Model No. TS
SK 3382. . . ./SK 3359. . . .	567.5	475	567.5	260	129.3	**8801.300**
	767.5	475	567.5	260	129.3	**8801.320**
SK 3209. . . ./SK 3383. . . ./SK 3210. . . ./ SK 3384. . . ./SK 3273. . . ./SK 3385. . . .	567.5	490	567.5	390	61.3	**8801.310**
	767.5	490	567.5	390	61.3	**8801.330**
	1167.5	490	567.5	390	61.3	**8801.350**
	767.5	490	767.5	390	161.3	**8801.920**
SK 3386. . . ./SK 3387. . . .	767.5	692	567.5	392	57.8	**8801.340**
	1167.5	692	567.5	392	57.8	**8801.360**





B = Width
T = Depth

Roof plates DK-TS

For mounting:
- TopTherm roof-mounted cooling units
- TopTherm air/water heat exchangers
- TopTherm roof-mounted fans
- Vent attachment TS

The cut-outs in the roof plate are arranged in such a way that the TopTherm roof-mounted cooling units are positioned centrally on the enclosure.

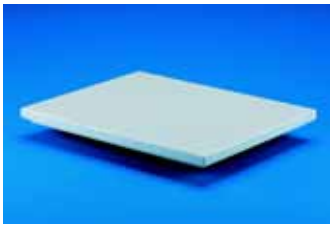
Material:
Sheet steel

Colour:
RAL 7035

For enclosures W x D mm	Suitable for mounting TopTherm	Model No. TS
600 x 900	SK 3209. . . . SK 3210. . . . SK 3272.5 . . SK 3383. . . . SK 3384. . . . SK 3385. . . .	**8801.410**
600 x 1000		**8801.420**
800 x 900		**8801.430**
800 x 1000		**8801.440**

For mounting TopTherm	B1 mm	B2 mm	T1 mm	T2 mm	T3 mm	Model No. TS
SK 3209. . . . SK 3210. . . . SK 3272.5 . . SK 3383. . . . SK 3384. . . . SK 3385. . . .	567.5	490	867.5	390	211.3	**8801.410**
	767.5	490	967.5	390	261.3	**8801.420**
	567.5	490	867.5	390	211.3	**8801.430**
	767.5	490	967.5	390	261.3	**8801.440**

General



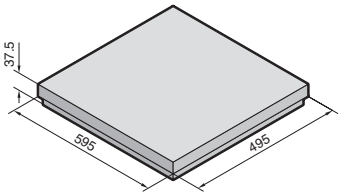
Vent attachment TS

For passive ventilation with labyrinthine air flow routing, to match the roofs for TopTherm roof-mounted cooling units.

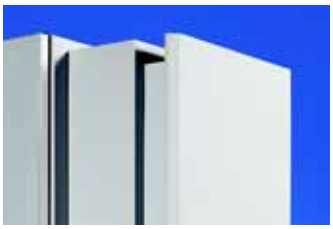
Colour:
RAL 7035

Protection category:
IP 43

Supply includes:
Assembly parts.



For roof plates with cut-out	Model No. TS
490 x 390 mm	**8801.380**



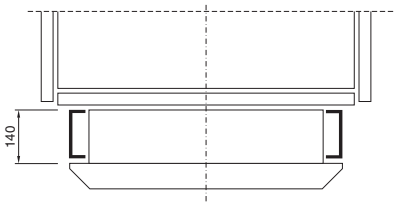
Trim frame

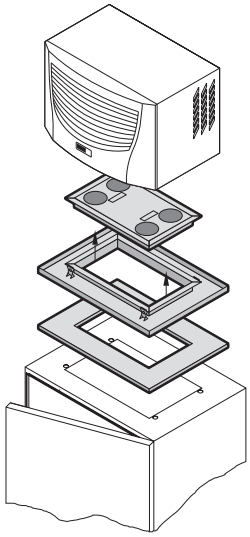
for slimline cooling units
Slimline cooling units can be internally or externally mounted on an enclosure door or wall. The trim frame presents a closed front for the cooling unit.

Material:
Sheet steel

Colour:
RAL 7035

For cooling unit	Model No. SK
SK 3366. . . . SK 3377. . . .	**3377.000**





Quick-change frame

for TopTherm roof-mounted cooling units
The quick-change frame is more than just an alternate frame. Together with the seal, the lower part of the frame is screw-fastened to the enclosure, making it possible to attach or remove the plug-in cooling unit to/from the top part of the quick-change frame. In case of servicing, this means minimal assembly times and hence minimal downtime. The quick-change frame offers effective protection against the ingress of oil into the enclosure in oily atmospheres, thanks to its integral drainage trough.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Quick-change frame, seal, quick-release fasteners.

For TopTherm cooling unit	Model No. SK
SK 3359. . . ./SK 3382. . . .	**3286.700**
SK 3209. . . ./SK 3210. . . . SK 3383. . . . SK 3384. . . . SK 3385. . . .	**3286.800**
SK 3386. . . . SK 3387. . . .	**3286.900**

Property rights:
German patent no. 41 10 323
French patent no. 2 675 317
GB patent no. 2 254 735

General



Electronic condensate evaporator

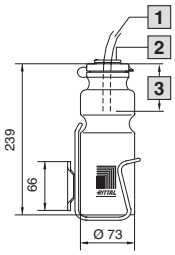
For external mounting on enclosures.
For use with all enclosure cooling units and air/water heat exchangers.
Evaporation performance:
[1] 2.4 l/d
[2] 4.2 l/d

Colour:
RAL 7035

Supply includes:
Electronic condensate evaporator, ready to connect.

Rated operating voltage	Model No. SK	
	for SK 3302/ SK 3303	for 400 mm wide cooling units
230 V, 50/60 Hz	**3301.560**[1]	**3301.570**[2]
115 V, 50/60 Hz	**3301.580**[1]	**3301.590**[2]

Detailed drawing,
see page 1297.



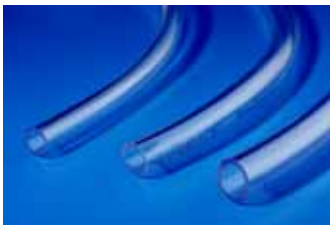
Condensate collecting bottle

For mounting on the enclosure.
For use with all enclosure cooling units and air/water heat exchangers.
Safety overflow at the side.
Capacity approximately 0.75 l.

1 Condensate discharge tube
2 Membrane grommet
3 Max. 70 mm

Packs of	Model No. SK
1	**3301.600**

Supply includes:
Condensate collecting bottle, bottle holder including assembly parts.



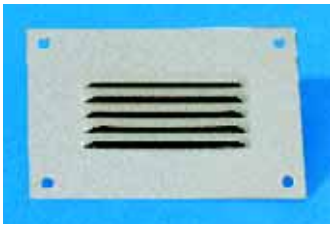
Condensate hose

For removing and forwarding condensate.
For connecting to enclosure cooling units.

Material:
PVC, transparent

Supply includes:
10 m hose.

For devices	Material thickness Ø	Model No. SK
SK 3302. . . ./SK 320.	8 x 1.5 mm	**3301.608**
SK 3303. . . ./SK 3361. . . .	10 x 1.5 mm	**3301.610**
SK 3273. . . ./SK 3304. . . ./ SK 3305. . . ./SK 3328. . . ./ SK 3329. . . ./SK 3332. . . ./ SK 3359. . . ./SK 3366. . . ./ SK 3377. . . ./SK 3382. . . ./ SK 3383. . . ./SK 3384. . . ./ SK 3385. . . ./SK 3386. . . ./ SK 3387. . . ./	12 x 2 mm	**3301.612**

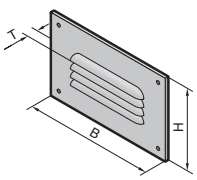


Integrated louvres

For ventilation by convection; easily retro-fitted using 4 screws.

Material:
Sheet steel

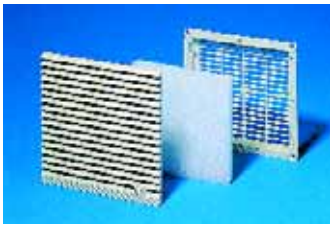
Colour:
RAL 7035



W (B) mm	H mm	D (T) mm	Packs of	Model No. SK
160	110	8	4	**2541.235**
210	100	8	4	**2542.235**
330	110	8	4	**2543.235**

To order in textured RAL 7032 please add extension .200 to the Model No., and for a primed version please add extension .300. Delivery times available on request.

Detailed drawing,
see page 1297.





Outlet filter

For ventilation by convection, an outlet filter can be installed in the upper and lower sections of the enclosure.

Material:
ABS,
material resistance to UL 94-V0.

Colour:
RAL 7035

Supply includes:
Outlet filter including filter mat.

Dimensions in mm	Model No. SK
116.5 x 22	**3321.207**
148.5 x 24.5	**3322.207**
204 x 30	**3323.207**
255 x 30	**3325.207**
323 x 30	**3326.207**

For RAL 7032, use order extension .200.

Note:
EMC version,
see page 694.

Accessories:

Spare filter mats,
see page 725.
Fine filter mats,
see page 725.





Hose-proof hoods

for fan-and-filter units/outlet filters
When the hose-proof hood is mounted above the fan-and-filter unit and outlet filter in conjunction with a fine filter mat, a protection category of IP 56 to EN 60 529/09.2000 is achieved.

Material:
Stainless steel

Protection category:
In conjunction with the fan-and-filter units/outlet filters, NEMA 3R + 12 is met.

For	Dimensions in mm	Model No. SK
SK 3321. . . .	150 x 260 x 40	**3321.800**[1)]
SK 3322. . . .	176 x 270 x 55	**3322.800**
SK 3323. . . .	233 x 410 x 55	**3323.800**
SK 3324. . . . SK 3325. . . .	282 x 500 x 85	**3324.800**
SK 3326. . . . SK 3327. . . .	350 x 560 x 110	**3326.800**

[1)] Delivery times available on request.



Front outlet grille 2 U

for centrifugal fans
This front outlet grille is required if a 482.6 mm (19″) cross-flow blower (SK 3144.000/ SK 3145.000) is used in the lower section of the electronic enclosure and the hot air is to be expelled to the outside from the upper section of the enclosure.
The design of the grille matches that of the intake grille in the cross-flow blower.
These grilles can also be used as simple inflow and outflow grilles with natural convection.

Packs of	Model No. SK
1	**3176.000**

Accessories:

Filter mat,
see page 723.

General



Filter holder

for roof ventilation
The use of a filter mat is required in order to increase the protection category of the roof vent (SK 3148.007).
Protection category IP 44 to EN 60 529/09.2000 is achieved.

Material:
Sheet steel

Supply includes:
Filter holder including filter mat.

W x H x D mm	Model No. SK
340 x 244 x 15	**3175.000**

Accessories:

Spare filter mat,
see page 725.



Overflow valve

Pressostat for use in the water cycle between the recooling system and the air/water heat exchanger. It prevents an increase in pump pressure in the recooling system against the closed magnetic valve of the air/water heat exchanger outside of the cooling cycle.

Material:
Brass

Design	Packs of	Model No. SK
1/2″_619_E bypass valve	1	**3301.900**
3/4″_619_E bypass valve	1	**3301.910**
1″_619_E bypass valve	1	**3301.920**



Flow regulator valve

For use with air/water heat exchangers, especially if more than one heat exchanger (n > 1) is used in the water cooling circuit. The correctly set valve then secures the same quantity of cooling medium. The valve is used for hydraulic balancing.

Material:
Brass

Design	Packs of	Model No. SK
3/4″ x 1/2″ for volumetric flow control	1	**3301.930**
3/4″ x 3/4″ for volumetric flow control	1	**3301.940**



Additives for recooling systems

Apart from the recooling systems for oil and emulsion, all other recooling systems are only suitable for the cooling of water or a water/glycol mixture. When filling the systems for the first time, water from the existing supply line is generally suitable, although care should be taken to ensure a consistent water quality.

However, as satisfactory results are only rarely achieved without water treatment, additives should always be added to the cooling water, irrespective of the installation site. As well as protecting against frost, these also serve to impair bacterial growth and achieve optimum corrosion protection.

Rifrost	Antifreeze/water mixture	Container	Model No. SK
Outdoor	1 : 2	10 l	**3301.950**
		25 l	**3301.955**
		200 l	**3301.957**[1)]
Standard	1 : 4	10 l	**3301.960**
		25 l	**3301.965**
		200 l	**3301.967**[1)]

[1)] Delivery times available on request.

Supply includes:
10 l canister, 25 l canister or 200 l barrel.

Filter technology for cooling units

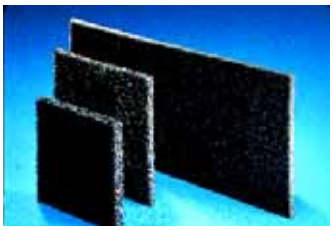


Filter mats for centrifugal fans

Made of chopped-fibre mat with a progressive structure. Temperature-resistant to 100°C, self-extinguishing category F1 to DIN 53 438.
Dust-laden air side: Open structure.
Clean air end: Closed structure.
Reliable filtering of virtually all types of dust from a particle size of 10 µm.

Material:
Chemical fibre

For centrifugal fans/front outlet grilles 2 U	W x H x D mm	Packs of	Model No. SK
SK 3144.000/SK 3145.000/SK 3176.000	425 x 85 x 8	5	**3177.000**



Filter mats for cooling units

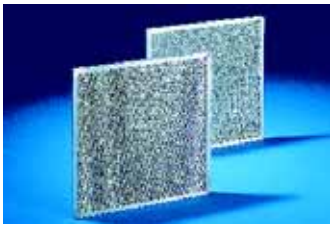
Rittal cooling units are low-maintenance and are supplied without filter mats. Filter mats may be used for extreme conditions.

Material:
Open-celled polyurethane foamed plastic with excellent physical and mechanical properties. Temperature-resistant from –40°C to +80°C. Thickness: 10 mm.

For TopTherm cooling units	W x H x D mm	Packs of	Model No. SK
SK 3302.300/SK 3302.310	190 x 95 x 10	3	**3286.110**
SK 3302. . . ./SK 3303. . . ./SK 3361. . . .	265 x 200 x 10	3	**3286.300**
SK 3304. . . ./SK 3305. . . ./SK 3328. . . ./SK 3329. . . ./ SK 3332. . . ./SK 3366. . . .	344 x 268 x 10	3	**3286.400**
SK 3273. . . ./SK 3382. . . ./SK 3383. . . ./SK 3384. . . ./ SK 3385. . . ./SK 3359. . . .	530 x 255 x 10	3	**3286.500**
SK 3386. . . ./SK 3387. . . .	720 x 300 x 10	3	**3286.600**
SK 3377. . . .	205 x 210 x 10	3	**3253.010**

For discontinued cooling units	W x H x D mm	Packs of	Model No. SK
SK 3296. . . ./SK 3272.100/SK 3290. . . ./SK 3280.100/ SK 3299. . . ./SK 3261. . . .	539 x 332 x 10	3	**3286.100**
SK 3265.100/SK 3266.100	270 x 332 x 10	3	**3267.100**
SK 3256. . . .	395 x 300 x 10	3	**3254.000**
SK 3293. . . ./SK 3281.100/SK 3298. . . ./SK 3279.100/ SK 3260. . . ./SK 3269. . . ./SK 3262.100/SK 3393. . . ./ SK 3381.100/SK 3391. . . .	334 x 313 x 10	3	**3294.100**
SK 3255. . . ./SK 3395. . . .	350 x 245 x 10	3	**3253.000**
SK 3394. . . .	315 x 200 x 10	3	**3285.000**
SK 3292.134/SK 3278.134	325 x 250 x 10	3	**3286.000**

Filter technology for cooling units



Metal filter for cooling units

Particularly when cooling units are used in dusty and damp environments, it is advisable to use washable metal filters.
If air or steam condenses on the metal surfaces, any particles that may be present will adhere to the metal and are easily washed out with water or grease-dissolving detergents.

Material:
Aluminium
Thickness: 10 mm

For TopTherm cooling units	W x H x D mm	Packs of	Model No. SK
SK 3302.300/SK 3302.310	190 x 95 x 10	1	**3286.120**
SK 3302.100/SK 3302.110/SK 3303. . . ./SK 3361. . . .	265 x 200 x 10	1	**3286.310**
SK 3304. . . ./SK 3305. . . ./SK 3328. . . ./SK 3329. . . ./ SK 3332. . . ./SK 3366. . . .	344 x 288 x 10	1	**3286.410**
SK 3273. . . ./SK 3382. . . ./SK 3383. . . ./SK 3384. . . ./ SK 3385. . . ./SK 3359. . . .	530 x 255 x 10	1	**3286.510**
SK 3386. . . ./SK 3387. . . .	720 x 300 x 10	1	**3286.610**
SK 3377. . . .	225 x 200 x 10	1	**3253.220**

For discontinued cooling units	W x H x D mm	Packs of	Model No. SK
SK 3296. . . ./SK 3272.100/SK 3290. . . ./SK 3280.100	520 x 290 x 10	1	**3286.210**
SK 3299. . . ./SK 3261. . . .	520 x 315 x 10	1	**3286.200**
SK 3265.100/SK 3266.100	265 x 320 x 10	1	**3267.200**
SK 3256. . . .	315 x 365 x 10	1	**3254.200**
SK 3293. . . ./SK 3281.100/SK 3298. . . ./SK 3279.100/ SK 3260. . . ./SK 3269. . . ./SK 3262.100/SK 3393. . . ./ SK 3381.100/SK 3391. . . .	300 x 328 x 10	1	**3294.200**
SK 3255. . . ./SK 3395. . . .	348 x 210 x 10	1	**3253.200**
SK 3394. . . .	375 x 415 x 10	1	**3285.200**

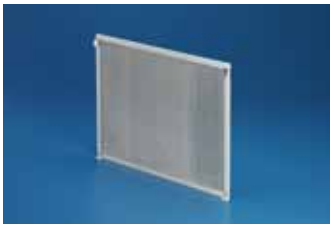
For TopTherm climate control door/section door	W x H x D mm	Packs of	Model No. SK
SK 3300.040/SK 3300.050/SK 3300.060/SK 3300.070/ SK 3300.080/SK 3300.090/SK 3300.110/SK 3300.120	425 x 78 x 10	1	**3284.210**

For climate control doors	W x H x D mm	Packs of	Model No. SK
SK 3306. . . ./SK 3307. . . ./SK 3309. . . ./SK 3310. . . .	424 x 100 x 10	1	**3284.200**
SK 3308. . . .	624 x 100 x 10	1	**3288.200**

For climate control side panel	W x H x D mm	Packs of	Model No. SK
SK 3331. . . .	380 x 150 x 10	1	**3289.200**

For Mini recooling systems	W x H x D mm	Packs of	Model No. SK
SK 3318.600/SK 3318.610/SK 3319.600/SK 3319.610	530 x 255 x 10	1	**3286.510**
SK 3320.600/SK 3334.600	500 x 558 x 8	1	**3286.520**
SK 3360. . . .	344 x 268 x 10	1	**3286.410**

Filter technology for cooling units



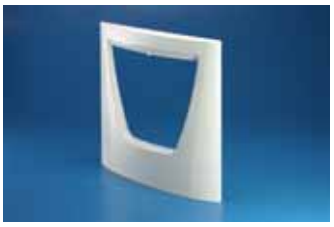
Lint screen

Especially for the use of cooling units and air/air heat exchangers where there is a high proportion of lint in the ambient air.

Material:
Stainless steel mesh

For devices	Packs of	Model No. SK
SK 3304. . . . /SK 3305. . . . / SK 3328. . . . /SK 3329. . . . / SK 3338. . . .	1	**3329.904**

Delivery times available on request.



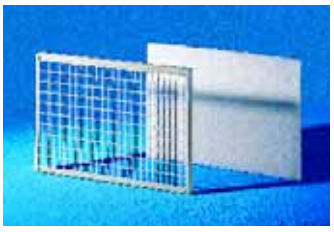
Louvred grille for lint screen

Material:
ABS

For	Packs of	Model No. SK
SK 3329.904	1	**3329.903**

Delivery times available on request.





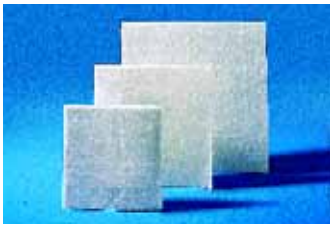
Spare filter mats for fan-and-filter units

Made of chopped-fibre mat with a progressive structure.
Temperature-resistant to 100°C, self-extinguishing category F1 to DIN 53 438.
Dust-laden air side: Open structure.
Clean air end: Closed structure.
Reliable filtering of virtually all types of dust from a particle size of 10 µm.

Material:
Chemical fibre

For fan-and-filter units	W x H x D mm	Packs of	Model No. SK
SK 3321. . . .	89 x 89 x 10	5	**3321.700**
SK 3322. . . .	120 x 120 x 12	5	**3322.700**
SK 3323. . . .	173 x 173 x 17	5	**3171.100**
SK 3324. . . /SK 3325. . . .	221 x 221 x 17	5	**3172.100**
SK 3326. . . .	289 x 289 x 17	5	**3173.100**
SK 3327. . . .	286 x 286 x 10	5	**3327.700**

For filter holders	W x H x D mm	Packs of	Model No. SK
SK 3175.000	338 x 242 x 20	3	**3174.000**



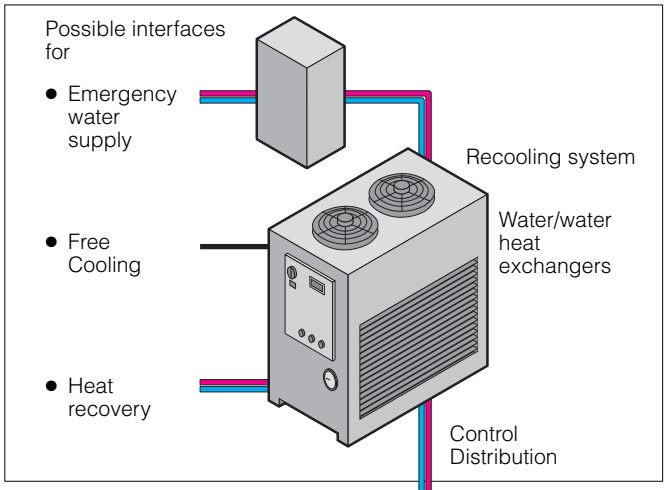
Fine filter mats for fan-and-filter units

Made of chopped-fibre mat with a progressive structure. Temperature-resistant to 100°C, self-extinguishing category F1 to DIN 53 438.
Dust-laden air side: Open structure.
Clean air end: Closed structure.
Reliable filtering of virtually all types of dust from a particle size of 10 µm.

Material:
Chemical fibre

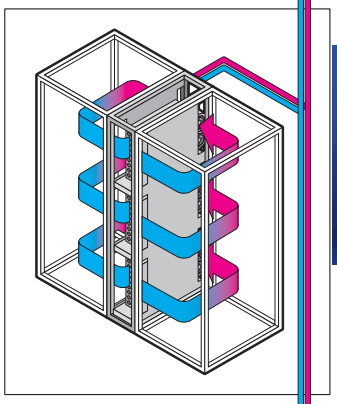
For fan-and-filter units/outlet filters	W x H x D mm	Packs of	Model No. SK
SK 3323. . . .	173 x 173 x 12	5	**3181.100**
SK 3324. . . /SK 3325. . . .	221 x 221 x 12	5	**3182.100**
SK 3326. . . /SK 3327. . . .	289 x 289 x 12	5	**3183.100**

Applications



Modular climate control concepts – to your specific requirements!

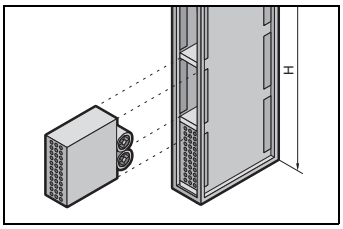
Rittal solves the problem of climate control for high heat losses per rack with liquid cooling components. Extremely high heat loads are dissipated from the enclosures, IT and server racks via air/water heat exchangers. Additionally, data centres may be extended in a temperature-neutral way.



LCP Standard



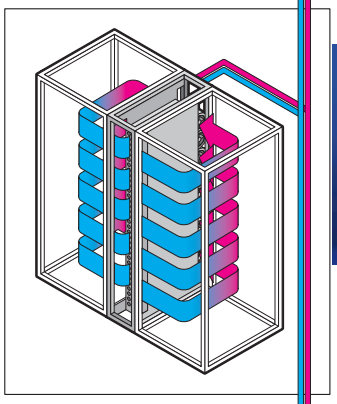
Bayable with TS 8 server racks
As the height and depth are identical, it may be bayed either in the middle of an enclosure suite or at the end, for added assembly and service friendliness.



Up to 20 kW useful cooling output
The useful cooling output is achieved with a modular configuration (1 – 3 modules) or with the complete LCP Plus systems. Active condensate management supports inlet temperatures from +6°C to +20°C.



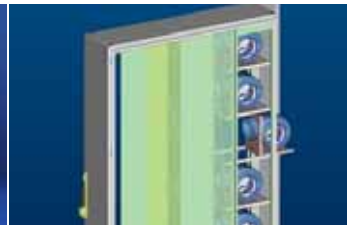
Safe insertion, simple assembly
The separation of cooling and rack prevents water from penetrating the server rack. A recooling system supplies the required cooling fluid.



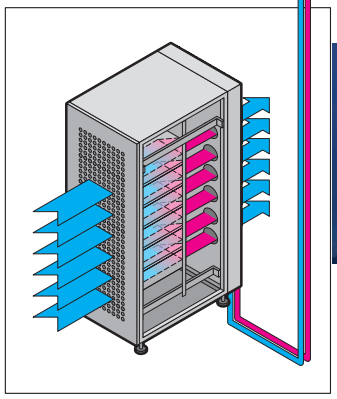
LCP Plus



Up to 40 kW useful cooling output
Useful cooling outputs of 30 kW (rack height 2000 mm) or 40 kW (rack height 2400 mm) are achieved with 6 or 8 high-performance fans, which may be exchanged without the need for tools. Overall, the LCP Plus has been optimised for use in data centres. Even with the enclosure doors open, e. g. during servicing work on servers, climate control is guaranteed. Ideal water supply: Rittal recooling systems.







LCP Extend



Installation while operational
Air/water heat exchanger (12 kW) to support climate control of the room.



Water connection variants
Water connection either at the bottom or top. Connection to the existing cooling circuit (optionally via water/water heat exchanger) or to recooling systems.

Rittal Liquid Cooling Package, useful cooling output 10 kW – 40 kW



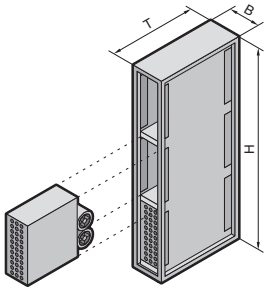
LCP Standard

Air/water heat exchanger, bayable with server racks based on TS 8 (H x D 2000 x 1000/1200 mm). The useful cooling output of max. 20 kW can be achieved by installing additional modules.

The separation of cooling and rack prevents water from penetrating the server rack, and makes it easy to assemble and very service-friendly.

LCPs are easy to handle (max. 2 m) and may be transported in lifts and through doors. The low weight means a minimal load area.

Technical specifications:
- Up to 20 kW useful cooling output
- Max. air volume 3000 m³/h
- TÜV GS, UL/CUL, DIN 3168



Width (B) 300 mm
Height (H) 2000 mm
Depth (T) 1000/1200 mm



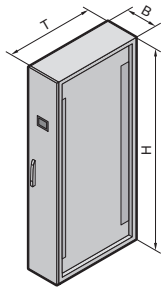
LCP Plus

Air/water heat exchanger, bayable with server racks based on TS 8 (H x D 2000 x 1200 mm). Complete unit with 30 kW useful cooling output.

The separation of cooling and rack prevents water from penetrating the server rack, and makes it easy to assemble and very service-friendly.

LCPs are easy to handle (max. 2 m) and may be transported in lifts and through doors. The low weight means a minimal load area.

Technical specifications:
- Up to 30 kW useful cooling output
- Max. air volume 4800 m³/h
- TÜV GS, UL/CUL, DIN 3168



Width (B) 300 mm
Height (H) 2000/2400 mm
Depth (T) 1200 mm

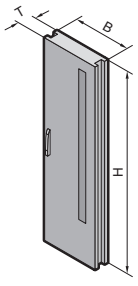


LCP Extend

Air/water heat exchanger for retrofitting to racks while operational.

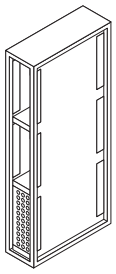
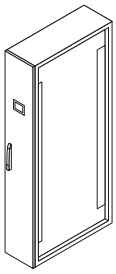
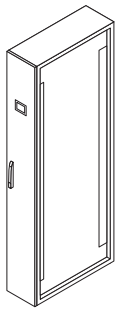
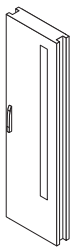
The stand-alone unit replaces the rear door (for other brands on request).

Technical specifications:
- Up to 12 kW useful cooling output
- Max. air volume 3000 m³/h
- Water connection either at the bottom or top



Width (B) 520 mm
Height (H) 1910 mm
Depth (T) 160 mm

Rittal Liquid Cooling Package, useful cooling output 10 kW – 40 kW

Model No. SK	**3301.230**[1]	**3301.420**	**3301.480**	**Available on request**	**3301.490**[1]
Description	LCP Standard		LCP Plus	LCP Plus	LCP Extend
Rated operating voltage	230, 50/60		230 V, 1~, 50/60 Hz 400 V, 3~, 50/60 Hz	230 V, 1~, 50/60 Hz 400 V, 3~, 50/60 Hz	230 V, 1~, 50/60 Hz 400 V, 3~, 50/60 Hz
Dimensions in mm W H D	300 2000 1000	300 2000 1200	300 2000 1200	300 2400 1200	520 1910 160
Usable U	42		42	51	42
Useful cooling output	**Up to 20 kW**		**Up to 30 kW**	**Up to 40 kW**	**12 kW**
Rated current	3.8 A/4.4 A		9.3 A/10.4 A	Technical specifications available on request.	2.4 A/3.0 A
Pre-fuse	10 A/10 A		16 A/16 A		6 A/6 A
Cooling medium	Water (for specifications see Internet)				Water (for specifications see Internet)
Water inlet temperature	+6°C to +20°C				+15°C
Permissible operating pressure p. max.	5 bar		5 bar		5 bar
Protection category to EN 60 529/09.2000	IP 30				IP 20
Duty cycle	100 %				100 %
Electrical connection	Connection cable		Connection cable		Connection cable
Water connection	$^3/_4$″ external thread		1″ external thread		$^3/_4$″ external thread
Weight	Max. 160 kg		230 kg		130 kg
Colour	RAL 7035				RAL 7035
Air throughput of fans	3000 m³/h		4800 m³/h		3000 m³/h
Temperature control	4-way fan control				Fan control
	Electronically controlled magnetic valve		2-way stop valve		
Additional module					
Useful cooling output max. 6.6 kW	3301.250		–	–	–

Special voltages and sizes available on request. Technical modifications reserved.
Rack heights of 2200 mm are achieved with an optional add-on cover.
[1] Also available with 115 V, Model No. **3301.210.**

To ensure proper use of LCP Standard and LCP Plus, the racks being cooled should be sealed against the ingress of ambient air wherever possible:

Description	Dimensions in mm		Packs of	**Model No.**
Side panel, screw-fastened	H x D	2000 x 1000	2	**8100.235**
Glazed door	W x H	600 x 2000	1	**8610.600**
		800 x 2000	1	**8610.800**
Sheet steel door, solid	W x H	600 x 2000	1	**7824.205**
		800 x 2000	1	**7824.207**
Divided partitioning plate for retrospective sealing in the base area	W x D	600 x 1000	1	**7825.300**
		800 x 1000	1	**7825.302**
Divided roof plate for cable entry	W x D	600 x 1000	1	**7826.605**[1]
		800 x 1000	1	**7826.805**[1]

[1] Retrospective installation is not possible.

Other accessories:
Recooling system,
see page 656.

Quick-release fastener,
see page 730.

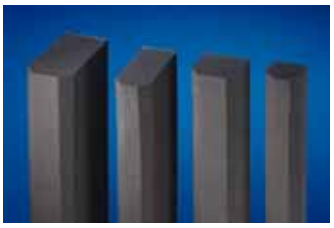
Base/plinth,
see page 892.

Service,
available on request.

Water/water heat exchanger,
available on request.

Accessories Page 710 **Recooling systems** From page 656 **Server enclosures** From page 774

Accessories for Rittal Liquid Cooling Package



Vertical shielding

To block the airflow on the left and right of the 482.6 mm (19″) level.
Length: 1900 mm, self-adhesive on one side.

Material:
Cellular PU foam, flame-inhibiting to UL 94 (HF1)

For sealing between	For enclosure width mm	Model No. SK
Side panel and 482.6 mm (19″) level	600	**3301.380**
	800	**3301.390**
LCP and 482.6 mm (19″) level	600	**3301.370**
	800	**3301.320**

Packs of 1

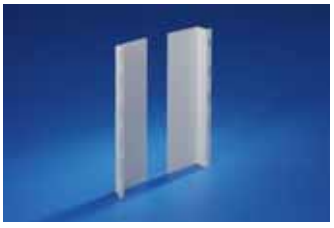


Horizontal shielding

Allows horizontal shielding of the airflow with a partially configured 482.6 mm (19″) rack.

Material:
Sheet steel, spray-finished in RAL 7035

For enclosure width mm	Packs of	Model No. SK
600	1	**3301.330**
800	1	**3301.340**



Covers

For sealing air inlet and outlet openings of the LCP that are not required.

Material:
Sheet steel, spray-finished in RAL 7035

Packs of	Model No. SK
2	**3301.310**



Vent valve

For effective cooling of individual LCP modules (SK 3301.250). With quick-release system for simple installation in the water inlet of the LCP, including stop valve.

Packs of	Model No. SK
1	**3301.400**

Accessories for Rittal Liquid Cooling Package



Connection hose

1 m long, flexible connection hose, may be shortened, including union nuts on both sides for connecting the LCP to existing pipe work.

For LCP	Thread	Model No. SK
SK 3301.230/.420	3/4″	**3301.350**
SK 3301.480	1″	**3301.351**

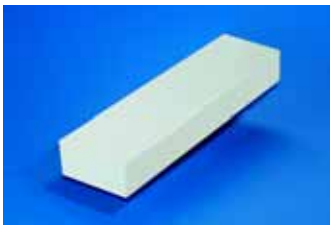
Packs of 2



Quick-release fastener

The shut-off quick-release fasteners on both sides facilitate easy disconnection of the LCP to the existing pipe work (3/4″ external thread) and connection hose SK 3301.350.

Packs of	Model No. SK
1 connector 1 coupling	**3301.360**



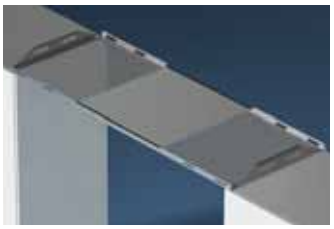
Add-on cover

For height compensation with 2200 mm high racks in conjunction with the LCP (H = 2000 mm).

Material:
Sheet steel, spray-finished in RAL 7035

For LCP	Model No. SK
SK 3301.210 SK 3301.230	**3301.221**
SK 3301.420 SK 3301.480	**3301.421**

Delivery times available on request.



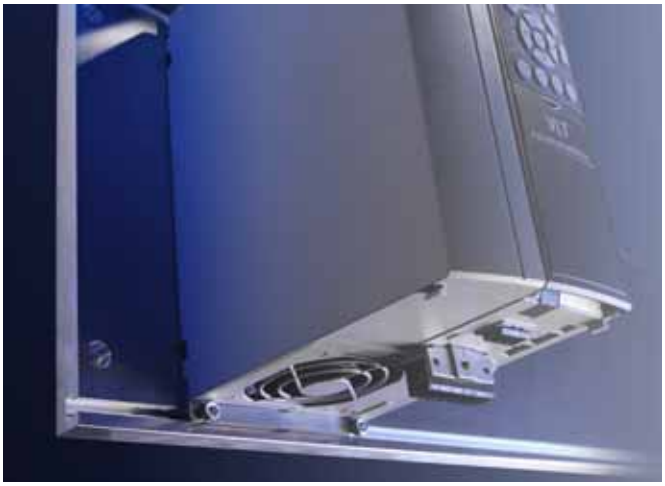
Aisle cover

for server racks

This aisle cover is used to cover the “cold aisle” between two server racks in a data centre. This serves to increase the effectiveness of the hot aisle/cold aisle cooling method. The expelled cold air is no longer able to escape upwards into the room, and is prevented from mixing with existing warm air. In this way, the cold airflow is available to the active 482.6 mm (19″) installed equipment without restriction. The aisle cover is extendible for aisle widths up to a maximum of 1.80 m.

For server racks	Packs of	Model No. SK
600 mm wide	1	**3301.430**
800 mm wide	1	**3301.440**

Features

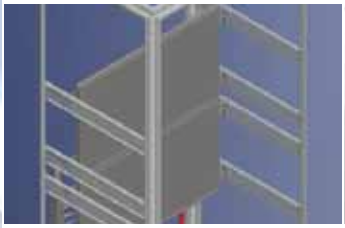


Power electronic components can be cooled particularly effectively and directly using the liquid cooled DCP mounting plate. Heat losses are cleverly dissipated from the enclosure or housing without compromising the high enclosure protection category in any way. Furthermore, liquid cooling is both quiet and 1000 times more efficient than heat dissipation via air.

The Rittal DCP Cold Plate has received type-tested certification from the TÜV inspection authority and is approved for pressures up to 10 bar.



User benefits



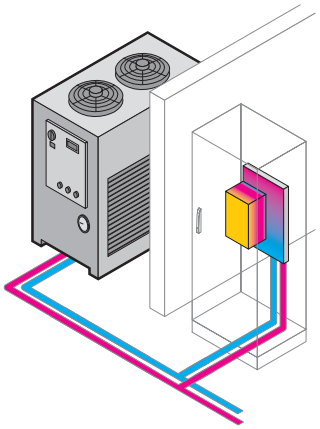
Flexible installation
Height and depth-variable mounting positions thanks to compatibility with the TS 8 system punchings.



Secure construction
Fluid distributor with fast-action vent valve.

Benefits:

- High surface quality (Ra = 1.2 µm) to reduce thermal resistance
- No vibrations from compressors and fans
- Ideal for precision machine tools
- No noise generation
- No top-mounted parts on the enclosure
- Enclosure may be installed in the machine base and in niches
- The protection category of the enclosure is preserved
- Mounting surface on both sides may be used as a contact surface for heat dissipation
- Space-saving configuration of electronic components in the enclosure



Application of the complete system:
DCP with recooling system with optional, ambient temperature control to avoid condensation.



Fastening system



Attachment directly in the T-slot
Direct and fast mounting using sliding nuts for components with suitable dimensions. Direct earthing or equipotential bonding points are provided on the Cold Plate.



Attachment with variable clamping system
Permitting fast mechanical installation without drilling, independently of the original attachment points, on components of a wide variety of models and makes.



Attachment with tapped holes
Power electronics can be mounted at any position over the whole surface by drilling tapped holes up to max. 12 mm in depth.

Cold Plate



Front



Rear

Cold Plate without T-slot

Liquid-cooled partial mounting plate with drilling surface
Whole surface can be used by the customer for own tapped holes (blind holes) to a maximum drilling depth of 12 mm.

Reverse:
Pressed-in copper or stainless steel tubes, dependent on the application, in closed recooling systems or existing (open) water circuit. Cooling water connection: G 1/4″.

Supply includes:
Mounting accessories for system integration into TS 8.

Accessories:

Accessories for fluid distribution connection, see page 733.

TS punched section with mounting flange 17 x 73 mm for the outer mounting level, see page 1023.

Recooling systems for closed cooling circuits, see from page 656.

Further technical information is available at www.rittal.com/dcp.

For installation in		Dimensions in mm	Material	Output[1]	Packs of	Model No. DCP
Enclosure width mm	Enclosure depth (side) mm					
600	600	499 x 399 x 25	CU	2500 W	1	**8616.610**
600	600	499 x 399 x 25	VA	2500 W	1	**8616.630**
800	800	699 x 399 x 25	CU	3000 W	1	**8616.810**
800	800	699 x 399 x 25	VA	3000 W	1	**8616.830**
1000	1000	899 x 399 x 25	CU	5000 W	1	**8616.010**
1000	1000	899 x 399 x 25	VA	5000 W	1	**8616.030**
1200	–	1099 x 399 x 25	CU	6000 W	1	**8616.210**
1200	–	1099 x 399 x 25	VA	6000 W	1	**8616.230**

[1] With 25°C fluid inlet temperature, T_u = 40°C and DCP surface temperature ≈ 40°C



Front



Rear

Cold Plate with T-slot

Liquid-cooled partial mounting plate for fastening with a variable clamping system
Fast mounting of converters with system fastening and additional possibility for tapped holes (blind holes) to a maximum drilling depth of 8 mm. Average T-channel spacing: 378 mm.

Rear:
Pressed-in copper or stainless steel tubes, dependent on the application, in closed recooling systems or existing (open) water infrastructure. Cooling water connection: G 1/4″.

Supply includes:
Mounting accessories for system integration into TS 8.

Accessories:

Accessories for fluid distribution connection, see page 733.

TS punched section with mounting flange 17 x 73 mm for the outer mounting level, see page 1023.

Recooling systems for closed cooling circuits, see from page 656.

Further technical information is available at www.rittal.com/dcp.

For installation in		Dimensions in mm	Material	Output[1]	Packs of	Model No. DCP
Enclosure width mm	Enclosure depth (side) mm					
600	600	499 x 399 x 20	CU	2500 W	1	**8616.600**
600	600	499 x 399 x 20	VA	2500 W	1	**8616.620**
800	800	699 x 399 x 20	CU	3000 W	1	**8616.800**
800	800	699 x 399 x 20	VA	3000 W	1	**8616.820**
1000	1000	899 x 399 x 20	CU	5000 W	1	**8616.000**
1000	1000	899 x 399 x 20	VA	5000 W	1	**8616.020**
1200	–	1099 x 399 x 20	CU	6000 W	1	**8616.200**
1200	–	1099 x 399 x 20	VA	6000 W	1	**8616.220**

[1] With 25°C fluid inlet temperature, T_u = 40°C and DCP surface temperature ≈ 40°C

Cold Plate/accessories





Cold Plate for frequency converters

Manufacturer-specific

Siemens SINAMICS S120 series
For the design of SINAMICS drive modules in the S120 series, please contact your local Siemens agent.

Danfoss frequency converters VLT® Automation Drive FC300 of enclosure sizes
A2 (0.37 – 4 kW/380 – 500 V)
A3 (5.5 – 7.5 kW/380 – 500 V)
with a channel spacing of 257 mm may be used.

For installation in		Dimensions in mm	Material	Packs of	Model No. DCP
Enclosure width mm	Enclosure depth mm				
Siemens SINAMICS S120					
600	600	499 x 449 x 20	CU	1	**8616.640**
600	600	499 x 449 x 20	VA	1	**8616.641**
800	800	699 x 449 x 20	CU	1	**8616.840**
800	800	699 x 449 x 20	VA	1	**8616.841**
Danfoss VLT® Automation Drive FC300					
600	600	499 x 299 x 20	CU	1	**8616.650**
600	600	499 x 299 x 20	VA	1	**8616.651**
800	800	699 x 299 x 20	CU	1	**8616.850**
800	800	699 x 299 x 20	VA	1	**8616.851**

Special sizes available on request. Reverse: Pressed-in copper or stainless steel tubes, dependent on the application, in closed recooling systems or existing (open) water infrastructure. Cooling water connection: G $^{1}/_{4}$″.



System attachment

for frequency converters
For mounting frequency converters on the Cold Plate.

Supply includes:
Wire clamp system, T-slot blocks.

For the attachment of frequency converters	Packs of	Model No. DCP
with all-round clamping surface	1	**8616.700**
with side clamping surfaces	1	**8616.710**
with clamping surfaces top and bottom	1	**8616.720**



Fluid distribution manifold

in stainless steel
For the connection of up to 4 Cold Plate units.

Supply includes:
2 fluid distributors (inlet and return),
screw plugs G1/4″, G3/8″,
connector sleeves G1/2″,
including seals.

Packs of	Model No. DCP
1 set	**8616.750**

Accessories:

Flex hose, see page 733,
quick-action vent valve, see page 734,
temperature sensor, see page 734.



Direct fluid connection

For connection of the Cold Plate through the rear or side panel of the enclosure.

Supply includes:
2 connector sleeves G1/2″,
2 mini stop valves G1/2″,
2 reducers G1/2″ – G1/4″,
including seals.

Packs of	Model No. DCP
1 set	**8616.751**

Accessories:

Flex hose, see page 733,
double-nipple coupling, see page 734.



Flexible hose

For connection of the Cold Plate to a fluid distribution manifold or direct fluid connection.

Supply includes:
2 flexible hoses G1/4″ with stainless steel braid, including seals.

Packs of	Length mm	Model No. DCP
1 set	500	**8616.760**
1 set	1000	**8616.761**

Accessories:

Elbow coupling, see page 734

Accessories



Quick-action vent valve

To vent the complete Direct Cooling Package system.
Easily mounted on the fluid distributor.

Supply includes:
Quick-action vent valve G3/8″,
including seal.

Packs of	Model No. DCP
1	**8616.762**



Elbow coupling

For horizontal or vertical connection of the Cold Plate.

Supply includes:
4 L-form 90° fittings G1/4″,
seals.

Packs of	Model No. DCP
1 set	**8616.763**

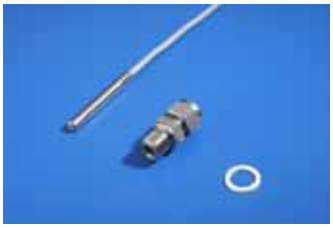


Double-nipple coupling

For connection of the flexible hose to the fluid distribution manifold.

Supply includes:
4 double-nipple fittings G1/4″,
seals.

Packs of	Model No. DCP
1 set	**8616.764**



Temperature sensor TF25

For monitoring of the inlet and return temperatures in the fluid distributor.

Supply includes:
Temperature sensor TF25 (NTC, 10 kΩ),
stainless steel cable gland G1/4″,
including seal.

Packs of	Model No. DCP
1	**8616.765**

Other versions available on request.



Splash protection, optional

Splash protection comprising side panels, front panel and base drain tray can be supplied as an option.







Rittal DCP CoolingUnit

The CoolingUnit is available in two variants. As a stand-alone unit with press-fitted cooler tubes, or as an add-on in conjunction with a Rittal Cold Plate. The optional housing for the cooler ensures even more efficient air routing and thus reliable cooling of the air inside the enclosure.

Function principle:
The warm air inside the enclosure is drawn up by a powerful radial fan and passed through the cooler.

The unit can be operated either indirectly, i. e. mounted on a Rittal Cold Plate, or as a fully autonomous system with its own cooling water circulation. The latter supports direct mounting on the mounting plate in the immediate vicinity of major heat loss sources. In this variant, additional copper or stainless steel tubes are press-fitted into the cooler.

Convincing arguments:
- Direct cooling of power electronics on a Rittal Cold Plate and lowering of the enclosure internal temperature.
- Decentralised cooling of high-performance power electronics
- No change to the existing protection category of the enclosure

DCP CoolingUnit – AddOn

Power	Dimensions W x H x D mm	Packs of	Model No. DCP
400 W	252 x 572 x 205	1	**8616.500**
800 W	252 x 572 x 205[1)]	1	**8616.510**

[1)] Space required behind the DCP = 110 mm
Delivery times available on request.

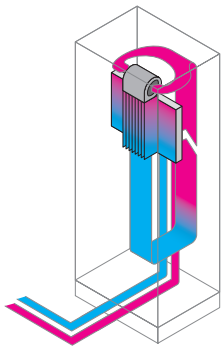
DCP CoolingUnit – Standalone

Power	Dimensions W x H x D mm	Packs of	Model No. DCP
500 W	252 x 572 x 205	1	**8616.550**
900 W	252 x 572 x 205	1	**8616.560**

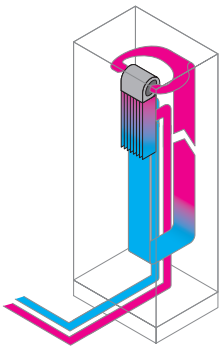
CoolingUnit as stand-alone with its own fluid connection (2 x G1/4″).
Delivery times available on request.

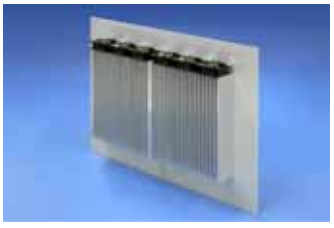
Further technical information is available at www.rittal.com/dcp.

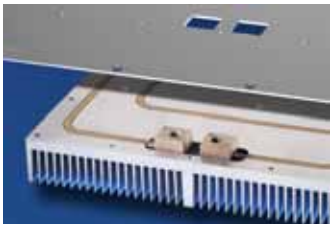
Add-on



Stand-alone







Rittal DCP PanelCooling

This integrated PanelCooling solution was developed by Rittal for optimum, space-saving cooling of operating housings. Heat losses of approx. 150 – 350 W can be dissipated without the need for external add-ons. The high protection category of the enclosure is retained, thanks to the fluid connection at the rear of the panel.

Function principle:
The fan unit with six individual fans ensures optimum air circulation at the cooler for efficient dissipation of the heat losses arising in the housing. The unit can be connected either to an existing coolant circuit or else to an external recooling system.

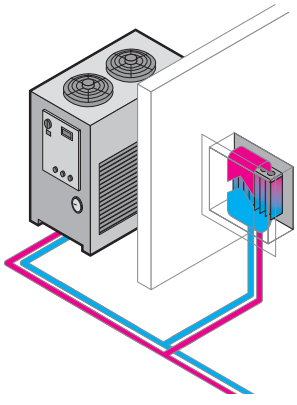
Convincing arguments:
- High performance with minimal space requirements
- No reduction of the original protection category
- No external add-ons necessary

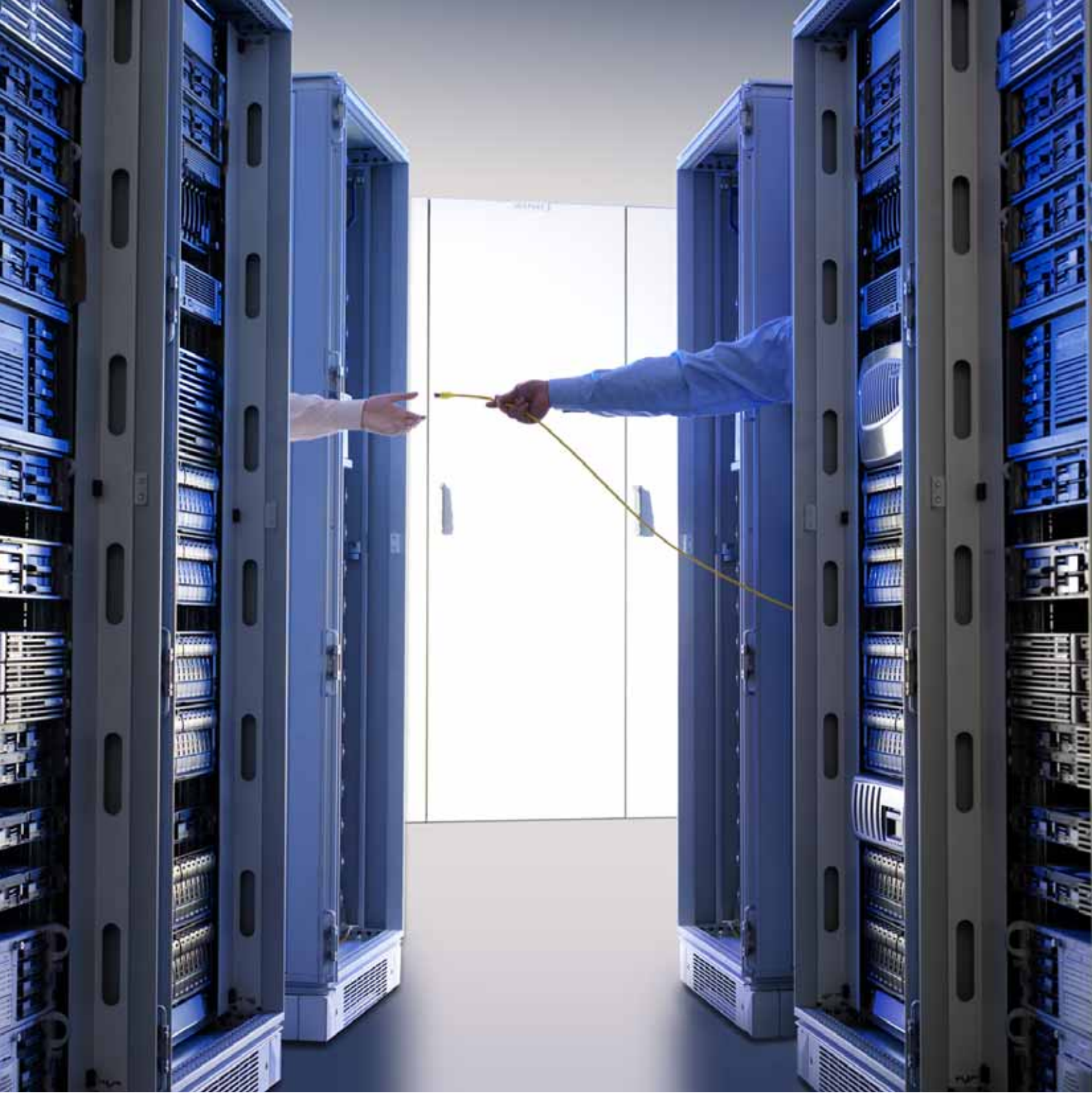
Operating housing cooling e. g. for the Comfort Panel and for special enclosures such as stainless steel enclosures for the food and consumables industry.
Cooling units may be ordered for heat losses of up to 350 W on a project-specific basis.

Power	Dimensions W x H x D mm	Packs of	Model No. DCP
150 W	300 x 250 x 50	1	**8616.300**
350 W	400 x 300 x 60	1	**8616.310**

Delivery times available on request.

Further technical information is available at www.rittal.com/dcp.





Permanent availability of your IT systems is undoubtedly crucial. This is your company's heartbeat, it is important to ensure stable conditions for your complex system architecture. Rittal combines the key elementary infrastructure components to create an extremely variable, and above all secure system:

Networking, Rack, Power, Cooling, Security,

Monitoring & Remote Management.

With Rittal, a high level of IT availability is guaranteed.

RITTAL®

IT Solutions

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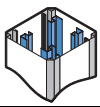
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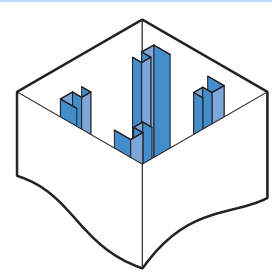
System comparison of enclosures

Plan with the best network enclosure for your requirements!

Customers' requirements of IT enclosures can be extremely varied. With this in mind, Rittal offers **three different system platforms with outstanding design features** for a variety of applications.

Rittal system comparison		TE 7000	TS 8	FR(i)
One platform for all requirements in the IT market				
Load capacity				
up to 400/700 kg		■■■	■■■	■■■
up to 1000 kg			■■■	■■■
Baying				
Side to side		■■■	■■■	■■■
In all levels			■■■	
Climate control				
Fans		■■■	■■■	■■■
Climate control device			■■■	
Air/water heat exchanger			■■■	
CPU liquid cooling			■■■	■■■
Cabling				
Cable space		■■■	■■	■■
Cable management		■■■	■■■	■■■
Lock system				
2-point		■■■	■■■	■■■
4-point			■■■	
Security				
Access control		■■■	■■■	■■■
Thermal management		■■■	■■■	■■■
Dismantling		■■■		■■
Interior installation				
Depth-variable		■■■	■■■	■■■
Partial installation			■■■	■
2-level principle			■■■	■
Aesthetics		■■	■■	■■■
Standards				
IEC 60 297-1-2		■■■	■■■	■■■
Protection categories	IP 20	■■	■■■	■■■
	IP 40		■■■	■■■
	IP 55		■■■	

TE 7000







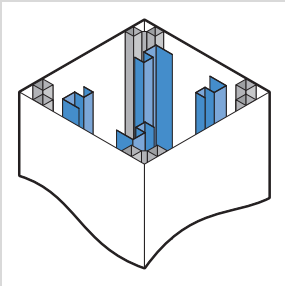
TE 7000 – Top efficiency, the global IT rack
Ready to use for network distribution. As little as possible, as much as necessary – the rack for rational, cost-effective cabling.

- At its core is the robust frame comprising two 482.6 mm (19″) mounting levels.
- Two-point locking rod, optionally with Ergoform-S handle system.
- System accessories ensure fast, versatile configuration.

Network enclosures TE 7000, see page 740.

System comparison of enclosures

Rittal TS 8





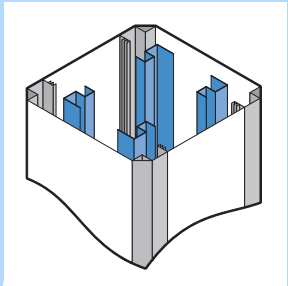


TS 8 – The Top enclosure system
This offers diversity and protection for your network, based on the ingenious rack profile. With two levels, it facilitates unlimited interior installation.

- Suitable for one or two 482.6 mm (19″) mounting levels, partial or full installation.
- The ingenious symmetry concept of the frame offers baying on all sides.
- A high level of security, thanks to lock systems with a comfort handle and 4-point locking.
- Perfect integration of climate control components.
- Protection category up to IP 55.

Network enclosures TS 8, see page 745.

Rittal flexRack(i)







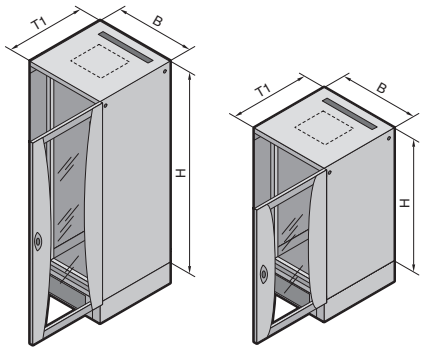
flexRack(i) – The high-end designer rack
A stylish design, a high degree of stability, plus futuristic technology – with the hollow aluminium section.

- Cables may be routed and system accessories integrated within the hollow chamber of the frame section.
- Power management integrated directly into the frame section. Three-phase infeed using the plug & play system, with no loss of enclosure volume.

Network enclosures flexRack(i), see page 752.

Network enclosures, based on Rittal TE 7000, pre-configured





Benefits:
- 19″ mounting angles front and rear always included
- No frame structure, optimum accessibility
- Load capacity up to 400 kg, static
- Pre-configured solution, including extensive accessory kit

Material:
Sheet steel

Surface finish:
Mounting frame:
Electrophoretic dipcoat-primed
Enclosure panels:
Powder-coated, RAL 7035

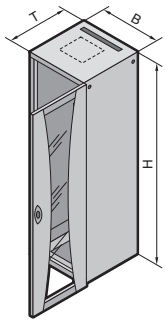
	Pre-configured	Pre-configured	Page
			
U	24	42	
Width (B) mm[1)]	800	800	
Height (H) mm[1)]	1200	2000	
Depth (T1) mm[1)]	800	800	
Distance between 482.6 mm (19″) mounting angles in its delivered state mm	495	495	
Model No. TE	**7000.840**	**7000.850**	
Model No. TE as bayed enclosure without side panels, including baying kit	**–**	**7000.852**	
Supply includes			
Self-supporting 482.6 mm (19″) frame structure, depth-variable at the front and rear	■	■	
Glazed door at the front, including 130° hinge, two-point locking rod, recessed handle and security lock 3524 E	■	■	
Sheet steel door at the rear, including 130° hinge, two-point locking rod and security lock 3524 E	■	■	
Pluggable weight-reduced side panels, including security lock 3524 E	■	■ (7000.850 only)	
Base frame with maximum cut-out (for optional population with modular panels, solid, with passive ventilation or for cable entry)	■	■	
Roof plate including brush strip for cable entry and concealed cut-out for population via the active fan plate	■	■	
4 levelling feet (including base/plinth adaptor) supplied loose	■	■	
Spacers, 20 mm, supplied loose to raise the roof	■	■	
Base/plinth 100 mm, vented	■	■	
Tested frame earthing to EN 60 950, fitted	■	■	
Accessory kit			
4 C rails, for cable clamping in the enclosure depth via cable clamps, supplied loose	■	■	
10 cable shunting rings made of plastic, 105 x 70 mm, supplied loose	■	■	
50 captive nuts, M6, conductive, supplied loose	■	■	
50 multi-tooth screws, M6, with plastic washers, supplied loose	■	■	
Premium accessories TE, for direct mounting in the delivered state			
Ergoform-S handle for semi-cylinder, to exchange for the existing lock	2435.000	2435.000	953
Fan module, with 2 fans and thermostat, pre-wired ready for connection	7000.670	7000.670	705
Slide rail for TE, for attachment between the 482.6 mm (19″) mounting frames, length 424 mm	7963.410	7963.410	1098
19″ component shelf for static installation, for direct screw fastening without an installation kit, 412 mm deep, load capacity 30 kg, static	7000.620	7000.620	1018
Punched section with mounting flange 17 x 73 mm, for mounting installation components, attached in the enclosure depth between the 482.6 mm (19″) mounting frames	8612.040	8612.040	993
C rail, for cable clamping in the enclosure depth via cable clamps	■	■	
C rail, for cable clamping in the enclosure width via cable clamps, on the 482.6 mm (19″) mounting frame at the rear	7828.060	7828.060	1000
Cable clamp rail, depth-variable 325 – 575 mm, for cable attachment in the enclosure depth via cable ties	7858.160	7858.160	1068
Cable clamp rail, for cable attachment in the enclosure width via cable ties, on the 482.6 mm (19″) mounting frame at the rear	7828.062	7828.062	1068
Earthing kit for TE	■	■	
Economy socket strip, 8-way for earthing-pin plugs (German version only)	7000.630	7000.630	1041

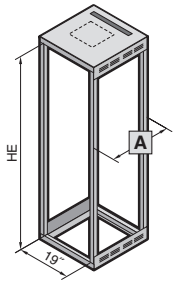
■ Included with the supply. [1)] All sizes are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet.

Network enclosures, based on Rittal TE 7000, width 600









A = Defined mounting distance for Premium accessories, see below.

Benefits:
- Configured to order
- No frame structure, optimum accessibility
- Load capacity up to 400 kg, static

Material:
Sheet steel

Surface finish:
Mounting frame: Electrophoretic dipcoat-primed
Enclosure panels: Powder-coated, RAL 7035/RAL 9005

Supply includes:
Self-supporting 482.6 mm (19″) frame structure, glazed door at the front, two-point locking rod, recessed handle and security lock 3524 E, sheet steel door at rear, two-point locking rod and security lock 3524 E, plug-in side panels with security lock 3524 E, base frame with maximum cut-out (for optional population with module plates), roof plate for cable entry with concealed cut-out for fan, levelling feet, spacers for raising the cover plate.

Detailed drawing,
available on the Internet.

U (HE)	11	11	24	24	42	42	47	47
Width (B) mm[1]	600	600	600	600	600	600	600	600
Height (H) mm[1]	600	600	1200	1200	2000	2000	2200	2200
Depth (T) mm[1]	600	800	600	800	600	800	600	800
Distance between 482.6 mm (19″) levels in its delivered state A mm	495	495	495	495	495	495	495	495
Model No. TE, RAL 7035	**7000.390**	**7000.410**	**7000.430**	**7000.440**	**7000.500**	**7000.510**	**7000.560**	**7000.570**
Model No. TE as a bayed enclosure without side panels, including baying kit, RAL 7035	**–**	**–**	**–**	**–**	**7000.502**	**–**	**7000.562**	**–**
Model No. TE including side panels, RAL 9005	**–**	**–**	**–**	**–**	**7000.505[2]**	**7000.515[2]**	**–**	**–**

[1] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet. [2] Delivery times available on request.

A 495 mm – this is the distance between the two 482.6 mm (19″) levels for all enclosure formats in their delivered state. Complies with TS 8 nominal depth 400 mm, inner level.

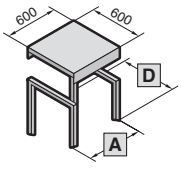
B Pitch spacing 50 mm. The distance between the two 482.6 mm (19″) levels may be varied in increments of 50 mm (445 to 695 mm).

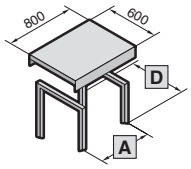
C Distance from door:
52.5 mm for depth 600
152.5 mm for depth 800

D The mounting distance in a rear mounting frame, horizontal, corresponds to the frame mounting dimensions of a 600 mm wide TS 8 (inner level, 512 mm).

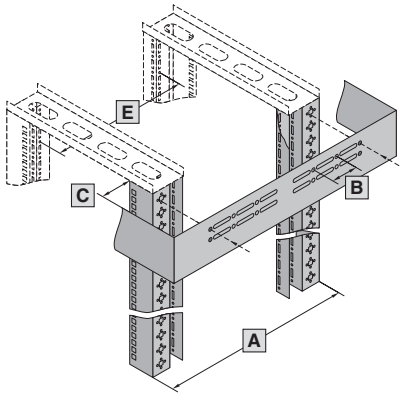
E = **A** – 120 mm

The distance between levels is freely selectable via the slot fastening. All key mounting components – punched sections with mounting flanges, installation kits, slide rails, component shelves – are also available in a depth-variable version.





German registered design no. M 403 07 489

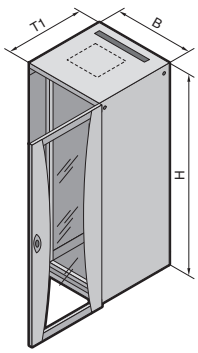


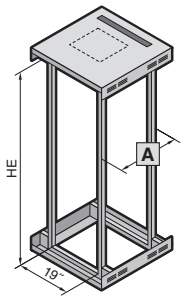
Accessories Page 890 **Monitoring** Page 838 **Climate control** Page 628

Network enclosures, based on Rittal TE 7000, width 800









A = Defined mounting distance for Premium accessories, see below.

Benefits:
- Configured to order
- No frame structure, optimum accessibility
- Load capacity up to 400 kg, static

Material:
Sheet steel

Surface finish:
Mounting frame: Electrophoretic dipcoat-primed
Enclosure panels: Powder-coated, RAL 7035/RAL 9005.

Supply includes:
Self-supporting 482.6 mm (19″) frame structure, glazed door at the front, two-point locking rod, recessed handle and security lock 3524 E, sheet steel door at rear, two-point locking rod and security lock 3524 E, plug-in side panels with security lock 3524 E, base frame with maximum cut-out (for optional population with module plates), roof plate for cable entry with concealed cut-out for fan, levelling feet, spacers for raising the cover plate.

Detailed drawing,
available on the Internet.

U (HE)	24	24	42	42	47	47
Width (B) mm[1)]	800	800	800	800	800	800
Height (H) mm[1)]	1200	1200	2000	2000	2200	2200
Depth (T1) mm[1)]	600	800	600	800	600	800
Distance between 482.6 mm (19″) levels in its delivered state A mm	495	495	495	495	495	495
Model No. TE, RAL 7035	**7000.450**	**7000.460**	**7000.520**	**7000.530**	**7000.580**	**7000.590**
Model No. TE as a bayed enclosure without side panels, including baying kit, RAL 7035	**–**	**–**	**–**	**7000.532**	**–**	**7000.592**
Model No. TE including side panels, RAL 9005	**–**	**–**	**7000.525[2)]**	**7000.535[2)]**	**–**	**–**

[1)] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet. [2)] Delivery times available on request.

A 495 mm – This is the distance between the two 482.6 mm (19″) levels for all enclosure formats in their delivered state. Complies with TS 8 nominal depth 400 mm, inner level.

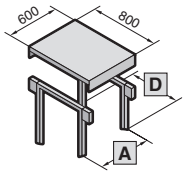
B Pitch spacing 50 mm. The distance between the two 482.6 mm (19″) levels may be varied in increments of 50 mm (445 to 695 mm).

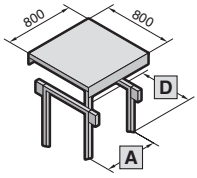
C Distance from door:
52.5 mm for depth 600
152.5 mm for depth 800

D The mounting distance in a rear mounting frame, horizontal, corresponds to the frame mounting dimensions of a 600 mm wide TS 8 (inner level, 512 mm).

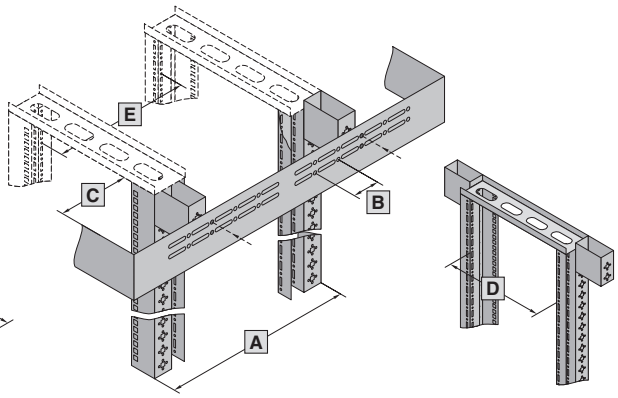
E = **A** – 120 mm

The distance between levels is freely selectable via the slot fastening. All key mounting components – punched sections with mounting flanges, installation kits, slide rails, component shelves – are also available in a depth-variable version.





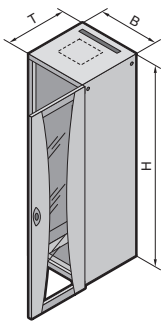
German registered design no. M 403 07 489

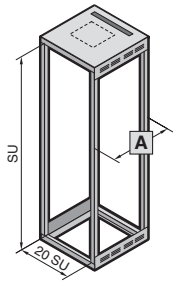


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Network enclosures, based on Rittal TE 7000, metric attachment levels







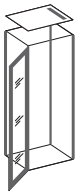
Benefits:
- Configured to order
- No frame structure, optimum accessibility
- Load capacity up to 400 kg, static

Material:
Sheet steel

Surface finish:
Nanoceramic coating, electrophoretic dipcoat-priming, powder-coating in RAL 7035.

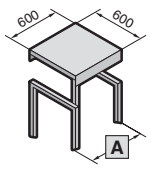
Supply includes:
Self-supporting metric frame structure,
glazed door at the front, two-point locking rod, recessed handle and security lock 3524 E, sheet steel door at rear, two-point locking rod and security lock 3524 E, plug-in side panels with security lock 3524 E, base frame with maximum cut-out (for optional population with module plates), roof plate for cable entry with concealed cut-out for fan, spacers for raising the cover plate, levelling feet.

Detailed drawing,
available on the Internet.

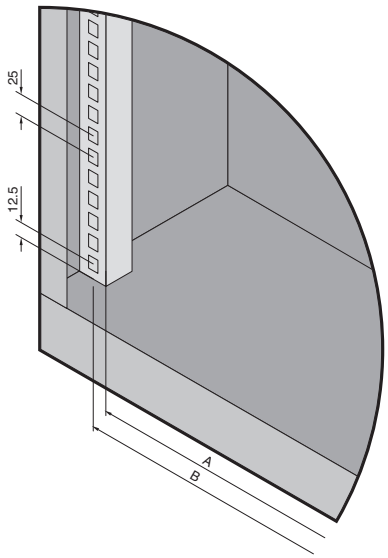
		
SU	76	82
Width (B) mm[2)]	600	600
Height (H) mm[2)]	2000	2200
Depth (T) mm[2)]	600	600
Distance between metric levels as delivered A mm	495	495
Model No. TE	**7000.508[1)]**	**7000.568[1)]**
Model No. TE as bayed enclosure without side panels, including baying kit	**7000.504[1)]**	**7000.564[1)]**

[1)] Delivery times on request. [2)]All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet.

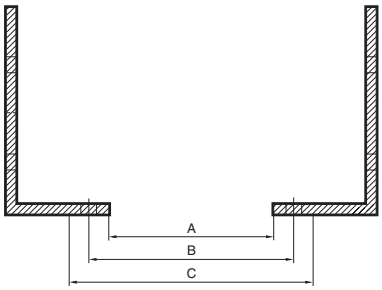
A 495 mm – This is the distance between the two metric levels for all enclosure formats in their delivered state. Complies with TS 8 nominal depth 400 mm, inner level. The distance between levels is freely selectable via the slot fastening.



Size systems



Explanation of the fastening dimensions
Interior installations



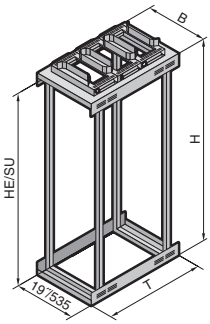
Installation width	A mm	B mm	C mm
20 SU	500	515	535

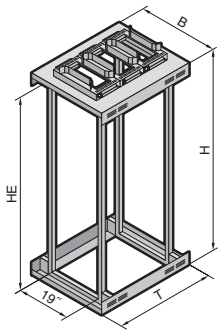
A = Clearance width
B = Mounting dimension
C = External dimension of slide-in equipment or front panel

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TE 7000 open







Benefits:
Unlimited applications covering all tasks in the IT sector. Both as a network distribution frame with maximum accessibility from all sides for assembly and installation, and as a server rack with a high load capacity of up to 700 kg. Unrestricted airflow, due to the open design.
The standard cable trays in the roof area mean that even large quantities of cables are easily routed to the various levels without kinks.

In a bayed configuration, the 800 mm width in particular offers plenty of space for cable routing between units.
There is an extensive range of accessories available for individual cable management solutions.
The distance between attachment levels is infinitely variable.

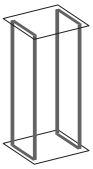
Material:
Sheet steel

Surface finish:
Powder-coated, RAL 7035

Load capacity:
700 kg, static

Supply includes:
Self-supporting frame structure, with a 482.6 mm (19″) or metric attachment level front and rear depending on the design.
Open roof frame for cable entry, 3 cable routing trays. Open base frame with 2 punched sections with mounting flanges for individual configuration in the width, levelling feet.

Detailed drawing,
available on the Internet.

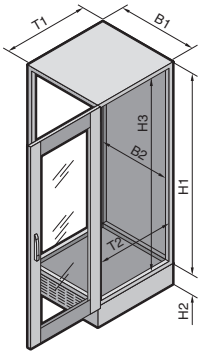
					
U/SU (HE/SU)		42/76	47/82	42/–	47/–
Width (B) mm		600	600	800	800
Height[3] (H) mm		2000	2200	2000	2200
Depth (T) mm		1000	1000	1000	1000
Distance between levels (mm) as delivered		745	745	745	745
Model No. TE with 482.6 mm (19″) attachment level		**7000.940**	**7000.942**	**7000.944**	**7000.946**
Model No. TE with metric (535 mm) attachment level		**7000.960**[1]	**7000.962**[1]	**–**	**–**
482.6 mm (19″) accessories	Packs of				
Cable management panel 482.6 mm (19″), 1 U for horizontal cable routing, with 5 steel rings, zinc-plated, passivated, size 100 x 37 mm	1	7257.035	7257.035	7257.035	7257.035
Cable management panel 482.6 mm (19″), 2 U for horizontal cable routing, with 5 steel rings, zinc-plated, passivated, size 120 x 80 mm	1	7257.100	7257.100	7257.100	7257.100
Shunting rings to accommodate large quantities of cables, or mounting on the side of the mounting frame, dimension 300 x 90 mm	2	7220.600	7220.600	7220.600	7220.600
Cable management panel 482.6 mm (19″), 2 U for horizontal cable routing, with removable front panel	1	7158.100	7158.100	7158.100	7158.100
Component shelf 482.6 mm (19″), 1/2 U static installation, depth-variable in the range from 600 – 900 mm	1	7063.720[2]	7063.720[2]	7063.720	7063.720
Slide rail 482.6 mm (19″), load capacity 100 kg, static for distance between 482.6 mm (19″) levels (internal) 740 mm	2	7063.740[2]	7063.740[2]	7063.740	7063.740
Slide rail 482.6 mm (19″), depth-variable within the range from 590 – 930 mm, load capacity 80 kg, static	2	7063.883[2]	7063.883[2]	7063.883	7063.883
C rail, variable within the range 450 – 850 mm	1	7016.140	7016.140	7016.140	7016.140
T-head rail, variable within the range 450 – 850 mm	1	7016.150	7016.150	7016.150	7016.150
Cable route for vertical cable management, for mounting at the side rear of the 482.6 mm (19″) mounting frame, W = 100 mm, H = 1700 mm	1 set	7000.685	7000.685	7000.685	7000.685

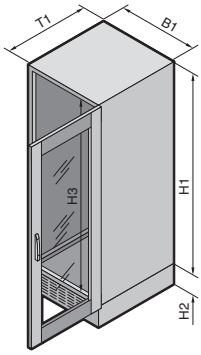
[1] Delivery times available on request.
[2] Not suitable for use with a metric attachment level.
[3] Plus 100 mm roof-mounting/cable-routing trays.

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Network enclosures, based on Rittal TS 8, pre-configured







Material:
Sheet steel

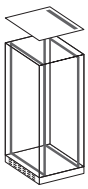
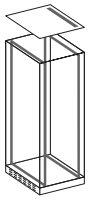
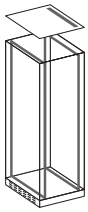
Surface finish:
Enclosure frame:
Dipcoat-primed
Doors, roof and base/plinth:
Dipcoat-primed,
powder-coated in RAL 7035
Gland plates, punched sections with mounting flanges and mounting angles:
Zinc-plated, passivated

Supply includes:
Enclosure frame with doors or rear panel, roof plate, vented base/plinth 100 mm,
earthing of all enclosure panels;
Supplied loose:
Levelling feet incl. base/plinth adaptor,
4 spacers for raising the roof,
4 cable clamp rails for the inner frame level,
10 cable shunting rings (105 x 70 mm, plastic, for DK 7930.100 in 44 x 70 mm),
50 captive nuts M6, conductive,
50 multi-tooth screws M6.

Version 1
Designer glazed door at the front, 180°, with comfort handle for semi-cylinder and security lock 3524 E;
Sheet steel door at the rear, 130°, with swivel handle and security lock 3524 E.
482.6 mm (19″) mounting angles, front, fitted approx. 150 mm behind the frame front edge, screw-fastened to the TS punched sections with mounting flange as depth stays.
Gland plate, one-piece, vented, with cable entry.

Version 2
Designer glazed door at the front, 180°, with comfort handle for semi-cylinder and security lock 3524 E;
Sheet steel door at the rear, 130°, with swivel handle and security lock 3524 E.
482.6 mm (19″) mounting angles at the front and rear, distance between levels pre-configured at 498 mm. Cranked mounting angles screw-fastened to installation brackets approx. 150 mm behind the frame front edge.
Gland plate at the front, fitted as an infill panel.

Detailed drawing,
available on the Internet.

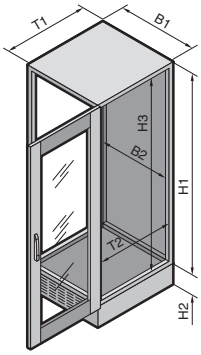
	Version 1	Version 2	Version 2	Version 2
				
U	24	38	42	47
Width (B1) mm[1]	600	800	800	800
Height (H1 + H2) mm[1]	1200 + 100	1800 + 100	2000 + 100	2200 + 100
Depth (T1) mm[1]	600	800	800	800
Clearance width (B2) mm	512	712	712	712
Clearance height (H3) mm	1112	1712	1912	2112
Clearance depth (T2) mm	512	712	712	712
Model No. DK including 2 plug-in side panels, with security lock 3524 E	**7930.100[3]**	**7930.800[3]**	**7930.200[3]**	**7930.220[3]**
Model No. DK as bayed enclosure without side panels, including baying kit TS 8800.500	**–**	**7930.850[2][3]**	**7930.250[3]**	**7930.270[2][3]**

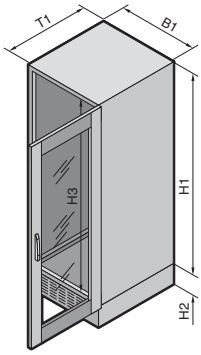
[1] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet.
[2] Delivery times available on request.
[3] Glazed aluminium door, delivery times available on request.

Accessories Page 890 **Monitoring** Page 838 **Climate control** Page 628

Network enclosures, based on Rittal TS 8, pre-configured







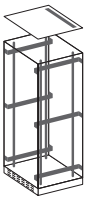
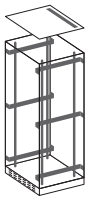
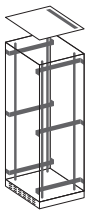
Material:
Sheet steel

Surface finish:
Enclosure frame:
Dipcoat-primed
Doors, roof and base/plinth:
Dipcoat-primed,
powder-coated in RAL 7035
Gland plates, punched sections with mounting flanges and mounting angles:
Zinc-plated, passivated

Supply includes:
Enclosure frame with doors or rear panel, roof plate,
vented base/plinth 100 mm,
earthing of all enclosure panels;
Supplied loose:
Levelling feet incl. base/plinth adaptor,
4 spacers for raising the roof,
4 cable clamp rails for the inner frame level,
10 cable shunting rings (105 x 70 mm, plastic)
50 captive nuts M6, conductive,
50 multi-tooth screws M6.

Version 3
Glazed front door, vented, 180°, with comfort handle for semi-cylinder and security lock 3524 E;
Sheet steel door at the rear, vented, 180°, with swivel handle and security lock 3524 E.
482.6 mm (19″) mounting angles at the front and rear, distance between levels pre-configured at 740 mm.
L-shaped mounting angles screw-fastened to 2 or 3 depth stays respectively.
Gland plate, one-piece, vented, with cable entry.

Detailed drawing,
available on the Internet.

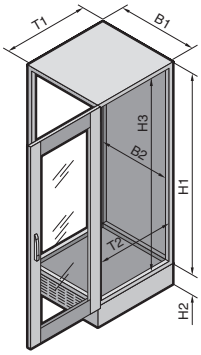
	Version 3	Version 3	Version 3	Version 3	Version 3
					
U	24	42	42	47	47
Width (B1) mm[1]	800	800	800	800	800
Height (H1 + H2) mm[1]	1200 + 100	2000 + 100	2000 + 100	2200 + 100	2200 + 100
Depth (T1) mm[1]	900	900	1000	900	1000
Clearance width (B2) mm	712	712	712	712	712
Clearance height (H3) mm	1112	1912	1912	2112	2112
Clearance depth (T2) mm	812	812	912	812	912
Model No. DK including 2 plug-in side panels, with security lock 3524 E	**7830.120**	**7830.300**	**7830.330**	**7830.320[2]**	**7830.340[2]**
Model No. DK as bayed enclosure without side panels, including baying kit TS 8800.500	**–**	**7830.350**	**7830.335**	**7830.370[2]**	**7830.380[2]**

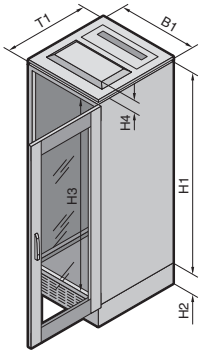
[1] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet.
[2] Delivery times available on request.

Accessories Page 890 **Monitoring** Page 838 **Climate control** Page 628

Network enclosures, based on Rittal TS 8, pre-configured







Material:
Sheet steel

Surface finish:
Enclosure frame:
Dipcoat-primed
Doors, roof and base/plinth:
Dipcoat-primed,
powder-coated in RAL 7035
Gland plates, punched sections with mounting flanges and mounting angles:
Zinc-plated, passivated

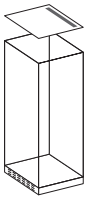
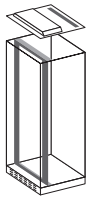
Supply includes:
Enclosure frame with doors or rear panel, roof plate,
vented base/plinth 100 mm,
earthing of all enclosure panels;
Supplied loose:
Levelling feet incl. base/plinth adaptor,
4 spacers for raising the roof or vent panel,
4 cable clamp rails for the inner frame level,
10 cable shunting rings (105 x 70 mm, plastic)
50 captive nuts M6, conductive,
50 multi-tooth screws M6.

Version 4
Designer glazed door at the front, 180°, with comfort handle for semi-cylinder and security lock 3524 E;
Sheet steel door at the rear, 130°, with swivel handle and security lock 3524 E.
Empty enclosure for individual configuration, 482.6 mm (19″)/ metric partial installation or a combination of mounting angles/ 482.6 mm (19″) mounting frames supported. Gland plate at the front, fitted as an infill panel.

Version 5
Designer glazed door at the front, 180°, with comfort handle for semi-cylinder and security lock 3524 E;
Sheet steel door at the rear, 130°, with swivel handle and security lock 3524 E.
482.6 mm (19″) mounting angles at the front and rear, distance between levels pre-configured at 598 mm.
L-shaped mounting angles screw-fastened to depth stays in the centre. Roof plate with cut-out for fan insert and vent panel on spacers. Gland plate at the front, fitted as an infill panel.

Version 6
Designer glazed door at the front 180°, with comfort handle for semi-cylinder and security lock 3524 E.
Sheet steel rear panel.
Swing frame, large, with side trim panel for the installation of 482.6 mm (19″) mounting components whilst utilising the full enclosure height (130°, 150 kg).
Full installation at the front, rear panel, including swing frame installation kit SR 1995.825 up to 150 kg total load capacity, static.
Roof plate with cut-out for fan insert and vent panel on spacers. Gland plate, one-piece, vented, with cable entry.

Detailed drawing,
available on the Internet.

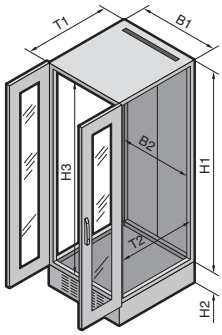
	Version 4	Version 5	Version 6
			
U	42	42	40
Width (B1) mm[1]	800	800	800
Height (H1 + H2) mm, (H1 + H2 + H4) mm[1]	2000 + 100	2000 + 100 + 25	2000 + 100 + 25
Depth (T1) mm[1]	800	800	800
Clearance width (B2) mm	712	712	712
Clearance height (H3) mm	1912	1912	1912
Clearance depth (T2) mm	712	712	712
Model No. DK including 2 plug-in side panels, with security lock 3524 E	**7930.400**[3]	**7930.500**[3]	**7930.660**[3]
Model No. DK as bayed enclosure without side panels, including baying kit TS 8800.500	**–**	**7930.550**[2][3]	**7930.670**[2][3]

[1] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet.
[2] Delivery times available on request.
[3] Glazed aluminium door, delivery times available on request.

Accessories Page 890 **Monitoring** Page 838 **Climate control** Page 628

Network enclosures, based on Rittal TS 8, pre-configured





Material:
Sheet steel

Surface finish:
Enclosure frame:
Dipcoat-primed
Doors, roof and base/plinth:
Dipcoat-primed,
powder-coated in RAL 7035
Gland plates, punched sections with mounting flanges and mounting angles:
Zinc-plated, passivated

Supply includes:
Enclosure frame with doors or rear panel, roof plate, vented base/plinth 100 mm,
earthing of all enclosure panels;
Supplied loose:
Levelling feet incl. base/plinth adaptor,
4 spacers for raising the roof,
4 cable clamp rails for the inner frame level,
10 cable shunting rings (105 x 70 mm, plastic)
50 captive nuts M6, conductive,
50 multi-tooth screws M6.

Version 7
Glazed front door, vertically divided, 180°, sheet steel rear door, vertically divided, 180°.
482.6 mm (19") mounting angles at the front and rear, distance between levels pre-configured at 498 mm.
Cranked mounting angles screw-fastened to installation brackets approx. 150 mm behind the frame front edge.
Gland plate at the front, fitted as an infill panel.

Detailed drawing,
available on the Internet.

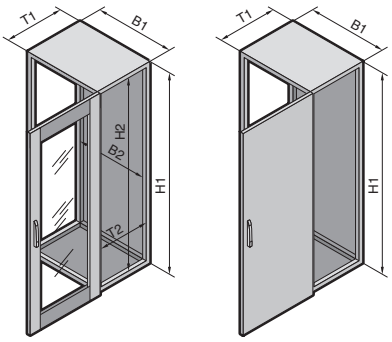
U		42
Width (B1) mm		800
Height (H1 + H2) mm		2000 + 100
Depth (T1) mm		800
Clearance width (B2) mm		712
Clearance height (H3) mm		1912
Clearance depth (T2) mm		712
Model No. DK as bayed enclosure without side panels, including baying kit TS 8800.500	**Version 7**	**7830.260**

Accessories		Page
Two plug-in side panels, with security lock 3524E	7824.208	919

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Network enclosures, based on Rittal TS 8, types 1 and 2





Type 1
Designer glazed aluminium door at the front (180°), with 3 mm single-pane safety glass, comfort handle for semi-cylinder and security lock 3524 E; sheet steel door at rear (130°) with handle and security lock 3524 E.

Type 2
Sheet steel door at front (180°), with comfort handle for semi-cylinder and security lock 3524 E; sheet steel door at rear (130°) with handle and security lock 3524 E.

Material:
Sheet steel

Surface finish:
Enclosure frame:
Dipcoat-primed
Doors and roof: Dipcoat-primed, powder-coated in RAL 7035
Gland plates and punched sections with mounting flanges:
Zinc-plated, passivated

Supply includes:
Enclosure frame with doors, roof plate, multi-piece gland plate, 2 punched sections with mounting flanges in the enclosure depth.

Approvals,
see page 92.

Detailed drawing,
available on the Internet.

U	15	20	20	24	24	24	24	24
Width (B1) mm[1]	600	600	800	600	800	800	800	800
Height (H1) mm[1]	800	1000	1000	1200	1200	1200	1200	1200
Depth (T1) mm[1]	600	600	600	600	600	800	900	1000
Clearance width (B2) mm	512	512	712	512	712	712	712	712
Clearance height (H2) mm	712	912	912	1112	1112	1112	1112	1112
Clearance depth (T2) mm	512	512	512	512	512	712	812	912
Model No. DK, type 1 with designer glazed door at the front	**7920.100**[3]	**7920.200**[3]	**7920.240**[2][3]	**7920.300**[3]	**7920.340**[2][3]	**7920.350**[3]	**7920.355**[3]	**7920.360**[2][3]
Model No. DK, type 2 with sheet steel door at the front	**7821.100**	**7821.200**	**7821.240**[2]	**7821.300**	**7821.340**	**–**	**7821.355**	**–**

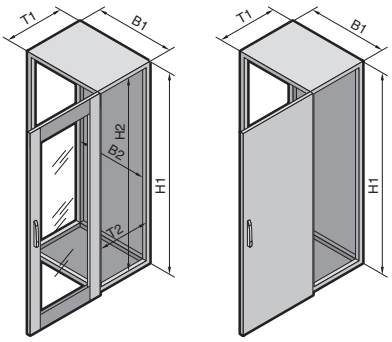
U	29	29	29	33	33	33	38	38
Width (B1) mm[1]	600	600	800	600	600	800	600	600
Height (H1) mm[1]	1400	1400	1400	1600	1600	1600	1800	1800
Depth (T1) mm[1]	600	800	600	600	800	600	600	800
Clearance width (B2) mm	512	512	712	512	512	712	512	512
Clearance height (H2) mm	1312	1312	1312	1512	1512	1512	1512	1712
Clearance depth (T2) mm	512	712	512	512	712	512	512	712
Model No. DK, type 1 with designer glazed door at the front	**7920.400**[2][3]	**7920.410**[3]	**7920.440**[2][3]	**7920.500**[3]	**7920.510**[3]	**7920.540**[2][3]	**7920.600**[3]	**7920.610**[3]
Model No. DK, type 2 with sheet steel door at the front	**7821.400**[2]	**7821.410**	**7821.440**[2]	**7821.500**	**7821.510**	**7821.540**[2]	**7821.600**	**7821.610**

[1] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet.
[2] Delivery times available on request.
[3] Glazed aluminium door, delivery times available on request.

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Network enclosures, based on Rittal TS 8, types 1 and 2





Type 1
Designer glazed aluminium door at the front (180°), with 3 mm single-pane safety glass, comfort handle for semi-cylinder and security lock 3524 E; sheet steel door at rear (130°) with handle and security lock 3524 E.

Type 2
Sheet steel door at front (180°), with comfort handle for semi-cylinder and security lock 3524 E; sheet steel door at rear (130°) with handle and security lock 3524 E.

Material:
Sheet steel

Surface finish:
Enclosure frame: Dipcoat-primed
Doors and roof: Dipcoat-primed, powder-coated in RAL 7035
Gland plates and punched sections with mounting flanges: Zinc-plated, passivated

Supply includes:
Enclosure frame with doors, roof plate, multi-piece gland plate, 2 punched sections with mounting flanges in the enclosure depth.

Approvals,
see page 92.

Detailed drawing,
available on the Internet.

U	38	38	38	38	42	42	42	42	42
Width (B1) mm[1]	600	800	800	800	600	600	600	600	800
Height (H1) mm[1]	1800	1800	1800	1800	2000	2000	2000	2000	2000
Depth (T1) mm[1]	900	600	800	1000	600	800	900	1000	600
Clearance width (B2) mm	512	712	712	712	512	512	512	512	512
Clearance height (H2) mm	1712	1712	1712	1712	1912	1912	1912	1912	1912
Clearance depth (T2) mm	812	512	712	912	512	712	812	912	512
Model No. DK, type 1 with designer glazed door at the front	**7920.620[3]**	**7920.640[3]**	**7920.650[3]**	**7920.670[3]**	**7920.700[3]**	**7920.710[2][3]**	**7920.720[3]**	**7920.730[3]**	**7920.740[3]**
Model No. DK, type 2 with sheet steel door at the front	**7821.620[2]**	**7821.640[2]**	**7821.650**	**7821.670[2]**	**7821.700**	**7821.710[2]**	**7821.720**	**7821.730**	**7821.740**

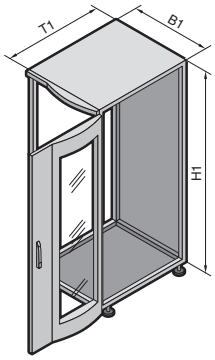
U	42	42	42	47	47	47	47	47	47
Width (B1) mm[1]	800	800	800	600	600	800	800	800	800
Height (H1) mm[1]	2000	2000	2000	2200	2200	2200	2200	2200	2200
Depth (T1) mm[1]	800	900	1000	600	800	600	800	900	1000
Clearance width (B2) mm	712	712	712	512	512	512	712	712	712
Clearance height (H2) mm	1912	1912	1912	2112	2112	2112	2112	2112	2112
Clearance depth (T2) mm	712	812	912	512	712	512	712	812	912
Model No. DK, type 1 with designer glazed door at the front	**7920.750[3]**	**7920.760[3]**	**7920.770[3]**	**7920.800[3]**	**7920.810[3]**	**7920.840[3]**	**7920.850[3]**	**7920.860[3]**	**7920.870[3]**
Model No. DK, type 2 with sheet steel door at the front	**7821.750**	**7821.760**	**7821.770**	**7821.800**	**7821.810**	**7821.840[2]**	**7821.850**	**7821.860[2]**	**7821.870**

[1] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet.
[2] Delivery times available on request.
[3] Glazed aluminium door, delivery times available on request.

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Network enclosures, based on Rittal flexRack(i)





Material:
Vertical frame sections:
Extruded aluminium section
Base, roof frame, panels:
Sheet steel

Surface finish:
Enclosure panels:
Spray-finished in RAL 7035
Frame sections and doors:
RAL 9006
Lock panels: RAL 7035
Viewing window:
Tinted, parsol grey
Gland plates:
Zinc-plated, passivated

Supply includes:
Designer glazed front door (130°), TS sheet steel rear door (130°), solid roof plate, multi-piece gland plate, levelling feet, comfort handle for semi-cylinder at the front, swivel handle at the rear, with security lock 3524 E.

Property rights:
German patent no. 103 11 376
German registered design no. 403 04 312
British registered design no. 301 54 31

Detailed drawing,
available on the Internet.

U	11	11	24	24	38	42	42	47
Width (B1) mm[1]	600	600	600	600	600	600	600	600
Height (H1) mm[1]	600	600	1200	1200	1800	2000	2000	2200
Depth (T1) mm[1]	605	1005	605	1005	605	605	1005	1005
Depth absolute, including handles and roof curvature (T1) mm + 74.5 mm	679.5	1079.5	679.5	1079.5	679.5	679.5	1079.5	1079.5
Model No. FR(i)	**7855.610**[2]	**7855.620**[2]	**7855.630**[2]	**7855.640**[2]	**7855.650**[2]	**7855.660**[2]	**7855.670**[2]	**7855.680**[2]

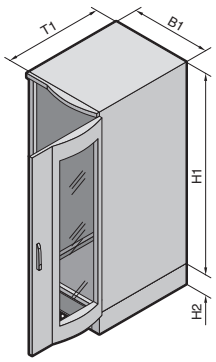
U	24	38	42	42	47	47
Width (B1) mm[1]	800	800	800	800	800	800
Height (H1) mm[1]	1200	1800	2000	2000	2200	2200
Depth (T1) mm[1]	805	805	805	1005	805	1005
Depth absolute, including handles and roof curvature (T1) mm + 74.5 mm	879.5	879.5	879.5	1079.5	879.5	1079.5
Model No. FR(i)	**7855.690**[2]	**7855.700**[2]	**7855.710**	**7855.720**	**7855.730**[2]	**7855.740**[2]

[1] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet. [2] Delivery times available on request.

Accessories Page 890 **Monitoring** Page 838 **Climate control** Page 628

Network enclosures, based on Rittal flexRack(i), pre-configured





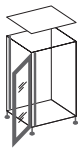
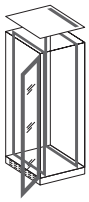
Material:
Vertical frame sections:
Extruded aluminium section
Base, roof frame, base/plinth, panels: Sheet steel

Surface finish:
Enclosure panels:
Spray-finished in RAL 7035
Frame sections and doors:
RAL 9006
Lock panels: RAL 7035
Viewing window:
Tinted, parasol grey
Gland plates, 482.6 mm (19″) mounting angles:
Zinc-plated, passivated

Supply includes:
Designer glazed door at front (130°), TS sheet steel door at rear (130°).
Roof plate, side panels, gland plate, vented base/plinth (Model No. FR 7855.540, .550, .560, .570 only), interior installation depending on design. Earthing of all enclosure panels, comfort handle for semi-cylinders at the front, swivel handle at the rear, with security lock 3524 E.

Property rights:
German patent no. 103 11 376
German registered design no. 403 04 312
British registered design no. 301 54 31

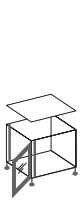
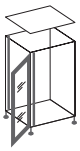
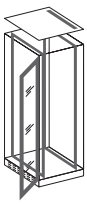
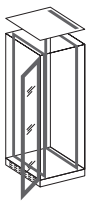
Detailed drawing,
available on the Internet.

					
U	11	11	24	42	42
Width (B1) mm[1]	600	600	600	800	800
Height (H1 + H2) mm[1]	600	600	1200	2000 + 100	2000 + 100
Depth (T1) mm[1]	805	1005	1005	805	1005
Depth absolute, including handles and roof curvature (T1) mm + 74.5 mm	879.5	1079.5	1079.5	879.5	1079.5
Model No. FR(i) as single enclosure including 2 side panels	**7855.480**	**7855.500**	**7855.510**	**7855.550**	**7855.570**
Model No. FR(i) as bayed enclosure without side panels, including baying kit	**–**	**–**	**–**	**7855.540**	**7855.560**[2]

[1] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet.
[2] Delivery times available on request.

Accessories Page 890 **Monitoring** Page 838 **Climate control** Page 628

Network enclosures, based on Rittal flexRack(i), pre-configured

						
U	11	11	24	42	42	Page
Width (B1) mm[1)]	600	600	600	800	800	
Height (H1 + H2) mm[1)]	600	600	1200	2000 + 100	2000 + 100	
Depth (T1) mm[1)]	805	1005	1005	805	1005	
Depth absolute, including handles and roof curvature (T1) mm + 74.5 mm	879.5	1079.5	1079.5	879.5	1079.5	
Model No. FR(i) as single enclosure including 2 side panels	**7855.480**	**7855.500**	**7855.510**	**7855.550**	**7855.570**	
Model No. FR (i) as bayed enclosure without side panels, including baying kit	**–**	**–**	**–**	**7855.540**	**7855.560[2)]**	
Doors						
Designer glazed front door/TS sheet steel rear door	■	■	■	■	■	
Side panel						
Side panel, plug-type including security lock 3524 E	■	■	■	■ (7855.550 only)	■ (7855.570 only)	920
Internal latch for side panel, plug-in	■	■	■	■	■	919
Baying	from page 926	from page 926	from page 926	from page 926	from page 926	
Roof						
Designer roof plate, solid	■	■	■	–	–	
Designer roof plate for cable entry, two-piece	–	–	–	■	■	
Various roof plate options, based on TS 8	from page 972	from page 972	from page 972	from page 972	from page 972	
Base/plinth						
Base/plinth components solid, front and rear	8601.605	8601.605	8601.605	8601.805	8601.805	893
Base/plinth components vented, front and rear	7825.601	7825.601	7825.601	■	■	893
Base/plinth trims, side	8601.085	8601.015	8601.015	■	■	893
Gland plate, front, fitted as an infill panel, rear section open	–	–	–	■	■	
Gland plate, one-piece, vented	■	■	■	–	–	914
Gland plate variants, based on TS 8	from page 914	from page 914	from page 914	from page 914	from page 914	
Interior installation						
482.6 mm (19″) mounting angles, L-shaped at front	■	■	■	–	–	1091
Additional 482.6 mm (19″) mounting angles, L-shaped	7856.800	7856.800	7856.803	7856.809	7856.809	1092
482.6 mm (19″) mounting frames, front and rear	–	–	–	■	■	1094
Additional 482.6 mm (19″) mounting frame	7856.710	7856.710	7856.713	7856.719	7856.719	1094
System punched section, interior installation of rail systems	from page 993	from page 993	from page 993	from page 993	from page 993	
Cable clamp rails	see page 1062	see page 1062	see page 1062	see page 1062	see page 1062	
Earthing/potential equalisation	from page 1034	from page 1034	from page 1034	from page 1034	from page 1034	
Socket strips/power management	from page 1038	from page 1038	from page 1038	from page 1038	from page 1038	
Component shelves	from page 1013	from page 1013	from page 1013	from page 1013	from page 1013	
482.6 mm (19″) installation	from page 1089	from page 1089	from page 1089	from page 1089	from page 1089	
4 hammerhead rails including system adaptor, supplied loose, for cable clamping in the enclosure depth	–	–	–	■	■	
10 cable shunting rings 105 x 70 mm, supplied loose	–	–	–	■	■	1069
50 cage nuts and multi-tooth screws	–	–	–	■	■	1105
Cable management	from page 1059	from page 1059	from page 1059	from page 1059	from page 1059	
CMC-TC system monitoring	from page 806	from page 806	from page 806	from page 806	from page 806	

■ Included with the supply.
[1)] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet.
[2)] Delivery times available on request.

Accessories Page 890 **Monitoring** Page 838 **Climate control** Page 628

System comparison of wall-mounted enclosures

The configuration of decentralised network units is extremely important for small and medium-sized companies. Rittal has high-quality solutions to meet virtually every requirement of a growing network.

FlatBox wall-mounted and floor-standing enclosure





The volume-optimised flat-pack offers advantages with regard to transportation and storage.



The snap connection system facilitates toolless enclosure assembly. In this way, a very stable enclosure is created with a high static load capacity of 5 kg/U or a maximum of 75 kg, static.



After assembling the base support, configuration of the open enclosure can follow.

Wall-mounted enclosures, based on Rittal QuickBox





Cut-outs in the mounting bracket for access to the rear of the patch panels or active components.



Slide rails to support heavy assemblies.



Vent slots for passive ventilation.

Wall-mounted enclosure, based on Rittal EL, 3-part/2-part





Optimum accessibility, thanks to 3-part or 2-part vertically hinged construction.



Equipped with Mini comfort handle (3 – 15 U), comfort handle (18 and 21 U) and replaceable **cable gland plates.**



2-part enclosure with swing frame. Facility for installing subracks and electronic components.

System comparison of wall-mounted enclosures

Whether fibre-optic or copper distributors, 1/2 19″ or 19″ enclosures, high protection category or passively vented wall-mounted enclosures, the IT wall-mounted distributor range covers every conceivable requirement and is available off the shelf.

RNC enclosure/RNC universal enclosure





Prepared for the installation of 1/2 19″ components.
10″ components may also be installed by using an adaptor.
19″ (482.6 mm) variant for vertical population.



Suitable for use both as a stand-alone model and for wall mounting.
Maximum free space for assembly purposes.



The universal enclosure, vertical for 19″ installation, horizontal for 1/2 19″ or 10″ installation.

Wall-mounted and distribution enclosures

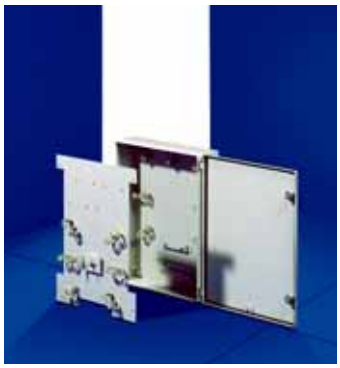




Wall-mounted enclosure based on AE with pull-out frame or depth-adjustable 482.6 mm (19″) level.



Small fibre-optic distributor
As a corridor and intermediate distributor of fibre-optic cables.



Small fibre-optic distributor, based on AE
The ideal enclosure for break-out applications.



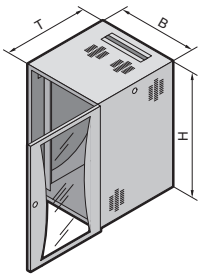
Fibre-optic marshalling enclosure
Two access areas:
1. For splicing cassette fixture
2. For the patching chamber.



Small fibre-optic distributor, polycarbonate, for extreme conditions with a high protection category of IP 66 to EN 60 529/ 09.2000.

FlatBox





Small package – big performance.
Time-saving, flexible, clever

- For flexible use as a wall-mounted or floor-standing enclosure
- The width and depth dimension of max. 700 mm provides plenty of space for use as a patch distributor
- Toolless quick assembly

Material:
Sheet steel

Surface finish:
Powder-coated in RAL 7035

Supply includes:
Flat-packed enclosure,
1 wall section, 2 basic supports,
2 roof/base plates, with cut-outs for cable entry, with brush strips,
2 482.6 mm (19″) mounting angles (for 6 U and 9 U),
1 482.6 mm (19″) frame (from 12 U),
4 levelling feet (from 12 U),
2 side panels, lockable,
1 glazed door, lockable,
door hinge point selectable.
Components for toolless, fast assembly.
Earthing kit for system-compatible earthing of the enclosure panels.

With 482.6 mm (19″) mounting angles at the front and glazed door	P. of					Page
U		6	9	6	9	
Width (B) mm		600	600	600	600	
Height (H) mm		358	492	358	492	
Depth (T) mm		400	400	600	600	
Model No. DK	1	**7507.000**	**7507.010**	**7507.100**	**7507.110**	
Accessories						
482.6 mm (19″) mounting angles as 2nd attachment level, 6 U	2	7507.706	–	7507.706	–	1092
482.6 mm (19″) mounting angles as 2nd attachment level, 9 U	2	–	7507.709	–	7507.709	1092
Levelling feet	4	7507.740	7507.740	7507.740	7507.740	907
Cover plates for fan panels	6	7507.760	7507.760	7507.760	7507.760	704
Earth rail	1	7113.000	7113.000	7113.000	7113.000	1036
C rail for cable clamping	1	7016.140	7016.140	7016.140	7016.140	1068
T-head rail for cable clamping	1	7016.150	7016.150	7016.150	7016.150	1068
Fan, 230 V AC, 50/60 Hz, 117/135 m^3/h, air throughput, unimpeded airflow	1	7980.100	7980.100	7980.100	7980.100	703
Fan, 48 V DC, 184 m^3/h, air throughput, unimpeded airflow	1	7980.148	7980.148	7980.148	7980.148	703
Thermostat	1	3110.000	3110.000	3110.000	3110.000	715

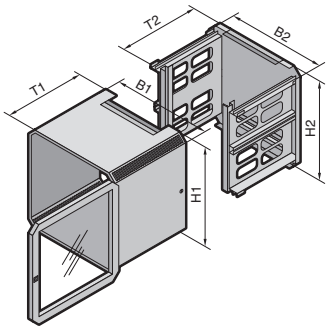
With 482.6 mm (19″) mounting frame at the front and glazed door	P. of							Page
U		12	15	12	15	18	21	
Width (B) mm		600	600	600	700	700	700	
Height (H) mm		625	758	625	758	892	1025	
Depth (T) mm		400	400	600	700	700	700	
Model No. DK	1	**7507.020**	**7507.030**	**7507.120**	**7507.200**[1)]	**7507.210**[1)]	**7507.220**[1)]	
Accessories								
482.6 mm (19″) mounting angles as 2nd attachment level, 12 U	2	7507.712	–	7507.712	–	–	–	1092
482.6 mm (19″) mounting angles as 2nd attachment level, 15 U	2	–	7507.715	–	7507.715	–	–	1092
482.6 mm (19″) mounting angles as 2nd attachment level, 18 U	2	–	–	–	–	7507.718	–	1092
482.6 mm (19″) mounting angles as 2nd attachment level, 21 U	2	–	–	–	–	–	7507.721	1092
Cover plates for fan panels	6	7507.760	7507.760	7507.760	7507.760	7507.760	7507.760	704
Earth rail	1	7113.000	7113.000	7113.000	7113.000	7113.000	7113.000	1036
C rail for cable clamping	1	7016.140	7016.140	7016.140	7016.140	7016.140	7016.140	1068
T-head rail for cable clamping	1	7016.150	7016.150	7016.150	7016.150	7016.150	7016.150	1068
Fan, 230 V AC, 50/60 Hz, 117/135 m^3/h, air throughput, unimpeded airflow	1	7980.100	7980.100	7980.100	7980.100	7980.100	7980.100	703
Fan, 48 V DC, 184 m^3/h, air throughput, unimpeded airflow	1	7980.148	7980.148	7980.148	7980.148	7980.148	7980.148	703
Thermostat	1	3110.000	3110.000	3110.000	3110.000	3110.000	3110.000	715

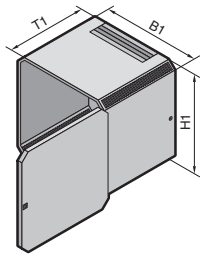
[1)] Pre-configured variant available on request.

Accessories Page 890

Wall-mounted enclosures, based on Rittal QuickBox, 6 – 12 U







Perfect access during installation and servicing, thanks to a removable cover.

Material:
Wall mounting plate with mounting brackets:
2.0 mm sheet steel
Enclosure cover:
1.0 mm sheet steel
Door: Sheet steel door or glazed door with sheet steel frame and single-pane safety glass, 3 mm

Surface finish:
Enclosure: Powder-coated, RAL 7035

Supply includes:
Wall section:
Pre-configured mounting brackets,
brush strip for cable entry at the bottom/top,
cable clamp rail

Enclosure cover:
Consisting of base and cover tray with vent slots, brush strip for cable entry at the top/bottom, 2 side security locks, sheet steel door/glazed door with security lock, 482.6 mm (19″) mounting angles, infinitely depth-variable.

Property rights:
German patent
no. 198 11 711
German utility model
no. 298 23 843
European patent no. 1 064 709
with validity for BE, ES, FR, GB, IT, NL, SE
Taiwanese patent
no. NI 123 288
Russian patent no. 2190912
Australian patent
no. 733078
South Korean patent
no. 10-0375062
US patent no. 6,435,364

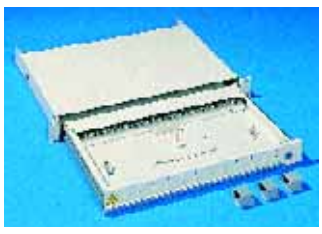
Detailed drawing,
available on the Internet.

U		Packs of	6	6	6	9	9	12	12	12	Page
Enclosure cover	**Width** (B1) mm		600	600	600	600	600	600	600	600	
	Height (H1) mm		362	362	362	495	495	628	628	628	
	Depth (T1) mm		300	400	600	400	600	400	500	600	
Wall section	**Width** (B2) mm		595	595	595	595	595	595	595	595	
	Height (H2) mm		355	355	355	488	488	621	621	621	
	Max. installation depth (T2) mm		247	347	547	347	547	347	447	547	
Model No. with glazed door		1	**7502.013**	**7502.014**	**7502.016**	**7502.024**	**7502.026**	**7502.034**	**7502.035**	**7502.036**	
Model No. with sheet steel door		1	**–**	**7502.114**	**–**	**7502.124**	**7502.126**	**–**	**–**	**7502.136**	
Accessories											
Mounting angles, 482.6 mm (19″)		2	7502.201	7502.201	7502.201	7502.202	7502.202	7502.203	7502.203	7502.203	1092
Solid gland plate		2	7502.310[1)]	7502.310[1)]	7502.310[1)]	7502.310[1)]	7502.310[1)]	7502.310[1)]	7502.310[1)]	7502.310[1)]	1052
Wall mounting bracket, 10 mm		4	2508.010	2508.010	2508.010	2508.010	2508.010	2508.010	2508.010	2508.010	975
Wall mounting bracket, 40 mm		4	2503.010	2503.010	2503.010	2503.010	2503.010	2503.010	2503.010	2503.010	975
Combination rails for enclosure width		6	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	1063
Combination rails for enclosure depth	300/400 mm	6	7502.302	7502.302	7502.302	7502.302	7502.302	7502.302	7502.302	7502.302	1063
	500/600 mm		7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	1063
Slide rails for enclosure depth	300 mm	10	1962.200	1962.200	1962.200	1962.200	1962.200	1962.200	1962.200	1962.200	1085
	400 mm	2	7492.300	7492.300	7492.300	7492.300	7492.300	7492.300	7492.300	7492.300	1098
	500/600 mm		7492.400	7492.400	7492.400	7492.400	7492.400	7492.400	7492.400	7492.400	1098
Earthing set		1	7502.240	7502.240	7502.260	7502.240	7502.260	7502.240	7502.260	7502.260	1036
Quick-release fastener		2	7502.220	7502.220	7502.220	7502.220	7502.220	7502.220	7502.220	7502.220	959

[1)] Delivery times available on request.



Cable clamps
for clamping to C rails and combination rails,
see page 1064.

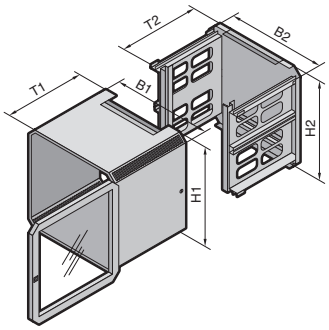


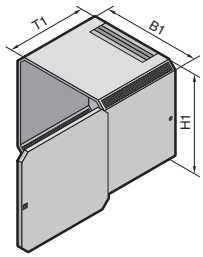
Splicing box
for fibre-optic termination or fibre-optic distributor,
see page 1111.

Accessories Page 890 **Mounting angles** Page 1092 **Wall mounting** Page 975 **Earthing** Page 1034

Wall-mounted enclosures, based on Rittal QuickBox, 15 – 21 U







Perfect access during installation and servicing, thanks to a removable cover.

Material:
Wall mounting plate with mounting brackets:
2.0 mm sheet steel
Enclosure cover:
1.0 mm sheet steel
Door: Sheet steel door or glazed door with sheet steel frame and single-pane safety glass, 3 mm

Surface finish:
Enclosure: Powder-coated, RAL 7035

Supply includes:
Wall section:
Pre-configured mounting brackets,
brush strip for cable entry at the bottom/top,
cable clamp rail

Enclosure cover:
Consisting of base and cover tray with vent slots, brush strip for cable entry at the top/bottom, 2 side security locks, sheet steel door/glazed door with security lock, 482.6 mm (19″) mounting angles, infinitely depth-variable.

Property rights:
German patent
no. 198 11 711
German utility model
no. 298 23 843
European patent no. 1 064 709
with validity for BE, ES, FR, GB, IT, NL, SE
Taiwanese patent
no. NI 123 288
Russian patent no. 2190912
Australian patent
no. 733078
South Korean patent
no. 10-0375062
US patent no. 6,435,364

Detailed drawing,
available on the Internet.

U		Packs of	15	15	15	18	18	21	21	Page
Enclosure cover	**Width** (B1) mm		600	600	600	600	600	600	600	
	Height (H1) mm		762	762	762	895	895	1028	1028	
	Depth (T1) mm		400	500	600	400	600	400	600	
Wall section	**Width** (B2) mm		595	595	595	595	595	595	595	
	Height (H2) mm		755	755	755	888	888	1021	1021	
	Max. installation depth (T2) mm		347	447	547	347	547	347	547	
Model No. with glazed door		1	**7502.044**	**7502.045**	**7502.046**	**7502.054**	**7502.056**	**7502.064**	**7502.066**	
Model No. with sheet steel door		1	**7502.144**	**–**	**7502.146**	**–**	**–**	**–**	**7502.166**	
Accessories										
Mounting angles, 482.6 mm (19″)		2	7502.204	7502.204	7502.204	7502.205	7502.205	7502.206	7502.206	1092
Solid gland plate		2	7502.310[1)]	7502.310[1)]	7502.310[1)]	7502.310[1)]	7502.310[1)]	7502.310[1)]	7502.310[1)]	1052
Wall mounting bracket, 10 mm		4	2508.010	2508.010	2508.010	2508.010	2508.010	2508.010	2508.010	975
Wall mounting bracket, 40 mm		4	2503.010	2503.010	2503.010	2503.010	2503.010	2503.010	2503.010	975
Combination rails for enclosure width		6	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	1063
Combination rails for enclosure depth	300/400 mm	6	7502.302	7502.302	7502.302	7502.302	7502.302	7502.302	7502.302	1063
	500/600 mm		7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	1063
Slide rails for enclosure depth	400 mm	2	7492.300	7492.300	7492.300	7492.300	7492.300	7492.300	7492.300	1098
	500/600 mm	2	7492.400	7492.400	7492.400	7492.400	7492.400	7492.400	7492.400	1098
Earthing set		1	7502.240	7502.260	7502.260	7502.240	7502.260	7502.240	7502.260	1036
Quick-release fastener		2	7502.220	7502.220	7502.220	7502.220	7502.220	7502.220	7502.220	959

[1)] Delivery times available on request.



Cable management panel
for all QuickBoxes from a height of 15 U,
see page 1073.

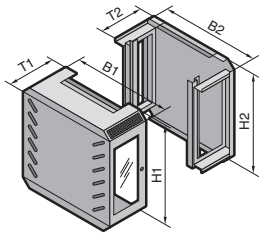


Earthing kit
for standardised earthing of the QuickBox.
With fast-on connections,
see page 1036.

Accessories Page 890 **Cable routing** Page 1059 **Lock systems** Page 947 **Patch panels** Page 1106

Wall-mounted enclosure, based on Rittal QuickBox with vertical 482.6 mm (19″) level





Optimum use of the interior space
via side installation of the 482.6 mm (19″) components. Status monitoring via side viewing window.

Material:
Wall mounting plate with mounting brackets:
2.0 mm sheet steel
Enclosure cover:
1.0 mm sheet steel with toughened safety glass, 3 mm at the side

Surface finish:
Enclosure: Powder-coated, RAL 7035

Supply includes:
Wall section:
With pre-configured 482.6 mm (19″) mounting brackets for side accommodation of mounting components and brush strip for cable entry from the bottom and top.

Enclosure cover:
With side vent slots to support passive climate control. The enclosure is secured via two security locks positioned at the sides.

Detailed drawing,
available on the Internet.

U vertical		Packs of	3	6	Page
Enclosure cover	**Width** (B1) mm		600	600	
	Height (H1) mm		631	631	
	Depth (T1) mm		210	360	
Wall section	**Width** (B2) mm		595	595	
	Height (H2) mm		621	621	
	Depth (T2) mm		198	348	
Model No. DK		1	**7502.630**[1)]	**7502.660**[1)]	
Accessories					
Gland plates, solid		2	7502.310[1)]	7502.310[1)]	1052
Wall mounting bracket, 10 mm		4	2508.010	2508.010	975
Wall mounting bracket, 40 mm		4	2503.010	2503.010	975
Combination rails for vertical mounting on the wall section QB		6	7502.304	7502.304	1063
Combination rails for horizontal mounting		6	7502.304	7502.304	1063
Mounting and cable management panel for cable routing and the attachment of small equipment		1	7502.270	7502.270	1073
Mounting angles, 482.6 mm (19″) for front mounting, 12 U		2	7502.203	7502.203	1092

[1)] Delivery times available on request.



Blanking panel
for toolless quick assembly,
see page 1110.

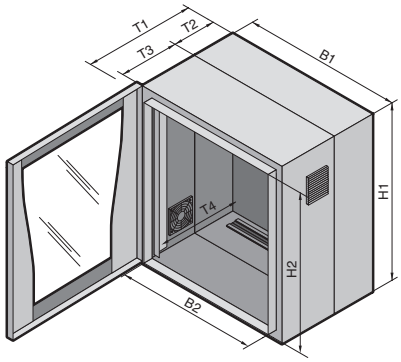


Wall mounting bracket
at a distance of 10 mm or 40 mm,
see page 975.

Accessories Page 890 **Cable management** Page 1059 **Gland plates** Page 1048 **Earthing** Page 1034

Wall-mounted enclosures, based on Rittal EL, 3-part, pre-configured, depth 573/673





Material:
Wall and hinged part:
Sheet steel, 1.5 mm
Viewing window:
Toughened safety glass 3 mm

Colour:
Wall and hinged part:
Powder-coated in RAL 7035
Glazed door: RAL 7035/7015 (slate grey)

Protection category:
IP 43 to EN 60 529/09.2000 when using solid gland plates.

Supply includes:
Wall section:
With vertical punched rails and C rail mounted horizontally for cable clamping, top cable gland plate solid, bottom cable gland plate with brush strips, earthing rail with star earthing, wall mounting bracket 10 mm.

Hinged part:
With 25 mm pitch pattern of holes in the front and rear frame, two 482.6 mm (19″) mounting angles mounted on C rails, infinitely depth-variable, one outlet filter each on the left and right side.

Designer glazed door:
With 3 mm toughened safety glass pane,
9 + 15 U with mini comfort handle for lock inserts,
21 U with comfort handle and 2-point locking,
including security lock 3524 E.

Available on request:
- Fully modified wall-mounted distributors
- Glazed door with aluminium frame
- Sheet steel door, solid
- Perforated door

Approvals,
see page 94.

Detailed drawing,
available on the Internet.

U	Packs of	9	15	21	9	15	21	Page
Width (B1) mm		600	600	600	600	600	600	
Height (H1) mm		478	746	1012	478	746	1012	
Depth (T1) mm		573	573	573	673	673	673	
Clearance width (B2) mm		502	502	502	502	502	502	
Clearance height (H2) mm		417	684	951	417	684	951	
Depth of wall section (T2) mm		135	135	135	135	135	135	
Depth of hinged part (T3) mm		416	416	416	516	516	516	
Maximum installation depth (T4) mm		520	520	520	620	620	620	
Model No. DK	1	**7709.735**	**7715.735**	**7721.735**	**7709.535**	**7715.535**	**7721.535**	
Load capacity, hinged part (kg, static)		45	75	75	45	75	75	
Accessories								
Solid gland plate	1	2235.135	2235.135	2235.135	2235.135	2235.135	2235.135	1052
Gland plate with brush insert	1	7705.035	7705.035	7705.035	7705.035	7705.035	7705.035	1052
Gland plate for metric cable glands	1	7705.235	7705.235	7705.235	7705.235	7705.235	7705.235	1052
Fan expansion kit, 230 V	1	7980.100	7980.100	7980.100	7980.100	7980.100	7980.100	703
Spare filter mats	5	3322.700	3322.700	3322.700	3322.700	3322.700	3322.700	725
Wall mounting bracket, 40 mm	4	2503.010	2503.010	2503.010	2503.010	2503.010	2503.010	975
Lock inserts		see page 956						
Component shelf 2 U, static installation or fully extendible, 300 mm deep	1	7148.035	7148.035	7148.035	7148.035	7148.035	7148.035	1019
Component shelf 2 U, static installation, 250 mm deep	1	7119.250	7119.250	7119.250	7119.250	7119.250	7119.250	1021



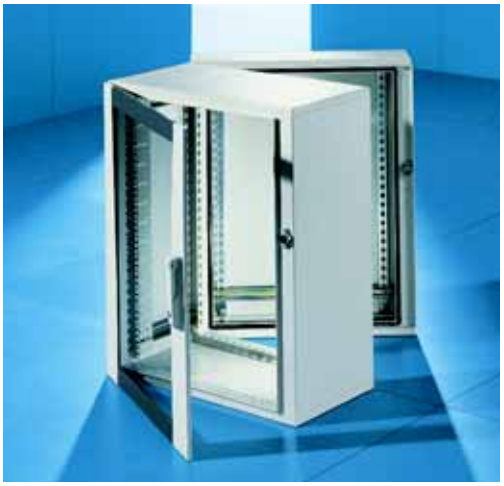
Fans
230 V AC or 48 V DC,
see page 703.

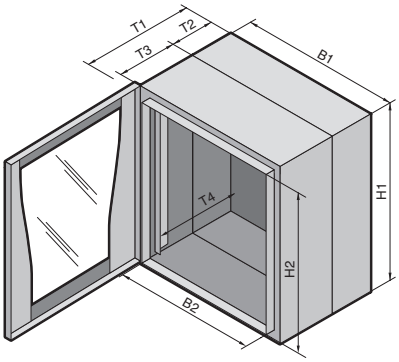


Socket strips
for mounting in the wall section or on the 482.6 mm (19″) profile,
see page 1038.

Accessories Page 890 **Cable shunting ring** Page 1069 **Slide rails** Page 1097

Wall-mounted enclosure, based on Rittal EL, 3-part, with punched rails, depth 473





Material:
Wall and hinged part:
Sheet steel, 1.5 mm
Viewing window:
Toughened safety glass 3 mm

Colour:
Wall and hinged part:
Powder-coated in RAL 7035
Glazed door: RAL 7035/7015 (slate grey)

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
Wall section:
With vertical punched rails and C rail mounted horizontally for cable clamping, solid cable gland plate top and bottom, wall mounting bracket 10 mm.

Hinged part:
With 25 mm pitch pattern of holes in the front and rear frame, two 482.6 mm (19″) mounting angles mounted on C rails, infinitely depth-variable.

Designer glazed door:
6 – 15 U with mini comfort handle for lock inserts,
18 – 21 U with comfort handle and 2-point locking,
including security lock 3524 E.

Available on request:
- Fully modified wall-mounted distributors
- Special sizes (D = 373 mm, 573 mm)
- Glazed door with aluminium frame
- Sheet steel door, solid

Approvals,
see page 94.

Detailed drawing,
available on the Internet.

U	Packs of	6	9	12	15	18	21	Page
Width (B1) mm		600	600	600	600	600	600	
Height (H1) mm		345	478	612	746	878	1012	
Depth (T1) mm		473	473	473	473	473	473	
Clearance width (B2) mm		502	502	502	502	502	502	
Clearance height (H2) mm		284	417	551	684	817	951	
Depth of wall section (T2) mm		135	135	135	135	135	135	
Depth of hinged part (T3) mm		316	316	316	316	316	316	
Maximum installation depth (T4) mm		420	420	420	420	420	420	
Model No. DK	1	**7706.135**	**7709.135**	**7712.135**	**7715.135**	**7718.135**[1)]	**7721.135**	
Load capacity, hinged part (kg, static)		30	45	60	75	75	75	
Accessories								
Gland plate with brush insert	1	7705.035	7705.035	7705.035	7705.035	7705.035	7705.035	1052
Gland plate for metric cable glands	1	7705.235	7705.235	7705.235	7705.235	7705.235	7705.235	1052
Base/plinth	1	7505.300	7505.300	7505.300	7505.300	7505.300	7505.300	904
Wall mounting bracket, 40 mm	4	2503.010	2503.010	2503.010	2503.010	2503.010	2503.010	975
Lock inserts		see page 956						
Earth rail, horizontal	1	7113.000	7113.000	7113.000	7113.000	7113.000	7113.000	1036
Component shelf 2 U, static installation and fully extendible	1	7148.035	7148.035	7148.035	7148.035	7148.035	7148.035	1019
Component shelf 2 U, static installation, 250 mm deep	1	7119.250	7119.250	7119.250	7119.250	7119.250	7119.250	1021
Component shelf 1 U, static installation, 140 mm deep	1	7119.140	7119.140	7119.140	7119.140	7119.140	7119.140	1021

[1)] Delivery times available on request.



Slide rails
to support heavy components on the 482.6 mm (19″) profile, see page 1097.

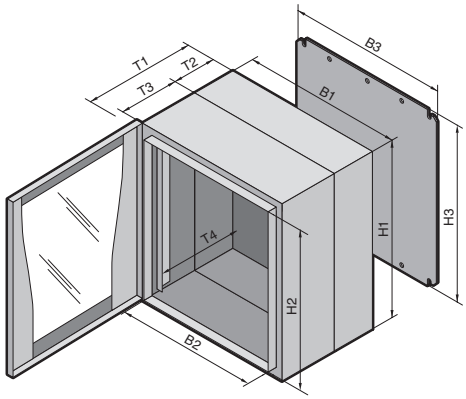


Semi-cylinder
for individual locks in the comfort or mini comfort handle, see page 957.
Handles, see page 947.

Accessories Page 890 **Socket strips** Page 1038 **Wall mounting** Page 975

Wall-mounted enclosure, based on Rittal EL, 3-part, with mounting plate, depth 373





Material:
Wall and hinged part:
1.5 mm sheet steel
Mounting plate:
2.5 mm sheet steel, zinc-plated, passivated
Viewing window:
Toughened safety glass 3 mm

Colour:
Wall and hinged part:
Powder-coated, RAL 7035
Glazed door: RAL 7035/7015 (slate grey).

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
Wall section:
With 2 cable gland plates,
1 mounting plate supplied loose, assembly parts.

Hinged part:
With 2 mounting angles,
482.6 mm (19″), fitted at the front, assembly parts.

Designer glazed door:
3 – 15 U with mini comfort handle for lock inserts,
18 – 21 U with comfort handle and 2-point locking,
including security lock 3524 E.

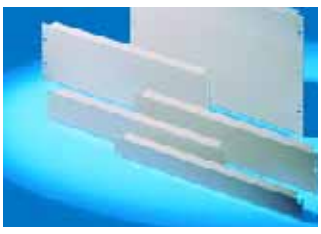
Available on request:
- Special sizes and colours
- Glazed door with aluminium frame
- Sheet steel door, solid

Approvals,
see page 94.

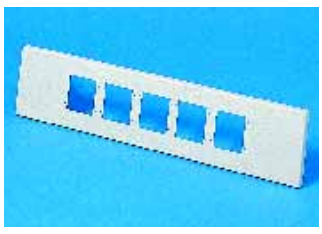
Detailed drawing,
available on the Internet.

U		Packs of	3	6	9	12	15	18	21	Page
Width (B1) mm			600	600	600	600	600	600	600	
Height (H1) mm			212	345	478	612	746	878	1012	
Depth (T1) mm			373	373	373	373	373	373	373	
Clearance width (B2) mm			502	502	502	502	502	502	502	
Clearance height (H2) mm			151	284	417	551	684	817	951	
Depth of wall section (T2) mm			135	135	135	135	135	135	135	
Depth of hinged part (T3) mm			216	216	216	216	216	216	216	
Maximum installation depth (T4) mm			320	320	320	320	320	320	320	
Width of mounting plate (B3) mm			485	485	485	485	485	485	485	
Height of mounting plate (H3) mm			165	299	432	565	699	832	965	
Model No. EL		1	**2243.605**	**2246.605**	**2249.605**	**2252.605**	**2255.605**	**2258.605**[1)]	**2261.605**	
Load capacity, hinged part (kg, static)			15	30	45	60	75	75	75	
Accessories										
Wall mounting bracket	10 mm	4	2508.010	2508.010	2508.010	2508.010	2508.010	2508.010	2508.010	975
Wall mounting bracket	40 mm	4	2503.010	2503.010	2503.010	2503.010	2503.010	2503.010	2503.010	975
Gland plate with brush insert		1	7705.035	7705.035	7705.035	7705.035	7705.035	7705.035	7705.035	1052
Gland plate for metric cable glands		1	7705.235	7705.235	7705.235	7705.235	7705.235	7705.235	7705.235	1052
Cable glands			see page 1054							
Lock inserts			see page 956							
Slide rails		10	2240.000	2240.000	2240.000	2240.000	2240.000	2240.000	2240.000	1099
C rails		4	2238.000	2238.000	2238.000	2238.000	2238.000	2238.000	2238.000	1002
Blanking plates		3	see page 1100							

[1)] Delivery times available on request.



Blanking panels
for individual machining,
see page 1110.

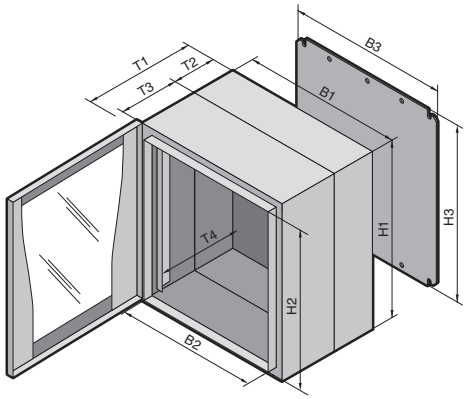


Gland plates
for PG segments for cable routing with a high protection category,
see page 1053.

Accessories Page 890 **Earthing** Page 1034 **Cable management panel** Page 1077 **Component shelf** Page 1021

Wall-mounted enclosure, based on Rittal EL, 3-part, with mounting plate, depth 473





Material:
Wall and hinged part:
1.5 mm sheet steel
Mounting plate:
2.5 mm sheet steel, zinc-plated, passivated
Viewing window:
Toughened safety glass 3 mm

Colour:
Wall and hinged part:
Powder-coated in RAL 7035
Glazed door: RAL 7035/7015 (slate grey)

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
Wall section:
With 2 cable gland plates,
1 mounting plate supplied loose,
assembly parts.

Hinged part:
With 2 mounting angles,
482.6 mm (19″), fitted,
assembly parts.

Designer glazed door:
3 – 15 U with mini comfort handle for lock inserts,
18 – 21 U with comfort handle and 2-point locking,
including security lock 3524 E.

Available on request:
- Special sizes and colours
- Glazed door with aluminium frame
- Sheet steel door, solid

Approvals,
see page 94.

Detailed drawing,
available on the Internet.

U		Packs of	3	6	9	12	15	18	21	Page
Width (B1) mm			600	600	600	600	600	600	600	
Height (H1) mm			212	345	478	612	746	878	1012	
Depth (T1) mm			473	473	473	473	473	473	473	
Clearance width (B2) mm			502	502	502	502	502	502	502	
Clearance height (H2) mm			151	284	417	551	684	817	951	
Depth of wall section (T2) mm			135	135	135	135	135	135	135	
Depth of hinged part (T3) mm			316	316	316	316	316	316	316	
Maximum installation depth (T4) mm			420	420	420	420	420	420	420	
Width of mounting plate (B3) mm			485	485	485	485	485	485	485	
Height of mounting plate (H3) mm			165	299	432	565	699	832	965	
Model No. EL		1	**2253.605**	**2256.605**	**2259.605**	**2262.605**	**2265.605**	**2268.605**[1)]	**2271.605**	
Load capacity, hinged part (kg, static)			15	30	45	60	75	75	75	
Accessories										
Wall mounting bracket	10 mm	4	2508.010	2508.010	2508.010	2508.010	2508.010	2508.010	2508.010	975
Wall mounting bracket	40 mm	4	2503.010	2503.010	2503.010	2503.010	2503.010	2503.010	2503.010	975
Lock inserts			see page 956							
Gland plate with brush insert		1	7705.035	7705.035	7705.035	7705.035	7705.035	7705.035	7705.035	1052
Gland plate for metric cable glands		1	7705.235	7705.235	7705.235	7705.235	7705.235	7705.235	7705.235	1052
Base/plinth		1	7505.300	7505.300	7505.300	7505.300	7505.300	7505.300	7505.300	
Cable glands			see page 1054							
Slide rails		10	2250.000	2250.000	2250.000	2250.000	2250.000	2250.000	2250.000	1097
C rails		4	2239.000	2239.000	2239.000	2239.000	2239.000	2239.000	2239.000	1002
Blanking plates		3	see page 1100							

[1)] Delivery times available on request.



Base/plinth
can be fitted with castors,
see page 904.

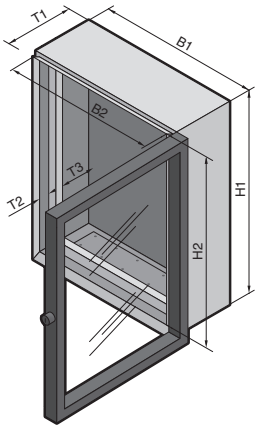


The 1 U **component shelf**
can be secured
in the centre section,
see page 1021.

Accessories Page 890 **Socket strip** Page 1038 **Wall mounting** Page 975 **Cable clamps** Page 1064

Wall-mounted enclosure, based on Rittal EL, 2-part, with swing frame, depth 369





Material:
Enclosure: 1.5 mm sheet steel
Swing frame: Sheet steel
Front door: Extruded aluminium section, 3 mm acrylic glazing

Surface finish:
Enclosure and swing frame: Primed and powder-coated, RAL 7035
Front door: Dark brown anodised

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
Enclosure, front door, fitted swing frame, including assembly parts.

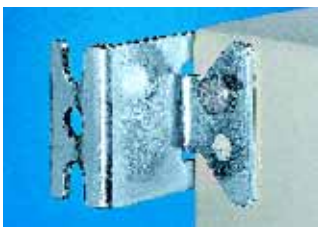
Available on request:
- Special sizes and colours

Approvals,
see page 95.

Detailed drawing,
available on the Internet.

U	Packs of	6	11	14	Page
Width (B1) mm		600	600	600	
Height (H1) mm		380	600	760	
Depth (T1) mm		369	369	369	
Clearance width (B2) mm		537	537	537	
Clearance height (H2) mm		317	537	697	
Distance from glazed door to swing frame (T2) mm		67 – 97	67 – 97	67 – 97	
Maximum installation depth (T3) mm		270	270	270	
Model No. EL	1	**1919.500**	**1920.500**	**1926.500**	
Accessories					
Wall mounting bracket, 10 mm	4	2508.010	2508.010	2508.010	975
Wall mounting bracket, 40 mm	4	2503.010	2503.010	2503.010	975
Gland plates with hole	5	2563.000	2563.000	2563.000	1048
Blanking plates	3	see page 1100			

Standard swing frame with double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 956.



Wall mounting bracket
for mounting the enclosure either 10 mm or 40 mm away from the wall,
see page 975.

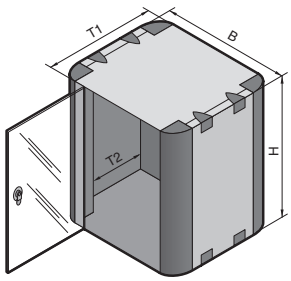


Combination rails
for securing cables to the T-heads or the C section,
see page 1063.

Accessories Page 890 **Cage nuts** Page 1105 **Patch panel for copper transmission cables** Page 1106 **Socket strips** Page 1038

RNC enclosures





Rittal-Net.com is the passive platform for the fast, future-proof assembly of communications networks in the small office sector.
Three designer enclosures, for population with connection cables, patch cables and distributor panels, are tailored to the specific criteria of the SOHO market. Work groups may be set up quickly and easily.

Material:
1.5 mm sheet steel
Smoked grey acrylic glazing
Corner sections, aluminium
Corner feet made from thermoplastic foam

Colour:
Enclosure panels: RAL 7035
Corner sections: RAL 7030

Detailed drawing,
available on the Internet.

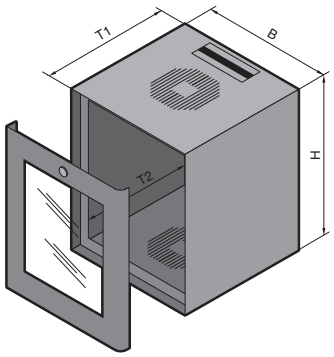
U	Packs of	4	8	6	Page
Width (B) mm		342	342	342	
Height (H) mm		215	390	490	
Depth (T1) mm		280	280	400	
Max. installation depth (T2) mm		250	250	335	
Model No. DK empty enclosure, individual	1	**7870.100**	**7870.200**	**7870.300**	
Design		42 HP ($^1/_2$ 19″)	42 HP ($^1/_2$ 19″)	84 HP (19″)	
Installation position		horizontal	horizontal	vertical	
Accessory kits					
Data distributor, including patch cable					
VF Cat 6, 8 ports, STP, LSA, including 8 patch cables with RJ 45 connector on both sides, extruded insulation, cable design in yellow, cable length 0.25 m	1	7870.822[1)]	7870.822[1)]	–	1106
VF Cat 6, 24 ports, STP, LSA, including 12 patch cables with RJ 45 connector on both sides, extruded insulation, cable design in yellow, cable length 0.6 m	1	–	–	7870.830	1106

[1)] Delivery times available on request.

Accessories Page 890

RNC universal enclosure





A compact contemporary design in black, with integral glazed door (tinted safety glass). Central locking with just one lock, the side panels cannot be removed whilst the front door is latched.

Suitable for use both as a stand-alone model and for wall mounting. The plug-in side panels ensure rapid access and plenty of scope when mounting. Optional 1/2 19″, 10″ or 19″ components RNC can be bayed, both horizontally and vertically, using the connector kit (supplied loose).

Passive ventilation via openings in the rear frame, roof and the gland plate. Fan expansion kit, optional (DK 7980.100).
Cable entry optionally via the rear panel, roof or base.
All frame parts and panels are prepared for earthing.

Material:
Sheet steel, single-pane safety glass

Colour:
Black, similar to RAL 9011

Supply includes:
Enclosure with glazed door, baying kit,
brush strip for cable entry,
482.6 mm (19″) mounting level at front.

Property rights:
German patents
no. 10 210 481
no. 10 210 482

Detailed drawing,
available on the Internet.

U 269.2 mm (1/2 19″)	Packs of	10	Page
U 482.6 mm (19″)		5	
Width (B) mm		350	
Height (H) mm		500	
Depth (T1) mm		350	
Max. installation depth (T2) mm		270	
Model No. DK	1	**7870.350**	
Accessories			
Socket strip 3-way, without switch	1	7240.110	1038
Socket strip 7-way, without switch, for 482.6 mm (19″) level	1	7240.210	1038
Socket strip 7-way, with switch, for 482.6 mm (19″) level	1	7240.220	1038
269.2 mm (1/2 19″) component shelf, 1 U	1	7502.600	1021
269.2 mm (1/2 19″) cable management panel, 1 U	1	7502.610	767
269.2 mm (1/2 19″) blanking panel, 1 U	2	7870.720	767
269.2 mm (1/2 19″) cable entry panel, 1 U	2	7870.730	767
482.6 mm (19″) blanking panel, 1 U	2	7151.035	1110
482.6 mm (19″) blanking panel, 2 U	2	7152.035	1110
482.6 mm (19″) blanking panel, 3 U	2	7153.035	1110
Combination rail, length 200 mm	6	7502.302	1063
Adaptor for 10″ system, 1 U	1	7870.760	767
Adaptor for 10″ system, 4 U	1	7870.765	767
Phillips-head screw M5, with plastic washer	100	2099.500	1105
Phillips-head screw M6, with plastic washer	100	2089.000	1105
Captive nuts M5, with contact	50	2094.500	1105
Captive nuts M6, with contact	50	2094.200	1105

Accessories Page 890

Accessories for RNC enclosures



Cable management panel 1U:

42 HP (1/2 19″)
for RNC
For horizontal cable routing.

Material:
Sheet steel

Colour:
RAL 7035

U	Model No. DK
1	**7502.610**

Supply includes:
Tray and 5 shunting rings.



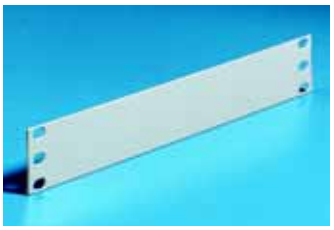
Entry panel 1 U

42 HP (1/2 19″)
for RNC
For entry of patch cables. Cut-out approximately 227 x 30 mm.

Material:
Sheet steel

Packs of	Model No. DK
2	**7870.730**

Colour:
RAL 7035



Blanking panel 1 U

42 HP (1/2 19″)
for RNC and RiCase
As a blanking cover.

Material:
Sheet steel

Colour:
RAL 7035

Packs of	Model No. DK
2	**7870.720**





Adaptor

for RNC
For installing 10″ components in 269.2 mm (1/2 19″) enclosures.

Material:
Sheet steel

Colour:
RAL 7035

U	Model No. DK
1	**7870.760**
4	**7870.765**



Base/plinth

for RNC
To accommodate a maximum of two 3-way socket strips DK 7240.110 and also as storage space for cables.
Height: 60 mm.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
4 levelling feet and 2/4 cable shunting rings.

HP	Width mm	Depth mm	Model No. DK
42	342	280	**7870.710[1)]**
84	342	400	**7870.715[1)]**

[1)] Delivery times available on request.

Accessories:

Socket strip,
see page 1038.



Angle bracket

for RNC
With space for optimum cable routing behind the RNC.

Material:
Sheet steel

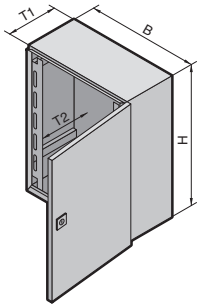
Colour:
RAL 7035

HP	Width mm	Depth mm	Packs of	Model No. DK
42	342	280	2	**7870.701**
84	342	400	2	**7870.706**

Supply includes:
Assembly parts

Wall-mounted enclosure, based on Rittal AE





Wall-mounted distributor with infinitely depth-variable 482.6 mm (19″) mounting level at the front. The ideal solution for small networks or corridor distributors.
Max. achievable protection category of up to IP 55 (to EN 60 529/09.2000) by replacing the cable entry brush with a gland plate.

Material:
Sheet steel

Surface finish:
Enclosure: Powder-coated, RAL 7035

Supply includes:
1 wall-mounted distributor enclosure with sheet steel door, cam lock and double-bit insert.
Brush strip for cable entry at the bottom,
2 mounting angles, 482.6 mm (19″), depth-adjustable,
1 C rail for cable routing,
1 metal bracket for optional accommodation of an earth rail or 482.6 mm (19″) socket strip.

Available on request:
- Fully modified wall-mounted distributors
- Special designs

Approvals,
see page 95.

Detailed drawing,
available on the Internet.

U		Packs of	8	13	16	Page
Width (B) mm			600	600	600	
Height (H) mm			380	600	760	
Depth (T1) mm			350	350	350	
Max. installation depth (T2) mm			310	310	310	
Model No. DK		1	**7641.000**	**7643.000**	**7645.000**	
Accessories						
Gland plates in various designs	Size		5	5	5	1048 – 1053
	Qty.		1	1	1	
Wall mounting bracket, 10 mm		4	2508.010	2508.010	2508.010	975
Wall mounting bracket, 40 mm		4	2503.010	2503.010	2503.010	975
Glazed door, 34 mm profile depth		1	2730.000	2731.000	2732.000	944
Glazed door, 60 mm profile depth		1	2760.000	2761.000	2762.000	944
Component shelf 2 U, static installation, 250 mm		1	7119.250	7119.250	7119.250	1021
Earth rail		1	7113.000	7113.000	7113.000	1036
Lock systems						
Plastic handle, version B, see page 954.						
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, version A, see page 956.						



Earth rail
for attaching to the rear bracket, see page 1036.

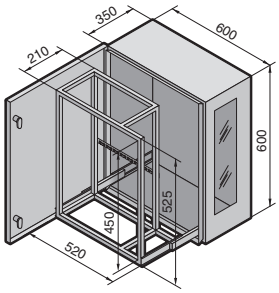


High protection category
by exchanging the brush strip for metal gland plates, see page 1049.

Accessories Page 890 **Socket strips** Page 1038 **Cage nuts** Page 1105 **Glazed doors** Page 944

Wall-mounted enclosure, based on Rittal AE, with pull-out frame





Wall-mounted distributor with 482.6 mm (19″) pull-out frame. Side and front installation with 482.6 mm (19″) components in a vertical mounting position. Horizontal installation also optionally supported at the front. Status monitoring via side viewing window. Pull-out frame may be removed for population via snap fastenings. Passive cooling via pre-configured outlet filter, may be upgraded to active. Optional accommodation of earth rail DK 7113.000 in a vertical position on the pull-out frame.

Material:
Sheet steel

Surface finish:
Enclosure: Powder-coated, RAL 7035
Pull-out frame zinc-plated, passivated

Supply includes:
1 wall-mounted distributor enclosure with sheet steel door, cam locks and double-bit insert.
Pull-out frame attached to telescopic slides.
Outlet filter in enclosure base and on left-hand side.
Viewing window on right-hand side.
Combination rail for cable clamping behind the cable entry.
Additional cable clamp rail for mounting on the pull-out frame.

Protection category:
IP 43 to EN 60 529/09.2000

Available on request:
- Fully modified wall-mounted distributors
- Special designs

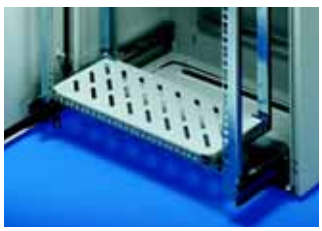
Detailed drawing,
available on the Internet.

Width mm		Packs of	600	Page
Height mm			600	
Depth mm			350	
Model No. DK		1	**7644.000**	
Side 482.6 mm (19″) level, vertical			4 U	
Front 482.6 mm (19″) level, vertical and horizontal			10 U	
Accessories				
Gland plates in various designs	Size		5	1048 – 1053
	Qty.		1	
Wall mounting bracket, 10 mm		4	2508.010	975
Wall mounting bracket, 40 mm		4	2503.010	975
Shelf		1	7644.400[1)]	1022
Component shelf, 1 U		1	7119.140	1021
Earth rail, horizontal		1	7113.000	1036
Fan expansion kit 230 V AC (only for use at the bottom)		1 set	7980.100	703
Fan expansion kit 48 V DC (only for use at the bottom)		1 set	7980.148	703
Lock systems				
Plastic handle, version B, see page 954.				
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, version A, see page 956.				

[1)] Delivery times available on request.



Active ventilation
with the fan expansion kit in 230 V AC or 48 V DC versions, see page 703.

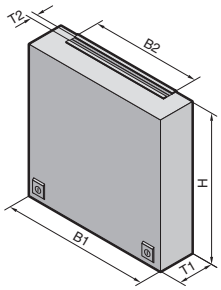


Shelf
support surface for small equipment,
see page 1022.

Accessories Page 890 **Component shelf** Page 1022 **Touch-up pens** Page 922 **Telecoms mounting bracket** Page 861

Small fibre-optic distributors





Material:
Sheet steel, 1.5 mm

Surface finish:
Enclosure: Powder-coated, RAL 7035

Supply includes:
1 enclosure, two-part, to accommodate a maximum of 48 or 96 optical fibres,
1 wall section:
With mounting holes for wall mounting,
11 or 16 shunting rings:
For patching cables/fibre stock,
1 or 2 splicing cassette holders:
To accommodate a maximum of 8 or 16 splicing cassettes,
2 comb strips:
For cable clamping, and brush inserts to provide protection against dust,
1 cover:
With suspension device and two cam locks.

Note:
When the small fibre-optic distributor is used without a patch panel, 1 or 2 splicing cassette holders may be retrofitted (maximum splicing cassette accommodation 16/32).

Available on request:
- Special designs

Property rights:
German patent no. 44 10 795

Detailed drawing,
available on the Internet.

Width (B1) mm	Packs of	500	500	Page
Height (H) mm		500	900	
Depth (T1) mm		120	120	
Width of cable entry (B2) mm		395	395	
Depth of cable entry (T2) mm		29	29	
Model No. DK	1	**7452.035**	**7453.035**	
Number of fibres (when using patch panels)		1 – 48	1 – 96	
Accessories				
Patch panels with 12/24 locations for fibre-optic couplings		Maximum population 2 patch panels	Maximum population 4 patch panels	
F-SMA 6.5 mm, 24 locations	2	**7456.035**[1)]	**7456.035**[1)]	–
F-SMA 7.5 mm, 24 locations	2	**7457.035**[1)]	**7457.035**[1)]	–
ST, 24 locations	2	**7458.035**	**7458.035**	–
DIN 47 256, 24 locations	2	**7459.035**[1)]	**7459.035**[1)]	–
SC, E-2000, E-2000 duplex, 24/12 locations	2	**7460.035**[1)]	**7460.035**[1)]	–
SC duplex, 12 locations	2	**7460.135**[1)]	**7460.135**[1)]	–
Splicing cassette holder for retrofitting	1	**7450.035**	**7450.035**	1111
Lock systems				
T handle without lock insert	1	2572.000	2572.000	955
T handle with lock insert no. 3524 E	1	2575.000	2575.000	955
Plastic handle with lock no. Nr. 3524 E	1	2576.000	2576.000	954
Plastic handle	1	2533.000	2533.000	954
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, version A, see page 956.				

[1)] Delivery times available on request.



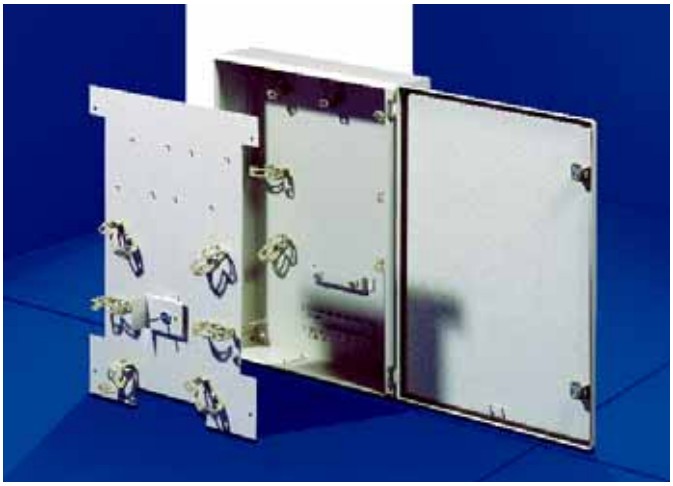
Splicing cassette holder
incl. cassette cover,
see page 1111.

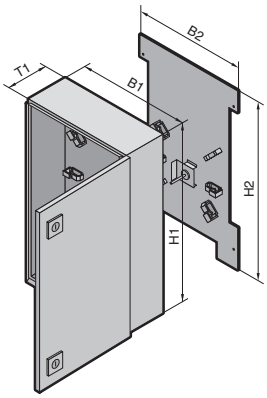


Blanking cover
for unused cut-outs in patch panels,
see page 1112.

Accessories Page 890 **Lock systems** Page 947 **Nylon loop** Page 1066

Small fibre-optic distributors, based on Rittal AE





Layout of the small fibre-optic distributor:

Basic enclosure:
With cable shunting rings to accommodate the fibre stock and a strain relief system for incoming and outgoing cables.

Mounting plate:
With accommodation for 4 splicing cassettes and 4 patch panels.

Patch panels:
There are 4 patch panels available with varying cut-outs.

Other special versions available on request.

Material:
Sheet steel

Surface finish:
Enclosure: Powder-coated, RAL 7035

Protection category:
IP 55 (to EN 60 529/09.2000) when using suitable cable gland plates.

Supply includes:
1 enclosure of sheet steel with
2 gland plates of sheet steel, sides,
1 gland plate, bottom,
7 cable shunting rings 70 x 44 mm,
2 strain relief clips,
1 cable clamp rail, double,
1 door of sheet steel, with double-bit locks, with 2 hinges on the right,
1 mounting plate of sheet steel with 6 shunting rings 70 x 44 mm,
4 recesses for patch panels,
1 splicing cassette holder.

Detailed drawing,
available on the Internet.

Width (B1) mm		Packs of	400	Page
Height (H1) mm			500	
Depth (T1) mm			155	
Mounting plate width (B2) mm			355	
Mounting plate height (H2) mm			455	
Model No. DK		1	**7454.000**	
Number of fibres (when using patch panels)			1 – 48	
Accessories				
Patch panel, maximum population with 4 patch panels	Locations			
Patch panel for ST couplings	12	2	**7462.000**	
Patch panel for SC, E-2000, E-2000 duplex couplings	12/6	2	**7463.100**	
Patch panel for SC duplex couplings	6	2	**7463.200**	
Cable gland with 2 half-shells, cable diameter from 8 – 36 mm, for mounting at the bottom, reduced protection category		1	2400.000	1057
Plastic cable gland plates, PG size 13.5, for side mounting		5	1581.000	1048
Plastic cable gland plates, PG size 13.5 /16/21, for side mounting		5	1582.000	1048
Wall mounting bracket, 40 mm		4	2503.010	975
Wall mounting bracket, 10 mm		4	2508.010	975
Lock systems				
Plastic handle		1	2533.000	954
Plastic handle with lock cylinder insert		1	2576.000	954
Lock cylinder insert no. 3524 E		1	2571.000	957
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, version A, see page 956.				



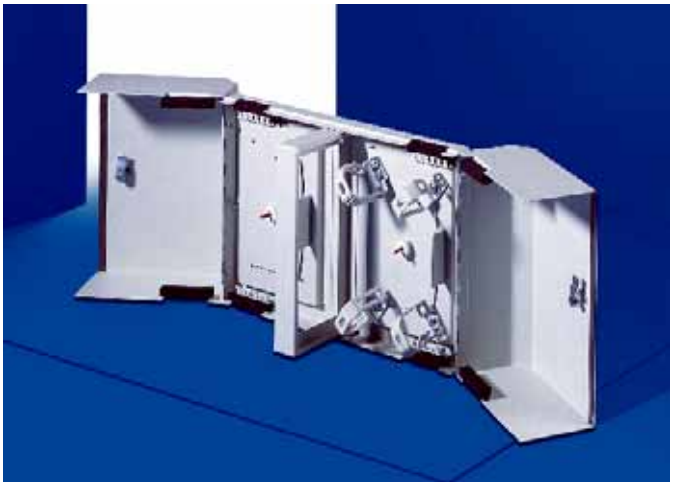
Connector gland
for pre-assembled cables, see page 1057.

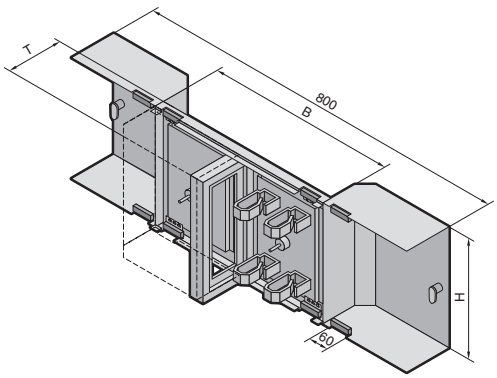


Plastic handle
with a lock cylinder, see page 954.

Accessories Page 890 **Plastic cable gland plates** Page 1048 **Wall mounting** Page 975

Fibre-optic marshalling enclosure





Patch panels are easily fastened within the aperture. A door is provided to cover and lock the splicing cassette accommodation. A second door covers and locks the secondary chamber/ splicing cassette accommodation. Both doors are provided with different locks.

Material:
Sheet steel, 1.0 mm

Colour:
RAL 7035

Surface finish:
Enclosure: Powder-coated, RAL 7035

Supply includes:
1 enclosure to accommodate a maximum of 24 optical fibres, wall section with mounting holes for wall mounting,
2 doors with different locks, for separate access,
4 shunting rings, 70 x 44 mm,
2 splicing cassette holders each for 2 splicing cassettes,
4 rubber seals for cable entry,
4 comb strips for cable clamping.

Note:
If the marshalling enclosure is used without patch panels, 4 splicing cassettes, 2 per side, may be integrated.

Property rights:
German patent no. 195 47 135
European patent no. 0 867 058 with validity for NL
European patent no. 0 867 059 with validity for DE, FR, GB, IT

Available on request:
- Other variants

Detailed drawing,
available on the Internet.

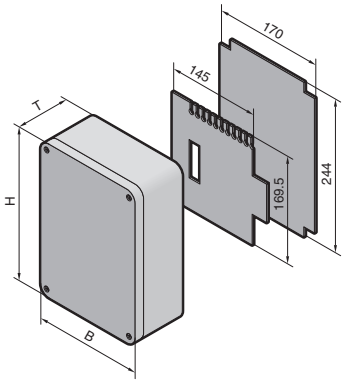
Width (B) mm	Packs of	400
Height (H) mm		250
Depth (T) mm		120
Model No. DK	1	**7247.000**
Number of fibres (when using patch panels)		1 – 24
Accessories		
Patch panel for 24 ST couplings	1	**7247.010**
Patch panel for 24 SC, E-2000 couplings[1)]	1	**7247.020**
Patch panel for 12 SC duplex couplings	1	**7247.030**

[1)] 12 E-2000 duplex couplings may be accommodated.

Accessories Page 890

Small fibre-optic distributor, polycarbonate





Configuration
Small fibre-optic distributor:

Mounting plate:
With accommodation for one or two splicing cassettes, the width of the cassettes may vary from 92 to 120 mm.

Dividing plate:
Covers the splicing cassettes and separates them from the patch cables. Aperture for patch panels and a cable clamp are also integrated.

Patch panels:
F-SMA, E-2000-ST couplings, E-2000 duplex and SC and SC duplex couplings are available. Other special variants available on request.

Cable entry:
For cable entry, there are pre-punchings for PG cable glands integrated into the small fibre-optic distributor.
The cable glands (12 x PG 7 and 1 x PG 16) are included with the supply. Pre-assembled connectors will also fit through the knockout apertures (for diameters, see below).
Depending on diameter, the cable can either be held in the knockouts by a 2-part cable entry gland or cable entry sleeves.
The two-part cable entry and the grommets are not included with the supply, due to the different cable diameters.
Diameter of the prepunched knockouts:
12 x 12.5 mm
2 x 22.5 mm

Material:
Enclosure and cover:
Fibreglass-reinforced polycarbonate
Cover screws: Polyamide

Colour:
RAL 7035

Protection category:
IP 66 to EN 60 529/09.2000.

Supply includes:
1 enclosure and lid of fibre-glass-reinforced polycarbonate to accommodate splicing cassettes and patch panels,
1 enclosure lid with 2 hinges,
knockouts for PG glands are integrated into the enclosure,
12 x cable glands PG 7,
1 x cable gland PG 16,
1 mounting plate with variable accommodation of 2 splicing cassettes and integral anti-twist guard,
1 dividing plate to cover the splicing cassette, accommodation for 2 patch panels and comb strip for cable clamping,
2 lid screws of polyamide with option of preparing for a lead seal, polyamide insulating bungs for wall mounting screws.
All-round foamed-in PU seal.

Detailed drawing,
available on the Internet.

Width (B) mm			Packs of	180
Height (H) mm				254
Depth (T) mm				90
Model No. DK			1	**7451.000**
Number of fibres (when using patch panels)				1 – 24
Accessories				
	Locations per patch panel	Locations per enclosure		
Patch panel for 7.5 mm F-SMA couplings	12	24	2	**7461.000**
Patch panel for ST couplings	12	24	2	**7462.000**
Patch panel for SC, E-2000, E-2000 duplex couplings	12/6	24/12	2	**7463.100**
Patch panel for SC duplex couplings	6	12	2	**7463.200**
Wall mounting brackets			40	**9583.000**

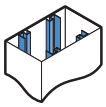
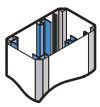


Wall mounting brackets
Attach securely to the enclosure simply by clipping in.

Accessories Page 890

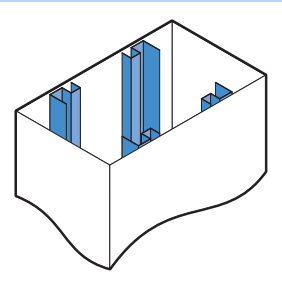
System comparison of racks

Rittal server rack solutions are as versatile as your requirements! **Three system platforms with various strengths in terms of security, interior installation, climate control and design** provide the basis for server racks with carefully selected configurations to meet your requirements precisely.

Rittal system comparison	TE 7000	TS 8	FR(i)
One platform for all requirements in the IT market			
Load capacity			
up to 700 kg, static	■■■	■■■	■■■
up to 1000 kg, static		■■■	■■■
Baying			
Side to side	■■■	■■■	■■■
In all levels		■■■	
Dismantling	■■■	■	■
Climate control			
Fans	■■■	■■■	■■■
Cooling unit		■■■	
Air/water heat exchanger		■■■	
CPU liquid cooling		■■■	■■■
Cabling			
Cable space	■■■	■■	■■
Cable management	■■	■■■	■■
Lock system			
2-point	■■■	■■■	■■■
4-point		■■■	
Security			
Access control	■■■	■■■	■■■
Thermal management	■■■	■■■	■■■
Interior installation			
Depth-variable	■■■	■■■	■■
Partial installation		■■■	
2-level principle		■■■	■
Aesthetics	■■	■■	■■■
Standards			
IEC 60 297-1-2	■■■	■■■	■■■

Note:
The more ■ the greater the compatibility.

Rittal TE 7000







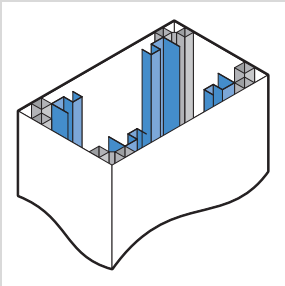
TE 7000 – The Top Efficiency server rack
With two depth-variable 482.6 mm (19″) frames (without enclosure frame), the practical rack for the server room.

- Optimum accessibility.
- Fully vented front and rear door, > 67 % free ventilation area.
- 2-point locking, optionally with Ergoform-S handle system.

Server racks based on Rittal TE 7000, see page 776.

System comparison of racks

Rittal TS 8





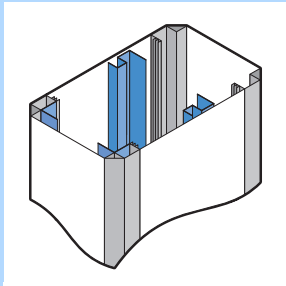


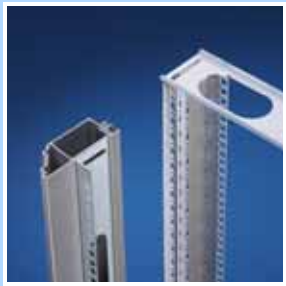
TS 8 – The server rack with no limitations
Rittal TS 8 server racks offer the ideal conditions to combine all the relevant technologies into complete IT infrastructure solution.
Each rack makes an important contribution to the physical security of your IT infrastructure and forms the interface to pioneering climate control concepts.

- Ventilation via perforated front and rear ventilated door with open area of > 78 %.
- Lock system with comfort handle and 4-point locking.
- The ingenious symmetry concept of the frame offers baying on all sides.
- Frame section with unlimited mounting diversity.
- High load capacity up to 1000 kg.

Server racks based on Rittal TS 8, see page 777.

Rittal flexRack(i)







flexRack(i) – Smart design, exceptional technology
The server rack with a highly individual touch. The curved designer door unites functionality with aesthetics, while the aluminium system channel in the frame sections accommodates redundant socket strips, cabling or even rising mains from liquid cooling systems with no loss of space.

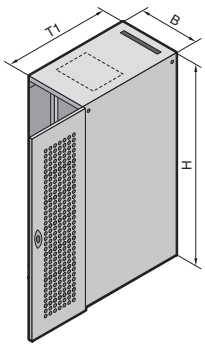
- Aluminium vertical sections with multi-functional system channel.
- Screw-fastened enclosure system, may be dismantled.
- Vented front and rear door with open surface area of 67 % in the perforated plate.
- 2-point locking.
- Stabilisers for optimum operational safety.

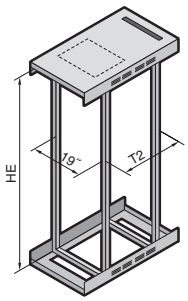
Server racks based on Rittal flexRack(i), see page 780.

Based on Rittal TE 7000, 1000 mm deep









Benefits:
- No frame structure, optimum accessibility

Static load capacity:
700 kg

Material:
Sheet steel

Surface finish:
Mounting frame:
Dipcoat-primed
Enclosure panels:
Powder-coated, RAL 7035/9005.

Supply includes:
Self-supporting 482.6 mm (19″) frame structure,
vented sheet steel door front and rear, two-point locking rod, recessed handle (front) and security lock 3524 E, roof plate with brush strip for cable entry and concealed cut-out for fan integration, levelling feet.

Detailed drawing,
available on the Internet.

U (HE)		42	42	42	42
Width (B) mm[1]		600	600	800	800
Height (H) mm[1]		2000	2000	2000	2000
Depth (T1) mm[1]		1000	1000	1000	1000
Distance between 482.6 mm (19″) levels in its delivered state (T2) mm		745	745	745	745
Model No. TE as bayed enclosure without side panels, including baying kit	RAL 7035	**7000.882**	**–**	**7000.892**	**–**
	RAL 9005	**–**	**7000.885**	**–**	**7000.895**
Doors					
Sheet steel door front and rear, fully vented; open surface area > 67 % perforated		■	■	■	■
Roof					
Roof plate including brush strip for cable entry and with an optional fan		■	■	■	■
Base					
Base frame with maximum cut-out for cable entry or passive ventilation. Can be fitted with optional blanking panels.		■	■	■	■
Interior installation					
482.6 mm (19″) mounting frames front and rear		■	■	■	■
Accessories					
Side panels, pluggable, including security lock 3524 E		**7000.653**	**7000.663**	**7000.653**	**7000.663**
Ergoform-S handle for semi-cylinder, to exchange for the existing lock		2435.000	2452.000[2]	2435.000	2452.000[2]
Fan unit, with 2 fans and thermostat, prewired ready for connection		7000.670	7000.671[3]	7000.670	7000.671[3]
Transport castors, 4 castors including assembly parts		7000.672	7000.672	7000.672	7000.672
C rail, for cable clamping in the enclosure width via cable clamps, on the 482.6 mm (19″) mounting frame at the rear		7828.060	7828.060	7828.060	7828.060
Cable clamp rail, depth-variable 500 – 895 mm, for cable attachment in the enclosure depth via cable ties		7858.162	7858.162	7858.162	7858.162
Cable clamp rail, for cable attachment in the enclosure width via cable ties, on the 482.6 mm (19″) mounting frame at the rear		7828.062	7828.062	7828.062	7828.062
Earthing kit for TE		7000.675	7000.675	7000.675	7000.675
TE socket strip, 8-way for earthing-pin plugs		7000.630	7000.630	7000.630	7000.630

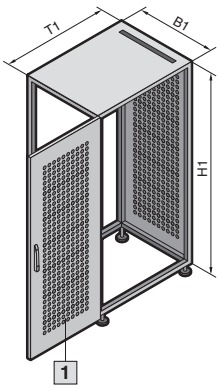
■ Included with the supply. [1] All sizes are nominal dimensions. For absolute dimensions, refer to detailed drawings on the Internet. [2] Matt nickel-plated.

Cable routing Page 1059 **Power management** Page 786 **CMC-TC system monitoring** Page 806

Based on Rittal TS 8, pre-configured







Design features
- Robust frame structure
- Front and rear door fully vented; vented surface area > 78 % perforated
- 4-point locking, 2-point locking with multiple door versions and H = 1200 mm
- Door hinge may be swapped to opposite side
- Cable entry via the roof and base
- Bayable at all levels
- Static load capacity of up to 1000 kg

Material:
Sheet steel

Surface finish:
Enclosure frame:
Dipcoat-primed

Enclosure panels:
Dipcoat-primed, powder-coated in RAL 7035 or RAL 9005
Mounting angles and punched sections with mounting flanges:
Zinc-plated, passivated

Supply includes:
Enclosure frame TS 8 with sheet steel doors front and rear, vented, with 130° hinges, L-shaped, depth-variable fitted mounting angles and/or 482.6 mm (19″) mounting frame, levelling feet, comfort handle with security lock 3524 E and 4-point lock.

Detailed drawing,
available on the Internet.

1 Optimised air flow

Number of front and rear doors		1	1	1	1	1	1	1	1
U		24	24	42	42	42	47	47	47
Width (B1) mm[2]		600	600	600	600	600	600	600	600
Height (H1) mm[2]		1200	1200	2000	2000	2000	2200	2200	2200
Depth (T1) mm[2]		900	1000	900	1000	1200	900	1000	1200
Model No. DK as bayed enclosure without side panels, without baying kit	RAL 7035	**7831.431**	**7831.433**[3]	**7831.436**	**7831.438**	**7831.481**	**7831.440**	**7831.442**	**7831.483**
	RAL 9005	**7831.432**[3]	**7831.434**[3]	**7831.437**	**7831.439**	**7831.482**	**7831.441**	**7831.443**	**7831.484**[3]
Model No. DK with side panels, plug-type	RAL 7035	–	–	–	–	**7831.491**	–	–	**7831.493**
	RAL 9005	–	–	–	–	**7831.492**	–	–	**7831.494**[3]
Doors									
Sheet steel doors, vented, front and rear[1]		■	■	■	■	■	■	■	■
Roof									
Roof plate for cable entry, two-piece		■	■	■	■	■	■	■	■
Base									
Levelling feet		■	■	■	■	■	■	■	■
Open base, without base frame		■	■	■	■	■	■	■	■
Interior installation									
482.6 mm (19″) levels, front and rear		■	■	■	■	■	■	■	■
L-shaped mounting angles		■	■	■	■	■	■	■	■
Mounting angles attached to depth stays		■	■	■	■	■	■	■	■
482.6 mm (19″) mounting frames, front and rear		–	–	–	–	–	–	–	–
Panel earthing, fitted		■	■	■	■	■	■	■	■
Individual compartments, shielded/separate cable routing per compartment		–/–	–/–	–/–	–/–	–/–	–/–	–/–	–/–
Accessories									
Plug-in side panels with T lock, IP 20	RAL 7035	7824.129	7824.120	7824.209	7824.200	■ (7831.491 only)	7824.229	7824.220	■ (7831.493 only)
	RAL 9005	7816.129	7816.120	7816.209	7816.200	■ (7831.492 only)	7816.229	7816.220	■ (7831.494 only)
Security lock 3524 E for side panels		7824.500	7824.500	7824.500	7824.500	7824.500	7824.500	7824.500	7824.500
Base assembly bracket		8800.210	8800.210	8800.210	8800.210	8800.210	8800.210	8800.210	8800.210
Depth-variable slide rail, 1 U		7063.883	7063.883	7063.883	7063.883	7063.883	7063.883	7063.883	7063.883
Stabiliser, pull-out		7825.200	7825.250	7825.200	7825.250	7825.260	7825.200	7825.250	7825.260

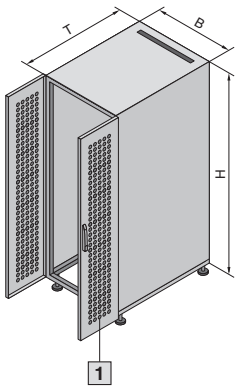
■ Included with the supply. [1] Vented surface area > 78 % perforated.
[2] All sizes are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet. [3] Delivery times available on request.

Accessories Page 890 **Liquid cooling** Page 726 **Baying system** Page 926

Based on Rittal TS 8, pre-configured







Design features:
- Robust frame structure
- Front and rear door fully vented; 180°; vented surface area > 78 % perforated
- 4-point locking
- Door hinge may be swapped to opposite side
- Cable entry via the roof and base
- Bayable at all levels
- Static load capacity of up to 1000 kg

Material:
Sheet steel

Surface finish:
Enclosure frame:
Dipcoat-primed
Enclosure panels:
Dipcoat-primed,
powder-coated in RAL 7035 or RAL 9005
Mounting frame:
Zinc-plated, passivated

Supply includes:
Enclosure frame TS 8 with sheet steel doors, vertically divided, vented front and rear, depth-variable 482.6 mm (19″) mounting frame front and rear, levelling feet, comfort handle with security lock 3524 E and 4-point lock.

Fitted with standard lock 3524 E. Enclosure panel earthing already prefitted. Two-piece roof plate, with sliding plate and rubber cable clamp strip for cable entry. Without or with side panels in colours RAL 7035 and RAL 9005.

Detailed drawing,
available on the Internet.

1 Optimised air flow. Open surface area > 78 % perforated.

Number of front and rear doors	2 (vertically divided)	2 (vertically divided)	2 (vertically divided)	2 (vertically divided)
U	42	42	42	42
Width (B) mm	800	800	800	800
Height (H) mm	2000	2000	2000	2000
Depth (T) mm	1200	1200	1200	1200
Model No. DK	**7831.489**	**7831.499**	**7831.580**[2)]	**7831.590**[2)]
RAL colour	7035	7035	9005	9005
Doors				
Sheet steel doors, vented, front and rear[1)]	■	■	■	■
Plug-in side panels with T lock	–	■	–	■
Roof				
Roof plate, two-piece with rubber cable clamp strip for cable entry	■	■	■	■
Base				
Open base, without base frame	■	■	■	■
Levelling feet	■	■	■	■
Interior installation				
482.6 mm (19″) level, front and rear	■	■	■	■
482.6 mm (19″) mounting frames, front and rear	■	■	■	■
Load capacity 1000 kg, static	■	■	■	■
Panel earthing, fitted	■	■	■	■
Accessories				
Security lock 3524 E for side panels	7824.500	7824.500	8601.802	7824.500
Base/plinth components, front and rear, solid	8601.805	8601.805	8601.802	8601.802
Base/plinth trims	8601.025	8601.025	8601.026	8601.026
Base assembly bracket	8800.210	8800.210	8800.210	8800.210
Stabiliser, pull-out	7825.260	7825.260	7825.260	7825.260

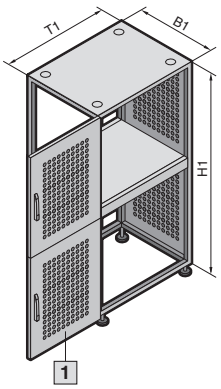
■ Included with the supply. [1)] Vented surface area > 78 % perforated. [2)] Delivery times available on request.

Accessories Page 890 **Liquid cooling** Page 726 **Baying system** Page 926

Based on Rittal TS 8, pre-configured







Design features
- Robust frame structure
- Front and rear door fully vented; vented surface area > 78 % perforated
- 4-point locking, 2-point locking with multiple door versions
- Door hinge may be swapped to opposite side
- Cable entry via the roof and base
- Bayable at all levels
- Static load capacity of up to 1000 kg

Material:
Sheet steel

Surface finish:
Enclosure frame:
Dipcoat-primed
Enclosure panels:
Dipcoat-primed, powder-coated in RAL 7035 or RAL 9005
Mounting angles and punched sections with mounting flanges:
Zinc-plated, passivated

Supply includes:
Enclosure frame TS 8 with sheet steel doors front and rear, vented, with 130° hinges, L-shaped, depth-variable fitted mounting angles and/or 482.6 mm (19″) mounting frame, levelling feet, comfort handle with security lock 3524 E and 4-point lock.

Detailed drawing,
available on the Internet.

1 Optimised air flow

Number of front and rear doors		1	1	1	2	4
U		42	42	47	2 x 21	4 x 10
Width (B1) mm[2]		800	800	800	600	600
Height (H1) mm[2]		2000	2000	2200	2200	2200
Depth (T1) mm[2]		1000	1200	1200	900	900
Model No. DK as bayed enclosure without side panels, without baying kit	RAL 7035	**7831.446**	**7831.485**	**7831.487**[3]	**7831.450**	**7831.460**
	RAL 9005	**–**	**7831.486**[3]	**7831.488**[3]	**7831.451**[3]	**7831.461**[3]
Model No. DK with side panels, plug-type	RAL 7035	**–**	**7831.495**[3]	**7831.497**[3]	**–**	**–**
	RAL 9005	**–**	**7831.496**[3]	**7831.498**[3]	**–**	**–**
Doors						
Sheet steel doors, vented, front and rear[1]		■	■	■	■	■
Roof						
Roof plate for cable entry, two-piece		■	■	■	–	–
Roof plate with cable entry openings in the corners		–	–	–	■	■
Base						
Levelling feet		■	■	■	–	–
Open base, without base frame		■	■	■	■	■
Interior installation						
482.6 mm (19″) levels, front and rear		■	■	■	–	–
L-shaped mounting angles		–	–	–	–	–
Mounting angles attached to depth stays		–	–	–	■	■
482.6 mm (19″) mounting frames, front and rear		■	■	■	–	–
Panel earthing, fitted		■	■	■	■	■
Individual compartments, shielded/separate cable routing per compartment		–/–	–/–	–/–	■/■	■/■
Accessories						
Plug-in side panels with T lock, IP 20	RAL 7035	7824.200	■ (7831.495 only)	■ (7831.497 only)	7824.229	7824.229
	RAL 9005	–	■ (7831.496 only)	■ (7831.498 only)	7816.229	7816.229
Security lock 3524 E for side panels		7824.500	7824.500	7824.500	7824.500	7824.500
Base assembly bracket		8800.210	8100.235	8100.235	8800.210	8800.210
Depth-variable slide rail, 1 U		7063.883	7063.883	7063.883	7063.883	7063.883
Stabiliser, pull-out		7825.250	7825.260	7825.260	7825.200	7825.200

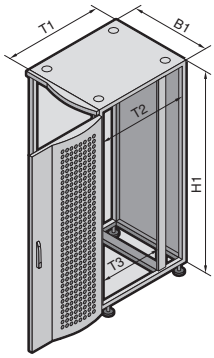
■ Included with the supply. [1] Vented surface area > 78 % perforated.
[2] All sizes are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet. [3] Delivery times available on request.

Accessories Page 890 **Liquid cooling** Page 726

Server racks

Based on Rittal flexRack(i), 1000 and 1200 mm deep, pre-configured





Design features
- Enclosure system may be dismantled because the vertical sections are screw-fastened to the roof and base frame.
- Aluminium vertical section with multi-functional system channel
- Vented front and rear door with vented surface area > 67 % perforated
- 2-point locking
- Cable entry via the roof and base
- Pull-out stabiliser
- Suitable for baying
- Static load capacity of up to 1000 kg

Material:
Vertical frame sections:
Extruded aluminium section,
roof frame, panels:
Sheet steel

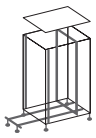
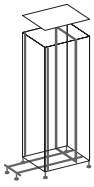
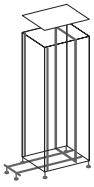
Surface finish:
Enclosure panels/door trim panel:
Spray-finished in RAL 7035

Frame sections, perforated plate of front/rear door: RAL 9006
482.6 mm (19″) mounting angles, mounting frame:
Zinc-plated, passivated

Supply includes:
System frame section FR(i)[1)] with designer door, vented, TS sheet steel door at rear, vented, levelling feet, stabiliser, earthing of all enclosure panels, comfort handles for semi-cylinder and/or knob handle with security lock 3524 E.

Property rights:
German patent
no. 103 11 376
German registered design
no. 403 04 312
British registered design
no. 301 54 31

Detailed drawing,
available on the Internet.

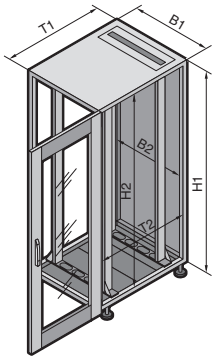
				
U	24	42	24	42
Width (B1) mm[3)]	600	600	600	600
Height (H1) mm[3)]	1200	2000	1200	2000
Depth (T1) mm[3)]	1005	1005	1205	1205
Depth absolute, including handles and curvature (T1) mm + 75 mm[3)]	1080	1080	1280	1280
Maximum distance between levels (T2) mm[3)]	829	829	1029	1029
Distance between the 482.6 mm (19″) levels (T3) mm[3)]	750	750	850	850
Model No. FR(i) as bayed enclosure without side panels, without baying kit	**7855.310**	**7855.330**	**7855.312**	**7855.332**
Doors				
Designer door, front, vented[2)]	■	■	■	■
TS sheet steel door, rear, vented[2)]	■	■	■	■
Roof				
Solid roof plate	■	–	■	–
Roof plate with cable entry openings in the corners	–	■	–	■
Base				
Levelling feet	■	■	■	■
Stabiliser, pull-out	■	■	■	■
Open base, without base frame	■	■	■	■
Interior installation				
482.6 mm (19″) mounting angles, front	■	■	■	■
482.6 mm (19″) mounting frame, rear	■	■	■	■
Earthing of all enclosure panels on the enclosure frame	■	■	■	■
Central earthing point fitted at the rear of the base frame	■	■	■	■
Accessories				
2 designer side panels IP 20, including security lock 3524 E	7856.672	7856.687	7856.673	7856.688
Transport kit, 4 castors including assembly parts	7825.900	7825.900	7825.900	7825.900

■ Included with the supply. [1)] The system frame FR(i) is generally suitable for the installation of TS 8 accessories.
[2)] Vented surface area > 67 % perforated. [3)] All sizes are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet.

Accessories Page 890 **Liquid cooling** Page 726 **Baying system** Page 926

Based on Rittal TS 8, High Performance Cooling systems HPC



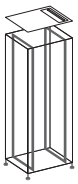
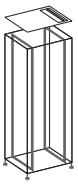
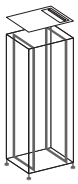
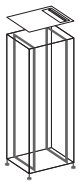


High Performance Cooling systems HPC:
Designer glazed door at the front (180°), with 3 mm single-pane safety glass, sheet steel door at the rear (130°), comfort handle for semi-cylinder and security lock 3524 E on both sides. 482.6 mm (19″) mounting frame front and rear, distance between levels pre-configured at 740 mm, free space to front door approx. 100 mm, max. static load capacity of the interior installation 1000 kg per rack. Roof plate, two-piece, for cable entry via sliding plate. Multi-divided base/gland plate. Maximum attainable protection category IP 54, in conjunction with solid roof (bayed solution) and additional screw-fastened side panels with stand-alone siting.

Material:
Sheet steel

Surface finish:
Dipcoat-primed, panels additionally powder-coated, RAL 7035.
Gland plates and 482.6 mm (19″) mounting frame zinc-plated, passivated.

Supply includes:
Enclosure frame with doors and rear panel, roof plate, gland plate, 482.6 mm (19″) interior installation, earthing of all panels, levelling feet, fitted.

				
U	42	42	42	42
Width (B1) mm[1)]	600	800	600	800
Height (H1) mm[1)]	2000	2000	2000	2000
Depth (T1) mm[1)]	1000	1000	1200	1200
Clearance width (B2) mm	512	712	512	712
Clearance height (H2) mm	1912	1912	1912	1912
Clearance depth (T2) mm	912	912	1112	1112
Model No. DK as bayed enclosure without side panels, without baying kit	**7931.810**	**7931.800**	**7931.812**	**7931.802**
Model No. DK with side panels, screw-fastened	**–**	**–**	**7931.813**	**7931.803**
Doors				
Designer glazed front door, sheet steel rear door	■	■	■	■
Roof				
Roof plate for cable entry, two-piece	■	■	■	■
Base				
Levelling feet	■	■	■	■
Base frame with multi-piece gland plate	■	■	■	■
Interior installation				
482.6 mm (19″) levels, front and rear	■	■	■	■
L-shaped mounting angles	–	–	–	–
Mounting angles attached to depth stays	–	–	–	–
482.6 mm (19″) mounting frames, front and rear	■	■	■	■
Panel earthing, fitted	■	■	■	■
Accessories				
Side panel, screw-fastened, IP 55	8100.235	8100.235	■ (7931.813 only)	■ (7931.803 only)
Depth-variable slide rail, 1 U	7063.883	7063.883	7063.883	7063.883
482.6 mm (19″) heavy duty base, 700 mm deep, 100 kg load capacity[1)]	7063.897	7063.897	7063.897	7063.897
Installation kit for heavy-duty component shelf, depth-variable	7063.890	7063.890	7063.890	7063.890

■ Included with the supply. [1)] All sizes are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet.

Accessories Page 890 **Baying system** Page 926

Smart Package, based on Rittal TS 8, pre-configured, A1 – A3



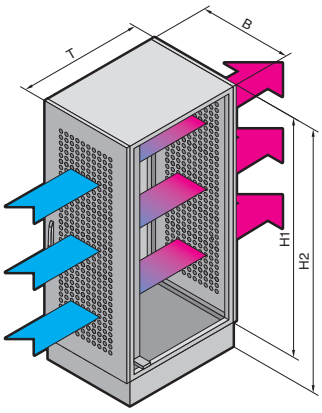
Smart Package A1

The solution for climate-controlled rooms
The perforated sheet steel doors at the front and rear provide for reliable ventilation of the racks, with > 78% of the door surface area available for air throughput.
A brush strip in the plinth and the sliding panel in the base frame enable simple cable entry even with pre-assembled plug connectors.

Power supply
The integrated PSM busbar with 6 x IEC 320 PSM modules is a VDE-approved power distribution system.
As IEC 60320 modules are used, it is not possible to transpose the phase and neutral conductors. The two infeeds to the PSM busbar permit both the mains voltage and a UPS voltage to be made available in the rack. The colour-coding of the C13 modules serves for differentiation (UPS = red).

Technical specifications:
- Cooling output for a 10 K temperature difference: max. 1.5 kW
- Nominal UPS output: 2 kVA
- UPS input voltage: 160 – 276 V AC
- Autonomy time at 100 % load: 7 min.
- Infeed: 400 V AC, 3 x 16 A, CEEkon
- Protocols: HTTP, SNMP, Telnet, SMTP

Benefits at a glance:
- Built-in 2 kVA UPS VFI-SS-111
- VDE-approved power distribution
- Mains and UPS voltage available on the PSM busbar



Width (B) 800 mm
Height (H1) 2000 mm
Overall height (H2) 2100 mm
Depth (T) 1000 mm



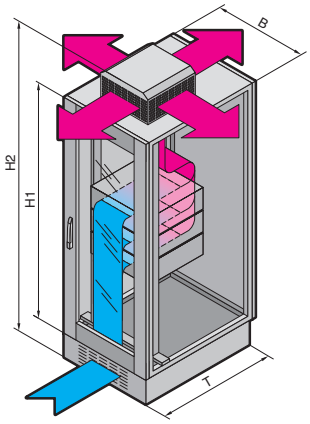
Smart Package A2

The solution for the office sector
Quiet-running roof-mounted fans with speed control functionality achieve active rack cooling at exceptionally low noise levels. Heat losses of up to 2.0 kW can be dissipated.

A glazed front door and a sheet steel rear door, together with a vented plinth, ensure that the prescribed air routing is maintained. A brush strip in the plinth and the sliding panel in the base frame enable simple cable entry even with pre-assembled plug connectors.

Technical specifications
- Cooling output for a 10 K temperature difference: 2.0 kW
- Nominal UPS output: 3 kVA
- UPS input voltage: 160 – 276 V AC
- Autonomy time at 100 % load: 5 min.
- Infeed: 400 V AC, 3 x 16 A, CEEkon
- Monitoring: Temperature, smoke, access
- Protocols: HTTP, SNMP, SSH, Telnet, PPP, SMTP

Benefits at a glance:
- Optimised air routing for servers and PCs
- Quiet roof-mounted fan, supplied ready-wired: Noise level 40 dB (A)
- 3 kVA UPS VFI-SS-111
- Mains and UPS voltage available on the PSM busbar
- Temperature monitoring, smoke alarm and access control



Width (B) 800 mm
Height (H1) 2000 mm
Overall height (H2) 2340 mm
Depth (T) 1000 mm



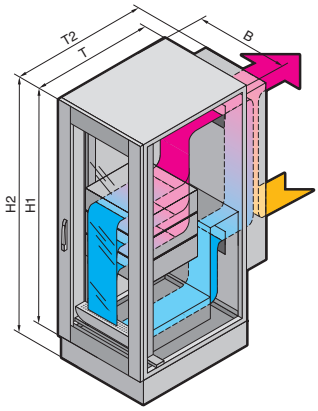
Smart Package A3

The server rack to IP 54
With the cooling unit at the rear, a glazed front door, a sheet steel rear door and screw-fastened side panels, this rack is a closed system.

This design permits IT infrastructures to be installed at locations subject to high levels of contamination or high ambient temperatures. This Smart Package server rack is able to dissipate heat losses of up to 3 kW at an ambient temperature of 35°C.

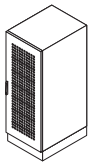
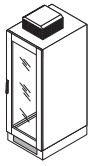
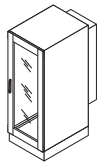
Technical specifications
- Cooling output at 35°C ambient temperature: 3 kW
- Nominal UPS output: 3 kVA
- UPS input voltage: 160 – 276 V AC
- Autonomy time at 100 % load: 5 min.
- Infeed: 400 V AC, 3 x 32 A, CEEkon
- Monitoring: Temperature, smoke, access
- Protocols: HTTP, SNMP, SSH, Telnet, PPP, SMTP

Benefits at a glance:
- Optimised air routing for servers and PCs
- IP 54
- 3 kVA UPS VFI-SS-111
- Mains and UPS voltage available on the PSM busbar
- Temperature monitoring, smoke alarm and access control



Width (B) 800 mm
Height (H1) 2000 mm
Overall height (H2) 2100 mm
Depth (T) 1000 mm
Overall depth (T2) 1350 mm

Smart Package, based on Rittal TS 8, pre-configured, A1 – A3

	A1	A2	A3	Page
				
Model No. DK	**7337.100**[1]	**7337.200**[1]	**7337.300**[1]	
Available U	38	37	34	
Width (B) mm[2]	800	800	800	
Height (H2) mm[2]	2100	2340	2100	
Depth (T or T2) mm[2]	1000	1000	1350	
Supply includes				
Doors				
Sheet steel door, vented, with comfort handle, front	■	–	–	936
Glazed door with comfort handle, front	–	■	■	934
Sheet steel door, vented, with swivel handle, rear	■	–	–	936
Sheet steel door with swivel handle, rear	–	■	■	936
Side panels				
Side panel, plug-in, IP 20	■	■	–	919
Lock for side panel, plug-in (3524 E)	■	■	–	919
Side panel, screw-fastened, IP 54	–	–	■	917
Roof				
Roof plate, solid	■	–	■	
Roof plate, vented	–	■	–	973
Base				
Base/plinth, solid with brush strip for cable entry at the rear	■	–	■	893
Base/plinth, vented with brush strip for cable entry at the rear	–	■	–	893
Gland plate, multi-piece	■	–	■	913
Gland plate, one-piece, vented, for TS	–	■	–	914
Filter mat for gland plate, one-piece	–	■	–	914
Interior installation				
482.6 mm (19″) level, front and rear	■	■	■	1091
Drawer, 2 U	■	■	■	1102
Power				
PSM busbar, installation height 2000 mm, incl. mounting kit for a max. of 7 standard modules	■	■	■	789
Plug-in module PSM 6 x C13 (IEC 320 appliances, black)	2	2	2	790
Plug-in module PSM 6 x C13 (IEC 320 appliances, red)	2	2	2	790
Cooling				
Roof-mounted fan (low-noise, speed-controlled), supplied ready wired	–	■	–	702
Cooling unit with adjusted airflow	–	–	■	638
UPS				
Double conversion UPS, classification: VFI-SS-111	■	■	■	797
2 kVA including battery and SNMP card	■	–	–	796
3 kVA including battery and SNMP card	–	■	■	796
Security/monitoring				
CMC-TC PU II including power pack and mounting kit (1 U)	–	■	■	809
Programming cable	–	■	■	819
CMC-TC I/O unit	–	■	■	811
Temperature sensor	–	■	■	823
Smoke alarm	–	■	■	824
Access sensor	–	■	■	828
Digital sensor input module (cooling unit monitoring)	–	–	■	825
Cable kit/mounting kit	–	■	■	–
Standard accessories, supplied loose				
Connection cable (3-phase)	16 A	16 A	32 A	818
IEC 320 appliances extension 0.5 m and 1 m, each	5	5	5	818
Cable lock C13	20	20	20	790
Nylon loop cable tie	20	20	20	1066
RCCMD licence (server shutdown software)	1	1	1	796

■ Included with the supply.
[1] Delivery times available on request.
[2] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing.

Smart Package, based on Rittal TS 8, pre-configured, A4 – A7







Smart Package A4 – A7

The server rack with the power distribution concept Power System Module PSM

The Smart Package racks based on the successful TS 8 enclosure system provide the ideal basis for your IT infrastructure.
These server racks are equipped with the power distribution concept PSM (Power System Module). Additional accessories for assembly and cable routing are supplied loose.

Design features:

- Robust frame structure
- Front and rear door fully vented; open surface area > 78 % in the perforated plate part
- 4-point locking of the doors
- Door hinge may be swapped to opposite side
- Side panels screw-fastened from the inside
- Cable routing via the roof and base
- Bayable at all levels
- Static load capacity of up to 1000 kg
- PSM busbar 2 m, for up to 7 PSM modules.

Material:
Sheet steel

Colour:
RAL 7035

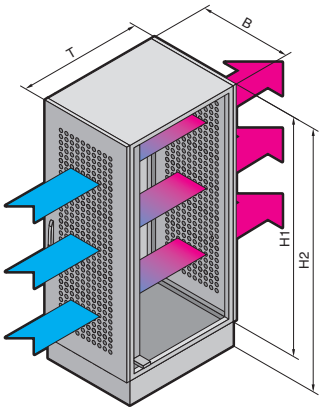
Surface finish:
Enclosure frame: Dipcoat-primed, enclosure panels dipcoat-primed and powder-coated in RAL 7035 (light grey), 482.6 mm (19″) mounting frame: Zinc-plated, passivated

482.6 mm (19″) mounting frame
Thanks to the two 482.6 mm (19″) mounting frames, the rack has a high load capacity of 1000 kg, static, in the 482.6 mm (19″) level. The distance between levels of the two 482.6 mm (19″) frames are infinitely adjustable to the required dimensions of the installation kits supplied by the server manufacturers, enabling the installation of virtually any type of server.

Doors/walls
The fully vented front and rear doors with an open surface area of > 78 % in the perforated plate part ensure that the prescribed air routing of the servers is not restricted. Hot air is able to escape easily at the rear. Thanks to the 4-point locking of the doors (door hinge may be swapped for 130° hinges) and the screw-fastened side panels, the installed equipment is protected from un-authorised access.
With the TS comfort handle system for semi-cylinders, the lock supplied may be exchanged at any time for a customer-specific model.

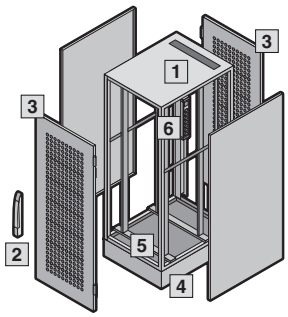
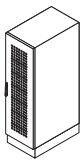
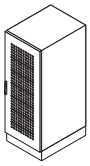
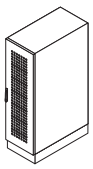
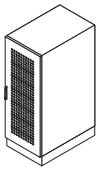
Plug & play power distribution
The plug & play power distribution concept PSM (Power System Module) is pre-integrated and fitted with selected modules in the factory. It may be extended at any time with up to 4 modules with various connector configurations. The required connection cables to supply the busbar with power are also included with the supply.

Cable management
Cable entry is via the base/plinth or the divided roof plate. In order to be able to begin server integration immediately, additional accessories for assembly, cable routing and attachment are supplied loose.



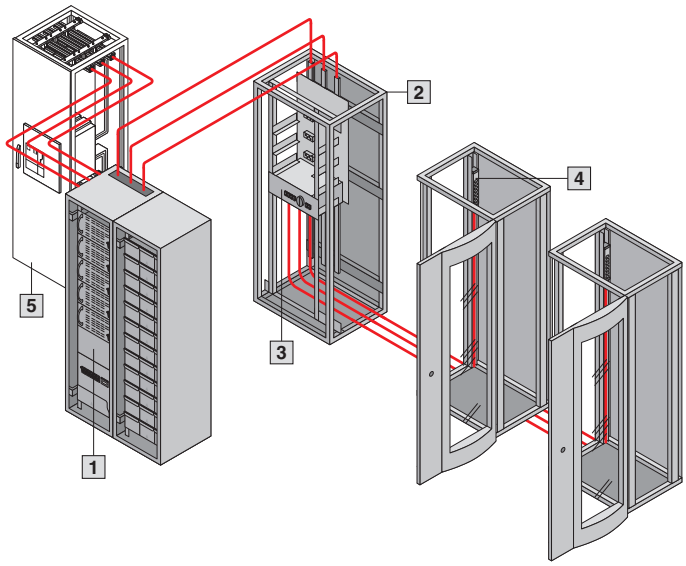
Width (B) 800 mm
Height (H1) 2000 mm
Overall height (H2) 2100 mm
Depth (T) 1000/1200 mm

Smart Package, based on Rittal TS 8, pre-configured, A4 – A7

Smart Package – Pre-configured server racks with power distribution concept PSM (Power System Module)		**A4**	**A5**	**A6**	**A7**	Page
						
U		42	42	42	42	
Width mm		600	800	600	800	
Height mm		2000 + 100	2000 + 100	2000 + 100	2000 + 100	
Depth mm		1000	1000	1200	1200	
Model No. DK (German version, with earthing-pin plug-in module)		**7337.440**	**7337.450**	**7337.460**	**7337.470**	
Model No. DK (international version, without earthing-pin plug-in module)		**7337.445**	**7337.455**	**7337.465**	**7337.475**	
Supply includes						
Doors						
3 Sheet steel doors, vented, front and rear[1)]		■	■	■	■	936
2 Comfort handle for semi-cylinder front and rear, including security lock 3524 E		■	■	■	■	948
Side panel						
Side panels, screw-fastened		■	■	■	■	917
Roof						
1 Roof plate with rubber cable clamp strip for cable entry, two-piece		■	■	■	■	972
Base						
4 Base/plinth, solid, with levelling feet		■	■	■	■	892
Base frame to accommodate optional gland plates		■	■	■	■	910
Interior installation	Model No. DK					
5 482.6 mm (19″) mounting frames front and rear		■	■	■	■	1094
Central earthing connection point	7829.200	■	■	■	■	1035
Earthing of all enclosure panels	7529.150	■	■	■	■	1034
6 PSM busbar (Power System Module)	7856.020	■	■	■	■	789
Mounting kit for PSM busbar	7856.011	■	■	■	■	789
6 2 x plug-in modules EN 60 320 C13 (IEC 320 connector)	7856.080	■	■	■	■	790
6 1 x plug-in module, earthing-pin type (German version only)	7856.100	■	■	■	■	790
Supplied loose						
PSM connection cable (3-phase)		7856.025	7856.025	7856.025	7856.025	793
PSM connection cable (1-phase)		7856.026	7856.026	7856.026	7856.026	793
10 x cable shunting rings 125 x 65 mm/nylon loops 200 mm		7072.230	7111.000	7072.230	7111.000	1066/1069
10 x 1 U blanking panel, toolless attachment		7151.110	7151.110	7151.110	7151.110	1110
2 x 1 U cable management panel		7257.035	7257.035	7257.035	7257.035	1076
20 x cable lock for EN 60 320 C13/C14 connectors		7856.013	7856.013	7856.013	7856.013	790
50 x 482.6 mm (19″) slot-in cable gland		2094.400	2094.400	2094.400	2094.400	1105
Accessories (available to order separately)						
Monitor/keyboard unit, 1 U with 15″ TFT display, touchpad (German)		9055.100	9055.100	9055.100	9055.100	840
SSC compact, Economy 8-port KVM switch		7552.010	7552.010	7552.010	7552.010	841
Mains connection cable for SSC compact		7200.210	7200.210	7200.210	7200.210	818
CPU cable 2 m (with interlocking PS/2 connectors) for SSC compact		7552.120	7552.120	7552.120	7552.120	845
CPU cable 4 m for SSC compact		7552.140	7552.140	7552.140	7552.140	845
Component shelf 700 mm, 482.6 mm (19″) population, heavy duty, 100 kg, static		7063.897	7063.897	7063.897	7063.897	1019
Installation kit, depth-variable, for component shelf, 100 kg, static		7063.890	7063.890	7063.890	7063.890	1023
Telescopic slide, 100 kg, static		7066.700	7066.700	7066.700	7066.700	1025
Slide rail, depth-variable, 590 – 930 mm, 50 kg, static		7063.883	7063.883	7063.883	7063.883	1098
1/2 U component shelf, pull-out, 600 – 900 mm, static installation		7063.720	7063.720	7063.720	7063.720	1020
PSM plug-in module, 6 x EN 60 320 C13 IEC 320 equipment		7856.080	7856.080	7856.080	7856.080	790
PSM plug-in module, EN 60 320 C19 x 4		7856.230	7856.230	7856.230	7856.230	790
PSM plug-in module, 4 x earthing-pin		7856.100	7856.100	7856.100	7856.100	790
PSM light module (portable light)		7856.210	7856.210	7856.210	7856.210	791

■ Pre-configured. [1)] Open space in the perforated plate part > 78 %.

Rittal IT power concept



1 Modular Power Concept PMC 200
2 Power Distribution Rack PDR
3 Power Distribution Module PDM
4 Power System Module PSM
5 Power distribution, further information see page 332.







1 Power Modular Concept PMC 200 – The guaranteed safe option

The efficient Power Modular Concept PMC is the scalable UPS concept from Rittal for a protected power supply. Its modularity, coupled with the unique Decentralised Parallel Architecture (DPA), ensure a high degree of availability for critical applications and requirement-based investments. The adaptive Rittal UPS concept accommodates versatile data centre requirements and is easily expanded with additional, safe-swappable UPS modules. High initial investments for first-time installation are avoided, thanks to the modular design concept, since UPS capacities may be upgraded at any time as and when required. The adaptive concept allows you to invest as your requirements grow.

This modular rack-mounted concept keeps the purchasing and operating costs of redundant solutions low. As your performance requirements grow, the UPS grows with you, thanks to its flexible scalability – even in the most confined spaces, and with the system operational. Your benefits: Less capital tie-up, inexpensive expansion, and minimal space requirements. The high efficiency of the UPS of 95 % load, and in the partial load range from just 25 % load, ensures that operating costs in the data centre are kept to a minimum.

Convincing benefits:
- "N+1" technology in a single rack
- True rack-mounted modularity
- Service-friendly, thanks to the modular layout, plus short MTTR
- High level of efficiency
- 8 – 40 kW modules
- 200 kW per rack
- Classification VFI-SS-111

2 Power Distribution Rack PDR – Central power management for IT racks

- Accommodation of up to 8 PDM systems
- Sub-distribution up to 250 A per phase
- PDM may be retrofitted whilst operational
- A maximum of 32 racks may be fitted to the sub-distributor
- Fully shock-hazard protected
- VDE-certified
- Cable connection in the PSM rail for maximum planning flexibility

3 Power Distribution Module PDM

Power management between IT racks

Plug & play installation of a power supply in the IT rack with complete shock-hazard protection means significantly reduced assembly costs plus a high level of investment confidence.

Convincing benefits:
- Cabled expansion
- Shock-hazard protected plug & play system
- Keyable connection
- Modules may also be replaced by trained staff
- Modules may be retrofitted with the system operational
- VDE-certified
- 19″ modules for sub-distribution of 40 kW into server and network enclosures
- 4 individually fused, 3-phase outlets
- Connected load 400 V/3~, max. 63 A

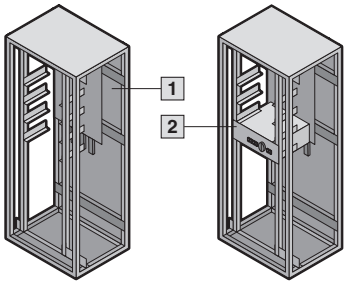
4 Power System Module PSM – Intelligent power distribution inside the rack

Power System Module PSM – Power solutions that connect
- Contact hazard-proof busbar
- Redundant configuration thanks to two separate circuits
- Load capacity up to 2 x 16 A with single-phase infeed, and up to 192 A with 3-phase infeed
- Modules may be retrofitted with the system operational
- Active modules feature individual slot switching with SNMP/HTTP and user management
- Max. 42 slots in one 2 m system
- Optimised cable management

Convincing benefits:
- Flexible and redundant layout
- Installation without loss of U
- Modules may be retrofitted with the system operational
- Remote monitoring via web browser and SNMP

Power Distribution Rack PDR





1 Power Distribution Rack PDR
2 Power Distribution Module PDM

- Power Distribution Rack to accommodate a maximum of 8 PDMs
- Height 1.20 m for 4 PDMs and 2 m height for 8 PDMs
- PDM may be retrofitted whilst operational
- A maximum of 32 racks may be fitted to the sub-distributor
- Fully shock-hazard protected
- Main switch in various options[1]:
  – Isolator switch
  – On-load isolator
  – Power circuit-breakers
  – RC circuit-breaker
- Low-voltage distribution up to 250 A

[1] Depending on the standards of the local power supply company

Note:
Observe the standards of the local power supply companies.

Material:
Sheet steel

Surface finish:
Enclosure frame: Dipcoat-primed
Doors, roof and base/plinth: Dipcoat-primed, powder-coated in RAL 7035

Gland plates, punched sections with mounting flanges and mounting angles:
Zinc-plated, passivated

Supply includes:
Enclosure frame with door (without tubular door frame), rear panel, side panels and roof plate, levelling feet including base/plinth adaptor, earthing of all enclosure panels, busbars shock-hazard protected, main switch integrated.

Extended delivery times.

Also required:
Power Distribution Module PDM, see page 787.

Detailed drawing,
available on the Internet.

Power Distribution Rack PDR 1		Packs of		
Possible number of PDM modules 2			4	8
Dimensions mm[1]	W H D		800 1200 500	800 2000 500
Model No. DK		1	**7857.310**	**7857.300**
Accessories				
Base/plinth components, front and rear	Height 100 mm	1 set	8601.800	8601.800
	Height 200 mm	1 set	8602.800	8602.800
Base/plinth trim, side	Height 100 mm	1 set	8601.050	8601.050
	Height 200 mm	1 set	8602.050	8602.050

[1] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing on the Internet.



2 Power Distribution Module PDM

- 482.6 mm (19″) Power Distribution Module mechanically locked in the PDR
- Scalable
- Including master switch, optional RC circuit-breaker
- 4 fused 3-phase outlets to the rack
- 3 x 230 V/16 A per outlet
- Connected load 400 V/3 AC, max. 63 A

Supply includes:
482.6 mm (19″) module, 3 U

Design	Model No. DK
PDM 482.6 mm (19″), 4 outlets per 10 kW	**7857.320**
PDM 19″, 4 outlets, project-specific	**7857.350**
Connection cable 32 A CEEkon connector, for operation without PDR	**7857.321**

Also required:
Plug & play connection cable to the server racks:

Length	Packs of	Model No. DK
3 m	1	7857.130
5 m	1	7857.150
8 m	1	7857.180
9 m	1	7857.190

Power Distribution Module PDM/system network analysis



PDM socket strip

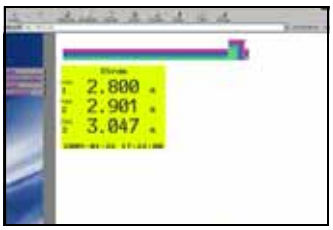
Socket strip for the direct connection of single-phase equipment to a Power Distribution Module PDM
482.6 mm (19″) power distributor with three-phase infeed. The standard plug & play connection cables may be used. Each group of three colour-coded connectors is supplied by one phase.

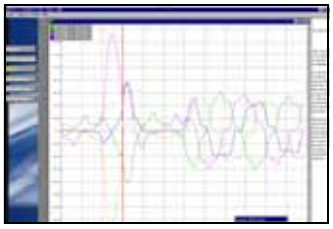
Benefits:
- Simple connection of single-phase equipment when using PDM
- Compatible with standard plug & play connection cables
- Prepared for the connection of **LCP, CMC-TC, SSC** etc.

Design	Model No. DK
6 x C13/3 x earthing-pin	**7857.325**

Technical specifications:
Input:
Mains voltage: 400 V/50 Hz, three-phase
Rated current: 16 A per phase
Connection: X-Com connector
Output:
Mains voltage: 230 V/50 Hz, three-phase
Rated current: 10 A per phase







System network analysis

The quality of the energy supply is an important component of a functioning IT system. There are UPS protection systems available which can help. The quality of the energy supply from different power supply companies in conjunction with different IT applications may vary extremely widely.

Rittal offers the network analysis system. It may be integrated into the Power Distribution Rack (PDR), where it will analyse the power infeed.

The system performs network quality measurements to EN 50 160. It has a large illuminated display for the direct retrieval of measurement results. Furthermore, all information is available in the network via the integrated Web server. Evaluation software is also included with the supply, and is capable of reading the measurements via the network and analysing them to DIN EN 50 160 and EN 61 000-2-4.

The electronic measuring device, which is equipped with 4 current and voltage inputs, records and digitises the effective values (RMS) of currents and voltages in a 15 – 75 Hz network. Based on the scanned values, the built-in microprocessor calculates the electric variables. For measurement in the three-phase system, the relevant voltage may be defined as a conductor-zero or conductor-conductor voltage. This voltage is used by the Rittal network analysis system to measure harmonics and to log transients and events, and for the flickermeter.

System network analysis	Available on request.

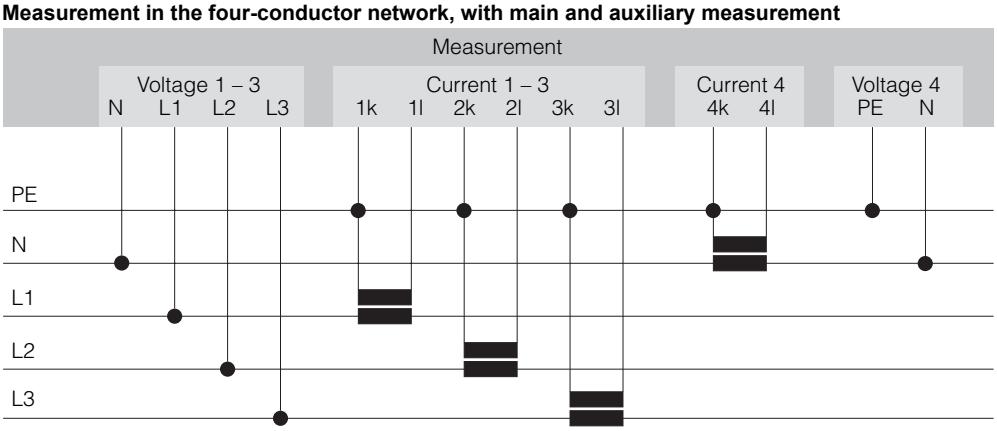
Measurement functions:
- Automatic adjustment to a network frequency of 15 … 75 Hz
- Measurement intervals of 10 (50 Hz) or 12 (60 Hz) period (200 ms)
- Continuous scanning and calculation of the following measurements: Voltage L-N, neutral-point displacement voltage and asymmetry L1...L3, voltage L-L, frequency, current, aggregate current L1...L3 and L1...L3+N, active power, reactive power, apparent power, power factor, distortion reactive power, fundamental power, cosphi, phase shift, work of main and auxiliary system, reactive power demand (capacitive and inductive) 1...50 harmonic of current and voltage, distortion factor (THD) of current and voltage, short- and long-term flickermeter readings, level of ripple-control signals.

Technical specifications:
Dimensions W x H x D: 144 x 144 x 90 mm
Auxiliary voltage:
95...265 V AC; 100...370 V DC; 25 VA
Voltage measurement:
L-N 0...500 V AC; 0.2 VA; 15 – 75 Hz
L-L 0...870 V AC; 0.2 VA; 15 – 75 Hz
Current measurement:
5 A (1 A), (larger values via converter)
Operating temperature range: –10 to +55°C

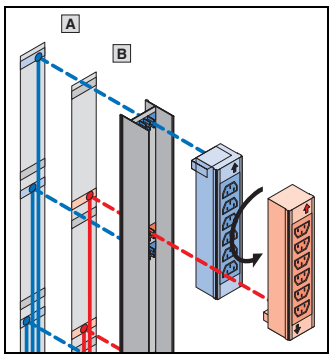
I/O:
Digital inputs: 8
Digital outputs: 5

Protection category:
IP 20

Measurement in the four-conductor network, with main and auxiliary measurement







Power System Module PSM

Busbar, current carrying capacity up to 96 A per rack

The ever-expanding power requirements of modern IT infrastructures demand refined solutions for power distribution inside the racks. This leads to an associated requirement for additional sockets. The new “intelligent power distribution system” from Rittal significantly reduces cabling and assembly work.

The modular system facilitates basic configuration of the racks, thanks to a vertical support rail with 3-phase infeed. The various insert modules to supply the active components may be snap-fitted into the support rail. This can even be done whilst the system is operational, because the support section is shock-hazard protected.

The various modules, earthing pins, IEC 320 etc. may be inserted into the support rail in any combination. This is easily achieved, even by non-electricians, thanks to the shock hazard protected plug & play system.

Technical specifications/benefits:

- 3-phase construction with a maximum current of 3 x 16 A.
- A redundant three-phase infeed with 3 x 16 A may also be added.
- The redundant circuit is completely separate from the 3 phases of the support rail.
- Each plug-in module picks off a phase on the support rail, either from infeed **A** or from the redundant infeed **B**, depending on the direction of connection.
- Modules may be retrofitted whilst the system is operational.
- Plug-in modules may be equipped with integral overcurrent protection, so that only the affected module is deactivated in the event of an excessively high current. The other modules remain operational.
- Overvoltage protection may be integrated into the supply line.
- Support rail may be integrated into the vertical frame section of the flexRack(i) without additional equipment.

The vertical support rail allows the slots to be used flexibly across the entire enclosure height, and configured in a redundant manner via separate power infeed to the individual modules.

Supply includes:
Busbar with connection socket, assembly parts and operating instructions. Without cable.

Also required:

Connection cable, see page 793.
Plug-in modules, see page 790.

Note:
Observe the country-specific connection data.

VDE Reg No. A592

UL

Busbar			
For enclosure height mm	Number of modules	Model No. DK	
		EU type	US type
1200	4	**7856.010**	**7856.050**[1)]
2000	7	**7856.020**	**7856.060**[1)]
Also required:			
Mounting kit		Without cable routing	With cable routing
For TS	For static installation	**7856.011**	**7856.022**
	Adjustable, for open 19″ level	**7856.012**	**7856.023**
For TE	For static installation	**7000.684**	–

[1)] Delivery times available on request.



1



1



PSM rail with measurement

Busbar with integral output measurement

Display and monitoring of the complete three-phase connection current and the power per rail. The display is local.
In conjunction with CMC, the rail may be remotely administered and configured using standard protocols (SNMP, HTTP).

The following active functions are provided:

- Local display, legibility is independent from the installation position.
- Measurement and monitoring of the current per phase. Min./max. limits may be set. Measurement range 0 – 16 A.
- Measuring and monitoring of the voltage per phase. Min./max. limits may be set. Measurement range 0 – 250 V.
- Alarm notification via a flashing display.
- Remote administration of the PSM rail, editing and monitoring of remote limits, SNMP trap message in case of alarm.

1 Simple connection via RJ connector.

For enclosure height mm	Maximum no. of modules	Model No. DK
2000	6	**7856.016**

Supply includes:
Busbar with connection socket, assembly parts and operating instructions. Without cable.

Note:
Observe the country-specific connection data.

Accessories:

Recommended CMC-TC accessories, see page 817.

Also required:

Connection cable, see page 793.
Plug-in modules, see page 790.
Mounting kit, see page 789.

In stand-alone mode without CMC-TC, a separate power pack DK 7201.210 with connection cables is required.

Power System Module PSM



PSM rail for 120/208 V

with coded circuits 120/208 V, 50/60 Hz, for applications in North America.
The circuits are preset.
Circuit 1 may be used for 208 V/3~ and only with the coded C19 PSM modules in the table.
Circuit 2 may be used for 120 V/1~ and only with the coded C13 modules in the table.

Design	Length mm	Model No. DK
PSM rail with coded circuits	2000	**7856.051**
PSM module C13 coded		**7856.052**
PSM module C19 coded		**7856.053**





PSM busbar

Single- and three-phase design with 32 A phase current.

Technical specifications:
- Single- and three-phase design with a max. current of 32 A per phase, 1 x 32 A or 3 x 32 A, 400/230 V, 50/60 Hz
- Accommodates up to 6 passive PSM modules
- Integral circuit-breaker 16 A, Class C
- Modules may be retrofitted whilst the system is operational

Supply includes:
Busbar with CEEkon-conforming connector, assembly parts and operating instructions.

Enclosure height mm	Number of modules	Model No. DK	
		Single-phase	Three-phase
2000	6	**7856.321**	**7856.323**

Also required:

Mounting kit,
see page 789.
Plug-in module PSM,
see page 790

Accessories:

Cable lock PSM,
see page 790.





Plug-in modules PSM

for busbar version EU and US.
Length 250 mm.

Plug-in modules

Plug-in module	Number of sockets	Without overcurrent protection	With overcurrent protection
EN 60 320 C13	6	**7856.080**	**7856.070**
EN 60 320 C13	4	**–**	**7856.220**[2)]
D/NL/A earthing-pin	4	**7856.100**	**7856.090**
F/B	4	**7856.120**[1)]	**7856.110**[1)]
USA	5	**7856.140**[1)]	**7856.130**
UK	3	**7856.160**[1)]	**7856.150**[1)]
CH	5/4	**7856.190**[1)]	**7856.180**[1)]
EN 60 320 C19	4	**7856.230**	**–**
EN 60 320 C13 red	6	**7856.082**	**–**
Earthing-pin socket red	4	**7856.240**	**–**

[1)] Extended delivery times.
Other modules available on request.
[2)] With individual overcurrent fusing.

Applicable to DK 7856.230:

c UL us E 215.843



Cable lock PSM

for all modules with EN 60 320 C13 connector configurations
The bars, developed especially for the PSM system, can hold two connection cables.
In this way, all connection cables of the terminal equipment are protected against accidental disconnection of the power supply.
Two bars are needed for two cables.

Design	Length m	Packs of	Model No. DK
Bar		20	**7856.013**
Connection cable C13/C14 Connector/jack	0.5[1)]	2	**7856.014**

[1)] Other lengths available on request.

Note:
Optimum locking function only occurs with connection cable DK 7856.014.



Light module PSM

for use as a portable lamp

The PSM light module is compatible with all PSM busbars. Equipped with a powerful NiMH battery, the module may be removed and used as a portable lamp. Thanks to the integral magnet, the module is easily attached to any metallic surface inside the rack.
The light module is equipped with an electricity-saving LED lamp to allow a long illumination time of up to 4 h.
To recharge, the module is inserted into a free slot in the PSM bar.

Design	Model No. DK
Light module PSM	**7856.210**

Note:
Please observe the connection voltage (230 V) of the busbar.



Active PSM, 4-way

The module has 4 x IEC320 C13 sockets and an integral overload tripping device.

The following active functions are additionally achieved:

- 2-digit local LED 7-segment current display on the module. Legibility is independent from the installation position.
- Measuring and monitoring of the current per module. Min./max. limits may be set. Measurement range 0 – 16 A.
- Alarm indication via a flashing 7-segment display.
- Monitoring of the overload fuse.
- Modules may be combined via the bus system, thereby enabling sequential activation.
- In conjunction with the CMC-TC, the modules may be activated and deactivated via HTTP and SNMP. The 4 jacks are always activated and deactivated together.
  The 4 free channels of the Processing Unit II (PU II) DK 7320.100 can be switched with up to 4 active PSM systems in each case.
  The active PSM does not require any separate power pack in conjunction with PU II.

Design	Packs of	Model No. DK
4-way	1	**7856.200**

- Remote administration of the power supply, editing and monitoring of remote limits, SNMP trap message in case of alarm.
- 4 IEC320 C13 sockets per module.

Material:
Aluminium section with plastic cover

Supply includes:
1 module (max. 10 A per module),
10 A integral overload tripping device,
1 bus cable,
1 infeed cable 24 V DC,
1 adaptor for power pack 24 V DC.

Also required:

A separate power pack (100 – 240 V AC/24 V DC) is required for stand-alone operation without CMC-TC (DK 7201.210) and the relevant connection cables.



Active PSM 6-way, individually switchable

For further details, see page 791.

Material:
Aluminium section with plastic cover

Supply includes:
1 module (max. 16 A per module),
1 infeed cable 24 V DC or 1 bus cable.

Design	Model No. DK
2 x C13 and 4 x C19	**7856.204**
2 x C13 and 4 x earthing-pin	**7856.203**

Also required:

A separate power pack (100 – 240 V AC/24 V DC) is required for stand-alone operation without CMC-TC **(DK 7201.210)** and the relevant connection cables.

Power System Module PSM



Active PSM 8-way, individually switchable

The module has 8 current outlets with IEC320 C13 slots. Each of the 8 slots is individually switchable (via the CMC-TC system). Furthermore, a current indicator, circuit display and thermal overload protection are integrated into the module. The module is twice the length of a standard PSM module, so that a maximum of 2 modules may be inserted into a 1200 mm long PSM rail, and a maximum of 3 modules into a 2000 mm long PSM rail.

Operate the module without CMC-TC:
For operation of the module, power pack DK 7201.210 and a connection cable are needed. Up to 2/3 modules may be operated in one PSM rail (1200/2000 mm) with one power pack.

Available functions: Current display, circuit display and automatic selective activation

Operate the module with CMC-TC:
No additional power pack is needed; the module is supplied with power via the CMC-TC system. Up to 4 x 4 modules may be connected to one Processing Unit II (DK 7320.100).

Available functions: Current display, circuit display, automatic selective activation, via CMC-TC in the network: Individual switching of the 8 current outlets, current limit monitoring, delayed switching of the individual current outlets, status display of the module.

Recommended accessory list CMC-TC:
- DK 7320.100 CMC-TC Processing Unit II
- DK 7320.425 CMC-TC power pack 24 V, input 100 – 230 V AC
- DK 7320.440 CMC-TC 1 U mounting unit
- DK 7320.472 CMC-TC connection cable sensor unit 2 m
- DK 7200.210 CMC-TC connection cable D 230 V AC (depending on country version)
- DK 7200.221 CMC-TC programming cable

Design	Model No. DK
8-way	**7856.201**

Description of functions:
- 2-digit local LED 7-segment current display on the module. Legibility is independent from the installation position.
- Measuring and monitoring of the current per module. Min./max. limits may be set. Measurement range 0 – 16 A.
- Alarm messages are indicated via a flashing 7-segment display.
- Monitoring of the thermo-fuse.
- Modules may be combined via the bus system, to enable selective activation.
- In conjunction with the CMC-TC, the 8 individual current outlets of the modules may be activated and deactivated individually via HTTP and SNMP.
- Remote administration of the power supply, editing and monitoring of remote limits, SNMP trap messages in case of alarm.
- 8 IEC320 C13 sockets per module.
- User administration.

Material:
Aluminium section with plastic cover

Supply includes:
1 module (max. 10 A per module),
1 infeed cable 24 V DC or 1 bus cable,
1 adaptor for power pack 24 V DC.

Also required:

A separate power pack (100 – 240 V AC/24 V DC) is required for stand-alone operation without CMC-TC (DK 7201.210) and the relevant connection cables.



Measurement module PSM

For power measurement of existing PSM or for new installations.

Suitable for for PSM busbar:
DK 7856.010, DK 7856.020, DK 7856.050, DK 7856.060.

Note:
Detailed information, see PSM rail with measurement, page 789.

Packs of	Model No. DK
1	**7856.019**



Overvoltage protection PSM

Is connected upstream of the busbar.

- Fine fuse
- Connection:
  Socket Wago X-Com
  Plug Wago X-Com

Overvoltage protection	Packs of	Model No. DK
With adaptor connector	1	**7856.170**





Connection cable for PSM rail

	Length	Packs of	Model No. DK
Connection cable, 3-phase			
CEEkon 5-pole/16 A	3 m	1	**7856.025**
US type NEMA		1	**7856.055**[1]
Connection cable, single-phase			
CEEkon 3-pole/16 A	3 m	1	**7856.026**
Connection cable, UPS, single-phase			
C14/X-Com	3 m	1	**7856.027**
Connection cable C19/C20			
16 A	2 m	1	**7200.217**
Connection cable C13/C14			
16 A	0.5 m[2]	2	**7856.014**

[1] Delivery times on request. [2] Other length available on request.



Rittal Power Control Unit (PCU)

Socket strip, IP-compatible
The 1 U PCU socket strip has 8 current outlets with IEC320 C13 slots. Each of the 8 slots is individually switchable (via the CMC-TC system). Furthermore, a current indicator, circuit display and thermal overload protection are integrated into the module. The socket strip may be installed on the enclosure frame or in the 482.6 mm (19″) section (1 U) of a rack.

Operate the socket strip without CMC-TC:
For operation of the socket strip, power pack 7201.210 and a connection cable (see page 818) are needed. Up to 4 socket strips may be operated with one power pack.

Available functions: Current display, circuit display, automatic selective activation

Operate the socket strip with CMC-TC:
No additional power pack is needed; the PCU is supplied with power via the CMC-TC system. Up to 4 x 4 PCUs may be connected to one Processing Unit II.

Available functions: Current display, automatic selective activation, via CMC-TC in the network: Individual switching of the 8 current outlets, current limit monitoring, delayed switching of the individual current outlets, status display of the module.

Recommended accessory list CMC-TC:
- 7320.100 CMC-TC Processing Unit II
- 7320.425 CMC-TC power pack 24 V, input 100 - 230 V AC
- 7320.440 CMC-TC 1 U mounting unit
- 7320.472 CMC-TC connection cable, sensor unit 2 m
- 7200.210 CMC-TC connection cable D 230 V AC (depending on country version)
- 7200.221 CMC-TC programming cable

Design	Model No. DK
8-way	**7200.001**

Description of functions:
- 2-digit local LED 7-segment current display on the PCU. Legibility rotates according to the installation position.
- Measuring and monitoring of the current per PCU. Min./max. limits may be set. Measurement range 0 – 16 A.
- Alarm indication via a flashing 7-segment display.
- Monitoring of the thermo-fuse.
- PCUs may be combined via the bus system, thereby enabling selective activation.
- In conjunction with the CMC-TC, the 8 individual current outlets of the PCUs may be activated and deactivated individually via HTTP and SNMP.
- Remote administration of the power supply, editing and monitoring of remote limits, SNMP trap messages in case of alarm.
- 8 IEC320 C13 slots per PCU.
- User administration.

Material:
Aluminium section with plastic cover

Supply includes:
1 socket strip PCU 1 U
(max. 10 A per socket strip),
1 bus cable,
1 infeed cable 24 V DC,
1 adaptor for power pack 24 V DC,
1 connector for power supply,
1 connection cable 3 m.

Also required:
A separate power pack (100 – 240 V AC/24 V DC) is required for stand-alone operation without CMC-TC (DK 7201.210) and the relevant connection cables.

Power System Module PSM Plus









Power System Module PSM Plus

Current carrying capacity up to 192 A per rack
Additional variant of the successful Rittal PSM concept, comprising a busbar with redundant configuration and three-phase infeed.
The external dimensions remain the same, as do the familiar attachment options.
By integrating two **further** three-phase circuits the PSM now has **four** independent three-phase infeeds. Each of the feeds can be supplied with up to 3 x 16 A. In total, this produces a maximum of 192 A.
This PSM is used particularly in applications with highly-integrated blade server applications.
Thanks to the design with four independent infeeds, it is possible to configure a redundant, high-availability power supply system for IT racks.
With all the benefits of the familiar PSM: Shock-hazard-protected; may be retrofitted whilst the system is operational.

The benefits at a glance:
- 2 m busbar with four independent infeeds (**A, B, C, D** each 400 V/3~, 50/60 Hz, 3 x 16 A).
- With four integral connection cables, 5 x 2.5 mm and Wieland GST connectors.
- Directly suitable for connecting to Rittal PDM.
- Easily integrated into existing applications with standard extension cables.
- 6 slots per 2 m rail.
- Attachment with no loss of U in the rack.

Note:
There are modules with two infeeds for use of the new PSM Plus rail. This means that redundancy can now be achieved at module level.
PSM modules DK 7856.070 to DK 7856.240 may also be used. The second infeed option of the rail is not used.

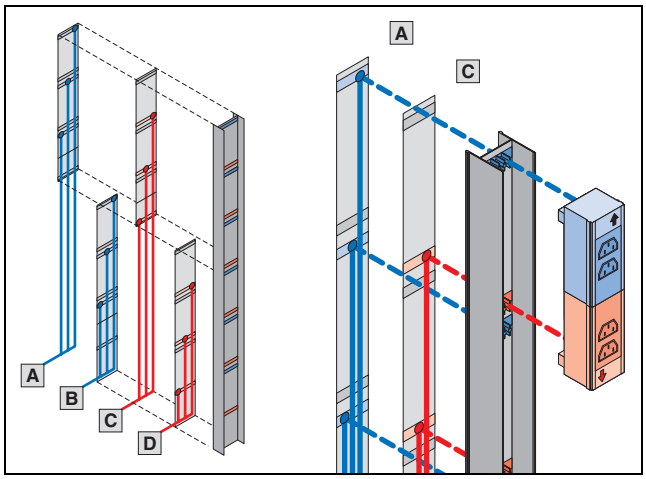
The following modules are available:
- 6-way C13, two infeeds with max. 16 A per 3 x C13
- 4-way C19, two infeeds with max. 16 A per 2 x C19
- 2-way earthing pin, two infeeds with max. 16 A per earthing-pin socket

Busbar	For enclosure height mm	Number of modules	**Model No. DK**
	2000	6	**7856.015**

Mounting kit			Without cable routing	With cable routing
	For TS	For static installation	**7856.011**	**7856.022**
		Adjustable, for freely accessible 482.6 mm (19″) level	**7856.012**	**7856.023**
	For TE	For static installation	**7000.684**	**–**

Plug-in modules (each half of the modules is supplied with one infeed)		Number of sockets	Without miniature fuse
	EN 60 320 C13	6 (3 x per infeed)	**7856.081**
		4 (2 x per infeed)	**–**
	EN 60 320 C19	4 (2 x per infeed)	**7856.231**
		2 (1 x per infeed)	**–**
	Earthing-pin socket	2 (1 x per infeed)	**7856.101**

Connection cable	Type	Length 5 m	
	Three-phase mains connection cable, EN 60 309	Three-phase connector EN 60 309 on Wieland GST socket	**7856.018**
	Extension cable	Wieland GST socket on Wieland GST 18 connector	**7856.017**



UPS, single-phase, output range 1 – 12 kVA N+1 redundant



The UPS is distinguished by the use of double-conversion technology.

Double-conversion technology provides the basis for an optimum supply voltage to all connected loads. This means that the Rittal PMC 12 UPS is ideallly suited to all applications in the IT environment, as well as for all other requirements such as medical technology, automation technology, plant control etc. A scalable autonomy of up to 2 h at 100 % load ensures a broad spectrum of applications.

Rittal Power Modular Concept PMC 12

- Double conversion technology VFI-SS 111
- For use as a rack or floor-standing enclosure with 90° rotating LCD display
- 2 U high
- Serial/USB interface and Emergency Power Off (EPO) contact
- Batteries “hot swap” compatible, may be exchanged from the front
- Integral batteries with 1 – 3 kVA
- External batteries with 4.5 kVA and 6 kVA
- Parallel switching 4.5 kVA and 6 kVA UPS up to 12 kVA N+1 redundant
- Optional SNMP card

DK 7857.430, DK 7857.431, DK 7857.432
Supply includes:
Single-phase UPS systems in double-conversion technology (VFI-SS 111) with internal “hot swap” compatible batteries, USB and serial interface.

DK 7857.433, DK 7857.434
Supply includes:
Single-phase UPS systems in double-conversion technology (VFI-SS 111), USB and serial interface.

Available on request:
Replacement battery packs and AS 400 interface adaptor.

Also required:

Country-specific connection cables and slide rails are required to operate the UPS systems.

For DK 7857.433, DK 7857.434
Parallel Hot Swap Chassis (DK 7857.443 or DK 7857.444).
External 3 U battery pack (DK 7857.442).

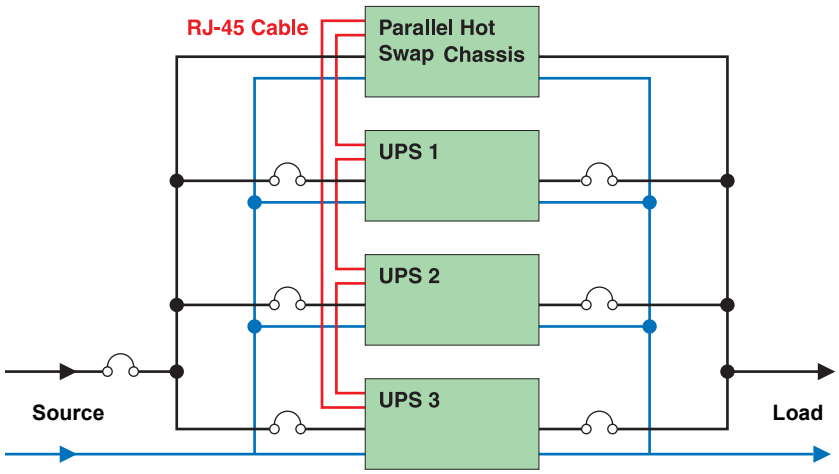
UPS for 482.6 mm (19″) racks or as floor-standing enclosures		UPS with integral battery			UPS control unit	
Model No. DK		**7857.430**	**7857.431**	**7857.432**	**7857.433**	**7857.434**
Power	VA	1000	2000	3000	4500	6000
	Watts	700	1400	2100	3150	4200
	Max. heat loss (W)	105	210	252	315	420
Input	Rated voltage	230 V (160 – 288 V)				
	Frequency	50/60 Hz ±5 %				
	Power factor	> 0.99 with linear load				
Output	Voltage	230 V ≤ ±1 % (200/208/220/230/240 V adjustable)				
	Frequency, synchronised	± 1 Hz				
	Frequency, asynchronous	±0.1 %	±0.1 %	±0.1 %	±0.2 %	±0.2 %
	Crest factor	3 : 1				
	Non-linear distortion	≤ 7 %	≤ 7 %	≤ 7 %	≤ 6 %	≤ 6 %
	Wave shape	≤ 3 %				
	Operating ratio, AC mode	85 %	85 %	88 %	90 %	90 %
	Operating ratio, battery mode	83 %	83 %	85 %	87 %	87 %
	Power factor	0.7				
Battery		5 years EUROBAT	5 years EUROBAT	5 years EUROBAT	5 years EUROBAT	5 years EUROBAT
	Autonomy at 100 % load	≥ 7 min	≥ 7 min	≥ 5 min	≥ 12 min	≥ 8 min
Overload	105 %	continuous				
	120 %	30 sec	30 sec	30 sec	160 sec	160 sec
	150 %	10 sec	10 sec	10 sec	160 sec	160 sec
Communication	Interface	1 x USB, 1 x RS-232				
	SNMP	Optional SNMP card DK 7857.420				
	Operating systems supported	Windows, Unix, Linux, OS/2, Novell, Apple; RCCMD shutdown licence DK 7857.421				
	Emergency Power Off (EPO)	■				
Mechanics	Width mm	440				
	Height mm	88				
	Depth mm	405	650	650	660	660
	Weight kg	15.7	29.4	29.7	24	24
	Input connection 230 V	10 A C14		10 A C20	Compact connector	Compact connector
	Output connection 230 V	6 x 10 A, C13, 2 units switched		4 x 10 A, C13, 2 units switched, 1 x 16 A, C19	Compact connector	Compact connector
Operating environment	Humidity	0 – 90 %, non-condensing				
	Noise level	50 db (A)				
	Safety	IEC/EN 62 040-1, EN 60 950-1				
Standards and certifications	Power	IEC/EN 62 040-3				
	EMC	EN 50 091-2/EN 62 040-2 class A, EN 61 000-4-2/-3/-4/-6-8/-11, EN 61 000-3-2/-3				
	Labelling	CE, FCC, cUL				

UPS, single-phase, output range 1 – 12 kVA N+1 redundant

Accessories for Model No. DK	7857.430	7857.431	7857.432	7857.433	7857.434
External bypass[1) 6)]	7857.439	7857.440	7857.441	–	–
Battery pack[2)]	7857.435	7857.436	7857.437	7857.442	7857.442
Parallel Hot Swap Chassis for 2 UPS systems[3)]	–	–	–	7857.443	7857.443
Parallel Hot Swap Chassis for 3 UPS systems[3)]	–	–	–	7857.444	7857.444
PDM for PMC 12[4)]	–	–	–	–	7857.445
SNMP card	7857.420	7857.420	7857.420	7857.420	7857.420
RCCMD shutdown licence	7857.421	7857.421	7857.421	7857.421	7857.421
Connection cable for 4.5 and 6 KVA[5)]	–	–	–	7857.446	7857.446
Connection cable, UPS, single-phase	7856.027	7856.027	–	–	–
Connection cable, UPS, single-phase, C20	–	–	7856.030	–	–
Slide rail, depth-variable	7063.883	7063.883	7063.883	7063.883	7063.883

[5)] Not required when using the Hot Swap Chassis. [6)] Extended delivery times.

Block diagram parallel redundant UPS DK 7857.433/.434



[1)] External bypass:
The external bypass allows the UPS to be swapped with the system operational.

[2)] Autonomy (min) at 100 % load:

UPS type	In supplied state	Battery packs		
		1	2	3
1 kVA	7 min	1:09 h	2:13 h	–
2 kVA	7 min	34 min	1:09 h	–
3 kVA	5 min	30 min	1:02 h	–
4.5 kVA	–	12 min	31 min	54 min
6 kVA	–	8 min	20 min	36 min

[3)] Parallel Hot Swap Chassis:
The parallel hot swap chassis for the 4.5 kVA and 6 kVA module allows up to 3 UPS systems to be connected together. This can be used to boost output and to achieve N+1 redundancy. An **external bypass** is additionally integrated into the Parallel Hot Swap Chassis.

[4)] PDM for PMC 12:
Single-phase power distribution for use with the Parallel Hot Swap Chassis DK 7857.444.
The PDM offers the opportunity of connecting two single-phase 32 A CEE connectors and four EN 60 320 C19 16 A connectors. All outputs have pre-fuses.

UPS, Rittal Modular Power Concept – PMC 200

Maximum availability, modularity and a compact design!

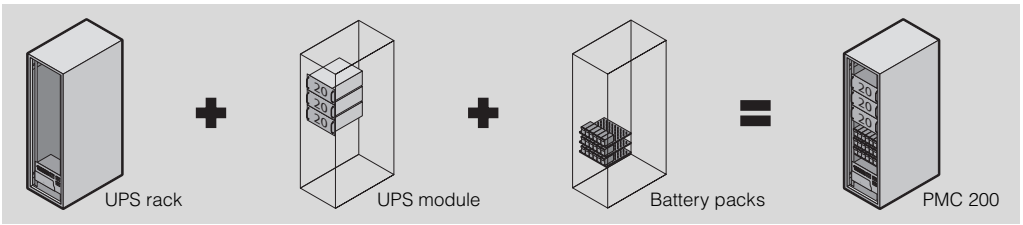


Rittal PMC 200 ensures optimum availability for critical applications by combining modularity (flexible, unlimited scalability and redundancy) with decentralised parallel architecture or DPA (redundant protection without “single point of failure”). The UPS modules are transformerless, genuine online, double-conversion UPSs with static bypass and classification code VFI-SS-111.

This modular concept keeps the purchasing and operating costs of redundant solutions low. As your performance requirements grow, the UPS grows with you, thanks to its flexible scalability – even in the most confined spaces, and with the system operational. Your benefits: Less capital tie-up, inexpensive expansion, and minimal space requirements.



The new UPS generation: Rittal PMC 200



Your individual UPS based on standard modules
Rack plus UPS modules plus battery packs produce a customised UPS to suit your current requirements.

Output density up to 200 kW (160 kW redundant) in one rack.

Might you need more in future?
No problem: The system supports modular expansion of performance and autonomy whilst operational!



The best UPS concept for you is an “individual concept”

The uninterrupted power supply to your data centre and all your IT is more than just a question of kilowatts, autonomy and UPS redundancy.

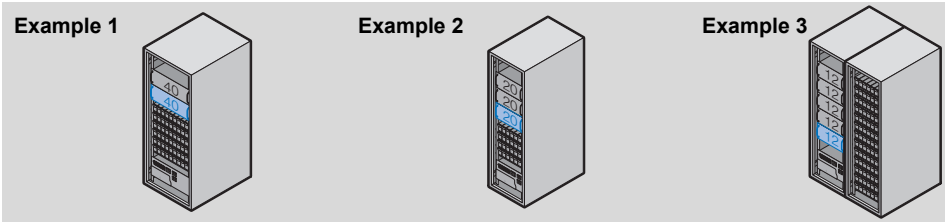
For this reason, we consider your individual UPS requirements in great depth in order to offer you optimum protection at an attractive price.

Thanks to the cost benefits afforded by mass production of the UPS modules, individual configuration produces a highly beneficial symbiosis for you.

UPS, Rittal Modular Power Concept – PMC 200



N + 1 = Perfect redundancy in a rack with PMC 200



Three examples of a 40 kW UPS with redundancy:
All modules operate in parallel mode. In all cases, one module may fail without impairing the connected load.

Example 1
- 1 + 1 (40 kW + 40 kW) Advantage: Just two UPS modules, minimal space requirements. Disadvantage: 100 % of the required output must be provided as redundancy.

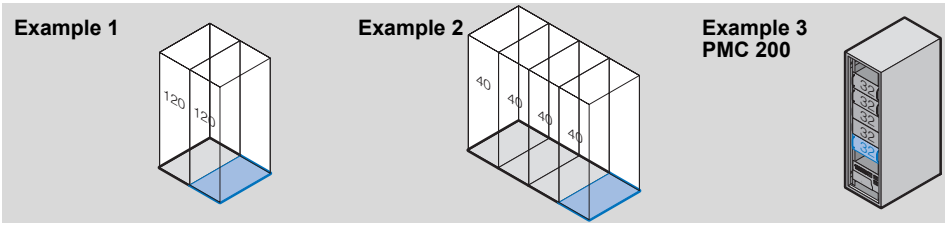
Example 2
- 2 + 1 (2 x 20 kW + 20 kW) Advantage: Compact and energy-efficient.

Example 3
- 4 + 1 (4 x 12 kW + 12 kW), an additional battery rack is needed for batteries. Advantage: Only 12 kW needs to be buffered for redundancy. Disadvantage: Greater space requirements.

▶ **We will be happy to work with you to project-plan the exact solution best-suited to your individual requirements.**



Extremely small installation space with PMC 200



Maximum performance density in one free-standing enclosure!

In examples 1 and 2 we compare the space requirements of two non-modular systems for 120 kW output plus redundancy with the modular UPS system

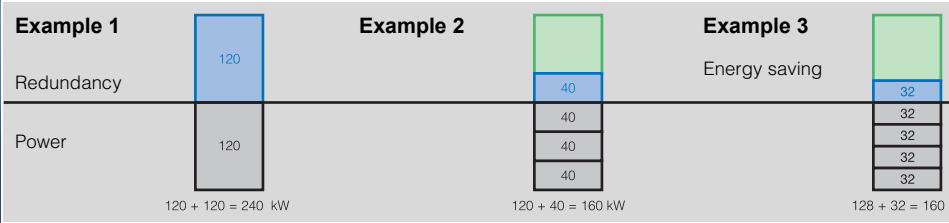
Rittal PMC 200 (example 3), which is configured according to the 4 + 1 concept with five 32 kW modules.

The minimised construction size of the Rittal PMC 200 concept allows three modules plus battery packs or five modules each with up to 40 kW in one Rittal 482.6 mm (19″) TS 8 UPS enclosure.

▶ **Benefits thanks to minimised construction size and modular design.**



Maximum energy efficiency with PMC 200



Minimal energy requirement means low costs and minimal pollution:
With the PMC 200 concept, you not only protect the critical load, but also safeguard the operating ratio of the UPS. Let us advise you to find the most suitable concept.

Example 1
This 120 kVA + 120 kW solution requires the most output for redundancy.

Example 2
This variant with three 40 kVA modules only requires $^1/_3$ of the output compared with example 1 for redundancy purposes.

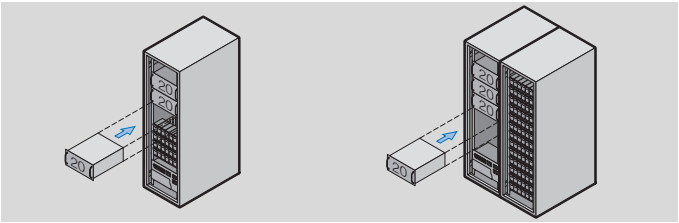
Example 3
With five 32 kW modules only $^1/_4$ is required for the buffer output of redundancy, compared with a single redundant 120 kW UPS. However, there is no space left in the rack for battery packs, i.e. an additional battery enclosure is needed.

▶ **PMC 200 is an excellent solution with regard to energy and space requirements and also with a view to future expansion.**

UPS, Rittal Modular Power Concept – PMC 200



Flexible scalability with PMC 200



Simple expansion while operational
Output may be expanded from 2 to 3, 4 or 5 UPS modules via "hot swap" with the system operational, without having to switch to bypass mode.

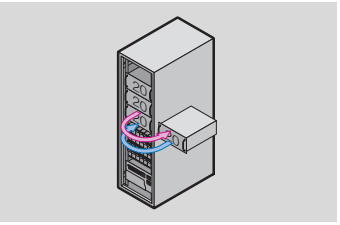
For four modules or more, an additional battery rack will be needed.

The autonomy may also be flexibly modified to suit your requirements.

The Rittal PMC 200 modular system combines flexible adaptation to customer-specific requirements with investment reliability and a high level of availability.



Super-fast service with PMC 200



Extremely short MTTR (Mean Time To Repair)
If servicing is required, a 12 kW or 20 kW module may be replaced with a 20 kW module, and a 32 kW or 40 kW module with a 40 kW module. This simplifies the logistics and ensures fast, flexible, cost-effective servicing.



PowerDecider

To obtain maximum benefits from the scalability of the modular Rittal PMC 200 UPS system and to avoid incorrect sizing and thus unnecessary additional costs, Rittal offers a professional power determination service.

PowerDecider
Service includes:
- Measurement of the power supply (voltage, current, frequency, apparent power, effective power and reactive power, asymmetries and harmonics, etc.)
- Logging of voltage drops and rises, transients, interruptions and fast voltage changes

	Model No. DK
PowerDecider	on request
PowerDecider Plus	on request

- Determination of your exact kVA and kW requirements
- Execution within ten days after receiving the order
- Data acquisition period: 2 hours
- Report with results/evaluations: Within 5 working days

PowerDecider Plus
Service includes:
As PowerDecider and additionally
- Execution within 5 days after receiving the order
- Data acquisition period: At least 3 days
- Report with results/evaluations: Within 3 working days



Sub-distributor 482.6 mm (19″) UPS, modular

The distributor may be fitted directly in the UPS PMC 200 rack. This allows a compact complete system to be realised with a 0.6 m² footprint that contains a rack-mounted modular **UPS PMC 200, batteries and distributor.**

Application area:
UPS systems Rittal Power Modular Concept PMC 200 up to 20 kW N+1.

Technical specifications:
- 482.6 mm (19″), 6 U
- 12 outlets, three-phase 400 V/50 Hz with 10 A
- On-load isolator for disconnecting
- Circuit-breaker 10 A per phase

Design	Model No. DK
19″, 6 U	**7857.372**

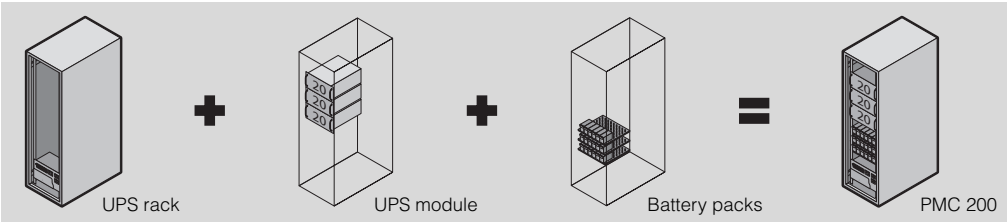
Supply includes:
482.6 mm (19″) modules, 6 U, instructions.

Note:
Observe the country-specific connection data.

Also required:
Plug & play connection cable to the server racks:

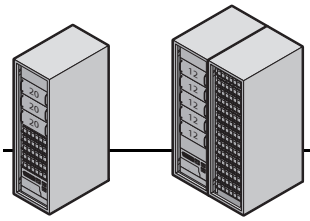
Length	Packs of	Model No. DK
3 m	1	**7857.130**
5 m	1	**7857.150**
8 m	1	**7857.180**
9 m	1	**7857.190**

UPS, Rittal Modular Power Concept – PMC 200



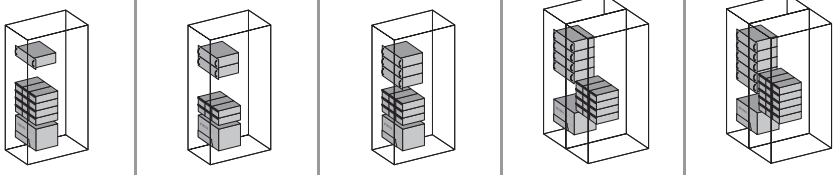
Minimum floor space is required by a rack with three modules (2 + 1 redundancy) and batteries with autonomy integrated into a single rack.

The Rittal PMC 200 allows the integration of up to 5 modules (4 + 1 redundancy) in one rack. For this configuration, an additional battery rack is always required. The autonomy may be flexibly adapted to suit your requirements.

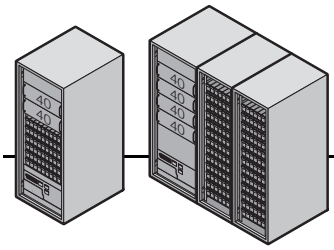


UPS racks: **W 600 x H 2000 x D 1000 mm**
Battery racks: **W 600 x H 2000 x D 1000 mm**

Examples of 12 and 20 kW module configurations and autonomies

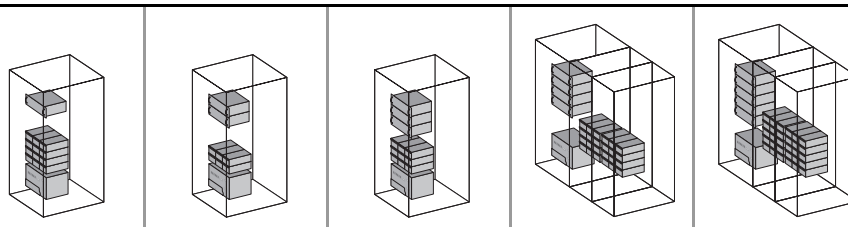


Redundancy	without	with	without	with	without	with	without	with	without	with
UPS rack/battery rack	1/–	–	1/–	1/–	1/–	1/–	1/1	1/1	1/1	1/1
Number of UPS modules	1	–	2	2	3	3	4	4	5	5
PMC 12 module type, power in kW	**12**	–	**24**	**12**	**36**	**24**	**48**	**36**	**60**	**48**
Battery autonomy[1)]	60	–	14	14	14	14	24	24	24	24
PMC 20 module type, power in kW	**20**	–	**40**	**20**	**60**	**40**	**80**	**60**	**100**	**80**
Battery autonomy[1)]	33	–	7	7	7	7	12	12	12	12



UPS racks: **W 800 x H 2000 x D 1000 mm**
Battery racks: **W 600 x H 2000 x D 1000 mm**

Examples of 32 and 40 kW module configurations and autonomies



Redundancy	without	with	without	with	without	with	without	with	without	with
UPS rack/battery rack	1/–	–	1/–	1/–	1/–	1/–	1/2	1/2	1/2	1/2
Number of UPS modules	1	–	2	2	3	3	4	4	5	5
PMC 32 module type, power in kW	**32**	–	**64**	**32**	**96**	**64**	**128**	**96**	**160**	**128**
Battery autonomy[1)]	18	–	9	9	9	9	12	12	12	12
PMC 40 module type, power in kW	**40**	–	–	–	–	–	**160**	**120**	**200**	**160**
Battery autonomy[1)]	15	–	–	–	–	–	9	9	9	9

[1)] Minutes/modules with cos φ 1.0/Autonomy may be extended to order.
Delivery times available on request.

Note:
This table contains only sample configurations.
We would be happy to work with you to project plan your individual solution.

Technical specifications

1. Rectifier data								
Module range		**up to 100 kW**				**up to 200 kW**		
Module types		10	15	20	25	30	40	50
Output per module	kVA	10	15	20	25	30	40	45
Output per module	kW	8	12	16	20	24	32	40
Nominal input voltage	V	3 x 380/220 V+N, 3 x 400/230 V+N, 3 x 415/240 V+N						
Input voltage tolerance	V	3 x 306/177 V to 3 x 464/264 V for < 100 % load 3 x 280/161 V to 3 x 464/264 V for < 80 % load 3 x 160/138 V to 3 x 464/264 V for < 60 % load						
Input frequency	Hz	35 – 70						
Power factor input		PF = 0.99 @ 100 % load						
Starting current	A	Limited by soft start/max. I_N						
Distortion factor, THDI		Sine-wave THDI = < 3 % @ 100 % load						
Input with charged battery and rated voltage	kW	8.4	12.6	17.4	21	26	34	42
Input with battery charging and rated output	kW	9.3	13.8	19.2	22.9	28.2	38	45.8

2. Battery data								
Module range		**up to 100 kW**				**up to 200 kW**		
Module types		10	15	20	25	30	40	50
No. of 12 V batteries	No.	30 – 50			40 – 50	40 – 50	30 – 50	40 – 50
Maximum charging current	A	6 A standard				10 A standard		
Battery charging curve		Ripple free; IU (DIN 41 773)						
Temperature-controlled battery charging		Standard (temp. sensor optional)						
Battery test		Automatic and periodic (adjustable)						
Battery type		Maintenance-free lead and NiCd						

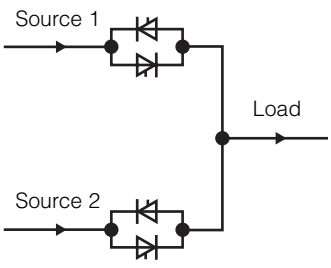
3. Output data								
Module range		**up to 100 kW**				**up to 200 kW**		
Module types		10	15	20	25	30	40	50
Output per module	kVA	10	15	20	25	30	40	45
Output per module	kW	8	12	16	20	24	32	40
Output current I_N at cosphi 1.0 (400 V)	A	11.6	17.4	23.2	29	35	46.5	58
Output voltage	V	3 x 380/220 V or 3 x 400/230 V or 3 x 415/240 V						
Output voltage stability		Static: < ± 1 % Dynamic (step load 0 % – 100 % or 100 % – 0 %): < ± 4 %						
Output voltage distortion		With linear load: < ± 2 % With non-linear load (EN 62 040-3; 2001): < ± 4 %						
Output frequency		50 Hz or 60 Hz						
Output frequency tolerance		Synchronous to input, network-led: < ± 2 % or: < ± 4 % Asynchronous quartz oscillator: ± 0.1 %						
Bypass mode		Nominal input voltage at 3 x 400 V or 190 V – 264 V ph-N: ± 15 %						
Admissible load unbalance (all 3 phases are controlled independently)	%	100						
Phase angle tolerance (with 100 % unbalanced load)	Deg.	± 0						
Overload capacity in inverter mode		125 % load: 10 min 150 % load: 60 sec						
Short-circuit capacity	A	Inverter: 2 x I_N during 250 ms Bypass: 10 x I_N during 10 ms						
Crest factor		3 : 1						
Efficiency AC – AC at 100 %/75 %/50 %/25 % load (cosphi 1.0)	%	96/95/95/95						
Eco-mode efficiency at 100 % load	%	98						

4. Standards	
Safety	EN 62 040-1-1: 2003, EN 60 950-1: 2006
EMC	2006, EN 61 000-3-2: 2000, EN 61 000-3-3: 2006, EN 61 000-6-2: 2006, EN 61 000-6-4: 2002
Classification code VFI SS 111	EN 62 040-3: 2002
Product conformity	CE
Protection rating	IP 20

Technical specifications

5. General technical specifications								
Module range		**up to 100 kW**				**up to 200 kW**		
Module types		10	15	20	25	30	40	50
Noise level at 100 %/50 % load	dB (A)	55/49	57/49	57/49	57/49	59/51	63/53	63/53
Ambient temperature UPS	°C	0 – 40						
Ambient temperature for batteries (recommended)	°C	20 – 25						
Storage temperature	°C	–25 to +70						
Battery storage time at ambient temperature		Max. 6 months						
Max. height (above sea level)		1000 m (3300 ft) without de-rating (max. 3000 m (10000 ft))						
Relative humidity		Max. 95 % (non-condensing)						
Accessibility		Total accessibility from the front for servicing and maintenance (side, no access required from the roof or rear)						
Siting		Min. 20 cm spacing from the wall (required for cooling)						
Input and output wiring.		From the front, below						
Efficiency AC – AC at 100 %/75 %/50 %/25 % load (cosphi 1.0)	%	96/95/95/95						
Eco-mode efficiency at 100 %	%	98						





Static Transfer Switch (STS)

The use of a static transfer switch allows “single-corded devices” (devices that have only one power pack) to be operated with a redundant power supply. STS has two infeeds that are switched automatically. The switching time is < 5 ms. This ensures that sensitive devices can be operated without interference. The “Break before Make” transfer ensures that the load is not fed concurrently from two sources.

Operation:
The operating panel mounted on the housing front shows all central functions and messages of the Static Transfer Switch. All messages may also be evaluated with floating contacts. The STS may optionally be supplemented with a quick-change frame equipped with an external bypass. This function allows the load to be switched manually onto the mains for servicing purposes.

Design	Model No. DK
STS 16 A without serial interface	**7857.070**
STS 16 A with serial interface	**7857.080**
STS 16 A with serial interface and quick-change frame	**7857.090**
STS 20 A with serial interface and quick-change frame	**7857.100**

Delivery times available on request.

Connectivity:
The optional SNMP card makes it possible for the Static Transfer Switch STS to be integrated into a network management system. The web server integrated in the SNMP card provides password-protected access to the STS using a web browser.

Available on request:
STS with superior switching load, quick-change frame with external bypass.

Note:
Up-to-date information such as operating instructions, software update and product information may be found at www.rimatrix5.com

Technical specifications:

Nominal current strength	16 A and 20 A
Voltage	1-phase 120/220/230/240 V
Tolerance of input voltage	Adjustable (±15 % as standard)
Frequency	50 or 60 Hz
Short-circuit resistance	up to 20/15 I_N according to the nominal current strength
Admissible Crest factor	up to 4
Changeover	Phase/zero conductor
Transfer mode	Synchronous/asynchronous without overlapping the current sources
Switch-over time	< 5 ms





Monitoring of UPS and Static Transfer Switch (STS)

This monitoring and management software can be used to manage all active components and power from RimatriX5. One interface for all single and 3-phase UPSs and for the Static Transfer Switch is typical of an integrated operating concept.
If an emergency generating unit is being used, it too may be monitored with the SNMP adaptor.

SNMP functionality
May easily be integrated into an existing SNMP monitoring system.
An additional MIB, in addition to the standard MIB RFC1628, handles the display of all parameters. An optional "snap-in" for HP Open View is additionally available.

E-mail functionality
The integrated mail client can be used to send status e-mails to the administrator. The configured event/alarm management provides a tool that allows the filtering of messages.

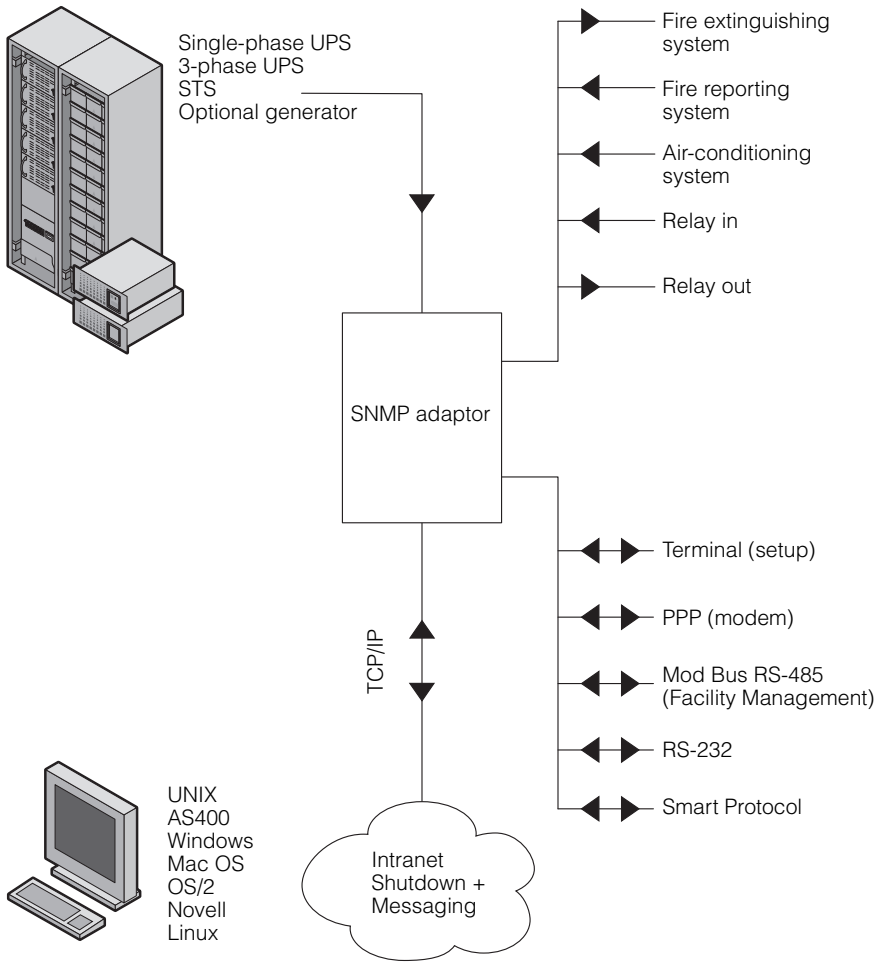
Web functionality
The integrated web interface shows all relevant information for the UPS or STS at a glance. Password protection prevents unauthorised access to the SNMP card. The integrated NTP client handles the synchronous operation of all plants.

The optional PPP interface allows you to access the SNMP card from outside the intranet or supports access to the SNMP card if the network infrastructure is not available.
In addition to the web interface, the UPS MON program can also be used to monitor the UPS.

UPS MON is available for the following operating systems:
Windows, Unix, Novell Netware, OS/2, MacOSX. The servers connected to the UPS may be shut down with the aid of a service controlled by the UPS. All standard operating systems are supported. An optional software solutions supports targeted shutdown of the servers to give greater autonomy to key services.

Supported protocols of the Ethernet interface:
- HTTP/Java/UPS MON interface
- WAP
- Remote Program Start
- SNMP
- SMTP/SMS
- Mod Bus over IP
- Telnet/FTP
- Log file
- Snap-in for HP Open View

Functional diagram of the SNMP card



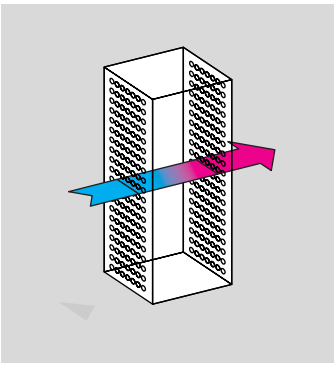
Rack cooling



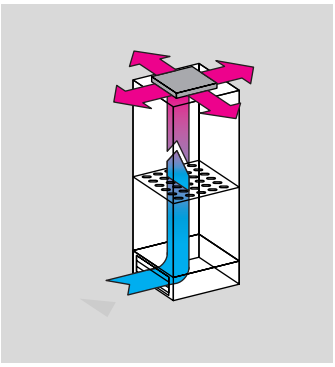
When climate control and ventilation are ideal, computing processes are able to run efficiently. This means uninterrupted data flows, which in turn translates into non-stop productivity. Further information can be found under “System climate control”, see page 629.

Passive cooling (use of the ambient air)

The air is cooled via the regular ambient air or via the building's air-conditioning system and it is then routed into the raised floor for rack cooling.



Horizontal ventilation
A high air throughput, stylish design and outstanding security are provided by the doors (with 78 % free surface area per door) of the server racks,
see page 777.



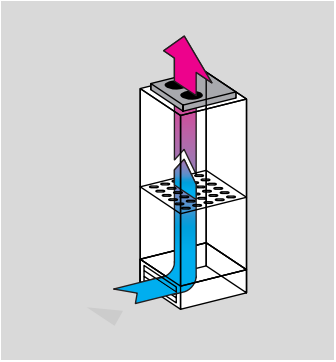
Vertical ventilation
Ventilation plinth, roof ventilation and slotted component shelves ensure heat dissipation,
see page 892, 701, 1013.



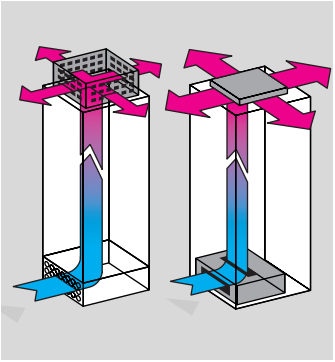
Air baffle system
Cool air from the hollow base is routed over the base/plinth and distributed via the door in a targeted manner,
see page 702.

Active cooling (use of the ambient air)

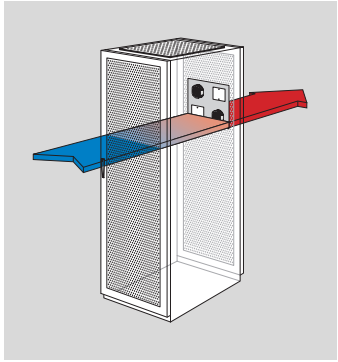
Fan systems for active cooling amplify the air exchange inside the rack and use ambient air for cooling.



Fan roofs
Various designs and outputs, extendible with fan kits.
Fast assembly tailored to racks,
see page 703.



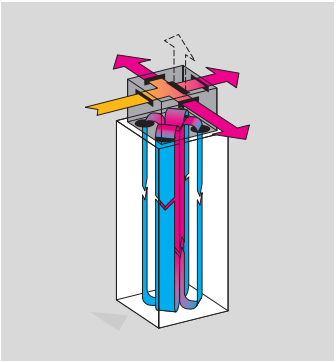
Roof-mounted fan
Quiet performance (1500 m^3/h) for office applications.
Centrifugal fan/rack-mounted fan,
see page 702.



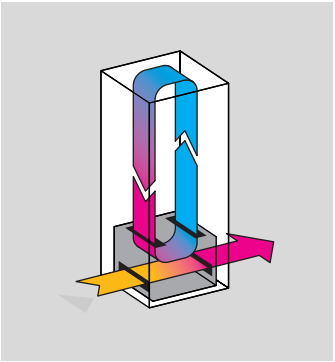
Fan cross member
For the perforated door of TS 8 server racks.
Air throughput of up to 1200 m^3/h,
see page 706.

Active, rack-related cooling

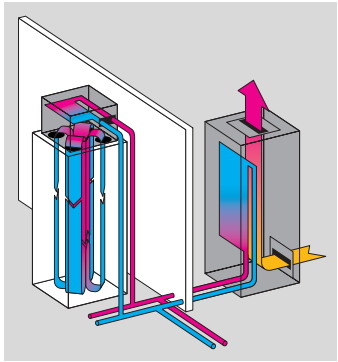
By contrast, rack-specific, active cooling is capable of reducing the interior temperature of the rack to below the ambient temperature. This cooling technique is very effective with an appropriate room volume and in industrial environments.



Roof-mounted cooling unit (office application)
Useful cooling output 1100 W at an extremely low noise level,
see page 638.



Rack-mounted cooling units 482.6 mm (19″)
Useful cooling output 1000 W, simple installation in the 482.6 mm (19″) level,
see page 698.

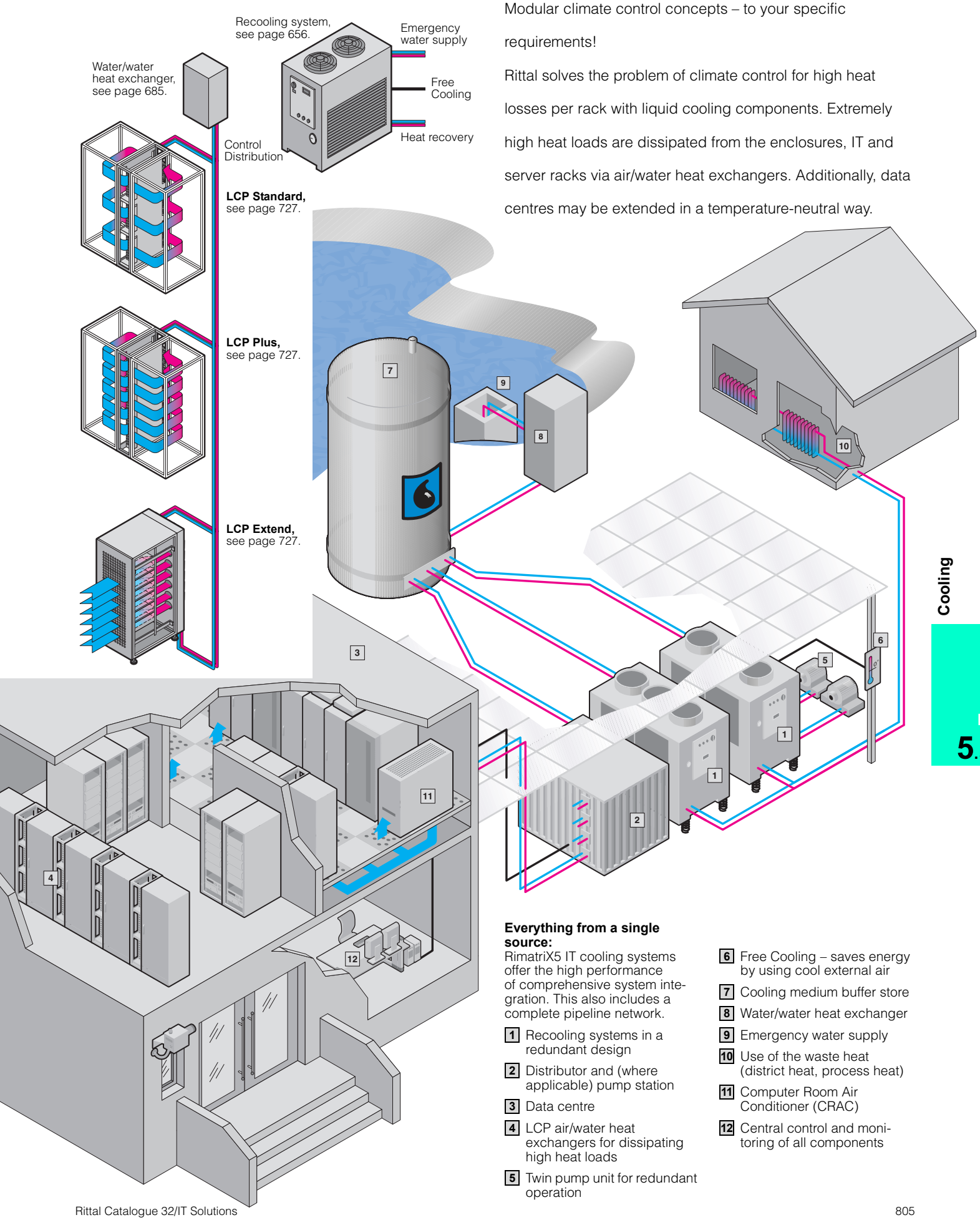


Air/water heat exchangers
These prevent the installation room from heating up. A link to a recooling system as cold water supply is essential,
see page 676.

High-performance cooling

Modular climate control concepts – to your specific requirements!

Rittal solves the problem of climate control for high heat losses per rack with liquid cooling components. Extremely high heat loads are dissipated from the enclosures, IT and server racks via air/water heat exchangers. Additionally, data centres may be extended in a temperature-neutral way.



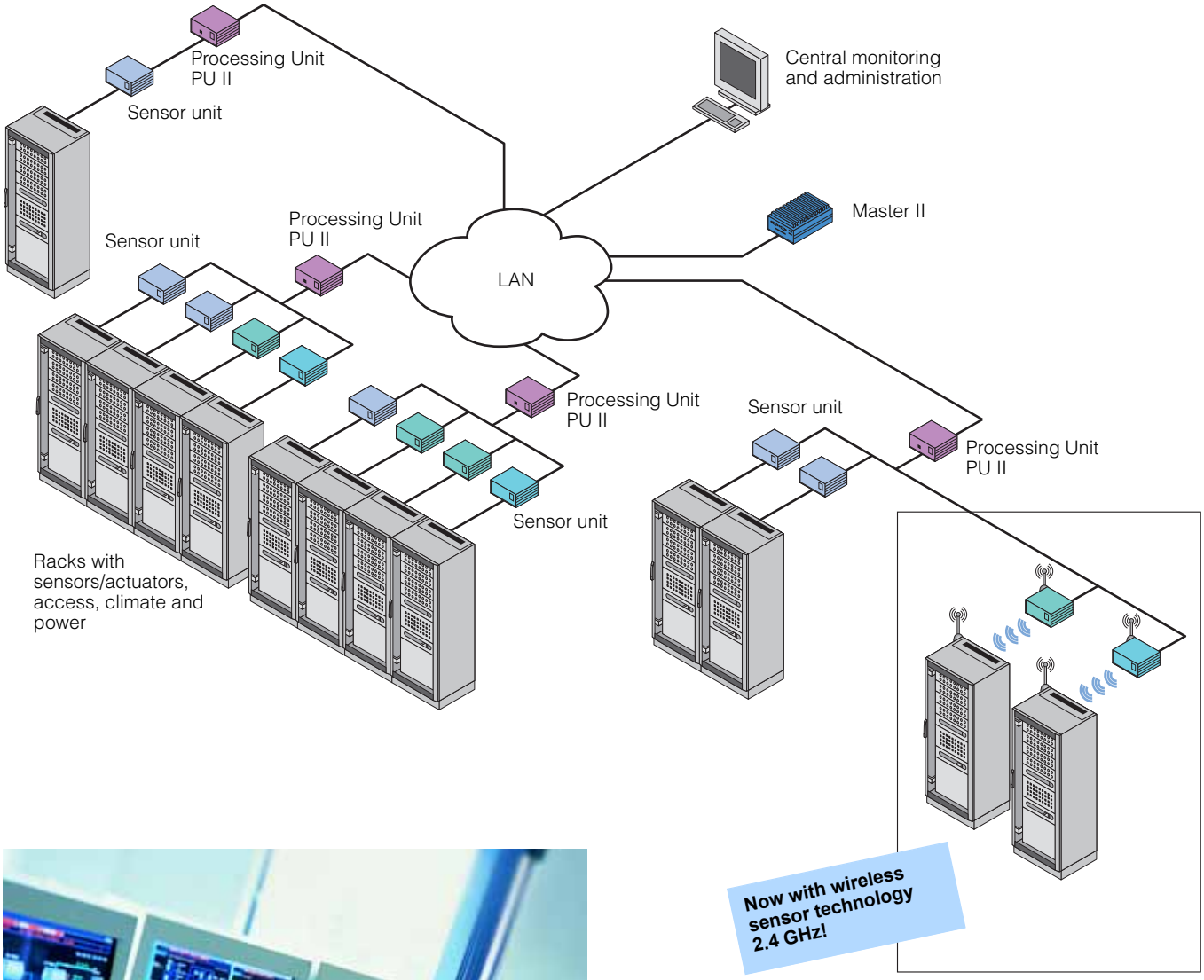
Everything from a single source:
RimatriX5 IT cooling systems offer the high performance of comprehensive system integration. This also includes a complete pipeline network.

1 Recooling systems in a redundant design
2 Distributor and (where applicable) pump station
3 Data centre
4 LCP air/water heat exchangers for dissipating high heat loads
5 Twin pump unit for redundant operation
6 Free Cooling – saves energy by using cool external air
7 Cooling medium buffer store
8 Water/water heat exchanger
9 Emergency water supply
10 Use of the waste heat (district heat, process heat)
11 Computer Room Air Conditioner (CRAC)
12 Central control and monitoring of all components

Monitoring system CMC-TC

Security – individual and flexible

The CMC-TC offers a new dimension in flexibility, efficiency, technology and cost-effectiveness. The modular master/slave system uses network technology as its communication system. In the past, bus systems were used for this purpose, but the CMC-TC system uses TCP/IP and SNMP for communication between the Master and Processing Unit II. This gives users the option of working with high performance, i. e. the CMC-TC Master, or only with the Processing Unit II. The standardised interface on the Processing Unit II (PU II) allows even small individual applications to be achieved cost-effectively. The Master II may also be used.





The new wireless sensor technology unites the popular CMC-TC system with radio sensors. This transports the modular concept into a new dimension of flexibility. Existing IT infrastructures can also be easily retrofitted with the wireless sensor network.

Detailed information, see page 834.

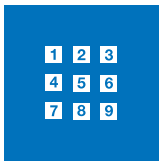
Security: Access


Access


Vandalism

Protection against data misuse is one of the most vital security factors in any company. The CMC-TC system regulates access to the server racks and records access.


Magnetic card



Numerical code


Transponder

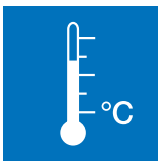

Smart card


Biometric


Legic



Rack


Temperature monitoring

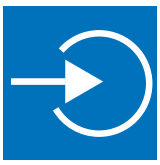

Monitoring of humidity

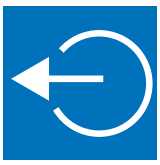
CMC-TC logs all safety-relevant parameters on the inside and the outside of the rack using various sensors.



Individual, analog input

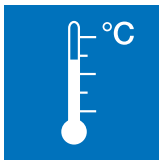

Smoke monitoring


Individual, open, digital input


Individual relay output



Cooling


Temperature control


Airflow monitoring

Any deviation from the setting is logged. The CMC-TC monitors the climate control components.


Speed control


Leakage detection


Monitoring of icing


Monitoring of filter mat

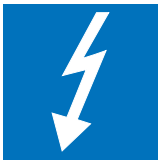


Power


Power supply


Power control

The CMC-TC monitors voltages and currents, and controls the power supply for individual network components.


Overvoltage protection



Voltage measurement



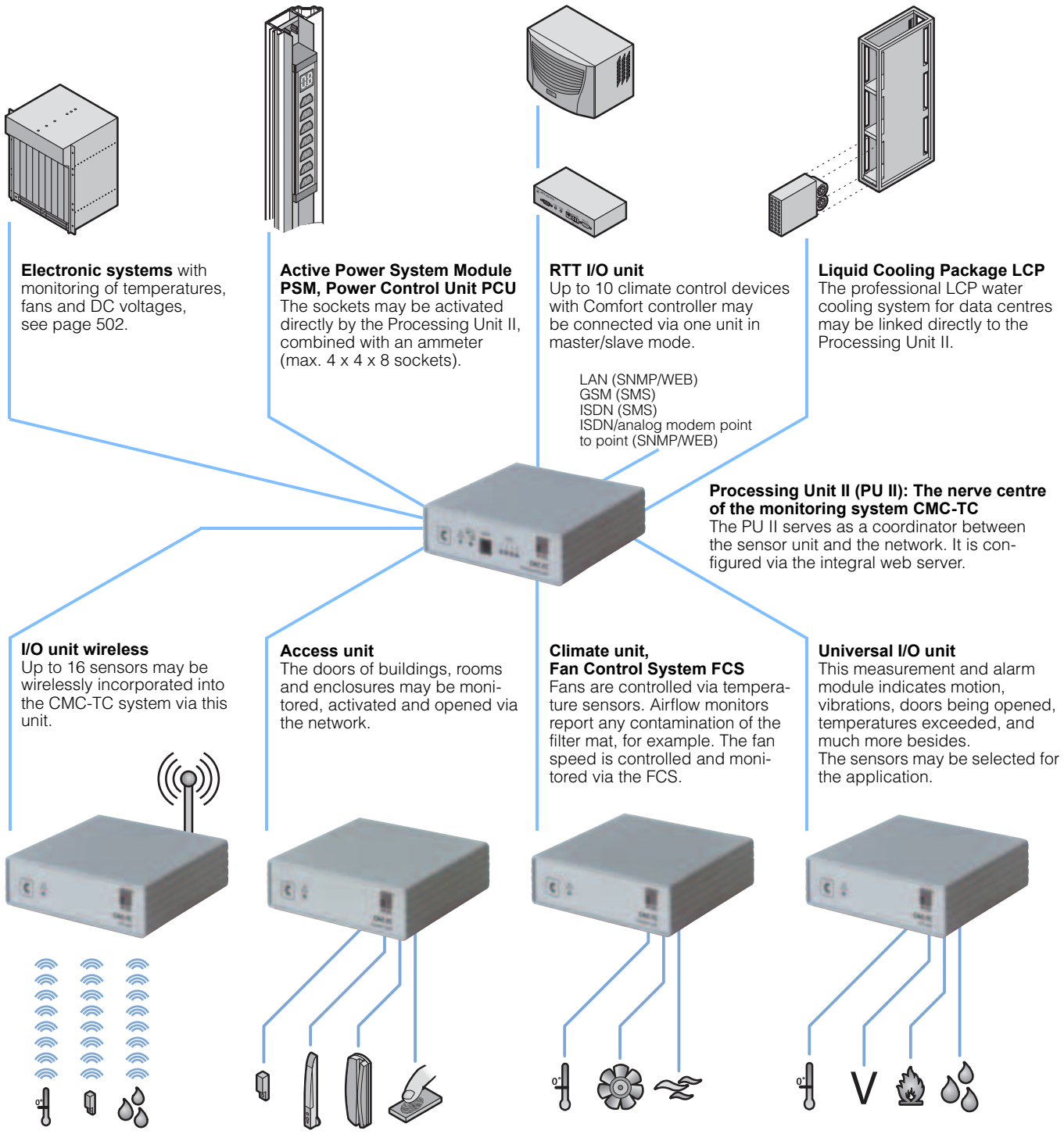
Current measurement



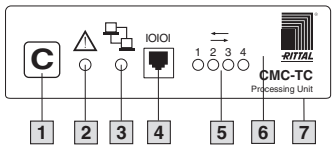
Monitoring system CMC-TC

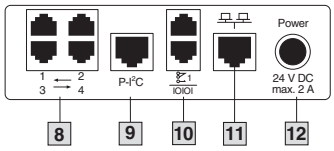
The CMC-TC monitoring system is the complete security management concept for preventive protection, to guard against follow-on costs. At the same time, it is also the central organisational unit for connecting to facility management.

Processing Unit II (PU II) forms the basis of any application and provides a direct interface to the user network. The sensor units are linked to the PU II with various sensors. The function of the CMC-TC monitoring system is determined by the selection of sensor units and sensors.









Monitoring system CMC-TC Processing Unit II

The Processing Unit II forms the basis of the CMC-TC system. This unit is required for every monitoring application.

Benefits:

- Freely selectable monitoring functions
- Sensor/actuator ports extendible
- TCP/IP SNMP network connection
- Integral web server for configuration
- Automatic menu generation
- Simple installation based on the plug & play system
- Alarm continues to record even in the event of a network failure
- Built-in real-time clock with NTP
- May be used via power pack for 100 – 240 V AC or 48 V DC
- Choice of mounting on the enclosure frame or 482.6 mm (19″) mounting angles
- Master II interface TCP/IP SNMP
- May be used for large data centres or small individual applications

Interface to the customer:
The PU II can be incorporated directly into the user network via 10/100BaseT. The PU II can also be linked to the master DK 7320.005 via this interface (TCP/IP, SNMP).

Interface to the sensors/actuators:
The PU II provides 4 open ports for sensor units. The sensor units determine the function of the PU II. There is a choice of 12 sensor units with different functions. In this way, the monitoring functions may be freely combined.

Fast, easy programming and installation:
The sensors/actuators are set up via an automatic electronic ID system. Installation is via a flexible plug & play system. This eliminates the need for time-consuming programming and wiring.

Power supply:
Power is supplied centrally via a power pack in the PU II. The connected sensor units and all connected sensors are supplied with power in this way. There is a choice of two input voltages (AC power pack DK 7320.425 and DC power pack DK 7320.435).

1 Control key
The C key is for sensor/actuator identification, set-up of the system and acknowledgement.

2 Alarm LED
The LED signals alarms or configuration changes.

3 Link/Traffic LED
The LED signals the status of the network interface 10BaseT/100BaseT.

4 RS-232 interface RJ 10
For programming via the serial PC interface.

5 LEDs channels of sensor units
The LEDs indicate the status of the attached sensor units.

6 Acoustic alarm
There is an acoustic alarm signalling device integrated into the PU II.

7 Mounting attachment
For attachment with individual bracket DK 7320.450 or 1 U mounting units DK 7320.440.

8 Inputs for sensor unit RJ 45
Up to 4 sensor units may be connected to the PU II via the 4 inputs. The sensor units determine the function of the PU II. There is a choice of 12 sensor units:
– I/O unit DK 7320.210
– Access unit DK 7320.220
– Climate unit DK 7320.230
– FCS DK 7320.810/DK 7858.488
– RTT I/O unit DK 3124.200
– RLCP DK 3301.230/.420
– Active PSM DK 7856.200/.201
– RPCU DK 7200.001
– MPS Monitoring
Connection cable DK 7320.470.

9 Power-I²C bus RJ 45
Up to 2 voltage extension units DK 7200.520 may be connected via the power I²C bus. Up to three AC voltages may be monitored with every extension unit.
Connection cable DK 7320.470.

10 Alarm relay RJ 12/RS-232
The upper RJ 12 jack provides a change-over contact from the PU II alarm relay.
Connection cable DK 7200.430.
The lower RJ 12 jack provides a serial interface (display unit/GSM module/ISDN unit/ Legic transponder handle/analogue modem).

11 Ethernet 10BaseT RJ 10
Integral Ethernet interface to IEEE 802.3 via 10/100BaseT full-duplex 10/100 Mbit/s.

12 Power supply
The rated voltage for the PU II is 24 V DC. There is a choice of power packs with varying primary voltages. AC power pack DK 7320.425.

Model No. DK	7320.100
W x H x D mm	136 x 44 (1 U) x 129
Network interface	Ethernet to IEEE 802.3 via 10BaseT/100BaseT, 10/100 Mbit/s
Protocols	TCP/IP, SNMP V1.0, Telnet, Secure Shell SSH, FTP, HTTP, HTTPS with SSL, Network Time Protocol NTP, DHCP, PPP, SMTP, SFTP, SNMPv3

Rated voltage	24 V DC
Serial interfaces	RS-232
Ports for sensor units	4 jacks RJ 45, shielded
Bus system	Power I²C for extension unit voltage AC DK 7200.520
Alarm relay output	Change-over contact max. 24 V DC 1 A
Audio display	Piezo signal generator
Time function	Real-time clock
Temperature application range	+5°C to +45°C
Humidity application range	5 % to 95 % relative humidity, non-condensing
IP protection category	IP 40 to EN 60 529/09.2000

c UL us LISTED

Also required:

Sample configuration,
see page 806.
Connection cable DK 7320.470,
see page 819.

Optional basic module





USB web camera available on request.

Monitoring system CMC-TC Master II

Benefits:

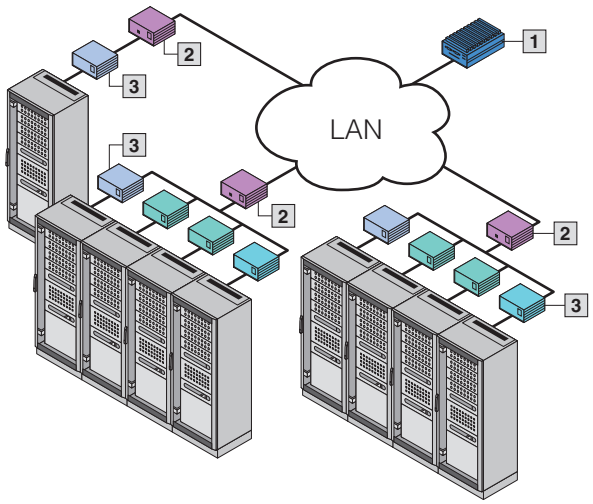
- Centralised administration
- Network connection 10/100BaseT
- Central web server for configuration
- Local administration via console VGA/PS/2
- Logging function for alarm messages
- Link for USB web camera
- Free function selection for monitoring
- Ideal for large data centres
- Web access via SSL 3.0 128-bit encryption
- Remote administration via SSH
- Monitoring functions may be linked together
- E-mail function via SMTP
- Video monitoring may be linked to the CMC-TC monitoring functions

The CMC-TC Master II is an optional component in the CMC-TC system. The master allows the alarm data of up to 10 PU II systems to be linked and displayed. Special features of this system include its superior flexibility and performance. Up to 10 PU II systems may be distributed directly in the customer's intranet. Like the PU II, the Master II may be placed at any position within the network.

It is possible to directly access the web pages of the PU II or the web page of the Master II, where all data is combined and linked. The PU II transmits all monitoring-related data and messages to the master system via TCP/IP, SNMP. The master unit has a 10BaseT/100BaseT network interface for network integration.
All monitoring data is provided in a separate MIB via TCP/IP, SNMP. The system may be configured remotely via the integral web server. Basic settings can also be implemented serially via RS-232 or Telnet. A Telnet routing function to the individual Processing Units II is also pre-integrated. This provides the user with a clear central monitoring facility. For example, up to 160 temperature sensors may be accessed or up to 80 enclosure doors may be monitored and activated via one IP address. Combined applications are also possible, and may be compiled individually from PU II and sensor units. Functional upgrades for the CMC-TC Master II are available on request in the form of a software update. Images may be archived on the hard drive via an optional web camera. Up to two USB cameras may be connected. USB web camera available on request.

Model No. DK	7320.005
Network interface	Ethernet to IEEE 802.3 via 10BaseT/100BaseT, 10/100 Mbit/s
Protocols	TCP/IP, SNMP V1.0, TELNET, SSH, TFTP, HTTPS

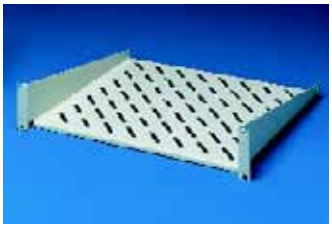
Rated voltage	100 – 240 Volt AC, 50/60 Hz
Serial interfaces	2 D-SUB 9 jacks RS-232
USB	Standard 2.0 for Rittal USB webcams
Time function	Real-time clock
Temperature application range	+5°C to +35°C
Humidity application range	5 % to 80 % relative humidity, non-condensing

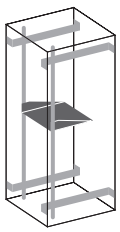


1 Master II
2 Processing Unit II (PU II)
3 Sensor unit

Also required:

A component shelf must also be ordered for each CMC-TC Master II, see page 810.





Component shelf

for attachment of the CMC-TC Master II
The 2 U component shelf serves to accommodate the CMC-TC Master II in a 482.6 mm (19″) rack.

Depth:
400 mm

Load capacity:
25 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

Component shelf	Model No. DK
2 U	7119.400

Note:
The Master II can also be mounted on top hat rails for better heat dissipation at the side of the rack (assembly parts not included with the supply).



1



2



3

CMC-TC sensor units

Description

I/O unit:
The alarm and measurement module

Access unit:
For controlling door systems

Climate unit:
For fan control and monitoring

Fan Control System FCS:
For DC fan

Benefits:
- Choice of functions thanks to twelve sensor units
- Open to customer-specific sensors/actuators
- Automatic sensor detection
- Simple plug & play installation
- No additional power pack required
- Choice of mounting on the enclosure frame or 482.6 mm (19″) mounting angles
- I/O unit: Freely selectable sensors/actuators
- Access unit: Personalised access detection
- Climate unit: Fan control with airflow monitoring

1 Interface for the sensor unit and processing unit connection. Used for data communication and power supply.
Cable DK 7320.470

2 Just one press of the button, and the system automatically reconfigures itself.

3 Up to 3 systems may be integrated into the 1 U mounting unit DK 7320.440

Technical specifications:
The sensors/actuators are set up via an automatic electronic ID system. Because it is installed using a flexible plug & play system, there is no need for time-consuming programming and wiring. Power is supplied centrally via the connection cable to the PU II.

Technical specifications:
W x H x D: 136 mm x 44 mm (1 U) x 129 mm
Temperature application range: +5°C to +45°C
Humidity application range:
5 % to 95 % relative humidity, non-condensing

Protection category:
IP 40 to EN 60 529/09.2000

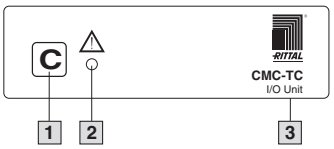
Also required:

Connection cable DK 7320.470,
see page 819.



I/O unit

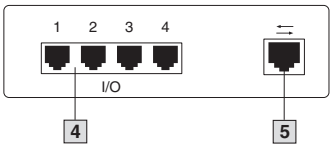
This allows alarm messages, status messages and measurements to be forwarded or remote actions to be executed via relay output modules. The I/O unit has 4 universal inputs/outputs. The sensors/actuators listed below can be operated here.
The interface to the user network is via the PU II (processing unit), which is always required to operate the system.



1 **Control key** for detection/set-up of the sensors/actuators

2 **Alarm LED** signals alarms or configuration changes

3 **Mounting fixture** for DK 7320.440 or DK 7320.450



4 **RJ 12, 4 inputs for sensors/actuators** (see table)

5 **RJ 45, connection** to PU II DK 7320.100 via connection cable DK 7320.470 (The unit is also supplied with power via this connection.)

Note:
For selection aid, see page 817.

c UL us LISTED

I/O unit	Model No. DK
4 universal inputs or outputs	7320.210

Also required:

Sensors/actuators	Max.	Model No. DK	Page
Temperature sensor	4	7320.500	823
Humidity sensor	4	7320.510	823
Analog sensor input module “4 – 20 mA”	4	7320.520	825
Access sensor[1)]	4 x 5	7320.530	828
Vandalism sensor	4	7320.540	828
Acoustic sensor	4	7320.640	824
Airflow monitor	4	7320.550	823
Smoke alarm	4	7320.560	824
Motion sensor	4	7320.570	828
Digital input module	4	7320.580	825
Digital relay output module	4	7320.590	825
Voltage monitor	4	7320.600	826
Voltage monitor with 10 A switch output	2 – 4	7320.610	826
Voltage monitor with 16 A switch output	2 – 4	7320.611	827
48 V voltage monitor	4	7320.620	827
Leak sensor	4	7320.630	823
Leak sensor, 15 m	4	7320.631	824
Connection cable		7320.470	819

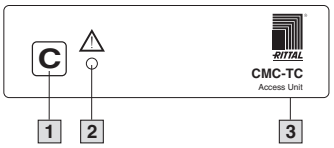
[1)] Up to a maximum of 5 sensors may be connected in series.

Sensor units



Access unit

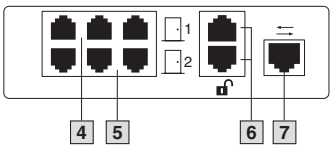
With this sensor unit, one or two doors may be released for access via the network, or personalised opening via a read system (e. g. smartcard reader) may be initiated. The system also monitors the status of the door, handle or latch. Authorised access codes can be set up via HTTP. The sensors/actuators/readers listed below can be operated here.
In order to operate the unit, at least one access sensor and at least one latch (e. g. handle) per door system must always be used.



1 **Control key** for detection/set-up of the sensors/actuators

2 **Alarm LED** signals alarms or configuration changes

3 **Mounting fixture** for DK 7320.440 or DK 7320.450



4 **Inputs for access sensor, handles** Latch system 1 (see table)

5 **Inputs for access sensor, handles** Latch system 2 (see table)

6 **I²C bus for reader units** Door system 1 and 2 (see table)

7 **RJ 45 connection** to PU II DK 7320.100 via connection cable DK 7320.470 (The unit is also supplied with power via this connection.)

Access unit	Model No. DK
Control of 2 door systems	**7320.220**

Also required:

Sensors/actuators	Max.	Model No. DK	Page
Access sensor[1)]	2 x 5	7320.530	828
Digital input module for door release	2	7320.580	825
Latch/reader			
Ergoform-S handle FR/PS/TC/TE	2	7320.700	953
Electromagnetic Ergoform-S QR	2	on request	830
Comfort handle TS 8 with master key function	2	7320.721	829
TS 8 transponder handle with Legic unit	2	7320.781	832
Universal lock unit	2	7320.730	831
Digital relay output module for room door	2	7320.740	825
Universal handle	2	7320.950	830
Smartcard reader for door release	2	7320.750	833
Magnetic card reader for door release	2	7320.760	833
Coded lock for door release	2	7320.770	833
Connection cable		7320.470	819

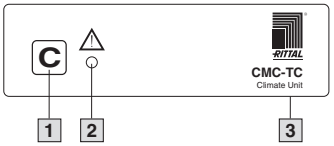
[1)] Up to a maximum of 5 sensors may be connected in series.

Note:
For selection aid, see page 817.



Climate unit

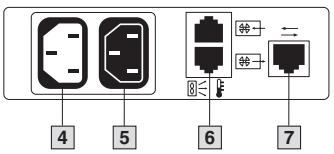
A temperature control circuit is installed with this sensor unit. Temperature setpoints are set via the PU II, and these are compared with the actual temperature. Depending on the result, the fan system is activated. Additional functions of the fans can also be monitored with an airflow sensor. Monitoring is only active whilst the fan is operational. Other sensors may optionally be connected to the unit.
In order to operate the unit as a temperature fan control circuit, at least one temperature sensor must always be used.



1 **Control key** for detection/set-up of the sensors/actuators

2 **Alarm LED** signals alarms or configuration changes

3 **Mounting fixture** for DK 7320.440 or DK 7320.450



4 **Input for fan supply** 115/230 V AC, cable 7200.210 – .215

5 **Output to fan** with cable DK 7200.215

6 **RJ 12, 2 inputs for sensors** (see table)

7 **RJ 45 connection** to PU II DK 7320.100 via connection cable DK 7320.470 (The unit is also supplied with power via this connection.)

Climate unit	Model No. DK
Control of a fan system	**7320.230**

Also required:

Sensors	Max.	Model No. DK	Page
Temperature sensor	2	7320.500	823
Access sensor[1)]	2 x 5	7320.530	828
Airflow monitor	2	7320.550	823
Smoke alarm	2	7320.560	824
Motion sensor	2	7320.570	828
Digital input module	2	7320.580	825
Voltage monitor	2	7320.600	826
48 V voltage monitor	2	7320.620	827
Connection cable		7320.470, 7200.210	819

[1)] Up to a maximum of 5 sensors may be connected in series.

Note:
For selection aid, see page 817.



Fan Control System FCS

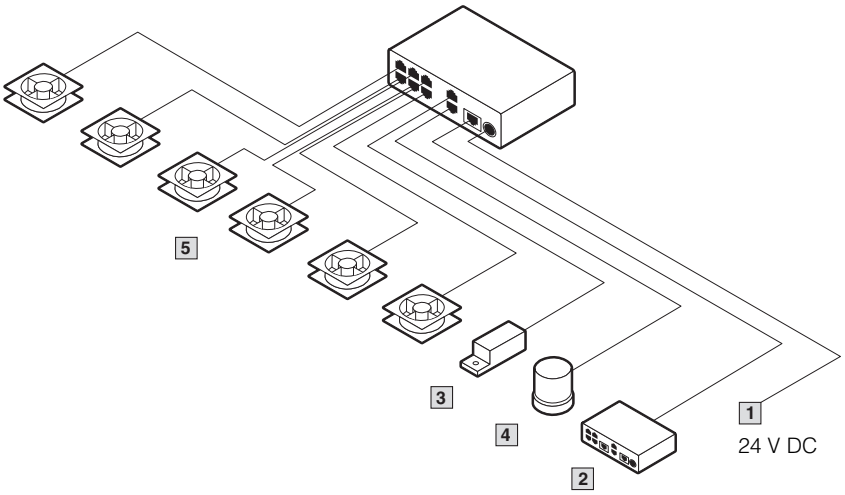
Speed-controlled fan system

The Fan Control System regulates and controls the speed of up to 6 fans DK 7320.812, 24 V DC. This helps to save energy and reduce the noise level of the fans, as well as extending the service life. The failure of one or more fans is detected and notified in the form of a collective fault signal via LED display, beeper and integral alarm relay (floating change-over contact).
Control is temperature-based using an external temperature sensor DK 7320.500. The temperature setpoint is set via a switch on the front.
The system may also optionally be set and monitored via the network (Web/SNMP). It is connected directly to the CMC-TC – Processing Unit II – DK 7320.100.

FCS	To fit Processing Unit II	Model No. DK
Without fan	■	**7320.810**

Functions:
- Speed-regulated speed control
- Fan speed monitoring
- Optional connection via Web/SNMP
- Redundant fan control; the air throughput of all fans is automatically increased in the event of a system failure
- Plug & play installation via RJ 12 connector system
- 482.6 mm (19″) mounting is possible via DK 7320.440

Note:
Supplied pre-configured on request:
The FCS system may be fitted in all Rittal fan roofs.
FCS fitted in fan roof,
see page 704.



1 Supply with 24 V DC via
- Supply connection cable, direct DK 7320.813
- CMC-24 V power pack 100 – 230 V AC (input) DK 7320.425
- CMC-24 V power pack 48 V DC (input) DK 7320.435

2 RJ 45 jack for connecting to Processing Unit II DK 7320.100 (optional) (Cat 5 cable)

3 CMC-TC temperature sensor DK 7320.500

4 Alarm relay output
24/48 V DC, 1 A (floating change-over contact)

5 Fan with speed monitoring
DK 7320.812 (24V DC)

Speed monitored/controlled fan system

Benefits:
- Excellent air throughput at a high operating ratio
- Monitoring of fan speed
- Plug & play compatibility system
- Easily installed in Rittal fan roofs
- Long service life
- Noise minimisation/speed control
- Alarm message via the CMC-TC in the network optionally possible
- Open power supply system 24/48 V DC/ 100 – 230 V AC
- EMC compatibility via DC fan systems

Equipment

Properties	Model No. FCS DK 7320.810
Fan speed monitoring	■
Pre-selectable speed	■
Non-temperature dependent speed	■
Speed increase in the event of a fan failure	■
Collective fault signal	■
Floating change-over contact	■
LAN connection via PU II	■
Configurable via LAN	■
Alarm output	Beeper, LED, relay, RJ 45 output for PU II

FCS sample order list:
Control system with fan control and monitoring of 6 fans

Description	Packs of	Model No. DK	Page
Fan Control System FCS	1	7320.810	813
CMC-TC power pack 24 V, input 100 – 230 V AC	1	7320.425	818
CMC-TC temperature sensor	1	7320.500	823
Fan 24 V DC (packs of 2) with speed monitoring	3	7320.812	814
RJ 12 extension for DC fan, 1 m (packs of 2)	3	7320.814	819
CMC connection cable D 230 V AC	1	7200.210	818

Sensor units



Fan 24 V DC for FCS

with speed monitoring

Fan with integral speed monitoring with RJ 12 connector/connection cable 0.6 m for connecting to FCS DK 7320.810.

Technical specifications:
Rated voltage: 24 V DC
Rated current: 0.28 A (max.)
Rated output: 6.72 W (max.)
Air throughput (unimpeded airflow): 165 m^3/h
Speed: 2650 rpm
Noise level: 41 dB (A)

Packs of	Model No. DK
2	7320.812





RTT I/O unit

for TopTherm cooling units with Comfort controller

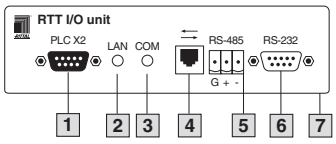
The interface card is an extension for TopTherm cooling units with Comfort controller. In this way it is possible, e. g. to monitor a master/slave combination of up to 10 cooling units. Control is via standardised interfaces: RS-232 (DB9) or RS-485, one PLC interface (DB9). The RTT I/O unit may also be connected to the Processing Unit II. This means that remote monitoring can be achieved via the network. The extension card is built into a 1 U plastic housing. A voltage supply of 24 V DC is needed. This may be supplied from the CMC-TC via a wide-range power pack DK 7320.425 (100 to 240 V AC, 50/60 Hz) or externally via a Kycon connector.

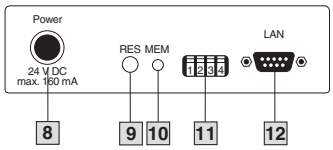
Supply includes:
Interface card integrated into a plastic box
W x H x D (mm): 136 x 44 (1 U) x 129.
Serial SUB-D cable 1.5 m.

Packs of	Model No. SK
1	3124.200

Functions/settings:
- Setpoint temperature for enclosure
- Alarm temperature value for enclosure
- Warning temperature value for enclosure
- Filter mat monitoring

Warnings/alarms:
- Internal temperature too high
- Icing
- High-pressure sensor
- Leakage
- Condenser/fan defect
- Evaporator coil/fan defect
- Compressor defect
- Sensor failure, condenser temperature
- Sensor failure, ambient temperature
- Sensor failure, icing sensor
- Sensor failure, condensate level
- Sensor failure, internal temperature
- Phase missing or incorrect
- EEPROM defect





1 **PLC X2** Opto-coupler alarm Outputs for PLC

2 **LAN LED** Internal communication

3 **COM LED** Status of serial interfaces

4 **RJ 45** for connecting to Processing Unit II DK 7320.100

5 **RS-485** interface

6 **RS-232** for set-up with a serial PC interface (e. g. Hyperterm)

7 **Mounting fixture** for DK 7320.440 or DK 7320.450

8 The ISDN unit may optionally be supplied with 24 V DC, 160 mA via this input. For applications with the PU II, this is not necessary.

9 **RES** Reset key

10 **MEM** EEPROM fault

11 **Changeover switch** Serial interface

12 **LAN** Connection to the master cooling unit with comfort control

Other products from the cooling/power range

with integral sensor unit for connecting to the CMC-TC system

Description	Topic	Model No. DK	Page
LCP Standard, D = 1000 mm	Cooling	3301.230	727
LCP Standard, D = 1200 mm	Cooling	3301.420	727
Power Control Unit PCU	Power	7200.001	793
Active PSM	Power	7856.200/.201/.203/.204	791, 792
Measurement module PSM	Power	7856.019	792



Display Unit II

The new Display Unit II may be linked directly to the PU II (DK 7320.100). CMC alarms, status messages, temperatures, voltages, currents etc. may be displayed on the screen, depending on the monitoring application. Additionally, the TCP/IP network settings of the PU II may be made using the three keys.
The new LCD graphics module (122 x 32 pixels) is very easy to read, with good contrast and a modern design. The display is blue and white. It is illuminated via an LED.
It is mounted in the 1 U component support DK 7320.440 or with the individual mounting unit DK 7320.450.
Power supply is via the processing unit PU II. Power supply and data communication to the PU II is via the supplied patch cable.

Packs of	Model No. DK
1	**7320.491**

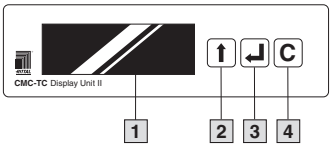
Technical specifications:
- Plug & play installation via RJ 12 connector
- 122 x 32 pixel graphical display
- Colours blue and white
- LED lights up

Supply includes:
Display module, cable for connecting to the PU II.

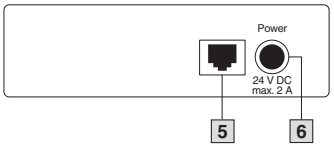
Note:
The serial interface RS-232 of the PU II may only be assigned to one accessory module.

Also required:

Component	Model No. DK
Processing Unit II	7320.100



1 **LCD display** lights up (122 x 32 pixels)
2 **"Change"** for selection
3 **"Enter"** to confirm
4 **"Clear"** to delete/acknowledge



5 **RJ 12 jack for connecting** to the serial interface of the PU II
6 The GSM unit may optionally be supplied with **24 V DC,** 150 mA via this input. For applications with the PU II, this is not necessary.



ISDN unit

In order to configure a redundant transmission channel or if there is no network infrastructure available, the unit may be used for alarm forwarding. The alarm signal is designed in SMS format. The ISDN unit is linked to the Processing Unit II DK 7320.100 via a serial interface. The power supply is likewise achieved via the connection cable. An ISDN connection is required in order to operate the module (see the requirements for an ISDN connection). Up to four target call numbers may be set and allocated to the various events. This variant of alarm reporting may also be used in countries with "SMS in the fixed network". Furthermore, with "SMS in the fixed network", it is also possible to control switch outputs via an SMS. Power is supplied via the Processing Unit II. CMC data may also be retrieved via the Web, Telnet or SNMP with the PPP protocol. In such cases, the SMS function cannot be used.

Other functions, where offered by the provider:
- Voice mail

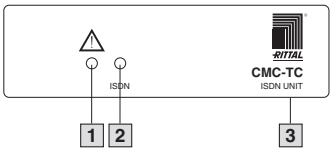
Components	Model No. DK
ISDN unit	**7320.830**

Requirements for the ISDN connection:
- DSS1 (Euro-ISDN) must also be provided when connecting to the ISDN system
- Point-to-multi-point configuration

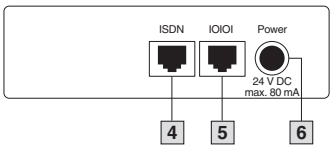
Note:
The serial interface RS-232 of the PU II may only be assigned to one accessory module.

Also required:

Components	Model No. DK
Processing Unit II	7320.100



1 **Alarm LED**
2 **Status ISDN-LED**
3 **Mounting fixture** for DK 7320.440 or DK 7320.450



4 **RJ 45 ISDN jack**
5 **RJ 12 jack for connecting** to the serial interface of the PU II
6 The ISDN unit may optionally be supplied with **24 V DC,** 80 mA via this input. For applications with the PU II, this is not necessary.

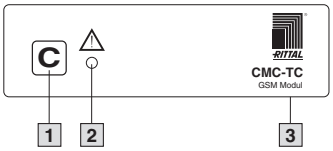
Accessory modules



GSM unit

In order to configure a redundant transmission channel or if there is no network infrastructure available, the unit may be used for alarm forwarding. The alarm signal is designed in SMS format. The GSM unit is linked to the Processing Unit II DK 7320.100 via a serial interface. The power supply is likewise achieved via the connection cable. The only other thing needed to operate the module is a SIM card. These may either be "data only" cards or conventional SIM cards. The GSM unit operates in the 900/1800 MHz frequency range – in other words, either D or E network cards may be used. Up to four target call numbers may be set and allocated to the various events.

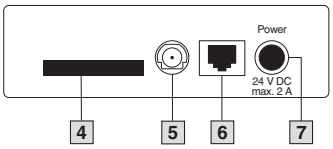
Other functions, where offered by the provider:
- Voice mail



1 **Alarm LED**

2 **GSM LED**

3 **Mounting fixture** for DK 7320.440 or DK 7320.450



4 **SIM card rack mount**

5 **Aerial connection**

6 **RJ 12 jack for connecting** to the serial interface of the PU II

7 The GSM unit may optionally be supplied with **24 V DC,** 500 mA via this input. For applications with the PU II, this is not necessary.

GSM unit	**Model No. DK**
SMS function	**7320.820**

To activate CMC-TC switch outputs, an SMS message may be sent to the GSM unit via any standard mobile phone, so as to execute the actions via this route. The aerial included with the supply has a connection cable of 2.8 m. Voltage supply is achieved via the Processing Unit II.
A standard commercially available SIM card for D or E networks must be provided by the customer.

Note:
The serial interface RS-232 of the PU II may only be assigned to one accessory module.

Also required:

Components	**Model No. DK**
Processing Unit II	7320.100



Adaptor cable

for analog modems, PPP application

The Processing Unit II supports the PPP protocol, making it possible to operate the CMC-TC application outside of LAN networks. The PU II may be adapted to an analog modem with HAYES command set on the telephone network using the adaptor DK 7320.831. Alternatively, the ISDN unit DK 7320.830 may be used. The adaptor cable is not required for the ISDN unit.

In this way, the tools
– CMC menu program
– CMC Web server
– SNMP
may be used in the WAN. Suitable computers must be available for monitoring.
The CMC menus may be displayed via the dial-in PPP functions integrated into the software. SNMP alarm traps, for example, may be sent from the PU II via dial-out. The security concept is established using the call-back function.

Suitable analog modem available on request.

Packs of	**Model No. DK**
1	**7320.831**

Technical specifications, adaptor:
- D-Sub9 connection for analog modem
- RJ 12 connector for PU II

Supply includes:
Adaptor for analog modem,
assembly parts.

Note:
The serial interface RS-232 of the PU II may only be assigned to one accessory module.

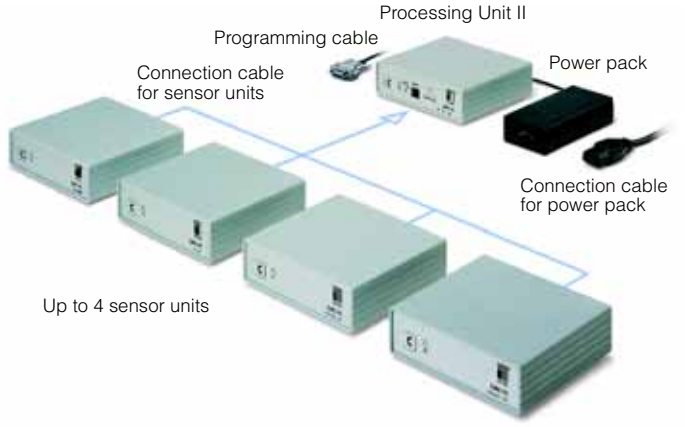
Also required:

Component	**Model No. DK**
Processing Unit II	7320.100

Examples

The basic system
The Processing Unit II (PU) forms the basis of any CMC-TC application. Connectivity is offered by the network interface (10/100BaseT, TCP/IP, SNMP, Web) directly into the user network or to the CMC-TC master. The following products are required for each CMC-TC application:

- Processing Unit II (DK 7320.100)
- Power pack 100 – 240 V 50 – 60 Hz (DK 7320.425) or power pack 48 V DC (DK 7320.435)
- Connection cable for power pack, country-specific (DK 7200.210 – .215)
- Connection cable for sensor unit (DK 7320.470)
- At least one sensor unit (DK 7320.210/.220/.230 etc.)
- Programming cable (DK 7200.221)



Example of a rack

Functions:
Temperature, humidity, smoke, access monitoring (doors/side panels)

Alarm routes:
Via the network and GSM/SMS

Power supply:
German network 230 V, 50 Hz.

Components	Qty.	Model No. DK
CMC-TC Processing Unit II	1	7320.100
CMC-TC I/O unit	1	7320.210
CMC-TC GSM unit	1	7320.820
CMC-TC power pack 24 V, input 100 – 230 V AC	1	7320.425
CMC-TC 1 U mounting unit	1	7320.440
CMC-TC connection cable, sensor unit, length 0.5 mm (packs of 4)	1	7320.470
CMC-TC temperature sensor	1	7320.500
CMC-TC humidity sensor	1	7320.510
CMC-TC smoke alarm	1	7320.560
CMC-TC access sensor (packs of 2)	4	7320.530
CMC-TC connection cable D 230 V AC	1	7200.210
CMC-TC programming cable	1	7200.221

Example of a TS 8 rack

Functions:
Fan with speed control, monitoring and access control remote + coded lock

Alarm routes:
Via the network and Display Unit II

Power supply:
US network 110 V, 60 Hz, redundant with A/B supply monitored.

Components	Qty.	Model No. DK
CMC-TC Processing Unit II	1	7320.100
CMC-TC I/O unit	1	7320.210
CMC-TC access unit	1	7320.220
CMC-TC Fan Control System FCS	1	7320.810
CMC-TC Display Unit II	1	7320.491
CMC-TC power pack 24 V, input 100 – 230 V AC	2	7320.425
CMC-TC redundant power supply	1	7320.426
CMC-TC second supply connection cable 24 V	1	7320.813
CMC-TC 1 U mounting unit	2	7320.440
CMC-TC connection cable, sensor unit, length 0.5 mm (packs of 4)	3	7320.470
CMC-TC temperature sensor	1	7320.500
CMC-TC access sensor (packs of 2)	4	7320.530
CMC-TC Comfort handle TS 8 with master key function	2	7320.721
CMC-TC coded lock	1	7320.770
CMC-TC fan 24 V DC with speed monitoring (packs of 2)	6	7320.812
CMC-TC RJ 12 extension for DC fan, 1 m (packs of 2)	6	7320.814
CMC-TC connection cable US 115 V, 60 Hz	2	7200.214
CMC-TC programming cable	1	7200.221

Note:
Fan mountings must be ordered according to the specific enclosure size.

Connection/mounting accessories



Connection cable/extension

The cable is used to connect to:
- CMC-TC Master II
- 24 V power pack for PU II
- Active fan unit for TE
- Climate unit (connected fan)
- Voltage monitor
- Voltage expansion unit

Technical specifications:
PVC cable, 3 pole, with IEC connector (non-heating appliances) with contact protection CEE22.

Supply includes:
1 connection cable.

Country version	Voltage Volt	Model No. DK
D / F / B	230	**7200.210**
GB	230	**7200.211**[1)]
CH	230	**7200.213**[1)]
USA / CDN	230/115	**7200.214**[1)]
IEC 320 extension	230/115	**7200.215**

[1)] Extended delivery times.





Connection/extension cable C19/C20

The earthing pin/C19 connection cable DK 7200.216 is needed in order to supply power to the voltage monitor with 16 A C19/C20 switch output DK 7320.611.
The C19/C20 extension cable DK 7200.217 is needed for the voltage monitor with 16 A C19/C20 switch output DK 7320.611 in order to connect a device.

Technical specifications:
3-pole PVC cable with IEC cable coupling C19/C20/earthing-pin.

Supply includes:
1 connection cable/extension cable.

	Packs of	Model No. DK
Connection cable D/C19	1	**7200.216**
Extension cable C19/C20	1	**7200.217**





Power pack for PU II, FCS

A 24 V DC power pack is required to supply the Processing Unit II with power. There are two variants available:
- The 100 – 240 V AC power pack requires an IEC connection cable to supply the voltage
- An alternative power pack is designed for the telecommunications sector (48 V battery voltages) and is connected at the input end via a terminal block.

Both power packs include an output cable, 1.65 m long.

Technical specifications DK 7320.425:
Rated voltage: 100 – 240 V AC, 50/60 Hz
Rated current: Max. 1.5 A
Secondary range: 24 V DC, 3 A

Technical specifications DK 7320.435:
Rated voltage: 20 – 72 V DC
Rated current: Max. 2.5 A
Secondary range: 24 V DC, 1.3 A

Primary input voltage	Output voltage	Model No. DK
100 – 240 V AC/ 50/60 Hz	24 V DC	**7320.425**
48 V DC	24 V DC	**7320.435**

Also required:

Connection cable for DK 7320.425 power pack, see page 818.



Supply connection cable

for PU II/FCS

If the customer is able to provide 24 V DC, the systems PU II/FCS may be supplied with power via the supply connection cable. No power packs are then required for the application. The cable is also used to extend the redundant power supply of the CMC-TC.

Packs of	Length	Model No. DK
1	2 m	**7320.813**



Programming cable

The interface cable is used to configure the network parameters in the Processing Unit II and the Master Unit.
The RJ 10 connector is connected to the front jack of the PU/master, whilst the 9-pole SUB-D connector is connected to a serial PC interface.

Packs of	Model No. DK
1	**7200.221**



Connection cable RJ 45

This cable is for data exchange and power supply to a sensor unit via the Processing Unit II. There is an RJ 45 connector at each end of the shielded cable. Additionally, the cables are used for applications with the CMC-TC Master II, extension unit DK 7200.520 and SSC applications.

Length m	Packs of	Model No. DK
0.5	4	**7320.470**
2	4	**7320.472**
5	4	**7320.475**
10	1	**7320.481**
15	1	**7320.485**



Connection cable RJ 10, RJ 12

The RJ 12 connection cable allows the alarm relay output of the Processing Unit II to be used for individual alarm lights/indicators. The RJ 10 connection cable facilitates connection to the CMC socket strip in conjunction with the digital input module. The cable is equipped with an RJ 10/12 connector at one end. The other end is open.

Connector	Length m	Packs of	Model No. DK
RJ 10	5	4	**7200.420**
RJ 12	5	4	**7200.430**



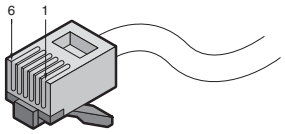
Extension cable RJ 12

The cable is used to extend the sensor supply cables (RJ 12) and individual actuator cables. The cable is equipped with an RJ 10/12 connector at one end. There is an RJ 10/12 jack at the other end.

Connector/jack	Length m	Packs of	Model No. DK
RJ 12	5	4	**7200.450**
RJ 12	1	2	**7320.814**



Example: RJ 12



Connection/mounting accessories



Redundant power supply

The Y-adaptor supports a redundant design of the power supply to the CMC-TC system.

System supply inputs:
The Y-adaptor has two 24 V DC inputs. This allows the connection of two 30 V AC power packs DK 7320.425 or two 48 V DC power packs DK 7320.435. The input therefore has a dual design. If one input fails, the second supply input will supply the required power. The system operates without interruption.

Alarm display:
There are two LEDs on the front of the device which display the status of the two supply inputs. At the rear there are two RJ 12 jacks which may be connected to the I/O unit DK 7320.210 of the CMC-TC system and indicate the status of the supply inputs.

System supply output:
The system has one 24 V DC output which is accessed via terminals at the rear of the enclosure. The terminals may be connected to the power input of the PU II (DK 7320.100) and FCS (DK 7320.810) using the supply connection cable DK 7320.813. The terminals have a 3-way design, allowing the connection of up to 3 cables. A supply connection cable is included with the supply.

Packs of	**Model No. DK**
1	**7320.426**

Installation:
May be mounted in the 1 U component support DK 7320.440 or with the individual mounting unit DK 7320.450.

Technical specifications, adaptor:
- Rated voltage 24 V DC
- Max. output current 3 A

Supply includes:
Y-adaptor, 1 supply connection cable, two RJ 12 connection cables to the I/O unit.

Note:
If several items of equipment are connected, a maximum of 3 A may be taken in total.

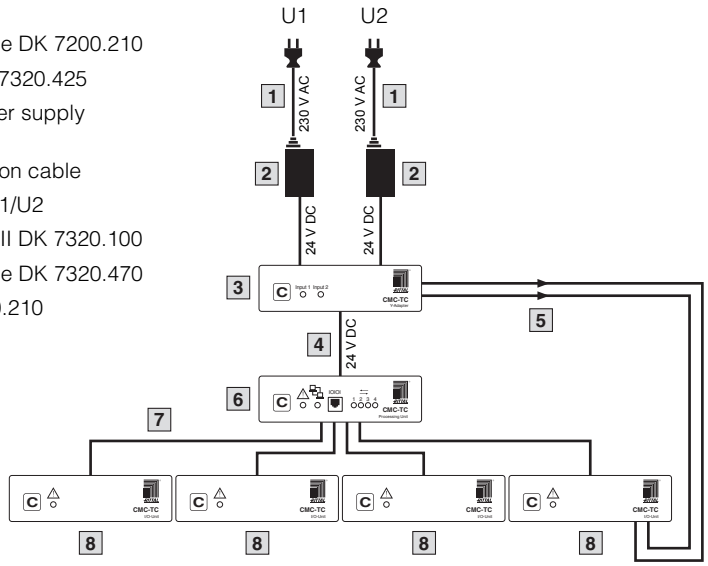
Also required:

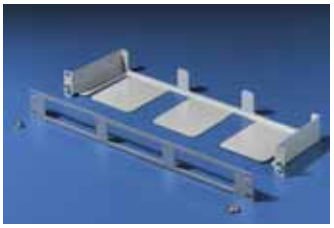
Description	No. of packs	Required	Optional	**Model No. DK**	Page
AC power pack 230 V or DC power pack 48 V	2 2	■ ■	– –	7320.425[1)] 7320.435	818 818
Connection cable D/F/B or Connection cable GB or Connection cable CH or Connection cable USA/CDN or Connection cable C13	2 2 2 2 2	■ ■ ■ ■ ■	– – – – –	7200.210[1)] 7200.211[1)] 7200.213[1)] 7200.214[1)] 7200.215[1)]	818 818 818 818 818
Supply connection cable (additional)	1 – 2	–	■	7320.813	818
1 U mounting unit	1	–	■	7320.440	821
Mounting module CMC	1	–	■	7320.450	821
I/O unit	1	–	■	7320.210[2)]	811

[1)] One connection cable is required for one power pack
[2)] A complete CMC-TC system is required to operate the I/O unit

Example:

1 Connection cable DK 7200.210
2 Power pack DK 7320.425
3 Redundant power supply DK 7320.426
4 Supply connection cable
5 Alarm outputs U1/U2
6 Processing Unit II DK 7320.100
7 Connection cable DK 7320.470
8 I/O unit DK 7320.210







Mounting unit, 1 U

The mounting unit can accommodate up to 3 sensor units or Processing Units II and is used for accommodation in the 482.6 mm (19″) attachment level. Cable clamp straps DK 7610.000 or DK 7611.000 can be used for cable clamping.

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Packs of	Model No. DK
1	**7320.440**

Accessories:

Cable clamp strap,
see page 1070.





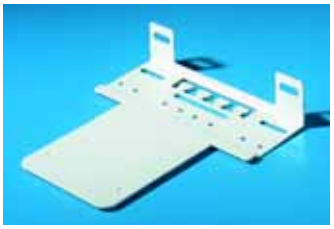
Single cover

for 1 U mounting unit

For CMC-TC applications the CMC-TC modules are attached to the 482.6 mm (19″) system of the enclosures via the 1 U mounting unit DK 7320.440. Up to 3 modules may be attached in one unit. Depending on the application, 1 or 2 installation openings will be left free. With a ventilated application, there is the risk of an air short-circuit. The free spaces may be covered with the single cover. The single cover consists of a film which is attached with adhesive and which may be removed again if necessary.

Supply includes:
2 single covers

Packs of	Model No. DK
2	**7320.441**





Mounting module CMC

The mounting module accommodates individual sensor units or processing units, for mounting on the frame section.

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Packs of	Model No. DK
1	**7320.450**

Connection/mounting accessories







Fixture unit, 1 U

for CMC-TC sensors

The fixture unit offers the option of accommodating up to 22 CMC-TC sensors. Depending on the design, there is a choice of 9 types (see table). This produces a patch front with 22 RJ 12 jacks. For sensors such as the digital input, the connection to external systems may be made at the rear of the fixture unit. Incoming cables may still be clamped at the rear with cable ties. With this application, a height of 1 U is maintained. Alternatively, the fixture unit can also accommodate up to 6 voltage monitors DK 7320.600. In this case, the installation height of 1 U is exceeded due to the large sensor height.

This provides CMC-TC sensors such as the digital input with a fixture unit in the 482.6 mm (19″) section of IT enclosures, ensuring professional accommodation of several sensors with neat cable clamping.

Supply includes:
1 U fixture unit, trim panel.

Packs of	Model No. DK
1	**7320.445**

Matching sensors/identification unit:

Description	Max. (qty.)	Model No. DK
Temperature sensor	22	7320.500
Analog input 4 – 20 mA	22	7320.520
Vandalism sensor	22	7320.540
Digital input	22	7320.580
Relay output	22	7320.590
48 V voltage sensor DC	22	7320.620
Identification unit, universal lock	22	7320.730
Room door output module	22	7320.740
Voltage monitor	6	7320.600



Alarm signal lamp CMC

The alarm signal lamp serves as a collective fault signal for all alarms in the CMC-TC.
For example: Temperature exceeded, fan defect, smoke alarm etc. The CMC-TC provides a user-friendly menu allowing the operator to select which message will affect the CMC-TC alarm relay.
The alarm signal lamp is activated via the alarm relay.
The lamp may be attached to the network enclosure or any other desired position, e. g. in the corridor.
The RJ 12 connection cable is needed for connecting to the PU II.

Item	Model No. SZ
LED steady light component 24 V DC, red	**2372.000**
Connection component	**2368.010**

To fit Processing Unit II, see page 809.

Technical specifications:
Rated operating voltage: 24 V DC
Rated current: 60 mA

Also required:

Connection cable RJ 12 (DK 7200.430), see page 819.



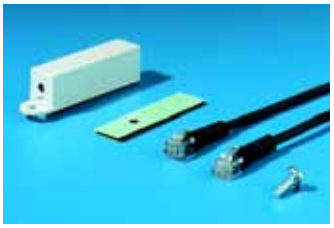
Interference suppression capacitors

for fans

The capacitors are used for the interference suppression of fans with self-starting shaded pole motors. One capacitor should be connected directly parallel to the mains voltage for each fan unit. The capacitors are equipped with a terminal, which means that they are easily fitted to the fan cable.

Design	Packs of	Model No. DK
100 nF	20	**7200.490**

Technical specifications:
Dielectric strength: 275 V AC
Capacity: 100 nF
Type: X2



Temperature sensor

The sensor assumes the function of a temperature monitor and contains an ID so that it is automatically detected and set up by the CMC-TC system. It is connected to a sensor unit via the connection cable supplied loose. The sensor can also control a fan on the climate unit or fan control system (FCS).

Packs of	Model No. DK
1	**7320.500**

To fit sensor unit:

I/O unit	Access unit	Climate unit	FCS
■		■	■

Technical specifications:
Type: NTC
Resistance: 10 kOhm at 25°C
Tolerance: ±2°C
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Temperature application range: +5°C to +45°C



Humidity sensor

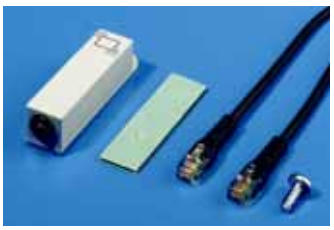
The sensor measures relative air humidity and converts it into a frequency signal. It contains an ID so that it is automatically detected and set up by the CMC-TC system. Power supply and data evaluation is performed by the I/O sensor unit via the connection cable supplied loose.

Packs of	Model No. DK
1	**7320.510**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

Technical specifications:
Sensor: With humidity/frequency converter
(50 kHz at 76 % rel. hum.)
Sensor measurement range:
Relative humidity 10...90 % rel. humidity ±3 %
(at 20°C)
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Temperature application range: +5°C to +45°C



Leakage sensor

The leakage sensor is equipped with an optical sensor head. If this sensor head becomes wet, it reports a leakage alarm. The sensor head may be mounted facing the floor. If water collects there and comes into contact with the sensor head, the alarm is triggered. The sensor contains an ID so that it is automatically detected and set up by the CMC-TC system. The connection cable, supplied loose, should be used for connection to the sensor unit.

Protection category:
IP 40

Packs of	Model No. DK
1	**7320.630**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

Technical specifications:
Monitoring: Visual
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Temperature application range: +5°C to +45°C



Airflow monitor

The airflow monitor determines whether the fan is achieving its full operating capacity.
Storage damage, dirty filter mats or jammed fan blades are promptly detected and reported by the sensor. The sensor contains an ID so that it is automatically detected and set up by the CMC-TC system. Its switch point is adjustable.

Technical specifications:
Connection: RJ 12 jack, 6-pole on the cable
Connection cable: Length 2 m
Temperature application range: +5°C to +45°C

Packs of	Model No. DK
1	**7320.550**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		■

Note:
The sensor can be operated with temperature-controlled fan via the climate unit sensor unit.

Rack sensors



Smoke alarm

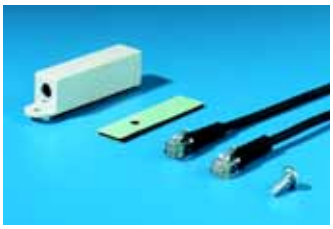
The smoke alarm is based on an opto-electronic smoke particle evaluation within a measurement chamber. The alarm contains an ID so that it is automatically detected and set up by the CMC-TC system. The power supply and alarm relay to the sensor unit occurs via the supplied connection cable.

Packs of	Model No. DK
1	7320.560

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		■

Technical specifications:
Alarm type: Combustion product alarm (smoke)
Sensor/transmitter: Silicon PIN photodiode/ GaAs infr. LED
Measurement frequency: Once every ten seconds
Power consumption: Max. 61 mA
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m, RJ 12 connector 6/6 on both sides
Dimensions (alarm with base/plinth): D = 100 mm, H = 50 mm
Temperature application range: +5°C to +45°C



CMC-TC acoustic anti-vandalism sensor

The CMC-TC acoustic sensor may be used in all situations where protection from vandalism is required. The sensor responds to loud mechanical noises such as those associated with a break-in. The sensitivity of the sensor is adjustable. The sensor contains an ID so that it is automatically detected and set up by the CMC-TC system.

	Model No. DK
Acoustic sensor	7320.640

Extended delivery times.

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

Technical specifications:
Sensor: Microphone
Frequency range: 50 Hz – 10 kHz
Noise level: 60 – 100 dB (A)
Response time: 20 ms
Patch cable to I/O Unit: 2 m
Rated voltage: 24 V DC
Temperature range: +5°C to +45°C



CMC-TC leak sensor, 15 m

The leak sensor is able to detect electrically conductive fluids such as freshwater, salt water, glycol solutions etc. over a distance of 15 m. The sensor may be fitted underneath water pipelines, LCP applications, climate control applications in bayed enclosure suites etc., preferably on the floor. Attachment on or close to the floor allows the system to detect even tiny quantities of fluid.
The sensor may be connected directly to the I/O unit using the patch cable supplied loose via plug & play. The sensor contains an ID so that it is automatically detected and set up by the CMC-TC system.
The 15 m long sensor cable is connected to an enclosure with the evaluation electronics via a 3.5 m long connection cable. The enclosure must be correctly installed according to the IP protection category, e. g. in a Rittal rack. The sensor cable is colour-coded to distinguish it from other cables in the monitoring area. The carrier material PEHD is chemically neutral with long-term stability. The PHLD sensor cable is very robust and protects the measurement wires inside from damage and accidental activation. The sensor cable is liquid-repelling and can therefore be quickly reused following a leak.

	Model No. DK
Leak sensor	7320.631

Extended delivery times.

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

Technical specifications:
Monitoring: Conductive sensor cable
Length of sensor cable: 15 m
Connection cable to electronics: 3.5 m
Patch cable to I/O unit: 2 m
Rated voltage: 24 V DC
Protection category of electronics with enclosure: IP 40 to EN 60 529/09.2000
Temperature range: +5°C to +45°C



Analog sensor input module

The input module facilitates the connection of individual external analog sensors (4 – 20 mA) to the I/O sensor unit. As an adaptor, it performs the function of identification, so that an external sensor is automatically identified and set up by the CMC-TC system.
Sensors with 4 – 20 mA signal output and 24 V DC operating voltage (max. 50 mA) may be connected. The CMC-TC makes its internal power source available.
It is connected to a sensor unit via the connection cable supplied loose.

Packs of	Model No. DK
1	**7320.520**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

Technical specifications:
Analog input: 4 – 20 mA at 24 V DC
Maximum current output of the module: 50 mA
Sensors without GND may also be used.
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Sensor connection:
Pull-off clamping strip, 3-pole



Digital sensor input module

The input module facilitates the connection of individual external digital sensors to a sensor unit. As an adaptor, it performs the function of identification, so that an external sensor is automatically identified and set up by the CMC-TC system.
External sensors or detectors must have a floating contact (normally closed or normally open).
It is connected to a sensor unit via the connection cable supplied loose.
In conjunction with the access unit, any given door release system (e. g. transponder) with a floating relay contact may be connected via the input module.
The input can be used as either “Normally Open” or “Normally Closed”.

Packs of	Model No. DK
1	**7320.580**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■	■	■

Technical specifications:
Floating external sensor contact:
Voltage min. 24 V DC load capacity
Current: Min. 10 mA load capacity
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Sensor connection:
Pull-off clamping strip, 3-pole



Relay output module

The output module allows individual, external extra-low voltage actuators to be switched via a change-over contact. As an intermediate relay, it performs the function of identification and isolation, so that an actuator is automatically identified and set up by the CMC-TC system.
It is connected to the I/O sensor unit via the connection cable supplied loose. At the output end, the module contains a pull-off terminal strip for assignment with actuator cables. Power supply to the actuator must be provided externally.
The output relay may be switched remotely via SNMP or HTTP. Alternatively, alarm links can also be created with alarm inputs.

Packs of	Model No. DK
1	**7320.590**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

Technical specifications:
Condition of the actuator: cosphi = 1
Max. load of the switch contact:
1 A, 30 V DC and 0.5 A, 48 V AC
Max. switching voltage: 48 V AC; 48 V DC
Max. switched current: 1 A
Max. switching load: 30 W, 62.5 VA
Min. switched current: 1 mA at 5 V DC
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Sensor connection:
Pull-off clamping strip, 3-pole

Power sensors



Extension unit CMC-TC

Three-phase voltage
The CMC-TC extension unit picks off three independently monitored mains voltages via network cables and forwards the measurements to the Processing Unit II. It is linked to the PU II via the RJ 45 connection cable on the P-I²C port (sep. accessory). Up to two extension units may be connected serially to one PU. A separate power pack is not required. Alarm limits may be preset for all voltages.

Technical specifications:
Voltage inputs:
3 x 100 – 230 V AC, IEC connector
Interface: P-I²C,
max. cable length 2 m
Temperature application range:
+5°C to +45°C
Tolerance: ±5 % at 20 – 30°C

Protection category:
IP 40

Max. number per PU II	Packs of	Model No. DK
2	1	**7200.520**

Note:
To fit Processing Unit II DK 7320.100,
see page 809.
For applications with SMS functions,
voltage monitors must be used.

Also required:

3 x IEC connection cable DK 7200.210,
see page 818.

Accessories:

RJ 45 connection cable,
see page 819.



Voltage monitor

The voltage monitor picks up a mains voltage to be monitored via the mains cable, and reports its status to a sensor unit: Voltage ON or voltage OFF. The monitor contains an ID so that it is automatically detected and set up by the CMC-TC system. The connection cable, supplied loose, should be used for connection to the sensor unit.

Technical specifications:
Monitored rated voltage:
230 V AC 50/60 Hz
Connections:
IEC connector, RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Temperature application range:
+5°C to +45°C

Packs of	Model No. DK
1	**7320.600**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		■

Protection category:
IP 40

Also required:

IEC connection cable DK 7200.210,
see page 818.



Voltage monitor

with 10 A IEC switch output
This sensor is used in conjunction with the CMC-TC to monitor voltage limits. The limits may be set via the WEB interface or SNMP. As an additional option, this voltage may also be switched on and off via the module, in order to reboot connected equipment via Ethernet.
It is connected via standard, commercially available IEC320 connectors as the input signal, and an IEC320 socket to connect the equipment.

Technical specifications:
- Plug & play compatibility system
- Initiation of the switching operation may be manually or event-based via SNMP or WEB
- The min./max. limits of voltage measurement are freely selectable
- Measurement range 100 – 250 V AC, 50/60 Hz
- Max. switching load 250 V AC and 10 A at cosphi = 1
- Tolerance: ±5 % at 20 – 30°C

Packs of	Model No. DK
1	**7320.610**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

Note:
The system has two functions. Each function occupies one input of the I/O unit.
1st function: Voltage measurement
2nd function: Relay switching (at zero current, with normally open contact)

Also required:

IEC connection cable DK 7200.210,
German version,
IEC extension cable DK 7200.215
for connecting the equipment,
see page 818.



Voltage monitor

with 16 A C19/C20 switched output

This sensor is used in conjunction with the CMC-TC to monitor voltage limits. The limits may be set via the WEB interface or SNMP. As an additional option, this voltage may also be switched on and off via the module, in order to reboot connected equipment via Ethernet. It is connected via a C19 connector as the input signal, and a C20 socket to connect the equipment (connection cable/extension cable DK 7200.216/.217).

Technical specifications:

- Plug & play installation
- Initiation of the switching operation may be manually or event-based via SNMP or WEB
- The min./max. limits of voltage measurement are freely selectable
- Voltage input 230 Volt ±10 %, 50/60 Hz
- Max. switching load 250 V AC and 16 A at cos phi = 0 – 1
- Tolerance: ±5 % at 20 – 30°C

Packs of	Model No. DK
1	7320.611

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

Note:
The system has two functions. Each function occupies one input of the I/O unit.
1st function: Voltage measurement
2nd function: Relay switching (at zero current, with normally closed contact)
To fit sensor unit > I/O unit.

Also required:

Components	Model No. DK	Page
Connection cable D/C19	7200.216	818
Extension cable C19/C20	7200.217	818



Voltage monitor 48 V DC

The voltage monitor picks off a mains voltage to be monitored via the 3-pole jack, and reports its status to a sensor unit: Voltage ON or voltage OFF. The monitor contains an ID so that it is automatically detected and set up by the CMC-TC system. The connection cable, supplied loose, should be used for connection to the sensor unit.

Technical specifications:
Monitored rated voltage:
48 V DC (12 – 60 Volt DC/
12 – 25 Volt AC 50/60 Hz)
Connections:
3-pole connector, RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Temperature application range:
+5°C to +45°C

Packs of	Model No. DK
1	7320.620

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		■

Protection category:
IP 40





Socket strip CMC-TC

With integral

- Interference suppressor filter
- Overvoltage protection
- Alarm contact

In the event of interference caused by overvoltage, the connected active network components are protected. With the relay message contact, undervoltage and any malfunctions caused by overvoltage can be reported via the CMC-TC in the network (SNMP trap). A green light on the strip indicates that the device is operational.
The second protective device is the interference suppressor filter which protects valuable equipment as a passive component.

Technical specifications:
Number of sockets: 9
Length of strip: 650 mm
Rated voltage: 230 V AC, 50/60 Hz
Rated current: 16 A
Relay alarm output: RJ 10 jack
Relay load capacity: 50 Volt DC 100 mA

Packs of	Model No. DK
1	7200.630

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		■

Technical specifications, overvoltage protection:
Arrester application category: D
Surge current resistance per conductor: 2.5 kA
Maximum surge strength: 8 kA

Also required:

A digital input module DK 7320.580 and an RJ 10 connection cable DK 7200.420 is needed to link the CMC socket strip to the CMC-TC system.



Access sensor

The access sensors monitor doors, side panels or windows in the network enclosure. The magnet is secured to the moving part (e. g. side panel), whilst the reed contact is fastened to the immobile part (enclosure frame).
The permanent magnet holds the reed contact in a closed position. When the door is opened or the side panel removed, the reed contact releases and opens the circuit. This triggers an alarm in the CMC-TC.
The sensor contains an ID so that it is automatically detected and set up by the CMC-TC system. It is connected to a sensor unit via the connection cable supplied loose. Up to five access sensors may be connected in series to one monitoring line, if necessary in conjunction with extension cable RJ 12. The jumper plug forms the end.

Packs of	Model No. DK
2	**7320.530**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■	■	■

Technical specifications:
2 magnets
(mounted on the moving part, directly adjacent)
2 sensors with reed contact
(mounting on the enclosure frame)
Connection 1: RJ 12 jack, 6-pole
(connection to the sensor unit)
Connection 2: RJ 12 socket, 6-pole
(series connection with other access sensors, or finished with the jumper plug)
2 jumper plugs RJ 12 at the end
2 connection cables: Length 2 m,
RJ 12 connector 6/6 on both sides



Motion detector CMC-TC

The motion detector may be used in enclosures or in rooms. Any modifications to the enclosure, such as opening a door or side panel, are indicated.
The motion detector can also detect persons in the room or in front of the data cabinet.
The alarm contains an ID so that it is automatically detected and set up by the CMC-TC system. The power supply and data exchange to the sensor unit occurs via the connection cable, supplied loose.

Packs of	Model No. DK
1	**7320.570**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		■

Technical specifications:
Alarm type: Infrared (IR) detector
Range: Max. 7 m
Power consumption: Max. 30 mA/24 V DC
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Dimensions:
W x H x D: 59 x 102 x 32 mm



Vandalism sensor

The sensor contains a position-insensitive alarm contact and an ID so that it is automatically detected and set up by the CMC-TC system.
It is connected to the I/O sensor unit via the connection cable supplied loose.
The sensitivity of the sensor may be set using the PU II software.

Packs of	Model No. DK
1	**7320.540**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

Technical specifications:
Mercury-free contact, position-insensitive
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides



Room door output module

The room door output module allows external door opener systems to be switched via a change-over contact. As an intermediate relay, it performs the function of identification and isolation, so that a door opener is automatically identified and set up by the CMC-TC system. It is connected to the access unit via the connection cable supplied loose. At the output end, the module contains a pull-off terminal strip for assignment with actuator cables. Power supply to the door opener must be provided externally.

Packs of	Model No. DK
1	**7320.740**

To fit sensor unit:

I/O unit	Access unit	Climate unit
	■	

Technical specifications:
Condition of the actuator: cosphi = 1
Max. load of the switch contact:
1 A, 30 V DC and 0.5 A, 48 V AC
Max. switching voltage: 48 V AC; 48 V DC
Max. switched current: 1 A
Max. switching load: 30 W, 62.5 VA
Min. switched current: 1 mA at 5 V DC
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Sensor connection:
Pull-off clamping strip, 3-pole

Note:
One access sensor DK 7320.530 is always needed for each output module.



Comfort handle TS 8

with master key function

The handle assumes the function of a door lock and lever handle monitoring.
Master key means that the handle can always be opened with the master key, independently of the control system. A semi-cylinder (security lock 3524 E) is supplied loose, but a semi-cylinder 40 mm overall length to DIN 18 254 may also be used.
An access sensor (DK 7320.530) must be connected to the corresponding door for each handle.
If the lever handle is closed, the locking mechanism integrated into the handle latches automatically. The handle may be released via the CMC-TC system in the network or via optional add-on systems, such as smartcard readers etc. The handle is locked in a de-energised manner (without electrical connection). The push-button may be depressed following electrical release and then opens the lever automatically.
Opening via the key is always superordinate, i. e. the enclosure may always be opened with the key in the case of electrical locking and in the event of a power failure (emergency opening).

Handle system	Model No. DK
Comfort handle TS 8 with master key function	**7320.721**

To fit sensor unit:

I/O unit	Access unit	Climate unit
	■	

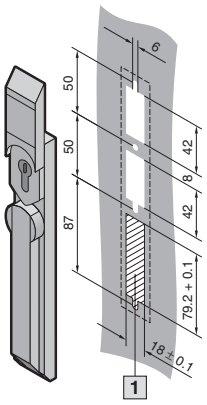
Technical specifications:
Rated voltage: 24 V DC
Rated current: Max. 100 mA
Connection cable: Length 3 m, RJ 12 connector
Connection cable:
Length 2 m, RJ 12/RJ 12 connector
Coupling for extension:
RJ 12/RJ 12 jack
Temperature application range:
+5°C to +40°C

Protection category:
IP 40

Also required:

Access sensor DK 7320.530,
see page 828.





Ergoform-S handle

with electromagnetic locking

The lock unit consists of a Rittal handle system whose handle is electromagnetically locked. It contains an identifier so that it is automatically detected and set up by the CMC-TC system. The power supply and data exchange to the access unit occurs via the attached connection cable. An access sensor (DK 7320.530) is always required for door monitoring. With the door closed and the clip-down handle locked home, latching is activated by switching on the lock magnet. The CMC-TC enables the handle to be pulled out by deactivating the lock magnet, thereby allowing the door to be opened. This deactivation can be initiated via an access unit such as a smartcard reader, magnetic card reader, coded lock and/or network management systems. The handle system likewise contains handle monitoring. The CMC-TC reports an alarm if the handle is not swung in and locked home after closing the door.
The push-button insert supplied can also be exchanged for **lock inserts.**

Note:
An additional hole is always required.

1 Additional hole for electronic lock (PS/FR/QR/VR/TC/TE)

Handle system	Model No. DK
Ergoform-S handle for FR, PS, TC, VR, TE	**7320.700**
Ergoform-S handle for QR	**Available on request.**

To fit sensor unit:

I/O unit	Access unit	Climate unit
	■	

Note:
For PS and FR glazed doors, the locking bars listed below are required:

Locking bars

Design	Model No. DK
Lower door locking bar for 2000 mm high PS enclosures	**7200.371**
Lower door locking bar for 2000 mm high FR enclosures	**7200.372**

Other sizes available on request.
Delivery times available on request.

Technical specifications:
Rated voltage: 24 V DC
Rated current: Max. 100 mA
Connection cable: Length 3 m, RJ 12 connector
Connection cable:
Length 2 m, RJ 12/RJ 12 connector
Coupling for extension:
RJ 12/RJ 12 jack
Temperature application range:
+5°C to +40°C

Protection category:
IP 40

Also required:

Access sensor DK 7320.530,
see page 828.



Note!
The handle only fits into the cut-out shown in the drawing. For other hole patterns, additional adaptors are needed, and/or machining of the door. Solutions provided on request.

Universal handle

with electromagnetic locking for the CMC-TC monitoring system

The universal handle is equipped with a pitch pattern of mounting holes which will fit many existing door systems. This handle is ideal for retrofitting to projects with varying enclosure types and variants.
The handle may be connected to the CMC-TC system via plug & play.
Additionally, an access sensor (DK 7320.530) should always be used to enable polling of the door status. The handle is equipped with a connection cable and an RJ 12 connector, which may be plugged into the access unit DK 7320.220 of the CMC-TC system. The handle is equipped with a push-button insert which may be depressed when the electromagnetic lock is released.

Technical specifications:
Rated voltage: 24 V DC
Rated current: Max. 100 mA
Connection cable: Length 5 m, RJ 12 connector

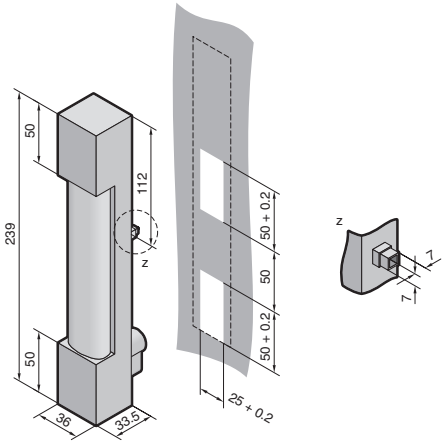
Note:
The handle is also available on request with integral Legic transponder.
Detailed information,
see page 832.

	Type	Model No. DK
Universal handle	CMC-TC	**7320.950**

Extended delivery times.

To fit sensor unit:

I/O unit	Access unit	Climate unit
	■	







Transponder handle TS 8

with integral transponder release system from Simons & Voss.

The electromagnetic transponder handle TS 8 may be retrofitted in the doors of TS 8/FR(i) enclosures. The handle is equipped with an integral radio transponder solution. The transponder receiver with battery is integrated into the handle housing. Apart from the transponder transmitter, no additional accessories, such as additional electronics, cables, power pack etc., are required. The handle is easily exchanged without the need for wiring.
If battery servicing is required, this is indicated acoustically.
The handle is supplied in the zero state, so that it may be opened with any transponder transmitter.

Use with hand-held transmitter:
The transponder transmitter is actuated from the handle, as a result of which the latter is unlatched for a specified time window and may be opened by pressing the push-button.

Use with the CMC-TC transmitter:
The transponder transmitter is linked to the CMC-TC system via the room door output DK 7320.740 and the access unit. The transmitter is placed in the enclosure frame, near the handle. In this way, the door may be released via the CMC-TC system. Additionally, an access sensor (DK 7320.530) should always be used to enable polling of the door status.

Use of the programmable transponder:
The programmable transponder allows the individual transponder transmitters to be allocated to individual handles. Matrix programming is supported.

	Type	Model No. DK
Electromagnetic handle	Transponder, stand-alone application	**7320.960**
Transponder transmitter	Hand-held transmitter	**7320.961**
Transponder transmitter	CMC-TC transmitter	**7320.962**
Programmable transponder	Programming	**7320.963**

Extended delivery times.

Benefits:
- No cables on the handle, because the electronics and battery are integrated into the handle.
- Several users may be set for one handle.
- Plug & play installation both mechanical and electrical.
- Individual control of the transponders and the set-up of each transponder is possible for up to 3 locking systems.
- With additional overlay to automatically block the old transponder in the event of reprogramming.
- Counterfeit-proof data communication is achieved via radio using crypto-codes.
- The “challenge response procedure” ensures protection against surveillance.
- The standard interface means that connections to other access and monitoring systems are not a problem.

The lock and organisation sytem is graded in the highest category with respect to unlocking protection to BSI 7500.

Note:
Systems with extra electronics and access control from Simons & Voss available on request.



Universal lock unit

The security lock consists of a base unit and a lock counterpart. The base unit is attached to the enclosure frame. The lock counterpart is attached to the door.
A mechanical setting allows you to choose between two states: At zero current when open, or at zero current when closed.
In order to identify the operating mode used, one of the two identifier modules (supplied loose) should be used, so that it is automatically identified and set up by the CMC-TC system. Power supply and data exchange is via the access unit, using the identifier modules and connection cables supplied loose.
An access sensor (DK 7320.530) is always required for door monitoring.

Technical specifications:
Rated voltage: 24 V DC
Rated current: 140 mA
Temperature application range:
+10°C to +40°C

Supply includes:
1 base unit with connection cable 0.1 m,
RJ 12 connector,
1 lock counterpart,
2 identifier modules with RJ 12 jack, 6-pole (connection to access unit),
RJ 12 jack, 6-pole (connection to universal lock),
1 connection cable for identifier modules,
2 m, RJ 12/RJ 12 connector without mounting kit.

Packs of	Model No. DK
1 set	**7320.730**

To fit sensor unit:

I/O unit	Access unit	Climate unit
	■	

Note:
Mounting kits depending on enclosure/door type available on request.

Also required:

Access sensor DK 7320.530,
see page 828.







Transponder comfort handle TS 8

with Legic Unit

With the CMC-TC system, Rittal offers an access system for racks. One form of access control is the release of the enclosure doors with Legic transponder technology. The popular Legic system is often used for access control in buildings. With the transponder handles, Rittal offers the option of opening the enclosure doors via Legic transponder cards. In this way, doors in buildings and Rittal enclosure doors may be opened via a transponder card.
The new TS 8 transponder handle has a similar design to the comfort handle TS 8 with master key function DK 7320.721. In the transponder handle, the master key function is replaced by the Legic system.
The handle may be connected as usual to the access unit DK 7320.220 of the CMC system and activated.

Additional transponder function in the handle:
Additionally, the handle contains a transponder receiver aerial, an LED and an acoustic signal generator. The functions are linked to the Legic unit B-Net 9106 – the control electronics for the transponder signals – via an integral connection cable.

Legic Unit B-Net 9106:
The Legic unit is integrated into a CMC-TC enclosure and may be mounted in the 1 U component support DK 7320.440 or with the individual mounting unit DK 7320.450.
In order to create a complete access system, the Legic unit must be connected to the serial interface of the PU II. Optionally this may also be connected to the P-I²C bus (input for reader units) of the corresponding access unit DK 7320.220.

Technical specifications:
Rated voltage: 24 V DC
Interface: RS-232/P-I²C
Transmission system: Legic transponder
Carrier frequency: 13.56 MHz
Protection category: IP 40
Temperature range: +5°C to +40°C

Supply includes:
– TS 8 handle with transponder antenna and acoustic/optic display
– Legic Unit B-Net 9106 with RS-232/P-I²C interface
– 3 transponder cards

Note:
When using the handle, an access sensor DK 7320.530 must always be used.
The serial interface RS-232 of the PU II may only be assigned to one accessory module/Legic Unit. In example 2 only the last 4 transponder digits are processed.

For the RS-232 application, the connection cable (PU II/Legic Unit) DK 7320.814 is required.

Transponder comfort handle TS 8	Packs of	**Model No. DK**
Legic Unit B-Net 9106	1	**7320.781**

Extended delivery times.

Application:

Example 1: Connection via the RS-232 der PU II
4 enclosures (front and rear) with one Legic reader:

Description	Qty.	**Model No. DK**
CMC-TC Processing Unit II	1	7320.100
CMC-TC access unit	4	7320.220
CMC-TC power pack 24 V, input 100 – 230 V AC	1	7320.425
CMC-TC 1 U mounting unit	2	7320.440
Cable clamp strap	2	7611.000
CMC-TC connection cable, sensor unit, 0.5 m long (packs of 4)	4	7320.470
CMC-TC access sensor (packs of 2)	8	7320.530
CMC-TC electromagnetic TS 8 handle with master key function	7	7320.721
Transponder comfort handle TS 8 with Legic Unit	1	7320.781
CMC connection cable D 230 V AC	1	7200.210
Programming cable	1	7200.221
Connection PU II/Legic Unit	1	7320.814

Example 2: Connection via P-I²C of the access unit
4 enclosures (front and rear) with 8 Legic readers:

Description	Qty.	**Model No. DK**
CMC-TC Processing Unit II	1	7320.100
CMC-TC access unit	4	7320.220
CMC-TC power pack 24 V, input 100 – 230 V AC	1	7320.425
CMC-TC 1 U mounting unit	2	7320.440
Single mounting unit	8	7320.450
Cable clamp strap	2	7611.000
CMC-TC connection cable, sensor unit, 0.5 m long (packs of 4)	4	7320.470
CMC-TC access sensor (packs of 2)	8	7320.530
Transponder comfort handle TS 8 with Legic Unit	8	7320.781
CMC connection cable D 230 V AC	1	7200.210
Programming cable	1	7200.221







Smartcard reader/ Magnetic card reader/ Coded lock

The door handle is released to authorised persons who have identified themselves with a smartcard/magnetic card/combination code. Smartcard readers/magnetic readers/coded locks are installed above the enclosure handle and can also function as a central unit for releasing several doors.
The entire access procedure can also be registered with the CMC-TC where there is network connection.

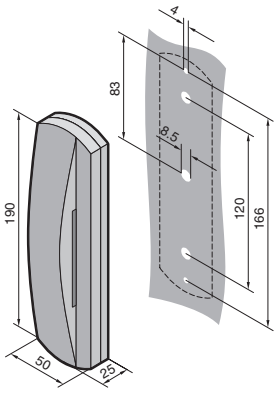
Technical specifications:
Rated voltage: 24 V DC
Rated current: Max. 20 mA
Smartcard type: I^2C chip
Magnetic card type:
Magnetic strip cards with data on track 2.
The read system is designed for cards with both a high and a low level of magnetism.

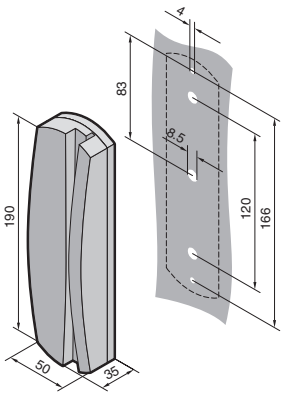
Read system	Model No. DK
Smartcard reader	**7320.750**
Magnetic card reader	**7320.760**
Coded lock	**7320.770**

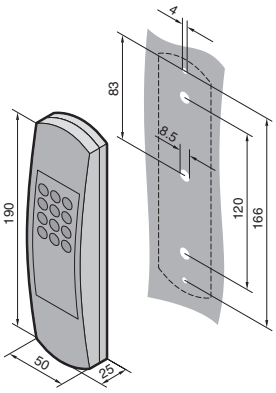
To fit sensor unit:

I/O unit	Access unit	Climate unit
	■	

Note:
Smartcard readers/magnetic card readers/coded locks may only be used in conjunction with the CMC-TC and an electric lock. 3 cards are supplied with the smartcard reader/magnetic card reader. Each card contains a four-digit code, which is different on all three cards. All cards are access-authorised. The code may be input directly on the coded lock.
Authorised codes may be set in the CMC-TC via Web. The input code is transmitted to the CMC-TC and, where applicable, to the network management system, via the I^2C bus. A mounting adaptor for a TS aluminium glazed door is supplied loose with every reader.









Mechanical lock systems

can be found under system accessories from page 947.

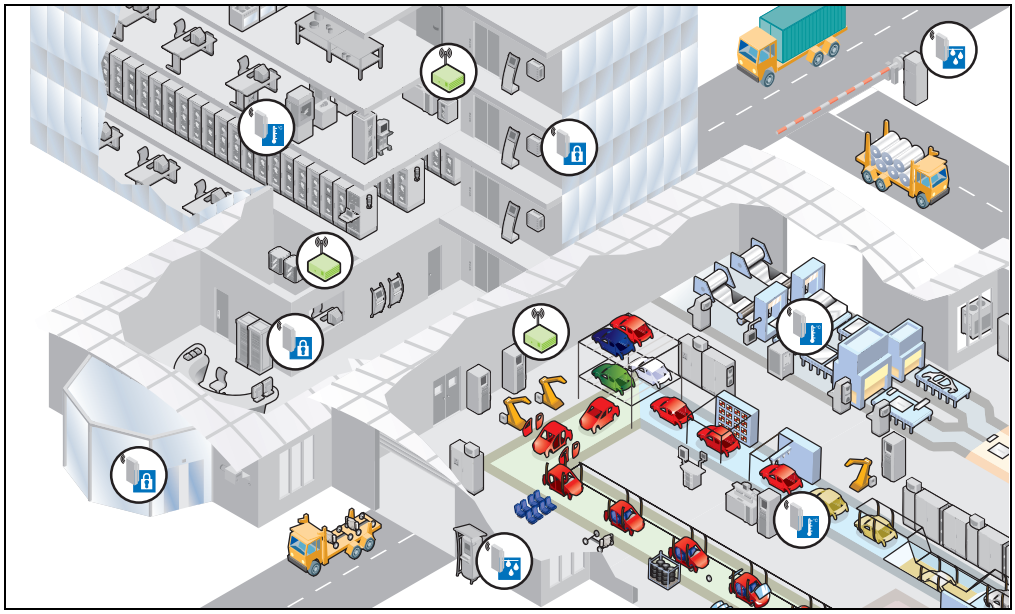
CMC-TC wireless sensor network

Increasingly complex IT infrastructures demand innovative security systems. Rittal offers a wireless sensor network for wireless security. The sensors are encrypted and operate in the 2.4 GHz ISM band.

Thanks to the CMC-TC system concept, all security-relevant information may be incorporated into the network management system or is available on the Intranet/Internet.

Benefits:

- Cabling to the sensor is eliminated
- Large range of applications thanks to high IP protection category and temperature range
- Secure, encrypted radio transmission
- ISM band suitable for universal use
- Networking capabilities (TCP-IP, SNMP, Web etc.) with the CMC-TC monitoring system
- Flexible, modular design
- Long battery operating period
- Simple installation based on the plug & play system
- Monitoring of the radio connection to the sensor
- Monitoring of the battery status



Flexible

The use of radio sensors is appropriate whenever direct cabling between the sensor and I/O unit is too time-consuming or too difficult to implement, e. g. for outdoor cabling, or in inaccessible places in the server rack or within the IT infrastructure of data centres (indoors). This eliminates the need for cabling, and the system is easily retrofitted while operational. There is no need to lay any cable trunking or modify the IT infrastructure. The position of the measuring point may also be altered retrospectively by simply moving the sensor. If the sensors are used in racks, the position of the enclosure may be flexibly modified with due regard for the radio connection.
By connecting the Wireless I/O Unit to the existing CMC-TC monitoring system, the system may be extended in a modular and flexible manner. In order to optimise radio links, an external aerial may optionally be used on the Wireless I/O Unit. Similarly, the transmission and reception range may be flexibly extended using additional Wireless I/O Units as repeaters.
The transmitter and receiver of the wireless network need not have visual connection, which likewise serves to increase flexibility.

Plug & play compatibility system

The wireless sensor network is easily set up using plug & play installation.
By means of a simple commissioning procedure comprised of a learning mode and learning key, the sensors are taught by the Wireless I/O Unit via plug & play. Rittal offers a wireless measurement system with digital display for identifying the optimum radio connection for the assembly site. This measurement system has the same design as the sensors and may be connected to the reference location of the sensor for test purposes.

Modular

The wireless sensor network is comprised of a central Wireless I/O Unit, and the wireless sensors. One Wireless I/O Unit is capable of managing up to 16 wireless sensors via radio. Users can choose between 4 sensors with different monitoring functions, in any given combination.
The wireless sensor network is compatible with the CMC-TC monitoring system, which is based on Processing Unit II (PU II). Several sensor units (I/O Unit, Access Unit, Climate Unit, FCS, socket strips, etc.) are available for the PU II. Up to 4 sensor units may be connected to one PU II.

The Wireless I/O Unit is connected to the PU II via a Cat 5 cable and can also be mixed with the existing sensor units. Up to a maximum of 4 Wireless I/O Units may be connected to one PU II. In total, therefore, up to 64 wireless sensors (4 x 16) may be operated with one PU II. The CMC-TC system with the PU II is always required in order to operate the wireless sensor network. In this way, the monitoring information may be processed and displayed in the Ethernet via SNMP, Web, FTP etc. It is also possible to connect cabled sensors to wireless sensors and compile modular, application-specific monitoring functions.

Secure

Radio transmission occurs within the ISM band, which is not subject to licensing by the end user.
The integral encryption of radio telegrams offers a suitable level of protection from unauthorised monitoring of the data transmission.

Note:
More detailed information can be found on the Internet at www.rimatrix5.com







Rack extinguisher system DET-AC Plus, 1 U

With integral early fire detection

This compact rack extinguisher system DET-AC Plus (Detection Active Plus) is designed for use in the Rittal IT rack, fitted in the 482.6 mm (19″) level. The system is equipped with a 2-stage smoke analysis extractor system. A bayed rack may optionally be included in the monitoring and extinguisher system. The system is also suitable for use in racks with bayed air/water heat exchangers (Liquid Cooling Package, LCP). The eco-friendly, non-toxic Novec[1)] 1230 is used as the extinguisher medium, which means that this extinguisher system is suitable for universal use. Sensitive hardware such as servers, storage and switches are not impaired by the extinguisher medium. Thanks to the extremely sensitive detection of smoke, even in racks with a high level of climate control (airflow speed), this ensures that there is plenty of time to forward an alarm message either acoustically, optically via the LC display on the enclosure front, or by connecting the integral floating contacts to the building management system or fire alarm centre and to the Rittal monitoring system CMC-TC. When opening an enclosure door, activation of the extinguisher system is blocked by the two access sensors (door monitoring). In order to ensure that proper functioning of the system is maintained even in the event of a power failure, an emergency back-up power supply with a stored energy time of 4 hours is integrated into the system. The system can also be supplied purely as an early fire detection system without the extinguisher.

[1)] Novec is a registered trademark of 3M.

Early smoke detection:
Thanks to the two highly sensitive optical sensors, minute particles of smoke may be detected even in the early stages of a fire (pyrolysis phase) via the active smoke extraction. If the 1st alarm detects smoke aerosols, a pre-alarm is triggered, and if the 2nd alarm likewise detects smoke, the extinguisher system is activated. This prevents major fires from developing.

Rack requirements:
As a general principle, the racks must meet protection category IP 55, i. e. with sealed doors and screw-fastened side panels. Use of an air/water heat exchanger (LCP) is supported.

Optional smoke analysis, extension for bayed racks:
The basic DET-AC Plus system is designed for a single rack, but neighbouring enclosures may also be incorporated via an additional pipe kit, provided the total interior enclosure volume to be extinguished does not exceed 3 m³. Several extinguisher systems may also be linked together in the bayed enclosure suites, so that all systems may be activated jointly.

Automatic system deactivation (compulsory deactivation):
In conjunction with the Rittal enclosure monitoring system CMC-TC plus suitable switchable Rittal socket strips (Power System Module PSM/Power Control Unit PCU with active current measurement, display and switching options), in the event of an alarm, compulsory deactivation of the components installed in the rack may be triggered. This ensures that the servers are protected from further destruction.

The alarms (pre-alarm, main alarm) may be transmitted via any given IP networks and processed in corresponding monitoring programs. The extinguisher system is supplied complete with mounting accessories.

Technical specifications:
Protection/rack volume: 3.0 m³
Extinguisher medium: Novec[1)] 1230
Weight of extinguisher medium: 3.2 kg
Power supply: 115 – 230 V AC/50 – 60 Hz
Emergency power supply (integral battery): Max. 4 h
Contact rating (pre-alarm, alarm, blocking): Max. 30 V DC/1 A
Sensors: 2x sensitive sensors, one each for pre-alarm/main alarm
Ambient temperature: 10 – 35°C
Display: LCD display with plain text information
Protection category: IP 30
Material of enclosure: Sheet steel, spray-finished
Material of extinguisher tank: Aluminium
Dimensions (W x H x D): 447 x 1 U x 780 mm

Description	Packs of	Model No. DK
DET-AC Plus extinguisher system with early fire detection	1	**7338.100**
DET-AC Plus early fire detection	1	**7338.200**
DET-AC pipe kit for bayed rack	1	**7338.310**

Delivery times available on request.

Also required:

CMC-TC access sensor only with extinguisher system)	2	7320.530
Mains connection cable (earthing-pin, German)	1	7200.210

Note:
The extinguisher system must be installed and maintained by qualified experts. Rittal is happy to offer such a service.

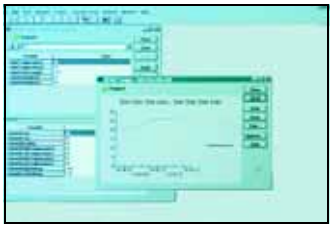
When baying several different IT racks together, a combined enclosure interior volume of 3 m³ must not be exceeded!

Enclosure interior volume of popular Rittal IT racks

Width mm	Height mm	Depth mm	Enclosure interior volume per rack/m³
300	2000	1000	0.6
300	2000	1200	0.72
600	2000	1000	1.2
600	2000	1200	1.44
600	2200	1000	1.32
600	2200	1200	1.584
800	2000	1000	1.6
800	2000	1200	1.92
800	2200	1000	1.76
800	2200	1200	2.112

Extinguisher system for use in 800 mm deep racks available on request.

Software



Network management systems

By using SNMP network management systems (NMS) such as HP Open View or Novell Manage Wise, it is possible to incorporate and address the CMC-TC system via SNMP. The required MIB is included with the supply.
The MIB is easily incorporated by simply copying. The standard MIB-II (RFC 1213) is also supported. It is included with the supply of the NMS. The private MIB contains all the required system variables, and is easily linked to the functions of the software HP Open View, Novell Manage Wise etc.

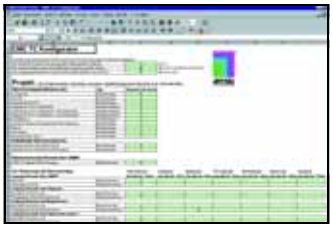
Note:
The MIB is also available for downloading from the Internet at
www.rimatrix5.com
and is included on CD with the supply of every CMC-TC system.



Management system Spectrum Enterprise Manager

The graphical user interface for the Spectrum Enterprise Manager covers every conceivable requirement. The MIB variables have been conveniently arranged on the interface. This professional software package combines the highlights of the CMC-TC monitoring system with the CA product.
The management module for Rittal CMC-TC, developed by DICOS, facilitates the integration of all information sent out by the CMC-TC agent into the Spectrum management platform. It also supports configuration of the threshold values being monitored. The Spectro Server receives all the information from the CMC-TC and provides users with an opportunity to visualise, control and configure Rittal network enclosures direclty via the central Spectrum console. Integration into the enterprise management system supports central processing of alarms, so that these may be forwarded, e. g. via a voice mail system, or used as the basis for the automatic generation of a trouble ticket.

Note:
Further information can be found on the Internet at:
www.dicos.de
or by sending an order by e-mail to
sales@dicos.de



CMC-TC configurator

The CMC-TC configurator automatically compiles all the modules and accessories required for a CMC-TC project. The user simply enters the monitoring requirements and the ambient conditions. The result is a list containing all the item numbers required for the project. In this way a project can be compiled quickly and effectively. This software requires MS Excel, Version 97 or above.

Note:
The CMC-TC configurator may be downloaded free of charge from the Internet at
www.rimatrix5.com.





CMC-TC Manager

The new CMC-TC Manager allows all Rittal SNMP agents to be managed in a single software package.

- CMC I/II (DK 7200.100)
- CMC-TC Processing Unit II (DK 7320.100)

The graphical interface reproduces information from the system and offers the opportunity of configuring systems via SNMP.
Only the Java Runtime Environment JRE 1.4 (or higher version) must be installed on the relevant PC system. Java may be downloaded from the Internet at **www.sun.com.**
The various products (PCU, CMC II, CMC-TC) may be sorted on the basis of type or location. All important alarm messages enter the built-in trap receiver, and can be recorded with the logging function. Alarm messages may be forwarded directly using the e-mail function.
The search function is used to distinguish and automatically list the SNMP agents.

Benefits:

- Open to operating systems via Java (Windows/Linux).
- Graphical information and operator interface for:
  – CMC II
  – CMC-TC/Processing Unit (I/II).
- Full integration of the management information base (MIB) of Rittal systems.
- Trap receiver with logging function.
- E-mails are sent in the event of trap alarm messages.
- User-oriented system listing according to locations.

Note:
The software is available free of charge from the Internet at **www.rimatrix5.com.**





Plug-in for HP Open View

Thanks to its integration into HP Open View NNM, StableNet ™ CMC-TC is centrally and permanently available. The management functions of HP Open View have been extended to optimum effect: NNM monitors the traps occurring in CMC-TCs and forwards them to StableNet™ CMC-TC. The MIB of the CMC-TC system processing unit (DK 7320.100) has been incorporated.

Functions:

- Integral trap manager
- Various alarm functions, e. g. e-mail, SMS etc.
- Integral MIB browser
- Graphical display of the monitored values with diagrams and tables
- Individual representation and organisation of the monitoring tools
- Pre-configured graphical interface for the CMC-TC
- Microsoft® Outlook® “look and feel”
- Non-platform-dependent (JAVA).

Other products from the StableNet™ suite with the option of integrating the StableNet™ CMC-TC manager:

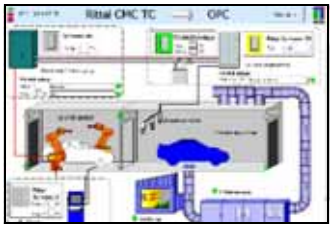
StableNet™ ARC
Advanced Router Configuration

- Management of all network components and CMC-TCs from within HP Open View NNM
- Efficient management of routers and switches

StableNet™ PME
Performance Management Engine

- Evaluation of the data obtained with StableNet™ CMC-TCs by means of comprehensive reporting functions
- Diverse opportunities for measuring network performance

Note:
Further information can be found on the Internet at:
www.infosim.net
or by sending an e-mail enquiry to
info@infosim.net



SNMP-OPC server

The OPC Server allows all variables in the CMC-TC MIB to be integrated into control desk interfaces. For all applications in industrial automation technology and building automation, with OLE for process control (OPC) “OLE: Object Linking and Embedding” provides the ideal interface between your control desk software and the CMC-TC system.

Note:
Software available on request.
www.rimatrix5.com
Further information can be found on the Internet at:
www.obermeier-software.de
or by sending an e-mail enquiry to:
info@obermeier-software.de



Other software

see page 1152.

Features of KVM switches



Space-saving server administration and perfect KVM technology

Rittal KVM switches have the right solution to suit every customer requirement, from stand-alone solutions for 8 to 32 servers, to complex multiuser systems for data centre applications with up to 2048 computers. The location of these computers is irrelevant. They may be accessed and administered directly, either at local level or via TCP/IP networks – worldwide!

Monitor/ keyboard unit



Compact administration
The compact 1 U monitor/keyboard unit from Rittal ensures reliable, space-saving, on-site server administration. The 1 U console is easily combined with the Rittal KVM switch series SSC view, allowing access to 8 or 32 servers respectively.

- 15″ or 17″ TFT display
- Variants with trackball or touchpad
- VGA connection
- Compatible with all Rittal SSC KVM systems

SSC view



Full control in 1 U
The SSC view line, with the Rittal monitor/keyboard unit, forms a compact console/switching solution which only occupies 1 U in the rack. The Rittal solution may be combined as required between a choice of two different console types with 15″ and 17″ TFT display, offering country-specific keyboard layouts and two different KVM switches. It is easily upgraded at a later date, or exchanged for a more powerful system.

- Compact stand-alone console/switching solution
- The SSC view utilises the space behind the monitor/ keyboard drawer and
- Is supplied via power via the integral power pack
- With the 8-way KVM switches, the servers are connected using standard VGA/PS/2 cables.

SSC compact



The new compact class
The SSC compact offers top performance in a small space at an inexpensive price.
The integral long-range power pack makes it ideally suited for stand-alone operation or as an upgrade to an existing installation. With the SSC Compact 8, standard VGA cables locked to the PS/2 sockets ensure reliable operation. With the SSC Compact 32 Cat, connection to the computer is made using Cat 5 cables and an SSC Converter.

- Space-saving ultra-compact server administration in stand-alone mode
- Option of cascading or retrofitting (SSC Compact 32 Cat)
- For connecting the computers, there are two variants available with VGA/PS/2 and Cat connection
- SSC Converter PS/2 signal converter to Cat, to reduce the cabling work/space requirements inside the rack.

SSC premium



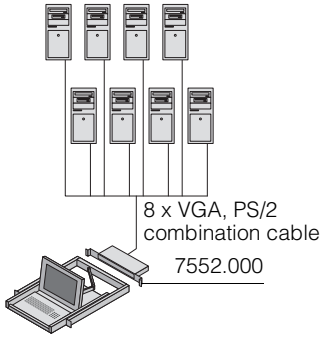
Modular and future-proof
The modular SSC premium is the first choice for medium-sized to large installations or in cases where modern features such as multi-user and/or IP access (KVM-over-IP) are required. Almost all system requirements may be met with just a few system components. The modularity ensures that this KVM is future-proof, as the SSC premium system is easily expanded to keep pace with your server installation as it grows.

- Highly integrated KVM matrix based on Cat technology
- New switching technology which adapts flexibly to your future requirements via cascading.
- Multiuser operation is supported, both locally and via IP access (KVM-over-IP).
- Three different converter types support the operation of a wide range of server platforms.

Connection examples – KVM switches

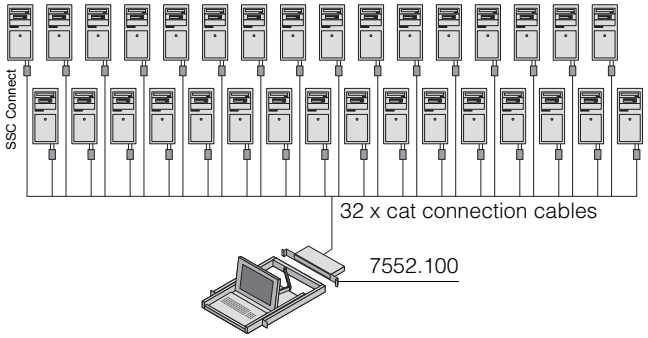
Connection example SSC view 8

see page 841
(behind monitor/keyboard unit, 1 U)
Compact switching solution for up to 8 servers.



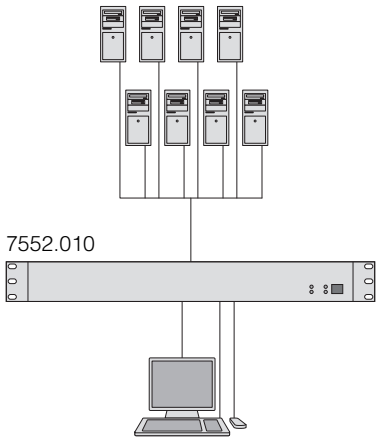
Connection example SSC view 32 cat

see page 841
(behind monitor/keyboard unit, 1 U) administer 32 servers in 1 U.
The most powerful 1 U console/switch solution.



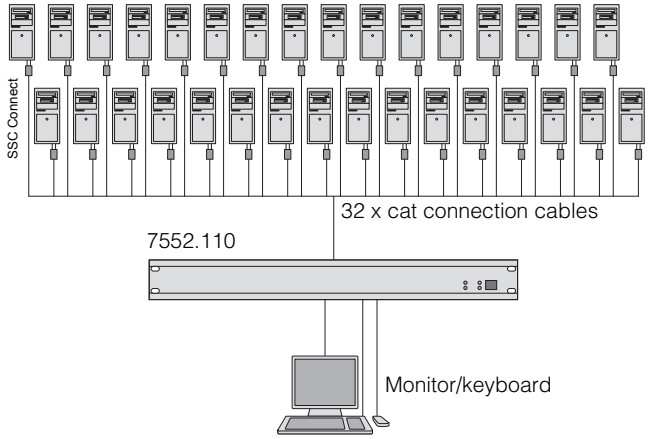
Connection example SSC compact 8

see page 841
Economy KVM technology. Ideal for retrofitting into existing installations.



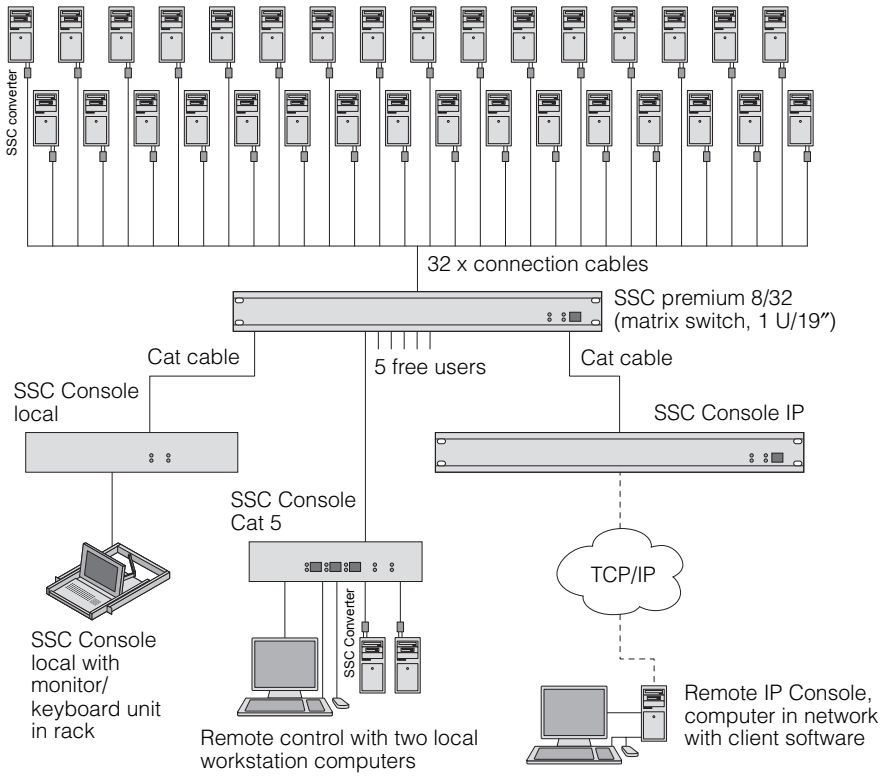
Connection example SSC compact 32 cat

see page 841
1 user KVM solution for 32 servers.
Extendible up to a maximum of 125 connected servers.



Connection example SSC premium 8/32

see page 842
Modular KVM solution for data centres. Up to 8 users may access the connected servers in parallel and independently from one another. Remote access via “KVM-over-IP” is also supported. Furthermore, the Rittal sockets may also be switched via the OSD of the SSC premium. This facilitates a “hard-reboot” of the servers from anywhere in the world.



Monitor/keyboard unit







Monitor/keyboard unit, 1 U

with 15″ and 17″ TFT display

This compact 1 U console in a 2-colour design was developed for secure, space-saving server administration. In order to access other servers, this monitor/keyboard unit is easily combined with the Rittal KVM switches SSC view 8 and SSC view 32 Cat. This makes it possible to connect up to 32 servers to one unit in 1 U. The peculiarity of this compact solution is that a 482.6 mm (19″) keyboard including number pad and keypad may be integrated, in spite of its small size. The minimal depth of the unit, at just 510 mm (680 mm with 17″ TFT display, each without SSC extension), makes it suitable for installation in enclosures of depth from 800 mm. The installation kits supplied allow it to be adapted to an existing difference between levels of 680 – 850 mm for the 482.6 mm (19″) levels.
When closed, the drawer can be locked for protection against unauthorised operation.
In order to prevent heat accummulation when folded, the backlight is deactivated automatically.

The unit has a German keyboard layout. Versions in English and French, as well as other country- and customer-specific versions available on request.

Supply includes:
Complete monitor/keyboard unit in colour version RAL 7035 (light grey) or RAL 9005 (black) with design components and handle in RAL 9006 (silver) including assembly parts and all the required connection cables (approx. 1.6 m) for:

- Power supply
- VGA video
- Keyboard connection (PS/2 and USB)
- Mouse connection (touchpad or trackball, PS/2, USB).

Note:
KVM switch, SSC view 8/view 32 Cat,
see page 841.

		15″		17″	
		RAL 7035/ RAL 9006	RAL 9005/ RAL 9006	RAL 7035/ RAL 9006	RAL 9005/ RAL 9006
Touchpad	German	**9055.100**	**9055.200**[1)]	**9055.300**	**9055.400**[1)]
	English	**9055.102**	**9055.202**[1)]	**9055.302**	**9055.402**[1)]
	French	**9055.103**[1)]	**9055.203**[1)]	**9055.303**[1)]	**9055.403**[1)]
	International	**9055.151**[2)]	**9055.251**[2)]	**9055.351**[2)]	**9055.451**[2)]
Trackball	German	**9055.150**	**9055.250**[1)]	**9055.350**[1)]	**9055.450**[1)]
Technical design[3)]					
TFT screen with anti-reflection coated security glass		15″ (381 mm)		17″ (432 mm)	
Maximum resolution		1024 x 768		1280 x 1024	
Colours		16.2 million			
Brightness		approx. 280 cd/m²			
Contrast ratio		approx. 400 : 1		approx. 700 : 1	
Mains voltage		100 – 240 V AC, 50 – 60 Hz			
Dimensions (W x H x D) approx.		448 mm x 1 U x 510 mm		448 mm x 1 U x 680 mm	
Ambient temperature		+5°C to +45°C (operating)			
Certifications		CE			
Connections at rear					
Mains voltage		IEC320 connection			
Video input		Analog (D-SUB 15-pole, jack)			
Keyboard		PS/2, jack, USB			
Mouse		PS/2, jack, USB			
Power out		(12 V DC) for SSC view 8/view 32 Cat			

[1)] Extended delivery times.
[2)] International version:
Please state the required language on the order. Extended delivery times.
Versions: French/Spanish/Portuguese/Italian/Danish/Norwegian/Finnish/Swedish/Belgian/Russian/UK English/ US English with EURO/Swiss/German. Other country-specific versions available on request
[3)] We reserve the right to make changes in line with technical progress.



1 SSC compact 8



2 SSC compact 32 Cat



3 SSC view 8



4 SSC view 32 Cat



5 SSC Connect PS/2



6 SSC Connect USB



7 CPU cable

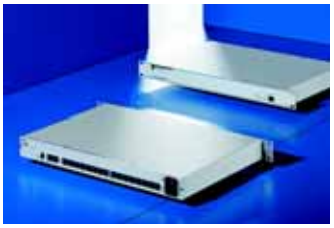
With these ultra-compact KVM switches for 482.6 mm (19″) mounting or for mounting behind a Rittal monitor/keyboard unit, space-saving server administration becomes possible in any IT rack. All SSCs have a password-protected OSD menu for server selection, but selection may also be made via hotkeys.
The SSC compact 32 Cat may be extended (cascaded) with up to three additional SSC compact 32 Cat if more than 32 servers need to be administered. In this way, up to 125 servers may be administered by one user in the final configuration. The Rittal SSC switching system grows flexibly with your requirements. With the SSC compact/view 32 Cat, computers are connected using Cat cables and converters (SSC Connect). In this way, the signals for video, keyboard and mouse are transmitted via a shared cable. This cuts down considerably on cabling work, particularly in fully populated racks. Processor-controlled keyboard and mouse emulation for each channel ensures fault-free booting and reliable switching between the connected computers.
The SSC views are mounted behind the monitor/keyboard unit and optionally extend the Rittal monitor/keyboard unit to include the function of an 8- or 32-port KVM switch, without requiring an additional U in the server rack for mounting.

Rittal SSC	**Model No. DK**	
1 2 SSC compact with integral power pack (for mounting on 482.6 mm (19″) levels)	**7552.010**	**7552.110**
3 4 SSC view (for mounting behind the monitor/keyboard unit DK 9055.XXX)	**7552.000**	**7552.100**
Equipment	**8 Port KVM**	**32 Port KVM**
Number of computers in stand-alone mode	8	32
Number of users (with password protection)	1	1
Cascading[3] as slave to SSC view/compact 32 Cat (with OSD transfer)	–	■
OSD menu with mouse operation (English)	■	■
OSD superimposed on computer screen (may be de-activated)	■	■
OSD display of channels used	■	■
Hotkeys for computer selection	■	■
Autoscan	■	■
Autoskip (skip over unused channels)	■	■
Type of cable to computer or to SSC Connect	VGA/HD15 and PS/2[4]	Cat 5, 6
Maximum cable length, SSC – computer (depending on cable quality)	4 m	15 m (30 m)
Port and system support	PS/2[2]	PS/2, USB, SUN-USB
Automatic cable alignment (manually readjustable)	–	■[1]
LED displays (rear)	None	Power
Maximum video resolution (depending on cable length)	1280 x 1024 @ 85 Hz	1920 x 1440 @ 75 Hz
Bandwidth	200 MHz	250 MHz
Connections		
Computer	SUB-HD15 / PS/2	RJ 45
Console	SUB-HD15 / PS/2	SUB-HD15 / PS/2
Cascading port (connection for slave, SSC compact only)	–	RJ 45
Service (for Firmware update)	–	Jack 2.5 mm
12 V DC power supply (from monitor/keyboard unit)	SSC view	SSC view
Power supply 100 – 240 V, 50/60 Hz (internal power pack, IEC320)	SSC compact	SSC compact
Power consumption (approx.)	10 W	13 W
Operating temperature	+5 to +45°C	+5 to +45°C
Protection rating	IP 20	IP 20
Cases	Sheet steel, powder-coated	Sheet steel, powder-coated
Colour SSC compact	RAL 7035	RAL 7035
Colour SSC view	RAL 9006	RAL 9006
Dimensions (excluding protruding parts) approx. W x H x D mm	448 x 44 x 150	448 x 44 x 150
Certification	CE	CE

[1] With a cable length of max. 15 metres, there is no need for any manual video readjustments. Above and beyond this, the maximum permissible cable length is approximately 30 metres (depending on the cable quality). Here, manual readjustment may be required.
[2] Adaptor for SUN/MAC server available on request.
[3] Up to 3 SSC compact/view 32 Cat may be cascaded to one master (max. 125 servers on 1 user).
[4] USB version available on request.

Accessories		
Mains connection cable (for SSC compact only)	7200.210	7200.210
7 CPU cable 2 m (with interlocking PS/2 connectors)	7552.120	–
7 CPU cable 4 m (with interlocking PS/2 connectors)	7552.140	–
5 SSC Connect PS/2	–	7552.421
6 SSC Connect USB	–	7552.422
Cat 5 cable 0.5 m	–	7320.470
Cat 5 cable 2 m	–	7320.472
Cat 5 cable 5 m	–	7320.475
Cat 5 cable 10 m	–	7320.481
Cat 5 cable 15 m	–	7329.485

KVM switches







SSC premium 2/16, 4/32, 8/32

Highly integrated KVM matrix based on Cat technology

With the SSC premium, Rittal offers a KVM switching technology which can adapt flexibly to your future requirements. By using Cat technology (i. e. transmission of signals for keyboard, video and mouse via a Cat cable), the required cabling work inside the rack may be reduced considerably; what is more, highly compact 1 U systems with up to 32 server ports are supported. The SSC premium are full-matrix switches which support simultaneous, unrestricted access to the chosen computer system for each of the connected users. Various console types are available for administration purposes, via which all computer systems may be conveniently activated via OSD or hotkeys.

By separating the hardware switch and operating console, the systems may be adapted to any required computer environment. On the computer side, conversion to standard PC interfaces is achieved via separate converters which optimise all signals (keyboard, video, mouse) for transmission via the Cat cable. Needless to say, all SSC premium have comprehensive configuration and management functions, and additional functions may be added in the future via flash upgradability. The full matrix may be flexibly extended via cascading with type-identical SSC premiums in up to 3 levels. The structure of the cascaded system right down to the individual computer level may be graphically depicted in a tree structure, thus facilitating an overview of the entire system. The new SSC Power Control (DK 7552.420) also facilitates control of the Rittal 8-way PSM modules (DK 7856.201) or 8-way Rittal PCU (DK 7200.001) with the SSC premium. In this way, any of the connected servers may be hard-rebooted if necessary – worldwide!

To this end, up to 3 IEC320 sockets in the SSC premium are allocated to each individual server.

Connection example see page 839.

Material:
Sheet steel

Colour:
Spray-finished in RAL 7035

Protection category:
IP 30

Also required:

SSC Converter (depending on the number of computers) and at least one operator console, see page 844/846.
Mains connection cable (DK 7200.210), see page 818.

By cascading type-identical SSC premiums, the maximum number of administrable computers may be flexibly extended.

SSC premium	2/16	4/32	8/32
Level	Number of computers		
1	16	32	32
2	128	256	128
3	1024	2048	512

Various SSC premiums may also be cascaded among one another.



KVM switches

Rittal SSC premium	SSC premium 2/16	SSC premium 4/32	SSC premium 8/32
Model No. DK	**7552.020**	**7552.030**	**7552.040**
Equipment			
Number of computers in stand-alone mode	16	32	32
Number of computers with cascading as full matrix (max. 3 levels, type-identical SSC premium)	1024	2048	512
Number of users (local, remote, IP), mixed and simultaneous	2	4	8
Number of users that may be administered (with allocation of rights)	128	128	128
Integral user/computer administration	■	■	■
Support of central directory services and authentication systems	–	–	■
OSD menu with mouse operation (English)	■	■	■
Display of system structure in the OSD per computer (path)	■	■	■
OSD superimposed on computer screen (may be de-activated)	■	■	■
OSD display of channels used	■	■	■
Hotkeys for computer selection	■	■	■
Type of cable to SSC Converter and SSC Console	Cat 5, 6	Cat 5, 6	Cat 5, 6
Maximum cable length console – computer (depending on cable quality)	300 m	300 m	300 m
Port and system support (SSC Converter)	PS/2, USB, SUN-USB/VT100	PS/2, USB, SUN-USB/VT100	PS/2, USB, SUN-USB/VT100
Automatic video alignment (manually readjustable)	■	■	■
Automatic cable alignment (manually readjustable)	■	■	■
LED displays (front):			
Power/Power Redundant	■	■	■
System Ready (illuminates as soon as the system booting process has been completed without error)	■	■	■
Status Switch (illuminates when the SSC is operational)	■	■	■
LED displays (rear):			
Computer port busy/connected	yellow/green	yellow/green	yellow/green
Console port busy/connected	yellow/green	yellow/green	yellow/green
Network port full duplex/half duplex	–	–	yellow/flashing
Network port connection status/activity	–	–	green/flashing
Maximum video resolution (depending on cable length)	1920 x 1440 @ 75 Hz	1920 x 1440 @ 75 Hz	1920 x 1440 @ 75 Hz
Bandwidth	250 MHz	250 MHz	250 MHz
Activation of switchable socket strip (on/off)	■	■	■
Connections			
Computers/consoles	RJ 45	RJ 45	RJ 45
Service (front) for Firmware update	Jack 2.5 mm	Jack 2.5 mm	Jack 2.5 mm
RS-232 (front)	RJ 11	RJ 11	RJ 11
Network	–	–	2 x RJ 45
Power supply via IEC320 connection (IEC320 C13)	■	■	■
Redundant power supply (with SSC power pack)	4-pole mini-DIN	4-pole mini-DIN	4-pole mini-DIN
Power supply (internal power pack)	90 – 264 V/ 47 – 63 Hz	90 – 264 V/ 47 – 63 Hz	90 – 264 V/ 47 – 63 Hz
External power supply, redundant	12 V/approx. 1 A	12 V/approx. 1 A	12 V/approx. 1 A
Power consumption (approx.)	12 W	13 W	16 W
Dimensions (excluding protruding parts) approx. W x H x D mm	435 x 44.4 x 286	435 x 44.4 x 286	435 x 44.4 x 286
Conformity	CE	CE	CE



KVM switches



Console local

for SSC premium

For installation in
- 482.6 mm (19″)
- at the rear of 15″/17″ monitor unit (9055.XXX)

This local console forms the link between the keyboard, monitor, mouse (or the Rittal monitor/keyboard unit) and the SSC premium. Via the console, the computer systems connected to the switch may be conveniently selected and administered using the OSD. The signals are converted to Cat cables with a length of up to 10 m and forwarded to the KVM matrix. Power supply is optionally via the Rittal monitor/keyboard unit or, in the case of stand-alone 482.6 mm (19″) installation, via the SSC Power Pack (DK 7552.220). Supplied complete with assembly parts.

Technical specifications:
Video resolution: Max. 1920 x 1440 @ 75 Hz (depending on the cable length)
Video bandwidth: 250 MHz
Voltage supply: 12 V DC (from monitor/keyboard unit) or via SSC Power Pack DK 7552.220
Dimensions:
W x H x D mm: 325 x 44 x 85 (stand-alone)
W x H x D mm: 465 x 44 x 140 (built into 482.6 mm/19″)

Type	Packs of	Model No. DK
Console local	1	**7552.200**

Connections (jack):
PS/2 (keyboard and mouse)
USB-A (keyboard/mouse)
HD15 (VGA video RGB & Sync.)
RJ 45 (KVM matrix connection)
Mini-DIN 4 (12 V power supply).

Also required:

Only for 482.6 mm (19″) installation without monitor/keyboard unit:
SSC Power Pack DK 7552.220, see page 846,
Cat 5 patch cable, see page 846.



Console Cat 5

for SSC premium

This remote console forms the link between the keyboard, monitor, mouse and the SSC premium. Via the console, the computer systems connected to the switch may be conveniently selected and administered using the OSD. The signals are forwarded via Cat cable, depending on the cable quality up to 300 m, via the KVM matrix to the connected computers. Additionally, if required, 2 local PCs and the corresponding converters may be connected to the console via Cat cables. Switchover to these two computers is achieved via keys on the front. The console is designed as a compact desktop enclosure with integral wide-range power pack (482.6 mm (19″) versions on request).

Technical specifications:
Video resolution: Max. 1920 x 1440 @ 75 Hz (depending on the cable length)
Video bandwidth: 250 MHz
Power supply (internal power pack):
100 – 280 V, 50 – 60 Hz/0.2 A
Dimensions: W x H x D mm: 270 x 44 x 220

Type	Packs of	Model No. DK
Console Cat 5	1	**7552.212**

Connections (jack):
PS/2 (keyboard and mouse)
USB-A (keyboard/mouse)
SUB-HD15 (VGA video RGB & Sync.)
2 x Cat (RJ 45) to connect 2 local PCs via SSC converters (VGA, PS/2 or USB)
RJ 45 (KVM matrix connection)
IEC320 C14 (power supply)
Mini-DIN 4 (redundant power supply).

Also required:

Cat 5 patch cable, see page 846,
SSC Converter for local PCs, see page 845.
Mains connection cable (e. g. DK 7200.210).





SSC Connect

only for SSC view 32 Cat/compact 32 Cat

These converters connect the KVM switches to the computers. The signals for keyboard, mouse and video are transposed onto the Cat cables and transmitted to the SSC compact 32 Cat/view 32 Cat up to a length of 30 m. Two versions with PS/2 connection for keyboard/mouse and with USB connection (connector type A) are available. The video signal (VGA) is picked off from the graphics card via a Sub-HD15 connector. Power supply to the converters is ensured via the PS/2 or USB interface directly from the computer.

Technical specifications:
Video resolution: 1600 x 1200 @ 85 Hz
Power supply:
5 V DC/approx. 150 mA (from computer)
Certification: CE
Dimensions: approx. 65 x 45 x 20 mm

Design	Packs of	Model No. DK
SSC Connect PS/2	1	**7552.421**
SSC Connect USB	1	**7552.422**

Note:
The SSC Connect cannot be used with the SSC premium KVM system. The SSC Converters (DK 7552.20x) are available for this purpose, see page 845.



Console IP

for SSC premium (KVM-over-IP)

With the IP remote console, computers connected to the KVM matrix may be accessed via any given TCP/IP network. The Console IP is a hardware solution requiring no software installation on the target computer. This ensures independence from the type and status of the operating system used, and facilitates remote monitoring of the computers at BIOS level even during the boot phase. Precise operation of the remote computer can only be achieved via the original mouse pointer. A browser-based Web interface is available for configuration of the SSC Console IP. With the system operational, the target computers may be accessed at any time via Web browsers and Java applets (irrespective of the operating system), or if Java is not supported, via optimised client software for common operating systems. This client has extended functions (e. g. a setup mode) and can be used throughout the company without restriction. Installation of the client software is not necessary, as it may also be launched e. g. from a USB stick. In addition to remote access via IP, the SSC Console IP also has an integral local console port (competing with IP access) for connecting the keyboard, mouse and monitor locally in the rack. With the Rittal KVM-over-IP solution, security is a top priority. For this reason, access to the console is additionally password-protected. KVM access to the Web interface may be encrypted via HTTPS (SSL 128 bit). This may optionally encrypt the control channel only, or additionally the video channel and/or the keyboard/mouse channel. In order to further increase failsafeness, the SSC console IP may also be extended with a redundant power pack via the SSC Power Pack (DK 7552.220).

Type	Packs of	Model No. DK
Console IP	1	**7552.214**

Note:
The supply includes the client software for current Windows operating systems (MS Windows 2000, XP Professional, 2003 Server) as well as Linux Distribution (RedHat, Suse) in German and English.

Technical specifications:
Video resolution: Max. 1280 x 1024 @ 75 Hz
Network: 10/100 MBit/s
Power pack: 100 – 240 V AC, 50/60 Hz
Dimensions:
W x H x D mm: Approx. 440 x 44 x 380

Connections (jack):
PS/2 (keyboard and mouse)
SUB-HD15 (VGA video, RGB and Sync.)
RJ 45 (KVM matrix connection)
RJ 45 (Ethernet)
Sub-D (RS-232)
IEC320 C14 (power supply)
Mini-DIN 4 (redundant power supply).

Also required:

Mains connection cable (DK 7200.210),
see page 818.
Cat 5 patch cable,
see page 846.





SSC Converter

for SSC premium

The SSC Converters convert the signals for keyboard, video and mouse from the connected computer to the CAT cable.
There is a choice of three different variants for connecting PCs with PS/2 or USB ports, and a separate version for use with SUN computers with a USB port. One converter is required for each computer. Every SSC Converter has a unique identification number (Unique-ID). When the converter is connected to a server, it can be located at any time in the overall system (even in the event of rewiring), without needing to know the physical connection. This is the main difference from simple converter solutions.

SSC Converter	Packs of	Model No. DK
PS/2	1	**7552.201**
USB	1	**7552.202**
SUN-USB (German)	1	**7552.203**
SUN-USB (US English)	1	**7552.204**



CPU cable

for SSC view 8/SSC compact 8

Combination connection cable between SSC view 8 and the individual servers, each with 2 HD 15 connectors for video, plus lockable PS/2 connectors at both ends for the keyboard and mouse, colour-coded.

Cable length	Model No. DK
2 m	**7552.120**
4 m	**7552.140**

KVM switches



SSC Converter VT100 (RS-232)

for SSC premium

With this SSC adaptor, active network components (such as an Ethernet switch) with a serial management port which support the VT100 terminal mode may be integrated into the SSC premium KVM system and administered remotely. The serial output signals (ASCII character set) are converted into a video signal which is transmitted via the KVM matrix. Conversely, incoming keyboard inputs are reconverted to serial.

Connections:
Sub-D 9-pole (RS-232),
RJ 45 (KVM matrix connection),
Mini-DIN 4 (power supply).

	Packs of	Model No. DK
SSC Converter VT100	1	**7552.205**

Supply includes:
Power Pack (100 – 240 V, 50/60 Hz/s secondary, 12 V/0.7 A,
mains connection cable DK 7200.210).

Also required:
Cat 5 patch cable,
see page 846.



Cat 5 patch cable

Flexible, pre-configured Cat 5 STP patch cable with shielded RJ 45 connectors for connecting the SSC Converter and SSC Console to the SSC premium switch. The cables are wired 1 : 1 to AT&T 258A/T568B and comply with ISO/IEC 11801, UL E151955.

Colour:
Grey

Length m	Packs of	Model No. DK
0.5	4	**7320.470**
2	4	**7320.472**
5	4	**7320.475**
10	1	**7320.481**
15	1	**7320.485**



SSC Power Control

for SSC premium

With this adaptor, the Power Control Unit socket strips (DK 7200.001) and the active PSM module (DK 7856.201) may be switched individually or in pairs (for servers with redundant power supply). Control is via the OSD integrated into the SSC premium.
Up to 8 PSM and PCU modules may be switched (max. 64 EN 60 320 C13 slots). Up to 3 sockets may be allocated per server.
This facilitates a hard reboot of each individual server via the connected user consoles, also via the IP networks in conjunction with the SSC Console IP.

Note:
The connection cable between the SSC premium and the SSC Power Control with a length of 2.5 m is included with the supply.

	Packs of	Model No. DK
SSC Power Control	1	**7552.420**

Also required:
Mounting module (DK 7320.450),
power pack (DK 7201.210),
mains cable (DK 7200.210),
at least 1 active PSM/PCU module,
see page 791.
Cat 5 patch cable,
see page 846.



SSC Power Pack

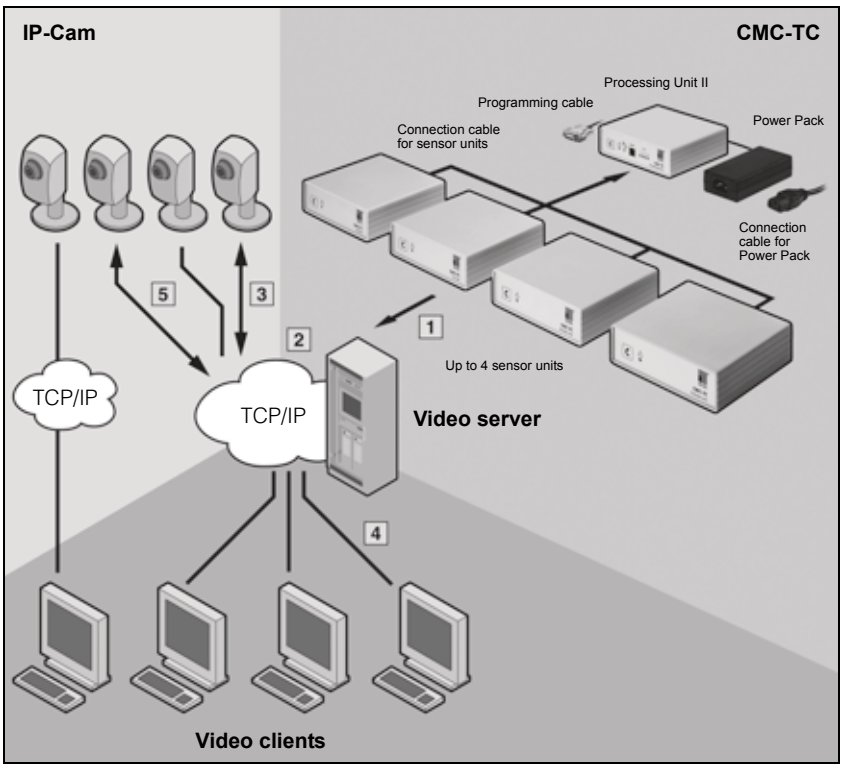
In order to increase failsafeness, we recommend configuring a redundant power supply to the SSC premium and the connected user consoles.
This compact long-range power pack (AC: 100 – 240 V, 50/60 Hz, DC: 12 V/5 A) with IEC320 socket (EN 60 320) and Mini-DIN 4 connector is ideal for this purpose. Should the first power supply of the internal power pack fail, the functionality of the KVM switch is maintained.

Supply includes:
Assembly parts.

SSC	Packs of	Model No. DK
SSC Power Pack	1	**7552.220**

Also required:
Connection cable for Power Pack,
see page 818.

Video technology



1 Event messaging
2 CMC-TC alarm processing
3 Start recording
4 Client visualisation
5 Motion detection

Rittal network video monitoring

for your data centre and building management

The Rittal IP monitoring solution supports extensive visual and alarm-controlled monitoring. Compared with standard analogue video monitoring solutions, purely digital video systems offer a wider range of functions and additional benefits. Rittal IP cams may be integrated into any existing network. Separate structured cabling, as required in analog systems, is not necessary. This considerably reduces the costs associated with the required infrastructure, because modern Power over Ethernet technology (PoE to IEEE 802.3af) means that a separate power supply to the camera installation side is not required.

The Rittal video monitoring system is modular and is able to grow dynamically along with your requirements or data centre. One IP-Cam is sufficient for a basic system. This is easily configured and operated via the integral Web interface. No further hardware is required. If the data is to be permanently backed up onto external data carriers, the Rittal software RiWatchIT "Video Edition", which is exclusively available for Rittal IP-Cams, should be used. This converts a powerful PC with MS Windows or Linux operating system into a video server with video archive, which stores alarm-controlled images onto the hard disk or an external network drive.
A combination of video monitoring with the CMC-TC enclosure monitoring system ensures even more extensive monitoring. This ensures that no actions are concealed. All standard CMC-TC sensors such as access, smoke or temperature sensors are supported. In short, the Rittal video monitoring solution affords perfect all-round protection for a secure data centre.

Video monitoring in combination with the CMC-TC monitoring system

The Rittal monitoring system CMC-TC comprises a broad range of modules and functions. It is possible, for example, to control access to the data centre or the equipment racks, with personalised access monitoring achieved by way of smart cards, magnetic cards or transponders. This access security can be enhanced significantly by incorporating video monitoring, as all activities or alarms in the data centre can be recorded automatically. Furthermore, the video monitoring function can be linked with all CMC-TC accessory sensors (including the assignment of different camera systems). If an alarm then occurs, e. g. impermissible temperatures in the racks or triggering of an extinguisher system connected to CMC-TC (such as DET-AC Plus), an automatic video recording is started. With this combination of active security technology and video monitoring, Rittal offers unique, all-round protection for your data centre.



Benefits:

- Discovery function: The cameras installed in the network are automatically detected and set up.
- Overview/room plan with drag & drop positioning of the cameras. By double-clicking on the relevant camera symbol, the live image is displayed in a window.
- Linking of individual cameras to all CMC-TC sensors such as access, temperature, smoke, humidity etc.
- Optical alarm representation with highlighted live image.
- Multi-view display: Several live images (4/9) may be displayed on the screen.
- The software has an integral video player to play the recorded files.
- All video files are time stamped and stored in MJPEG format.
- Extensive security functions:
  – The video files are stored in an encrypted format via an individual system key. Reproduction is only possible using the video player integrated into the software.
  – "Four-eyes" principle: Upon request, access to the cameras and video recordings may be protected with passwords, so that at least two people must be present at all times.
- Export functions: These facilitate the unencrypted storage of video sequences or individual images in MJPEG/JPG format e. g. on CD-ROM.
- Multi-config in administrator mode: Global camera settings may be transmitted to all Rittal IP-Cams available in the network (clone function).
- Simultaneous access to the video server with several clients is supported.



Rittal IP-Cam type 1

Rittal IP-Cams are ideal for use in the data centre and for indoor room monitoring. These compact cameras may be fitted quickly and easily wherever there is an IP network connection close at hand.

The magnetic base facilitates toolless installation e. g. on an enclosure roof. A PoE (Power over Ethernet) power supply can be achieved with adaptor DK 7555.310.

Rittal IP-Cam	Type 1
Model No. DK	**7555.100**
Functions	
Video sensor (MegaPixel)	0.3
Focus	manual
Video	
Live camera display	■
Adjustable HTML pages (ActiveX required)	■
Security functions	
Alarm recording via motion detection or external authorisation	■
E-mail forwarding	■
Technical specifications	
Video sensor	CMOS
Light sensitivity	1 lux
Maximum resolution (progressive scan)	640 x 480 pixels
Video streams Motion JPEG and MPEG4 simultaneous, bandwidth controllable (various levels of compression)	■
Image settings	
Compression	■
Colour, contrast, brightness	■
White balance	■
Overlays (time, date, text)	■
Password protection (restricted access)	■
Connections	
Network (10BaseT/100BaseTX)	RJ 45
Power supply	Hollow connector
Long-range power pack (connector acc. to version)	100 – 240 V AC (50/60 Hz)
Supply includes	Camera, power pack, base
Assembly parts supplied loose	■
Software	
RiWatchIT Video Edition	For detailed information, refer to page 1155.

We reserve the right to make technical modifications.



Power splitter

for Rittal IP-Cam type 1

Power supply to the Rittal IP-Cam type 1 via the network cable (Power over Ethernet, PoE) can be achieved using this adaptor. This eliminates the need for a separate power pack or electricity connection at the installation site. Power can be supplied to the camera (5 V DC approx. 3 W) via existing PoE-compatible network switches. The required operating voltage may optionally be supplied to the Cat 5 network cable via an external infeed (midspan).

	Model No. DK
Power splitter	**7555.310**

Extended delivery times.



Power infeed

for Power over Ethernet (PoE) network components (external infeed)

If the network environment used is not designed for PoE components, power supply to a PoE-compatible network camera via the existing network cable can be achieved with this single-port midspan.
This means that the external power pack supplied is not required.

Technical specifications:
PoE to IEEE 802.3af
Output: 15.4 W/port

Delivery times available on request.
(Multi-channel midspans available on request)

Modules



Rack, Power, Cooling, Security, Monitoring & Remote Management – the modules for your success.

Five infrastructure modules for an optimum IT performance. The complete, integral solution from Rittal with individual all-round support, complemented by a comprehensive range of services for maximum operational reliability and efficiency.



Rack

As the world's leading manufacturer of server and network enclosures, Rittal offers a comprehensive product range with an optimum accessory portfolio.

This helps you to create the ideal requirements for individual configuration of your IT infrastructure. The consequence: Greater freedom, greater flexibility, greater reliability.



Power

This module ensures a constant, uninterrupted power supply.

It includes power distribution inside the rack and data centre with the Rittal Power System Module PSM and power protection with the UPS Power Modular Concept PMC 200.



Cooling

Climate control concepts from Rittal help to minimise investment costs and maximise investment reliability.

With scalable climate control concepts such as the Liquid Cooling Package or direct CPU cooling, data centres may be extended in a temperature-neutral way, without needing to modify the room.



Security

Physical security is one of the principal elements of high availability of the entire IT infrastructure.

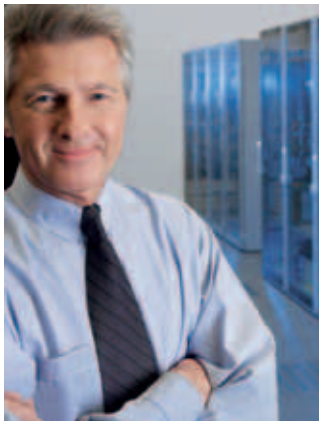
Temperature, smoke and vibration sensors coupled with modern access control and fire protection solutions provide reliable protection against external influences.



Monitoring & Remote Management

Simple to operate and a perfect overview: Monitoring & remote management help to permanently reduce maintenance and operating costs with the system operational, and increase availability.

For example, comprehensive monitoring, measurement and control tasks via the CMC-TC (Computer Multi Control Top Concept) reduce the risk of failure to a minimum and facilitate preventive intervention.



Services

We have no time for system failures: Maximum operational reliability, high availability and excellent cost-effectiveness are supported by innovative, pioneering technology, individual advice, a complete system architecture, and comprehensive service. In short, Rittal modular services.
Take us at our word.

Customised solutions with modular system technology

Efficient IT infrastructure

Blade servers with their superior computing performance are very resource-hungry and therefore incur high heat losses. As a result, the requirements of IT infrastructure solutions are rising dramatically: For example, there is a demand for energy-efficient UPS and cooling systems which are distinguished by low power consumption coupled with minimal heat loss.

On top of this, we aim to keep the so-called total cost of ownership (TCO), i. e. the sum total of purchase and acquisition costs, at the lowest possible level, which ensuring absolute availability and security.

Impossible? Certainly not. The “pay-as-you-grow” concept from Rittal is pivotal to our solution. This means that the user selects the exact IT infrastructure solution which is most efficient for him. The benefits for the user include: No over-dimensioning, no unnecessary fixed costs, and, if necessary, easy extendibility even with the system operational.

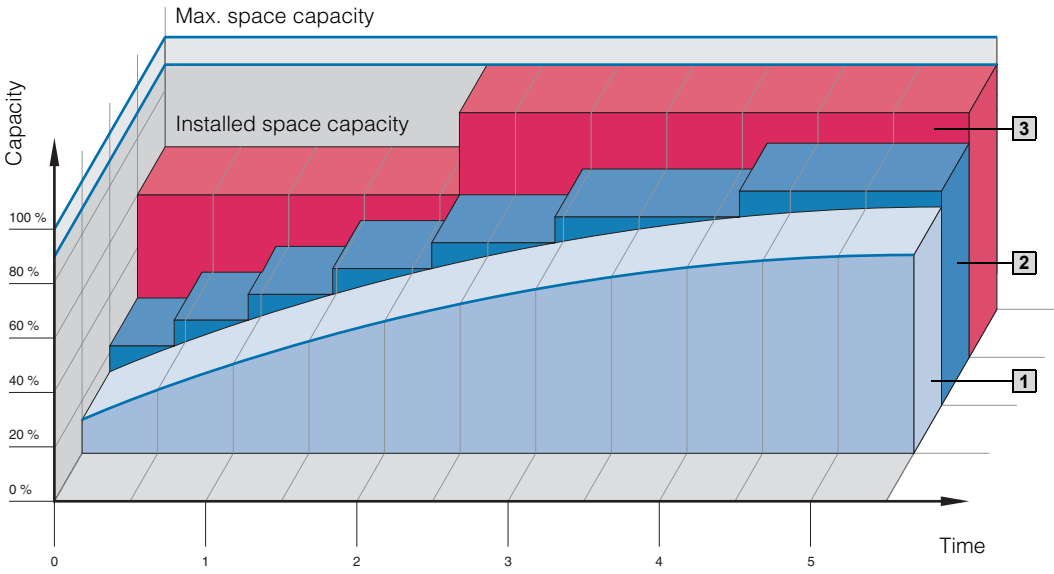
RimatriX5 from Rittal combines holistic IT infrastructure solutions with superb know-how. Thanks to our comprehensive range of services, individual connections are made between the module racks, power, cooling, security, monitoring & remote management.

Generally speaking, RimatriX5 modules are designed to be system-integrated – all areas are superbly coordinated with one another to ensure maximum energy efficiency, optimum space utilisation, plus cost-effective servicing and expansions.

As a manufacturer of holistic IT infrastructures, Rittal supplies its customers with everything from a single source. In this way, the required levels of security and availability are implemented to perfection in harmony with the principle of cost-effectiveness.

Benefits of RimatriX5:

- Flexibly scalable (pay-as-you-grow)
- Extendible on a modular basis
- High energy efficiency
- Comprehensive security and monitoring solutions
- Holistic offer
- Global availability and global service



Pay-as-you-grow
The “pay-as-you-grow” concept from Rittal:
The user only purchases the IT infrastructure solution he actually needs. If his requirements grow, the infrastructure grows with him. Efficiency through modularity.

1 Current output demand

2 Scalable, requirement-oriented, gradual adaptation of requirements with RimatriX5

3 Installed excess capacity without RimatriX5

All the costs at a glance with RimatriX5

Cost-effectiveness analyses must be comprehensive, and include everything from the initial acquisition, to operation, through to maintenance. With this in mind, Rittal offers decisive cost benefits on all criteria:

- **Lower investment costs** coupled with investment security thanks to maximum flexibility
- **Lower operating costs** through energy-efficient systems for cooling and power supply plus **cost-effective adaptation to your requirements**
- **Reduced downtime** and hence lower costs, thanks to a high level of availability plus **remote maintenance and administration**
- **Reduced planning costs** thanks to modular, scalable components
- **Minimal installation and expansion costs** through plug & play technology and technical modifications with the system operational

Comprehensive services

In RimatriX5, Rittal offers its customers an integrated, complete solution for outstanding IT performance with a comprehensive range of services for optimum availability.



RIMATRIX5
DRIVING IT-PERFORMANCE

Analysis

- Data capture, assessment of structural design, power supply, security technology, fire alarm and extinguisher systems, climate control technology, company organisation, document management
- Climate checks with load tests, wireless sensor technology, pipeline calculation, CFD and thermography

Advice and planning

- Concept development, draft planning, detailed planning, accompaniment of the building phase, organisation of IT operations, IT emergency plan
- Project and room planning
- Complete project organisation

Implementation and logistics

- Configuration, production, delivery, pre-assembly
- Accompaniment of the on-site installation process
- Special logistics (e. g. vibration-damped HGVs)

Installation and commissioning

- Creation of a functioning complete system – From power supply, to climate control, through to holistic security concepts
- Installation, functional tests, operational training for your staff

Certification and maintenance

- Depending on your requirements, we also offer services such as service packs, maintenance contracts, remote management, automated escalation management, and a central hotline (up to 24/7/365)

Rittal service packs – Individual for optimum availability

	Basic	Comfort	Advanced	Full	Customised
Reachability					
Business hours	■	■			
24/7/365			■	■	
Response times					
Next working day	■				
Next day		■	■		
8 hours				■	
Spare parts availability					
Standard	■	■			
24 hours			■		
Individual concept				■	
Maintenance					
1/year	■				
2/year		■	■		
Individual (min. 2/year)				■	
Warranty extension					
No	■	■			
Yes			■	■	

Telecom/distributor racks/mobile workstations

Features



For years, the demands placed by modern telecommunications and data transfer on distributor racks, enclosures and accessories have been escalating, with no end in sight. There is a wide variety of standards that must be met. The use of even the smallest creative scope is always the greatest challenge for Rittal, and one which is solved to perfection.



Telecom







TC-Rack
The open frame for individual design with enclosure panels. Compliance with standard ETS 300 119-3 is guaranteed.

Small FM distributors
Ideally suited for the configuration of transit, intermediate and main distributors. The protection category of IP 55 makes it suitable for use in tough industrial environments.

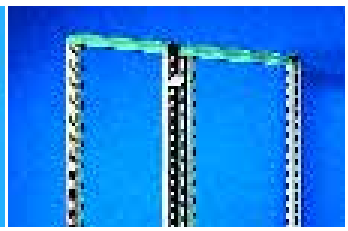
Modular FM distribution enclosures
Rittal wall-mounted and bayed enlosures – Diversity from small distributors, to FM wall-mounted distributors, through to two-door bayed enclosures.



Data Rack distributor







Second mounting level
To accommodate 482.6 mm (19″) network components or for the attachment of component shelves, slide rails and telescopic rails.

Roof plate for cable routing
For optimised use of the Data Rack as a corridor distributor or cable management rack.

Baying clamp
For assembling rows of distributor frames, or for cable routing between data racks.



Mobile workstation RiLab II







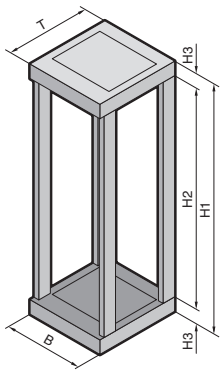
Smooth-running **twin castors,** combined with colour-coordinated wall guard, 2 of them lockable.

Intelligent cable routing, concealed inside the torsionally stiff vertical aluminium section. Horizontal cable ducting optional.

Drawer compartment open at the top, for mounting beneath the basic drawer, extension piece on castors with catch.

Rittal TC rack





Material:
Roof/base frame:
Sheet steel, 2 mm
Frame:
Aluminium, natural

Surface finish:
Roof/base frame:
Powder-coated in RAL 7035

Supply includes:
Frame:
4 supporting aluminium uprights,
the two front uprights are prepared to accommodate doors whilst the two rear uprights are prepared to accommodate a rear panel and a ceiling fastening.

Roof/base frame:
to accommodate roof/base cover modules.
Fitted as standard with cover plate (D = 300 mm) or sliding cover (D = 600 mm),
4 levelling feet.

Property rights:
German patent no. 43 33 027
European patent no. 0 645 957
with validity for FR, GB, IT, NL
US patent no. 5,513,759
Jap. patent no. 233373/94

Note:
Used in conjunction with metric (535 mm) mounting angles, the Telecommunication Rack meets the requirements of ETS standard 300119-3.

Available on request:
- TC rack fully fitted with all mounting parts
- Divided front doors
- Special sizes

Detailed drawing,
available on the Internet.

Width (B) mm[3]	Packs of	600	600	Page
Height (H1) mm[3]		2200	2200	
Depth (T) mm[3]		300	600	
Height or mounting dimension (H2) mm		2050 (46 U/82 SU)	2050 (46 U/82 SU)	
Height roof/base frame (H3) mm		75	75	
Model No. DK	1	**7723.035**	**7726.035[2]**	
Door				
Sheet steel door, front, solid	1	7720.035[2]	7720.035[2]	854
Sheet steel door, front, with vent slots	1	7722.035[2]	7722.035[2]	854
Sheet steel door, front, with safety glass insert	1	7725.035[2]	7725.035[2]	854
Rear/side panel				
Rear panel	1	7729.235[2]	7729.235[2]	854
Side panels	2	7713.235	7716.235[2]	854
Roof				
Ceiling fastening	1 set	7719.000	7719.000	854
Roof insert for cable entry	1	–[1]	7701.035[2]	854
Roof insert with vent slots	1	7702.035[2]	7702.035[2]	854
Active fan insert	1	7703.035[2]	7703.035[2]	854
Base/plinth				
Base insert for cable entry	1	–[1]	7701.035[2]	854
Base insert with vent slots	1	7702.035[2]	7702.035[2]	854
Active fan insert	1	7703.035[2]	7703.035[2]	854
Interior installation				
Component shelves for 482.6 mm (19″) mounting angles	1	7119.250	7119.400	1021
Component shelves for metric mounting angles (530 mm)	1	7119.255	7119.455	1021
Mounting angles, 482.6 mm (19″), 46 U	2	7758.000	7758.000	855
Metric mounting angles (535 mm), 82 SU	2	7760.000[2]	7760.000[2]	855
Support strips	6	7128.000[2]	7129.000[2]	855
Cable clamp rails for installation in the enclosure width	4	7101.000[2]	7101.000[2]	855
Cable clamp rails for installation in the enclosure depth	4	7090.000[2]	7107.000[2]	855
Earthing set	1 set	7277.000	7277.000	1036

[1] Special designs available on request. [2] Delivery times available on request.
[3] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing.

Accessories for Rittal TC rack



Door

For front mounting, with 180° hinges, locking rod, double-bit lock insert (may be exchanged for Ergoform-S lock system).

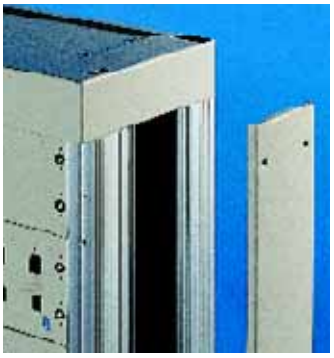
Material:
Sheet steel

Colour:
RAL 7035

Sheet steel door at front	Model No. DK
Solid	**7720.035**[1)]
With vent slots	**7722.035**[1)]
With safety glass insert	**7725.035**[1)]

Lock system	Model No. SZ
Ergoform-S handle RAL 7035	**2435.000**
Lock no. 3524 E	**2467.000**

[1)] Delivery times available on request.
Available as a rear door on request.



Rear/side panel

To finish off a complete enclosure unit, including assembly material.

Material:
Sheet steel

Colour:
RAL 7035

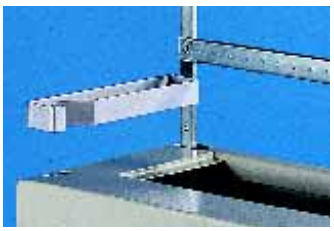
For side panels DK 7713.235 and DK 7716.235:

German patent no. 43 33 025
US patent no. 5,584,406

	For enclosure depth mm	Packs of	Model No. DK
Side panel	300	2	**7713.235**
Side panel	600	2	**7716.235**[1)]

	For enclosure width mm	Model No. DK
Rear panel	600	**7729.235**[1)]

[1)] Delivery times available on request.



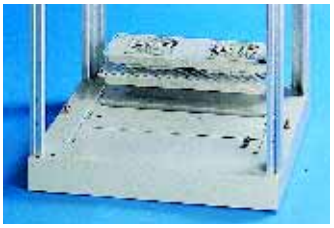
Ceiling fastening

Infinitely height-adjustable for ceiling fastening of fee-standing Rittal TC racks and for cable routing. Max. mounting height of vertical stays: 550 mm.

Material:
Sheet steel, zinc-plated, passivated

Model No. DK	7719.000

Supply includes:
2 vertical stays,
1 horizontal rail,
2 cable shunting rings,
assembly parts.



Roof and base/plinth insert

The inserts may be fitted in the roof or base/plinth as required.

Material:
Sheet steel

Colour:
RAL 7035

Roof and base/plinth insert	Model No. DK
For cable entry[1)]	**7701.035**
With vent slots	**7702.035**
With active fan insert	**7703.035**

Delivery times available on request.
[1)] For Rittal TC rack DK 7726.035.
Special design for DK 7723.035 available on request.

Accessories for Rittal TC rack




Mounting angles

on a U/SU pitch pattern and T channel mounting angles, 482.6 mm (19″)/metric (535 mm).
The mounting angles are simply screwed to the rack upright; a combination of 482.6 mm (19″) and metric (535 mm) mounting angles is also possible. Also available in a T channel version. The mounting angles are depth-adjustable.

Supply includes:
Mounting angles,
assembly parts.

	Packs of	Model No. DK		
		U pitch pattern mounting angles	SU pitch pattern mounting angles	T channel mounting angles
46 U	2	**7758.000**	–	**7758.100**
82 SU	2	–	**7760.000**[1)]	**7760.100**

[1)] Delivery times available on request.

Material:
Aluminium, natural

Accessories:

Captive nuts M5/M6,
spring nuts,
screws M5/M6,
see page 1105.



Depth stays

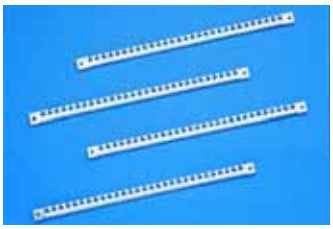
For infinitely variable adjustment of metric (535 mm) or 482.6 mm (19″) mounting angles across the entire enclosure depth, or for attachment of a second pair of 482.6 mm (19″) mounting angles at the rear.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Depth stays, including assembly parts.

Enclosure depth mm	Packs of	Model No. DK
300	6	**7128.000**
600	6	**7129.000**

Delivery times available on request.



Cable clamp rails

For installation in the enclosure width and depth. Fully height-adjustable for cable clamping with rear or side cable routing.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Cable clamp rails,
assembly parts.

Enclosure width mm	Packs of	Model No. DK
600	4	**7101.000**

Delivery times available on request.

Enclosure depth mm	Packs of	Model No. DK
300	4	**7090.000**
600	4	**7107.000**

Delivery times available on request.



Clip-on nuts

For variable interior installation of TC racks. Simply clip onto one of the two channels, for infinitely variable component mounting.

German patent no. 195 24 648
European patent no. 0 836 679
Japanese patent no. 28 91 779
US patent no. 5,897,276

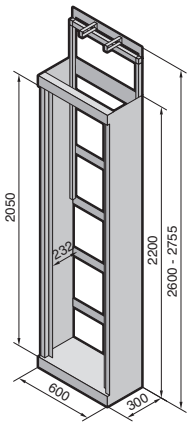
Packs of	Model No. FR
50	**2102.500**

Accessories:

M6 assembly screws,
see page 1105.

CS Indoor Rack





Material:
Side panels, roof and base frame:
Sheet steel, 2.0 mm
Mounting angles:
Extruded aluminium section

Surface finish:
Powder-coated in textured RAL 7035
Mounting angles:
Natural aluminium, clear-chromated

Supply includes:
Screw-fastened frame, consisting of
2 side panels,
roof and base frame,
front plinth trim,
2 mounting angles,
ceiling attachment,
4 levelling feet,
4 rear panel struts,
enclosure panels, earthed.

Note:
The screw-fastened rack will accommodate metric or 482.6 mm (19″) installed equipment (to IEC 60 907 or IEC 60 297 and DIN 41 494). In addition to the basic rack, which satisfies the requirements of ETSI standard 300119-3, customised solutions can be designed in next to no time and implemented cost-effectively.

The following variants of the Indoor rack are available, amongst others:
- Size variants
- Solid front door
- Vented front door
- Horizontally divided doors
- Folding doors
- Overlapping doors
- Roof modules
- Cut-outs in the enclosure panels
- Interior installation with system accessories

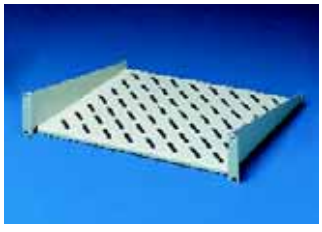
Detailed drawing,
available on the Internet.

Width mm[1)]	Packs of	U	SU	600
Height mm[1)]				2200
Depth mm[1)]				300
Clearance width mm				500
Clearance height mm				2050
Clearance depth mm				232
Model No. CS with mounting angles 482.6 mm (19″)	1	46	–	**9790.042[2)]**
Model No. CS with mounting angles, metric	1	–	82	**9790.043[2)]**
Accessories				
Rear panel for screw fastening, sheet steel 2.0 mm	1			**9790.003[2)]**

[1)] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing.
[2)] Delivery times available on request.



Energy-Box
for DC and AC distribution.
Model No. see page 1044.

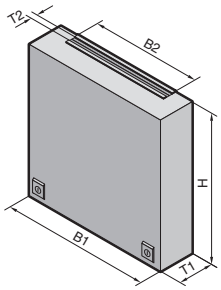


Component shelf
250 mm deep, for 482.6 mm (19″) or metric mounting levels.
Model No. see page 1021.

Accessories Page 860 **Component shelves** Page 1013 **482.6 mm (19″) installation** Page 1089 **LSA connection systems** Page 1114

Small FM distributors





Material:
Sheet steel, 1.5 mm

Surface finish:
Powder-coated in RAL 7035

Supply includes:
Two-part enclosure

Wall section:
With mounting holes for wall mounting, 2 comb strips for cable clamping and brush insert for cable entry, shunting ring for system-compatible routing of telecommunications cables.

Cover:
Retaining device and two cam locks with double-bit lock insert.

Property rights:
German patent
no. 44 10 795

Detailed drawing,
available on the Internet.

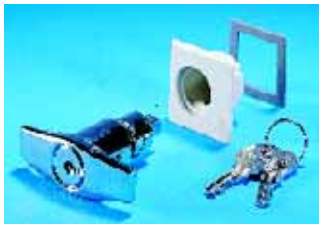
Width (B1) mm[1]	Packs of	300	500	500	900	Page
Height (H) mm[1]		500	500	700	700	
Depth (T1) mm[1]		120	120	120	120	
Width of cable entry (B2) mm		195	395	395	795	
Depth of cable entry (T2) mm		29	29	29	29	
Model No. DK	1	**7052.035**[2]	**7053.035**[2]	**7054.035**[2]	**7055.035**[2]	
Max. number of adjacent cable retainers or mounting troughs (LSA)		1	2	2	4	
Max. accommodation when using cable retainers (LSA)		100 paired wires	200 paired wires	400 paired wires	800 paired wires	
Shunting ring, plastic, 70 x 44 mm		2	3	3	5	
Accessories						
FM universal mounting brackets, L = 275 mm, LSA-Plus	1 set	7031.100	7031.100	7031.100	7031.100	861
Lock systems						
T handle without lock insert	1	2572.000	2572.000	2572.000	2572.000	955
T handle with lock insert no. 3524 E	1	2575.000	2575.000	2575.000	2575.000	955
Plastic handle with lock no. Nr. 3524 E	1	2576.000	2576.000	2576.000	2576.000	954
Plastic handle	1	2533.000	2533.000	2533.000	2533.000	954

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, version A, see page 956.

[1] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing.
[2] Delivery times available on request.



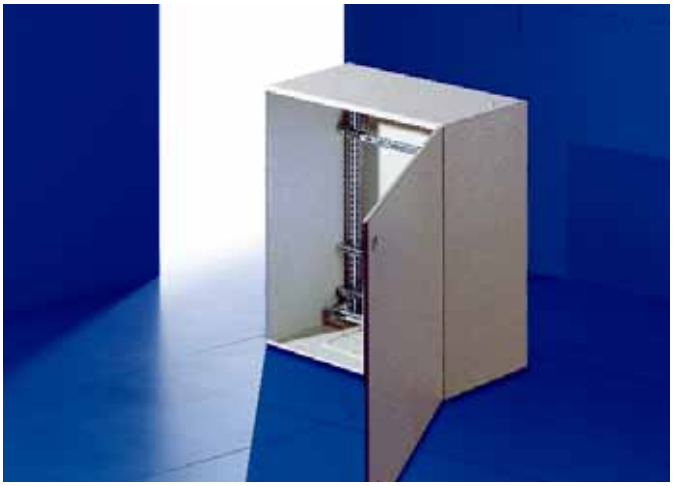
FM universal mounting bracket
for the connection of LSA-Plus strips.
Model No. see page 861.

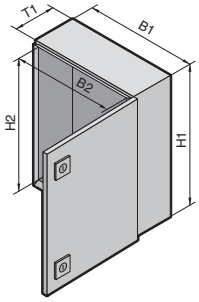


T handle
of die-cast zinc with security lock.
Model No. see page 955.

Handle systems Page 947 **Cable routing** Page 1059

FM wall-mounted distributors, modular





Material:
Sheet steel, 1.5 mm
Door: 2.0 mm

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
Enclosure: Based on Rittal AE with gland plate at bottom, swappable door hinge, double-bit lock inserts (DK 7014.535 with 3-point locking rod and double-bit lock), earth rail, cable clamp rail, 2 punched rails to accommodate FM system strips, FM system rods and FM-cable shunting strips.
Top horizontal punched rail to accommodate cable shunting rings.

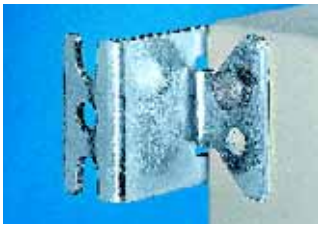
Available on request:
- FM wall-mounted distributor configured with Rittal standard accessories (FM system strips, FM system rods, FM cable shunting strips etc.) to order.
- Cable entry with brush strips top/bottom.

Approvals,
see page 102.

Detailed drawing,
available on the Internet.

Width (B1) mm[3]		Packs of	600	760	800	800	Page
Height (H1) mm[3]			600	760	1000	1200	
Depth (T1) mm[3]			350	300	300	300	
Clearance width (B2) mm			560	720	760	760	
Clearance height (H2) mm			560	720	960	1160	
Model No. DK		1	**7011.535**[1]	**7012.535**[1]	**7013.535**[1]	**7014.535**[1]	
Maximum accommodation when using FM system strips or FM rods			340 paired wires	500 paired wires	990 paired wires	1170 paired wires	
Installation of FM system strips FM system rods			2 set	2 set	3 set	3 set	
Accessories							
Plastic handles with lock cylinder insert		1	2439.000	2439.000	2439.000	2439.000	954
Ergoform-S handle		1	–	–	–	2435.000	953
FM system strips[2]		1 set	7032.500[1]	7033.500[1]	7034.500[1]	7035.500[1]	860
FM system rods		1 set	7533.000[1]	7534.000[1]	7535.000[1]	7536.000[1]	861
FM cable shunting strips		1 set	7233.000[1]	7234.000[1]	7235.000[1]	7236.000[1]	861
Gland plates in various versions	Size		5	5	5	5	1048 – 1053
	Qty.		1	1	1	1	
Wall mounting bracket, 10 mm		1	2508.000	2508.000	2508.000	2508.000	975
Wall mounting bracket, 40 mm		1	2503.000	2503.000	2503.000	2503.000	975

[1] Delivery times available on request.
[2] FM universal mounting bracket, VS standard, DIN strips, 71 dividing strip and distributor system series 5000 may be fitted.
[3] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing.



Wall mounting bracket
for 10 or 40 mm distance to wall.
Model No. see page 975.

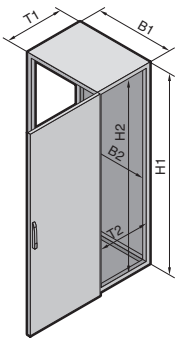


Nylon loop
for simple attachment of cables.
Model No. see page 1066.

Accessories Page 860 **Handle systems** Page 947 **Gland plates** Page 1048

FM distributor racks, modular





Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates:
1.5 mm
Door: 2 mm

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
Enclosure frame with door or 2 doors, without side panels, comfort handle with security lock, three-piece gland plate, rear panel and roof plate, 3 punched rails to accommodate FM system strips, FM system rods, FM cable shunting strips, 1 top horizontal punched rail to accommodate cable shunting rings, cable clamp rail, earth rail.

Available on request:
- FM distributor racks configured with Rittal standard accessories (FM system strips, FM system rods, FM cable shunting strips etc.) to order.
- FM distributor racks in special sizes.
- FM distributor racks with roof plate for cable entry.

Detailed drawing,
available on the Internet.

Width (B1) mm[3]		Packs of	600	800	1200	Page
Height (H1) mm[3]			2000	2000	2000	
Depth (T1) mm[3]			400	400	400	
Clearance width (B2) mm			512	712	1112	
Clearance height (H2) mm			1912	1912	1912	
Clearance depth (T2) mm			312	312	312	
Model No. DK		1	**7834.060**[1]	**7834.080**[1]	**7834.120**[1]	
Maximum accommodation when using FM system strips or FM rods			1300 paired wires	1950 paired wires	3250 paired wires	
Installation of FM system strips FM system rods			2 set	3 set	5 set	
Accessories						
FM system strips[2]		1 set	7038.500	7038.500	7038.500	860
FM system rods		1 set	7538.000	7538.000	7538.000	861
FM cable shunting strips		1 set	7238.000	7238.000	7238.000	861
Cable shunting ring external dimensions	125 x 85 mm	10	7111.900	7111.900	7111.900	1069
	125 x 65 mm	10	7111.000	7111.000	7111.000	1069
	85 x 43 mm	10	7112.000	7112.000	7112.000	1069
Side panels		2	8104.235	8104.235	8104.235	917
Quick-fit baying clamps		6	8800.500	8800.500	8800.500	928
Roof plate for cable entry		1	7826.645[1]	7826.845[1]	7826.245[1]	972
Height 100 mm, base/plinth components front/rear		1 set	8601.600	8601.800	8601.200	893
Height 100 mm, base/plinth components sides 400 mm		1 set	8601.040	8601.040	8601.040	893
Height 200 mm, base/plinth components front/rear		1 set	8602.600	8602.800	8602.200	893
Height 200 mm, base/plinth components sides 400 mm		1 set	8602.040	8602.040	8602.040	893

[1] Delivery times available on request.
[2] FM universal mounting bracket, VS standard, DIN strips, 71 dividing strip and distributor system series 5000 may be fitted.
[3] All sizes given are nominal dimensions. For absolute dimensions, please refer to the detailed drawing.

Accessories Page 860 **Handle systems** Page 917 **Roof variants** Page 969 **Handle systems** Page 947

Accessories for FM distribution racks, modular















FM system strips

For user-specific solutions or modular FM distributor assembly. The following connection systems may be mounted on the FM system strips:

- DIN connector strips to DIN 47 614, type B; soldering lugs to DIN 41 499, LSA-Plus connector strips 1/20 to DIN 47 608 with 170 mm mounting dimension, vertical (with 2 system strips, horizontal mounting is also supported).
- Cable retainers or mounting troughs for LSA connection technology.
- Dividing strip 71.
- Series 5000 distributor system (Corning).

The FM system strip features a 25 mm DIN pitch pattern (DIN 43 660) at the side. Shunting rings of plastic or metal may be fitted here for cable routing. Alternatively, FM cable shunting strips may also be used.

Design:
Installation height: 120 mm
Installation width: 75 mm

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
1 FM system strip,
2 shunting rings (105 x 70 mm),
including assembly parts.

Accessories:

FM universal mounting bracket DK 7031.100, see page 861.
Shunting rings (plastic) DK 7218.035, DK 7219.035, see page 1069.
Shunting rings (metal) DK 7111.000, DK 7111.900, DK 7112.000, see page 1069.
FM cable shunting strips, see page 861.

Population opportunities for DIN, LSA and dividing strips

	Model No. DK					
FM system strips	**7032.500[1)]**	**7033.500[1)]**	**7034.500[1)]**	**7035.500[1)]**	**7038.500**	**7039.500**
Length mm	425	625	825	975	1625	1825
Connection system	Maximum population[2)] paired wires					
DIN connector strip	20	60	80	100	160	180
LSA connector strip	170	250	330	390	650	730
Dividing strip 71	100	200	200	300	500	600

[2)] Based on the following mounting dimensions:
– DIN connector strip 170 mm
– LSA connector strip 25 mm
– Dividing strip 71: 290 mm

Population opportunities for distributor system series 5000 (Corning)

	Model No. DK					
FM system strips	**7032.500[1)]**	**7033.500[1)]**	**7034.500[1)]**	**7035.500[1)]**	**7038.500**	**7039.500**
Length mm	425	625	825	975	1625	1825
	No. of blocks per FM system strip					
Block 128 paired wires, L = 218 mm	1	1	1	2	3	3
Block 100 paired wires, L = 152 mm	1	2	3	2	5	6
Block 384 paired wires, L = 640 mm	–	–	–	–	1	1
Block 600 paired wires, L = 925 mm	–	–	–	–	1	1
Block 104 paired wires, L = 180 mm	2	3	4	5	8	9
Block 128 paired wires, L = 218 mm	1	2	3	4	7	8
Block 200 paired wires, L = 333 mm	1	1	2	2	4	5
Block 1000 paired wires, L = 1690 mm	–	–	–	–	–	1

Population opportunities for FM universal mounting bracket

		Model No. DK					
FM system strips		**7032.500[1)]**	**7033.500[1)]**	**7034.500[1)]**	**7035.500[1)]**	**7038.500**	**7039.500**
Length mm		425	625	825	975	1625	1825
Max. packs of mounting brackets		1	2	2	3	5	6
Vertical bracket distance in mm		–	50	50	50	50	35
Connection system	Pitch pattern distance mm	No. of strips per system strip					
LSA-Plus	22,5	12	24	24	36	60	72
VS-Standard	25	11	22	22	33	55	66
Other connection systems	22,5	12	24	24	36	60	72
	17,5	15	30	30	45	75	90
	16	17	34	34	51	85	102

[1)] Delivery times available on request.

Accessories for FM distribution racks, modular





FM system rods

For user-specific solutions or modular FM distributor assembly. LSA-Plus profile modules 2/10 may be mounted on the FM system rods. The rod diameter is 12 mm and the rod spacing 95 mm. The FM system rods may be supplemented with FM cable shunting strips, to permit the accommodation of patching cables.

Design:
Installation height: 120 mm
Installation width: 110 mm

Material:
Round steel, clear-chromated

Supply includes:
2 rods,
2 rod holders, plus (with 650 paired wires and more) an additional rod spacer,
including assembly parts.
For items 7538.000 and 7539.000
plus 2 shunting rings (105 x 70 mm).

LSA-Plus[1] section modules 2/10	Length mm	Packs of	Model No. DK
170 paired wires	425	1 set	**7533.000**
250 paired wires	625	1 set	**7534.000**
330 paired wires	825	1 set	**7535.000**
390 paired wires	975	1 set	**7536.000**
650 paired wires	1625	1 set	**7538.000**
730 paired wires	1825	1 set	**7539.000**

[1] Refers to LSA strip pitch pattern: 25 mm.



FM cable shunting strips

For user-specific solutions or modular FM distributor assembly.
The FM cable shunting strips facilitate cable management between the connection systems. FM cable shunting strips are supplementary to FM system strips and FM system rods, and are designed for routing patch cables. They are mounted on the sides, next to the FM system strips or FM system rods.

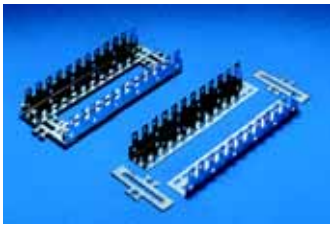
Design:
Installation height: 132 mm
Installation width: 70 mm
Shunting ring: 105 x 70 mm

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
1 punched rail,
shunting rings,
including assembly parts.

Shunting ring	Length mm	Packs of	Model No. DK
2	425	1 set	**7233.000[1]**
3	625	1 set	**7234.000[1]**
4	825	1 set	**7235.000[1]**
5	975	1 set	**7236.000[1]**
7	1625	1 set	**7238.000**
8	1825	1 set	**7239.000**

[1] Delivery times available on request.





FM universal mounting bracket

The universal mounting bracket for LSA-Plus strips (8 or 10 paired wires) and other connection systems are comprised of 2 brackets, which may be combined with different systems depending on their position in relation to one another. The brackets may be slid flexibly against each other so that strips with different lengths can be used. The mounting brackets can be mounted in FM distribution enclosures or on FM system strips.

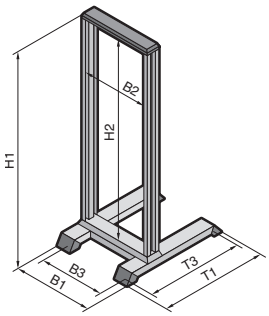
Material:
Sheet steel, zinc-plated, passivated

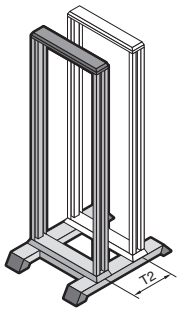
Supply includes:
2 mounting brackets, support strips, including assembly parts.

Length mm	Connection system	LSA-Plus	Other connection systems	Packs of	Model No. DK
	Pitch pattern in mm	22.5	17.5		
275	No. of strips	12	15	1 set	**7031.100**

Rittal Data Rack







Supply includes:
1 torsionally stiff section frame welded from 2 mm sheet steel with 482.6 mm (19″) punchings, spray-finished in RAL 7035, trim in RAL 5018,
1 stable base/plinth of folded sheet steel and integral die-cast zinc feet (RAL 5018) with the option of floor anchoring, including mounting accessories. Alternatively, levelling feet (DK 7493.000) or castors (DK 7495.000) may be fitted.

Available on request:
- Metric (535 mm) version
- Side panels
- Special versions and special sizes

Load capacity:
Max. 150 kg, static/level

Property rights:
German registered design M 9201859
German patent no. 4207282

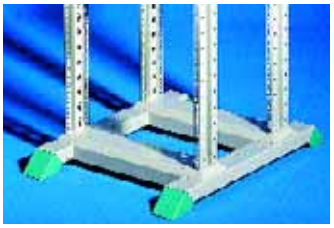
Detailed drawing,
available on the Internet.

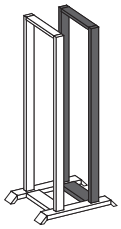
U		Packs of	31	36	40	45	Page
Width (B1) mm			550	550	550	550	
Height (H1) mm			1499.5	1721.8	1899.5	2121.8	
Depth (T1) mm			750	750	750	750	
Clearance width (B2) mm			450	450	450	450	
Clearance height (H2) mm			1381.5	1603.8	1781.5	2003.8	
Distance from the second mounting level (T2) mm[1]			min. 150 – max. 350	min. 150 – max. 350	min. 150 – max. 350	min. 150 – max. 350	
Max. total depth with second 482.6 mm (19″) level			T2 + 79.4	T2 + 79.4	T2 + 79.4	T2 + 79.4	
Mounting dimension for levelling feet and castors	B3		475	475	475	475	
	T3		680	680	680	680	
U x 44.45 mm =			1377.95	1600.2	1778	2000.25	
Model No. DK			**7391.000**	**7396.000**	**7400.000**	**7445.000**	
Accessories							
Second mounting level[1]		1	7296.000	7297.000	7298.000	7299.000	863
Baying clamp		3	7494.000	7494.000	7494.000	7494.000	863
Levelling feet		4	7493.000	7493.000	7493.000	7493.000	906
Cable duct		1	7827.333	7827.338	7827.342	7827.347	1072
C rails, 482.6 mm (19″)		6	7016.100	7016.100	7016.100	7016.100	1078
Cable clamp rail, 482.6 mm (19″)		6	7016.110	7016.110	7016.110	7016.110	1078
Cable clamp strap D = 250 mm		6	7016.120	7016.120	7016.120	7016.120	1078
Twin castors		4	7495.000	7495.000	7495.000	7495.000	907
Support strips		2	7401.000	7401.000	7401.000	7401.000	863
Component shelf 2 U for one pair of mounting angles D= 250 mm		1	7119.250	7119.250	7119.250	7119.250	1021
Component shelf 2 U for one pair of mounting angles D= 400 mm		1	7119.400	7119.400	7119.400	7119.400	1021
Component shelf 2 U for one pair of mounting angles D= 300 mm[3]		1	7148.035	7148.035	7148.035	7148.035	1019
Drawer 2 U for one pair of mounting angles		1	7281.035	7281.035	7281.035	7281.035	1144
Component shelf D = 300 mm[2] [3]		1	7143.035	7143.035	7143.035	7143.035	1017
Component shelf D = 400 mm[2] [3]		1	7144.035	7144.035	7144.035	7144.035	1017
Component shelf D = 500 mm[2] [3]		1	7145.035	7145.035	7145.035	7145.035	1017
Slide rails D max. < 190 mm		10	1962.200	1962.200	1962.200	1962.200	1085
Slide rails D max. > 190 mm		10	1963.200	1963.200	1963.200	1963.200	1085
Slide rails for pairs of mounting angles[1] [2] [4]		2	7402.000	7402.000	7402.000	7402.000	863

[1] Second mounting level may be positioned on a 50 mm pitch pattern.
[2] A second pair of mounting angles is required for assembly.
[3] Stationary installation or full withdrawal, telescopic slides see page 1025.
[4] Distance between levels (T2) 350 mm, can be combined with component shelf ≅ D = 500 mm.

Accesories Page 860 **Monitoring** Page 838 **482.6 mm (19″) installation** Page1089 **Patch panels** Page 1106

Accessories for Rittal Data Rack





Second mounting level

In order to accommodate 482.6 mm (19″) network components or for the attachment of component shelves, slide rails and telescopic rails. The mounting level may be positioned on a 50 mm pitch pattern.
Minimum distance between levels 150 mm, maximum distance between levels 350 mm.

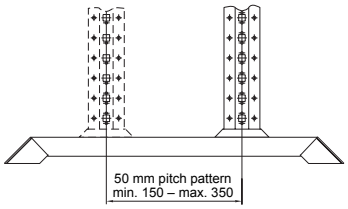
Material:
Sheet steel, 2 mm

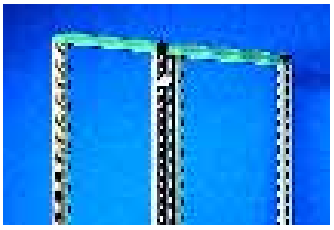
Colour:
RAL 7035

Supply includes:
1 torsionally stiff section frame including assembly parts. 482.6 mm (19″) punched profile at the front, hole centre distance 465 (470 mm at the rear), tailored to the attachment of patch panels and cable routing rails.

U	Model No. DK
31	**7296.000**
36	**7297.000**
40	**7298.000**
45	**7299.000**

Detailed drawing,
available on the Internet.





Baying connector

For assembling rows of distributor frames, or for cable routing between data racks.

Technical specifications:
Length: 53 mm

Colour:
RAL 7035

Packs of	Model No. DK
3	**7494.000**



Roof plate with cable route

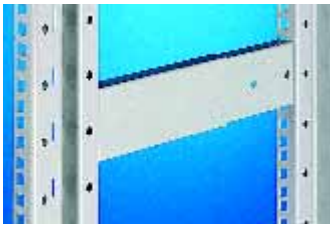
For optimised use of the Data Rack as a corridor distributor or cable management rack. By moving the guide plates, the individual cableways can be separately sized, thus enabling structured cable routing in data highways, even in the roof area. On all Data Racks, the roof plate can be attached with two mounting levels and a distance between the levels of 350 mm.

Packs of	Model No. DK
1	**7411.000**

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Supply includes:
Roof plate including assembly parts.



Depth stays

For securing and stabilising two pairs of 482.6 mm (19″) mounting angles in the Data Rack. The length of the depth stay is adjustable, and can accommodate the following spacings of mounting angles: 250, 300 and 350 mm.

Colour:
RAL 7035

Depth stays	Packs of	Model No. DK
	2	**7401.000**



Continuous slide rail

for two pairs of mounting angles, 482.6 mm (19″)
The continuous slide rail is used to support heavy installed equipment in the Data Rack.
The mounting dimensions of the slide rails were selected to enable them to be combined with 500 mm deep, 482.6 mm (19″) component shelves. The mounting distance of the 482.6 mm (19″) mounting angles is 350 mm.

Requirements:
Second pair of mounting angles

Packs of	Model No. DK
2	**7402.000**

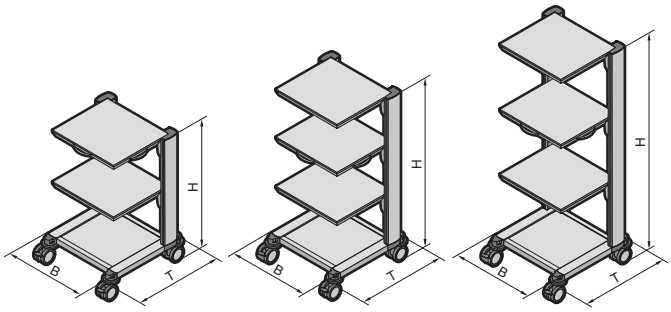
Material:
Sheet steel, zinc-plated, passivated

Accessories:

Component shelf, 500 mm deep, DK 7145.035, see page 1017.

Rittal RiLab II





Type 1 Type 2 Type 3

The mobile workstation offers ideal opportunities for the secure positioning of sensitive equipment whilst remaining flexible in terms of location. An expedient range of installation accessories allows the RiLab II to adapt, chameleon-like, to a wide range of applications, both in the medical and network technology sectors, and in office and industrial environments. It can be used as a mobile laboratory or test stand, a flexible measurement station, computer support point, transport trolley or assembly workstation.

The versatile opportunities are almost unlimited.
The hygiene-friendly surface finish is resistant to scratches and bumps, as well as being insensitive to disinfectant.
Cable routing concealed as standard inside the vertical support columns helps to avoid messy cables. The routing system may be horizontally extended if required.
Practically designed for 482.6 mm (19″) systems, the mobile workstation can also be combined with Rittal RiCase enclosures.

Load capacity:
Base frame 225 kg in total, stowage shelves max. 50 kg per shelf

Material:
Sheet steel,
support pillars extruded aluminium section,
powder-coated in RAL 9002,
wall guard, handles, trim panels RAL 5018

Supply includes:
Base frame with cable duct inside the support pillars,
twin castors,
2 lockable,
1 shelf with 3 operator handles, depending on the design,
1 or 2 stowage shelves without handle,
fully assembled.

		Type 1	Type 2	Type 3	Page
Width (B) mm		700	700	700	
Height (H) mm		796	1076	1426	
Depth (T) mm		660	660	660	
Model No. DK		**7602.100**	**7602.200**	**7602.300**	
Accessories	Load capacity				
1 shelf, W x H x D: 630 x 35 x 480 mm	50 kg	7602.500[1)]	7602.500[1)]	7602.500[1)]	865
1 shelf, with extension, W x H x D: 630 x 35 x 480 mm	20 kg	7602.510[1)]	7602.510[1)]	7602.510[1)]	865
1 pull-out shelf, with integral mouse pad, W x H x D: 630 x 35 x 480 mm	20 kg	7602.512	7602.512	7602.512	865
1 monitor support for flat screens, centrally-positioned	20 kg	7602.550[1)]	7602.550[1)]	7602.550[1)]	867
1 monitor support for flat screens, positioned on the r/h side	10 kg	7602.552[1)]	7602.552[1)]	7602.552[1)]	867
1 monitor support for flat screens, positioned on the l/h side	10 kg	7602.554[1)]	7602.554[1)]	7602.554[1)]	867
1 basic drawer, W x H x D: 630 x 140 x 480 mm	10 kg	7602.540[1)]	7602.540[1)]	7602.540[1)]	865
1 externally-mounted drawer	10 kg	7602.542[1)]	7602.542[1)]	7602.542[1)]	866
1 adaptor set for installing Rittal RiCase enclosures, tiltable		7602.590[1)]	7602.590[1)]	7602.590[1)]	867
1 6-way socket strip, with switch, 16 A, 250 V		7600.600	7600.600	7600.600	867
1 cable duct		7602.530[1)]	7602.530[1)]	7602.530[1)]	866
1 ring handle		7602.520[1)]	7602.520[1)]	7602.520[1)]	866

[1)] Extended delivery times.



Smooth-running twin castors, combined with colour-coordinated wall guard, 2 of them lockable.



Intelligent cable routing, concealed inside the torsionally stiff vertical aluminium section. Horizontal cable ducting optional.

Rittal RiCase Page 621

Accessories for Rittal RiLab II



RiLab II shelf

Flat surface, fully usable up to the edge, with seamless, rounded edges, hygiene-friendly, smooth surface.

Load capacity:
50 kg, static

Material:
Sheet steel

Surface finish:
Impact- and scratch-resistant, resistant to disinfectant, powder-coated in RAL 9002

Supply includes:
Assembly parts.

W x H x D mm	Packs of	Model No. DK
630 x 35 x 480	1	**7602.500**

Extended delivery times.



RiLab II shelf, with extension piece

Guide rails mounted on ball bearings with fixing in both end positions, the large maximum extension of 380 mm facilitates ergonomic working, with an operating handle in a contrasting colour.

Load capacity:
20 kg, static

Material:
Sheet steel

Surface finish:
Impact- and scratch-resistant, resistant to disinfectant, powder-coated in RAL 9002, handle RAL 5018

Supply includes:
Assembly parts.

W x H x D mm	Packs of	Model No. DK	
		Without mouse pad	With mouse pad[1)]
630 x 35 x 480	1	**7602.510**	**7602.512**

Extended delivery times.
[1)] Mouse pad extendible sideways from below.



Basic drawer unit RiLab II

Top serves as a useful shelf, extension piece on castors with catch, robust removable drawer for easy cleaning, with operating handle in a contrasting colour.

Load capacity:
Shelf 50 kg, static, drawer 10 kg, static

Material:
Sheet steel

Surface finish:
Impact- and scratch-resistant, resistant to disinfectant, powder-coated in RAL 9002, handle RAL 5018

Supply includes:
Assembly parts.

W x H x D mm	Packs of	Model No. DK
630 x 140 x 480	1	**7602.540**

Extended delivery times.

Accessories for Rittal RiLab II



Add-on drawer unit for RiLab II

Drawer unit open at the top, for mounting beneath the basic drawer, extension piece on castors with catch, robust removable drawer for easy cleaning, with operating handle in a contrasting colour.

Load capacity:
Drawer max. 10 kg, static

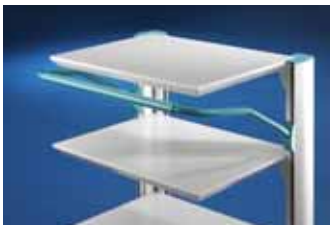
Material:
Sheet steel

Surface finish:
Impact- and scratch-resistant, resistant to disinfectant, powder-coated in RAL 9002, handle RAL 5018

Supply includes:
Assembly parts.

W x H x D mm	Packs of	Model No. DK
630 x 125 x 480	1	**7602.542**

Extended delivery times.



Tubular handle RiLab II

An ideal addition for managing heavy mobile workstations. For mounting on the chassis on the front T-slot of the vertical section, infinitely positionable in the height, operation from the front or from the side.

Surface finish:
RAL 5018

Supply includes:
Assembly parts.

For chassis W mm	Packs of	Model No. DK
700	1	**7602.520**

Extended delivery times.



Cable duct for RiLab II

For concealed horizontal routing at the rear, a useful addition to vertical cable routing inside the support section, removable cover for unimpeded access, variable cable entry via sealing lips, construction height 60 mm.

Material:
Sheet steel

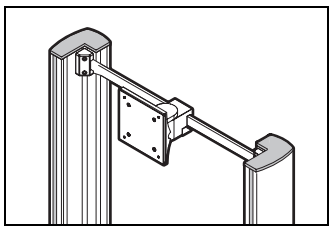
Surface finish:
Impact- and scratch-resistant, resistant to disinfectant, powder-coated in RAL 9002

Supply includes:
Assembly parts.

For chassis W mm	Packs of	Model No. DK
700	1	**7602.530**

Extended delivery times.

Accessories for Rittal RiLab II



Holder for flat screen RiLab II

Holder VESA 75/100 on support rail, for mounting on the chassis between the support pillars, rotatable and tiltable VESA fixture pushes on to the support rail.

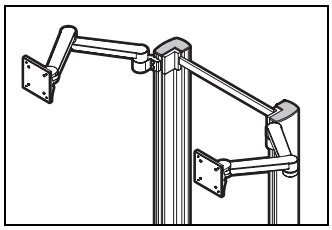
Extension:
110 mm from support rail

Load capacity:
20 kg, static

Supply includes:
Support rail, holder, assembly parts.

For chassis W mm	Packs of	Model No. DK
700	1 set	**7602.550**

Extended delivery times.



Holder for flat screen RiLab II

Support arm 2 x 305 mm with fixture VESA 75/100, for mounting at the side of a chassis support pillar, infinitely positionable in the height. Screen fixture may be rotated, vertically hinged and tilted.

Extension:
Max. 575 mm

Load capacity:
Max. 10 kg, static

Supply includes:
Assembly parts.

For chassis side	Packs of	Model No. DK
Right	1	**7602.552**
Left	1	**7602.554**

Extended delivery times.



6-way socket strip, with switch

Mounting option at the back rear of the chassis or on the T-slot of the support pillar.

Technical specifications:
6-way socket strip with switch, 3 m connection cable, manufactured to CEI 884-1, tested to VDE.

Material:
Aluminium section with polycarbonate cover, self-extinguishing to UL 94-V0.

Supply includes:
Assembly parts.

Packs of	Model No. DK
1	**7600.600**



Adaptor kit

For Rittal RiCase enclosures, 600 mm wide
The adaptor kit facilitates the mounting of enclosures type RiCase W = 600 mm on the base frame of the RiLab II. This achieves optimum synergy between the flexibility of the mobile workstation, and the versatile mounting opportunities of the RiCase enclosure. The forward tilt angle is lockable in 5 increments within the range of ± 15°.

Load capacity:
50 kg, static

Material:
Sheet steel

Surface finish:
RAL 9002

Supply includes:
Assembly parts.

For chassis W mm	Packs of	Model No. DK
700	1 set	**7602.590**

Extended delivery times.

Interactive Terminal Systems

Plug & play compatibility system supplied as standard



Every Interactive Terminal System ITS (kiosk) is the combined result of Rittal's comprehensive spectrum of expertise, skilfully uniting outstanding benefits, top quality and cost efficiency. Whether from our standard range or custom-designed for you, regardless of order quantities. Rittal's specialist advisors give you the confidence to go online with kiosks that have been perfectly tailored to both your market and your functional requirements.



ITS Arc-Line II
Modern communications and technology in a robust enclosure.



ITS Opti-Line II
Stylish elegance in a combination of stainless steel and aluminium.



ITS Opti-Desk
Stylish stand-up workstation for the office environment, with generous worktop.



ITS Opti-Wall
This wall option was developed for internal administrative applications.



ITS Alpha-Line
The terminal gives a dynamic, stylish impression thanks to its curved lines.



ITS Out-Line Wall
The Out-Line Wall was developed for protected outdoor applications (semi-outdoor).



ITS Out-Line Pro
This aluminium terminal was developed on the basis of Rittal's outdoor expertise.

The platform for customer-specific solutions



ITS Multi-Line
Without a stainless steel designer tube, but with the “flair” of the Opti series. The stylishly integrated enclosure offers plenty of space for your individual configuration.



ITS Opti-Line L
The model with the large technical enclosure within the successful Opti-Line range.



Ingenious – the PC flap
Install, secure, and flip up – service-friendly, space-saving accommodation for the PC.



Optimum access
Two doors, unrestricted access for configuration and servicing work at the rear of the Multi-Line.



TFT touch screen or keyboard
Or even both, depending on the requirements of your specific application.



Flexible configuration
Opti-Line L and Multi-Line: Freely configurable mounting plate as the nodal junction of your kiosk equipment.



Modular diversity
The Multi-Line modular panel offers a diverse range of applications with various function modules.



Stylishly integrated
Protected beneath the keyboard section: Speaker and printer tray.

Any given combination:

- Display
- Touch screen
- Keyboard
- Speaker
- PC systems
- WLAN
- Printer
- Telephone/ microphone
- Barcode scanner
- Card reader
- PinPad
- Webcam
- Coin checker
- Climate control
- etc.



Rittal **outdoor enclosures and outdoor climate control components** will withstand even the toughest wind and weather conditions. In this respect, we are uncompromising.

From basic requirements such as humidity, temperature fluctuations and sunlight, to **extreme conditions** such as seawater resistance or earthquake resistance, through to protection against vandalism, Rittal has the answer. In this way, we ensure that there are no limits to our customers' applications.

Communication Systems

CS Outdoor enclosures from page 872

Features ... 872

CS modular enclosures from page 874

CS modular enclosures ... 874
Installation variants, width 600 mm ... 875
Installation variants, width 800/1200 mm ... 876

Toptec CR from page 877

CS Basic enclosures from page 878

Single-door, width 600 mm ... 878
Single-door, width 800 mm ... 879
Two-door, width 1200 mm ... 880

CS wall-mounted enclosures from page 881

Outdoor climate control from page 882

Features ... 882

Cooling units for CS modular enclosures from page 883

Heat exchangers for CS modular enclosures from page 884

Climate control units for Toptec CR from page 886

Geothermal heat exchanger, Terravent from page 887

CS fuel cell from page 888

Features ... 888
Fuel cell 3 and 5 kW ... 889

CS Outdoor enclosures

Features



For all requirements in the outdoor sector, Rittal has the ideal enclosure solution, thanks to its platform strategy.
With single-walled or twin-walled enclosures of aluminium or coated sheet steel, as well as an extensive range of accessories. With constant interior temperatures and perfect climate, thanks to in-house development and production of cooling units, heat exchangers and heaters.



CS modular enclosures



Protection against vandalism – These features will protect your equipment against unauthorised access: **No point of access for lever-type tools,** because the double side panel seamlessly conceals the door hinges.



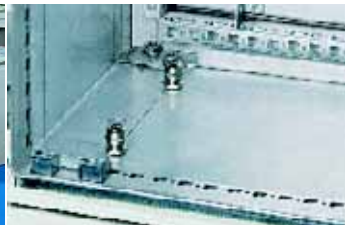
The hinged **roof is screw-fastened to the enclosure body.**



The **base/plinth trim is secured with safety screws.**



Batteries for emergency power back-up are securely housed in the **pull-out drawer** of the battery base/plinth.



High level of stability thanks to **ten-fold profiling** of the enclosure body.



Rittal accessory components facilitate fast, **universal interior installation.**

CS wall-mounted enclosures





The **enclosure-within-an-enclosure concept** with the curved designer cover is a characteristic feature.



Security lock on the designer cover and door of the interior enclosure.



Air louvres at the sides and in the rear panel.

Features



Toptec CR



Functional design
No roof projection at the sides – enclosures are connected via cut-outs or by baying complete enclosures.



Enclosure platform TS 8
TS 8 vertical sections and system punchings are the key to the comprehensive range of accessories.



Climate control modules
Climate control – identical door cut-outs for cooling units and air/air heat exchangers offer variability when selecting climate control components.



Twin-walled doors
Chimney effect – The twin wall minimises the influence of sunlight and prevents condensation.



Multifunctional rain canopy protects the side panel from removal, while ventilation prevents condensation and the sloping roof stops rainwater from accumulating.



Lock system
The doors at the front and rear each have one swing lever handle with security lock.



CS basic enclosures



Eyebolts, concealed by the rain canopy, for crane transportation of the fully fitted unit.



Ventilation louvres all-round in the hinged rain canopy – with an all-round roof projection of 25 mm.



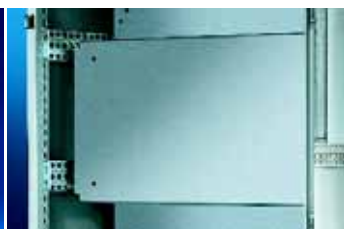
Width 1200 mm: **With removable centre bar** and two lockable doors with or without centre bar, with overlapping doors.



The open base frame may be covered with **gland plates.**



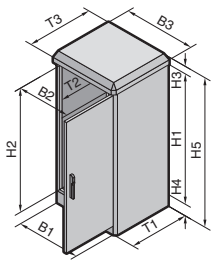
Individual installation with an **extensive choice of system accessories.**

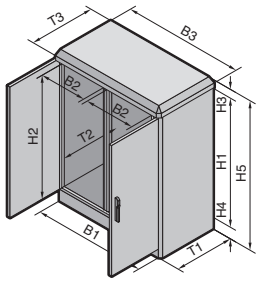


25 mm system punchings for mounting 482.6 mm (19″) mounting angles, mounting plates or partial mounting plates.

CS modular enclosures







Technical specifications:
Basic module:
Solid top and sides, closed base with 4 gland plates (width 600 mm with 2 gland plates).
Double-walled rear panel screw-fastened from the inside.
Double-walled door with Ergo-form padlock handle with 3-point locking, foamed-in PU seal.
Gas pressurised spring as door stay.
Double side panel across the enclosure and base/plinth, screw-fastened from the inside, screws not visible from the outside.
Rain canopy, 75 mm high, hinged, 25 mm projection on all sides.
Base/plinth, 100 mm high.

Material:
Enclosure, roof and side panel:
2.0 mm aluminium AlMg3
Base/plinth:
3.0 mm aluminium AlMg3

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 3R.

Supply includes:
Twin-walled, fully assembled enclosure, consisting of basic module, roof, side panels and base/plinth.

Note:
Modular enclosures with climate control units, as bayed suites, with side doors or rear doors available on request.

Property rights:
German patents
no. 196 09 699 and 196 09 704
European patents
no. 0 886 899 and 0 886 900
with validity for FR, IT, GB, SE
US patents no. 6,109,053 and 5,971,511
South Korean patents
no. 0 334 548 and 0 325 930
Japan. patent no. 3 401 015

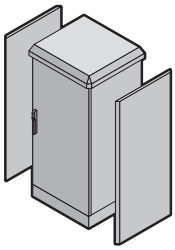
Detailed drawing,
see page 1298 – 1299.

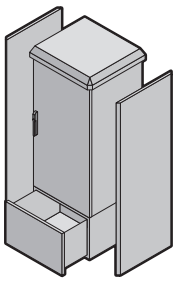
Width (B1) mm	Packs of	600	800	800	1200	Page
Height (H1) mm		1200	1200	1600	1200	
Depth (T1) mm		600	500	600	600	
Clearance width (B2) mm		512	712	712	512	
Clearance height (H2) mm		1112	1112	1512	1112	
Clearance depth (T2) mm		554	454	554	554	
Rain canopy width (B3) mm		700	900	900	1300	
Rain canopy height (H3) mm		75	75	75	75	
Rain canopy depth (T3) mm		650	550	650	650	
Base/plinth height (H4) mm		100	100	100	100	
Overall height (H5) mm		1375	1375	1775	1375	
Model No. CS	1	**9751.125**	**9751.145**	**9751.165**	**9752.125**	
Accessories						
Concrete base/plinth	1	9765.083	9765.084	9765.085	9765.087	900
Mounting plate	1	9765.092	9765.095	9765.096	9765.191	987
Mounting angles, 482.6 mm (19″)	2	7688.000	7688.000	7690.000	7688.000	1093
Installation kit for 482.6 mm (19″) mounting angles	2	7696.000	7698.000	7698.000	7696.000	1093
Mounting angles, metric (T-slot)	2	–	7000.240	7000.330	–	1093
Installation kit for metric mounting angles	2	–	7000.100	7000.100	–	1093
Gland plate Size		4	4	4	4	From 1048
Gland plate No. of		2	4	4	4	From 1048
Support rails	4	4396.000	4395.000	4396.000	4396.000	1001
Heater 800 W	1	9769.080	9769.080	9769.080	9769.080	709
Thermostat	1	3110.000	3110.000	3110.000	3110.000	715
Enclosure light 48 V DC	1	9765.150	9765.150	9765.150	9765.150	1029

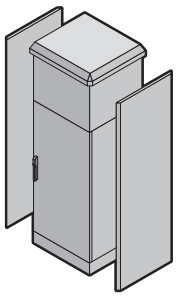
Concrete base/plinth Page 900 **Rail systems** Page 998 **482.6 mm (19″) installation** Page 1093

Installation variants, width 600 mm









Material:
Enclosure, roof and side panel:
2.0 mm aluminium AlMg3
Base/plinth, battery plinth:
3.0 mm aluminium AlMg3

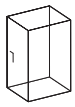
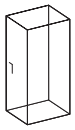
Colour:
RAL 7035

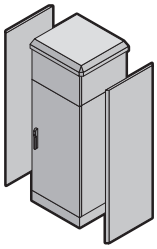
Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 3R.

Other climate control devices, from page 883.

Note:
Please note the minimum enclosure dimensions when making your selection.

The enclosures are manufactured to order from individual modules.
Delivery times available on request.

					
Width (W) mm	600	600	600	600	Page
Height (H) mm	800	1000	1200	1600	
Depth (D) mm	600	500	600	600	
Model No. CS	**9751.015**	**9751.075**	**9751.025**	**9751.035**	
Base/plinth					
Standard base/plinth 100 mm	**9755.015**	**9755.065**	**9755.015**	**9755.015**	
Battery plinth 350 mm	**9754.025**	**9754.015**	**9754.025**	**9754.025**	
Roof-mounted climate control					
Cooling unit	9762.012	9762.012	9762.012	9762.012	883
Heat exchangers	9764.012	9764.012	9764.012	9764.012	884
Mounting frame for heat exchanger or cooling unit	**9765.051**	**9765.051**	**9765.051**	**9765.051**	
Climate hood	**9756.015**	**9756.065**	**9756.015**	**9756.015**	
Wall-mounted climate control					
Cooling unit	–	–	9761.012	9761.012	883
Heat exchangers	–	–	9763.012	9763.012	884
Roof					
Standard roof	**9757.015**	**9757.065**	**9757.015**	**9757.015**	
Roof for wall-mounted climate control	**–**	**–**	**9758.015**	**9758.015**	
Side panel					
Side panel for 100 mm base/plinth	**9753.015**	**9753.175**	**9753.035**	**9753.045**	
Side panel for 350 mm base/plinth	**9753.055**	**9753.195**	**9753.075**	**9753.085**	
Side panel for 100 mm base/plinth and roof-mounted climate control	**9753.095**	**9753.185**	**9753.115**	**9753.125**	
Side panel for 350 mm base/plinth and roof-mounted climate control	**9753.135**	**9753.205**	**9753.155**	**9753.165**	



Order example:
Enclosure 800 x 800 x 600 mm of aluminium AlMg3 with standard base/plinth and roof-mounted cooling unit.

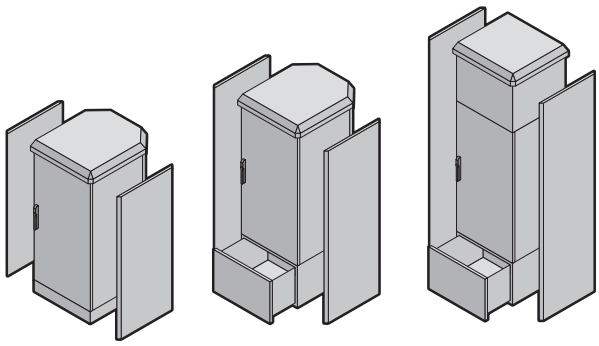
You will need:

Enclosure:	Basic enclosure 600 x 800 x 600 mm	**CS 9751.015**
Base/plinth:	Standard base/plinth 100 mm	**CS 9755.015**
Roof-mounted climate control:	Roof-mounted cooling unit	**CS 9762.012**
	Mounting frame	**CS 9765.051**
	Climate hood	**CS 9756.015**
Roof:	Standard roof	**CS 9757.015**
Side panel:	Side panel for 100 mm base/plinth and roof-mounted climate control	**CS 9753.095**

CS modular enclosures

Installation variants, width 800/1200 mm





Material:
Enclosure, roof and side panel:
2.0 mm aluminium AlMg3
Base/plinth, battery plinth:
3.0 mm aluminium AlMg3

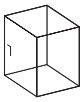
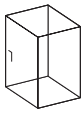
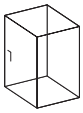
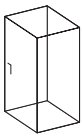
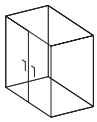
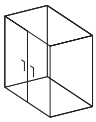
Colour:
RAL 7035

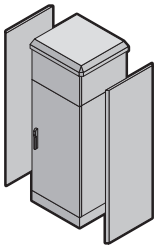
Protection category:
IP 55 to EN 60 529/09.2000, complies with NEMA 3R.

Other climate control devices,
from page 883.

Note:
Please note the minimum enclosure dimensions when making your selection.

The enclosures are manufactured to order from individual modules.
Delivery times available on request.

							
Width (W) mm	800	800	800	800	1200	1200	Page
Height (H) mm	1000	1200	1200	1600	1200	1200	
Depth (D) mm	500	500	600	600	500	600	
Model No. CS	**9751.085**	**9751.045**	**9751.055**	**9751.065**	**9752.015**	**9752.025**	
Base/plinth							
Standard base/plinth 100 mm	**9755.025**	**9755.025**	**9755.035**	**9755.035**	**9755.045**	**9755.055**	
Battery plinth 350 mm	**9754.035**	**9754.035**	**9754.045**	**9754.045**	2 x **9754.015**	2 x **9754.025**	
Roof-mounted climate control							
Cooling unit	9762.012	9762.012	9762.012	9762.012	9762.012	9762.012	883
Heat exchangers	9764.012	9764.012	9764.012	9764.012	9764.012	9764.012	884
Mounting frame for heat exchanger or cooling unit	**9765.051**	**9765.051**	**9765.051**	**9765.051**	**9765.051**	**9765.051**	
Climate hood	**9756.025**	**9756.025**	**9756.035**	**9756.035**	**9756.045**	**9756.055**	
Wall-mounted climate control							
Cooling unit	–	9761.032	9761.032	9761.032	9761.012	9761.012	883
Heat exchangers	–	9763.012	9763.012	9763.012	9763.012	9763.012	884
Roof							
Standard roof	**9757.025**	**9757.025**	**9757.035**	**9757.035**	**9757.045**	**9757.055**	
Roof for wall-mounted climate control	**–**	**9758.025**	**9758.035**	**9758.035**	**9758.045**	**9758.055**	
Side panel							
Side panel for 100 mm base/plinth	**9753.175**	**9753.025**	**9753.035**	**9753.045**	**9753.025**	**9753.035**	
Side panel for 350 mm base/plinth	**9753.195**	**9753.065**	**9753.075**	**9753.085**	**9753.065**	**9753.075**	
Side panel for 100 mm base/plinth and roof-mounted climate control	**9753.185**	**9753.105**	**9753.115**	**9753.125**	**9753.105**	**9753.115**	
Side panel for 350 mm base/plinth and roof-mounted climate control	**9753.205**	**9753.145**	**9753.155**	**9753.165**	**9753.145**	**9753.155**	

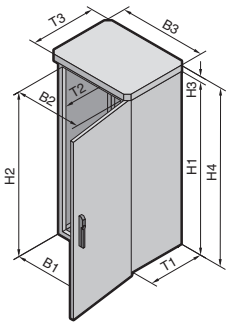


Order example:
Enclosure 800 x 1200 x 500 mm of aluminium AlMg3 with standard base/plinth and roof-mounted cooling unit.

You will need:

Enclosure:	Basic enclosure 800 x 1200 x 500 mm	**CS 9751.045**
Base/plinth:	Standard base/plinth 100 mm	**CS 9755.025**
Roof-mounted climate control:	Roof-mounted cooling unit	**CS 9762.012**
	Mounting frame	**CS 9765.051**
	Climate hood	**CS 9756.025**
Roof:	Standard roof	**CS 9757.025**
Side panel:	Side panel for 100 mm base/plinth and roof-mounted climate control	**CS 9753.105**





Material:
Enclosure frame:
1.5 mm stainless steel 1.4301 (AISI 304)
Rain canopy:
2.0 mm aluminium, AlMg3
Doors, side panels, base/plinth trim:
Sheet steel, hot-galvanised

Surface finish:
Zinc-phosphated, powder-coated in RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
Double-walled outdoor enclosure fully pre-configured.
Rigid enclosure body, consisting of vertical sections based on TS 8, roof and integral base/plinth assembly.
Outer roof, door front and rear, side panels left and right secured to the enclosure frame and doubled on the inside, to allow baying possibilities.
Doors doubled by 25 mm on the outside and ventilated, r/h hinge, with swing lever handle and semi-cylinder with security lock.
Door stay lock for a door opening angle of 90°, 115° or 135°.
Roof with front and rear projection, vented.
Outer side panel screw-fastened from the inside, combined to form one unit with the inner side panel. Side panels removable, offering full side accessibility. Integral base/plinth including two screw-fastened gland plates for cable entry.
Front and rear base/plinth trim screw-fastened to the enclosure frame must be dismantled to gain access to the mounting holes for the concrete base/plinth or foundation.
Protection against removal of the roof, side panels and base/plinth trim.

Note:
The outer mounting level of the TS 8 vertical sections may only be used in the enclosure depth to a limited extent, as the side panel protrudes into the level.

Rittal service:
Toptec CR, 800 mm wide, with integral cooling unit or air/air heat exchanger, see page 886 for output data.

Detailed drawing,
see page 1300.

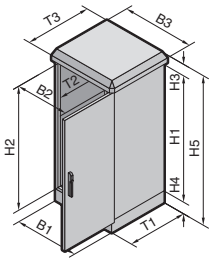
Width (B1) mm	Packs of	610	810	610	810	Page
Height (H1) mm		1200	1200	1600	1600	
Depth (T1) mm		653	653	653	653	
Clearance width (B2) mm		512	712	512	712	
Clearance height (H2) mm		1112	1112	1512	1512	
Clearance depth (T2) mm		512	512	512	512	
Rain canopy width (B3) mm		610	810	610	810	
Rain canopy height (H3) mm		40	40	40	40	
Rain canopy depth (T3) mm		700	700	700	700	
Overall height (H4) mm		1299	1299	1699	1699	
Model No. CS	1	**9775.100**	**9775.200**	**9775.300**	**9775.400**	
Accessories						
Concrete base/plinth	1	9765.166	9765.186	9765.166	9765.186	900
Mounting angles, 482.6 mm (19″) full installation	2	7827.120	7827.120	7827.160	7827.160	1091
Installation kit for 482.6 mm (19″) mounting angles	4	8612.060	7794.580	8612.060	7794.580	1095, 1096
Mounting kit CS for roof and base frame	4	9765.155	9765.155	9765.155	9765.155	987
Mounting plate	1	9765.092	9765.095	9765.093	9765.096	987
Gland plate — Size		4	4	4	4	From 1048
Gland plate — No. of		2	2	2	2	
Eyebolts	4	4568.000	4568.000	4568.000	4568.000	974
Semi-cylinder	1	9785.040	9785.040	9785.040	9785.040	957

Concrete base/plinth Page 900 **Climate control** Page 886 **Rail systems** Page 998 **Cable routing** Page 1062

CS Basic enclosures

single-door, width 600 mm





Material:
Enclosure, roof and doors:
2.0 mm aluminium AlMg3
Base/plinth:
3.0 mm aluminium AlMg3

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000 in conjunction with the gland plates available as accessories.

Supply includes:
Single-walled enclosure of all-round solid construction, with open base,
3-point locking via Ergoform padlock and lock cylinder, base/plinth, rain canopy.

Detailed drawing,
see page 1301.

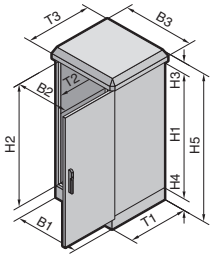
Note:
When installing a mounting plate in the rearmost position, additional vertical mounting rails are required in the enclosure height, see page 998.

Width (B1) mm	Packs of	600	600	600	600	Page
Height (H1) mm		800	1200	1400	1200	
Depth (T1) mm		400	400	400	500	
Clearance width (B2) mm		512	512	512	512	
Clearance height (H2) mm		712	1112	1312	1112	
Clearance depth (T2) mm		349	349	349	449	
Rain canopy width (B3) mm		650	650	650	650	
Rain canopy height (H3) mm		75	75	75	75	
Rain canopy depth (T3) mm		450	450	450	550	
Base/plinth height (H4) mm		100	100	100	100	
Overall height (H5) mm		975	1375	1575	1375	
Model No. CS	1	**9783.040**	**9783.050**	**9783.060**	**9783.030**	
Accessories						
Concrete base/plinth	1	9765.182	9765.182	9765.182	9765.082	900
One-piece gland plate	1 set	9785.017	9785.017	9785.017	9785.020	913
Gland plate, divided	1 set	9785.011	9785.011	9785.011	9785.014	913
Cable entry plate	2	4320.700	4320.700	4320.700	4320.700	1045
Mounting plate	1	9765.090	9765.092	9765.098	9765.092	987
Mounting angles 482.6 mm (19″), full installation	2	7685.000	7688.000	7689.000	7688.000	1093
Installation kit for mounting angles	2	7696.000	7696.000	7696.000	7696.000	1093
Heater 800 W	1	9769.080	9769.080	9769.080	9769.080	709
Thermostat	1	3110.000	3110.000	3110.000	3110.000	715

Partial mounting plate Page 984 **482.6 mm (19″) installation** Page 1093 **Cable entry** Page 1045

single-door, width 800 mm





Material:
Enclosure, roof and doors:
2.0 mm aluminium AlMg3
Base/plinth:
3.0 mm aluminium AlMg3

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000 in conjunction with the gland plates available as accessories.

Supply includes:
Single-walled enclosure of all-round solid construction, with open base,
3-point locking via Ergoform padlock and lock cylinder, base/plinth, rain canopy.

Detailed drawing,
see page 1301.

Note:
When installing a mounting plate in the rearmost position, additional vertical mounting rails are required in the enclosure height, see page 998.

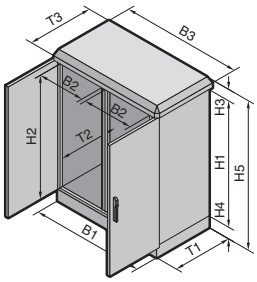
Width (B1) mm	Packs of	800	800	800	800	Page
Height (H1) mm		800	1200	1400	1200	
Depth (T1) mm		400	400	400	500	
Clearance width (B2) mm		712	712	712	712	
Clearance height (H2) mm		712	1112	1312	1112	
Clearance depth (T2) mm		349	349	349	449	
Rain canopy width (B3) mm		850	850	850	850	
Rain canopy height (H3) mm		75	75	75	75	
Rain canopy depth (T3) mm		450	450	450	550	
Base/plinth height (H4) mm		100	100	100	100	
Overall height (H5) mm		975	1375	1575	1375	
Model No. CS	1	**9783.010**	**9783.020**	**9783.120**	**9783.110**	
Accessories						
Concrete base/plinth	1	9765.088	9765.088	9765.088	9765.084	900
One-piece gland plate	1 set	9785.018	9785.018	9785.018	9785.019	913
Gland plate, divided	1 set	9785.012	9785.012	9785.012	9785.013	913
Cable entry plate	2	4321.700	4321.700	4321.700	4321.700	1045
Mounting plate	1	9765.097	9765.095	9765.099	9765.095	987
Mounting angles 482.6 mm (19″), full installation	2	7685.000	7688.000	7689.000	7688.000	1093
Installation kit for mounting angles	2	7698.000	7698.000	7698.000	7698.000	1093
Heater 800 W	1	9769.080	9769.080	9769.080	9769.080	709
Thermostat	1	3110.000	3110.000	3110.000	3110.000	715

Concrete base/plinth Page 900 **Heaters** Page 709 **Earthing** Page 1034

CS Basic enclosures

two-door, width 1200 mm





Material:
Enclosure, roof and doors:
2.0 mm aluminium AlMg3
Base/plinth:
3.0 mm aluminium AlMg3

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000 in conjunction with the gland plates available as accessories.

Supply includes:
Single-walled enclosure of all-round solid construction, with open base,
3-point locking via Ergoform padlock and lock cylinder
Version without centre bar: overlapping doors, lockable door with r/h hinge.
Version with centre bar:
2 lockable doors,
base/plinth, rain canopy, centre bar can be dismantled.

Detailed drawing,
see page 1301.

Note:
When installing a mounting plate in the rearmost position, additional vertical mounting rails are required in the enclosure height, see page 998.

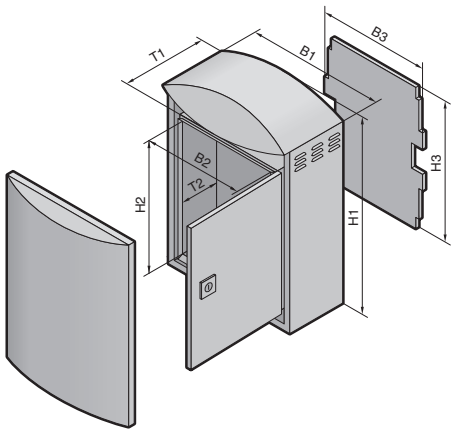
Width (B1) mm	Packs of	1200	1200	1200	1200	Page
Height (H1) mm		800	1200	1200	1400	
Depth (T1) mm		400	400	500	400	
Clearance width (B2) mm		512	512	512	512	
Clearance height (H2) mm		712	1112	1112	1312	
Clearance depth (T2) mm		349	349	449	349	
Rain canopy width (B3) mm		1250	1250	1250	1250	
Rain canopy height (H3) mm		75	75	75	75	
Rain canopy depth (T3) mm		450	450	550	450	
Base/plinth height (H4) mm		100	100	100	100	
Overall height (H5) mm		975	1375	1375	1575	
Model No. CS without centre bar	1	**9784.110**	**9784.120**	**9784.140**	**9784.130**	
Model No. CS with centre bar	1	**9784.010**[1)]	**9784.020**	**9784.040**	**9784.030**	
Accessories						
Concrete base/plinth	1	9765.089	9765.089	9765.086	9765.089	900
One-piece gland plate	1 set	2 x 9785.017	2 x 9785.017	2 x 9785.020	2 x 9785.017	913
Gland plate, divided	1 set	2 x 9785.011	2 x 9785.011	2 x 9785.014	2 x 9785.011	913
Cable entry plate	2	4320.700	4320.700	4320.700	4320.700	1045
Mounting plate for one half of the enclosure	1	9765.090	9765.092	9765.092	9765.098	987
Mounting plate (full width)	1	9765.190	9765.191	9765.191	9765.192	987
482.6 mm (19″) mounting angles for one half of the enclosure	2	7685.000	7688.000	7688.000	7689.000	1093
Installation kit for mounting angles	2	7696.000	7696.000	7696.000	7696.000	1093
Heater 800 W	1	9769.080	9769.080	9769.080	9769.080	709
Thermostat	1	3110.000	3110.000	3110.000	3110.000	715

[1)] Delivery times available on request.

Mounting plate Page 987 **Fan-and-filter unit** Page 689 **Cable routing** Page 1062


1


2



Material:
Aluminium AlMg3
Enclosure:
Exterior: 2.0 mm
Interior: 1.5 mm/2.0 mm
Doors: 2.0 mm
Mounting plate/rotating frame:
2.0 mm clear-chromated

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
Inner enclosure with door,
aluminium mounting plate or rotating frame,
security lock (CS 9791.045 and CS 9791.145 with 2 security locks),
foamed in door seals,
gland plate at bottom,
mounting bracket for thermostat,
outer enclosure with integral vent louvres,
designer cover with security lock, C rails on the rear panel.

Property rights for wall-mounted enclosure with mounting plate:
German registered design no. 97 08 625
UK registered design no. 2 072 965
IR reg. design no. DM/044 110 with validity for ES, FR, IT, Indonesia
US patent no. 6,024,236
European patent no. 0 902 514 with validity for FI, GB, SE
Japan. patent no. 3 189 210

1 Wall-mounted enclosure with mounting plate

2 482.6 mm (19″) rotating frame

Rittal service:

Complete interior installation of the wall-mounted enclosure up to integration Level 4 to the customer's specifications is available.

Detailed drawing,
see page 1302.

Width (B1) mm	Packs of	370/300	420/350	530/460	630/580	630/580	Page
Height (H1) mm		522.5/400	560.5/440	700/565	780/580	780/580	
Depth (T1) mm		210/170	210/170	265/220	380/333	380/333	
Clearance width (B2) mm		280	330	440	560	560	
Clearance height (H2) mm		380	420	545	560	560	
Clearance depth (T2) mm		145	145	195	308	240[2)]	
Mounting plate width (B3) mm		270	320	430	550	–	
Mounting plate height (H3) mm		380	410	535	550	–	
Model No. CS	1	**9791.015**	**9791.025**	**9791.035**	**9791.045**	**9791.145[1)]**	
Accessories							
Wall mounting bracket	4	9765.120	9765.120	9765.120	9765.120	9765.120	976
Pole clamp	1 set	9765.125	9765.125	9765.125	9765.125	9765.125	976
Heater, 30 W	1	3115.000	3115.000	3115.000	3115.000	3115.000	709
Thermostat	1	3110.000	3110.000	3110.000	3110.000	3110.000	715

[1)] With 5 U rotating frame instead of mounting plate.
[2)] Max. installation depth in the 482.6 mm (19″) level.

Wall mounting Page 976 **Pole clamp** Page 976 **Compact enclosure AE, stainless steel** Page 308
Compact enclosure AE, stainless steel, protection category IP 69K Page 310

CS Outdoor climate control

Features



Rittal Communication Systems offer everything you need to protect your electronic equipment, from weather-tested enclosure solutions, to a variety of climate control components, through to complete security management systems. Cooling units, heat exchangers, fans and heaters especially designed for outdoor use ensure constant interior temperatures.

The protection category of IP 55 for the system as a whole is retained when using Outdoor heat exchangers and cooling units.



Flexible climate control



Climate control modules in various different output levels may be positioned on the door, rear panel, side panel or roof of the modular enclosure.



Suitable for use within a temperature range from –33°C to +55°C (with cooling unit) or +65°C (with heat exchanger).



Many units feature an integral heater. **Heaters** may be snap-mounted onto **top hat rails** inside the enclosure using the quick-assembly system.



The **full 25 mm double wall** assists heat management and minimises the influence of sunlight.



Active climate control concept with fixed cut-out sizes and a mounting frame for depth-variable positioning of the climate control unit.



Depending on the local conditions at the installation site, either a heat exchanger or a cooling unit may be used.

Cooling units for CS modular enclosures



Type 1 for roof mounting
With microcontroller and 400 watt heater as standard.

Mounting frame:
Required for CS 9762.012.



Type 2 for door mounting
With microcontroller and 400 watt heater as standard.



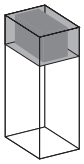
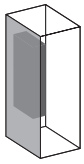
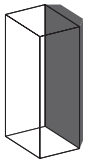
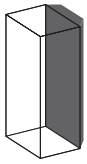
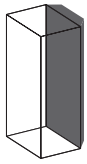
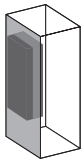
Type 3 for wall mounting
With microcontroller and 400 watt heater as standard. Alternative mounting on the rear or side panels is also possible. The picture shows the cooling unit with designer cover (not included in the supply).



Type 4 for universal installation
With microcontroller and 800 watt heater as standard.

Installation options:
- in the door or rear panel
- in the side panel

Approvals,
see page 104.

								
Model No. CS		**9762.012**	**9768.100**	**9761.012**	**9761.032**	**9761.042**	**9768.150**	Page
Mounting		Type 1 Roof-mounted	Type 2 Door-mounted	Type 3 Wall-mounted			Type 4 Universal	
Rated operating voltage	AC	230 V, 50/60 Hz						
Unit dimensions mm	W H D	535 390 400	430 1070 210	515 1170 151.5	695 1132 151.5	776 1100 250	400 1050 310	
Minimum enclosure dimensions mm	W x H/D x H	–	600 x 1200	600 x 1200	800 x 1200	800 x 1200	600 x 1200	
	W x D	600 x 500	–	–	–	–	–	
Useful cooling output EN 814	**L35 L35** **L35 L50**	**900 W** **750 W**	**900 W** **650 W**	**900 W** **750 W**	**1400 W** **1050 W**	**2500 W** **2000 W**	**1500 W** **1250 W**	
Heater		400 W	400 W	400 W	400 W	400 W	800 W	
Rated current max.		4.0 A	4.0 A	3.5 A	5.5 A	10.0 A	5.8 A	
Start-up current max.		10.7 A	11.6 A	10.8 A	15.5 A	32.0 A	19.0 A	
Power consumption	L35 L35 L35 L50	460 W 520 W	470 W 530 W	450 W 520 W	900 W 1000 W	1450 W 1650 W	940 W 1045 W	
Coolant		R134a						
p. max.		26 bar	28 bar	24 bar	24 bar	28 bar	28 bar	
Temperature range		–33°C to +55°C						
Air throughput of fans – unimpeded air flow	Internal circuit fan External circuit fan	570 m^3/h 570 m^3/h	580 m^3/h 430 m^3/h	880 m^3/h 880 m^3/h	850 m^3/h 880 m^3/h	1450 m^3/h 1450 m^3/h	850 m^3/h 680 m^3/h	
Temperature control		Microcontroller[1)]						
Type of connection		Plug panel						
Weight		29 kg	31 kg	45 kg	48 kg	52 kg	40 kg	
Protection category to EN 60 529/09.2000		IP 55 (internal circuit to external circuit)						
Material (enclosure)		Aluminium		Sheet steel		Aluminium		
Surface finish		Spray-finished in RAL 7035						
CE Declaration of Conformity		■	■	■	■	■	■	
UL/CUL		–	–	■	■	–	–	
Accessories								
Cable connection kit		9765.105	9765.105	9765.105	9765.105	9765.105	9765.105	717
Mounting frame		**9765.051**	–	–	–	–	–	–

[1)] With temperature-controlled activation of the components (internal/external circuit, heater). Setpoints are preset. Modifications can only be made by arrangement.

Delivery times available on request.

Cooling units for modular enclosures are manufactured to order. The units are assembled and supplied connected to the modular enclosure. Adaptations to other enclosure platforms are available on request.

CS modular enclosures Page 874 **Test adaptor** Page 717 **Heaters** Page 709

CS Outdoor climate control

Heat exchangers for CS modular enclosures



Type 1 for roof mounting
Without microcontroller, without heater.



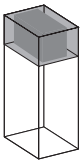
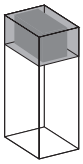
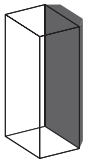
Type 2 for roof mounting
With microcontroller and heater as standard.

Mounting frame:
Required for CS 9764.012.



Type 3 for wall mounting
With microcontroller and heater as standard. For external mounting on side or rear panels.
The picture shows the heat exchanger with designer cover (not included in the supply).

Property rights for Type 1 and 2:
German patent
no. 196 09 796
US patent no. 6,092,384
European patent no. 0 913 015
with validity for FR, GB, IT, SE
Japan. patent no. 32 79 576
South Korean patent
no. 0 337 973

					
Model No. CS		**9764.040**	**9764.012**	**9763.012**	Page
Mounting		Type 1 Roof-mounted	Type 2 Roof-mounted	Type 3 Wall-mounted	
Rated operating voltage	DC (fan/ microcontroller)	48 V			
	AC (heater)	–	230 V, 50/60 Hz		
Unit dimensions mm	W H D	470 158 380	535 390 400	515 1170 151.5	
Minimum enclosure dimensions mm	W x H/D x H	–	–	600 x 1200	
	W x D	600 x 500	600 x 500	–	
Specific thermal output		**30 W/K**	**60 W/K**	**60 W/K**	
Heater		–	400 W	400 W	
Rated current max.	DC (fan/ microcontroller)	1.3 A	3.1 A	3.2 A	
	AC (heater)	–	1.9 A	1.9 A	
Temperature range		–33°C to +65°C			
Air throughput of fans – unimpeded air flow	Internal/external circuit fan	345 m^3/h	830 m^3/h	830 m^3/h	
Temperature control		without[1)]	Microcontroller[2)]		
Type of connection		Plug panel			
Weight		7 kg	17 kg	31 kg	
Protection category to EN 60 529/09.2000		IP 55 (internal circuit to external circuit)			
Material (enclosure)		Aluminium		Sheet steel	
Surface finish		Spray-finished in RAL 7035			
CE Declaration of Conformity		■	■	■	
UL/CUL		–	■	■	
Accessories					
Cable connection kit		9765.110	9765.110	9765.110	717
Thermostat		3110.000	–	–	715
Mounting frame		–	**9765.051**	–	–

[1)] Customers may fit their own temperature control (SK 3110.000).
[2)] With temperature-controlled activation of the components (internal/external circuit, heater). Setpoints are preset. Modifications can only be made by arrangement.

Delivery times available on request.

Heat exchangers for modular enclosures are manufactured to order. The units are assembled and supplied connected to the modular enclosure. Adaptations to other enclosure platforms are available on request.

CS modular enclosures Page 874 **Test adaptor** Page 717 **Heaters** Page 709

Heat exchangers for CS modular enclosures



Type 4 for door mounting
With microcontroller and 400 watt heater as standard.



Type 5 for door mounting
With microcontroller and heater as standard.

Model No. CS		**9768.032**	**9768.012**	**9768.042**	**9768.062**	Page
Mounting		Type 4 Door-mounted		Type 5 Door-mounted		
Rated operating voltage	DC (fan/ microcontroller)	48 V				
	AC (heater)	230 V, 50/60 Hz		–		
Unit dimensions mm	W H D	480 1005 110	510 1005 150	445 1050 150	575 1050 195	
Minimum enclosure dimensions mm	W H	600 1200	650 1200	650 1300	800 1300	
Specific thermal output		**40 W/K**	**60 W/K**	**85 W/K**	**120 W/K**	
Heater		400 W		–		
Rated current max.	DC (fan/ microcontroller)	2.0 A	3.2 A	6.4 A	7.9 A	
	AC (heater)	1.9 A		–		
Temperature range		–33°C to +65°C				
Air throughput of fans – unimpeded air flow	Internal/external circuit fan	515 m^3/h	530 m^3/h	1020 m^3/h		
Temperature control		Microcontroller[1]				
Type of connection		Plug panel			Sub-D connector 13W3[2]	
Weight		13 kg	15 kg	28 kg	32 kg	
Protection category to EN 60 529/09.2000		IP 55 (internal circuit to external circuit)				
Material (enclosure)		Aluminium				
Surface finish		Spray-finished in RAL 7035				
CE Declaration of Conformity		■	■	■	■	
UL/CUL		■	■	■	■	
Accessories						
Cable connection kit		9765.110	9765.110	9765.115	–	717

[1] With temperature-controlled activation of the components (internal/external circuit, heater). Setpoints are preset. Modifications can only be made by arrangement.
[2] Special connection cable included in the supply.

Delivery times available on request.

Heat exchangers for modular enclosures are manufactured to order. The units are assembled and supplied connected to the modular enclosure. Adaptations to other enclosure platforms are available on request.

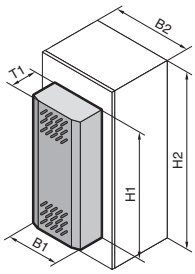
CS modular enclosures Page 874 **Test adaptor** Page 717 **Heaters** Page 709

CS Outdoor climate control

Climate control units for Toptec CR







B = Width
T = Depth

1 Heat exchanger/ cooling unit
With three mounting positions for internal mounting, partial internal mounting or external mounting plus a choice between cooling via front or rear door.

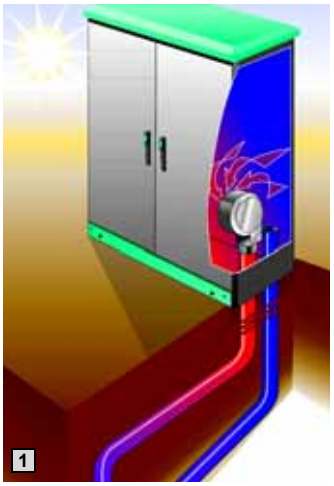
2 Heat exchanger/ cooling unit,
built into the Toptec CR.

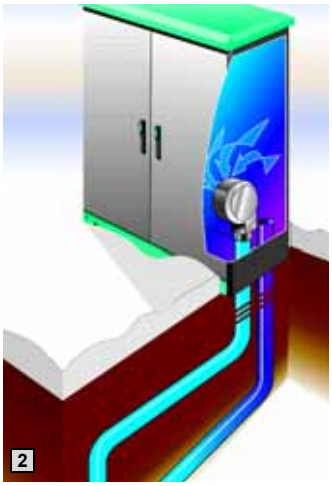
		Heat exchangers		Cooling units		Page
Model No. CS		**9776.100**	**9776.150**	**9776.500**	**9776.550**	
Mounting		Universal		Universal		
Rated operating voltage	DC	48 V		–		
	AC	–		230 V, 50/60 Hz		
Unit dimensions mm	B1 H1 T1	500 1000 150	500 1000 200	500 1000 150	500 1000 260	
Minimum enclosure dimensions mm	W x H	800 x 1200		800 x 1200		
Specific thermal output		**85 W/K**	**105 W/K**	**–**	**–**	
Useful cooling output EN 814	**L35 L35 L35 L50**	**–**	**–**	**1000 W/1180 W 650 W/700 W**	**1600 W/1750 W 1200 W/1250 W**	
Heater		–	–	400 W		
Rated current max.	DC	4.2 A	4.5 A	–	–	
	AC	–		5.0 A/5.0 A	6.0 A/6.8 A	
Start-up current max.		–		24.0 A/22.0 A	34.0 A/32.0 A	
Power consumption	L35 L35 L35 L50	–		640 W/760 W 780 W/920 W	960 W/1170 W 1125 W/1310 W	
Coolant		–		R134a		
p. max.		–		28 bar	28 bar	
Temperature range		–33°C to +65°C		–33°C to +55°C		
Air throughput of fans – unimpeded air flow	Internal/external circuit fan	530 m^3/h	1130 m^3/h	600/625 m^3/h 600/625 m^3/h	880/950 m^3/h 1000/1090 m^3/h	
Temperature control		Microcontroller[1)]	Microcontroller[2)]			
Type of connection		Plug panel	Female multi-point connector 9-pole			
Weight		22 kg	30 kg	35 kg	45 kg	
Protection category to EN 60 529/09.2000		IP 55 (internal circuit to external circuit)				
Material (enclosure)		Aluminium				
Surface finish		Spray-finished in RAL 7035				
CE Declaration of Conformity		■	■	■	■	
Accessories						
Cable connection kit		9765.115	–	–	–	717

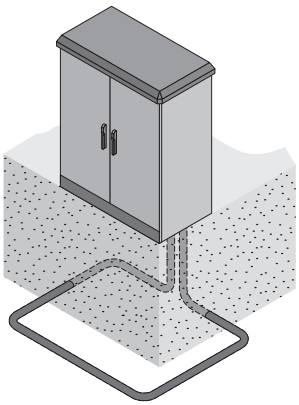
[1)] With temperature-controlled activation of the components (internal/external circuit, heater). Setpoints are preset. Modifications can only be made by arrangement.
[2)] Settings may be amended directly on the unit display.

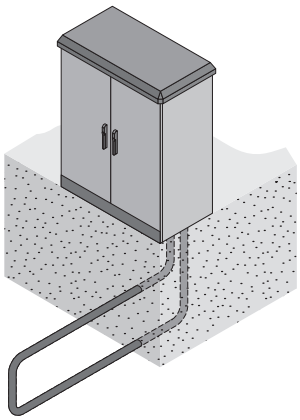
Toptec CR Page 877 **Heaters** Page 709

Geothermal heat exchanger, Terravent


1


2


3


4

Rittal Terravent
This ingeniously simple and effective climate control principle, which uses geothermal effects to cool and heat, underscores Rittal's expertise in all aspects of enclosure systems for outdoor siting. The geothermal heat transmitter is suitable for use whenever earthworks are required to install an outdoor enclosure.
Throughout the world, at a certain depth beneath the earth's crust, the temperature is always roughly the same, whatever the season; and this fact is used to cool and heat outdoor enclosures. The hot air from the enclosure is forced into a pipe with a radial or axial fan.

A pipeline system laid in the earth cools the air, which in turn is used to cool the enclosure. In cool external temperatures, the temperature of the air inside the pipeline system rises, and this achieves a heating effect.
The inlet and outlet points of the pipes can be freely positioned to effectively avoid hotspots. Depending on the application, the air discharge and air inlet can be positioned in the base/plinth, in the roof, or at freely selectable positions inside the enclosure.

Benefits of the geothermal heat exchanger
- With the sealed ventilation system, ambient air is unable to penetrate the enclosure, which in turn prevents the ingress of humidity and aggressive pollutants from the air.
- Minimal energy requirements, since only a radial or axial fan is required to generate the air flow. The fan motors are available in various operating voltages.
- Reduction of noise emissions, since there are no active climate control components mounted on the outside of the enclosure.
- Minimal maintenance required for the fan system.
- Control, monitoring and alarm relays can be achieved via the CMC.

German utility model no. 210 22 322

German patent no. 102 102 10 566

US patent no. 6,523,602

1 With a radial or axial fan, the hot air from the enclosure is forced into a pipe. A pipeline system laid in the earth cools the air, which in turn is used to cool the enclosure.

2 In cool external temperatures, the temperature of the air inside the pipeline system rises, and this achieves a heating effect.

3 **Excellent heat dissipation is effected,** because the pipeline system is laid horizontally on one level. Major excavation work is, however, required.

4 **The pipeline system is laid vertically**
The pipeline system to and from the outdoor enclosure is laid in a pit. The effects of heat dissipation are somewhat less pronounced, but the pipes are simply laid in a pit where the supply lines to the enclosure can also be laid.

Terravent supply includes
- Calculation of the maximum required and maximum possible thermal output.
- Calculation and dimensioning of the fan, the pipe diameter, the pipe length, and the best way of laying the pipe.
- Determination of the optimum positioning of the air inlet and air outlet on the enclosure.
- Supply of all components, pre-assembly of the fan pipe fixtures in the outdoor enclosure, installation of the fan, insulation of the enclosure (where necessary).

Packs of	Model No. CS
1 set	9767.500

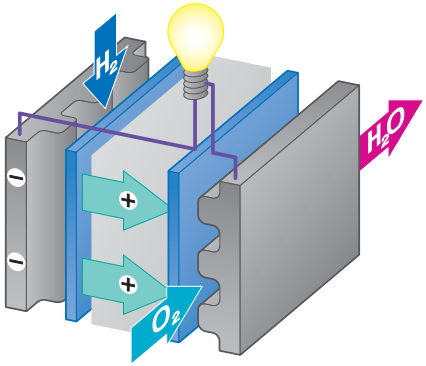
Examples of temperature variation, see page 1303.

CS fuel cell

Features



Reliable redundancy in the form of emergency power supply systems must be established in critical applications demanding high-availability. From the field of cellular phones via telematics and remote measuring stations through to the primary energy source for information kiosk systems and applications at open-air events – for all these the fuel cell represents the convincing “energy supplier”. Here Rittal with its expertise and know-how in the fields of outdoor enclosure technology, climate control and system integration can supply complete solutions.



How a fuel cell works

Fuel cells convert the chemical energy arising from the reaction between hydrogen (H_2) and oxygen (O_2) directly into electrical energy, water and heat.

- A fuel cell essentially consists of two electrodes separated by an electrolyte.
- At one electrode, the hydrogen is separated into positively charged protons and negatively charged electrons.
- At the other electrode, oxygen molecules (O_2) are dissociated (separated) and are able to absorb electrons at the electrode.
- The H_2 ions pass through the electrolyte to the positive electrode where they react with the O_2 ions to form water.
- The two electrodes are connected to one another via an external load so that an electric current flows. The flow of current is supplied directly by converting a significant portion of the chemical energy from hydrogen and oxygen into electrical energy.



Reliable emergency power supply for outdoor applications

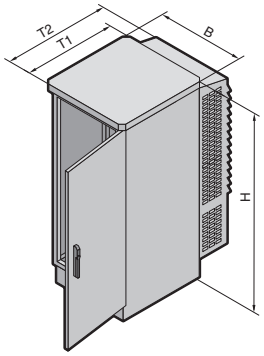
The emergency power supply may be supplied with hydrogen directly at the site of installation.
The oxygen required by the system is obtained from filtered ambient air. The broader temperature range of the fuel cell stacks compared with conventional, battery-buffered back-up systems is a major advantage, since batteries require constant temperatures inside the enclosure.
As a result of this, the fuel cell makes climate control significantly cheaper and more efficient.

Other benefits include:

- Freely scalable autonomy, by adapting the volume of hydrogen stored at the site. In this way, individual back-up times may be achieved very easily for each installation site.
- A substantially longer service life than batteries – the total service life of the plant in this mode of operation is approximately 10 years.
- Minimal servicing and maintenance work for the emergency back-up supply.

3 and 5 kW





Application:
Outdoor emergency power supply e. g. for mobile phone base stations.

Material:
Enclosure frame:
Stainless steel 1.4301 (AISI 304)
Doors, side panels,
climate control cover, roof:
Aluminium AlMg3, powder-coated in RAL 7035

Supply includes:
Ready-to-connect fuel cell system including climate control.
Hydrogen supply not included.

Available on request:
- Cascadable up to 3 systems
- Non-standard input/output voltage
- Use as primary supply unit (not for continuous 24 h operation)
- Reformer system, e. g. infeed of methanol instead of hydrogen
- Housing for gas cylinders
- Further protocols:
  S-Bus, Profibus, Modbus, MPI, EIB, LON, BacNet, GENIbus

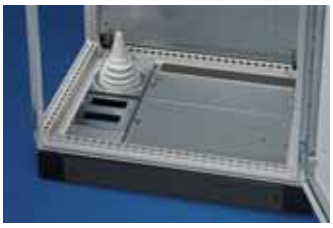
Detailed drawing,
see page 1303.

Width (B) mm	694	694
Height (H) mm	1403	1403
Depth (T1) mm	675	675
Overall depth (T2) mm	992	992
Weight (kg)	219	226
Model No. CS	**9782.030**	**9782.050**
Fuel cell		
Output scalable up to	1000 – 3000 W	1000 – 5000 W
Input voltage in standby mode	230 V, 50/60 Hz	230 V, 50/60 Hz
Output voltage	–48 V DC (–42 V DC to –55 V DC)	–48 V DC (–42 V DC to –55 V DC)
Hydrogen supply		
Gas type	Hydrogen, purity at least 3.5 (99.95 %)	Hydrogen, purity at least 3.5 (99.95 %)
Pressurised gas bottles	e. g. 50 litre or 10 litre bottles, 200 bar	e. g. 50 litre or 10 litre bottles, 200 bar
Consumption at full load	45 slpm (standard litres per minute)	75 slpm (standard litres per minute)
Stored energy time	Freely scalable via manifolds, 50 l, 200 bar hydrogen produces approx. 10 kWh output, i. e. with 3 kW full load, this means an autonomy of 3.5 hours	Freely scalable via manifolds, 50 l, 200 bar hydrogen produces approx. 10 kWh output, i. e. with 5 kW full load, this means an autonomy of 2 hours
Ambient conditions		
Temperature range	–40°C to +50°C[1)]	–40°C to +50°C[1)]
Relative humidity	0 % to 95 %, non-condensing	0 % to 95 %, non-condensing
Height above mean sea level	0 to 1800 m	0 to 1800 m
Monitoring		
Interface	Ethernet-IP, RS-232	Ethernet-IP, RS-232

[1)] From 43°C: 2.5 % reduction in output per degree of temperature increase.

System accessories

Base from page 892



Base/plinth TS 892
Base/plinth 901
Base 906

Walls from page 917



Side panels 917
Divider panels 921
Divider panels for module plates 922
Module plates 923

Baying system from page 926



For TS 8 926
Baying at the installation site 927
Baying for transport 930
Baying 931
TS 8 corner enclosures 933

Doors/locks from page 934



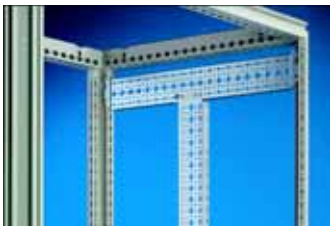
Door variants 934
Modular front design for TS 8 940
Viewing panels/operating panels 943
Lock systems 947
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Roof/wall mounting from page 969



Roof 969
Wall mounting 975

Interior installation — from page 978



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Component shelves for frame attachment ... 1013
Component shelves for attachment to the 482.6 mm (19″) frame ... 1017
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Earthing ... 1034
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Cable management — from page 1045



Cable entry ... 1045
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Cable routing ... 1059
Cable routing 482.6 mm (19″) ... 1074

482.6 mm (19″) installation — from page 1079



Swing frames ... 1079
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Installation kits for mounting angles ... 1095
Slide rails ... 1097
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482.6 mm (19″)/metric installation ... 1100
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Patch panels for fibre-optic technology ... 1109
Splicing boxes ... 1111
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Human/machine interface — from page 1115



Handles, external mounting accessories ... 1115
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Two-handed operating console ... 1130
Monitors, keyboards ... 1133
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Mouse, mousepad ... 1145
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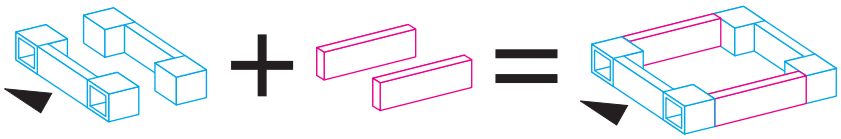
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Planning/project management/selection ... 1152

Base/plinth TS



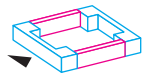
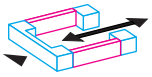
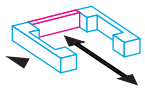
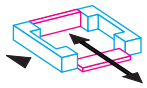
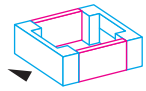
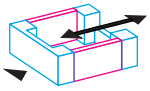
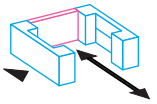
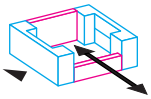
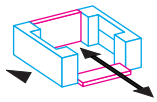
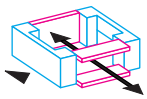
One Model No.
for the
base/plinth components
front and rear.

One Model No.
for the
base/plinth trim,
side.

A complete
base/plinth TS.

Modular base/plinth diversity

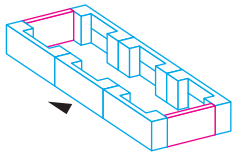
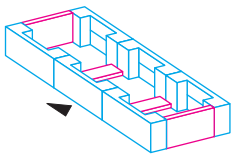
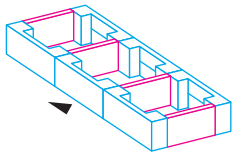
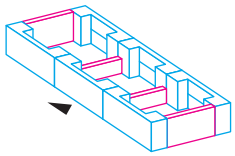
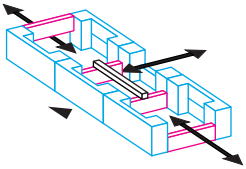
Regardless of the enclosure depth:
The base/plinth components at the front and rear, pre-configured with corner pieces, are always the same for the chosen width.
Only the side trim panels are selected according to the enclosure depth and the required base/plinth configuration. The modular concept produces exceptional advantages in terms of cost and function.
Assembly on the enclosure is conveniently carried out from the outside. The base/plinth interior offers diverse opportunities for mounting levels for cable management.

Base/plinth height	Basic form	Cable gland options			Stabilisation of bayed base/plinth	
100 mm						
200 mm						

Function and cost benefits

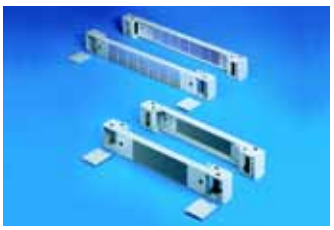
Fewer parts, more opportunities, lower purchasing, storage and assembly costs – the formula for the new modular base/plinth system.

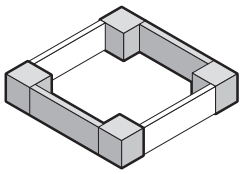
The following table shows three bayed base/plinths in 200 mm height illustrating a wide range of possible solutions and the potential savings with trim panels compared with the previous 200 mm base/plinth system each with two trim panels of 100 mm height at the sides.

Sample solutions	New supply includes	Functional benefits	Savings potential compared with twelve 100 mm trim panels
	3 packs of base/plinth components 1 pack of base/plinth trim panels 200 mm high	Continuous cable chamber	2 trim panels 200 mm
	3 packs of base/plinth components 1 pack of base/plinth trim panels 200 mm high 1 pack of base/plinth trim panels 100 mm high 1 pack of base/plinth baying brackets TS 8601.100 (packs of 20) 4 are required for this solution	Additional stabilisation for transportation purposes with base/plinth trim rotated through 90°	2 trim panels 200 mm 2 trim panels 100 mm
	3 packs of base/plinth components 2 packs of base/plinth trim panels 200 mm high	Shielding of the base/plinths in relation to one another	4 trim panels 200 mm
	3 packs of base/plinth components 1 pack of base/plinth trim panels 200 mm high 1 pack of base/plinth trim panels 100 mm high	Additional connection of the base/plinths	2 trim panels 200 mm 2 trim panels 100 mm
	Other options: ● Cable entry at the side by mounting a 100 mm base/plinth trim panel (top or bottom). ● Cable entry from the rear by dismantling one or more trim panels of the base/plinth components. ● Cable clamp rail fitted on the 100 mm high trim panel.		









Base/plinth components, front and rear

Sheet steel
for TS, CM, TP, PC-TS, IW, FR(i), TE
Base/plinth component consisting of one trim panel and two pre-configured corner pieces. In 200 mm high base/plinth components, one trim panel is divided into two for cable entry.

Material:
Sheet steel, spray-finished
Cover caps plastic RAL 9005/7035

Supply includes:
1 set =
3 base/plinth components, 4 cover caps, 4 screws and captive nuts M12 for mounting on the enclosure.

Accessories:

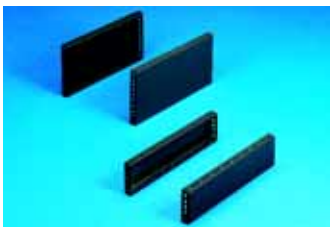
Base mounting plate SO 2817.000, see page 896.
Filter mat for trim panel, vented, see page 898.

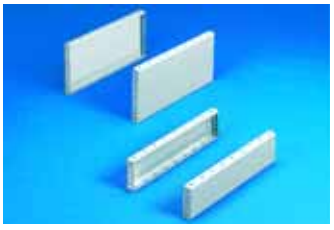
Detailed drawing, see page 894.

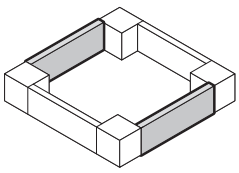
German patent no. 198 60 408

For enclosure width mm	Design	Colour		Model No. TS	
		RAL 7022	RAL 7035	100 mm high	200 mm high
300	Solid	–	■	**8601.905**	**8602.905**
	Solid	■	–	**8601.915**	**8602.915**
400	Solid	■	–	**8601.400**	**8602.400**
500	Solid	■	–	**8601.500**	**8602.500**
600	Solid	■	–	**8601.600**	**8602.600**
	Solid	–	■	**8601.605**[1]	**8602.605**
	Vented	–	■	**7825.601**[2]	**–**
	Vented with designer cover	–	■	**7825.603**	**–**
800	Solid	■	–	**8601.800**	**8602.800**
	Solid	–	■	**8601.805**[3]	**8602.805**
	Vented	–	■	**7825.801**[4]	**–**
	Vented with designer cover	–	■	**7825.803**	**–**
850	Solid	■	–	**8601.850**	**8602.850**
1000	Solid	■	–	**8601.000**	**8602.000**
1100	Solid	■	–	**8601.300**	**8602.100**
1200	Solid	■	–	**8601.200**	**8602.200**
1600	Solid	■	–	**8601.920**	**8602.920**

[1] Variant in RAL 9005: TS 8601.602
[2] Variant in RAL 9005: DK 7825.605
[3] Variant in RAL 9005: TS 8601.802
[4] Variant in RAL 9005: DK 7825.805







Base/plinth trim, side

Sheet steel
for TS, CM, TP, PC-TS, IW, FR(i), TE
For mounting between the base/plinth components. At 200 mm height, two 100 mm base/plinth trims may be used. Base/plinth trim (100 mm high) may be installed rotated through 90° in order to stabilise bayed base/plinth components.

Material:
Sheet steel, spray-finished

Supply includes:
1 set =
2 base/plinth trim panels, including parts for attaching to the base/plinth components.

Also required:

Base/plinth baying brackets TS 8601.100, see page 896,
when mounting base/plinth trim panels rotated through 90°.

Accessories:

Assembly bolts for base/plinth, see page 896.

Detailed drawing, see page 894.

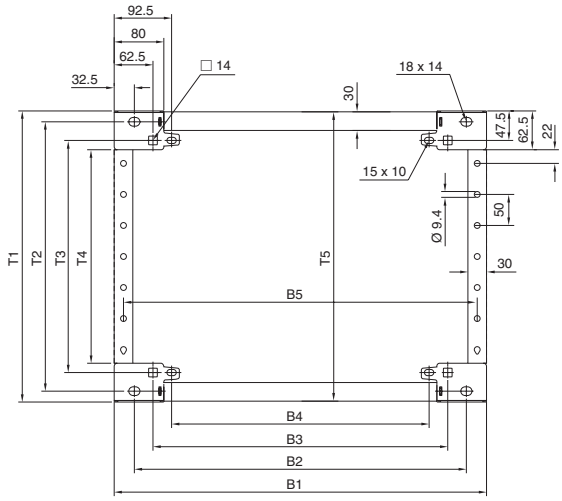
For enclosure depth mm	Colour		Model No. TS	
	RAL 7022	RAL 7035	100 mm high	200 mm high
300	■	–	**8601.030**	**8602.030**
400	■	–	**8601.040**	**8602.040**
500	■	–	**8601.050**	**8602.050**
600	■	–	**8601.060**	**8602.060**
	–	■	**8601.065**	**8602.065**
800	■	–	**8601.080**	**8602.080**
	–	■	**8601.085**[1]	**8602.085**
900	–	■	**8601.095**[2]	**8602.095**
1000	–	■	**8601.015**[3]	**8602.015**
1200	–	■	**8601.025**[4]	**8602.025**

[1] Variant in RAL 9005: TS 8601.086
[2] Variant in RAL 9005: TS 8601.092
[3] Variant in RAL 9005: TS 8601.010
[4] Variant in RAL 9005: TS 8601.026

Base/plinth TS

Base/plinth TS

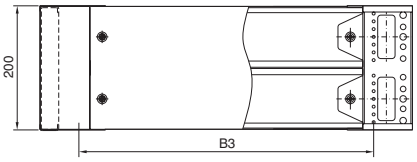
Sheet steel



Plinth, 100 mm high



Plinth, 200 mm high



Description of the hole patterns

B1/T1 = External dimensions

B2/T2 = For screw-fastening in the thread of the enclosure corner piece from below

B3/T3 = For screw-fastening with captive nuts to the enclosure base from below or above

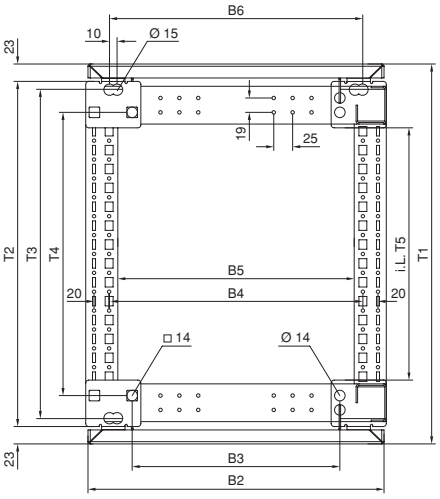
All holes (B2 – B4 / T2 – T4) may be used for screw-fastening to the base.

Base/plinth components front/rear						Page
Width mm	B1	B2	B3	B4	B5	
300	300	235	175	115	270	893
400	400	335	275	215	370	893
500	500	435	375	315	470	893
600	600	535	475	415	570	893
800	800	735	675	615	770	893
850	850	785	725	665	820	893
1000	1000	935	875	815	970	893
1100	1100	1035	975	915	1070	893
1200	1200	1135	1075	1015	1170	893
1600	1600	1535	1475	1415	1570	893

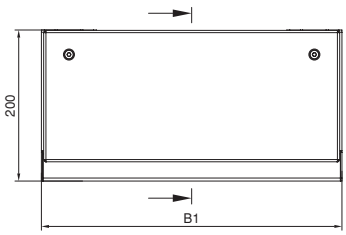
Base/plinth trims, side						Page
Depth mm	T1	T2	T3	T4	T5	
300	269	235	175	144	268	893
400	369	335	275	244	368	893
500	469	435	375	344	468	893
600	569	535	475	444	568	893
800	769	735	675	644	768	893
900	869	835	775	744	868	893
1000	969	935	875	844	968	893
1200	1169	1135	1075	1044	1168	893

Cable chamber

for TS see page 895



i.L. = Clearance width





Enclosure width mm	400	600	800	1000	1200
B1	398	598	798	998	1198
B2	392	592	792	992	1192
B3	275	475	675	875	1075
B4	335	535	735	935	1135
B5	312	512	712	912	1112
B6	335	535	735	935	1135
Enclosure depth mm	500	600	800	–	–
T1	503	603	803	–	–
T2	457	557	757	–	–
T3	435	535	735	–	–
T4	375	475	675	–	–
T5	344	444	644	–	–



Cable chamber

for TS
The front and rear sheet steel trim panels are simply plugged in at the bottom by means of a guide, and are screw-fastened to the frame. Cable chambers can be bayed at the sides if required; they are bayed in the same way as base frames.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts for mounting on the enclosure.

For enclosures		Model No. TS
Width mm	Depth mm	
400	500	**8600.455**
400	600	**8600.465**
600	500	**8600.655**
600	600	**8600.665**
800	500	**8600.855**
800	600	**8600.865**
1200	500	**8600.255**
1200	600	**8600.265**

To order versions in RAL 7032, please add extension .XX0 to the model no.
For primed version, please add extension .XX1 to the model no.
Delivery times available on request.

Accessories:

Side panels for cable chamber,
see page 895.

Detailed drawing,
see page 894.



Side panels

for cable chamber

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosure depth mm	Packs of	Model No. TS
500	2	**8600.510**
600	2	**8600.520**

To order versions in RAL 7032, please add extension .0X0 to the model no.
For primed version, please add extension .XX1 to the model no.
Delivery times available on request.



Transport castors

for base/plinth TS
For locating onto the base/plinth corner piece 100 or 200 mm high by raising or tilting.

Load capacity:
Maximum permissible load per twin castor:
static: 100 kg

Supply includes:
1 set =
4 twin castors,
2 x with, 2 x without locks.

Colour:
RAL 7022

Note:
Base/plinth trims, side, must be fitted in a free-standing position.

Floor clearance mm	Model No. TS
100	**8800.390**

Also required:

Base/plinth trim, side,
see page 893.

Base/plinth TS



Base assembly plate

for base/plinth TS and base/plinth, complete
For fastening the plinth to the floor without moving the enclosure or the bayed enclosure suite. For assembly screws up to 12 mm Ø.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. SO
10	**2817.000**



Fastening bolts

for
- **Base/plinth TS**
- **Base/plinth, complete**
- **Base/plinth, stationary**

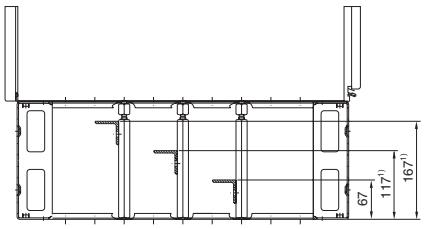
For mounting on base/plinth trim panels, side. The lockable assembly bolt allows the installation of cable clamp rails and standard C rails.

Material:
Hexagon steel, zinc-plated, passivated, width across flats 19 mm

Base/plinth trim panel mm high	Packs of	Model No. SZ
100	10	**2819.000**
200	10	**2819.200**

Accessories:

Cable clamp rail,
see page 1061.
C rail 30/15,
see page 999.



¹⁾ only for height 200 mm





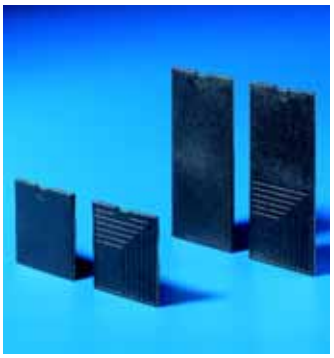
Base/plinth baying brackets

for base/plinth TS
Essential if the trim panels are mounted rotated through 90° for additional stabilisation during the transportation of bayed enclosures.
Additionally required for each trim panel: 2 units.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Screws M8 x 16 mm.

Packs of	Model No. TS
20	**8601.100**



Cover cap

for base/plinth components TS
As a replacement.

Material:
Plastic ABS

Colour:
RAL 9005

For base/plinth height mm	Packs of	Model No. TS
100	4	**8601.130**
200	4	**8601.140**



Version A



Version B



Base/plinth trim

with brush strip for base/plinth TS

The supplement to the modular base/plinth concept (see page 892).
May also be exchanged retrospectively for the front or rear trim panel of the base/plinth components 100 or 200 mm high.

Material:
Sheet steel, spray-finished

Version A:
By rotating the trim panel, the hammer-head strip for cable attachment may optionally be positioned at the top or bottom, sealed all-round for a high level of stability.

Version B:
Open on one side for retrospective mounting if cables have already been inserted.

Version A

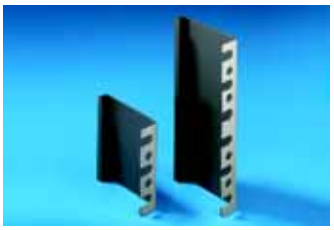
For base/plinth width mm	Height mm	Model No. TS	
		RAL 7022	RAL 7035
600	100	**8601.610**	**8601.615**
800	100	**8601.810**	**8601.815**

Accessories:

Cable tie SZ 2597.000,
see page 1066.

Version B

For base/plinth width mm	Height mm	Model No. TS	
		RAL 7035	RAL 9005
600	100	**7825.607**	**7825.608**
800	100	**7825.807**	**7825.808**



Connecting plinth trim

for base/plinth TS

For covering gaps in the case of bayed back-to-back or corner enclosure suites. Simply push in between the trim panel and the corner piece before tightening the screws.

Material:
Sheet steel

For base/plinth height mm	Colour RAL	Packs of	Model No. TS
100	7022	2	**8601.110**
200	7022	2	**8601.120**
100	7035	2	**8601.115**
200	7035	2	**8601.125**





Base/plinth trim

for base/plinth TS

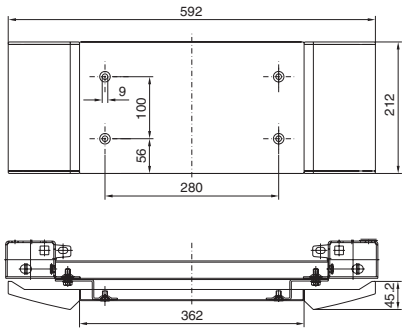
to continue the design of the
- bottom front door of PC enclosures based on TS,
- door of the IW enclosure.

The base/plinth trim is screw-fastened to the corner pieces of the TS base/plinth components from the outside.

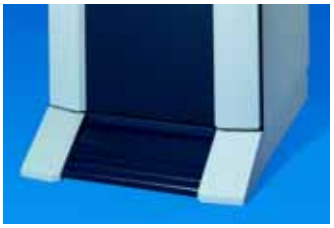
Material:
Sheet steel, spray-finished
Designer trim panels: Extruded aluminium section

Colour:
RAL 7015
Designer trim panels: RAL 7035

For base/plinth width mm	Height mm	Model No. PC
600	200	**8360.920**



Base/plinth TS



Base/plinth, stationary

for PC-TS, IW
Design-coordinated with the enclosures, height 100 mm, with front projection.

Material:
Sheet steel, 2.0 mm

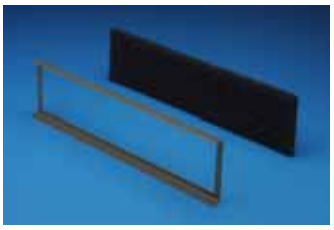
Colour:
RAL 7035
Design component, front: RAL 7015

Supply includes:
1 design component, front
1 base/plinth component, rear
2 base/plinth trim panels, side

For depth mm	Model No. PC
600	**8800.920**

Accessories:

Attachment opportunities for:
- Twin castors PC 4634.500, see page 907,
- Levelling feet PS 4612.000, see page 906,
- Fastening bolts for cable clamp rails SO 2819.000, see page 896,
- Support bracket PS 4183.000, see page 1007.



Filter mat

for
- **Base/plinth component, vented**
- **Base/plinth component, vented, with designer trim panel**

To cover the trim panel in the base/plinth component.
The mounting frame slides into position behind the filter mat in the base/plinth trim panel.
Filter class G3 to DIN EN 779.

Supply includes:
Mounting frame.

For enclosure width mm	Packs of	Model No. DK
600	1	**7561.500**
800	1	**7581.500**

Spare filter mat

Supply includes:
Filter mat without mounting frame for base/plinth trim panels up to 800 mm wide.

	Packs of	Model No. DK
Spare filter mats	5	**7582.500**



Base/plinth components, front and rear

Stainless steel for TS, CM

Material:
Stainless steel 1.4301 (AISI 304)

Surface finish:
Brushed, grain 400

Supply includes:
Assembly parts including 4 screws and captive nuts M12 for mounting on the enclosure.

100 mm high:
2 trim panels front/rear

200 mm high:
2 corner pieces with removable trim panel, 1 trim panel front/rear.

For enclosure width mm	Model No. TS	
	100 mm high	200 mm high
600	**8701.600**	**8702.600**
800	**8701.800**	**8702.800**
1200	**8701.200**	**8702.200**

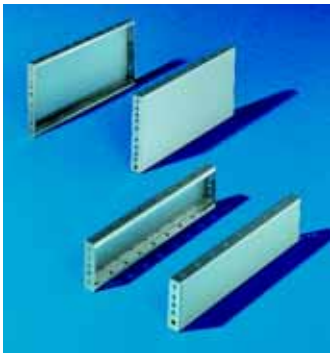
To order enclosures in stainless steel 1.4404 (AISI 316L) please add the extension .X05 to the model no. Delivery times available on request.

Accessories:

Base/plinth trim, modular (perforated plate), see page 899.

Possible alternative:

Supporting structure Hygienic Design, see page 300.



Base/plinth trim, side

Stainless steel for TS, CM

For mounting between the base/plinth components. At 200 mm height, two 100 mm base/plinth trims may be used.
Base/plinth trim (100 mm high) may be installed rotated through 90° in order to stabilise bayed base/plinth components.

Material:
Stainless steel 1.4301 (AISI 304)

Surface finish:
Brushed, grain 400

Supply includes:
2 base/plinth trim panels, including parts for attaching to the base/plinth components.

For enclosure depth mm	Model No. TS	
	100 mm high	200 mm high
400	**8701.040**	**8702.040**
500	**8701.050**	**8702.050**
600	**8701.060**	**8702.060**

To order enclosures in stainless steel 1.4404 (AISI 316L) please add the extension .X05 to the model no. Delivery times available on request.

Also required:

Base/plinth baying brackets TS 8601.100, see page 896, when mounting base/plinth trim panels rotated through 90°.

Accessories:

Assembly bolts for base/plinth, see page 896.
Levelling feet PS 4612.000, see page 906.

1 Base/plinth components front/rear
2 Base/plinth trim panel, side
3 Base/plinth corner piece
4 Trim panel, removable

Description of the hole patterns

B/T =
Enclosure dimensions

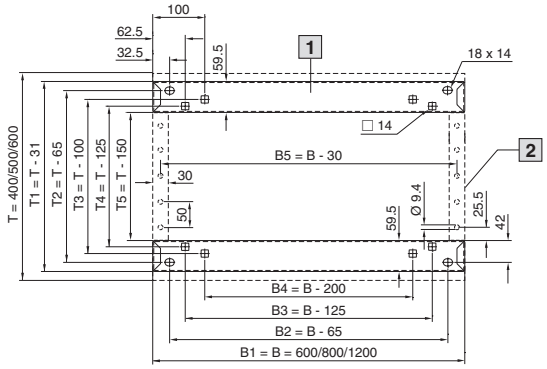
B1/T1 =
External dimension

B2/T2 =
For screw-fastening in the thread of the enclosure corner piece from below

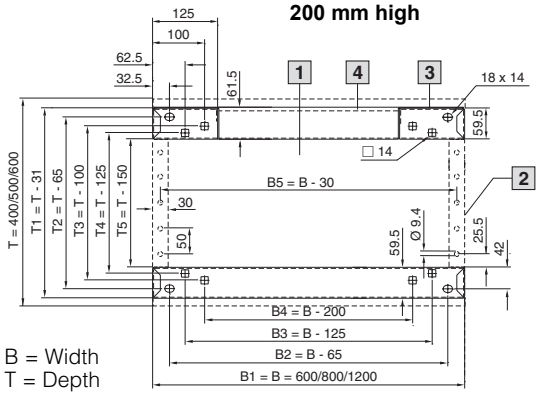
B3/T3 =
For screw-fastening with captive nuts to the enclosure base from below or above

All holes (B2 – B4/T2 – T4) may be used for screw-fastening to the base.

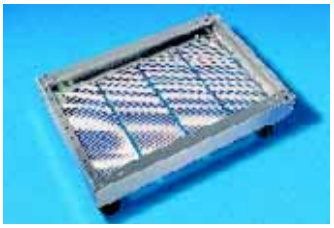
100 mm high



200 mm high



B = Width
T = Depth



Base/plinth trim, modular

for base/plinth TS and base/plinth, complete, stainless steel

For cable routing in the stainless steel base/plinth, e.g. if levelling feet SO 2890.000 or SO 2890.000, see page 903, are used.
Width: 175 mm.

Material:
Stainless steel 1.4301 (AISI 304)

Supply includes:
4 base/plinth trim panels.

For enclosure depth mm	No. of base/plinth trims required for base/plinth width[1]				Model No. SO
	600 mm	800 mm	1000 mm	1200 mm	
400	3	4	5	6	**2907.000**
500	3	4	5	6	**2908.000**
600	3	4	5	6	**2913.000**

[1] If the surface is to be completely sealed.

Accessories:

Cable tie SZ 2597.000, see page 1066.

Base/plinth TS

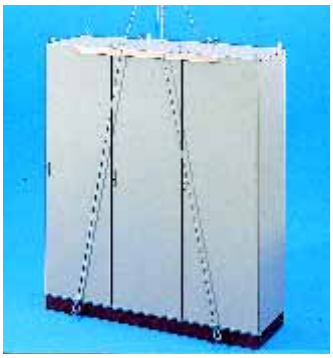


Transport plinth

for TS
For the transportation of heavy, bayed enclosure suites. Available in 200 mm increments from 2 to 5 m.
Transport plinths can have 2 tubes welded to receive cross-bars for transportation.
Variable punchings to suit all enclosure widths of 600 mm and above.

Surface finish:
Primed in reddish-brown rust-inhibiting paint, optionally spray-finished.

Note:
Please state the required width and depth of the enclosure suite when ordering.



For mounting on the TS base frame

Transport plinth depth = enclosure depth – 31 mm			
Colour	Packs of	Model No. SO	
		With transport tubes	Without transport tubes
Primed, reddish-brown rust-inhibiting paint	1	**1228.010**	**1228.000**
Similar to RAL 7022	1	**1228.110**	**1228.100**
Similar to RAL 7032	1	**1228.210**	**1228.200**
Similar to RAL 7035	1	**1228.310**	**1228.300**

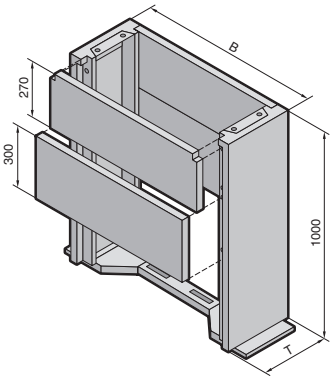
Delivery times available on request.

For mounting on the TS corner piece

Transport plinth depth = enclosure depth			
Colour	Packs of	Model No. SO	
		With transport tubes	Without transport tubes
Primed, reddish-brown rust-inhibiting paint	1	**1228.015**	**1228.005**
Similar to RAL 7022	1	**1228.115**	**1228.105**
Similar to RAL 7032	1	**1228.215**	**1228.205**
Similar to RAL 7035	1	**1228.315**	**1228.305**

Delivery times available on request.





Concrete base/plinth

for Outdoor enclosures
The base/plinth is made from pre-cast concrete sections which are easily fitted in situ. Front/rear base/plinth plate screw-fastened from the inside may be removed for servicing purposes.
Overall height: approx. 1000 mm,
excavation depth: approx. 700 mm.

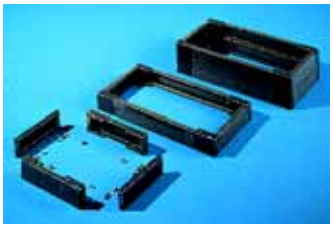
Material/Surface finish:
Light concrete, untreated

Supply includes:
1 base plate,
2 side parts,
2 divided base/plinth plates,
including assembly parts and assembly screws for enclosure configuration.

Note:
Base/plinth trim panel screw-fastened from the outside available on request.

For enclosures/housings		Model No. CS
Width (B) mm	Depth (T) mm	
CS modular and basic enclosures		
600	400	**9765.182**
600	500	**9765.082**
600	600	**9765.083**
800	400	**9765.088**
800	500	**9765.084**
800	600	**9765.085**
1200	400	**9765.089**
1200	500	**9765.086**
1200	600	**9765.087**
Toptec CR		
600	600	**9765.166**
800	600	**9765.186**

Delivery times available on request.
Other sizes available on request.



Base/plinth, complete

Sheet steel
for AE, AP, ES, PC-ES
consisting of:
Trim panels at the front and rear with fitted corner pieces and side trim panels.

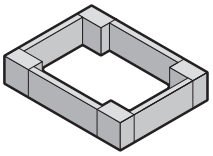
Material:
Sheet steel, spray-finished

Colour:
RAL 7022

Supply includes:
Assembly parts including 4 screws and captive nuts M12 for mounting on the enclosure.

100 mm high:
4 corner pieces, 2 trim panels front/rear,
2 trim panels side.

200 mm high:
4 corner pieces, 1 trim panel front/rear x 200 mm,
2 trim panels front/rear x 100 mm,
4 trim panels side.



Base/plinth for ES-PC/AP universal console

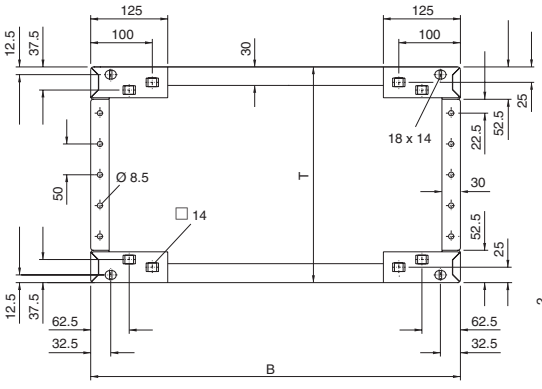
For enclosures/consoles		Base/plinth depth (T) mm	Model No. SO	
Width (B) mm	Depth mm		100 mm high	200 mm high
600	400	350	**2804.200**	**2805.200**
600	500	450	**2807.200**	**2808.200**
600	600	550	**2813.200**	**2814.200**
600	800	750	**2846.200**	**2847.200**
800	400	350	**2823.200**	**2824.200**
800	500	450	**2829.200**	**2830.200**
1000	400	350	**2909.200**	**2910.200**
1200	400	350	**2836.200**	**2837.200**
1200	500	450	**2839.200**	**2840.200**
1600	400	350	**2905.200**	**2906.200**
1800	500	450	**2903.200**	**2904.200**

Base/plinth for AE, AP one-piece console

For enclosures/consoles		Base/plinth depth (T) mm	Model No. SO	
Width (B) mm	Depth mm		100 mm high	200 mm high
600	300	279	**2816.200**	**2826.200**
600	400	370	**2911.200**	**2912.200**
800	300	279	**2818.200**	**2828.200**
800	400	370	**2901.200**	**2902.200**
1000	300	279	**2801.200**	**2802.200**
1000	400	370	**2891.200**	**2892.200**
1200	400	370	**2921.200**	**2922.200**

Accessories:

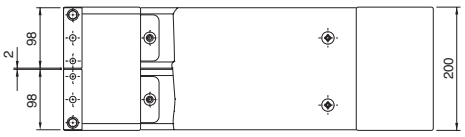
Assembly bolts for base/plinth,
see page 896.
Base mounting plate,
see page 896.



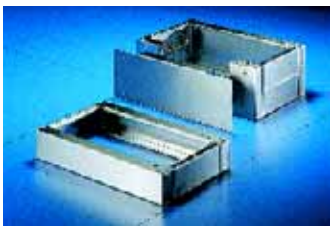
Plinth, 100 mm high



Plinth, 200 mm high



Base/plinth

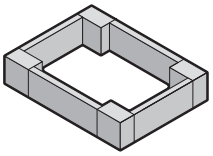


Base/plinth, complete

Stainless steel
for ES, PC-ES, AP one-piece console

Material:
Stainless steel 1.4301 (AISI 304)

Surface finish:
Brushed



Supply includes:
Assembly parts including 4 screws and captive nuts M12 for mounting on the enclosure.

100 mm high:
2 trim panels front/rear,
2 trim panels side.

200 mm high:
2 corner pieces with removable trim panel,
1 trim panel front/rear, 4 trim panels side.

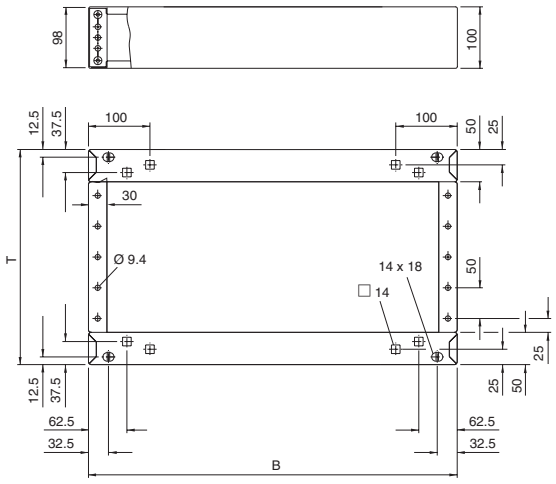
Accessories:

Levelling feet,
see page 903.
Base/plinth trim, modular (perforated plate),
see page 899.

For enclosures/consoles		Model No. SO	
Width mm	Depth mm	100 mm high	200 mm high
600	400	**2865.000**	**2875.000**
600	500	**2868.000**	**2876.000**
600	600	**2855.000**	**2877.000**
800	400	**2869.000**	**2878.000**
800	500	**2866.000**	**2879.000**
800	600	**2856.000**	**2880.000**
1000	400	**2867.000**	**2885.000**
1200	400	**2870.000**	**2886.000**
1200	500	**2860.000**	**2887.000**

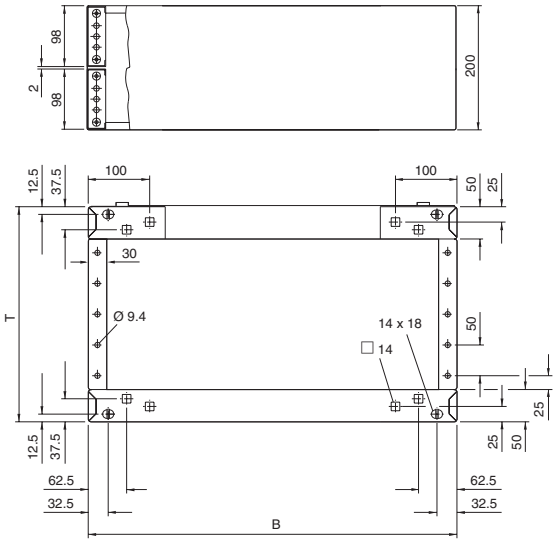
To order enclosures in stainless steel 1.4404 (AISI 316L) please add the extension .500 to the model no.
Delivery times available on request.

Plinth, 100 mm high

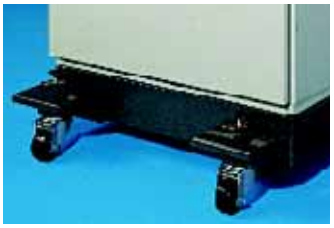


T = Enclosure depth – 50 mm
B = Enclosure width

Plinth, 200 mm high



T = Enclosure depth – 50 mm
B = Enclosure width



Transport castors

for base/plinth, complete
For locating onto the base/plinth corner piece 100 or 200 mm high by raising or tilting.

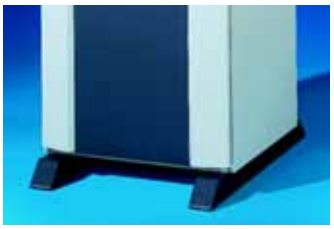
Load capacity:
Maximum permissible static load:
100 kg per twin castor

Supply includes:
1 set =
4 twin castors,
2 x with, 2 x without locks.

Colour:
RAL 7022

Floor clearance mm	Model No. PS
60	**4570.000**





Cross-member

for TS, CM, TP, PC, IW, ES, AP adjustable

To increase stability, the cross-member is positioned 138 mm above the base frame of the enclosure at the front and rear. For deeper enclosures, the rear part may be extended and screw-fastened again. For screw-fastening to the floor and enclosure with mounting hole at the sides, front and rear. The castors and levelling feet may be secured to the welded nuts M12.

Material:
Sheet steel, spray-finished

Colour:
RAL 7015

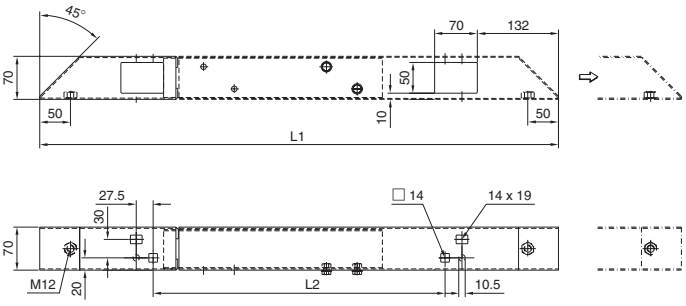
Note:
For mobile use, the cross-member must be screw-fastened twice in the corners of the enclosure.

For	Enclosure depth mm	L1	L2	Packs of	Model No. TS/AP
TS, CM, TP, PC, IW, ES, AP Universal console	400	644	275	2	**8601.450**
	500	744	375		
	600	844	475	2	**8601.680**
	800	1044	675		
AP one-piece console	400	634	320	2	**2697.450**
	500	734	390		

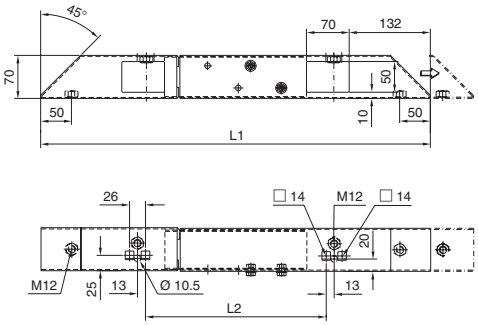
Accessories:

Mounting options for
- Twin castors PC 4634.500, see page 907.
- Levelling feet PS 4612.000, see page 906.

TS 8601.450, TS 8601.680



AP 2697.450





Cast feet

For IW

For secure siting of
- Enclosure for tower PC

or
- Other own assemblies

Depth 700 mm.

Material:
Cast aluminium

Colour:
RAL 7035

Supply includes:
Assembly parts.

Packs of	Model No. IW
2	**6902.920**

Accessories:

Base mount CP 6147.000, see page 291.
Twin castors, see page 907.



Levelling feet

For direct mounting underneath the base/plinth TS and the base/plinth, complete.
For unhindered access e.g. when cleaning the floor, and to compensate for floor irregularities.

Load capacity:
Maximum permissible static load:
400 kg per levelling foot

Adjustment range:
M12: 55 mm – 125 mm
M16: 45 mm – 120 mm

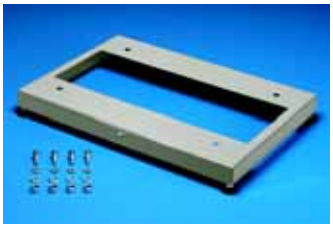
Material:
Stainless steel 1.4301 (AISI 304)

Thread	Packs of	Model No. SO
M12	4	**2889.000**
M16	4	**2890.000**

Possible alternative:

Levelling feet Hygienic Design, see page 301.

Base/plinth



Base/plinth

for EL

The base/plinth can be fitted onto all EL enclosures with a centre part depth of 316 or 416 mm. Holes must be made for attaching to the centre part. A drilling template is supplied. These may additionally be fitted with castors for use as a mobile base/plinth.

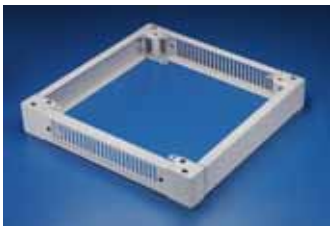
Material:
Sheet steel

Colour:
RAL 7044

Supply includes:
4 levelling feet and assembly parts.

For centre part depth mm	Packs of	Height mm	Model No. DK/VR
316	1	50	**7505.300**[1)]
416	1	50	**7505.400**[1)]
Additional castors for base/plinth	4	50	**3805.500**

[1)] Delivery times available on request.





Base/plinth, vented

for TE 7000

For easier cable routing between bayed enclosure systems or as additional storage space beneath the enclosure, this vented complete base/plinth is easily screwed underneath. The trim panels may be removed on all sides to allow cable routing in all directions.

Base/plinth height:
100 mm

Material:
Sheet steel, spray-finished

Colour:
RAL 7035/9005

Supply includes:
1 base/plinth, vented, assembly parts.

For enclosures		Colour RAL	Model No. TS
Width mm	Depth mm		
600	1000	9005	**7000.686**
800	1000	9005	**7000.687**
600	600	7035	**7000.690**
600	800	7035	**7000.691**
600	1000	7035	**7000.692**
800	600	7035	**7000.693**
800	800	7035	**7000.694**
800	1000	7035	**7000.695**

Accessories:

Filter mat for base/plinth, vented, 600 mm wide DK 7561.500 and 800 mm wide DK 7581.500, see page 898.



Base/plinth trim, solid

for base/plinth, vented

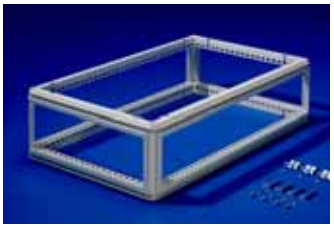
To be used in exchange for the existing trim panel.
If a solid design is required for the base/plinth for TE, the vented front and rear trim panels should be exchanged for solid trim panels.

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Supply includes:
2 base/plinth trim panels, assembly parts.

For enclosure width mm	Colour RAL	Model No. TS
600	7035	**7000.696**
800	7035	**7000.698**





Under-floor frame

for DK-TS, FR(i)
For siting the enclosure on a false floor when heavy equipment is installed.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Baying connector and base mounting bracket.

Width mm	Height mm	Depth mm	Model No. DK
600	400	1000	**7855.340**
800	400	1000	**7855.342**

Delivery times available on request.

Note:
Other sizes available on request.



Stabiliser bracket

for base/plinth TS
The stabiliser bracket may be retrospectively screw-fastened to the outside of the base/plinth corner pieces.

Load capacity:
Up to a maximum of 80 kg static load.

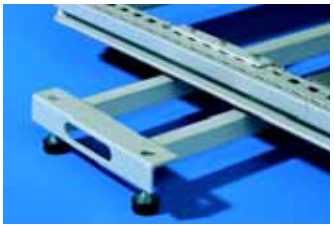
Material:
Sheet steel, spray-finished

Colour:
RAL 7035, warning markings RAL 2002

Supply includes:
Assembly parts.

Packs of	Model No. DK
2	**7825.150**





Stabiliser

for server racks DK-TS, FR(i)
The pull-out stabiliser is quickly and easily retrofitted to the lower frame of the server racks and only extended when necessary. May be used in combination with levelling feet and/or transport kit for DK-TS (DK 7825.900), see page 908.

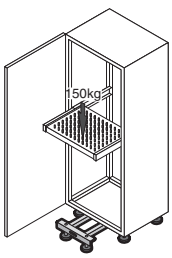
Load capacity:
Up to a maximum of 150 kg static load.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Enclosure depth mm	Model No. DK
900	**7825.200**
1000	**7825.250**
1200	**7825.260**

Note:
The stabiliser cannot be used together with base plates, base frames or base/plinths.
Combined use with the divided base frame (DK 7825.341 – DK 7825.345), see page 910, is supported.



Base



Levelling feet

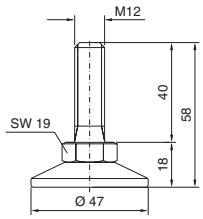
18 – 43 mm high
To compensate for height differences with floor irregularities. Thread length 40 mm.
Assembly thread M12.

Maximum permissible static load:
approx. 300 kg per levelling foot.

For:
- Baying system TS 8
- PC enclosure system
- Pedestal base plate CP 6137.035 – CP 6137.535
- Pedestal CP 6141.XXX
- Industrial workstations
- flexRack(i)

Packs of	Model No. PS
4	**4612.000**

Also required:
For mounting on the TS base/plinth:
Base/plinth adaptor TS 8800.220, see page 908.





Levelling feet

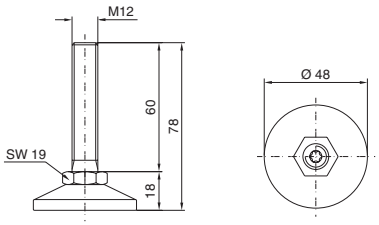
18 – 63 mm high, with hex socket for baying system TS 8, FR(i)
To compensate for floor irregularities.
Particularly in confined spaces, adjustments can be made quickly and easily from the enclosure interior.

Mounting thread: M12
Hex socket: 6 mm
Thread length: 60 mm

Maximum permissible static load:
300 kg/levelling foot.

Packs of	Model No. DK
4	**7493.100**

Also required:
For mounting on the TS base/plinth:
Base/plinth adaptor TS 8800.220,
see page 908.





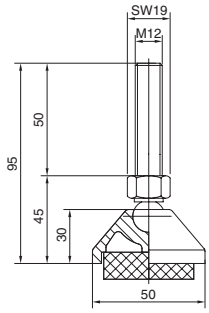
Levelling feet

with vibration dampening
For vibration insulation of enclosures and to compensate for floor irregularities.
The levelling foot is comprised of a disc of reinforced polyamide and an M12 screw, zinc-plated, with ball joint pendulum plus anti-slip and insulating plate for buffering.
The insulating plate is resistant to water, mineral oils, petrol, alkaline and acid solutions, salts, soap lye and detergents.
Also suitable for special applications such as chemical and laboratory environments.

Thread length: 50 mm

Maximum permissible static load:
150/300 kg per levelling foot.

Maximum permissible static load per levelling foot	Packs of	Model No. DK
150 kg	4	**7493.210**
300 kg	4	**7493.230**





Levelling feet

for Data Rack
To compensate for height differences in the event of floor unevenness.
The levelling feet are attached into the die-cast zinc feet of the base/plinth.

Supply includes:
4 levelling feet M12,
levelling range 40 mm.

Packs of	Model No. DK
4	**7493.000**



Levelling feet

for FlatBox, TE
M10 x 20 mm

For fastening onto the enclosure base when used as a floor-standing or desktop enclosure.
Width across flats 17, mounting thread multi-tooth 30.

Packs of	Model No. DK
4	**7507.740**



Levelling feet

85 – 115 mm high
For mounting on TS, ES and PC enclosures, for easier floor cleaning and to compensate for floor irregularities ±15 mm.
Height 100 mm.

Maximum permissible static load:
350 kg per levelling foot.

Material:
Feet: Nickel-plated brass
Threaded bolts and mounting plates:
Stainless steel 1.4301 (AISI 304)

Supply includes:
Assembly parts to the enclosure.

Packs of	Model No. SO
4	**2859.000**

Possible alternative:

Levelling feet Hygienic Design,
see page 301.



1



2



3



4

Twin castors

Mounting thread M12 x 20.

Maximum permissible static load (per castor) kg	Floor clearance mm	Lock	Packs of		Colour	Model No.
40	50	4 without	1 set	1	Black	**4611.000**
75	85	2 with, 2 without	1 set	2	Black with grey running surface	**6148.000**
120	125	2 with, 2 without	1 set	3	Black	**4634.500**[1)]
				4		**7495.000**

[1)] With metal enclosure

For:
- Baying system TS 8
- PC enclosure system
- Pedestal base plate CP 6137.035 – CP 6137.535
- Pedestal CP 6141.XXX
- TopConsole pedestals
- Industrial workstations
- flexRack(i)
- Data Rack

Also required:

For mounting on the TS base/plinth:
Base/plinth adaptor for twin castors TS 8800.290,
see page 908.

Base



Transport castors

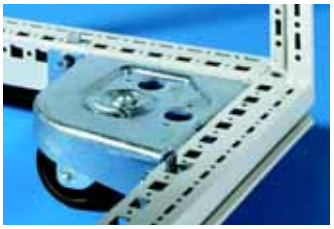
for TE

For easy transportation between sites. The castors may be screw-fastened in the corner areas within the base frame in place of the levelling feet. Ground clearance: 58 mm, mounting thread M10 x 20

Permissible static load:
300 kg per enclosure

Packs of	Model No. TE
1 set	7000.672

Supply includes:
1 set = 4 baying clamps, including assembly parts.



Transport kit

for DK-TS

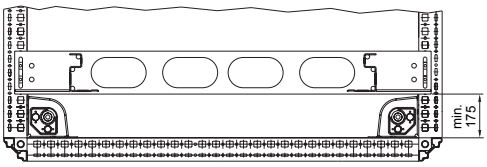
For convenient transportation of the configured network enclosures to their final installation site, or as a mobile rack. Ground clearance approx. 40 mm.

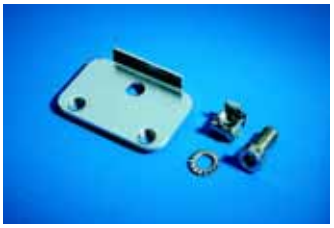
Permissible static load:
750 kg per enclosure

Supply includes:
1 set =
4 castors (2 steerable) including assembly parts.

Packs of	Model No. DK
1 set	7825.900

Note:
Only for enclosures without gland plates or gland plate frames.
For 800 mm wide enclosures with 19″ mounting frame, special installation dimensions must be observed (see drawing).





Base/plinth adaptor

for levelling feet

Connection component for fastening M12 levelling feet PS 4612.000 to the TS base/plinth.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. TS
4	8800.220

Also required:

Levelling feet PS 4612.000,
see page 906.



Base/plinth adaptor

for twin castors

Connection component for mounting twin castors to the TS base/plinth.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. TS
4	8800.290

Also required:

Base/plinth trim panels, side,
see page 893,
wherever a twin castor is fitted.



Width divider

Divides 1200 mm wide TS enclosures into two halves.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
1 set =
1 bracket for right/left,
2 compensating plates for the top,
mounting accessories.

Packs of	Model No. TS
1 set	**8800.200**

Also required:

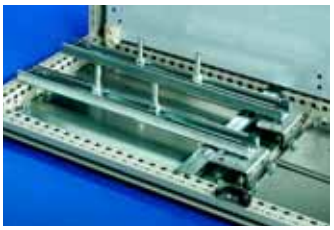
Depending on the installation situation:
TS punched rail 18 x 38 mm,
see page 996.
PS punched section without mounting flange 23 x 73 mm,
see page 998.



1st mounting situation:
Two mounting plates side by side.
Two mounting plates (from 600 mm wide enclosures) in a 1200 mm wide enclosure permit independent positioning and easy handling.

Also required:

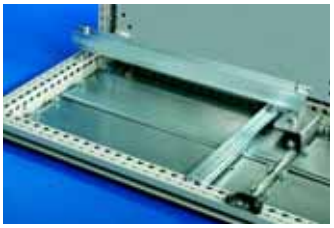
In accordance with the enclosure depth:
4 TS punched rails 18 x 38 mm, bottom,
see page 996,
1 PS punched section 23 x 73 mm, top,
see page 998.



2nd mounting situation:
System support rails, fitted on the left.
Whilst heavy installed equipment rests on the system support rails, the remaining floor space is free, e.g. for unhindered cable entry.

Also required:

2 system support rails PS 4361.000,
see page 1000.
1 TS punched rail 18 x 38 mm in accordance with the enclosure depth (included with the supply of the standard enclosure).



3rd mounting situation:
Cable clamp rail, installed on the left.
With 1200 mm wide enclosures, the width divider allows cable entry and cable clamping to be arranged differently on the left and right of the enclosure.

Also required:

1 cable clamp rail PS 4191.000,
see page 1061.
1 TS punched rail 18 x 38 mm in accordance with the enclosure depth (included with the supply of the standard enclosure).



Base mounting bracket

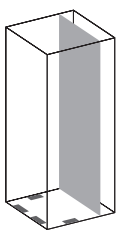
for TS, ES, AR universal console, FR(i)
For anchoring the enclosure at any position of the base frame, particularly in cases where the existing holes in the frame or base tray cannot be used due to the installed equipment or because the substructure prevents them from being used.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. TS
4	**8800.210**

Note:
Additional holes in the base are required for mounting.





Base





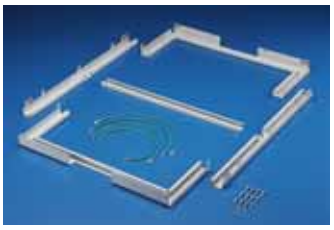
Reinforcement bracket

For TS, ES, AP universal console
For use as an additional stabiliser to the clamping straps when populated enclosures are screw-fastened via the base tray to the base/plinth or pallet for transportation purposes.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
4	**8800.830**





Base frame, divided

for server racks DK-TS, FR(i)
For retro-fitting a base frame.
Particularly for the use of gland plates or base modules within TS server enclosures, it is necessary to fit this base frame first in order to accommodate the base elements. The divided design also allows it to be retro-fitted. Suitable for combining with the pull-out stabiliser.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Packs of 1 set
Frame elements,
assembly parts.

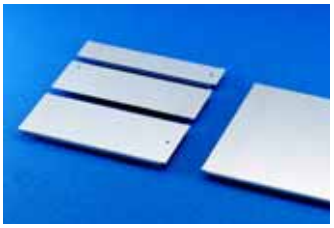
For enclosures		Model No. DK
Width mm	Depth mm	
600	900	**7825.341**
600	1000	**7825.342**
600	1200	**7825.343**
800	1000	**7825.344**
800	1200	**7825.345**

Note:
Transport kit:
For optional use of the transport kit DK 7825.900 (see page 908) the front and rear frame elements may be temporarily removed and then re-fitted to the transport.

Stabiliser:
see page 905.

Accessories:

Multi-piece gland plate,
see page 913.



Gland plate

for CM, TP

Select suitable gland plates depending on the application. The following examples illustrate how individually cable entry may be structured. Potential equalisation is provided via assembly components and earthing points.

Material:
Sheet steel, zinc-plated, passivated

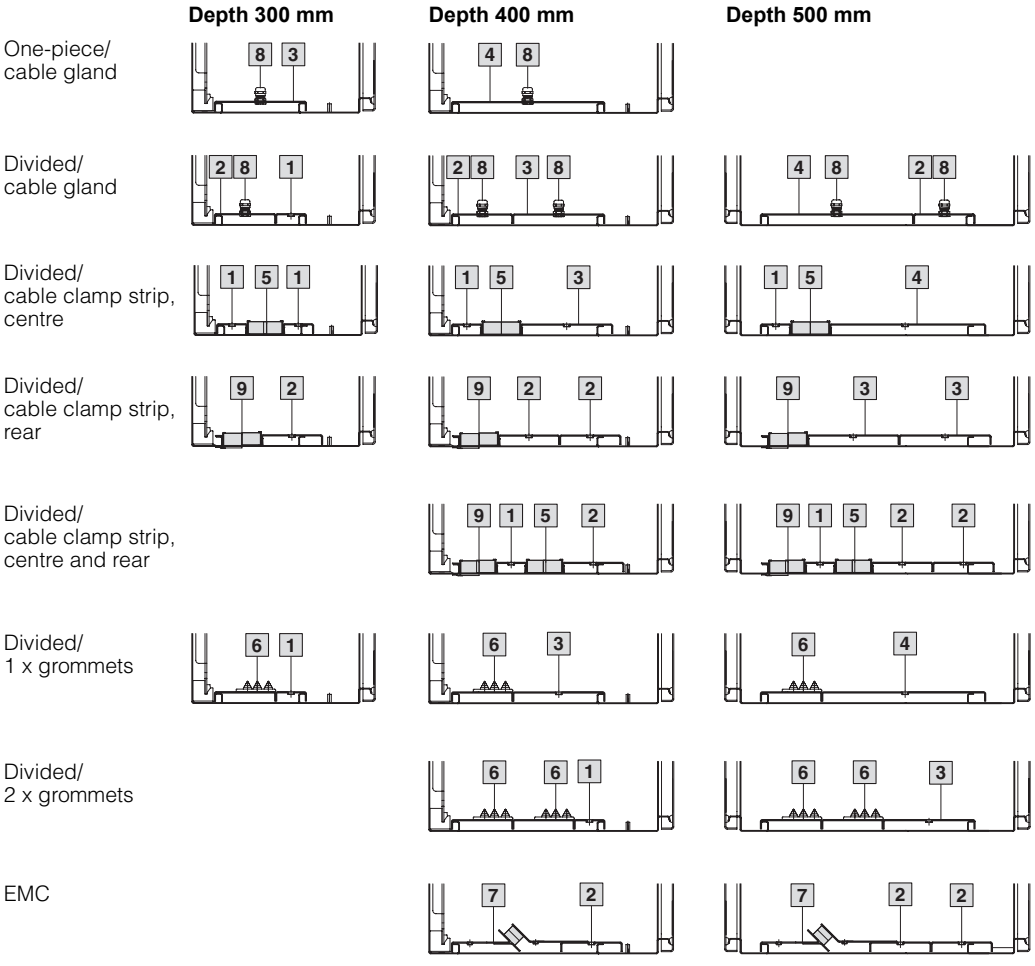
Protection category:
IP 55 to EN 60 529/09.2000, subject to correct mounting.

Supply includes:
1 piece, including assembly parts.

Note:
For greater stability and universal cable entry, the base opening is divided in the width for 1000 and 1600 mm wide enclosures, and is suitable for various configurations.

Design	For enclosure/console depth mm				
	600	800	1000	1200	1600
	Model No. CM				
1	**5001.210**	**5001.211**	**5001.212**	**5001.213**	**5001.233**
2	**5001.214**	**5001.215**	**5001.216**	**5001.217**	**5001.234**
3	**5001.218**	**5001.219**	**5001.220**	**5001.221**	**5001.235**
4	**5001.222**	**5001.223**	**5001.224**	**5001.225**	**5001.236**

Combination options:

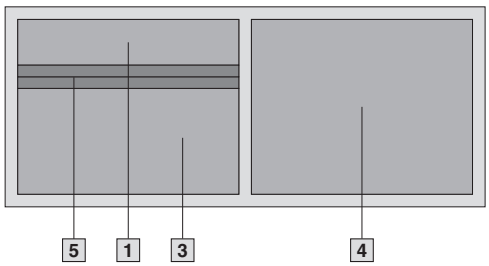


Key:

- 1 Gland plate, depth 50 mm
- 2 Gland plate, depth 100 mm
- 3 Gland plate, depth 150 mm
- 4 Gland plate, depth 250 mm
- 5 Section for cable entry, centre, see page 1046.
- 6 Cable entry plates, depth 100 mm, see page 1045. Cable entry grommets, see page 1046.
- 7 EMC base plate, see page 1032.
- 8 Cable glands, see page 1054.
- 9 Section for cable entry, rear, see page 1047.

Order example:
CM 5120.500
(W/H/D 1000 x 1200 x 400 mm)

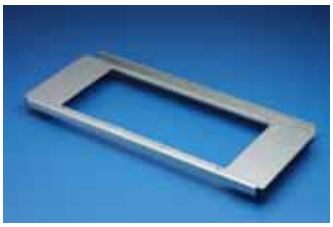
- On left, gland plates divided into two with cable clamp strip
- On right, one-piece gland plate

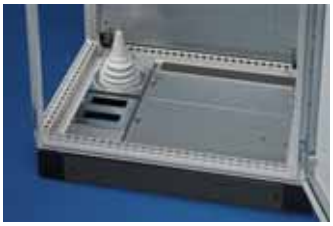


You will need:

- 5 2 sections for cable entry, centre, TS 8802.100, see page 1046. (packs of 2 sets)
- 1 1 gland plate, depth 50 mm, 5001.212
- 3 1 gland plate, depth 150 mm, 5001.220
- 4 1 gland plate, depth 250 mm, 5001.224

Base





Gland plate with sealing bar

for TS, CM, TP

Can be installed in:
- TS in depth and width
- CM, TP in width

Reduces the base opening by 200 mm.
For example, a gland plate with sealing bar for large supply cables can be mounted at the side in the enclosure depth with the usual partition in the width (200 mm smaller than the enclosure width) adjacent to it, above the standard gland plates.

Material:
Sheet steel

Surface finish:
Zinc-plated, passivated

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
Assembly parts and seals.

For enclosure width/depth mm	For module plates, divided	Packs of	Model No. CM
500	2	1	**5001.230**
600	2	1	**5001.231**
800	3	1	**5001.232**

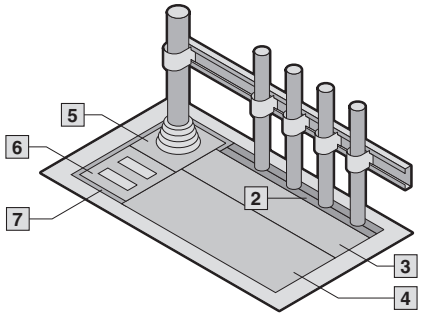
Accessories:

CM gland plate,
see page 911.
Section for cable entry, rear,
see page 1047.
Section for cable entry, centre,
see page 1046.
EMC gland plate,
see page 1032.
Cable glands,
see page 1054.

Also required:

Module plates,
see page 923.
Module plates, divided,
see page 924.

TS ordering example:
W 800 x D 600 mm



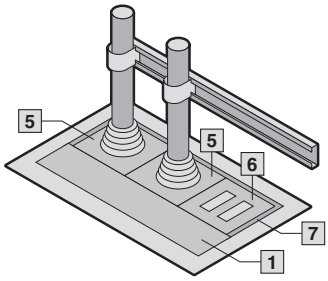
For 600 mm enclosure depth:

- 7 Gland plate with sealing bar CM 5001.231
- 5 Module plate, divided with grommet
- 6 Module plate, divided with 16- or 24-pole cut-outs

For reducing the enclosure width by 200 mm down to 600 mm:

- 2 Section for cable entry, centre
- 3 CM gland plate, depth 150 mm
- 4 CM gland plate, depth 250 mm

CM ordering example:
W 800 x D 400 mm



For 800 mm enclosure width:

- 7 Gland plate with sealing bar CM 5001.232
- 5 Module plate, divided with grommet
- 6 Module plate, divided with 16- or 24-pole cut-outs
- 1 CM gland plate, depth 50 mm



Clips

for gland plates

As replacement and for additional gland plate attachments in TS, CM, TP.

Material:
Sheet steel

Surface finish:
Zinc-plated, passivated

Packs of	Model No. TS
50	**8800.075**



Trim panel

for CM
To conceal the entire base opening.

Note:
May be used as a cover in enclosures that are rotated through 180° (available on request).

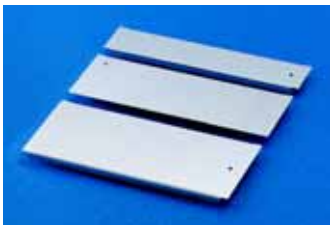
Material:
Sheet steel

Colour:
Textured RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
Assembly parts.

For enclosure		Model No. CM
W mm	D mm	
600	300	**5001.100**
800		**5001.110**
1000		**5001.120**
600	400	**5001.130**
800		**5001.140**
1000		**5001.150**
1200		**5001.160**



Gland plate, multi-piece

for DK-TS, FR(i)
For optional sealing of the base area.
Any combination of gland plates is supported.
Gland plates including mounting clamps; the additional installation of PE conductors is not required.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Packs of 1 set
Gland plates including sliding plate for cable entry, including sealing tape and assembly parts.

Note:
For the size variant 800 x 800 mm, the gland plate included with the supply of pre-configured network enclosures should be additionally used.

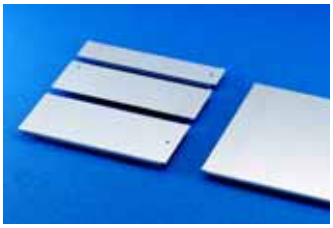
For enclosures		Model No. TS
Width mm	Depth mm	
600	900	**7825.363**
600	1000	**7825.364**
600	1200	**7825.365**
800	800	**7825.382**
800	900	**7825.383**
800	1000	**7825.384**
800	1200	**7825.385**

Also required:

For integration of the gland plates, there must be a base frame inside the enclosure.
Base frame, divided, for retro-fitting,
see page 910.

Accessories:

All gland plates with a depth of 237.5 mm may be exchanged for gland plate modules on request.
Base plate modules,
see page 914.
Base plate modules, vented with airflow regulator,
see page 915.
Base module for cable entry,
see page 915.
Section for cable entry,
see page 1046, 1047.



Gland plates

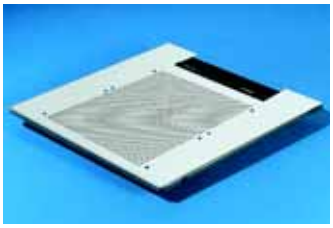
for CS Basic enclosures
For sealing the base opening and for cable entry.

Material:
Aluminium, 2 mm.

Supply includes:
Assembly parts.

For enclosure dimensions		Packs of	Model No. CS	
Width mm	Depth mm		One-piece	Divided
600	400	1 set	**9785.017**	**9785.011**
600	500	1 set	**9785.020**	**9785.014**
800	400	1 set	**9785.018**	**9785.012**
800	500	1 set	**9785.019**	**9785.013**
1200	400	1 set	**2 x 9785.017**	**2 x 9785.011**
1200	500	1 set	**2 x 9785.020**	**2 x 9785.014**

Base



One-piece gland plate

vented, for DK-TS, FR(i)
The slotted gland plate has a cut-out in the rear for cable entry, which is concealed with brush strips.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width mm	Depth mm	
600	600	**7825.660**
600	800	**7825.680**
600	900	**7825.690**
600	1000	**7825.610**
800	600	**7825.860**
800	800	**7825.880**
800	900	**7825.890**
800	1000	**7825.810**
600	1200	**7825.612**
800	1200	**7825.812**

Accessories:

Filter mat for gland plate,
see page 914.

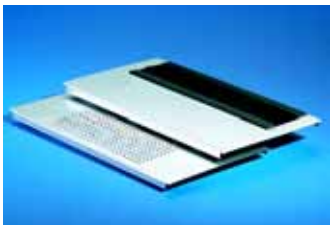


Filter mat

for one-piece gland plate
To conceal the slotted area inside the one-piece vented gland plates for TS, FR(i). The filter mat is easily cut to the required cut-out and conveniently slides into position from the front via the guide rails of the gland plate.

Packs of	Model No. DK
1	**7825.620**

Material:
PPI 35-5/polyamide



Gland plate modules

for DK-TS
For use in the base frame of the network enclosure. Used in exchange for an existing gland plate of the same depth or in conjunction with a multi-piece gland plate for pre-configured TS 8 enclosures, see page 913.

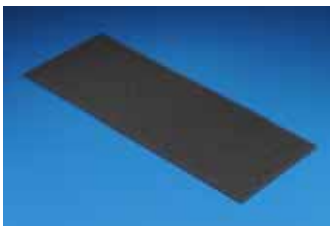
Gland plate depth:
237.5 mm

Design for cable entry:
With brush strip

Vented design:
With filter mat for concealing the holes and nylon tape for securing from the inside or outside.

For enclosure width mm	Model No. DK	
	Design	
	For cable entry	Vented
600	**7825.361**	**7825.360**
800	**7825.381**	**7825.380**

Material:
Sheet steel, zinc-plated, passivated



Spare filter mat

for gland plate modules, vented
To be used in exchange for the existing filter mat.

Material:
PPI 35-15

Supply includes:
2 filter mats, including assembly parts.

Packs of	Model No. DK
2	**7825.350**





Gland plate modules, vented

with airflow regulator
for DK-TS, FR(i)
Allows controlled air routing from the twin base to the installed components. Individually adjustable membranes facilitate control of the air inlet opening between 10 % and 80 % free space. If the rear area of the enclosure is partitioned by base/gland plates, the required volumetric airflow may be individually regulated, and distribution of the airflow inside the twin base adapted to suit the requirements of each enclosure.
The gland plate module may be combined with all gland plates as required. Gland plate module including contacting assembly screws; the additional installation of PE conductors is not required.

Material:
Sheet steel

Supply includes:
Packs of 1
Gland plate module, vented, filter mat, including assembly parts.

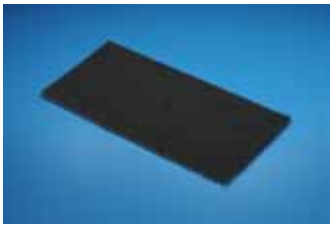
For enclosure width mm	Model No. DK
600	**7825.366**
800	**7825.386**

Also required:

For integration of the gland plates, there must be a base frame inside the enclosure.
Base frame, divided, for retro-fitting,
see page 910.

Accessories:

Spare filter mat,
see page 915.



Spare filter mat

for gland plate modules, vented, with airflow regulator
To be used in exchange for the existing filter mat. Easily exchanged thanks to front operation via guides.

Material:
PPI 35-5/polyamide

Supply includes:
1 filter mat
including mounting accessories.

Packs of	Model No. DK
1	**7825.622**





Base module for cable entry

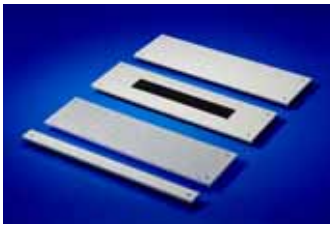
Super-airtight
for DK-TS, FR(i)
The two-part base module has a special cable entry with alternate offset brush strips which guarantee an excellent seal even with large cable quantities. This minimises the possible ingress of inappropriate air or the unintentional escape of extinguisher gas or coolant.
The two-part design allows the module plate to be removed at any time, even when cables have already been inserted, to provide access to the level beneath the rack. Base module with contacting mounting clamps; the additional installation of PE conductors is not required.

For enclosure width mm	Packs of	Model No. DK
600	1	**7825.367**
800	1	**7825.387**

Material:
Module plate: Sheet steel, zinc-plated, passivated
Brush strip: Plastic, UL 94-V0

Supply includes:
Brush strip and assembly parts.

Base



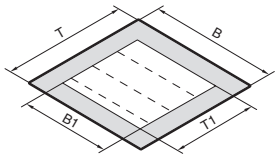
Module plates

for TE
The base area of the TE may be varied as required using the module plates.

Material:
Sheet steel

Supply includes:
Assembly parts.

Design	Width (B) mm	Depth (T) mm	Model No. TE
Solid	450	200	**7526.760**
	450	550	**7526.770**
	450	750	**7526.780**
	650	550	**7526.785**
	650	200	**7526.800**
	650	750	**7526.820**
With brush strip	450	200	**7526.850**
	650	200	**7526.860**
Vented	450	200	**7526.829**
	650	200	**7526.834**
Compensating panel	450	50	**7526.750**
	450	150	**7526.755**
	650	50	**7526.790**
	650	150	**7526.795**



Enclosure dimensions mm	B	600	600	600	800	800	800
	T	600	800	1000	600	800	1000
Base cut-out dimensions mm	B1	450	450	450	650	650	650
	T1	550	750	950	550	750	950



Pressure relief stopper

Especially when enclosures are exposed to changing climatic conditions (e.g. with outdoor siting), condensation may form in sealed enclosures due to pressure differences. The integral sealing membrane largely prevents such pressure differences and hence condensation; additionally, it also prevents the ingress of moisture from the outside.
Installed in vertical surfaces to protect against dirt.

Packs of	Model No. SZ
5	**2459.500**

Technical specifications:
- Air permeability up to 120 litres/hour with a pressure difference of 70 mbar
- Protection category IP 66, 68, 69K
- Connection thread M12 x 1.5
- For fitting in wall thicknesses up to 4 mm

Material:
Polyamide

Colour:
Similar to RAL 9005 (black)

Supply includes:
Lock nut





Condensate discharge

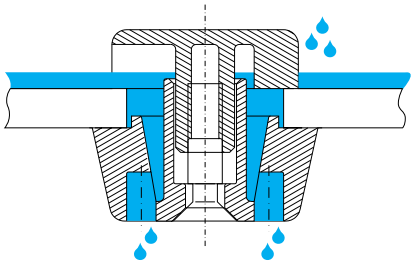
For reliable discharge from the inside and protection against splashes from the outside (labyrinth effect).
A hole diameter of 16 mm is required.
(With AE sheet steel, the holes are already provided in the base).

Material:
Polyamide

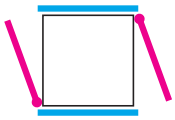
Colour:
Similar to RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000, subject to correct mounting at the bottom.

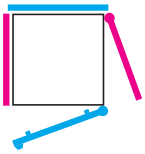
Packs of	Model No. SZ
6	**2459.000**



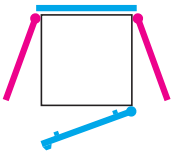
Side panels

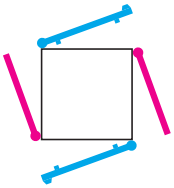


The TS side panel provides new dimensions in convenient access to the TS interior, thanks to the option of hinging.



Important:
Red areas (side panels), hinged and unhinged, must always be opposite one another. Blue areas (doors/rear panels) must always be opposite one another.





Only one surface on each vertical enclosure section may be hinged.



Note:
Climate control side panels with integral cooling module may be retrofitted instead of an enclosure side panel, see page 635.





Automatic potential equalisation

Side panels, screw-fastened, sheet steel

for TS
Easy positioning on the frame with the location aid. Six or eight enclosure panel fasteners with earthing insert ensure automatic potential equalisation and higher EMC protection. Earthing bolts with contact surface are integrated.

Material:
Sheet steel 1.5 mm

Surface finish:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside.

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
Assembly parts.

Note:
Enclosure panel fasteners may optionally be fitted from the inside or outside of the enclosure. Area available for population: External dimension – 100 mm.

Accessories:

Earth straps,
see page 1034.
Enclosure panel fasteners, internal,
see page 918, for heavy installed equipment and high dynamic pressures.

German patent no. 198 01 720

For enclosures		Packs of	Model No. TS
Height mm	Depth mm		
800	600	2	**8173.235**
1000	600	2	**8174.235**
1200	500	2	**8115.235**
1200	600	2	**8170.235**
1200	800	2	**8175.235**
1200	1000	2	**8176.235**
1400	500	2	**8145.235**
1400	600	2	**8146.235**
1400	800	2	**8148.235**
1600	500	2	**8165.235**
1600	600	2	**8166.235**
1600	800	2	**8168.235**
1800	400	2	**8184.235**
1800	500	2	**8185.235**
1800	600	2	**8186.235**
1800	800	2	**8188.235**
1800	900	2	**8189.235**
1800	1000	2	**8180.235**
2000	400	2	**8104.235**
2000	500	2	**8105.235**
2000	600	2	**8106.235**
2000	800	2	**8108.235**
2000	900	2	**8109.235**
2000	1000	2	**8100.235**
2200	600	2	**8126.235**
2200	800	2	**8128.235**
2200	900	2	**8129.235**

For RAL 7032 version, use order extension .200; to order primed version, use extension .300. Delivery times available on request.



Side panels, screw-fastened, stainless steel

for TS
To finish a complete enclosure unit. Easy attachment on the inside vertical enclosure frame member. Earthing inserts ensure automatic potential equalisation and a higher degree of EMC protection. Earth studs with contact surfaces are already included.

Material:
Stainless steel 1.4301 (AISI 304), 1.5 mm

Surface finish:
Brushed, grain 400

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
Assembly parts.

For enclosures		Packs of	Model No. TS
Height mm	Depth mm		
1800	400	2	**8700.840**
1800	500	2	**8700.850**
2000	600	2	**8700.060**

To order enclosures in stainless steel 1.4404 (AISI 316L), use model no. 8705.XXX. Delivery times available on request.

Detailed drawing,
see side panels for modular front design, page 942.

Accessories:

Enclosure panel fasteners, internal,
see page 918, for heavy installed equipment and high dynamic pressures.

Side panels





Side panels, asymmetrical

for TS

The alternative to the standard side panel for improved visual appearance in the event of back-to-back, back-to-side or corner baying. The gap (A) which occurs with standard side panels is reduced to a standard dimension (B), see technical drawing. In the case of the TS 8 corner enclosure, an asymmetrical side panel is included in the supply.
The number of additional asymmetrical side panels required depends on the chosen baying variant.

Material:
Sheet steel, 1.5 mm

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000

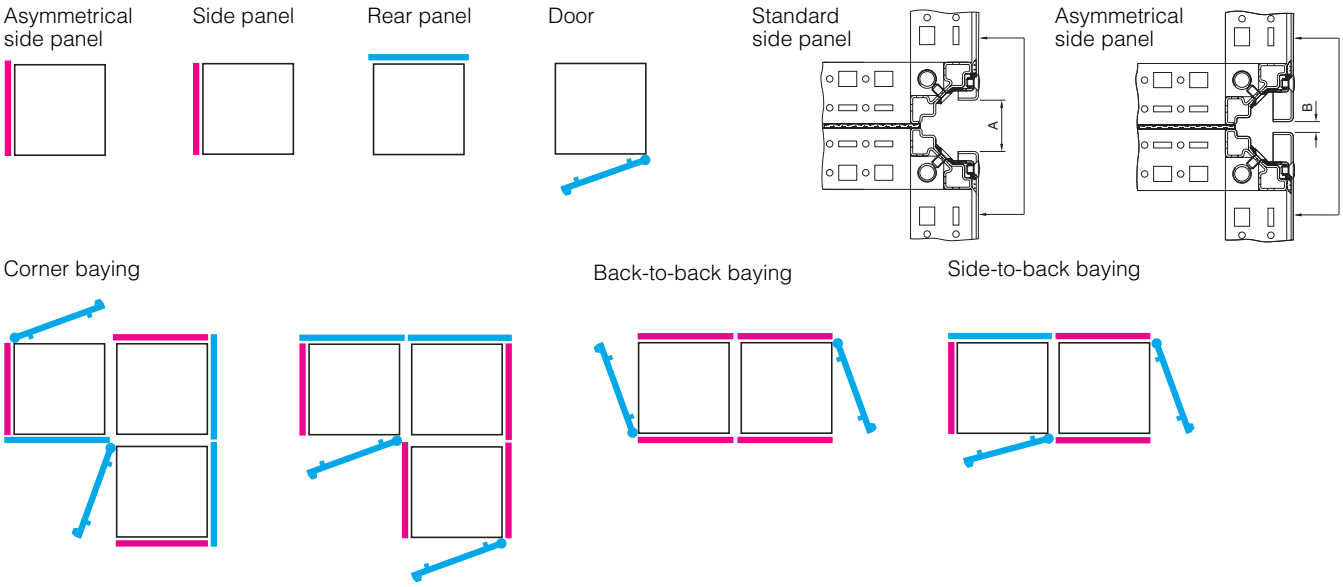
Supply includes:
Assembly parts.

For enclosures		Packs of	Model No. TS
Height mm	Depth mm		
1800	400	2	**8184.500**
1800	500	2	**8185.500**
1800	600	2	**8186.500**
2000	400	2	**8104.500**
2000	500	2	**8105.500**
2000	600	2	**8106.500**
2000	800	2	**8108.500**
2200	600	2	**8126.500**

For RAL 7032 version, use order extension .400; to order primed version, use extension .450. Delivery times available on request.

Accessories:

Enclosure panel holder, internal,
see page 918, for heavy installed equipment and high dynamic pressures.





Enclosure panel fasteners, internal

for TS

for additional fixing of the side or rear panel with heavy installed equipment and high dynamic pressures.

Packs of	Model No. TS
10	**8800.071**





Hinges

For
TS side panel, screw-fastened, sheet steel
TS side panel, asymmetrical

The 180° opening angle allows unhindered access. May be installed optionally from the inside or outside of the enclosure: Simply replace 3 enclosure panel fasteners with hinges. Despite the hinge, the protection category of the enclosure is retained.

Material:
Die-cast zinc

Supply includes:
Assembly screws.

Design	Packs of	Model No. TS
RAL 7035	6	**8800.110**
RAL 7032	6	**8800.010**

German patent no. 298 20 604
US patent no. 6,238,027

Note:
Side panel and door hinges may only be installed on the same enclosure section when using a 180° door hinge (see page 961).





Side panel, plug-type

for TS

Side panel, lockable with 2 options:
- With lock
- Internal latch

Plug-&-play compatibility system – Insert side panel into the base, press upwards and rotate the two toggle locks – there is no faster way of finishing off an entire enclosure suite at the side.

Material:
Sheet steel, powder-coated

Colour:
RAL 7035/RAL 9005

Protection category:
IP 20/NEMA 1

Supply includes:
2 side panels with toggle locks.

Note:
These side panels must be notched centrally in conjunction with punched sections with mounting flange for the external level.

For enclosures		Model No. DK	
Height mm	Depth mm	RAL 7035	RAL 9005
800	600	**7824.086**	–
1000	600	**7824.106**	–
1200	600	**7824.126**	–
1200	800	**7824.128**	–
1200	900	**7824.129**	**7816.129**
1200	1000	**7824.120**	**7816.120**
1400	600	**7824.146**[1)]	–
1400	800	**7824.148**	–
1600	600	**7824.166**	–
1600	800	**7824.168**	–
1800	600	**7824.186**	–
1800	800	**7824.188**	–
1800	900	**7824.189**	–
1800	1000	**7824.180**[1)]	–
2000	600	**7824.206**	–
2000	800	**7824.208**	–
2000	900	**7824.209**	**7816.209**
2000	1000	**7824.200**	**7816.200**[1)]
2200	600	**7824.226**	–
2200	800	**7824.228**	–
2200	900	**7824.229**	**7816.229**[1)]
2200	1000	**7824.220**	**7816.220**[1)]

[1)] Delivery times available on request.

Accessories:

TS punched section with mounting flange, 17 x 73 mm, notched,
see page 994.
Internal latch DK 7824.510,
see page 919.



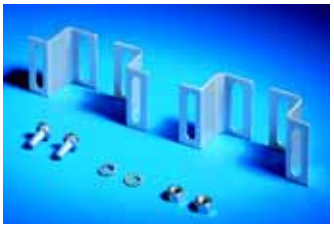
Lock

for side panel, plug-type

With security lock insert no. 3524 E, in exchange for the existing toggle locks.

Supply includes:
4 locks, 2 keys.

Packs of	Model No. DK
4	**7824.500**





Internal latch

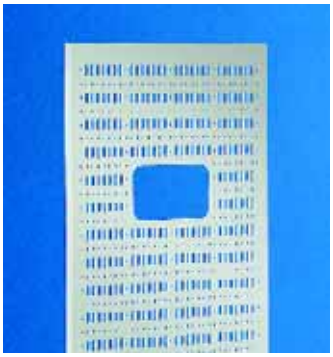
for side panel, plug-type

Additional security is achieved via the option of latching the side panel from the inside.
The side panels on the frame section are screw-fastened from the inside with latching brackets.

Supply includes:
Assembly parts.

For enclosure system	Packs of	Model No. DK	Model No. FR
TS	4	**7824.510**	–
FR(i)	4	–	**7856.700**

Side panels



Cable management panel

for DK-TS

The ideal, universal routing aid for network enclosures where large quantities of cables and lines are managed. Cut-outs for the attachment of cable shunting rings and nylon loop fasteners. Cable ties are available from the accessories range. With bayed enclosures, the panel may also be used as a partition with cable management facilities.
By attaching to the inner level, cables may be secured inside and out, and may also be used when a single panel is fitted.
The panel is secured to the inner mounting level of TS 8 enclosures using the assembly parts supplied. The cable management panel may be screwed to the outer mounting level on punched sections with mounting flanges.

Material:
Sheet steel, powder-coated

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width/depth mm	Height mm	
600	2000	**7824.560**
800	2000	**7824.580**
900	2000	**7824.590**[1)]

[1)] Delivery times available on request.

Note:
Other sizes available on request.

German patent no. 100 07 470

Accessories:

Nylon loop fasteners,
see page 1066.
Cable route,
see page 1070.
Cable ties,
see page 1066.



Side panel, plug-type

for FR(i)

The lockable side panel is simply plugged in at the side and secured via two security locks. The integral beading gives the side panels a special touch. Additional security is achieved via the option of latching the side panel from the inside. The side panels may be screw-fastened to the frame section from the inside using locking brackets FR 7856.700.

Material:
Sheet steel, powder-coated

Colour:
RAL 7035

Protection category:
IP 20

Supply includes:
Security lock 3524 E.

For enclosures		Packs of	Model No. FR
Height mm	Depth mm		
600	600	2	**7856.660**[1)]
600	1000	2	**7856.663**[1)]
1200	600	2	**7856.666**[1)]
1200	800	2	**7856.669**[1)]
1200	1000	2	**7856.672**
1200	1200	2	**7856.673**[1)]
1800	600	2	**7856.675**[1)]
1800	800	2	**7856.678**[1)]
2000	600	2	**7856.681**[1)]
2000	800	2	**7856.684**
2000	1000	2	**7856.687**
2000	1200	2	**7856.688**
2200	800	2	**7856.693**[1)]
2200	1000	2	**7856.696**[1)]

[1)] Delivery times available on request.

Accessories:

Internal latch DK 7856.700,
see page 919.



Side panels

for TE

To finish of individual racks or entire bayed suites of racks at the sides.
The side panels are simply located and secured with the integral padlock.
The super-lightweight design means that it is easily handled by one person.

Material:
Sheet steel, powder-coated

Colour:
RAL 7035

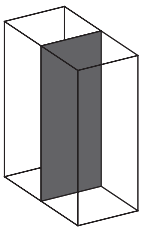
Protection category:
IP 20

Supply includes:
Security lock 3524 E.

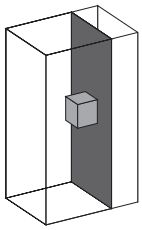
For enclosures		Packs of	Model No. TE
Height mm	Depth mm		
1200	600	2	**7000.642**
1200	800	2	**7000.644**
2000	600	2	**7000.650**
2000	800	2	**7000.652**
2200	600	2	**7000.654**
2200	800	2	**7000.656**











Divider panel

for TS

For shielding individual enclosure cells. Thanks to the symmetry of the frame system, the divider panel can also be used at the rear. All-round, double fold for stability and to hold the seal. Notches in the corners and half-way up the sides permit the use of angular baying brackets and baying brackets, even with a divider panel fitted. For mounting on the outer mounting level. This leaves the inner level free for further population.

Material:
Sheet steel, 1.5 mm, zinc-plated

Protection category:
IP 54 to EN 60 529/09.2000

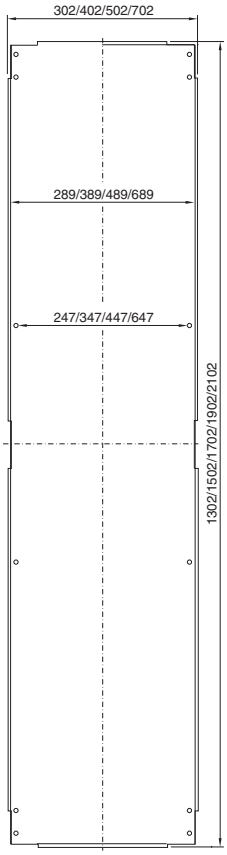
Supply includes:
Assembly parts.

Accessories:

Cover with door,
see page 925.
Baying attachment, vertical TS 8800.470
for enclosure with fitted divider panel,
see page 931.

Note:
The divider panel may also be fitted to the rear. This allows, e.g. frequency converters for heat dissipation to be installed in a divider panel with the cooling units facing outwards and protected/ finished off with a cover (see page 925).

For enclosures		Model No. TS
Height mm	Depth mm	
1400	500	**8609.450**
1600	500	**8609.650**
1800	400	**8609.840**
1800	500	**8609.850**
1800	600	**8609.860**
2000	400	**8609.040**
2000	500	**8609.050**
2000	600	**8609.060**
2000	800	**8609.080**
2200	600	**8609.260**





Partition

for TS

For rack mounting, suspended between two TS 8 enclosures.
With three Ø 40 mm holes in all 4 corner areas for the insertion of cable sections, conduits etc. Drilled holes may be sealed with the enclosed stepped collars. For cable entry, simply cut off at a suitable level to match the required cross-section.

Material:
Partition: Sheet steel, zinc-plated, passivated,
Stepped collar: Plastic to UL 94-HB

Supply includes:
12 stepped collars Ø 40 mm.

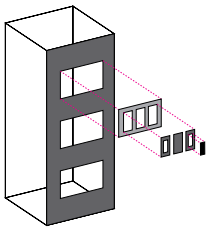
For enclosures		Model No. DK
Height mm	Depth mm	
2000	900	**7831.721**
2000	1000	**7831.723**
2000	1200	**7831.724**
2200	1200	**7831.726**

Note:
Use baying connector TS 8800.490.
Not for use in conjunction with a baying seal.
Any existing seals must be removed prior to installation.

Accessories:

Baying clamp TS 8800.490,
see page 929.

Divider panels for module plates



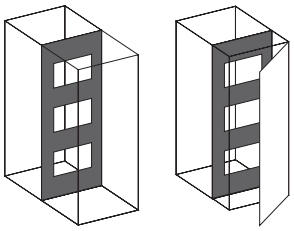
The divider panel and module plate system

More options:
The cut-outs of a divider panel are individually equipped with module plates for 16-pole or 24-pole connectors, with module plates for cable entry and with solid module plates.

Faster assembly:
Usually only part of the total number of connector cut-outs are used. Thanks to the new divider panel technique the cut-outs do not need to be covered individually. The solid module plate is used instead.
The benefits: Less plates, less screws, less assembly work.







Divider panel

for module panels TS
With cut-outs for the installation of module plates for connectors or for cable entry, and also for the entry of busbar systems and other installed equipment. All-round, double fold for stability and to hold the seal. Thanks to the symmetry of the enclosure frame, divider panels may also be fitted at the rear, dimensions permitting.
For mounting on the outer mounting level. This leaves the inner level free for further population.

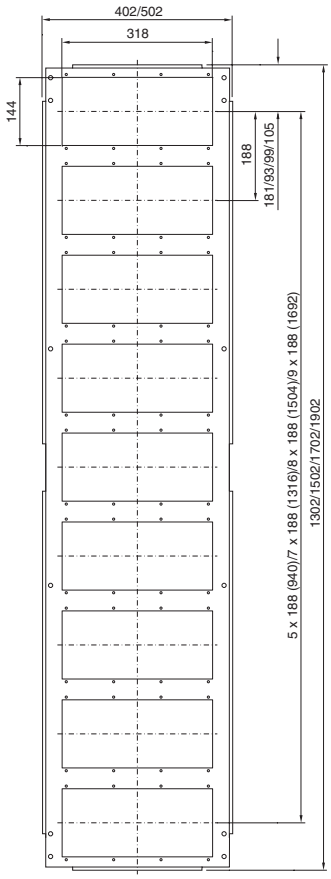
Material:
Sheet steel, 2 mm, zinc-plated

Supply includes:
Assembly parts and multi-tooth screws M5 x 12 mm for mounting the module plates.

Note:
Notches in the corners and half-way up the sides permit the use of angular baying brackets and baying brackets, even with a divider panel fitted.

Accessories:

Module plates,
see page 923 – 924.
Cover with door,
see page 925.
Baying attachment TS 8800.470
for enclosure with fitted divider panel,
see page 931.



For enclosures		Number of cut-outs	Model No. TS
Height mm	Depth mm		
1800	500	9	**8609.100**
1800	600	9	**8609.110**
2000	500	10	**8609.120**
2000	600	10	**8609.130**



Paint

For touching up and repairing powder-coated and wet-painted surfaces, air-drying.

Colour RAL	Model No. SZ		
	Touch-up pen 12 ml	Spray can 150 ml	Spray can 1000 ml
7022	–	**2581.000**	–
7032	**2436.732**	**2437.000**	**2438.000**
7035	**2436.735**	**2440.735**	**2438.735**
9005	**2436.905**	**2440.905**	–

Module plates

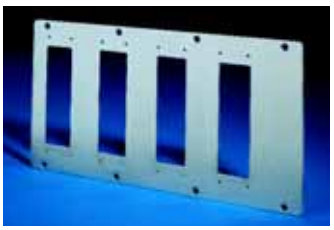
Material:
Sheet steel, 2 mm, zinc-plated

Supply includes:
Seal

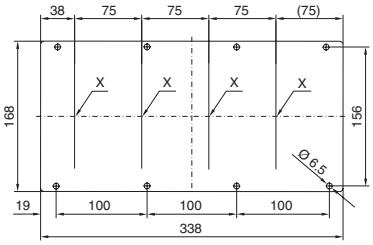
Design	Cut-outs	Packs of	Model No. TS
Solid	–	1	**8609.160**
For 16-pole connectors	4	1	**8609.150**
For 24-pole connectors	4	1	**8609.140**
For cable entry	1	1	**8609.170**
For cable entry grommets	4	1	**8609.190**



solid
For sealing unused cut-outs. Easily machined for individual cut-outs.

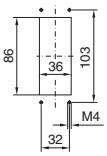


for 16/24-pole connectors
With cut-outs to accommodate connectors.
In addition to mounting on divider panels, module plates may also be attached to the 25 mm pitch pattern of the enclosure and to the rails of the TS/PS system.

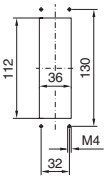


Accessories:

Adaptor, cover plate,
see page 925.
Connector gland for connector cut-outs,
see page 1057.



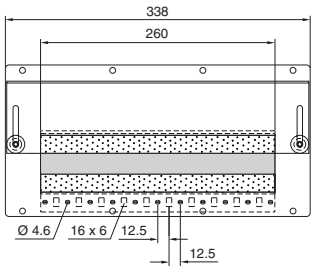
X 16-pole



X 24-pole

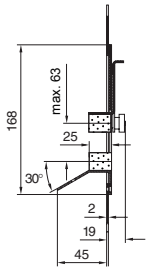


for cable entry
For the entry of pre-assembled cables. Sealed, routing is achieved via adjustable angle brackets with inserted foam cable clamp strip. Attachment bracket, punched, for cable clamping.



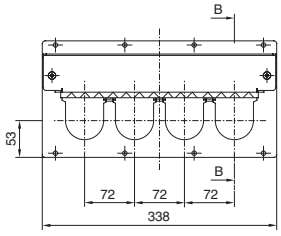
Accessories:

Cable tie for fast assembly SZ 2597.000,
see page 1066.



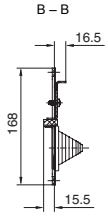


for cable entry grommets
For mounting on the divider panel for module panels TS. Slide the grommets into the cut-outs, slide the clamp plate with seal down over them, and screw-fasten.



Also required:

Cable entry grommets,
see page 1046
or connector grommets,
see page 1046.



Module plates

Module plates, divided

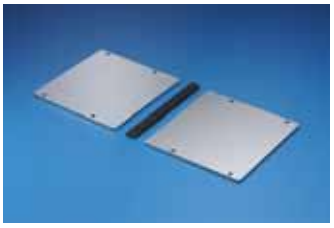
Now available in “half” versions for even more flexibility as the different versions can be combined with any of the others.

May optionally be installed in:
- TS divider panel for module plates, see page 922.
- Gland plate with sealing bar, see page 912.

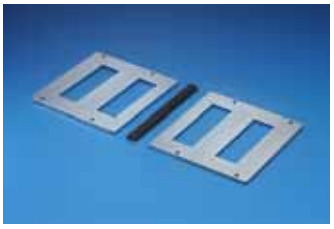
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts and seals.

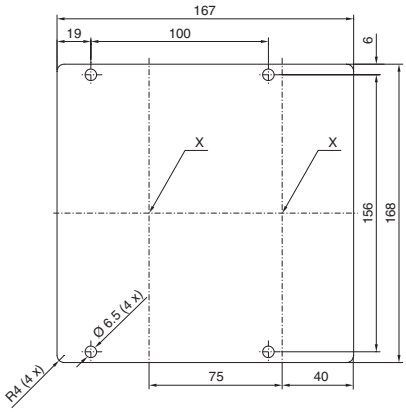
Design	Cut-outs	Packs of	Model No. TS
2 x sealed	–	1 set	**8609.360**
2 x for 16-pole connectors	4	1 set	**8609.350**
2 x for 24-pole connectors	4	1 set	**8609.340**
1 x with cable sleeve, 1 x solid	–	1 set	**8609.390**



solid
For sealing unused cut-outs. Easily machined for individual cut-outs.

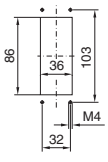


for 16/24-pole connectors
With cut-outs to accommodate connectors.
In addition to mounting on divider panels, module plates may also be attached to the 25 mm pitch pattern of the enclosure and to the rails of the TS/PS system.

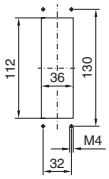


Accessories:

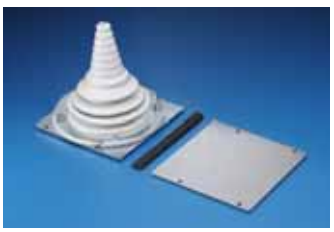
Adaptor, cover plate, see page 925.
Connector gland for connector cut-outs, see page 1057.



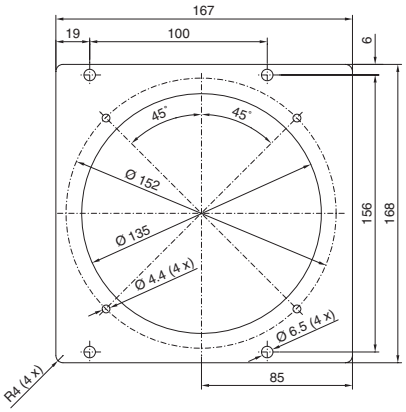
X 16-pole

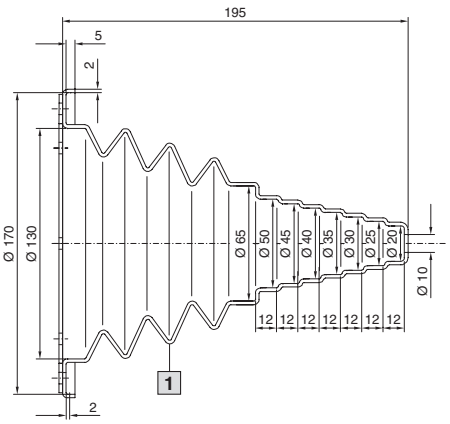


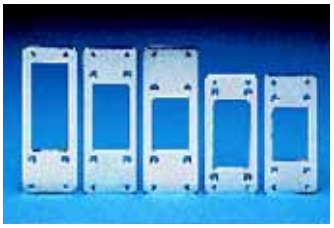
X 24-pole



with cable grommet/sealed
For 10 – 65 mm cable diameters. The flexible grommet adapts to the cable’s bending radius. The sealed half can be exchanged for other versions (see above).







Adaptor

for connector cut-outs
For using connectors with varying numbers of poles.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Seal for adaptor and assembly parts.

For reduction	Packs of	Model No. SZ
From 24 to 16 poles	5	**2479.000**
From 24 to 10 poles	5	**2480.000**
From 24 to 6 poles	5	**2481.000**
From 16 to 10 poles	5	**2401.000**
From 16 to 6 poles	5	**2402.000**



Cover plate

for connector cut-outs
For unused cut-outs.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Seal and assembly parts.

For	Packs of	Model No. SZ
24-pole cut-outs	20	**2477.000**
16-pole cut-outs	20	**2478.000**



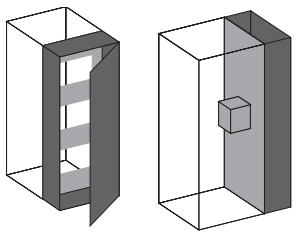
Partition

for DK-TS
For side partitioning of bayed TS server enclosures.
Up to 8 cable glands to the adjacent rack are possible, covered with blanking plates.

Material:
Sheet steel, zinc-plated, passivated

For enclosures		Packs of	Model No. DK
Height mm	Depth mm		
2200	900	1	**7831.715**





Cover with door

for TS
To protect and finish off connectors or other installed equipment. 200 mm wide cover, with opening at the top or bottom for cable entry including a cover plate for unused openings.

Material:
Sheet steel
Cover: 1.5 mm
Door: 2.0 mm

Colour:
7035 textured

Supply includes:
Cover, door with locking rod and double-bit lock insert, 1 cover plate for the top or bottom.

Note:
May also be fitted at the rear to extend the enclosure depth. To cover the resultant gap, we recommend asymmetrical side panels (see page 918). In this way, for example, frequency converters to dissipate heat may be installed in a divider panel (see page 921) with the heat sinks facing outwards and protected/concealed with a cover.

For enclosures		Model No. TS
Height mm	Depth mm	
2000	500	**8609.020**
2000	600	**8609.030**

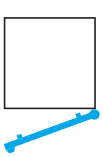
For primed version, please add extension .XX1 to the model no.
Delivery times available on request.

Accessories:

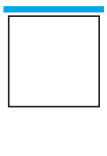
Lock inserts, version F
see page 956.
Comfort handle,
see page 947.
180° hinge,
see page 961.

for TS 8

Versatile door and side panel concept



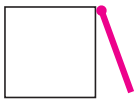
Door with lock



Rear panel



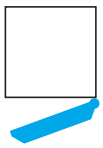
Side panel



Hinged side panel



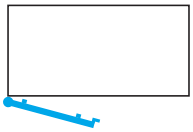
Side panel, asymmetrical



Climate control door



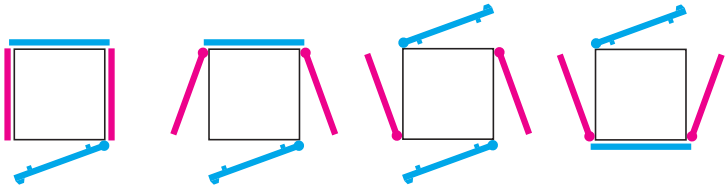
Climate control side panel



Adjacent door

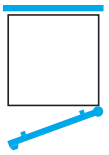
Important:

- Red areas (side panels, hinged and unhinged) must always be opposite one another.
- Blue areas (doors/rear panels) must always be opposite one another.

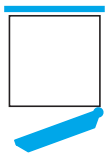


The versatile door and side panel concept also applies to the following baying variants:

. . . infinite possibilities



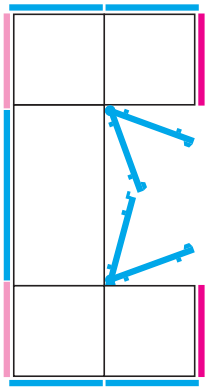
TS 8 standard enclosure

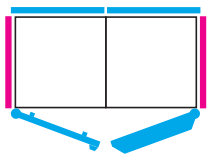


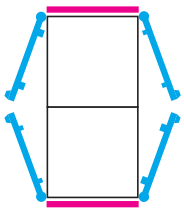
TS 8 standard enclosure with modular climate control concept

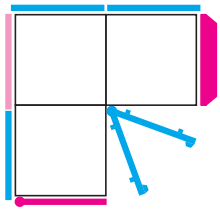


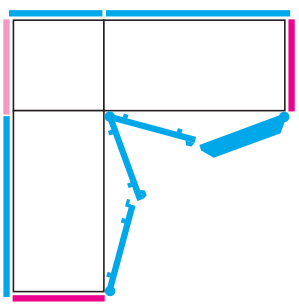
TS 8 corner enclosure

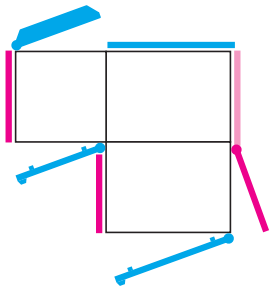


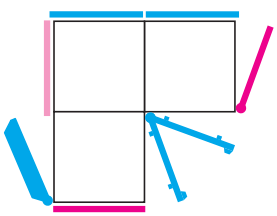




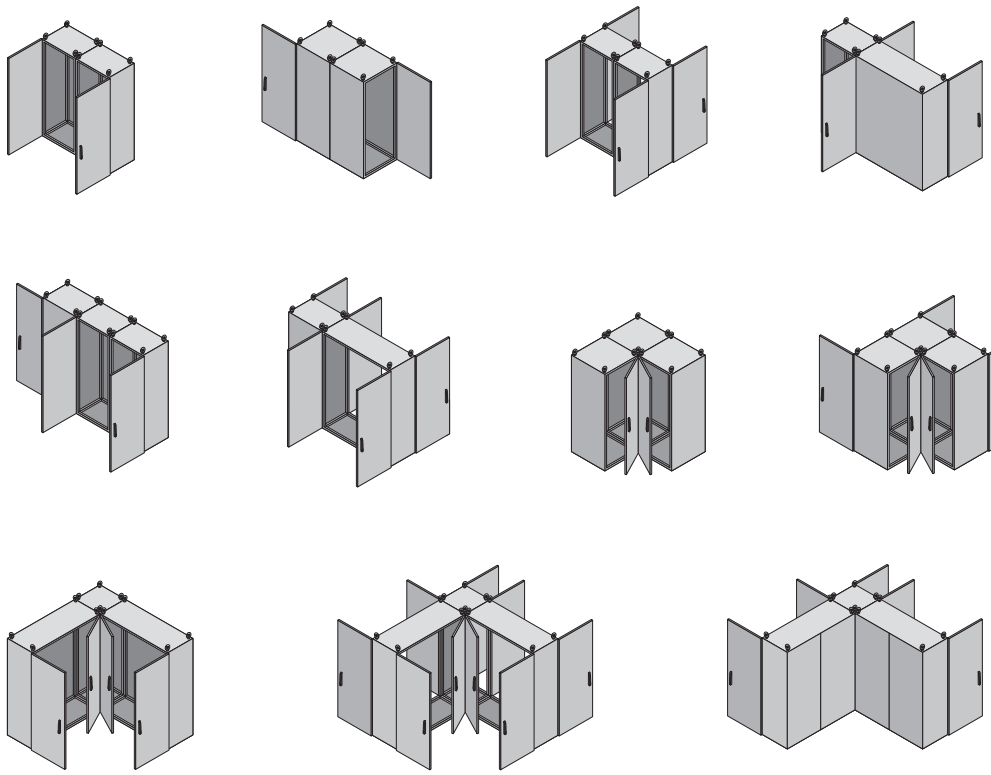






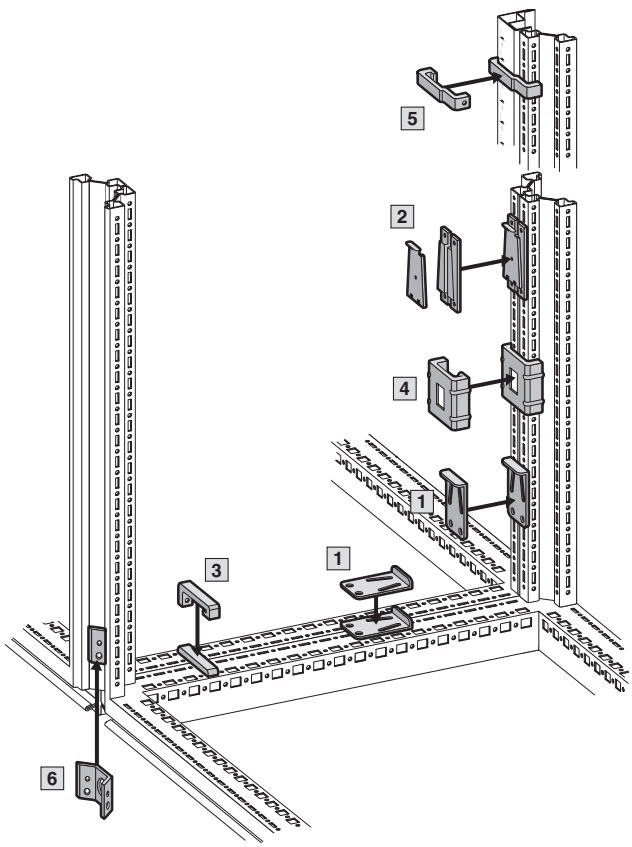


Baying at the installation site



Bayable on all sides

Whether around corners, forwards, backwards, to the left or right or even upwards if required, the baying possibilities are unlimited.

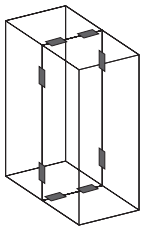


For baying at the installation site or for provisional siting in the workshop

1 Quick-fit baying clamps, one-piece
2 Quick-fit baying clamps, three-piece
3 Baying clamp, horizontal
4 Baying clamp, vertical for TS/TS
5 Baying clamp, vertical for TS/PS
6 Baying connector, external

Notes on the transport of bayed enclosures, see page 929.

Baying at the installation site

1 Quick-fit baying clamps, one-piece

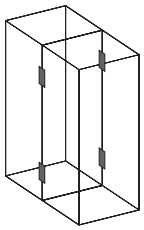
for TS/TS and FR(i)/FR(i)
Simply attach the screws, insert the quick-fit baying clamp, tap in with a hammer and lock.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
6	8800.500

Note:
Only for mounting on vertical enclosure sections of FR(i).

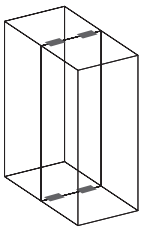
2 Quick-fit baying clamps, three-piece

for TS/TS
Simply locate, connect with the lock plate, and secure.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
6	8800.590

3 Baying clamp, horizontal

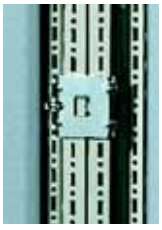
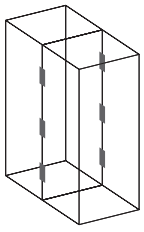
for TS/TS, TS/PS and FR(i)/FR(i)
For mounting on the horizontal enclosure sections.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
4	8800.400

German patent no. 197 35 251
French patent no. 98 104 58
Jap. patent no. 2 965 975

4 Baying clamp, vertical

for TS/TS
For mounting on the vertical enclosure sections.

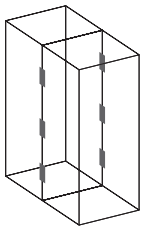
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
6	8800.410

German patent no. 197 35 251
French patent no. 98 104 58
Jap. patent no. 2 965 975





5 Baying clamp, vertical

for TS/PS
For mounting on the vertical enclosure sections.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

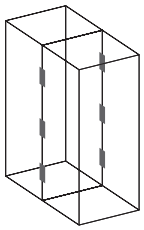
Packs of	Model No. TS
6	**8800.420**

German patent no. 198 01 185
US patent no. 6,435,759
European patent no. 104 8098
with validity for FR, GB, IT









6 Baying connectors, external

for TS/TS
For mounting on the vertical enclosure sections.

Simply position on the outside and screw-fasten either from the inside or outside.

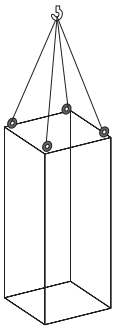
Material:
Sheet steel, zinc-plated, passivated or stainless steel 1.4301 (AISI 304)

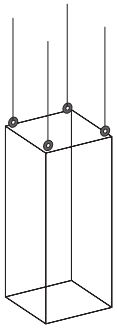
Supply includes:
Assembly parts.

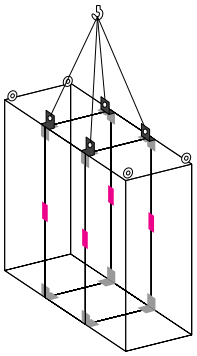
Design	Packs of	Model No. TS
Sheet steel	6	**8800.490**
Stainless steel	6	**8700.000**

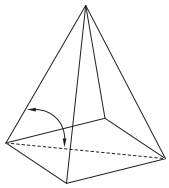
German patent no. 197 37 668

Note on the transport of bayed enclosures









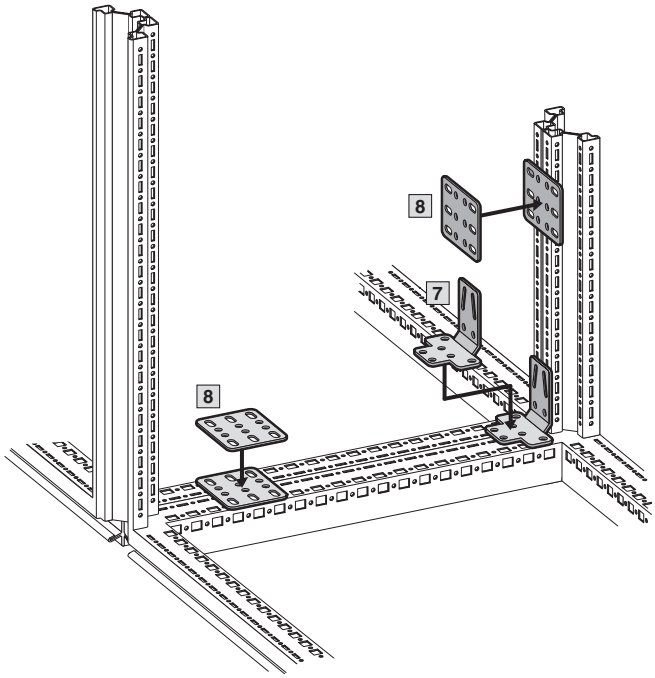
Individual enclosures may be safely transported using the eyebolts included with the supply.
For symmetrical loads, the following maximum permissible loads apply:
for 45° cable pull angle 4,800 N,
for 60° cable pull angle 6,400 N,
for 90° cable pull angle 13,600 N.

Note:
The eyebolts must be aligned in the direction of the cable pull.
For larger baying combinations, we recommend the use of a transport base/plinth, see page 900.

For the enclosure combination with angular baying brackets, quick-fit baying clamps and combination angles shown here, the load capacity with a cable pull angle of 60° is as follows:
for the left-hand enclosure 7,000 N,
for the central enclosure 14,000 N,
for the right-hand enclosure 7,000 N.

The cable pull angle between the roof plate and the cable has a significant influence on the total permissible load.
The cable pull angle must not be less than 45°, and where possible, should be less than 60°.

Baying for transport



When transporting bayed enclosures

7 Baying bracket for TS/TS

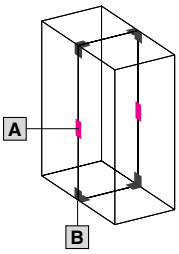
8 Baying bracket for TS/TS and TS/PS

Note:
- In addition, the outer baying connector (see page 929), can be used.
- When transporting large, heavy enclosure combinations by crane, we additionally recommend the use of combination angles TS 4540.000, see page 931.

Also required:

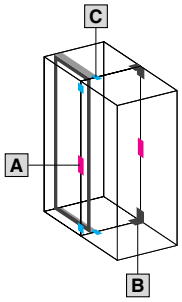
For protection category IP 55: One connector/clamp is required half-way up the enclosure height, see page 928.
Baying clamp, see page 928 – 929.

Notes on the transport of bayed enclosures, see page 929.



A 2 quick-fit baying clamps **TS 8800.500** (see page 928).

B 4 baying brackets **TS 8800.430** (see page 930).

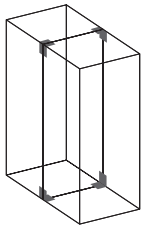


A 2 quick-fit baying clamps **TS 8800.500** (see page 928).

B 2 baying brackets **TS 8800.430** (see page 930).

C 4 baying brackets **TS 4582.500** (see page 930) if the angular baying brackets cannot be fitted in the foremost installation position due to installed equipment such as large swing frames.





7 Angular baying brackets

for TS/TS

The robust connection when transporting bayed enclosure suites.

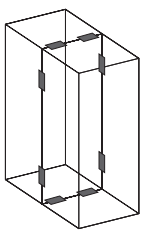
Screw-fastening may be optionally
- Horizontally and vertically with 8 screws
- Horizontally with 2 screws and M8 threaded blocks, vertically with 4 screws.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
4	8800.430





8 Baying brackets

for TS/TS and TS/PS

For additional stabilistation, or in cases where:
- Mounting plate brackets
- Swing frames
- Busbar supports

prevent the installation of angular baying brackets.

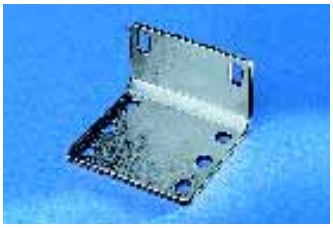
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
4	4582.500

Accessories:

For mounting on the vertical TS enclosure section: Snap-on nut M8, TS 8800.808, see page 1005.



Angular baying brackets

The alternative to baying bracket TS 4582.500 and for individual interior installations.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Screws M8 x 16 mm.

Packs of	Model No. PS
4	4582.000

Also required:

For mounting on:
Horizontal TS enclosure section
cage nuts/threaded blocks M8, see page 1010,
vertical TS enclosure section
snap-on nuts M8, TS 8800.808, see page 1005.



Combination angle

For optimum distribution of tensile forces during transportation of bayed enclosures by crane.

Material:
Sheet steel, zinc-plated, passivated

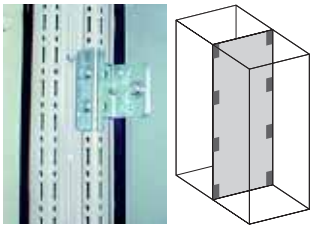
Supply includes:
Assembly parts.

Packs of	Model No. TS
4	4540.000

Accessories:

Top baying cover,
see page 932.

Notes on the transport of bayed enclosures,
see page 929.



Baying attachment, vertical

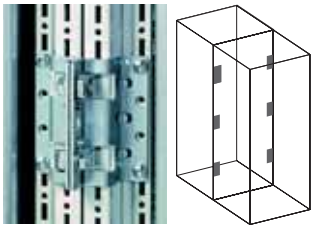
for TS/TS with divider panel
Only suitable for mounting in conjunction with the angle brackets of the divider panel (included with the supply).

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
8	8800.470

Note:
May also be used for side or wall attachment/ fastening of enclosures. In such cases, additional holes must be drilled in the side or rear panel.



Baying attachment, vertical

for TS/TS
For baying two populated enclosures on the vertical enclosure section.
Simply locate into the vertical TS punchings, secure and connect both brackets by using the hex screws (supplied loose).
Using the fastening bolts, the enclosure is pulled into a defined end position, with a height or side offset of up to ± 2 mm.

Packs of	Model No. TS
6	8800.670

Material:
Sheet steel 3 mm, zinc-plated, passivated.

Supply includes:
Assembly parts.



Baying clamp, horizontal

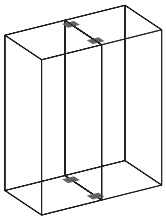
for back-to-back mounting
Two-piece, for on-site assembly of enclosures with mounting plate in the rearmost installation position.

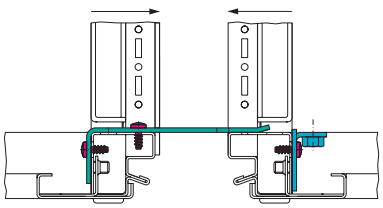
Material:
Sheet steel, zinc-plated, passivated

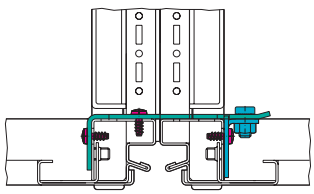
Supply includes:
Assembly parts.

Packs of	Model No. TS
4	8800.170

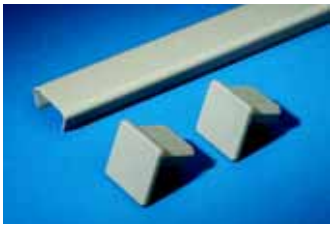
German patent no. 10 157 979







Baying





Baying cover, top

A cover with two end caps may additionally be clipped over the seal between the two enclosures. This prevents dirt and liquid from collecting on the baying seal.

Material:
Cover section: Sheet steel, spray-finished or stainless steel 1.4301 (AISI 304)
End caps: Plastic

Note:
May also be fitted in the width with enclosure suites bayed back-to-back.

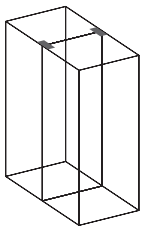
May also be used in conjunction with dust guard trim, see page 970.

For enclosure depth mm	Packs of	Model No. TS		
		RAL 7032[1]	RAL 7035	Stainless steel
400	1	**8800.440**	**8800.840**	**8700.140**
500	1	**8800.450**	**8800.850**	**8700.150**
600	1	**8800.460**	**8800.860**	**8700.160**
800	1	**8800.480**	**8800.880**	**–**
900	1	**–**	**8800.890**	**–**
1000	1	**–**	**8800.892**	**–**

[1] Delivery times available on request.

German patent no. 197 37 667
US patent no. 6,312,068
European patent no. 10 12 935
with validity for FR, IT





Baying connectors, external

for DK-TS/DK-TS with side panels
For retrospective baying of enclosures with screw-fastened or plug-type side panels.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Packs of	Model No. DK
4	**7824.540**

Note:
Plug-type side panels only in conjunction with lock DK 7824.500, see page 919.





Compensating panel

for TS
The panel is screw-fastened to the outside of the enclosure frame and serves as an infill panel when baying 2000 mm high enclosures of varying depths.
No seal between the enclosures.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Depth difference mm	Model No. DK
100	**7067.100[1]**
200	**7067.200**

[1] Delivery times available on request.



Baying kit

for FR(i)/FR(i)
For mounting on the vertical enclosure sections.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. FR(i)
4	**7856.752**



Baying kit

for TE/TE
For connecting individual enclosures into bayed suites at the sides. The enclosures are connected between the base and roof frame.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TE
4	**7000.640**



TS 8 corner enclosures

The corner enclosure and the supplied components will accommodate the various baying options of the TS 8 frame on all outer surfaces. Fitted with a rear panel and an asymmetrical side panel (see page 918, mounted on the l/h side), the corner enclosure also permits the option of baying in both the width and depth.
The gland plates are aligned parallel to the rear panel. In TS 8 enclosures with a square footprint, the gland plates may also be rotated through 90°. The baying system is identical to all other TS 8 enclosures.

Material:
Sheet steel, 1.5 mm

Surface finish:
Dipcoat primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Supply includes:
Enclosure frame with roof, rear panel (on the longest side), asymmetrical side panel, gland plates (divided lengthwise).

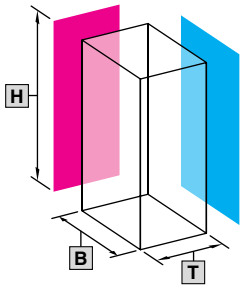
Width mm	Height mm	Depth mm	Model No. TS
400	1800	400	**8484.300**
500	1800	400	**8584.300**
600	1800	400	**8684.300**
500	1800	500	**8585.300**
600	1800	500	**8685.300**
600	1800	600	**8686.300**
400	2000	400	**8404.300**
500	2000	400	**8504.300**
600	2000	400	**8604.300**
800	2000	400	**8804.300**
500	2000	500	**8505.300**
600	2000	500	**8605.300**
800	2000	500	**8805.300**
600	2000	600	**8606.300**
800	2000	600	**8806.300**
600	2200	600	**8626.300**

Delivery times available on request.

Accessories:

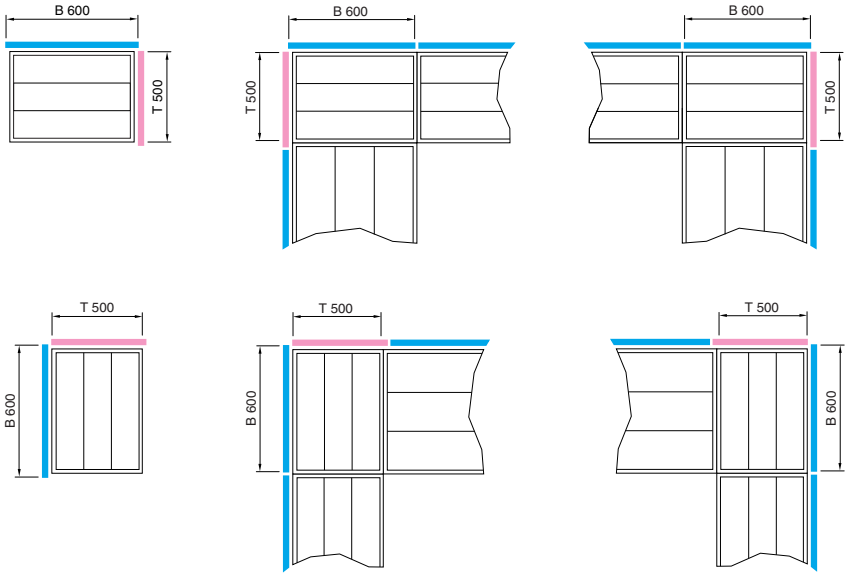
TS base/plinth,
see page 892.
Base/plinth infill panel,
see page 897.



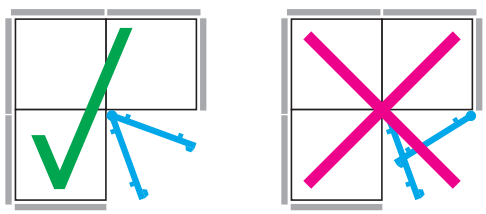


Baying examples

TS 8 corner enclosures



Caution!



Correct **Incorrect**

B = Width
T = Depth

Door variants





Glazed door

for TS
Instead of a sheet steel door or rear panel.

Design:
Frame:
Extruded aluminium section,
die-cast zinc corner pieces,
powder-coated in RAL 7035
Single-pane safety glass,
3 mm thick,
printed mask on the inside
RAL 7015
Locking-rod with double-bit insert
180° hinges (4)
Visible area:
W – 140 mm,
H – 160 mm.

Protection category:
IP 55 to EN 60 529/09.2000

German registered design
no. M 98 03 844
IR reg. design no. DM/045 440
with validity for BE, FR, NL, HU, LU
UK reg. design no. 2 076 673
South Korean. reg. design no. 0 240 621
Russian reg. design no. 46 300
Japan reg. design no. 1 056 165
US design patent no. 418 608

For enclosures		Model No. TS
Width mm	Height mm	
600	1800	**8610.680**
800	1800	**8610.880**
600	2000	**8610.600**
800	2000	**8610.800**
600	2200	**8610.620**
800	2200	**8610.820**

Also required:

When mounting instead of the rear panel:
Lock components for frame TS 8800.040,
see page 934.

Accessories:

Lock inserts, version F,
see page 956.
Comfort handle,
see page 947.



Handle adaptor

The handle adaptor compensates for the design chamfer in the door profile to enable installation of the comfort handle.

Material:
Plastic

Supply includes:
1 adaptor plate,
1 extension for drive,
2 assembly screws.

for glazed door TS

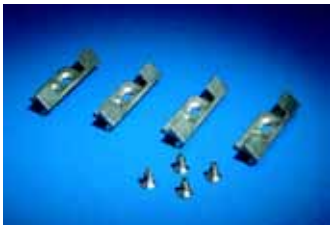
Colour	Model No. TS
RAL 7035	**8611.080**
RAL 8019	**8611.090**

for designer door IW and PC-TS, bottom door

Colour	Model No. PC
RAL 7035	**8611.300**

for glazed door IW

Colour	Model No. IW
RAL 7035	**6903.170**



Lock components

for frame TS
For retrofitting a glazed door or sheet steel door in place of a rear panel.

Material:
Die-cast zinc

Supply includes:
Assembly screws.

Packs of	Model No. TS
4	**8800.040**





Designer glass door, 180°

for DK-TS

- Facilitates monitoring of on-going processes.
- Door opening angle when bayed 180° – optimised design of escape routes.
- Rear all-round cable duct integrated inside the frame section.
- Concealed cable routing to the installed electronic equipment.
- Form-fit hinges integrated into the frame section.
- A high standard of security thanks to
  – Four-point locking
  – Lock handle for semi-cylinder
  – Optional electronic lock and sensor systems

Material:
Aluminium frame section,
3 mm single-pane safety glass

Colour:
RAL 7035

Supply includes:
Lock system with security lock insert no. 3524 E and assembly parts.

For enclosures		Model No. DK
Width mm	Height mm	
600	800	**7824.628**
600	1000	**7824.630**
600	1200	**7824.632**
600	1400	**7824.634**
600	1600	**7824.636**
600	1800	**7824.638**
600	2000	**7824.640**
600	2200	**7824.642**
800	1000	**7824.830**
800	1200	**7824.832**
800	1400	**7824.834**
800	1600	**7824.836**
800	1800	**7824.838**
800	2000	**7824.840**
800	2200	**7824.842**

Accessories:

Cover section for cable duct DK 7824.850,
see page 935.
Semi-cylinder,
see page 957.





Cover section

for cable duct, designer glazed door, 180°
For optional sealing of the cable duct within the designer glazed door, 180°.
The pack is comprised of various pieces which together are sufficient to seal the cable duct of a door with the dimensions H x W 2200 x 800. Other sizes can be achieved by cutting to length. Connection is toolless by simply clipping into the strip.

Material:
Plastic, RAL 7035

Supply includes:
6 pieces of 1000 mm, for cutting to length and combining.

Packs of	Model No. DK
1 set	**7824.850**



Mounting adaptor

for designer glazed door, 180°
For the attachment of
- Comfort handle,
- Comfort handle with coded lock or
- Electromagnetic comfort handle

A mounting adaptor is required on the designer glazed door.
This mounting adaptor allows installation of the comfort handle series by simply snapping into position instead of the existing handle system.

Packs of	Model No. DK
1	**7824.610**

Material:
Die-cast zinc

Door variants



Sheet steel door

for DK-TS
To replace existing doors. With 180° hinges and swivel handle with security lock no. 3524 E, in exchange for comfort handle.

Material:
Sheet steel

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width mm	Height mm	
600	2000	**7824.205**
800	1200	**7824.127**
800	2000	**7824.207**
600	2200	**7824.225**
800	2200	**7824.227**

Accessories:

Comfort handle,
see page 947.
180° hinge for bayed TS enclosure suites with comfort handle, see page 962.



Sheet steel door, vented

for DK-TS
With 180° hinges and swivel handle with security lock no. 3524 E, in exchange for comfort handle. For optimum air throughput in network enclosures with a high proportion of active components. Slotted surface (SWG-6.7 hexagon) with air inlet openings >78 %.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width mm	Height mm	
600	1200	**7824.123**[1)]
600	1800	**7824.183**
800	1200	**7824.124**
800	1800	**7824.184**
600	2000	**7824.203**
800	2000	**7824.204**
600	2200	**7824.223**
800	2200	**7824.224**

[1)] Delivery times available on request.

Accessories:

Comfort handle,
see page 947.
180° hinge for bayed TS enclosure suites with comfort handle, see page 962.



Glazed door, vented

for DK-TS
With 180° hinges and comfort handle with security lock no. 3524 E. For optimum air throughput in network enclosures with a low proportion of active components.

Material:
Sheet steel, spray-finished
Viewing window of 3 mm single-pane safety glass, side slotted surfaces (SWG-6.7 hexagon) for air inlet.

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width mm	Height mm	
600	1200	**7824.121**[1)]
600	1800	**7824.181**[1)]
800	1800	**7824.182**[1)]
600	2000	**7824.201**
800	2000	**7824.202**
600	2200	**7824.221**
800	2200	**7824.222**

[1)] Delivery times available on request.

Accessories:

180° hinge for bayed TS enclosure suites with comfort handle, see page 962.



Adaptor door

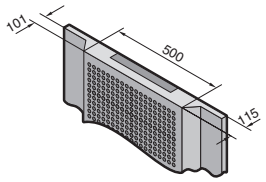
for DK-TS

With 180° hinges and comfort handle with security lock no. 3524 E. To extend the enclosure depth by 100 mm. This creates the necessary free space at the rear for retro-fitting deep-build active components or space for system-compatible cabling at the front. Retro-fitting with deeper components is therefore easily achieved whilst in operation. The adaptor door is vented across the surface. Slotted surface (Ø 5 mm), air inlet opening >60 %.
Simple cable routing via brush strips top and bottom.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.



For enclosures		Model No. DK
Width mm	Height mm	
800	2000	**7824.780**

Note:
Other sizes and side adaptor available on request.



Sheet steel door, vertically divided

for DK-TS

With 130° hinges and locking rod including comfort handle for semi-cylinder with security lock no. 3524 E. Thanks to the minimal rotation radius of the individual doors, the distance between individual bayed enclosure suites may be reduced. The extensive door perforations additionally support climate control of the installed equipment. Slotted surface with air inlet opening >78 %.

Material:
Sheet steel

Protection category:
IP 55 to EN 60 529/09.2000 (unvented)
IP 20 to EN 60 529/09.2000 (vented)

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosures		Model No. DK	
Width mm	Height mm	Vented	Unvented[1)]
600	2000	**7824.360**	**7816.360**
600	2200	**7824.362**	**7816.362**
800	2000	**7824.380**	**7816.380**
800	2200	**7824.382**	**7816.382**

[1)] Without tubular door frame.
Tubular door frame available on request.

Accessories:

180° hinge TS 8800.190,
see page 961.



All-glass door, vertically divided

for DK-TS

With 180° hinges and locking rod including comfort handle with security lock no. 3524 E. Thanks to the minimal rotation radius of the individual doors, the distance between individual bayed enclosure suites may be reduced. When baying, an external 180° hinge is required.

Material:
5 mm single-pane safety glass,
frame of aluminium frame elements.

Colour:
Frame elements, RAL 7035
Viewing windows tinted, parsol grey.

Supply includes:
Assembly parts.

For enclosures		Rotation range[1)]	Model No. DK
Width mm	Height mm		
800	2000	180°	**7824.490**

[1)] Stand-alone siting

Note:
Not to be used in conjunction with a swing frame.

Door variants



Lockable and adjacent door

for TS

For example, if two 400 mm doors instead of one 800 mm wide door are used to comply with escape routes.

Material:
Sheet steel

Surface finish:
Dipcoat-primed,
powder-coated on the outside.

Supply includes:
2 doors
including hinges and lock parts.

For enclosures		Colour RAL	Model No. TS
Width mm	Height mm		
800	2000	7035	**8801.450**

Note:
Enclosure without door (TS 8806.512),
see page 149.

Accessories:

Lock system,
see page 947.



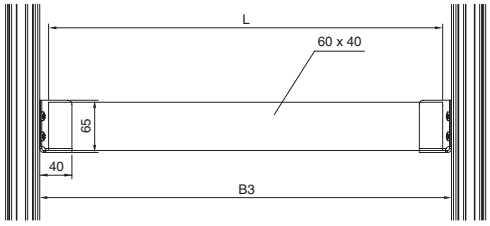


Protective bar

for TS

As an alternative to a door, e. g. in sealed switch rooms. Prevents people from falling into the open enclosure frame. Easily removable for maintenance purposes.
For 1200 mm enclosure width; may be shortened or divided for other sizes.

Material:
Wood, spray-finished, RAL 3000



For enclosure width mm	Length mm	Packs of	Model No. TS
1200	1090	1	**8801.010**

Enclosure width mm	Clearance between the enclosure frame (B3) mm	Length protective bar (L) mm
400	312	290[1)]
600	512	490[1)]
800	712	690[1)]
1000	912	890[1)]
1200	1112	1090

[1)] The protective bar TS 8801.010 (1090 mm) will need to be shortened.



Holder

for protective bars

For location into the vertical TS section. The protective bar is simply inserted.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

Packs of	Model No. TS
2	**8801.000**

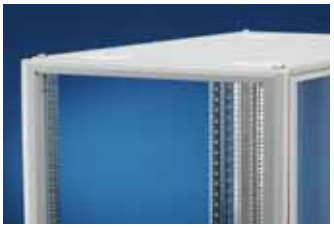


Variable modular climate control concept

Instead of an enclosure door in a 600 mm/800 mm/1200 mm wide and 1800 mm/2000 mm high TS enclosure, section doors with integral cooling module may be retrofitted without major assembly work.

Possible alternative:

Modular climate control concept
see page 634.



Trim frame

for TS
To conceal the TS 8 front frame in enclosures without a door. Can be combined with large swing frame.

Possible application areas include, for example:
- Studio technology
- Electronic configuration

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width mm	Height mm	
600	2000	**7824.130**
800	2000	**7824.132**

Note:
The trim frame conceals the system punchings at the sides in the inner mounting level.
The TS punched sections with mounting flange 23 x 73 mm (see page 995) may be used for installation.



Profile blanking frame

for TS
On request, all enclosures in the TS 8 series (see page 138) may be manufactured with a fitted profile blanking frame (design to match the TS glazed door) instead of door(s). For optimum access to installed equipment, trim frame hinged on the right, held by a mechanical snap fastener on the left.

Material:
Extruded aluminium section, with die-cast zinc corner pieces, powder-coated

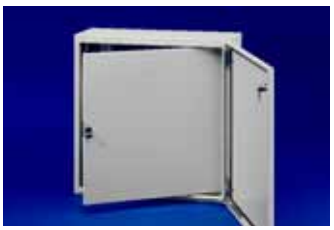
Colour:
RAL 7035

Packs of	Model No. TS
1	**xxxx.550**

Delivery times available on request.

Order example:
Baying system TS 8, WHD: 800 x 2000 x 600 mm
- Standard TS 8806.500
- with profile blanking frame TS 8806.550





Interior door

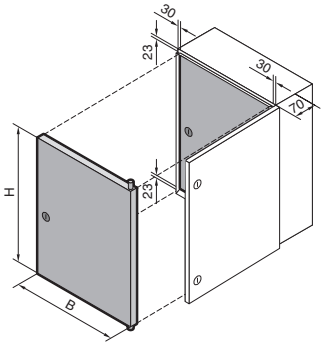
with mounting frame
for compact enclosure AE IP 69K
For the installation of control and display components. Mounting frame, depth-adjustable for a distance between the outer surface and the inside of the outer door of 35 to 85 mm (80 mm with AE 1101.010/.110).

Material:
Sheet steel, 1.5 mm

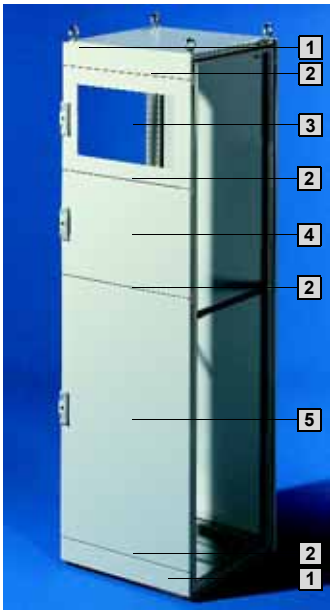
Colour:
RAL 7035

Supply includes:
Mounting frame, door with cam lock and screwdriver insert,
including assembly parts.

For AE enclosure	W (B) mm	H mm	Model No. AE
1101.010/.110	160	260	**1101.910**
1101.020/.120	330	330	**1101.920**
1101.030/.130	330	580	**1101.930**
1101.040/.140	580	580	**1101.940**



Modular front design for TS 8



Modular front design

for TS 8606.512,
WHD 600 x 2000 x 600 mm,
for TS 8806.512,
WHD 800 x 2000 x 600 mm
(see page 149)
and all other 600 and 800 mm wide TS 8 enclosures instead of a door or rear panel, insofar as the modular front is positioned in a suite between two enclosures with normal doors. If positioned as a free-standing enclosure or at the end of an enclosure suite, special side panels such as TS 8106.512 (see page 942) are required.
The partial doors with and without viewing panels can be arbitrarily combined with cross members. A trim panel and a cross member are each required at the top and bottom.
The requirements for you individual front design and the considerations which must be taken into account are illustrated on the sample configuration opposite.

Protection category:
With a completed enclosure
IP 55 to EN 60 529/09.2000,
complies with NEMA 12.

Also required:

1 Trim panels, height 100 mm or trim panel, hinged at the top, height 300 mm

2 Cross member

Accessories:

3 Partial door with viewing window, height 400 mm

4 Partial door without viewing window, height 400 mm

5 Partial door without viewing window, height 1000 mm





1 Trim piece, hinged at the top

for TS
For the installation of control and display components.

Material:
Sheet steel, 2 mm

Colour:
RAL 7035

Supply includes:
Hinges, cam locks with double-bit insert and assembly parts.

Note:
Not in combination with top-mounted module for TS (see page 971).

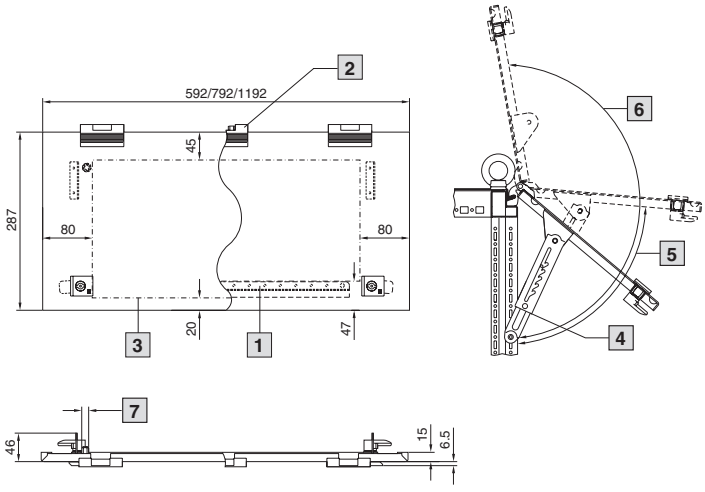
Width mm	Height mm	Model No. TS
600	300	**8801.230**
800	300	**8801.240**
1200	300	**8801.250**

Accessories:

Support stay for trim piece, hinged at the top, see page 942.
Lock inserts, version A, see page 956.

Rittal service:

Combination with shortened door, enclosure with pre-fitted trim panel instead of door, cut-outs for operating and display components available on request.



1 Only for width 800 and 1200 mm

2 Only for width 1200 mm

3 Usable interior area

4 Optional: Stay TS 8801.260

5 Maximum opening with support stay approx. 85°

6 Maximum opening without support stay approx. 190°

7 Earthing bolt M8

Modular front design for TS 8



1 Trim panels

for TS
Required as upper and lower height trim.

Material:
Sheet steel, 2 mm, textured

Colour:
RAL 7035

Supply includes:
2 trim panels, assembly parts.

Height mm	Model No. TS	
	600 mm width	800 mm width
100	**8801.510**	**8801.110**

Also required:

Cross member,
see page 941.



2 Cross member

for TS
For use as sealing member between:
- Trim panels
- Partial doors
- Trim piece, hinged at the top

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Packs of	Model No. TS	
	600 mm width	800 mm width
5	**8801.630**	**8801.830**





3 4 5 Partial doors

for TS
Door can be optionally hinged on the right or left side.
In the case of doors without viewing panel (height 600 – 1000 mm) the installation of monitor frame SZ 2305.000 is possible.
Standard double-bit lock insert may be exchanged for lock inserts, type F, and from 600 mm height, for comfort handle.

Material:
Sheet steel, 2 mm

Colour:
RAL 7035

Supply includes:
Hinges and lock.

Also required:

Cross member,
see page 941.

Accessories:

Monitor frame SZ 2305.000,
see page 945.
Lock inserts, type F,
see page 956.
Comfort handle,
see page 947.

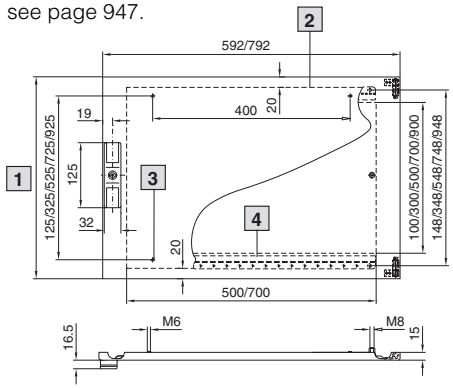
Solid

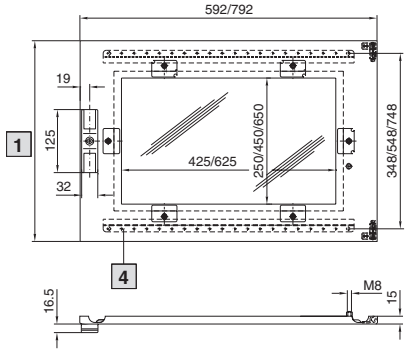
Height mm	Model No. TS	
	600 mm width	800 mm width
200	**8801.520**	**8801.120**
400	**8801.540**	**8801.140**
600	**8801.560**	**8801.160**
800	**8801.580**	**8801.180**
1000	**8801.500**	**8801.100**

With 3 mm single-pane safety glass

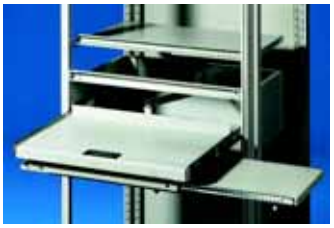
Height mm	Model No. TS	
	600 mm width	800 mm width
400	**8801.550**	–
600	**8801.570**	**8801.170**
800	**8801.590**	–

1 Height – 2 mm
2 Usable interior area
3 M6 bolt only for width 600 mm
4 Perforated strip only for width 800 mm





Modular front design for TS 8



Drawer

for TS
For mouse and keyboard with a maximum width of 500/700 mm.
A high level of protection is retained, even with the flap open.
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, plastic handles, type B and T handles, type B.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Flap and assembly parts.

Height	Model No. TS	
	600 mm width	800 mm width
200 mm	**8801.715**	**8801.915**

Also required:
Cross member,
see page 941.

Accessories:
Lock inserts, 27 mm, type A,
see page 956.
Plastic handle, type B,
see page 954.
T handles, type B,
see page 955.



Desk section

for TS
For installing
- Keyboard
- Display and control elements

with screw-fastened cover plates top and bottom.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Height	Model No. TS
	600 mm width
200 mm	**8801.705**

Also required:
Cross member,
see page 941.



Side panels for modular front design

for TS
Attachment on the inside vertical enclosure frame member. The TS 8106.235 side panel retainers (page 917) could conflict with the partial door fasteners.

Material:
1.5 mm sheet steel

Surface finish:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside

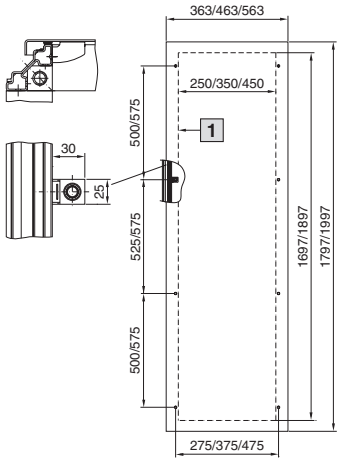
Protection category:
IP 55 to EN 60 529/09.2000

Supply includes:
2 side panels,
16 retainers with automatic potential equalisation.

Note:
Can also be used in enclosures without modular front design!

1 Usable interior area

For enclosure		Model No. TS
Height mm	Depth mm	
2000	600	**8106.512**
2000	800	**8108.512**





Support stay

for trim panel, hinged at the top
5 pitch pattern positions up to a maximum opening of approx. 85°.

Material:
Sheet steel, zinc-plated, passivated.

Packs of	Model No. TS
2	**8801.260**



System windows

To conceal display and operating instruments or cut-outs, and to protect against dirt and liquids as well as unauthorised access.

Consisting of the following components:

1. Base frame:
- Easily screw-fastened to the door thanks to modified dimensions (tubular door frame may be used as a drilling template).
- Readily height-adjustable.
- Stabilises the door cut-out.
- Conceals the cut edge.
- The rain canopy
  – prevents dirt from landing on the seal,
  – protects the glass from being lifted out,
  – prevents the ingress of dirt and moisture when opening the window.

2. Viewing window:
- Made from single-pane safety glass:
  – high level of resistance to solvents and scratches,
  – anti-static,
  – reduced risk of injury if broken.
- Cam lock with double-bit insert, easily exchanged for lock inserts, type A, and semi-cylinders in the Ergoform-S lock system (not with FT 2735.500 and .560)
- Hinge with 180° opening angle, easily inserted.

Material:
System windows:
Extruded aluminium sections with die-cast zinc corner pieces and single-pane safety glass.

Surface finish:
Base frame:
Powder-coated in RAL 7035.
Hinge and lock section:
Natural-anodised.

Protection category:
IP 54 to EN 60 529/09.2000

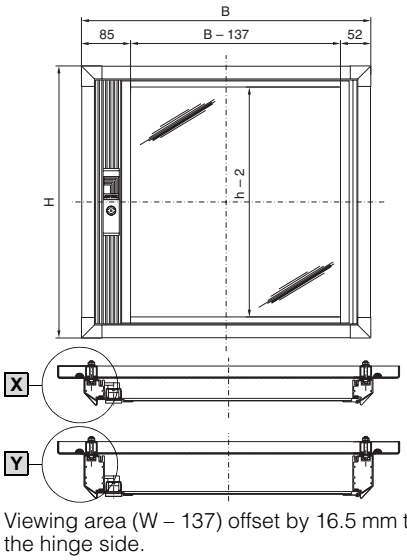
To fit TS, ES with width mm	Window size mm				Model No. FT 30 section	Model No. FT 60 section
	exterior		internal			
	W (B)	H	b	h		
600	500	270	430	200	**2735.500**	**–**
		370		300	**2735.510**	**2736.510**
		470		400	**2735.520**	**2736.520**
		570		500	**2735.530**	**2736.530**
		670		600	**2735.540**	**2736.540**
800	700	270	630	200	**2735.560**	**–**
		370		300	**2735.570**	**–**
		470		400	**2735.580**	**2736.580**
		570		500	**2735.590**	**2736.590**
		670		600	**2735.250**	**2736.500**
Other sizes[1)]					**2735.509**	**2736.509**

Lock systems

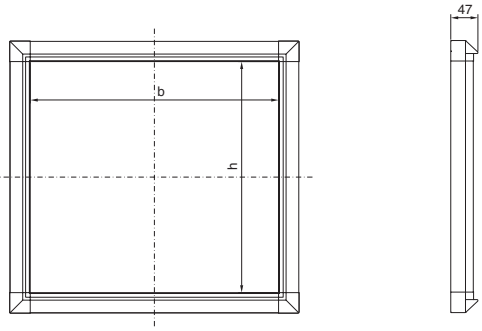
Standard double-bit lock insert may be exchanged for lock inserts 27 mm, type A, see page 956 and for Ergoform-S lock system (except H = 270 mm), see page 953.

[1)] Please also specify the external dimensions of the viewing window. Delivery times available on request.

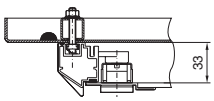
Example:
System window (30 section) to fit door width 500 mm
with width W (B) = 400 mm x height H = 480 mm (b x h = 330 mm x 410 mm)
Model No. FT 2735.509/W (B) x H = 400 x 480 mm.



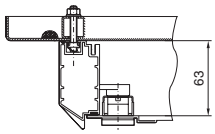
Viewing area (W – 137) offset by 16.5 mm towards the hinge side.



View X
for profile height 30



View Y
for profile height 60



Viewing panels/operating panels





Viewing window

For mounting on
- AE instead of door
- Surfaces

Material:
Frame: Aluminium, natural-anodised
Glass panel: Acrylic

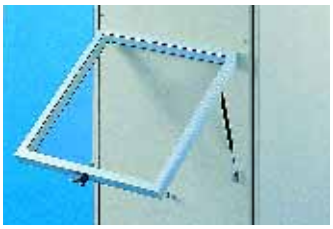
Protection category:
IP 54 to EN 60 529/09.2000

Supply includes:
Plastic handle with lock insert no. 3524 E.

For use as door variant with	Width mm	Height mm	Model No. FT	
			Depth = 34 mm	Depth = 60 mm
AE 1039.500 AE 1339.500 AE 1009.500 DK 7641.000	599	377	**2730.000**	**2760.000**
AE 1050.500 AE 1350.500 AE 1007.500	499	497	**2733.000**	**2763.000**
AE 1010.500 AE 1054.500 AE 1060.500 AE 1360.500 DK 7643.000	599	597	**2731.000**	**2761.000**
AE 1012.500 AE 1076.500 AE 1376.500 DK 7645.000	599	757	**2732.000**	**2762.000**
for 3 U subrack	599	197	**2734.000**	–

Max. installation depth: (depth – 4 mm)
Visible area:
(width – 60 mm) x (height – 60 mm)

Note:
Other sizes available on request.



Horizontally hinged FT stay

A gas pressurised spring holds the viewing window securely open (top or side).
When the viewing window is closed, the gas pressurised spring disappears into the frame section.

Packs of	Model No. FT
2	**2772.000**



Acrylic glazed cover

With security lock, lock no. 3524 E

Material:
Frame:
Extruded aluminium sections with die-cast corner pieces
Glas panel: Smoked acrylic

Protection category:
IP 54 to EN 60 529/09.2000

Acrylic glazed covers, 482.6 mm (19″)

U	Width mm	Height mm	Depth mm	Model No. FT
3	320	158	47.5	**2780.000**
3	534	158	47.5	**2781.000**
6	534	291.5	47.5	**2782.000**
9	534	425	47.5	**2796.000**

Max. installation depth: 43 mm
Visible area:
(width – 40 mm) x (height – 20.5 mm)

Metric acrylic glazed covers

Width mm	Height mm	Depth mm	Model No. FT
400	200	47.5	**2784.000**
400	400	47.5	**2785.000**
500	200	47.5	**2786.000**
500	400	47.5	**2787.000**
600	200	47.5	**2788.000**
600	400	47.5	**2789.000**

Max. installation depth: 43 mm
Visible area:
(width – 40 mm) x (height – 20.5 mm)





Viewing window

Stainless steel
Fitted as standard with internal 130° hinges and all-round seal.
The double-bit lock insert may be exchanged for 27 mm lock inserts, type A, and Ergoform-S handle SZ 2452.000.

Material:
Stainless steel 1.4301 (AISI 304)
Single-pane safety glass

Protection category:
IP 54 to EN 60 529/09.2000

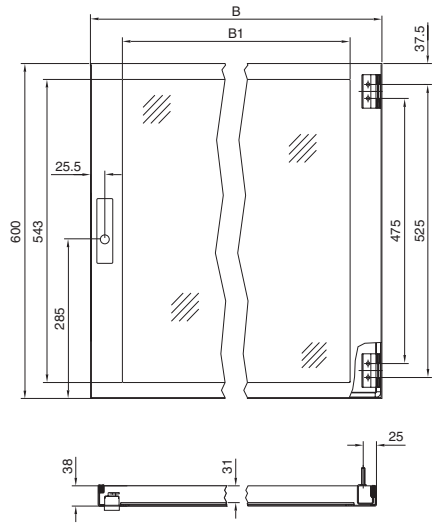
Supply includes:
Assembly parts.

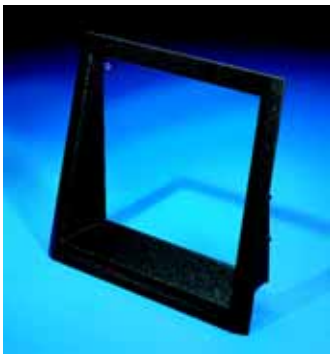
Width (B) mm	Height mm	Depth mm	W (B1) mm	Model No. FT
522	600	38	408	**2793.560**
722	600	38	608	**2793.760**

Note:
Smaller sizes and viewing window for hygienic design in preparation.

Accessories:

Lock inserts, 27 mm, version A,
see page 956.
Ergoform-S handle SZ 2452.000,
see page 953.





Monitor frame

For door width 600 and 800 mm
For covering a door cut-out, for all standard monitors up to 482.6 mm (19″).

Protection category:
IP 54 to EN 60 529/09.2000

Supply includes:
Security glass pane.

Monitor frame	Model No. SZ	
	2305.000	
Dimensions	Width mm	Height mm
External dimensions	470	430
Viewing area	375	325
Cut-out required	415	375

German registered design no. M 93 03 143



Identification strips

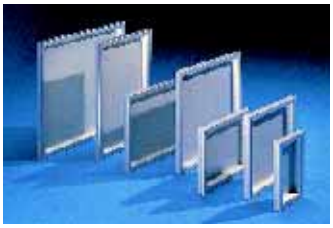
For individual field identifiers on the door, including transparent cover and assembly parts.
For labels:
Width: Enclosure width – 150 mm
Height: 29 mm
Thickness: 0.75 mm.

Colour:
RAL 7033

For enclosure width mm	Model No. SZ
600	**2403.000**
800	**2404.000**

German registered design no. M 92 02 456
IR reg. design no. DM/023 581 with validity for DE, FR, IT

Viewing panels/operating panels





Operating panel

For mounting on:
- AE instead of door
- Surfaces

Frame construction with corner connectors on the inside, 3 mm aluminium plate secured from the inside and sealed against the frame

Material:
Aluminium, natural-anodised.

Protection category:
IP 54 to EN 60 529/09.2000

Supply includes:
Aluminium frame, display panel, hinges, brackets.

For use as door variant for AE	Width mm	Height mm	Depth mm	Model No. FT
1001.600 1002.500 1002.600 1032.500 1035.500	199	297	34	**2740.000**[1)]
1004.600 1011.600 1030.500 1031.500	379	297	34	**2741.000**
1006.500 1006.600 1380.500	379	377	34	**2742.000**
1008.600 1038.500 1338.500	379	597	34	**2743.000**
1007.600 1013.600 1050.500 1350.500	499	497	34	**2745.000**
1009.600 1039.500 1339.500	599	377	34	**2744.000**
1010.500 1010.600 1060.500 1360.500	599	597	34	**2746.000**

[1)] With AE, only for use on the rear panel

Area available for population:
(width – 70 mm) x (height – 70 mm)

Dimensions of aluminium plate:
(width – 54 mm) x (height – 54 mm)

Note:
Other sizes available on request.

Accessories:

Cam lock FT 2749.000,
see page 946.



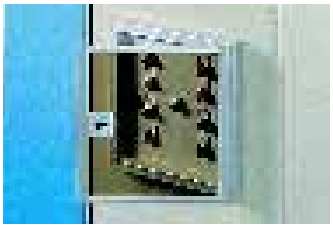
Cam lock

May be retrofitted to the operating area or enclosure panel of operating panels.
Standard double-bit lock insert may be exchanged for type C lock inserts and type C plastic handle.

Packs of	Model No. FT
1	**2749.000**

Accessories:

Lock inserts, type C,
see page 956.
Plastic handle, type C,
see page 954.



Viewing window

for operating panel
For the protection of display and control components. With a build height of max. 35 mm.

Material:
Frame: Aluminium, natural-anodised
Glass panel: Smoked acrylic.

Supply includes:
Lock insert no. 3524 E.

For operating panel	Model No. FT
FT 2741.000	**2791.000**
FT 2742.000	**2792.000**

Note:
Other sizes available on request.



The Rittal comfort handle

As the handle does not take up any swing space, due to its folding mechanism, the door surface area may be maximised for installed equipment.

Material:
Die-cast zinc

Surface finish:
Powder-coated

German patent no. 198 01 721
German registered design no. M98 00 539
IR reg. design no. DM/045 065 with validity for BE, CH, ES, FR, IT, NL, HU, LU
Austrian design no. 32290
Czech design no. 28278
UK reg. design no. 2 075 910
Swedish design no. 64 750
South Korean design no. 241 505
Israeli design no. 30 123
Slovenian design no. 98 500 73
Russian design no. 46307
South African design no. 98/0865
Finnish design no. 20461
Chinese design no. 983 03439
Australian design no. 13887
US design patent no. 428,322
Brazilian design no. DI 5801235-4
Jap. design no. 1 081 561
Taiwanese design no. 68683
European patent no. 1 049 842 with validity for FR, GB, IT
Jap. patent no. 3 485 892
US patent no. 6,418,762





Comfort handle

for lock inserts
Prepared for the installation of lock inserts, version F, see page 956, and TS lock and push-button inserts, see page 947.
Length: 295 mm.

Design	Model No. TS
RAL 7032	**8611.010**
RAL 7035	**8611.020**
RAL 8019	**8611.250**
RAL 9005	**8611.350**
Matt nickel-plated	**8611.330**

Also required:

Handle adaptor for mounting on a TS glazed door, PC-TS bottom door, IW designer door, IW glazed door,
see page 934.
Mounting adaptor for mounting on a designer glazed door 180°,
see page 935.





Comfort handle

for padlock and lock inserts
With additional shackle (hole diameter 8 mm) for a padlock. Prepared for the installation of lock inserts, version F, see page 956, and TS lock and push-button inserts, see page 947.
Length: 295 mm.

Design	Model No. TS
RAL 7032	**8611.030**
RAL 7035	**8611.290**
RAL 8019	**8611.260**

Also required:

Handle adaptor for mounting on a TS glazed door, PC-TS bottom door, IW designer door, IW glazed door,
see page 934.
Mounting adaptor for mounting on a designer glazed door 180°,
see page 935.



Lock and push-button inserts

For installation in the comfort handles for lock inserts.

Design	Model No. TS
Security lock insert no. 3524 E	**8611.180**[1)]
Push-button insert	**8611.190**
Lock and push-button insert, lock no. 12321; no other lock is possible	**8611.200**[1)]

[1)] with 2 keys

Lock systems




Comfort handle

With security lock insert E1
Only for use with **VW, Audi, SEAT, SkodaAuto.**
Supplied without key.
Length: 295 mm.
Other VW locks available on request.

Design	Model No. TS
RAL 7032	**8611.040**
RAL 7035	**8611.045**

Also required:

Handle adaptor for mounting on a TS glazed door, PC-TS bottom door, IW designer door, IW glazed door,
see page 934.
Mounting adaptor for mounting on a designer glazed door 180°,
see page 935.




Comfort handle

for semi-cylinder
Prepared for the installation of commercially available semi-cylinders, 40 or 45 mm total length, to DIN 18 252, see page 957, as well as SZ lock and push-button inserts, see page 948.
Length: 302 mm.

Design	Model No. TS
RAL 7032	**8611.060**
RAL 7035	**8611.070**
RAL 8019	**8611.270**
RAL 9005	**8611.360**
Matt nickel-plated	**8611.340**

Also required:

Handle adaptor for mounting on a TS glazed door, PC-TS bottom door, IW designer door, IW glazed door,
see page 934.
Mounting adaptor for mounting on a designer glazed door 180°,
see page 935.



Lock and push-button inserts

For installation in
- Comfort handle for semi-cylinders, see above,
- Ergoform-S standard, see page 953
- Folding lever handle for CM, see page 949

Design	Model No. SZ
Security lock insert no. 3524 E	**2467.000**[1)]
Push-button insert	**2468.000**
Lock and push-button insert, lock no. 2123; no other lock is possible	**2469.000**[1)]

[1)] with 2 keys

Possible alternative:

Semi-cylinder,
see page 957.




Comfort handle

Prepared for ASSA lock system.
Length: 302 mm.

Design	Model No. TS
RAL 7032	**8611.050**
RAL 7035	**8611.280**

Also required:

Handle adaptor for mounting on a TS glazed door, PC-TS bottom door, IW designer door, IW glazed door,
see page 934.
Mounting adaptor for mounting on a designer glazed door 180°,
see page 935.




Designer handle

for DK-TS

To be used in exchange for the existing handle system. Prepared for the installation of standard commercial semi-cylinders, cylinder length 30/10 mm or 35/10 mm, to DIN 18 252, as well as lock and push-button inserts.

Material:
Die-cast zinc

Surface finish:
Powder-coated

Colour:
RAL 7035

Packs of	Model No. DK
1	7824.600

Accessories:

SZ lock and push-button inserts,
see page 948.
Semi-cylinder,
see page 957.



Folding lever handle

for CM

As the handle does not take up any swing space, due to its folding mechanism, the door surface area may be maximised for installed equipment.

Colour:
Enclosure: Similar to RAL 9005
Handle: Similar to RAL 9006

Dimensions:
Length: 242 mm (with inserted trim panel)
Width: 50 mm
Depth: 17.5 mm




Folding lever handle

for CM
for lock inserts

Prepared for the installation of:
- Semi-cylinders with an overall length of 40 or 45 mm (to DIN 18 252)
- Lock inserts
- Lock and push-button inserts

Packs of	Model No. CM
1	5001.060

Accessories:

Lock inserts, version F,
see page 956.
SZ lock and push-button inserts,
see page 948.
Semi-cylinder,
see page 957.




Folding lever handle

for CM
for padlock and lock inserts

Prepared for the installation of:
- Semi-cylinders with an overall length of 40 or 45 mm (to DIN 18 252)
- Lock inserts
- Lock and push-button inserts

With additional shackle (hole diameter 8 mm) for a padlock.

Packs of	Model No. CM
1	5001.062

Accessories:

Lock inserts, version F,
see page 956.
SZ lock and push-button inserts,
see page 948.
Semi-cylinder,
see page 957.

Lock systems




Folding lever handle

for CM
prepared for KESO lock system.

Packs of	Model No. CM
1	**5001.063**




Folding lever handle

for CM
prepared for ASSA lock system.

Packs of	Model No. CM
1	**5001.064**




Folding lever handle

for CM
with lock insert, lock E1

Only for use with **VW, Audi, SEAT, SkodaAuto.**
Supplied without key.
Other VW locks available on request.

Packs of	Model No. CM
1	**5001.061**




Security handle

with code
Flexible access opportunities with
- individual 3-digit code without key
  or
- with the master key function via an additional semi-cylinder of 40 or 45 mm to DIN 18 252, irrespective of the code.

Design with	Model No. DK
Comfort handle TS, FR(i)	**7200.800**
Ergoform-S handle for TE	**7200.810**

Also required:

Mounting adaptor for mounting on a designer glazed door 180°,
see page 935.

Accessories:

SZ lock and push-button inserts,
see page 948,
Semi-cylinder,
see page 957.





Adjacent door locking

for TS

For optimum operation of the adjacent door from the outside if the handle on the inside is difficult to access due to swing frames or 482.6 mm (19″) installed equipment. Retrospective conversion of the adjacent door is easily achieved using the supplied drilling template.
The handle on the inside is no longer required.

Colour:
RAL 7035

Supply includes:
Assembly parts.

Packs of	Model No. TS
1	8611.370

Accessories:

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, version A, see page 956.



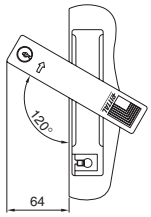


Swivel handle

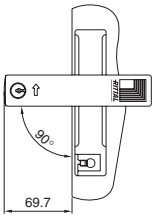
for sheet steel door DK-TS

With lock insert, lock no. 3524 E.
The use of semi-cylinders is not supported.
Length: 150 mm.

Note:
When used in a bayed enclosure suite, the hinges must be on the same side.



Position for door opening



Max. projection of the upper handle part

Design	Model No. DK
RAL 7035	7829.300





Locking bar latch to CNOMO[1)]

To fit all locking bars in TS doors and glazed doors with standard lock or comfort handle.
The latch prevents the locking bars from moving when the door is open. For mounting on the bolt of the bar guide.

[1)] CNOMO is a specification by the French automobile industry. For safety reasons, it must not be possible to lock the handle whilst the door is open.

Packs of	Model No. TS
10	8611.210

Also required:

for CNOMO[1)]
Lock inserts, version F, 6.5 mm triangular insert TS 8611.220,
see page 956.

Lock systems




Spring washer

Upon dismantling the TS locking rods, the spring washers cannot be reused.

Material:
Spring steel, zinc-plated, passivated

Packs of	Model No. TS
100	**8800.070**



Assembly tool

for spring washers
For simple pressing-on of the spring washers via inlet ring magnets.

Packs of	Model No. TS
1	**8800.270**






Mini-comfort handle

for use in all 3-part EL enclosures
Prepared for the installation of lock inserts and for the installation of commercially available 40 or 45 mm semi-cylinders, and of lock and push-button inserts.

Material:
Die-cast zinc

Colour:
RAL 7035

Design	Model No. DK
For lock inserts[1)]	**7705.110**
For semi-cylinder[2)]	**7705.120**

Accessories:

[1)] Lock inserts, version F,
see page 956.
[1)] TS lock and push-button inserts,
see page 947.
[2)] SZ lock and push-button inserts,
see page 948.
[2)] Semi-cylinder,
see page 957.



The Ergoform S lock system

The unlocked handle folds down forwards and is swivelled to open the lock.

Material:
Die-cast zinc

Surface finish:
Powder-coated



Ergoform standard

Prepared for the installation of semi-cylinders with a total length of 40 or 45 mm (to DIN 18 252), see page 957, all 27 mm lock inserts, version A, see page 956, as well as SZ lock and push-button inserts, see page 948.

Design	Model No. SZ
RAL 7032 with brown handle	**2450.000**
RAL 7035 with brown handle	**2450.010**
Brown	**2451.000**
Matt nickel-plated	**2452.000**
RAL 7032	**2454.000**
RAL 7035	**2435.000**
RAL 7032[1] with brown handle and bracket	**2455.000**
RAL 7035[1] with brown handle and bracket	**2455.010**

[1] Hole diameter = 7 mm for padlock



To fit **KS plastic enclosures.** Prepared for the installation of semi-cylinders with a total length of 40 mm (to DIN 18 252), see page 957, all 27 mm lock inserts, version A, see page 956, as well as SZ lock and push-button inserts, see page 948.

Design	Model No. KS
RAL 7035 with brown handle	**1490.010**

Ergoform special



1



2



3

1 With security lock insert E1.
Only for use with **VW, Audi, SEAT, SkodaAuto.**
Supplied without key.
Other locks available on request.

E1	Model No. SZ
RAL 7035 with brown handle	**2456.500**

2 Prepared for ASSA lock system.

ASSA	Model No. SZ
Completely brown	**2453.000[1]**

[1] To fit plastic enclosures KS on request.

3 To fit all ES enclosures with CNOMO lock, 6.5 mm.
Triangular lock insert. The handle can only be locked if the door is completely closed **(French motor car industry).** Not suitable for glazed doors.

CNOMO	Model No. SZ
RAL 7035 with brown handle	**2421.500**



Ergoform padlock handle system

for CS basic and modular enclosures
With an additional shackle for a padlock.
Hole diameter of shackle: 9 mm.
Prepared for the installation of 40 mm semi-cylinders (length: 10/30 mm), see page 957.

Packs of	Model No. CS
1	**9785.030**

Lock systems



Plastic handles

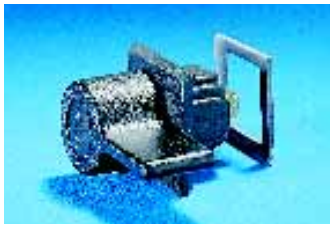
With cylinder insert.
Lock no. 3524 E including assembly parts, seal and 2 keys.

Note:
The universal lock systems allows the installation of a suitable handle to suit almost any application or customer specification. The relevant product ordering page shows which handles can be fitted into each particular assembly.



Version B

Colour	Model No. SZ
RAL 9011	**2576.000**
RAL 7030	**2439.000**



Version B, but without lock insert.

Colour	Model No. SZ
RAL 9011	**2533.000**



Version C

Colour	Model No. SZ
RAL 9011	**2485.000**



Version C, but without lock insert.

Colour	Model No. SZ
RAL 9011	**2485.100**



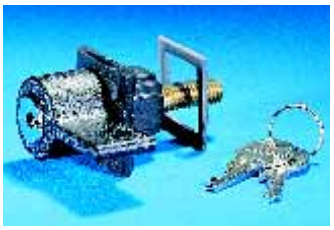
Version E

Colour	Model No. KS
RAL 8019	**1484.000**



Version E, but without lock insert.

Colour	Model No. KS
RAL 8019	**1484.001**



Version G

Colour	Model No. SZ
RAL 9011	**2599.000**

T handles

Material:
Die-cast zinc, chrome-plated

Supply includes:
Seal and 2 keys.



Version B

Design	Model No. SZ
With cylinder insert, lock no. 3524 E	**2575.000**
Without cylinder insert	**2572.000**



Version C

Design	Model No. SZ
With cylinder insert, lock no. 3524 E	**2535.000**
Without cylinder insert	**2536.000**

Cam locks



Housing made of die-cast zinc, nickel-plated.

	Model No. SZ
With double-bit insert[1)]	**2520.000**
With cylinder insert, lock no. 3524 E	**2530.000**

[1)] May be exchanged for version C lock inserts, see page 956.



Housing made of fibre-glass reinforced polyamide, also as a replacement for compact enclosures AE.

	Model No. SZ
With double-bit insert[1)]	**2420.000**
With cylinder insert, lock no. 3524 E	**2430.000**

[1)] May be exchanged for version B lock inserts, see page 957 and 27 mm lock inserts, version A, see page 956.



Housing made of fibre-glass reinforced polyamide, also as a replacement for compact enclosures AE.

With lock no. E1.
Only for use with **VW, SEAT, Audi, SkodaAuto.**
Supplied without key.
Other locks available on request.

Colour	Model No. SZ
RAL 7032	**2540.000**
RAL 7035	**2540.500**



Made entirely from stainless steel 1.4404 (AISI 316L).
For AE compact enclosures, stainless steel (with cam lock).

	Model No. SZ
With double-bit insert	**2304.000**

Lock inserts

Note:
The universal lock systems allows the installation of a suitable handle to suit almost any application or customer specification. The relevant product ordering page shows which handles can be fitted into each particular assembly.



Version A

Material:
Die-cast zinc

Length 27 mm	Model No. SZ
7 mm square	**2460.000**
8 mm square	**2461.000**
7 mm triangular	**2462.000**
8 mm triangular	**2463.000**
Screwdriver	**2464.000**
Daimler insert	**2465.000**
3 mm double-bit	**2466.000**
Fiat	**2307.000**
6.5 mm triangular (CNOMO)	**2460.650**



Version C

Material:
Die-cast zinc

Length 41 mm	Model No. SZ
7 mm triangular	**2527.000**
8 mm triangular	**2528.000**
7 mm square	**2523.000**
8 mm square	**2526.000**
Daimler insert	**2522.000**
3 mm double-bit	**2483.000**



Version D

Material:
Die-cast zinc

Length 47 mm	Model No. SZ
7 mm triangular	**2555.000**
8 mm triangular	**2556.000**
7 mm square	**2557.000**
8 mm square	**2558.000**
Daimler insert	**2554.000**
3 mm double-bit	**2484.000**



Version E

Material:
Plastic

	Model No. KS
7 mm triangular	**1485.000**
8 mm triangular	**1486.000**
7 mm square	**1487.000**
8 mm square	**1488.000**
Screwdriver	**1489.000**
Double-bit	**1492.000**



Version F

Material:
Die-cast zinc

Design	Model No. TS
7 mm square	**8611.100**
8 mm square	**8611.110**
6.5 mm triangular (CNOMO)	**8611.220**
7 mm triangular	**8611.120**
8 mm triangular	**8611.130**
Screwdriver	**8611.140**
Daimler	**8611.150**
3 mm double-bit	**8611.160**
Fiat	**8611.170**

Cylinder inserts

Material:
Die-cast zinc



Version B

Lock no. 3524 E with 2 keys.

Packs of	Model No. SZ
1	**2571.000**



Version C

Lock no. 3524 E with 2 keys.

Packs of	Model No. SZ
1	**2525.000**



Semi-cylinder

to DIN 18 252
40 mm, alternative closure, for individual locks in handle systems with cylinder insert.

Supply includes:
3 keys.

Packs of	Model No. CS
1 set	**9785.040**





Semi-cylinder lock

for compact enclosures AE
For retro-fitting to single-door enclosures with cam lock.
The cover plate is locked by semi-cylinders with a total length of 40/45 mm (to DIN 18 252). An additional cover protects the cylinder against dirt. The protection category of the enclosure is not impaired.
Supplied without semi-cylinder.

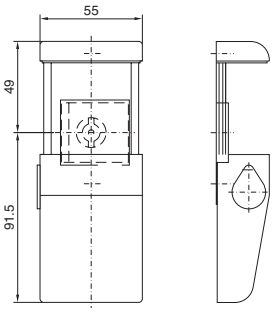
Material:
Die-cast zinc

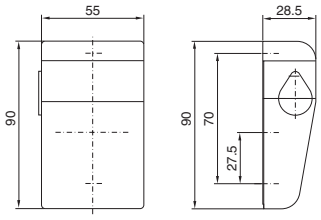
Design	Model No. SZ
RAL 7035	**2534.100**
Nickel-plated (matt)	**2534.500**

Accessories:

Semi-cylinder,
see page 957.

German patent no. 195 12 280
European patent no. 0778 913
with validity for GB, FR, IT
US patent no. 5,916,282
Jap. patent no. 3.088.465





Lock systems



Lock cover

For padlocks or multiple locks
For retrospective mounting on all compact enclosures AE, of sheet steel and with cam lock.

Material:
Die-cast zinc, nickel-plated, passivated

Packs of	Model No. SZ
1	**2493.000**



Multiple lock

for 6 cam locks
The the ideal solution in cases where individual access for several persons is required for maintenance and repair purposes.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. SZ
2	**2493.500**



Lock cover

prepared for lead seal
For all enclosure types with Rittal-specific locks, such as AE, EB and AP.

Material:
Polyamide

Colour	Packs of	Model No. SZ
RAL 7035	2	**2476.000**

German registered design no. M 92 07 062



Security lock

Fitted to doors, to protect against contact with live electrical equipment whilst the main switch is ON.

Function:
- Locks the door when the main switch is ON.
- Mains power (voltage) is only enabled whilst the door is closed.
- Monitoring of the lock magnet via an additional closing contact.

Supply includes:
Lock, actuator, angle bracket, assembly parts.

Connection voltage for lock magnet	Model No. SZ
230 V AC 11 VA	**2416.000**
24 V DC 8 W	**2418.000**
120 V AC 8 VA	**2419.000**

Also required:

For twin-door enclosures (for the overlapping door, to indicate “enclosure door closed”), Rittal door-operated switch PS 4127.000, see page 1030.





Enclosure keys

For lock inserts (one double-bit key is supplied with every enclosure).

Design	Model No. SZ/QB
Double-bit key no. 5	**2531.000**
Security key no. 3524 E	**2532.000**[1)]
7 mm triangular	**2545.000**
8 mm triangular	**2546.000**
7 mm square	**2547.000**
8 mm square	**2548.000**
For HD lock insert	**2549.600**
Daimler key	**2521.000**
Fiat key	**2308.000**
Lock 12321	**7526.050**[1)]

[1)] Packs of 2



Universal enclosure key

For inserts:
- Double-bit
- Rectangular 8 mm
- Triangular 8 mm

With integral slotted screwdriver.

Packs of	Model No. SZ
1	**2549.000**



Universal key

For inserts:
- Double-bit
- Rectangular 6 mm
- Rectangular 7 – 8 mm
- Triangular 7 – 9 mm

With bit adaptor and reversible bit for:
- Multi-tooth size 25
- Philips-head (Ph 2)

Packs of	Model No. SZ
1	**2549.500**

Accessories:

Bit for HD lock insert (Model No. HD 2549.510), see page 301.



Quick-release fastener

for QuickBox

The quick-release fastener provides optimum access, even when used in problem areas. To facilitate locking, the quick-release fastener is screw-fastened to the mounting bracket at the front. This enables the QuickBox to be locked even when the fasteners of the sides are opened, allowing the enclosure cover to be attached and removed easily.

Packs of	Model No. QB
2	**7502.220**

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Supply includes:
2 mounting brackets, assembly parts and quick-release fasteners.

Lock systems



1

Door latch for bayed suites

For extending the door locking of **commercially available main switches** to bayed suites TS. Adjacent door cannot be opened until the main door has been opened.

The main switch can be positioned anywhere in the suite; its function is independent from the door hinge position.
Subsequent locking of the adjacent doors in the suite is possible: they are thus automatically included in locking operation.



2

1 Operating mechanism
(Fitted in the enclosure with main switch and additionally in every fourth adjacent enclosure)

	Model No. TS
Operating mechanism	**4912.000**

2 Adjacent door locking
(installation in adjacent enclosure)

	Model No. TS
Adjacent door locking	**4911.000**



3

3 Interconnecting rods
To extend locking from the main enclosure to the adjacent enclosures of a bayed suite. An interconnecting rod corresponding to the width of the enclosure is required for each adjacent enclosure.

For enclosure width mm	Packs of	Model No. TS
600	10	**4916.000**
800	10	**4918.000**
1200	10	**4920.000**



Isolator door locking (US version)

For safety locking of enclosures and bayed suites in accordance with US regulations, only in conjunction with the following **types of main switches:**

- Allen Bradley 1494 V-H1 (actuating lever)
- Square D 9422 A1
- ITE Siemens Max-Flex series/FHOH (only available in the USA)
- General Electric TDA Typ 1 and 2.
- Moeller NZM-XSHGVR 12-NA

For assembly, a main door lock plus adjacent door locking are required, together with interconnecting rods to match the bayed enclosures.

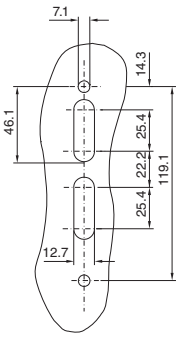
Main door latch	Model No. TS
for TS	**8611.310**



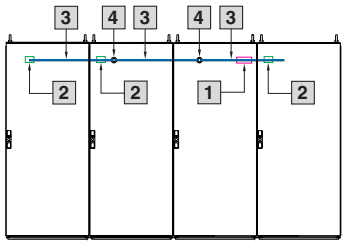


Caution!
When configuring bayed suites, it must be noted that the isolator main enclosures can only be attached to the right side (US version).

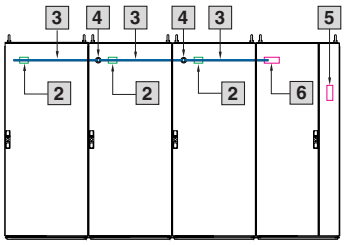
Cut-out for main switch



Door locking for TS bayed suites (commercially available main switches)



Isolator door locking (USA version)



1 Operating mechanism, installation in enclosure with main switch
2 Adjacent door locking, installation in adjacent enclosure
3 Interconnecting rod
4 Connection component (included in the supply of adjacent door locking item 2)
5 Main door lock (for isolator door locking, USA version)
6 Operating mechanism, installation in the main enclosure (included in the supply of the main door lock pos. 5)



Hinges 130°

for ES
For retrofitting a sheet steel door instead of the rear panel.

Material:
Die-cast zinc

Supply includes:
Assembly screws.

Packs of	Model No. PS
6	**4190.000**



Hinges 130°

for TS
For retrofitting a sheet steel door instead of the rear panel.

Material:
Die-cast zinc

Supply includes:
Assembly screws.

Packs of	Model No. TS
4	**8800.020**

Also required:

Lock components for frame TS 8800.040,
see page 934.



Hinges 180°

For retrospective conversion of sheet steel doors with 130° hinges.

One-person assembly:
- Exchange the hinge parts on the frame side for 180° hinges (4 screws).
- Drill the door at the pre-marked points.
- Screw-fasten the hinge parts onto the door.
- Locate the door.
- Press in the captive hinge pins.

Supply includes:
Assembly screws.

Note:
Door assemblies such as the comfort handle may restrict the door opening angle. The hinge pins may only be actuated and the door removed with the door open. The hinge cannot be dismantled from the outside with the door closed (access protection).

for TS

Material:
Die-cast zinc

Design	Packs of	Model No. TS
RAL 7035	4	**8800.190**
RAL 7032	4	**8800.030**
RAL 8019	4	**8800.230**
RAL 9005	4	**8800.950**
Matt nickel-plated	4	**8701.180**

for TS with high dynamic loads
Specifically for applications where dynamic stresses occur in addition to heavy door installations (up to 900 N).

Material:
Precision-cast/Die-cast zinc

Colour:
RAL 7035

Packs of	Model No. TS
4	**8800.710**

Hinges





Hinges 180°

for TS bayed enclosure suites with comfort handle

In TS bayed enclosure suites with comfort handle for semi-cylinder, the following door opening angles may be achieved:
Sheet steel door: max. 180°
Glazed door: max. 140°

Material:
Die-cast zinc

Colour:
RAL 7035/RAL 9005

Supply includes:
Assembly screws.

Version for	Packs of	Model No. TS	
		RAL 7035	RAL 9005
Sheet steel door	4	**7824.520**	**7824.522**
Glazed door	4	**7824.525**	**–**

Note:
- The protection category of the enclosure may be reduced.
- Not for divided doors.
- Door hinge remains the same within a bayed enclosure suite.
- Not suitable for use with TS designer glazed doors.



Rear panel bracket

For:
- Premium Panel
- Premium Line KL, from height 200 mm

For fitting on the inside, so that there are no exterior surfaces where substances could accumulate and pose a potential threat to hygiene.
Holds the rear panel against the enclosure when it is flipped down; easily removed if required.

Packs of	Model No. CP
1 set	**6682.000**

Material:
Stainless steel 1.4301 (AISI 304)

Supply includes:
Assembly parts.



Cover hinge

for KL

The cover hinge is simply screwed to the enclosure protection channel and to the edge fold.

Supply includes:
Assembly parts.

Material	Packs of	Model No. KL
Die-cast zinc	6	**1592.000**
Stainless steel 1.4404 (AISI 316L)	2	**1592.010**



Cover retainer

for KL

The cover retainer is easily fitted without drilling, and allows the covers to be opened upwards, even when the terminal box below is bayed.

Packs of	Model No. KL
3 pairs	**1591.000**

Hinges 180°

For retrospective conversion of standard doors with 130° hinges.
Including assembly parts.



For ES, AP universal console, TP pedestals, TE

Material:
Aluminium

Surface finish:
Powder-coated in RAL 8019

Packs of	Model No. PS
6	4189.000



For ES

Material:
Stainless steel 1.4301 (AISI 304)

Packs of	Model No. PS
6	4156.000



For AP one-piece console

Material:
Sheet steel

Packs of	Model No. SZ
6	2579.000



For AE

Material:
Die-cast zinc

Packs of	Model No. SZ
2	2449.000



For CM

Material:
Die-cast zinc

Colour:
RAL 9011/9006

Packs of	Model No. CM
3	5001.000

Hinge pin remover

For safe and easy removal of hinge pins.



For enclosure	Model No. SM
AE/CM/FM	2432.000

Door, internal

Support strips

For attachment of
- Cable trunking
- Cable conduit holders
- Contact hazard protection covers
- Equipment installed on the door
- Cable clamping and attachment

4.5 mm diameter hole on a 25 mm DIN pitch pattern.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Packs of 20,
including screws.

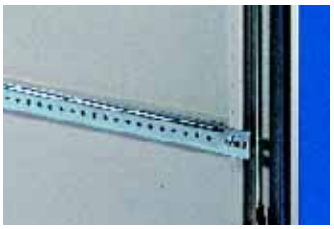
Accessories:

Screws and self-tapping screws M5,
see page 1011.



For TS, CM, ES, TP

For door width mm	Length mm	Model No. SZ
400	290	**4594.000**
500	390	**4309.000**
600	490	**4596.000**
800	690	**4598.000**
900	790	**4579.000**
1000	890	**4599.000**



For AE

For enclosures AE	Model No. SZ
1007.500[2], 1013.500[2] 1018.500[2], 1019.500[2] 1050.500[1], 1057.500 1100.500, 1110.500 1114.500[1], 1130.500 1213.500[1], 1350.500[1]	**2325.000**
1009.500[2], 1010.500[2] 1012.500[2], 1039.500 1054.500, 1058.500 1060.500, 1076.500 1090.500, 1260.500[1] 1339.500, 1360.500 1376.500	**2326.000**
1014.500[2], 1073.500 1077.500	**2327.000**
1016.500[2], 1017.500[2] 1055.500, 1180.500 1280.500[1]	**2328.000**

[1] For these AE models, the door rails should be cut to length.
[2] Only in conjunction with perforated mounting strips (see page 965).



Spacers

The universal assembly component for all cases where a distance from the mounting level is required. With self-tapping thread for diameter 4.5 mm. The following components may be attached to the rear using 5.5 x 13 mm screws:
- Top-hat/cross rails
- Contact hazard protection covers
- Master switch trim panels
- Cable clamp rails,
  etc.

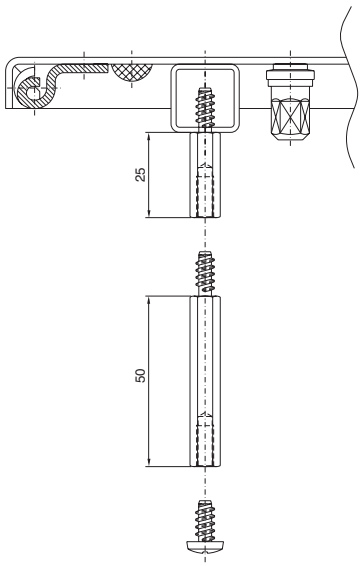
Material:
Hexagonal steel (SW8)

Surface finish:
Zinc-plated, passivated

Accessories:

Screws 5.5 x 13 mm,
see page 1011.

Length mm	Packs of	Model No. TS
25	12	**2311.225**
50	12	**2311.250**





Perforated mounting strip

For AE stainless steel, AP universal console[1)]
For vertical mounting on the threaded bolts of the door, for attaching
- Support strips for AE, see page 964.
- Door stay SZ 2519.000, see page 967.

3.7 mm diameter hole on a 25 mm DIN pitch pattern.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Packs of 20,
including nuts and serrated washers.

To match AE	Length mm	Model No. SZ
1005.500, 1005.600, 1006.500, 1006.600, 1009.600	318	**2310.038**[1)]
1012.600, 1014.600	698	**2310.076**
1016.600, 1018.600	938	**2310.100**
1017.600, 1019.500, 1019.600	1138	**2310.120**

[1)] For door at top.

Accessories:

Screws,
see page 1011.



Utility lectern

For programming units etc. Prepared for mounting on the tubular door frame of TS, CM, ES, PC or on any sufficiently large surface.
When required for servicing, it folds down quickly with a maximum support area, and after use is stowed between the tubular door frames in a space-saving design.
Load capacity: max. 30 kg.

Material:
Sheet steel

Colour:
RAL 7035

Support area		For door width mm	Model No. TS
Width mm	Depth mm		
413	400	600	**4638.600**
613	400	800	**4638.800**





Wiring plan lectern

Holds wiring plans during fault finding and maintenance work.
The wiring plan lecterns can be bayed according to the door width.
For mounting on the tubular door frame.

Material:
Utility lectern: Polypropylene
Mounting bracket: Die-cast zinc

Colour:
Similar to RAL 7035

Supply includes:
Wiring plan lectern (width 210 mm).
Assembly parts.

For enclosures	Packs of	Model No. TS
TS, CM, ES, PC, TP	1	**4120.000**

For door width mm	Required/possible number of wiring plan lecterns	
	min.	max.
400	1	1
500	1	1
600	2	2
800	2	3
1000	3	3



CD/disk box

For fixing to all flat, clean surfaces with double-sided adhesive tape.

Capacity:
Max. 10 CDs/DVDs
or 18 (3 $^1/_2$″) disks.

Material:
Polyamide

Colour:
RAL 7033

Packs of	Model No. SZ
1	**2446.000**

German registered design no. M 92 07 061
U.K. reg. design no. 2 029 365
IR reg. design no. DM/025 474
with validity for FR, IT

Door, internal







Plastic wiring plan pockets

for AE

For installation options, refer to table

- B = Screw-fastened to the perforated door strip on both sides
- E = Screw-fastened on one side, other side stuck with adhesive

or stuck entirely with adhesive

Supply includes:
2 holders with double-sided adhesive tape,
acrylic glazed pane,
assembly parts.

Note:
The acrylic glazed pane may be shortened to any required size for shorter doors.

Model No. SZ		2514.500	2514.600	2514.800
Usable width mm		340	415	615
Usable depth mm		18	18	18
Height of acrylic glazed pane mm		167	167	167
Installation options				
For Model No. AE	Width mm			
1050.500	500	B	–	–
1054.500	600	E	E	–
1055.500	800	E	E	B
1057.500	500	B	–	–
1058.500	600	E	E	–
1060.500	600	E	E	–
1073.500	760	E	E	–
1076.500	600	E	E	–
1077.500	760	E	E	–
1090.500	600	E	E	–
1100.500	1000	B	–	–
1110.500	1000	B	–	–
1114.500	1000	B[1)]	–	–
1130.500	1000	B	–	–
1180.500	800	E	E	E
1213.500	1000	B[1)]	–	–
1260.500	600	E	B	–
1280.500	800	E	E	B
1350.500	500	B	–	–
1360.500	600	E	E	–
1376.500	600	E	E	–

[1)] Prepared for the installation in the l/h side door; for installation in the r/h side door, the acrylic glazed pane can be shortened.



Plastic wiring plan pockets

For affixing to the inside surfaces of doors.

Material:
Polystyrene with self-adhesive fastening strips.

Colour:
Similar to RAL 7035

For format	Clearance openings mm			Model No. SZ
	W	H	D	
A3 landscape	438	286	45	**2513.000**
A4 portrait	228	254	17	**2514.000**
A5 landscape	228	174	17	**2515.000**



Wiring plan pockets with transparent pouch

With welded-on transparent pouch and self-adhesive backing.

For format	Model No. SZ
DIN A4	**2510.000**
DIN A3	**2512.000**





Wiring plan pockets of sheet steel

for TS, CM, ES, PC, TP pedestal
For fastening to tubular door frames at any height.

Colour:
RAL 7035

Supply includes:
Assembly screws

To fit door width mm	Clearance openings mm		Model No. TS	
	W	H	D 90 mm	D 35 mm
400	255	260	**4114.000**	–
500	355	260	**4115.000**	**4115.500**
600	455	260	**4116.000**	**4116.500**
800	655	260	**4118.000**	**4118.500**
900	755	260	**4123.000**	–
1000	855	260	**4124.000**	–





Door stay

To secure the door in the open position.

For	Assembly	Packs of	Model No.
TS, ES, PC, AP universal console	Bottom	5	**4583.000**
AP one-piece console	Top	5	**2518.000**
CM, TP	Top	2	**2519.200**
AE (except AE 1032.500 and AE 1035.500) and all AE stainless steel enclosures[1)]	Top	5	**2519.000**
AE IP 69K	Top	1	**1101.800**

[1)] With AE stainless steel, only in conjunction with perforated mounting strip, see page 965.



Ride-up roller

for TS, ES, PC
Lifts the door with heavy installed equipment (e. g. cooling unit) as a closing aid. For attaching to the tubular door frame.

Packs of	Model No. TS
10	**4538.000**





Transport and mounting handle

for doors TS, ES
For secure attachment and dismantling of the door and for movement into the workshop. The matching hinge pin removal tool for 130° hinges is pre-integrated, and supplied loose for 180° hinges.

Packs of	Model No. SM
1	**2415.100**

Door, internal





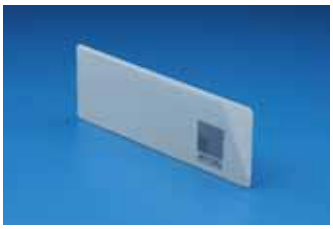
Document clip, magnetic

For simple attachment of installation documentation as a reminder or for flexible accommodation of a wide range of documents, measurement records, test reports etc. May be attached to any magnetisable surface via a permanent magnet.

Material:
Plastic: Transparent
Grips: Black

Supply includes:
2 mounting clamps
including permanent magnet.

Packs of	Model No. DK
2	**7950.200**





Alternate frame, magnetic

For individual marking or labelling of the existing network infrastructure.
The magnetic surface facilitates flexible mounting on all magnetisable surfaces. Adhesive strips are supplied for non-magnetic surfaces.
The maximum size of the labels is 130 x 50 mm.

Material:
Plastic

Supply includes:
Alternate frame, magnetic,
labels,
double-sided adhesive tape.

Packs of	Model No. DK
10	**7950.150**

Rain canopies

for AE, CM
Reliable protection for outside siting – with water run-off to the rear. Easily retro-fitted.

Supply includes:
Assembly parts.

Accessories:

Condensate discharge,
see page 916.
Pressure relief valve,
see page 916.
Wall mounting brackets SZ 2503.0X0 and SZ 2508.0X0 may be used,
see page 975.

Note:
For outdoor siting, we generally recommend a rain canopy above the enclosure or the gap between the door or screw-fastened rear panel and the enclosure, in order to protect against water and UV radiation.
The tests of IP protection categories for water protection (2nd code number to EN 60 529/09.2000) cannot be compared with an enclosure sited outdoors or under similar conditions.
Upon request, rain canopies of sheet steel, stainless steel or aluminium can also be produced for other enclosures.



for AE, sheet steel version

Material:
Sheet steel

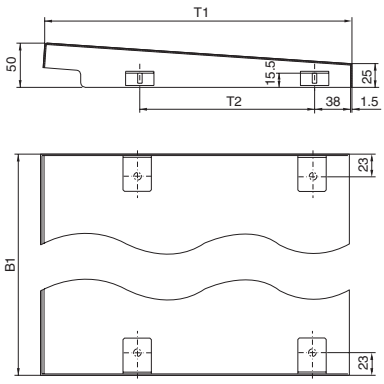
Surface finish:
Powder-coated in textured RAL 7035

For AE enclosures	Model No. SZ
1031.500, 1038.500, 1380.500	**2501.500**
1039.500, 1060.500, 1076.500	**2502.500**
1339.500, 1360.500, 1376.500	**2511.500**

for AE, stainless steel version

Material:
Stainless steel 1.4301 (AISI 304)

Surface finish:
Brushed, grain 240



B1 = Enclosure width + 11 mm
T1 = Enclosure depth + 25 mm
T2 = Enclosure depth – 90 mm, from enclosure width 600 mm – enclosure depth 115 mm

For AE enclosures	Model No. SZ
1002.600, 1035.500	**2470.000**
1003.600, 1005.500, 1005.600, 1033.500, 1034.500	**2361.000**
1004.600, 1030.500	**2471.000**
1006.500, 1006.600, 1008.600, 1011.600, 1031.500, 1038.500, 1380.500	**2472.000**
1007.600, 1050.500	**2362.000**
1009.600, 1010.500, 1010.600, 1012.600, 1039.500, 1060.500, 1076.500	**2473.000**
1014.600, 1073.500	**2474.000**
1016.600, 1017.600, 1055.500, 1180.500, 1280.500	**2475.000**
1018.600, 1019.500, 1019.600, 1110.500, 1114.500, 1130.500, 1213.500	**2363.000**

Possible alternative:

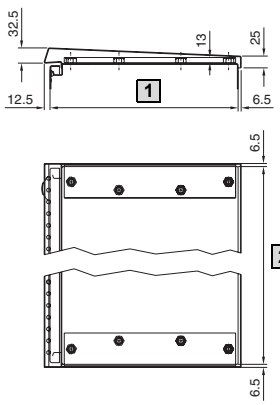
Compact enclosures Hygienic Design,
see page 299.





for CM, sheet steel version

Benefits:
- Mounting via the two holes in the top of the CM
- At the front, with integrated ventilation holes at the top



1 Enclosure depth
2 Enclosure width

Width mm	Depth mm	Model No. CM
600	300	**5001.300**
600	400	**5001.310**
800	300	**5001.320**
800	400	**5001.330**
1000	300	**5001.340**
1000	400	**5001.350**
1200	400	**5001.360**

Material:
Sheet steel

Surface finish:
Powder-coated in textured RAL 7035

Roof



Dust guard trim

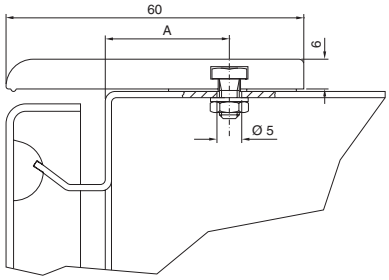
for AE, CM, EB, KL and BG

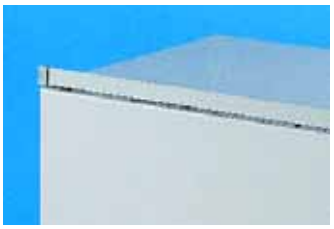
To protect against deposits on the upper edge of the door and between the enclosure and the door/lid. Cut the door protection strip to length according to the enclosure width. Drill the enclosure and mount the strip using the adhesive strips and screws.

Material:
Plastic, UV-resistant

Colour:
Similar to RAL 7024

For enclosure	Length mm	A mm	Model No. SZ
AE	1200	25	**2426.500**
CM		20	
KL, EB, BG		20.5	





Dust guard trim

for TS, ES

To protect against dust deposits on the upper edge of the door and between the door and upper horizontal enclosure section. The dust guard trim provides space to accommodate texts or company logos.

Colour:
RAL 7035

Supply includes:
Clear plastic strip for text labels (height 29.5 mm).

Length mm	Model No. SZ
600	**2424.100**
800	**2425.100**
1000	**2427.100**
1200	**2426.100**

Note:
Also suitable for use in conjunction with baying cover top,
see page 932.





Top mounting module

for TS, FR(i)

As a cable chamber for cable infeed from above or for power distribution with busbar systems across bayed enclosures. The TS cover plate is used as standard to finish off at the top. The enclosure height is increased by 200 mm with the top mounting module fitted.
The top baying cover cannot be fitted. Installation accessories for top and bottom, see diagram and explanations below.

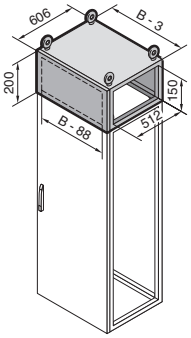
Material:
Sheet steel, 1.5 mm

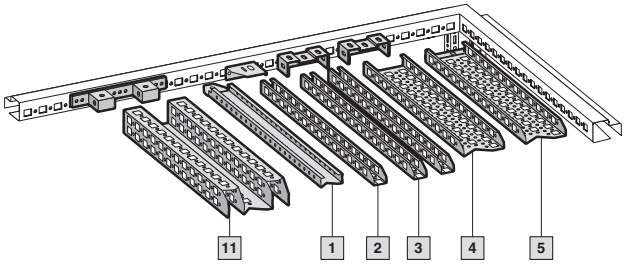
Surface finish:
Spray-finished in textured RAL 7035

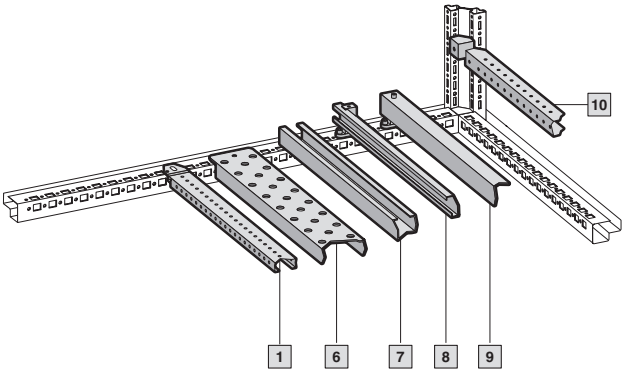
Protection category:
IP 55 to EN 60 529/09.2000
Complies with NEMA 12 (in conjunction with side panel for top mounting module, see page 971).

For enclosures		Model No. TS
Width (B) mm	Depth mm	
400	600	**8801.725**
600	600	**8801.735**
800	600	**8801.745**
1000	600	**8801.755**
1200	600	**8801.765**

Supply includes:
1 frame module,
2 trim panels (front and rear),
8 holders with automatic potential equalisation,
4 tapped rods with eyebolts.

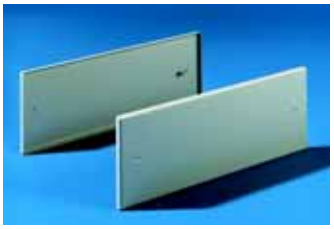






Accessories:

Description	Page
1 TS punched rail 18 x 38 mm	996
2 PS punched rail 23 x 23 mm with angle bracket	998
3 PS punched rail 23 x 23 mm with support bracket	998
4 PS punched section without mounting flange 23 x 73 mm, with support bracket PS	998
5 PS punched section with mounting flange 23 x 73 mm	999
6 Support rail	1001
7 System support rails	1000
8 C rail 30/15 with support bracket or spacer	999
9 Cable clamp rail	1061
10 TS punched rail 25 x 38 mm	996
11 TS punched section without mounting flanges, 45 x 88 mm	995





Side panel

for top mounting module

To finish off the side of a top mounting module or bayed suite.

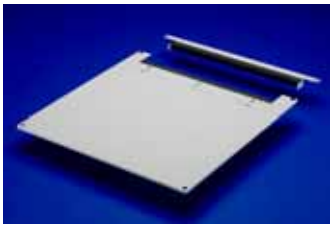
Material:
Sheet steel, 1.5 mm

Surface finish:
Spray-finished in textured RAL 7035

Supply includes:
2 side panels,
8 retainers
with automatic potential equalisation.

Packs of	Model No. TS
2	**8801.775**

Roof





Roof plate

for cable entry, two-piece
for DK-TS, FR(i)

In exchange for the standard roof. Equipped with a sliding angular bracket in the rear section. Rubber cable clamp strip on both sides for attaching cable bundles and bunched cables. Thanks to the symmetrical design of the TS 8 frame, side cable entry can also be achieved by rotating the roof plate.
The two-piece design additionally allows easy retro-fitting, by simply removing the front part of the plate for retrospective cable entry.
For active ventilation, a fan mounting plate may be fitted in the front section of the enclosure (only with TS, not in conjunction with 482.6 mm (19″) mounting frames). To this end, the roof plate must be raised by at least 20 mm using spacers.

Material:
Sheet steel

Colour:
RAL 7035

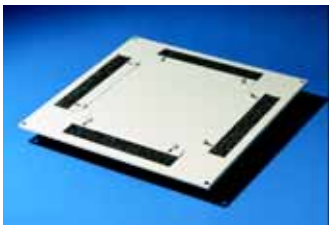
For enclosures		Model No. DK
Width mm	Depth mm	
600	400	**7826.645**[1]
600	600	**7826.665**
600	800	**7826.685**
600	900	**7826.695**
600	1000	**7826.605**
600	1200	**7826.625**
800	400	**7826.845**
800	600	**7826.865**
800	800	**7826.885**
800	900	**7826.895**
800	1000	**7826.805**
1200	400	**7826.245**
800	1200	**7826.825**

[1] Delivery times available on request.

Accessories:

Fan mounting plate,
see page 703.
Spacers,
see page 974.

Detailed drawing,
available on the Internet.



Roof plate

for cable entry on all sides,
for DK-TS, FR(i)

The roof plate has sliding plates for cable entry on all four sides, and therefore allows individual selection of cable routing tailored to the specific requirements. After cable entry, the sliding plate is closed again as far as possible, and the rubber cable clamp strips supplied loose then seal the cable entry area.

Material:
Sheet steel

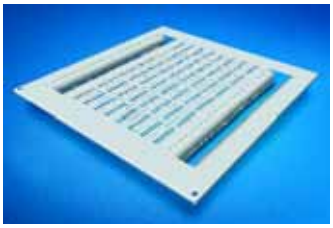
Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width mm	Depth mm	
800	800	**7826.588**
800	900	**7826.589**[1]

[1] Delivery times available on request.

Detailed drawing,
available on the Internet.



Cable management roof plate

for DK-TS, FR(i)

In exchange for the standard roof plate. Thanks to the rounded side cut-outs, large quantities of cables may be routed into the rack whilst preserving the bend radii. The roof has system punchings for the attachment of cables with nylon tape or cable ties.

Material:
Sheet steel

Colour:
RAL 7035

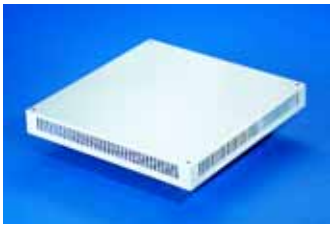
For enclosures		Model No. DK
Width mm	Depth mm	
800	800	**7826.884**
800	900	**7826.894**[1]

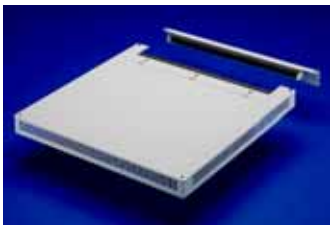
[1] Delivery times available on request.

Other sizes available on request.

Note:
Combination with a 482.6 mm (19″) mounting frame is not possible.

Detailed drawing,
available on the Internet.





Roof plate, vented

for DK-TS, FR(i)
In exchange for the standard roof.

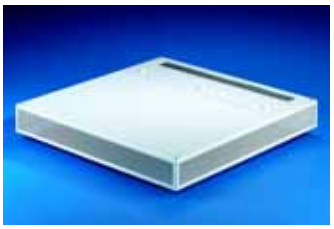
Variant 1:
72 mm high roof plate, all-round vent slots, optionally with clamp strip for cable entry. The two-piece design with cable entry allows easy retro-fitting, by simply removing the front part of the plate. The cables are held in position via a guide at the side.

Material:
Sheet steel

Colour:
RAL 7035

For enclosures		Model No. DK	
Width mm	Depth mm	One-piece without cable entry	Two-piece with cable entry
600	600	**7826.766**	**7826.669**
600	800	**7826.768**	**7826.689**
600	900	**7826.769**[1)]	**7826.699**
600	1000	**7826.760**[1)]	**7826.609**
800	600	**7826.786**	**7826.869**
800	800	**7826.788**	**7826.889**
800	900	**7826.789**[1)]	**7826.899**
800	1000	**7826.780**	**7826.809**

[1)] Delivery times available on request.



Variant 2:
Ventilation holes (Ø 5 mm) are incorporated all-round into the 97 mm high roof plate. In conjunction with the vented glazed and sheet steel door, the roof plate matches the door design to perfection.

Material:
Sheet steel

Colour:
RAL 7035

For enclosures		Model No. DK
Width mm	Depth mm	
800	600	**7826.866**
800	800	**7826.886**
800	900	**7826.896**[1)]
800	1000	**7826.806**[1)]

[1)] Delivery times available on request.

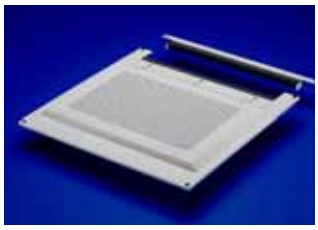
Accessories:

Fan mounting plate for active ventilation
see page 703.

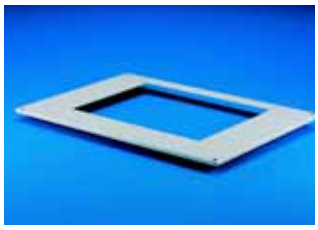
Detailed drawing,
available on the Internet.



Roof-mounted fan for DK-TS, FR(i)
For the office sector,
see page 702.



Fan roof, modular, two-piece for DK-TS, FR(i)
see page 705.

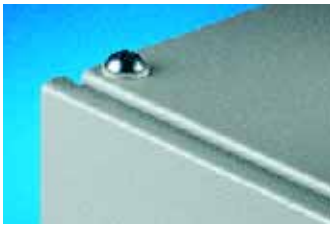


Roof plates TS
for TopTherm roof-mounted cooling units, roof-mounted fans and vent attachments TS,
see page 718.



Cooling components
for the entire IE and IT sector,
from page 628.

Roof



Roof mounting screw

For screw-fastening the roof plate instead of eye-bolts. With the TS 8, the contact washers for potential equalisation may be taken from the eye-bolts included with the supply of the enclosures.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. PS
20	**4198.000**





Spacers

for roof plate TS
To raise the TS 8 roof for ventilation purposes, in three different heights.
Not suitable for crane transportation!

Material:
Hexagonal sectional steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Height mm	Packs of	Model No. SZ/DK
10	4	**2422.000**
20	4	**2423.000**
50	4	**7967.000**



Spacers

for cover plates TE
To assist passive ventilation spacers may be used to raise the cover plates.

Material:
Hexagonal sectional steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Height mm	Packs of	Model No. TE
20	4	**7526.963**

Note:
Spacers are already included with the supply of the TE enclosures.



Eyebolts

for TS, ES
For crane transportation of enclosures, may already be included in the supply.
Thread: M12

Packs of	Model No. PS
4	**4568.000**

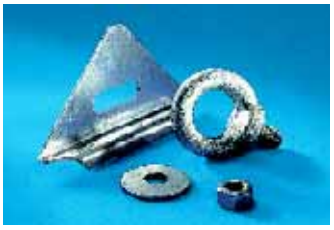


Eyebolts

for CM
For crane transportation of enclosures, with reinforcement plate to be inserted underneath.
Mounting via the two holes in the top of the CM.
Thread: M12

Supply includes:
Eyebolts, reinforcement plates.

Packs of	Model No. CM
2	**2509.500**



Eyebolts

for AE
For crane transportation of enclosures, with reinforcement plate to be inserted underneath.
Thread: M12

Supply includes:
Eyebolts, reinforcement plates.

Packs of	Model No. SZ
4	**2509.000**



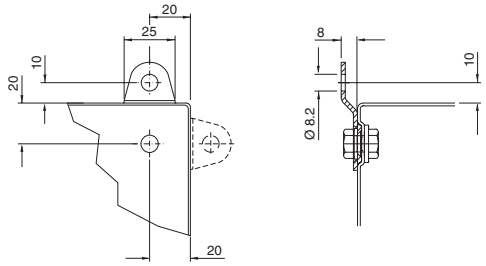
Wall mounting bracket

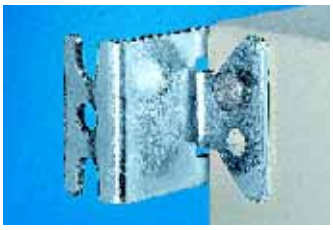
For the attachment of KL, EB, BG and EL enclosures as well as DK and FM wall-mounted distributors.

Supply includes:
Assembly parts for mounting on the enclosure.

Note:
For hygiene reasons, and in view of the protection category, the stainless steel enclosures do not have any drilled holes for the wall mounting brackets.

Material	Wall distance mm	Packs of	Model No. SZ
Brass, nickel-plated	8	4	**1580.000**
Sheet steel, zinc-plated, passivated	8	4	**1590.000**
Stainless steel 1.4301 (AISI 304)	8	4	**1594.000**





Wall mounting bracket

For the attachment of KL, EB, BG, AE, CM and EL enclosures, TP consoles as well as DK, FM wall-mounted distributors and small fibre-optic distributors.

Supply includes:
Assembly parts for mounting on the enclosure.

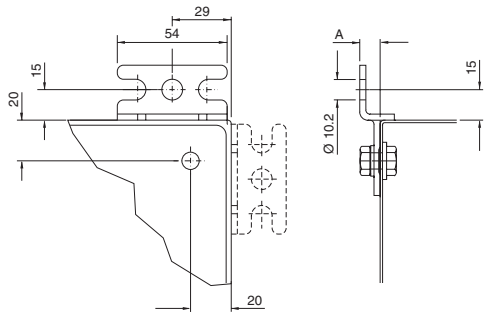
Note:
For hygiene reasons, and in view of the protection category, the stainless steel enclosures and TP consoles do not have any drilled holes for the wall mounting brackets.

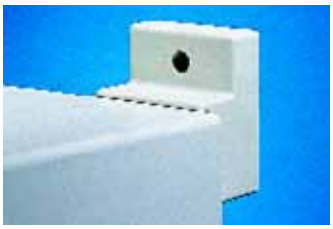
Possible alternative:

Wall spacer bracket Hygienic Design,
see page 301.

Material	Wall distance (A) mm	Packs of	Model No. SZ
Sheet steel, zinc-plated, passivated	40	1	**2503.000**[1]
		4	**2503.010**
	10	1	**2508.000**[1]
		4	**2508.010**
Stainless steel 1.4301 (AISI 304)	10	4	**2433.000**
Stainless steel 1.4404 (AISI 316L)	10	4	**2433.500**

[1] Without assembly parts.





Wall mounting bracket

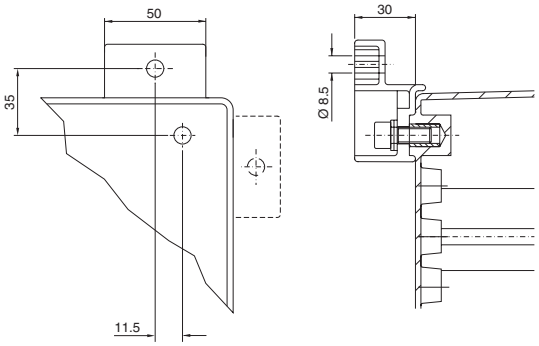
for KS
For attachment to the wall, only possible from the outside of the enclosure.

Material:
Fibreglass-reinforced polyamide[1]

Supply includes:
Assembly parts for mounting on the enclosure.

Colour	Packs of	Model No. KS/KE
Similar to RAL 7035	4	**1483.010**
Similar to RAL 9011	4	**9266.000**[1]

[1] With graphite additive for Ex applications.



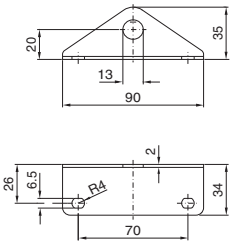
Wall mounting



Wall angle

For compact enclosures (additional holes required in the enclosure).

Material	Colour	Packs of	Model No. SZ
Sheet steel	RAL 7035	1	**2505.500**
Stainless steel 1.4301 (AISI 304)	–	1	**2583.000**





Wall bracket

For wall attachment of TS and ES enclosures at the roof, e. g. with heavy components on the door or built-in swing frame.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. PS
4	**4595.000**

Possible alternative:

With TS 8 inside the enclosure (without mounting plate), baying bracket TS 8800.470,
see page 931.



Wall mounting bracket

for CS wall-mounted enclosures
For mounting on a wall or panel.

Material:
Stainless steel 1.4301 (AISI 304)

Packs of	Model No. CS
4	**9765.120**



Pole clamp

For reliable, convenient fastening to round or square poles.

For pole diameter/size:
Ø from 40 to 190 mm
□ from 50 to 150 mm

Material:
Mounting angles, clamping section:
Sheet steel, zinc-plated, passivated
Clamping strap: Stainless steel 1.4301 (AISI 304)



For KL, EB, BG, AE, KS

Supply includes:
2 mounting angles, 600 mm long,
4 clamping sections,
2 clamping straps,
4 clamping brackets,
4 screws and nuts M8
for attachment to the enclosure.

Packs of	Model No. SZ
1 set	**2584.000**



For CS wall-mounted enclosures

Supply includes:
4 clamping sections,
2 clamping straps,
4 clamping brackets.

Packs of	Model No. CS
1 set	**9765.125**



Enclosure connectors

adjustable
Between Command Panels, terminal boxes, compact enclosures
and
horizontal or vertical surfaces.
Pre-mount the connector halves on both sides, screw together and secure with a locking screw, and/or adjust the angle of rotation.

Rotation range:
±105° with 7.5° stepped increments.

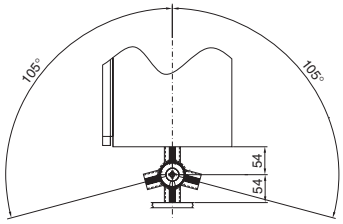
Material:
Die-cast zinc, powder-coated

Colour:
RAL 7035

Supply includes:
Assembly parts for both sides.

Packs of	Model No. CP
1 set	6016.200

Note:
The locking screws may be exchanged for standard, commercially available clamping levers (M10 x 50 mm).







Frame connector, adjustable

for Comfort Panel
Between the operating and keyboard housing
and
horizontal or vertical surfaces.

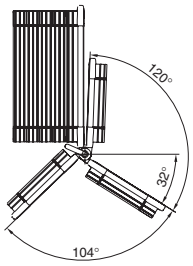
Rotation range:
Adjustable via teeth in 8° increments, see drawing.

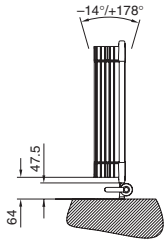
Material:
Die-cast zinc, powder-coated

Colour:
RAL 7024

Supply includes:
Assembly parts and clamping levers for both sides.

Packs of	Model No. CP
1 set	6005.500







Wall mounting bracket

vertically hinged
Between the Compact Panel
and
horizontal or vertical surfaces.

Rotation range:
180° adjustable on a 7.2° pitch pattern.

Material:
Wall mounting bracket: Sheet steel
Knurled screw: Steel with plastic knurled handle

Supply includes:
Locking screw and assembly parts for mounting on the Compact Panel.

Packs of	Model No. CP
1 set	6341.000



Mounting plates



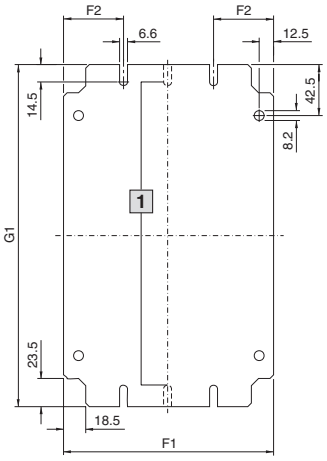
Mounting plates

for KL
For component installation outside of the enclosure. Assembly screws included as accessories with the enclosure.

Material:
Sheet steel, 2 mm, zinc-plated, passivated

Accessories:
Self-tapping screws, SZ 2487.000,
see page 1011.

Possible alternative:
Support rails,
see page 1002.



1 Attachment in the centre only for 125 mm wide plates

For size mm	For Model No. KL	Dimensions in mm			Model No. KL
		G1	F1	F2	
150 x 150	1500.510, 1514.510, 1521.010	135	125	–	**1560.700**
200 x 150	1528.510, 1529.510	185	125	–	**1575.700**
300 x 150	1501.510, 1515.510, 1522.010, 1530.510	285	125	–	**1561.700**
400 x 150	1589.510	385	125	–	**1576.700**
200 x 200	1502.510, 1516.510, 1523.010	185	175	50	**1562.700**
300 x 200	1503.510, 1517.510, 1524.010, 1531.510	285	175	50	**1563.700**
400 x 200	1504.510, 1518.510, 1525.010, 1532.510	385	175	50	**1564.700**
500 x 200	1505.510, 1533.510	485	175	50	**1565.700**
600 x 200	1506.510, 1519.510, 1534.510	585	175	50	**1566.700**
800 x 200	1527.510, 1542.510	785	175	50	**1574.700**
300 x 300	1507.510, 1526.010, 1535.510	285	275	50	**1567.700**
400 x 300	1508.510, 1536.510	385	275	50	**1568.700**
500 x 300	1509.510, 1537.510	485	275	50	**1569.700**
600 x 300	1510.510, 1538.510	585	275	50	**1570.700**
400 x 400	1511.510, 1539.510	385	375	62.5	**1571.700**
600 x 400	1512.510, 1540.510	585	375	62.5	**1572.700**
800 x 400	1513.510, 1541.510	785	375	62.5	**1573.700**



Mounting plate

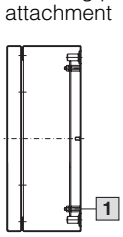
for Premium Line KL
For installing at a distance from the rear panel.

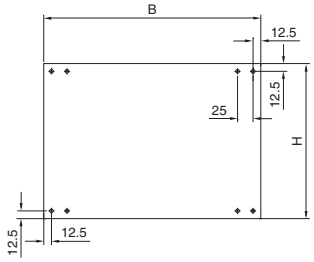
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Spacer bolts
and assembly parts.

For KL enclosures	W (B) mm	H mm	Packs of	Model No. KL
1024.010 1024.020	100	100	1	**1024.910**
1024.030	250	150	1	**1024.920**
1024.040	350	250	1	**1024.930**

Mounting plate attachment





1 Spacer bolts M5 x 15

Mounting plate attachment

For additional clamping and to reduce potential vibration of the mounting plate. Select according to mounting position, installation type and enclosure.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.



For TS
Installation options:
- Side, at half height in conjunction with mounting plate infill
- In the penultimate position
- Set forward (supplied state)

Advantage:
No impairment to the mounting surface, but mounting is only possible from the enclosure rear.

Packs of	Model No. TS
10	8800.630

Accessories:

Mounting plate infill,
see page 981.



For TS
Installation options:
- Side
- Rear, flush with enclosure frame

Advantage:
No impairment to the mounting surface, but mounting is only possible from the enclosure rear.

Packs of	Model No. TS
10	8800.610



For TS
Installation options:
- Side
- Rear, flush with enclosure frame
- Set forward on a 25 mm pitch pattern

Advantage:
No impairment to the mounting surface.
May optionally used for attachment or screw fastening.

Packs of	Model No. TS
10	8800.090

Also required:

Punched section with mounting flange 17 x 73 mm for the inner mounting level,
see page 993 (with Fig. 3).



1



2

1 Mounting plate screw-fastened in the rearmost installation position.

2 Mounting plate screw-fastened from the rear in the rearmost installation position.

3 Mounting plate in a set forward position, either attached or screw-fastened (not shown).



3



For TS
Installation options:
- Side
- Rear, flush with enclosure frame

Slide over the plate at the side and secure with screws. Additionally, the mounting plate may be drilled and screw-fastened at the rear C-edge.

Packs of	Model No. TS
10	8800.050

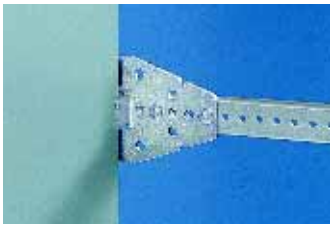
Mounting plates

Mounting plate attachment

For additional clamping and to reduce potential vibration of the mounting plate. Select according to mounting position, installation type and enclosure.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.



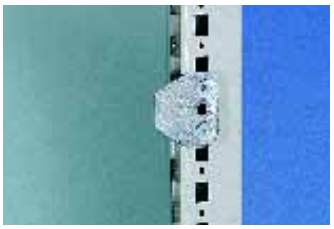
For TS, ES
Installation options:
- All-round
- Set forward on a 25 mm pitch pattern

Slide in between the bar and plate from below or above or from the side, and secure with screws.

Packs of	Model No. TS
10	**4593.000**

Also required:

Support strip (with TS for inner level),
see page 997 or
punched section with mounting flange
(with TS for inner level),
see page 993 or
punched rails and punched sections,
see page 998.



For TS, ES
Installation options:
- On the top and bottom of the mounting plate (with ES all-round)
- Rear, flush with enclosure frame

Screw in the clip behind the plate and secure with screws.

Packs of	Model No. TS
10	**4576.000**

Installation kit







For mounting plates TS, back-to-back
Thanks to a minimum distance between the two mounting plates, a maximum installation depth is achieved for installed equipment on both sides.

Material:
Sheet steel, zinc-plated, passivated

Note:
Build height front and rear
with central installation =
(enclosure depth minus 48 mm) : 2
For example:
TS 8806.521 = depth 600 mm
Build depth = 2 x 276 mm

Packs of	Model No. TS
1 set	**8800.280**

Rittal service:

Enclosures with 2 mounting plates (mounted in the centre unless otherwise specified) and door(s) on both sides may be ordered as complete units.
Model No.: TS 8xxx.521

Self-tapping screws

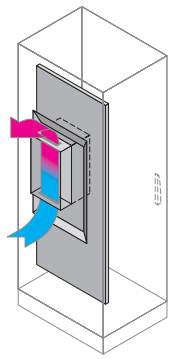




Order information may be found on page 1011.







Sealing frame for through-panel mounting

of the heat sinks of frequency converters

Where the ambient air is cool and clean, through-panel mounting is a very efficient way of dissipating a significant proportion of the heat losses from the enclosure.

Applications:

- In modern drive technology for through-panel mounting the heat sinks of frequency converters, line reactors, braking resistors or other components with external cooling sections
- For recessed installation of the main switch
- For protected mounting of command panels

Installation: Between a cut-out in the rear panel of the enclosure and the mounting plate.
Different sizes of sealing frame are used depending on the number of frequency converters.

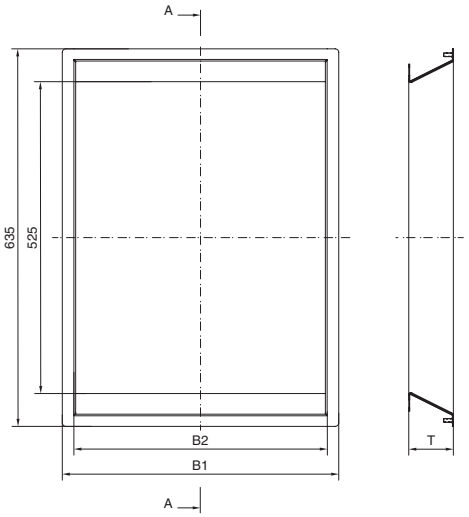
Function principle:
The heat sinks of frequency converters suitable for through-panel mounting are effectively relocated outside the enclosure. The majority of the heat loss can then be dissipated without affecting the interior climate.
The sealing frame is screw-fastened to the wall or door using studs. On the other side, the seal presses against the rear of the set-forward mounting plate or a partial mounting plate for the master switch.

Material:
Sheet steel, spray-finished in RAL 7035

Protection category:
IP 54 (if mounted correctly)

Supply includes:
Seals and assembly parts.

For installing in enclosure width/depth mm	External dimensions of sealing frame mm	Packs of	Model No. SZ
600	465 x 635 x 75	1	**2390.000**
600	465 x 635 x 100	1	**2390.010**
800	665 x 635 x 75	1	**2390.020**
800	665 x 635 x 100	1	**2390.030**
1000	865 x 635 x 75	1	**2390.040**
1000	865 x 635 x 100	1	**2390.050**
1200	1065 x 635 x 75	1	**2390.060**
1200	1065 x 635 x 100	1	**2390.070**



W (B1)	W (B2)	D (T)	Model No. SZ
465	420	75	**2390.000**
465	420	100	**2390.010**
665	620	75	**2390.020**
665	620	100	**2390.030**
865	820	75	**2390.040**
865	820	100	**2390.050**
1065	1020	75	**2390.060**
1065	1020	100	**2390.070**



Mounting plate infill

for TS
For a continuous mounting surface in bayed suites where the mounting plate is set forward.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure height mm	Model No. TS
1800	**4590.700**
2000	**4591.700**
2200	**4592.700**

Mounting plates



Mounting plate slide block

for CM

In this way, populated mounting plates slide easily into the mounting position for installation and/or clip-fastening.

Benefits:
- Installation without drilling
- Simply screw-fasten to the existing holes in the mounting plate
- May be reused, unscrew to detach

Material:
Polyamide

Colour:
Similar to RAL 9011

Supply includes:
Assembly parts.

Packs of	Model No. CM
2	**5001.070**





Slide rails

for insertion of mounting plate into TS enclosure

Slides in from the side.
- Attachment of the mounting plate to the slide rails via captive nuts and screws.
- Mounting of the slide rails directly on the enclosure frame, depth-adjustable on a 25 mm pitch pattern.
- Possible mounting depth T 6 – 25 mm (see page 1184).

Material:
Sheet steel

Surface finish:
Zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure width mm	Packs of	Model No. TS
600	2	**8802.260**
800	2	**8802.280**
1000	2	**8802.200**
1200	2	**8802.220**

Rittal service:

To order TS enclosures (see page 138 – 147) with fitted slide rails and wide mounting plate (overall width B1 + 2 mm, see page 1184), please add the extension .570 to the Model No. Delivery times on request.



Mounting plate adjustment bracket

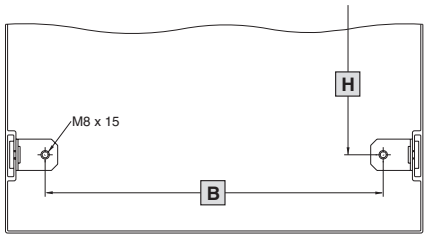
for KS

Infinitely adjustable.
Other equipment can also be installed in this way, instead of the mounting plate.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosures KS	Packs of	Model No. KS
1423.600, 1432.600 1434.600, 1444.600 1446.600, 1448.600 1449.600, 1466.600 1467.600	4	**1481.000**
1453.600, 1454.600 1468.600, 1469.600 1479.600, 1480.600 1400.600	4	**1491.000**



B Enclosure width:
– 76 mm (KS 1481.000)
– 104 mm (KS 1491.000)

H Enclosure height:
– 150 mm







Mounting plate attachment

for CM
for heavy dynamic loads
For example, if the accompanying enclosures (crane systems, etc.) have to make a direct connection with the wall/support mounting plates as well as an additional connection between the mounting plate and the enclosure in stand-alone versions, i. e. on a base/plinth.
Tested as per DIN EN 60 721 severity 4M4, with a weight of 150 kg evenly distributed over the mounting plate.

Simply screw-fasten to the existing holes in the mounting plate to pre-assemble for:

Wall-mounted from the inside
Direct using a bracket and wall/support-mounted enclosure.

Wall-mounted from the outside
Screws for wall mounting brackets (see page 975) can easily be screwed into the plate nuts from the outside.

Material:
Sheet steel

Surface finish:
Zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. CM
1 set	**5001.075**





Cross-brace for mounting plates

for TS, ES
Additional horizontal rigidity for vibration resistance and/or stabilisation of wide mounting plates. This brace may also be used as an attachment aid for heavy components.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
2 sections,
4 clamps,
4 grub screws M10 x 16 mm.

For enclosure width mm	Model No. TS
1200	**4333.120**
1600	**4333.160**
1800	**4333.180**

Other widths available on request.



Transport handles for mounting plates

for TS, ES
May be used at any given position in the side C-fold.
Benefits include:
- Can be used for people of different heights
- Optimised force transmission
- Easy handling

Packs of	Model No. SZ
2	**2415.500**

Mounting plates





Partial mounting plates

for TS, Toptec CR

For

- Universal interior installation, also in conjunction with punched sections with mounting flanges and support strips. Defective assemblies are quickly and easily replaced
- Additional mounting levels.

Partial mounting plates are fastened directly onto the vertical enclosure sections via the inner mounting level using the assembly parts supplied loose. In this mounting position (in both the width and the depth) they form one level with TS punched sections with mounting flanges 17 x 73 mm and TS support strips for the inner mounting level.

Material:
Sheet steel, 2.5 mm, zinc-plated, passivated

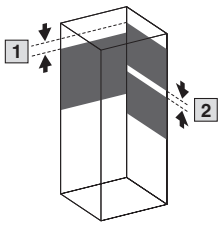
Supply includes:
Assembly parts.

Accessories:

TS punched section with mounting flange 17 x 73 mm for the outer mounting level, see page 993.
TS support strip, see page 997.
Hinge attachment, see page 985.
Self-tapping screws, SZ 2487.000, see page 1011.

For installation in									Size mm	Packs of	Model No. TS
Enclosure width mm					Enclosure depth (side) mm						
400	600	800	1000	1200	400	500	600	800			
■	■				■		■		500 x 300	1	**8614.640**
	■					■	■		500 x 400	1	**8614.650**
	■						■		500 x 500	1	**8614.660**
	■	■					■	■	500 x 700	1	**8614.680**
	■						■		500 x 775	1	**8614.675**[1)]
■		■			■			■	700 x 300	1	**8614.840**
		■				■		■	700 x 400	1	**8614.850**
		■						■	700 x 700	1	**8614.880**
■			■		■				900 x 300	1	**8614.040**
			■			■			900 x 400	1	**8614.050**
	■		■				■		900 x 500	1	**8614.060**
■				■	■				1100 x 300	1	**8614.240**
				■		■			1100 x 400	1	**8614.250**
	■			■			■		1100 x 500	1	**8614.260**

[1)] Also suitable for installing in
- PC enclosures based on TS behind the lower front door
- IW enclosures, height 900 and 1000 mm

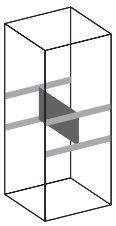


When **installing around corners** due to collision between the assembly components

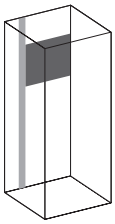
1 At least 75 mm (adjustable on a 25 mm pitch pattern).

Maximum space utilisation

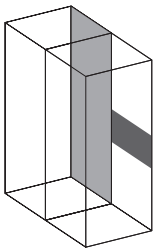
2 1 mm (adjustable on a 25 mm pitch pattern).



Set forward installation position
Quickly and easily achieved wtih four TS punched sections with mounting flanges 17 x 73 mm for the outer mounting level, see page 993.



Partial installation
Partial utilisation of the enclosure depth or width is also possible. In this example, using a PS punched section without mounting flange 23 x 73 mm, see page 998.



Continuously flush
In bayed enclosures, the partial mounting plate is in the rearmost position flush with the standard mounting plate. This facilitates continuous component mounting.



Hinge attachment

for partial mounting plate TS

Material:
Sheet steel, zinc-plated, passivated

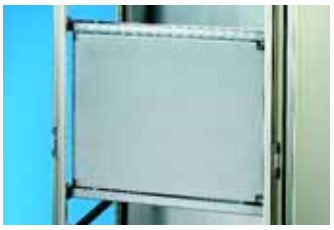
Supply includes:
Assembly parts.

Packs of	Model No. TS
1 set	**8614.100**

Also required:

Depending on the installation position
1 Installation kit for swing frame, small,
for enclosure width
600 mm, Model No. SR 2377.860,
800 mm, Model No. SR 2377.880,
see page 1080.
2 PS punched section without mounting flange
23 x 73 mm according to the enclosure depth,
see page 998.
Support brackets TS 8800.330,
see page 1007.

Side installation:
In conjunction with hinge, for side panel,
see page 918, for an enclosure depth of 600 or
800 mm, side installation is identical to installation
parallel to the front.

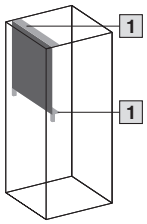




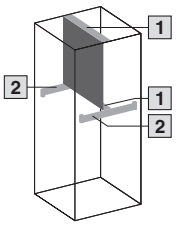
Examples

In the highest or lowest position

Front

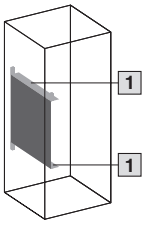


Set back

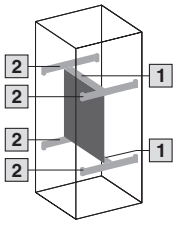


In a central position

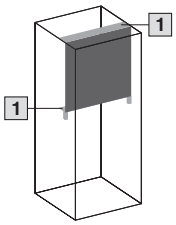
Front

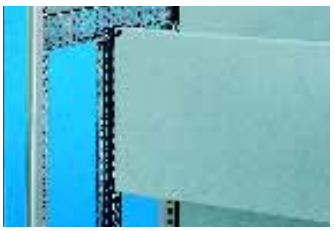


Set back



Side installation





Partial mounting plates

for ES, CS Basic and modular enclosures
For additional mounting levels.

Material:
Sheet steel 2.5 mm, zinc-plated

Supply includes:
Assembly parts.

For enclosure width mm	Width x height mm	Packs of	Model No. PS
600	492 x 373	2	**4131.700**
600	492 x 573	2	**4132.700**
800	692 x 573	2	**4137.700**

Accessories:

PS punched section with mounting flange
23 x 73 mm,
see page 999.
Self-tapping screws, SZ 2487.000,
see page 1011.

Mounting plates



Partial mounting plates, locatable into rails

for TP

For installation in:
- Console and desk unit on the interior installation system rails
- Punched sections with mounting flanges or support strips fitted to the side of the pedestal in the depth
- Other enclosures mounted on rails with 25 mm pitch pattern punchings

For easy mounting on pre-fitted assembly screws. Can be bayed using the side screws.

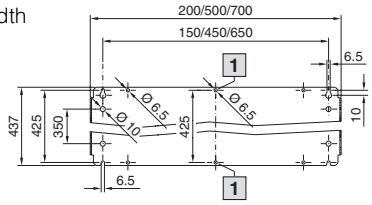
Material:
Sheet steel, zinc-plated, passivated

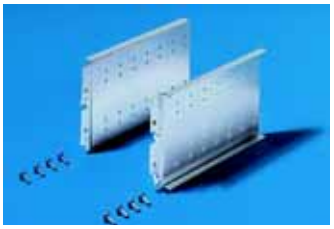
Supply includes:
Assembly parts.

Width mm	Height mm	Packs of	Model No. TP
200	435	1	**6730.310**
500	435	1	**6730.330**
700	435	1	**6730.340**

For console/desk unit width mm	Max. partial mounting plate installation
600	1 x TP 6730.330
800	1 x TP 6730.340
1200	2 x TP 6730.310 1 x TP 6730.340
1600	3 x TP 6730.330

[1] From width 500 mm







Support rail, locatable

for TS, CM, PC-TS, TP

To fit:
- Internal mounting behind the mounting compartment, small, of the PC enclosure,
- Mounting on the vertical TS enclosure section,
- Mounting in CM and TP on a rail for internal installation.

Integral 25 mm pitch pattern of holes to accommodate:
– Mounting plate, small
– PS punched section without mounting flange
via support brackets PS as a second mounting level if due to an installed:
– Mounting plate infill
– Cable duct, vertical
no punched sections or other assemblies can be mounted in the depth.

Static load: Max. 15 kg

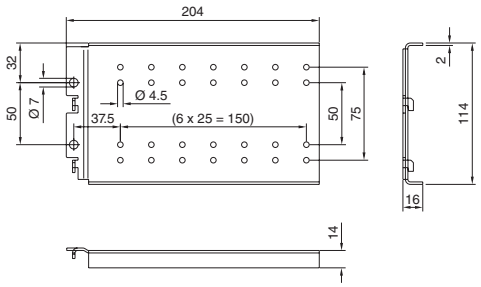
Material:
Sheet steel 2.0 mm, zinc-plated, passivated

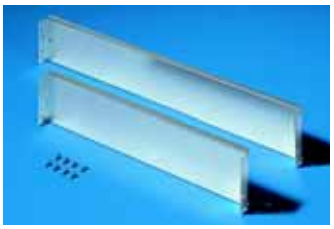
Supply includes:
Assembly parts.

Packs of	Model No. TS
1 set	**8612.200**

Accessories:

PS punched section without mounting flange, see page 998.





Mounting plate, small

For external mounting on:
- Support rail TS, locatable, depth-adjustable on a 25 mm pitch pattern,
- Punched sections with mounting flanges, attached to the outer mounting level.

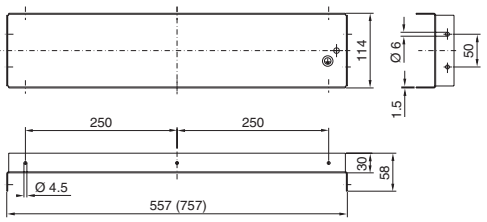
Material:
Sheet steel 1.5 mm, zinc-plated, passivated

Supply includes:
Assembly parts.

Enclosure width mm	Packs of	Model No. TS
600	1	**8612.600**
800	1	**8612.800**

Accessories:

TS punched section with mounting flange, see page 993.
Self-tapping screws, SZ 2487.000, see page 1011.





Mounting plate

for TS, 400 mm wide
depth-adjustable on a 25 mm pitch pattern,

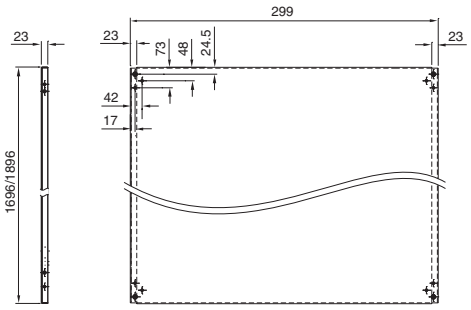
Material:
Sheet steel, 3 mm, zinc-plated, passivated

Supply includes:
Assembly parts.

Accessories:

TS 18 x 38 mm punched rail, used as mounting plate slide rail, see page 996.
TS width divider, for installation in wider enclosures, see page 909.

For enclosure height mm	Model No. TS
1800	**8614.180**
2000	**8614.200**







Mounting plates

for Toptec CR, CS Basic and modular enclosures
For the configuration of mounting levels.
The mounting plates are depth-adjustable on a 25 mm pitch pattern.

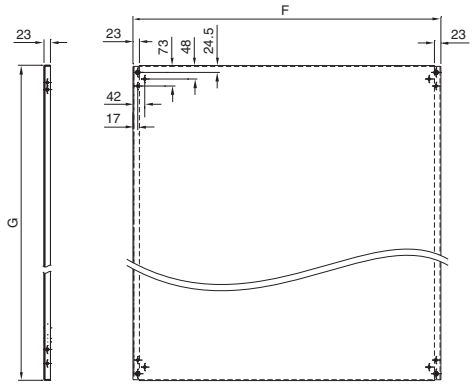
Material:
Aluminium, 3 mm

Supply includes:
Assembly parts.

Note:
For an enclosure width of 1200 mm partial installation with one or two 600 mm wide mounting plates is possible.

Accessories:

Mounting kit for Toptec CR, see page 987.



For enclosure		F	G	Model No. CS
Width mm	Height mm			
600	800	499	696	**9765.090**
600	1000	499	896	**9765.091**[1)]
600	1200	499	1096	**9765.092**
600	1400	499	1296	**9765.098**
600	1600	499	1496	**9765.093**
800	800	699	696	**9765.097**
800	1000	699	896	**9765.094**[1)]
800	1200	699	1096	**9765.095**
800	1400	699	1296	**9765.099**
800	1600	699	1496	**9765.096**
1200	800	1099	696	**9765.190**[1)]
1200	1200	1099	1096	**9765.191**
1200	1400	1099	1296	**9765.192**

[1)] Delivery times available on request.



Mounting kit

for Toptec CR
For the attachment of mounting plates or swing frames in the enclosure depth.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
1 set =
2 punched rails and
2 mounting brackets,
assembly parts.

Packs of	Model No. CS
1 set	**9765.155**

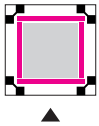
Installation examples TS 8 enclosure system

Overview of TS installation systems

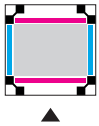
Clearance width
Depending on attachment, the following values apply to the clearance between the mounting levels:
- Outer mounting level = Enclosure width and depth minus 42 mm
- Inner mounting level = Enclosure width and depth minus 88 mm



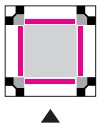
External level



Internal level

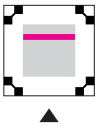


External and internal level

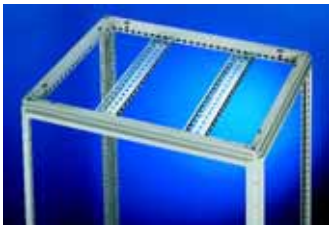


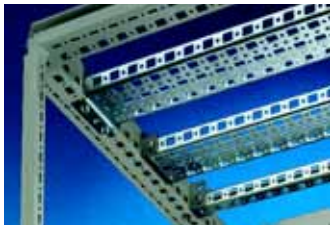
PS-compatible installation

Cover installation



Installation with:
- PS punched section with mounting flange
- PS punched section without mounting flange
- PS punched rail in three mounting variants
- TS punched rails
- TS punched sections without mounting flanges
- TS punched sections with mounting flanges





TS 8 rails for the outer level



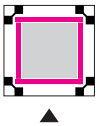
- TS punched sections with mounting flanges
- TS mounting bar
- TS punched rail

Benefits:
- Largest clearance width
- May be installed directly, on one level all round





TS 8 rails, PS rail for the inner level



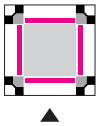
- TS punched sections with mounting flanges
- TS mounting bar
- PS punched section without mounting flange, with support bracket TS

Benefits:
- Use of a second level
- Height-offset mounting all-round

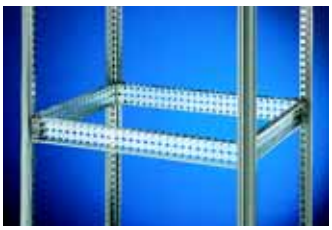




With adaptor rail for PS compatibility

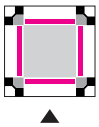


On one level all round with:
- PS punched section without mounting flange, with support bracket PS
- PS punched rail with angle bracket, mounting bracket or support bracket PS

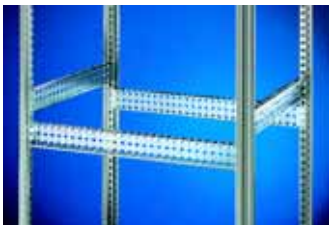




With adaptor rail for PS compatibility

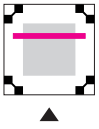


Height-offset in the width and depth with:
- PS punched section with mounting flange
- PS punched rail with mounting bracket
- TS punched rail

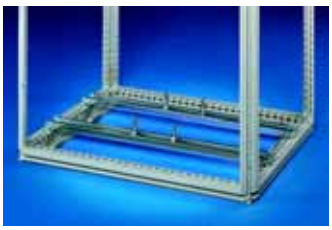


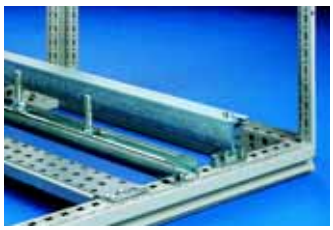


Base installation

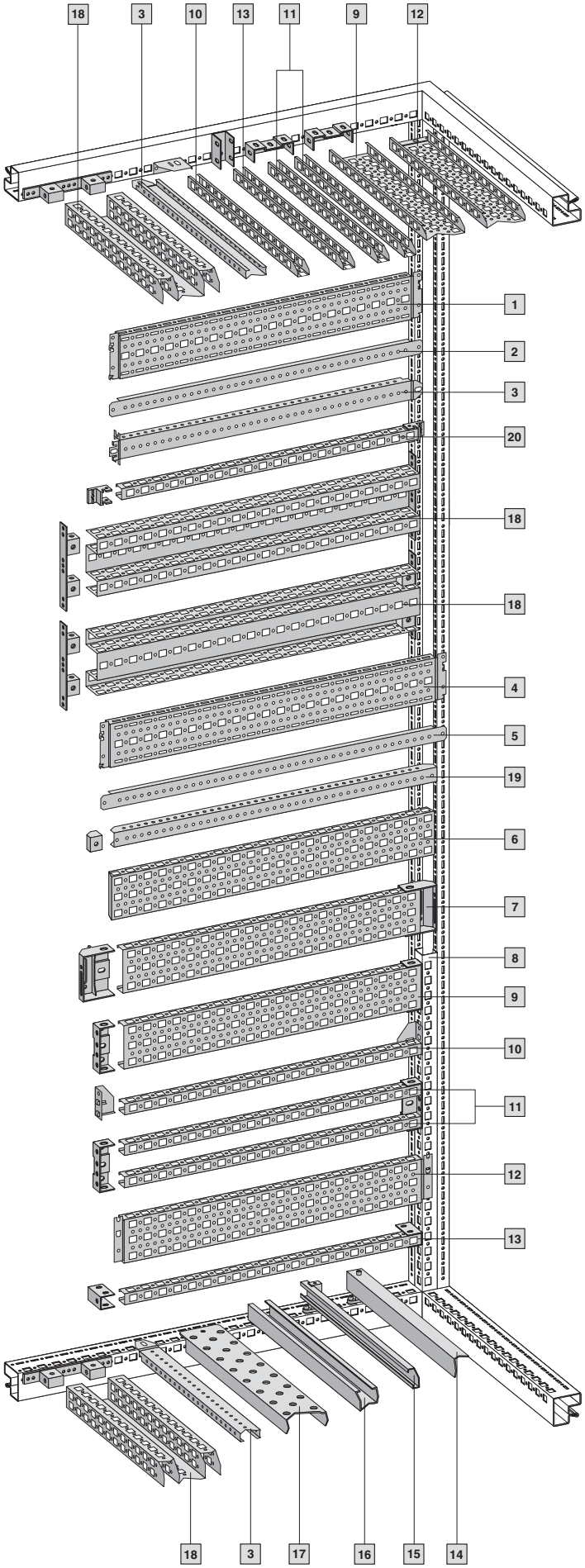


Installation with:
- Cable clamp rails
- C rails 30/15 with bracket/spacer
- System support rails
- Support rail
- TS punched rails





Installation examples TS 8 enclosure system



Cover installation

Punched sections and rails may be mounted on the horizontal enclosure sections in both the width and depth.

Installation accessories	Page
1 TS punched section with mounting flange 17 x 73 mm for the outer level	993
2 TS support strip for the outer level	997
3 TS punched rail 18 x 38 mm[1] for the ● outer level ● horizontal enclosure sections ● adaptor rail for PS compatibility	996
4 TS punched section with mounting flange 17 x 73 mm for the inner level	993
5 TS support strip for the inner level	997
6 TS punched section with mounting flange 23 x 73 mm for the inner level	995
7 PS punched section without mounting flange 23 x 73 mm with support bracket TS (alternatively with one or two punched rails 23 x 23 mm)	998
8 Adaptor rail for PS compatibility	997
9 PS punched section without mounting flange 23 x 73 mm, with support bracket PS	998
10 PS punched rail 23 x 23 mm with angle bracket	998
11 PS punched rails 23 x 23 mm with support bracket PS (alternatively with one or two punched rails 23 x 23 mm)	998
12 PS punched section with mounting flange, 23 x 73 mm	999
13 PS punched rail 23 x 23 mm with support bracket	998
14 Cable clamp rail	1061
15 C rails 30/15 with bracket/spacer	999
16 System support rails	1000
17 Support rail	1001
18 TS punched sections without mounting flanges, 45 x 88 mm	995
19 TS punched rail 25 x 38 mm with snap-on nut	996
20 PS punched rail 23 x 23 mm with support bracket TS	998

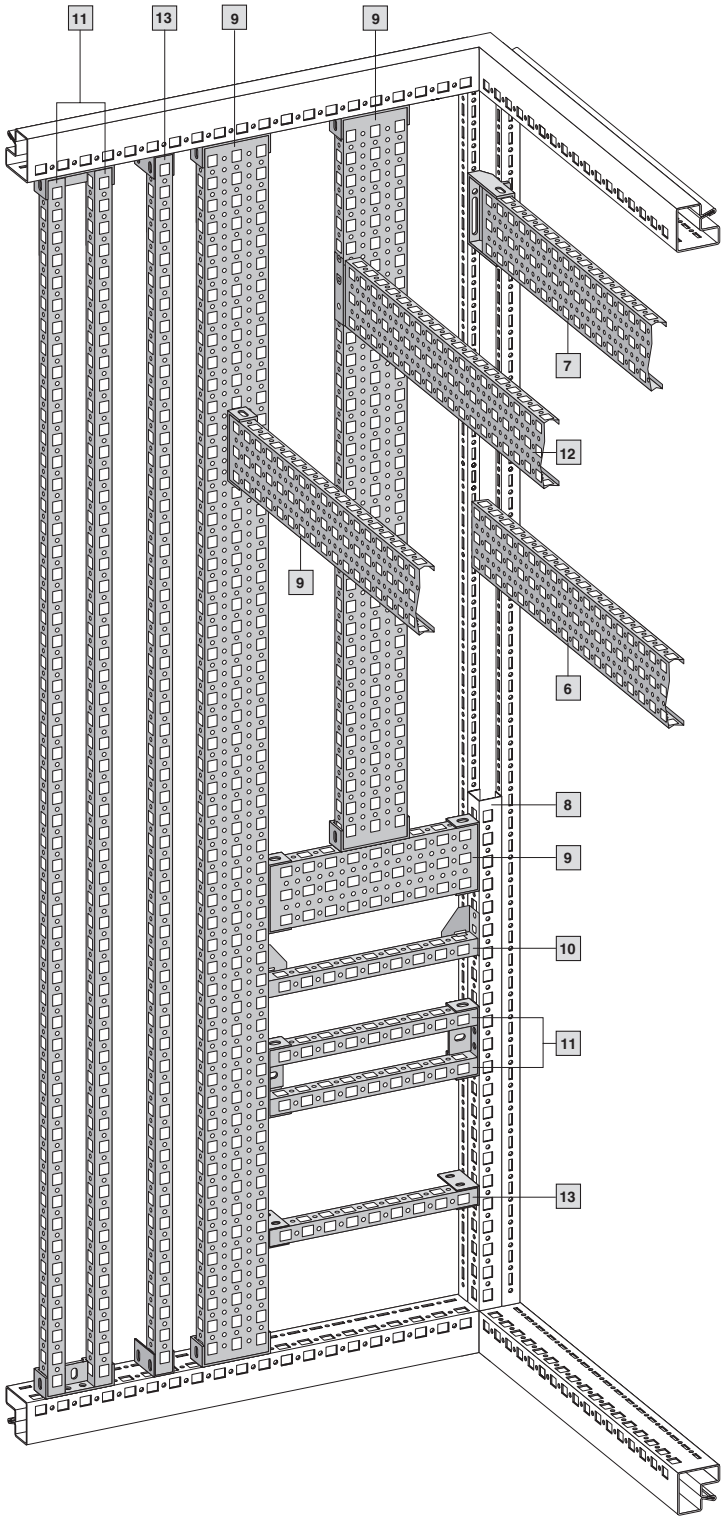
[1] Two TS punched rails 18 x 38 mm are included in the supply of enclosures with a mounting plate. After installing the mounting plate, the TS punched rail may be inserted, as shown here.

Base installation

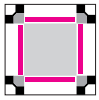
Punched sections and rails may be mounted on the horizontal enclosure sections in both the width and depth.

Installation examples TS 8 enclosure system

Attachment may be made at any point in the TS 8 enclosure space. Not only with horizontal rail installations directly between the TS sections, but by combining vertical and horizontal rails, any given mounting level in the width, height and depth may be achieved.

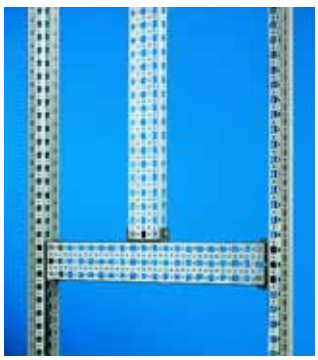


Vertical mounting levels – PS compatible



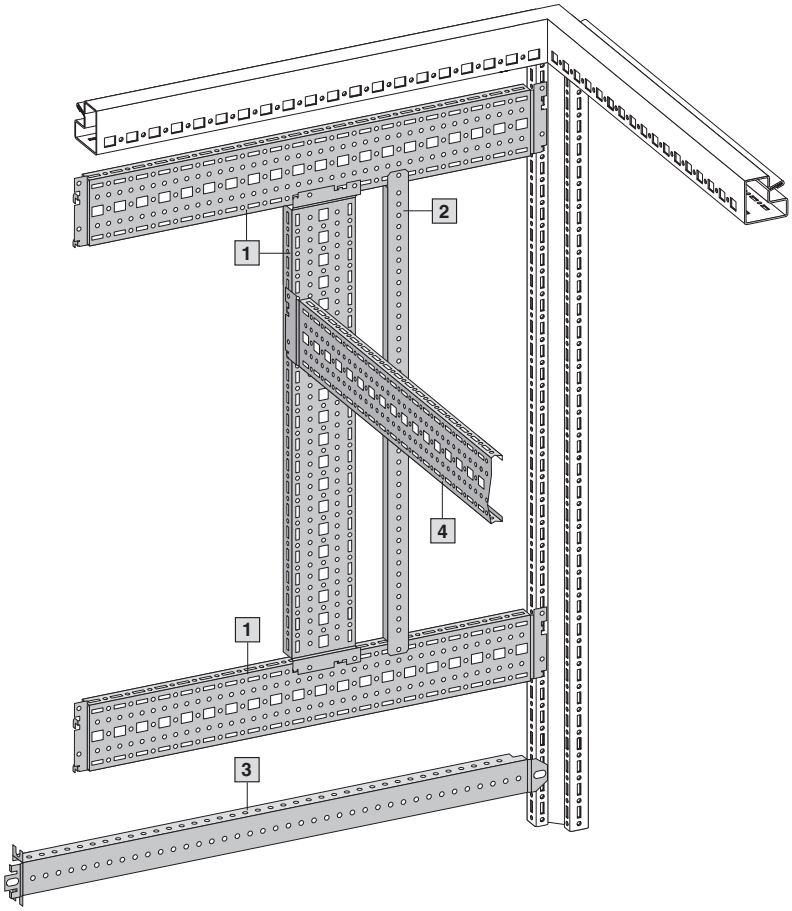
The basis for a second mounting level across the entire enclosure height is quickly achieved, e. g. with two PS punched sections without mounting flanges 23 x 73 mm **9.** Between these two sections, configuration may be achieved with PS punched rails **10, 11** and **13,** with PS punched sections without mounting flanges **9** and PS punched sections with mounting flanges **12.** When using the adaptor rail for PS compatibility **8,** installation is easily achieved across a suitable sub-height, or with suitable enclosure dimensions, across a sub-width or sub-depth.

Installation accessories (Consecutive numbering in accordance with diagram on page 989)	**Page**
6 TS punched section with mounting flange 23 x 73 mm for the inner level	993
7 PS punched section without mounting flange 23 x 73 mm with support bracket TS (alternatively with one or two punched rails 23 x 23 mm)	998
8 Adaptor rail for PS compatibility	997
9 PS punched section without mounting flange 23 x 73 mm, with support bracket PS	998
10 PS punched rail 23 x 23 mm with angle bracket	998
11 PS punched rails 23 x 23 mm with support bracket PS (alternatively with one or two punched rails 23 x 23 mm)	998
12 PS punched section with mounting flange, 23 x 73 mm	999
13 PS punched rail 23 x 23 mm with support bracket	998



If PS punched rails or PS punched sections without mounting flanges are installed vertically on roof or base frames, a PS rail is also required for horizontal sub-division.

Installation examples TS 8 enclosure system



Vertical outer mounting level



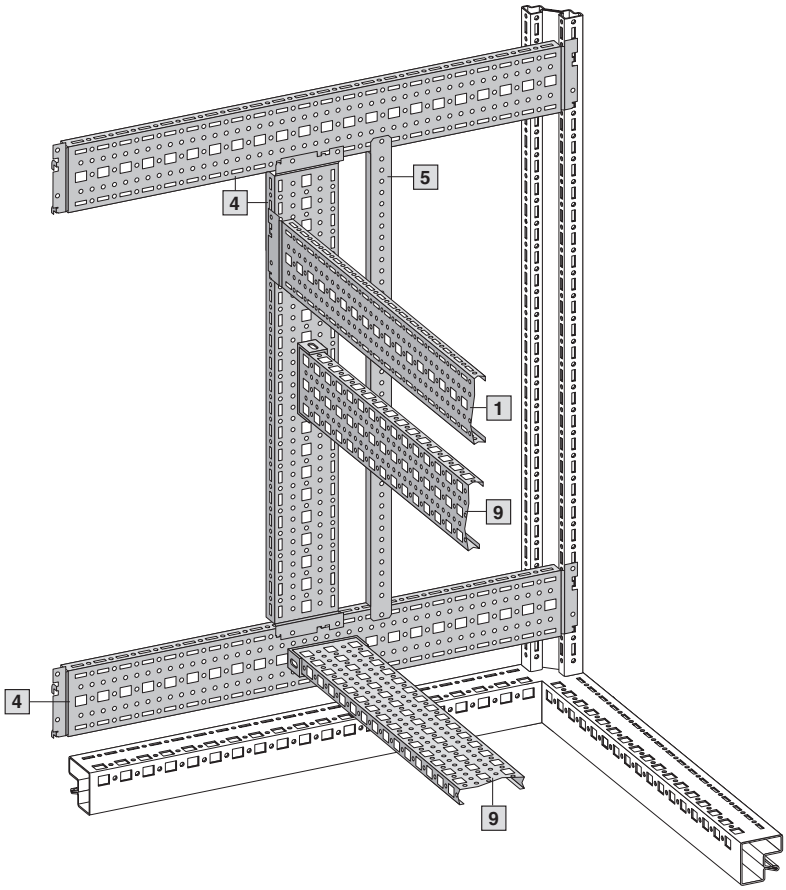
Optimum space utilisation and super-fast assembly by mounting the TS punched section with mounting flange directly onto the outer level of the TS 8 vertical section. Simply snap into position and secure!

Installation accessories (Consecutive numbering in accordance with diagram on page 989)	**Page**
1 TS punched section with mounting flange 17 x 73 mm for the outer level	993
2 TS support strip for the outer level	997
3 TS punched rail 18 x 38 mm[1] for the ● outer level ● horizontal enclosure sections ● adaptor rail for PS compatibility	996
4 TS punched section with mounting flange 17 x 73 mm for the inner level	993

[1] Two TS punched rails 18 x 38 mm are included in the supply of enclosures with a mounting plate. After installing the mounting plate, the TS punched rail may be inserted, as shown here.



German patent no. 196 47 802

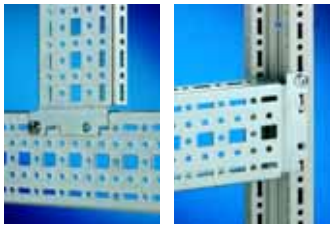


Vertical inner mounting level



Separate utilisation of the inner level of the TS 8 vertical section, irrespective of the outer level, creates additional opportunities. Even in one enclosure, all installation systems may complement one another perfectly for brand new, customer-specific solutions. Endless possibilities! Simply snap into position, secure, and voilà! Super-fast assembly by mounting the TS punched section with mounting flange directly onto the inner level of the TS 8 vertical section.

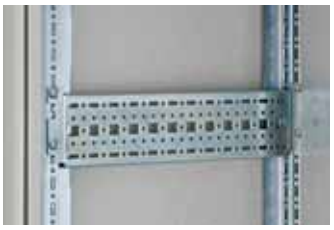
Installation accessories (Consecutive numbering in accordance with diagram on page 989)	**Page**
1 TS punched section with mounting flange 17 x 73 mm for the outer level	993
4 TS punched section with mounting flange 17 x 23 mm for the inner level	993
5 TS support strip for the inner level	997
9 PS punched section without mounting flange 23 x 73 mm, with support bracket PS	998



German patent no. 196 47 802

Rail systems





Rails for interior installation

for CM, TP
For mounting on the existing threaded bolts.
With TS system punchings on three sides.

Material:
Sheet steel, zinc-plated, passivated

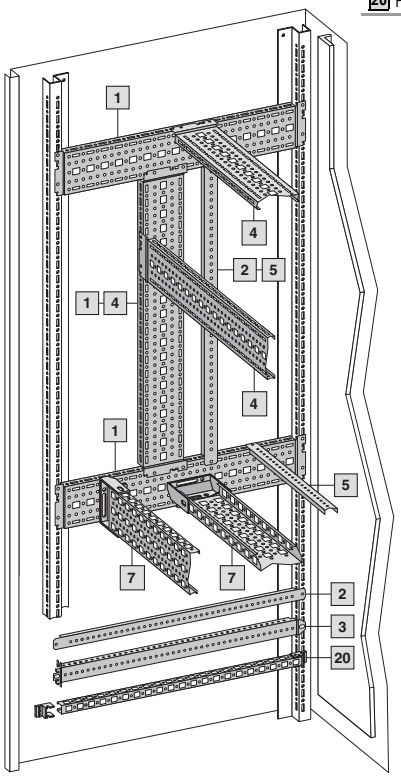
Supply includes:
Assembly parts.

Width mm		Height mm		Packs of	Model No. CM
CM	TP[1]	CM	TP[2]		
600	600	600	675	4	**5001.050**
800	800	800	–	4	**5001.051**
1000	–	1000	–	4	**5001.052**
1200	1200	1200	–	4	**5001.053**
–	–	1400	–	4	**5001.054**
–	1600	–	–	4	**5001.055**

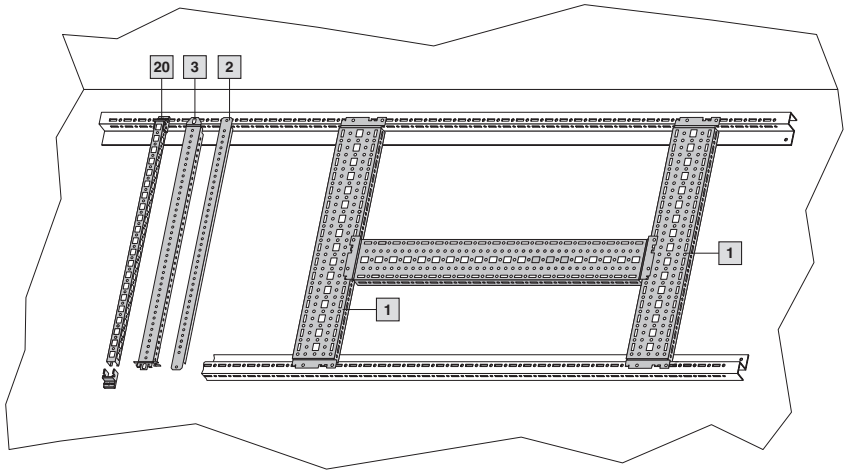
[1] Only with TP console and desk unit (cover or rear panel/base).
[2] Only with TP pedestal.

Installation accessories	Model No.					
For CM and TP pedestal	For depth mm					Page
	300		400		500	
1 TS punched section with mounting flange 17 x 73 mm for the outer level	8612.130		8612.140		8612.150	993
2 TS support strip for the outer level	8800.125		4694.000		4695.000	997
3 TS punched rail 18 x 38 mm	–		8612.240		8612.250	996
20 PS punched rail 23 x 23 mm with support bracket TS 8800.370	–		4169.000		4170.000	998
For CM and TP pedestal	For width mm					Page
	600	800	1000	1200	1600	
4 TS punched section with mounting flange 17 x 73 mm for the inner level	8612.060	8612.080	8612.000	8612.020	–	993
5 TS support strip for the inner level	8800.130	4579.000	–	–	–	997
7 PS punched section without mounting flange 23 x 73 mm with support bracket TS (alternatively with one or two punched rails 23 x 23 mm)	4376.000	4377.000	4382.000	4378.000	–	998
For TP console and desk unit (except cover for height 650 mm)				**May be installed in depth or height**		Page
1 TS punched section with mounting flange 17 x 73 mm for the outer level				8612.150		993
2 TS support strip for the outer level				4695.000		997
3 TS punched rail 18 x 38 mm				8612.250		996
20 PS punched rail 23 x 23 mm with support bracket TS 8800.370				4170.000		998
For TP console (only cover for height 650 mm)				**May be installed in the height**		Page
1 TS punched section with mounting flange 17 x 73 mm for the outer level				8612.140		993
2 TS support strip for the outer level				4694.000		997
3 TS punched rail 18 x 38 mm				8612.240		996
20 PS punched rail 23 x 23 mm with support bracket TS 8800.370				4169.000		998

Compact system enclosures CM/ TP pedestal



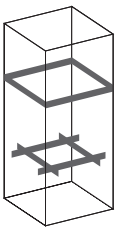
TP console and desk unit (cover or rear panel/base)



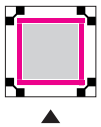












TS punched section with mounting flange, 17 x 73 mm

Variable, with 5 rows of holes for universal skeleton structures or partial assembly. Simply locate into the TS punchings and secure.

Installation options:

- On the vertical TS enclosure section
  - On the outer mounting level, all-round, at the same height
  - On the inner mounting level, all-round, height-offset
- In CM via rail for interior installation
  - In the depth, for outer mounting level
  - In the width, for inner mounting level

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

German patent no. 196 47 802

Also required:

For installation in CM, TP:
Rail for interior installation,
see page 992.

Accessories:

Screws,
see page 1011.
Cable tie for quick assembly SZ 2597.000,
see page 1066.

For the outer mounting level[1)]

For enclosure width/depth mm	Packs of	Model No. TS
300	4	**8612.130**
400	4	**8612.140**
500	4	**8612.150**
600	4	**8612.160**
800	4	**8612.180**
1000	4	**8612.100**
1200	4	**8612.120**

1) Note:
In conjunction with plug-in side panels, notched punched sections are required.

For the inner mounting level

For enclosure width/depth mm	Packs of	Model No. TS
300	4	**8612.030**
400	4	**8612.040**
500	4	**8612.050**
600	4	**8612.060**
800	4	**8612.080**
900	4	**8612.090**
1000	4	**8612.000**
1200	4	**8612.020**





Attachment TS

for TS punched section with mounting flange, 17 x 73 mm

Benefits:

- For attaching the TS punched section with mounting flange where installed equipment, such as mounting plates, blocks access to the screw fastening.
- May also be screw-fastened onto the punched section with mounting flange or enclosure frame and used as a support for contact hazard protection covers of master switch trim panels.

Packs of	Model No. TS
12	**8612.010**

Material:
Sheet steel

Surface finish:
Zinc-plated, passivated

Rail systems



TS punched section with mounting flange, 17 x 73 mm

notched version for DK-TS, FR(i)

For enclosures with plug-in side panels.
Variable, with 5 rows of holes for universal skeleton structures or partial assembly. Simply locate into the TS punchings and secure.

Installation options:

- On the vertical TS enclosure section
  - On the outer mounting level, all-round, at the same height

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

German patent no. 196 47 802

For the outer mounting level

For enclosure width/depth mm	Packs of	Model No. TS
600	4	**7828.064**
800	4	**7828.084**
900	4	**7828.094**
1000	4	**7828.104**
1200	4	**7828.124**

Accessories:

Screws,
see page 1011.
Cable tie for quick assembly SZ 2597.000,
see page 1066.





TS punched section with mounting flange, 17 x 73 mm

with slot fastening for DK-TS, FR(i)

The slot fastening facilitates fully depth-variable attachment of installation components or system accessories. In this way, any required 482.6 mm (19″) distance between levels may be implemented in the field of server integration.
The sections are simply suspended from the inner TS mounting level and secured.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
1 set =
4 punched sections with mounting flange including mounting accessories for rack mounts and mounting angles.

For the inner mounting level

For enclosure depth mm	Packs of	Model No. TS
900	4	**7828.095**
1000	4	**7828.105**
1200	4	**7828.125**





TS punched section with mounting flange, 17 x 73 mm

depth-variable for mounting frames DK-TS, FR(i), TE

For designing flexible interior installation, and/or to accommodate additional built-in components. The punched sections with mounting flanges may be located in the enclosure depth between two mounting frames. An additional screw fastening secures the unit.
The depth variability of the rails facilitates flexible adaptation of their length to the existing attachment distance between the two 482.6 mm (19″) mounting frames. An additional punched section centre piece may be slid flexibly along the rail in the depth and secured to slots. This facilitates flexible attachment at any point between the mounting frames in the enclosure depth.

Length mm	Packs of	Model No. TE
300 – 470[1) 2)]	2	**7000.676**
530 – 700[1)]	2	**7000.678**

[1)] Distance between 19″ levels = length + 120 mm
[2)] L < 420 mm, without centre piece

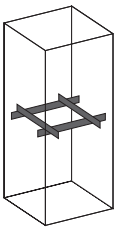
Material:
Sheet steel, zinc-plated, passivated

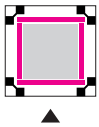
Supply includes:
2 variable punched sections with mounting flanges,
including one sliding centre part each,
including assembly parts.











TS punched section with mounting flange 23 x 73 mm

The alternative to the TS punched section with mounting flange 17 x 73 mm, see page 993, with punchings for captive nuts/threaded blocks instead of the slotted holes top and bottom. Simply locate and secure.

Installation options:
- On the vertical TS enclosure section

Material:
Sheet steel, zinc-plated, passivated

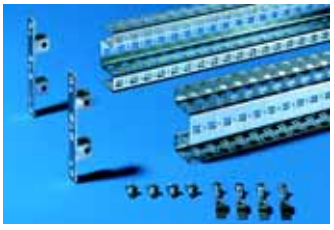
Supply includes:
Assembly screws.

For the inner mounting level

For enclosure width/depth mm	Packs of	Model No. TS
500	4	**8612.550**
600	4	**8612.560**
800	4	**8612.580**
1000	4	**8612.500**
1200	4	**8612.520**

Accessories:

Screws,
see page 1011.
Threaded blocks, captive nuts,
see page 1010.

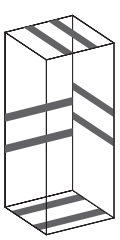


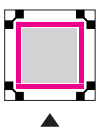












TS punched section without mounting flange 45 x 88 mm

Heavy top-mounted equipment mounted directly on the internal surfaces (e. g. roof) is supported. Mounted on the side or rear, the enclosure can then be screw-fastened securely to the machine. The twin profile with 11 rows of holes offers numerous additional opportunities for interior installation.

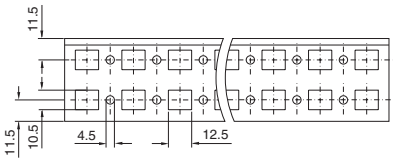
Installation options:
- On the vertical and horizontal TS enclosure section

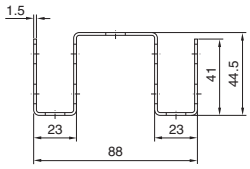
Material:
Sheet steel, zinc-plated, passivated

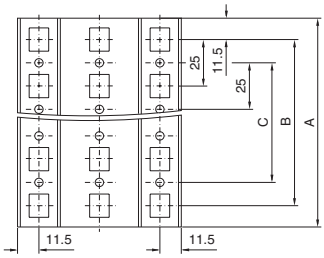
Supply includes:
Assembly parts.

For enclosure width/depth mm	Packs of	Model No. TS
500	2	**8612.650**
600	2	**8612.660**
800	2	**8612.680**

Side punchings

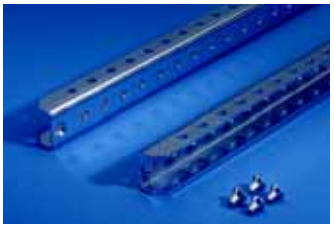






For enclosure width/depth mm	A	B	C
500	398	375	350
600	498	475	450
800	698	675	650

Rail systems







TS punched rail 25 x 38 mm

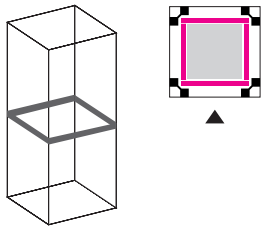
For heavy installations, with attachment holes.

Installation options:
- On the vertical TS enclosure section

With 9 mm round holes on a 25 mm pitch pattern on all sides, for mounting:
- Support rails, see page 1001
- System support rails, see page 1000
- C rails 30/15, see page 999
- Cable clamp rails (right angle section), see page 1061
- Own assemblies

Material:
Sheet steel 3.0 mm, zinc-plated, passivated

Supply includes:
Assembly screws.



For enclosure width/depth mm	Packs of	Model No. TS
400	2	**8612.740**
500	2	**8612.750**
600	2	**8612.760**
800	2	**8612.780**

Also required:

Snap-on nut M8, TS 8800.808,
see page 1005.

Note:
In conjunction with the snap-on nut, particularly well-suited for dynamic connections.







TS punched rail 18 x 38 mm

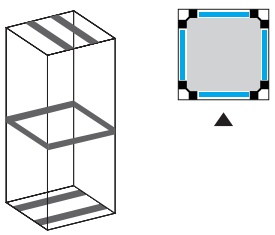
Simply locate and secure with a screw. The location system makes assembly and dismantling easier. It only needs to be secured on one side, but may be secured on both sides if required.

Installation options:
- On the vertical TS enclosure section
  – On the outer mounting level
- On the horizontal TS enclosure section

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

Note:
In enclosures with a mounting plate, 2 punched rails are already included with the supply.



For enclosure width/depth mm	Packs of	Model No. TS
400	4	**8612.240**
500	4	**8612.250**
600	4	**8612.260**
800	4	**8612.280**

German patent no. 197 37 673
European patent no. 0 940 067
with validity for FR, GB, IT, SE
US patent no. 6,145,943
Chinese patent no. ZL 971 995 32.X
Australian patent no. 725 979

Accessories:

Screws,
see page 1011.
Cable tie for quick assembly SZ 2597.000,
see page 1066.
Cable clamps,
see page 1064.







TS support strips

Installation options:

- On the vertical and horizontal TS enclosure section
  - – On the outer mounting level, all-round, at the same height
  - – On the inner mounting level, all-round, height-offset
- On the tubular door frame TS, ES
- On the perforated door strip CM, TP
- On the ES system punchings, in the enclosure depth

Material:
Sheet steel, zinc-plated, passivated

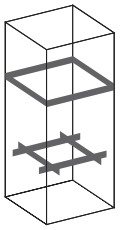
Supply includes:
Assembly screws.

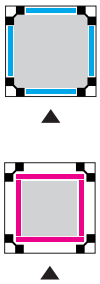
For the outer mounting level

For enclosure width/depth mm	Length mm	Packs of	Model No. TS
300	240	20	**8800.125**
400	340	20	**4694.000**
500	440	20	**4695.000**
600	540	20	**4696.000**
800	740	20	**4697.000**

Accessories:

Screws,
see page 1011.
Cable tie for quick assembly SZ 2597.000,
see page 1066.

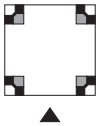




For the inner mounting level and for mounting on doors

For enclosure width/depth mm	For door width mm	Length mm	Packs of	Model No. TS
–	400	290	20	**4594.000**
400	500	390	20	**4309.000**
500	600	490	20	**4596.000**
600	–	590	20	**8800.130**
–	800	690	20	**4598.000**
800	900	790	20	**4579.000**
–	1000	890	20	**4599.000**





TS assembly block

Installation in the vertical TS enclosure sections for mounting PS-compatible individual components.

Material:
Die-cast zinc

Supply includes:
Assembly screws.

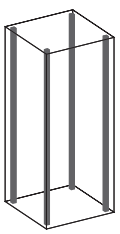
Packs of	Model No. TS
4	**8800.310**

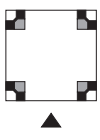
Possible alternative:

Snap-on nut,
see page 1005.









Adaptor rail

for PS compatibility

Installation in the vertical TS enclosure sections (across the entire enclosure height or in sub-sections) to create compatibility with:

- PS punched rail, 23 x 23 mm
- PS punched section without mounting flange, 23 x 73 mm
- PS punched section with mounting flange, 23 x 73 mm

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

German patent no. 19 647 781
European patent no. 0 939 990
with validity for FR, GB, IT, SE
US patent no. 6,206,494
Australian patent no. 727 880
Chinese patent no. ZL 971 997 31.4

For enclosure height mm	Packs of	Model No. TS
1800	4	**8800.380**
2000	4	**8800.300**
2200	4	**8800.320**

Accessories:

Screws,
see page 1011.

Possible alternative:

Snap-on nut,
see page 1005.

Rail systems









PS punched rails 23 x 23 mm

for TS, ES

Installation options:

- On the vertical enclosure section
  - Directly via support brackets TS
  - Via adaptor rail for PS compatibility in conjunction with angle brackets, mounting brackets or support brackets PS
- On the horizontal enclosure section
  - Directly via angle brackets, mounting brackets or support brackets PS

Material:
Sheet steel, zinc-plated, passivated

Length mm	For WHD mm	Packs of	Model No. PS
295	400	12	**4169.000**
395	500	12	**4170.000**
495	600	12	**4171.000**
695	800	12	**4172.000**
895	1000	12	**4173.000**
1095	1200	6	**4174.000**
1295	1400	6	**4393.000**
1495	1600	6	**4175.000**
1695	1800	6	**4176.000**
1895	2000	6	**4177.000**
2095	2200	6	**4178.000**

Also required:

U nuts,
see page 1010.
Mounting brackets TS/PS,
see page 1006
or
angle brackets, support brackets TS/PS,
see page 1007.

Accessories:

Cable attachment,
see page 1066.
Screws,
see page 1011.
Cable tie for quick assembly SZ 2597.000,
see page 1066.









PS punched section without mounting flange 23 x 73 mm

for TS, ES

Installation options:

- On the vertical enclosure section
  - Directly via support brackets TS
  - Via adaptor rail for PS compatibility in conjunction with support brackets PS
- On the horizontal enclosure section
  - Directly via support brackets PS

Material:
Sheet steel, zinc-plated, passivated

Length mm	For WHD mm	Packs of	Model No. PS
295	400	4	**4374.000**
395	500	4	**4375.000**
495	600	4	**4376.000**
695	800	4	**4377.000**
895	1000	4	**4382.000**
1095	1200	4	**4378.000**
1695	1800	4	**4379.000**
1895	2000	4	**4380.000**
2095	2200	4	**4381.000**

Also required:

Support brackets PS/TS,
see page 1007.

Accessories:

Screws,
see page 1011.
Cable tie for quick assembly SZ 2597.000,
see page 1066.
U nuts,
see page 1010.







PS punched section with mounting flange 23 x 73 mm

for TS, ES

Variable, with 5 rows of holes for universal skeleton structures or partial assembly. Simply locate into the system punchings and secure.

Installation options:

- On the vertical TS enclosure section
  – Via adaptor rail for PS compatibility
- On the horizontal TS enclosure section
- On the ES system punchings, in the enclosure depth

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

Installation in enclosure width/depth TS mm	Packs of	Model No. PS
400	4	**8800.640**
500	4	**8800.650**
600	4	**4364.000**
800	4	**4365.000**
1000	4	**4373.000**
1200	4	**4367.000**

Installation in enclosure depth ES, AP universal console, CS modular enclosures mm	Packs of	Model No. PS
400	4	**4369.000**
500	4	**4370.000**
600	4	**4371.000**
800	4	**4372.000**

Also required:

Adaptor rail for PS compatibility (when mounting on the vertical enclosure section),
see page 997.







C rails 30/15

to EN 60 715
for TS, ES

Installation options:

- On the vertical TS enclosure section
  – Via snap-on nut TS 8800.808 (Fig. left)
  – Via adaptor rail for PS compatibility
- On the horizontal TS enclosure section (Fig. right)
- On the ES system punchings

Material:
Sheet steel, zinc-plated, passivated

For enclosure width/depth mm	Length mm	Packs of	Model No. PS
500	455	6	**4943.000**
600	555	6	**4944.000**
800	755	6	**4945.000**
1000	955	6	**4946.000**
1200	1155	6	**4947.000**

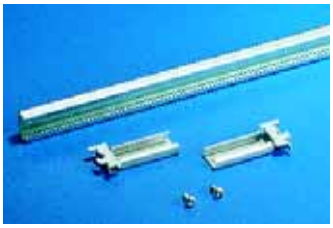
Accessories:

Cable clamps,
see page 1064.
Support bracket or spacer,
see page 1008.
Quick-assembly block,
see page 1008.
Snap-on nut M8, TS 8800.808,
see page 1005.
Adaptor rail,
see page 997.

Possible alternative:

Rail for EMC shielding bracket and strain relief,
see page 1031.

Rail systems



C rails

for DK-TS, CR Toptec

For direct mounting on the vertical enclosure section.
Thanks to the universally designed attachment piece, the C rails may optionally be attached to the inner or outer level of the TS 8 frame.

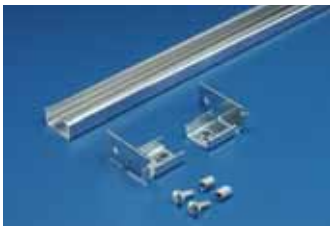
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure width/depth mm	Length mm	Packs of	Model No. DK
400	298	4	**7828.040**
500	398	4	**7828.050**
600	498	4	**7828.060**
800	698	4	**7828.080**
900	798	4	**7828.090**
1000	898	4	**7828.100**
1200	1098	4	**7828.120**

Accessories:

Cable clamps,
see page 1064.







C rails

for DK-TS

Installation options:
- On the horizontal enclosure sections
- On the vertical TS enclosure section via adaptor rail for PS compatibility

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure width/depth mm	Length mm	Packs of	Model No. DK
400	284	6	**7091.000**
500	384	6	**7092.000**
600	484	6	**7095.000**
800	684	6	**7096.000**
1000	894	6	**7100.000**
1200	1094	6	**7102.000**

Also required:

Adaptor rail for PS compatibility (when mounting on the vertical enclosure section),
see page 997.

Accessories:

Cable clamps,
see page 1064.







System support rails

For heavy installed equipment such as transformers. T-head screw and slot in the support rail for any mounting position.

Installation options:
- On the vertical TS enclosure section
  - Via snap-on nut TS 8800.808 (Fig. left)
  - Via adaptor rail for PS compatibility
  - Offset in the height, via TS punched rail 25 x 38 mm (Fig. right)
- On the horizontal TS enclosure section
  - In the width
  - In the depth (without mounting plate)
- On the ES system punchings, in the enclosure depth

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
2 system support rails (45 x 25 mm),
4 T-head screws M12 x 60 mm,
and assembly parts.

For enclosure width mm	Packs of	Model No. PS
600	2	**4361.000**
800	2	**4362.000**
1000	2	**4347.000**
1200	2	**4363.000**

Accessories:

Width divider e. g. for the installation of 2 system support rails (for 600 mm width) in 1200 mm wide enclosures,
see page 909.
Snap-on nut M8, TS 8800.808,
see page 1005.
Adaptor rail,
see page 997.
TS punched rail 25 x 38 mm,
see page 996.






Support rails

for TS, ES

For heavy installations. Particularly suitable for the installation of base isolators.

Installation options:

- On the vertical TS enclosure section
  - Via snap-on nut TS 8800.808 (Fig. left)
  - Via adaptor rail for PS compatibility
  - Offset in the height, via TS punched rail 25 x 38 mm (Fig. right)
- On the horizontal TS enclosure section
  - In the width
  - In the depth
- On the ES system punchings, in the enclosure depth

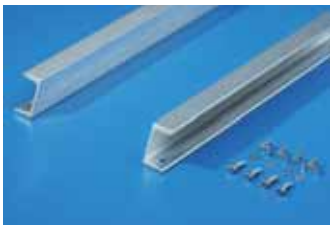
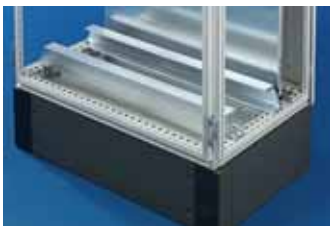
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure width/depth mm	Packs of	Model No. PS slotted	Model No. TS unslotted
400	4	**4394.000**	**4394.500**
500	4	**4395.000**	**4395.500**
600	4	**4396.000**	**4396.500**
800	4	**4398.000**	**4398.500**

Accessories:

Snap-on nut M8, TS 8800.808,
see page 1005.
Adaptor rail,
see page 997.
TS punched rail 25 x 38 mm,
see page 996.

Support rail 65 x 42 mm

for TS, ES

Benefits:

- For heavy assemblies up to 5000 N per support rail.

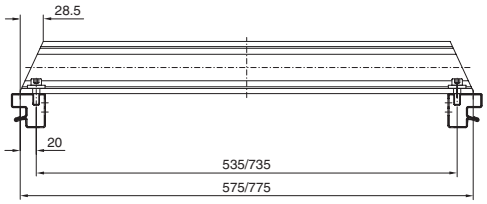
Permissible static load:
10000 N per enclosure

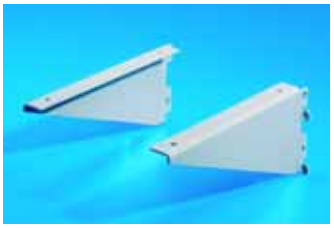
Material:
Steel

Surface finish:
Zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure width mm	Packs of	Model No. TS
600	2	**8612.960**
800	2	**8612.980**






Bracket, locatable

for shelves

Simply locate into the vertical TS section.
May be additionally secured with screws.
Support surface for shelves: 200 mm.

Material:
Sheet steel

Colour:
RAL 7035

Packs of	Model No. IW
3 pairs	**6902.690**

Rail systems

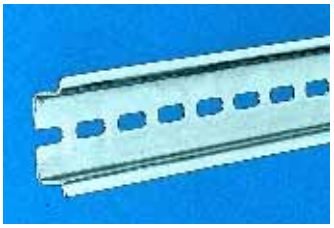


Support rails TS 35/15

to EN 60 715
for TS, ES

Mounting on the TS vertical section via snap-on nuts M8, TS 8800.808, see page 1005, assembly block see page 997 or adaptor rail, see page 997.

For enclosure width/ depth mm	Support rails length mm	Packs of	Model No. PS
500	455	6	**4933.000**
600	555	6	**4934.000**
800	755	6	**4935.000**
1200	1155	6	**4937.000**



Support rails TS 35/7.5 and TS 35/15

to EN 60 715
for KL, AE

Length sized to the enclosure width

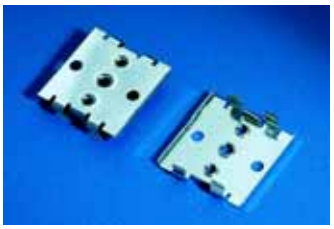
For enclosure width mm	Support rails length mm	Design	Packs of	Model No. SZ
150	137	TS 35/7.5	10	**2314.000**
200	187		10	**2315.000**
300	287		10	**2316.000**
400	387		10	**2317.000**
500	487	TS 35/15	10	**2318.000**
600	587		10	**2319.000**

Support rails

to EN 60 715

Fixed length 2 m

Design	Length	Packs of	Model No. SZ
TS 35/15	2 m	6	**2313.150**
TS 35/7.5	2 m	6	**2313.750**



Mounting clip

for support rails

For fast, secure attachment of:
- Cable trunking
- Mounting plates
- Mounting angles

on support rail TS 35/7.5 and TS 35/15 to EN 50 022.
Simply pre-assemble the mounting clip on the part to be installed, then snap into position on the support rail.

Packs of	Model No. SZ
30	**2309.000**

German patent no. 195 44 083
European patent no. 0 776 077
with validity for ES, FR, IT, SE



C rails

for EL

For infinite adjustment of the mounting angles in the depth.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For centre part depth mm	Packs of	Model No. EL
216	4	**2238.000**
316	4	**2239.000**
416	4	**2237.000**

Accessories:

Cable clamps,
see page 1064.



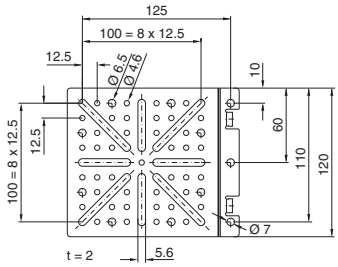

Mounting plates

Locatable
on
- the vertical TS enclosure section
- TS punched section with mounting flange, 17 x 73 mm
- at the rear on the TE 482.6 mm (19″) mounting frame

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

Packs of	Model No. TS
4	8612.400





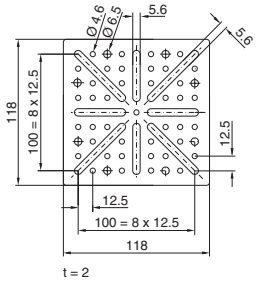

Mounting plates

Screw-fastened, large
On all enclosures and mounting parts with system punchings on a 25 mm pitch pattern.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

Packs of	Model No. TS
4	8612.410





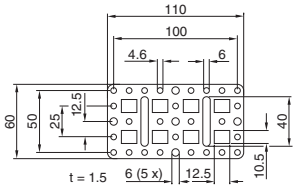
Mounting plates

Screw-fastened, small

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

Packs of	Model No. PS
4	4532.000





Mounting bracket

Screw-fastened on all enclosures and mounting parts with system punchings on a 25 mm pitch pattern.

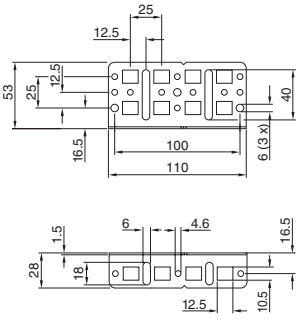
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

Packs of	Model No. PS
4	4597.000

Accessories:

Screws, see page 1011.
Cable tie for quick assembly SZ 2597.000, see page 1066.



Rail systems





Mounting bracket

for interior installation

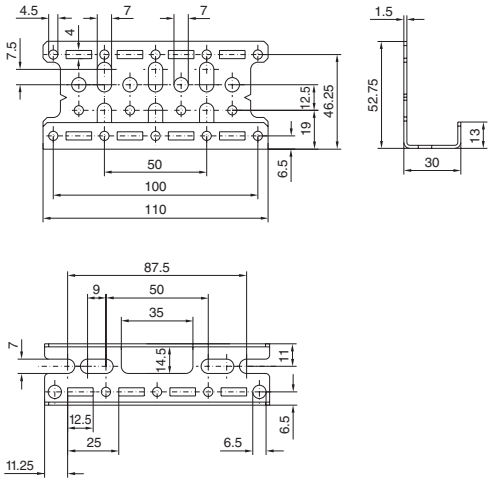
For installing punched sections with mounting flanges and support strips in:
- CP horizontal/vertical Quickline Panel
- CP horizontal/vertical Comfort Panel from 74 mm installation depth

or for installing in:
- CP Optipanel from an installation depth of 100 mm
- CP VIP 6000 from an installation depth of 155 mm

Material:
Sheet steel, zinc-plated, passivated

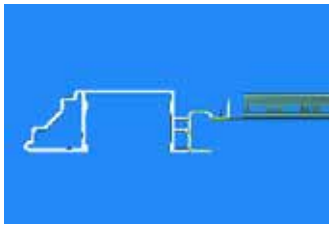
Supply includes:
Assembly parts.

Packs of	Model No. CP
4	**6205.100**

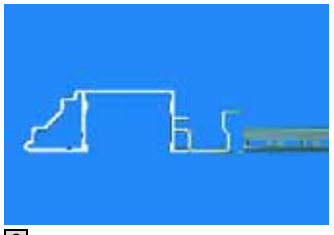


		Quickline panel		Comfort Panel	Page
		CP 6690.500	CP 6691.500	Front plate width 482.6 mm (19″)	
Punched sections with mounting flanges	horizontal	8612.160	8612.160	8612.150	993
	vertical	–	8612.150		
Mounting bars	horizontal	4696.000	4696.000	4695.000	997
	vertical	4594.000	4695.000		





1



2

System adaptor

for FR(i)

By using the system adaptor, the principle of two TS 8 attachment levels within this enclosure system is easily achieved. This supports the integration of all rail systems which are attached to the outer enclosure level, and therefore offers a diverse choice of installation options. The inner attachment level may be emulated by simply rotating the system adaptor, and therefore creates the requirements for perfect cable management and completely flexible interior installation. Rail systems attached between the front and rear frame section must be 200 mm shorter than the external enclosure dimensions.

1 Installation position, outer level

2 Installation position, inner level

Packs of	Model No. FR(i)
8	**7856.760**

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.



Snap-on nut TS

Metric thread for vertical TS enclosure section.
To install, insert into slot and clip into position.
The snap-on nut is then secure. By tightening the screw, it is securely tightened against the section, and potential equalisation is automatically created.

Installation options:
- On the vertical TS enclosure section
  - with metric thread M6 or M8
  - the alternative to metal screws
  - particularly well-suited for dynamically loaded connections

Material:
Precision-cast stainless steel

Thread	Packs of	Model No. TS
M6	20	**8800.806**
M8	20	**8800.808**

German patent no. 101 49 599

Accessories:

Multi-tooth screw M6 x 12 or M8 x 12,
see page 1011.



1



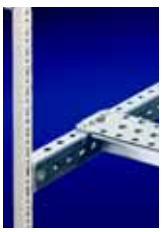
2



3



4



5

Accessories for interior installation

1 Support rails,
see page 1001

2 Cable clamp rails,
see page 1061

3 C rails 30/15,
see page 999

4 System support rails,
see page 1000

5 TS punched rail 25 x 38 mm,
see page 996



Adaptor bracket TS

For external mounting of
- System lights
- Cable duct

on the vertical TS enclosure section.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

Packs of	Model No. TS
6	**8800.360**





Assembly components



Mounting bracket TS

Offers variable mounting opportunities for the mounting angle 23 x 23 mm.
E.g. for supporting external surfaces or creating an additional internal level.

Material:
Die-cast zinc

Supply includes:
24 screws 5.5 x 13 mm.

Packs of	Model No. TS
24	**8800.370**

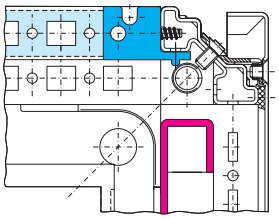
Accessories:

U nuts (recommendation: M6),
see page 1010.

Installation options:
- On the vertical TS enclosure section
  – flush with the outer edge of the enclosure or
  – flush with the enclosure clearance width.



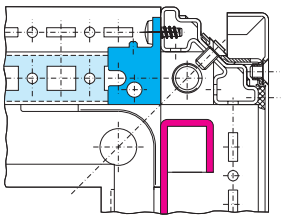
1



1 Support of the external surfaces with two mounting options:
- Without mounting plate (photo)
- With mounting plate (drawing)



2

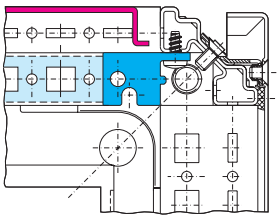


Two installation options for the inner mounting level:

2 If there is no divider panel fitted.



3



3 With a divider panel fitted, and without or with a mounting plate in a set forward position.





Mounting bracket PS

For variable attachment of punched rails 23 x 23 mm.

Installation options:
- Optionally flush with:
  – Outer enclosure edge or
  – Enclosure clearance width
- On the vertical TS enclosure section via
  – Adaptor rail for PS compatibility,
  see page 997
- On the horizontal TS enclosure section
- On enclosures and rails with rectangular system punching 12.5 x 10.5 mm.

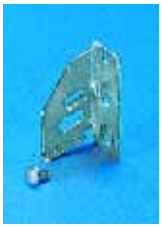
Material:
Die-cast zinc

Supply includes:
1 set =
1 mounitng bracket,
1 screw M6 x 12 mm,
1 cage nut M6.

Packs of	Model No. PS
24 sets	**4182.000**

Also required:

U nuts for punched rails (recommended: M6),
see page 1010.
Multi-tooth screws M6 x 12 mm,
see page 1011.





Angle bracket PS

For quick attachment of
punched rails 23 x 23 mm.

Installation options:
- On the vertical TS enclosure section via
  – Adaptor rail for PS compatibility,
  see page 997
- On the horizontal TS enclosure section
- On enclosures and rails with rectangular system punching 12.5 x 10.5 mm.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
1 set =
1 angle bracket, left,
1 angle bracket, right,
2 metal screws 5.5 x 13 mm.

Packs of	Model No. PS
12 sets	4181.000

Also required:

U nuts for punched rails (recommended: M6),
see page 1010.
Multi-tooth screws M6 x 12 mm,
see page 1011.




Support bracket TS

For the attachment of
punched sections without mounting flange
23 x 73 mm or
punched rails 23 x 23 mm.

Installation options:
- On the vertical and horizontal TS enclosure section
  – on a 25 mm pitch pattern
  – in 2 mm increments.

Material:
Die-cast zinc

Supply includes:
1 set =
1 support bracket,
1 stay,
3 metal screws 5.5 x 13 mm.

Packs of	Model No. TS
6 sets	8800.330

German patent no. 199 37 892

Also required:

U nuts for punched rails (recommended: M6),
see page 1010.
Multi-tooth screws M6 x 12 mm,
see page 1011.





Support bracket PS

For the attachment of
punched sections without mounting flange
23 x 73 mm or
punched rails 23 x 23 mm.

Installation options:
- On the vertical TS enclosure section via
  – Snap-on nut TS 8800.806,
  see page 1005, or
  – Adaptor rail for PS compatibility,
  see page 997
- On the horizontal TS enclosure section
- On enclosures and rails with rectangular system punching 12.5 x 10.5 mm.

Material:
Die-cast zinc

Supply includes:
1 set =
1 support bracket,
2 countersunk screws,
2 serrated lock washers.

Packs of	Model No. PS
24 sets	4183.000

Also required:

U nuts for punched rails (recommended: M6),
see page 1010.
Multi-tooth screws M6 x 12 mm,
see page 1011.
Adaptor rail for PS compatibility (when mounting on the vertical enclosure section),
see page 997.

Assembly components






Bracket/spacer

For fastening C rails, punched rails or cable clamp rails (angle section). On the sides, to accommodate square sections or tubes (Ø 20 mm).
Attachment points with M8 thread.

Installation options:
- On the vertical TS enclosure section via
  – Snap-on nut TS 8800.808, see page 1005, or
  – Adaptor rail for PS compatibility, see page 997
- On the horizontal TS enclosure section
- On enclosures and rails with rectangular system punching 12.5 x 10.5 mm

Material:
Die-cast zinc

Supply includes:
1 set =
1 bracket/spacer,
2 screws M8 x 16 mm,
2 spring lock washers,
2 cage nuts M8,
2 serrated lock washers,
2 metal screws.

Packs of	Model No. TS
6 sets	**4199.000**

Accessories:

Angle piece TS 4134.000, see page 1008.




Quick-assembly block

For a variety of installation options.

Installation options:
- On the vertical TS enclosure section via
  – Snap-on nut TS 8800.808, see page 1005, or
  – Adaptor rail for PS compatibility, see page 997
- On the horizontal TS enclosure section
- On enclosures and rails with rectangular system punching 12.5 x 10.5 mm

Material:
Die-cast zinc

Supply includes:
12 quick-assembly blocks,
12 threaded blocks M8,
24 screws M8 x 12 mm,
24 square nuts M8.

Packs of	Model No. TS
12	**4133.000**

German patent no. 42 33 205




Angle piece

For assembling punched rails and mounting surfaces with a 45° incline.

Installation options:
- On the vertical TS enclosure section via
  – Snap-on nut TS 8800.806, see page 1005, or
  – Adaptor rail for PS compatibility, see page 997
- On the horizontal TS enclosure section
- On enclosures and rails with rectangular system punching 12.5 x 10.5 mm

Material:
Angle pieces: Die-cast zinc
Insulating pieces: Plastic

Supply includes:
1 set =
1 angle piece,
1 insulating piece,
1 insulating screw and
2 assembly screws,
1 threaded block M6.

Packs of	Model No. TS
12 sets	**4134.000**







Universal bracket

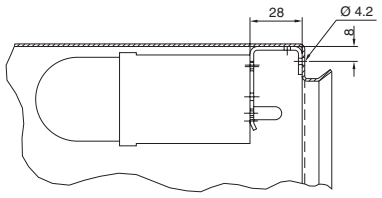
For installing
- Enclosure lights in
  – Compact enclosures AE
  – Console systems AP
- Door-operated switches in
  – Compact enclosures AE
  – TopConsole system TP
  – Console systems AP
- Cable conduit holders SZ 2593.000 and SZ 2591.000 in
  – Compact enclosures AE
  – Console systems AP
- Support rails for terminals in
  – Operating housings and command panel housings with door.

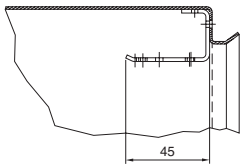
Mounting screws are concealed when the door is closed. Existing holes for mounting blocks or hinges may be used with AE.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. SZ
6	**2373.000**







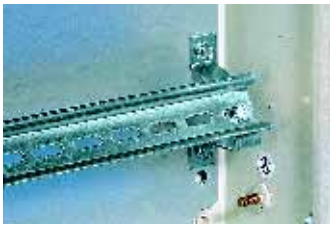


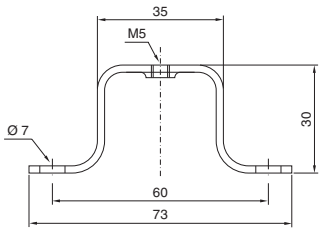
Rail mounting bracket

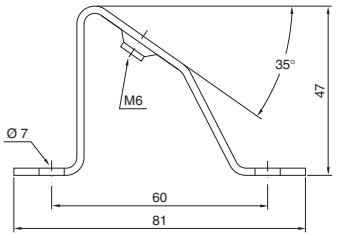
For individual rail mounting.

Material:
Sheet steel, zinc-plated, passivated

Rail mounting bracket	Packs of	Model No. SZ
Flat	20	**2365.000**
Inclined	20	**2366.000**









Mounting block

for AE

As an accessory for additional interior installation, e.g. mounting of cable ties, PS punched rails, top hat rails and C rails (e.g. for a second pair of mounting angles).

Supply includes:
Assembly parts.

Packs of	Model No. SZ
20	**2574.000**

Assembly components




U nuts

For
- Punched rail 23 x 23 mm
- Punched section without mounting flange, 23 x 73 mm
- Punched section without mounting flange, 45 x 88 mm
- Punched section with mounting flange, 23 x 73 mm

For mounting punched rails and punched sections without mounting flanges on angle brackets, mounting brackets and support brackets, we recommend U nuts with M6 thread (PS 4179.000).

Thread	Packs of	Model No. PS
M4	20	**4119.000**
M5	20	**4157.000**
M6	20	**4179.000**
M8	20	**4180.000**

Accessories:

Multi-tooth screws M6 x 12 mm, (for PS 4179.000), see page 1011.

Cage nuts/threaded blocks

Installation options:
On enclosures and rails with rectangular system punching 12.5 x 10.5 mm, such as:
- TS enclosure section
  – vertical, via adaptor rail for PS compatibility
  – horizontal, direct
- ES enclosure body, all-round
- Punched rail 23 x 23 mm
- Punched section without mounting flange, 23 x 73 mm
- Punched section without mounting flange, 45 x 88 mm
- Punched section with mounting flange, 23 x 73 mm

Possible alternative:

On the vertical TS enclosure section TS snap-on nuts, see page 1005.




Cage nuts
The compression spring, designed as an insertion aid, ensures reliable mechanical and electrical connection in the system punchings.

Thread	Packs of	Model No. TS
M6	50	**4164.000**
M8	50	**4165.000**




Threaded blocks
With snap-off insertion aid, die-cast zinc.

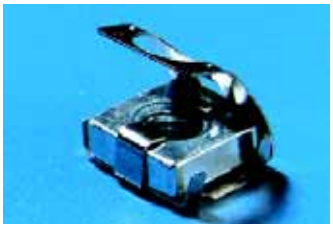
Thread	Packs of	Model No. TS
M6	50	**4162.000**
M8	50	**4163.000**




Cage nuts
The nuts are inserted from the same side as screw-fastening takes place. Consequently, attachment points in the same height or width may also be used around corners.
The spring cage also ensures electrical connection in the system punchings.

Thread	Packs of	Model No. TS
M6	50	**8800.340**
M8	50	**8800.350**

German patent no. 198 60 434



Spring nut M5

For
- Comfort Panel from an installation depth of 74 mm
- Optipanel from an installation depth of 100 mm
- VIP 6000 from an installation depth of 185 mm
- Compact Panel

The spring ensures reliable protection against unintentional displacement.
Further interior installation, e.g. with mounting bracket PS 4597.000 (see page 1003) or mounting bracket CP 6205.100 (see page 1004).

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. CP
50	**6108.000**



Threaded inserts M6

For KS
For securing installed equipment to the moulded bosses in the door and in the enclosure rear panel.
Screw length available for insertion: 8 mm.

Packs of	Model No. KS
20	**1482.000**



Multi-tooth screws

M6 x 12 to fit:
- Snap-on nuts (TS 8800.806)
- U nuts for punched rails (PS 4179.000)
- Cage nuts (PS 4164.000)
- Threaded blocks (TS 4162.000)

M6 x 12 to fit:
- Snap-on nuts (TS 8800.808)



Metal multi-tooth screws

For the round holes 4.5 mm diameter in the enclosure section, punched rails and punched sections without mounting flanges.



Self-tapping screws

For the round holes 4.5 mm diameter in the enclosure section, punched rails and punched sections without mounting flanges.



Self-tapping screws

Mark, drill and tighten in a single operation using electric or pneumatic tools.

For metal thickness: 0.8 – 3 mm
Length: 16 mm
Usable length: 9.5 mm
Width across flats: 8 mm

Multi-tooth drive for optimum transmission of torques, an extended tool life and increased safety and reliability when tightening and loosening screw connections.

Type of screw	Dimensions mm	Packs of	Model No. SZ
Multi-tooth screws	M6 x 12 M8 x 12	300 300	**2504.500** **2504.800**
Metal multi-tooth screws	5.5 x 13	300	**2486.500**
Multi-tooth screws for stainless steel	5 x 13	300	**2486.300**
Self-tapping screws:			
• Hex screws	M5 x 10	500	**2504.000**
• Posidrive raised countersunk screws	M5 x 12	500	**2488.000**
• Pan-head srews, posidrive	M5 x 12	500	**2489.000**
• Multi-tooth pan-head screws	M5 x 12	500	**2489.500**
Self-tapping screws	ST 4.8 x 16	300	**2487.000**

Assembly components

TS adaptor for wiring systems



Adaptor rail for the Lütze LSC wiring system.

Supply includes:
1 set =
6 adaptor rails,
24 spring lock washers,
24 metal screws 5.5 x 13 mm.

Note:
Mounting parts for the LCS wiring system not included with the supply.

For enclosure depth mm	Packs of	Model No. TS
400	1 set	**8800.140**
500		**8800.150**
600		**8800.160**
800		**8800.180**



Installation kit for the Moeller MR 25 wiring system.

Supply includes:
1 set =
2 baying clamps,
4 mounting rails,
assembly parts.

For enclosure depth mm	Packs of	Model No. TS
400	1 set	**8800.240**
500		**8800.250**





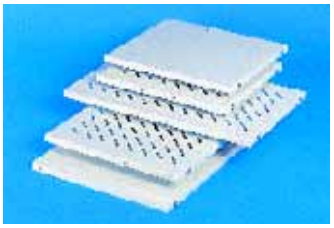
Kit

for separate frame TS
Every TS 8 frame is easily converted to a rack suitable for dismantling. To this end, the frame sections in the roof and base frame are separated, optionally in the width or depth. The four connection components are inserted into the frame section and screw-fastened. The external dimensions of the frame remain unchanged.

Supply includes:
Assembly parts.

Note:
The maximum achievable IP protection category is restricted by separation of the frame.

Packs of	Model No. DK
4	**7829.400**



Component shelf for frame attachment

Enclosure width 600 mm on the enclosure frame or between two 482.6 mm (19″) mounting angles

Maximum depth of component shelves with enclosure frame attachment = enclosure depth minus 100 mm.

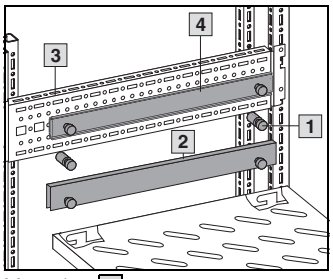
Technical specifications:
Mounting bolts or mounting rails may be installed on a 25 mm pitch pattern in the enclosure depth. Mounting hole for handles provided.

Load capacity:
50 kg/100 kg surface load, static

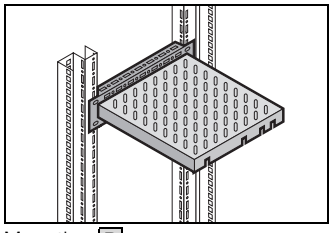
Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.



Mounting A



Mounting B

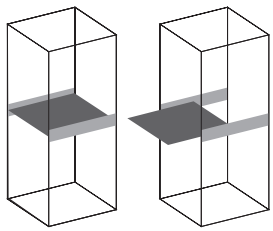
1 Fastening bolts
2 Mounting rails
3 Installation kit
4 Telescopic slides

Also required:

TS punched section with mounting flange, 17 x 73 mm, as installation kit for component shelves,
see page 1023.
For FR(i) plus system adaptor,
see page 1004.

Load capacity kg	50				100			
Component shelf depth mm	400	500	600	700	400	500	600	700
Component shelf height mm	29				45			
Model No. DK, slotted	**7164.035**	**7165.035**	**7166.035**	**7166.735**	**7464.035**	**7465.035**	**7466.035**	**7466.735**
Model No. DK, unslotted	**7264.035**	**7265.035**	**7266.035**	–	–	–	–	–

Mounting on a 600 mm wide enclosure frame, installation A, for TS, FR(i)



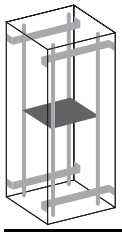
Also required:

For TS TS punched sections with mounting flanges 17 x 73 mm as installation kit for enclosure depth mm	600	8612.060
	800	8612.080
	900	8612.090
	1000	8612.000
For FR(i) System adaptor and TS punched sections with mounting flanges 17 x 73 mm as installation kit for enclosure depth mm	System adaptor	7856.760
	600	8612.140
	800	8612.160
	1000	8612.180
	1200	8612.100

Accessories:

Telescopic slides, see page 1025	7061.000	7081.000	7161.000	7161.700	7064.000	7065.000	7066.000	7066.700
Handles for component shelves, see page 1025	3636.010							

Mounting on the 482.6 mm (19″) mounting frame[1], installation B, for TE, TS, FR(i)



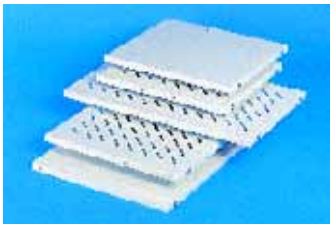
Distance between 482.6 mm (19″) levels, minimal	495	595	695	895	495	595	695	895

Also required:

TS punched section with mounting flange 17 x 73 mm as installation kit in the enclosure depth between the 482.6 mm (19″) mounting frames	8612.040	8612.050	8612.060	8612.080	8612.040	8612.050	8612.060	8612.080

[1] **Note:**
Not suitable for combination with telescopic slides.

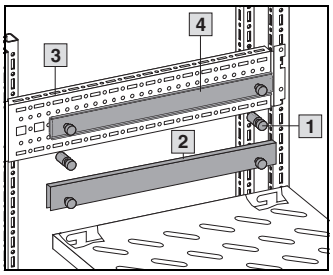
Component shelves for frame attachment



Component shelf for frame attachment

Enclosure width 800 mm for TS, FR(i)
For installation in enclosures **without** 482.6 mm (19″) accommodation.

Maximum depth of component shelves with enclosure frame attachment = enclosure depth minus 100 mm.



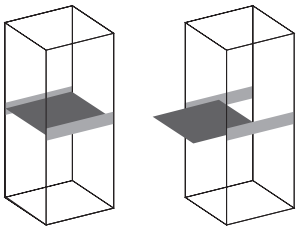
Technical specifications:
Mounting bolts or mounting rails may be installed on a 25 mm pitch pattern in the enclosure depth. Mounting hole for handles provided.

Load capacity:
50 kg/100 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.



1 Fastening bolts
2 Mounting rails
3 Installation kit
4 Telescopic slides

Also required:

TS punched section with mounting flange, 17 x 73 mm, as installation kit for component shelves,
see page 1023.
For FR(i) plus system adaptor,
see page 1004.

Load capacity kg	50				100			
Component shelf depth mm	400	500	600	700	400	500	600	700
Component shelf height mm	29				45			
Model No. DK, slotted	**7184.035**	**7185.035**	**7186.035**	**7186.735**	**7484.035**	**7485.035**	**7486.035**	**7486.735**

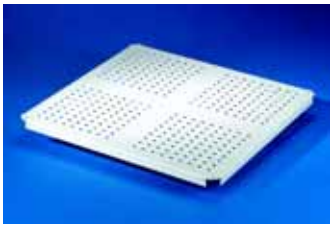
Also required:

For TS TS punched sections with mounting flanges 17 x 73 mm as installation kit for enclosure depth mm	600	8612.060
	800	8612.080
	900	8612.090
	1000	8612.000
For FR(i) System adaptor and TS punched sections with mounting flanges 17 x 73 mm as installation kit for enclosure depth mm	System adaptor	7856.760
	600	8612.140
	800	8612.160
	1000	8612.180
	1200	8612.100

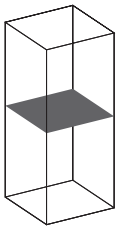
Accessories:

Telescopic slides, see page 1025	7061.000	7081.000	7161.000	7161.700	7064.000	7065.000	7066.000	7066.700
Handles for component shelves, see page 1025	3636.010							

Component shelves for frame attachment







Component shelf, static installation

for TS
Locate the mounting pieces in the frame and attach the component shelf. Attachment in the TS enclosure section offers the greatest possible support surface.

Dimensions:
Height: 25 mm
Width: Enclosure width minus 44 mm
Depth: Enclosure depth minus 44 mm

Load capacity:
75 kg surface load, static

Material:
Sheet steel

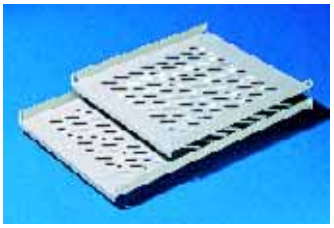
Colour:
RAL 7035

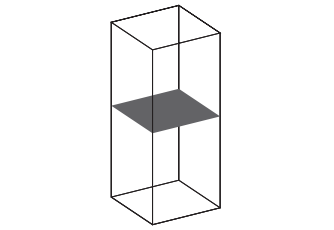
Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width mm	Depth mm	
600	600	**7828.660**
600	800	**7828.680**
600	900	**7828.690**[1)]
600	1000	**7828.600**[1)]
800	600	**7828.680**
800	800	**7828.880**
800	900	**7828.890**
800	1000	**7828.800**

[1)] Delivery times available on request.

Note:
Combined use with vertically divided doors is not possible.
Not suitable for combination with telescopic slides.





Component shelf, static installation

for PC-ES
For direct mounting on the enclosure frame. Simply locate into the 4 screws, tighten, and voilà!

Load capacity:
40 kg surface load, static

Material:
Sheet steel

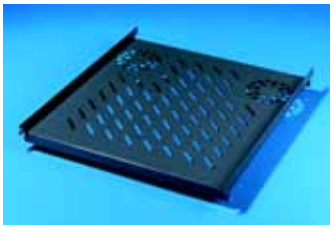
Colour:
RAL 7035

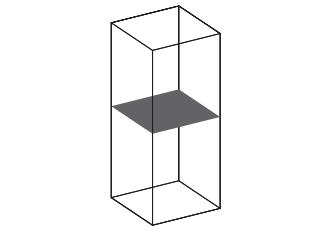
Supply includes:
Assembly parts.

For enclosures		Support area		Model No. PC
Width mm	Depth mm	Width mm	Depth mm	
600	650	510	555	**4619.660**
600	850	510	755	**4619.680**

Accessories:

Fastening bolts for slotted component shelves DK 7115.000,
see page 1026.





Component shelf, static installation

for TS, PC-TS, IW
prepared for fan expansion kit
For direct mounting on the vertical TS enclosure section. Simply located into 4 pre-fitted screws and secure.

Load capacity:
40 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7015

Supply includes:
Assembly parts.

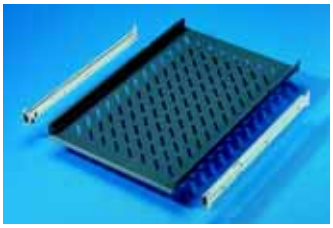
For enclosures		Support area		Model No. PC
Width mm	Depth mm	Width mm	Depth mm	
600	600	507	550	**8800.900**
600	800	507	750	**8800.910**

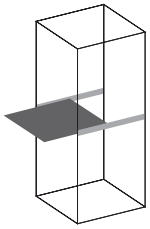
[1)] For enclosures without a mounting plate.

Accessories:

Fan expansion kit DK 7980.000,
see page 703.

Component shelves for frame attachment





Component shelf, pull-out

for TS, PC-TS, IW
For direct mounting on the vertical TS enclosure section.

Load capacity:
40 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7015

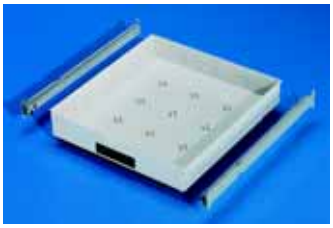
Supply includes:
2 telescopic slides.

For enclosures[1]		Support area		Model No. IW
Width mm	Depth mm	Width mm	Depth mm	
600	600	465	545	**6902.960[2]**
600	800	465	745	**6902.980**

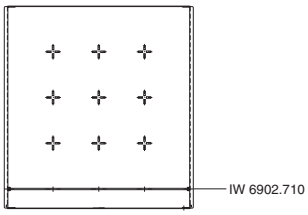
[1] For enclosures without a mounting plate.
[2] May also be installed in 800 mm deep enclosures based on TS (pull-out rear attachment).

Also required:

When installing more than one pull-out component shelf/drawer tray, we recommend that for reasons of work safety to DIN EN 349 a drawer extension lock should be used,
see page 1026.







Drawer tray

pull-out
For enclosures with TS frame construction in series IW, PC-TS.
Width 600 mm and depth 600 – 800 mm.
Individual sub-division is possible via the use of cross members.
Tray height: 83 mm

Load capacity:
40 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
2 telescopic slides.

Note:
Suitable for installation in all enclosures, without mounting plate, with W x D 600 x 600/800 mm based on TS (rear attachment of telescopic slides extendible).

When sub-dividing the drawer tray, one cross member is always needed for the entire width (IW 6902.710).

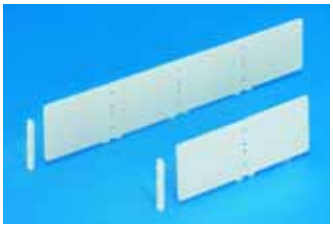
Packs of	Model No. IW
1	**6902.700**

Also required:

When installing more than one pull-out component shelf/drawer tray, we recommend that for reasons of work safety to DIN EN 349 a drawer extension lock should be used,
see page 1026.

Accessories:

Cross member,
see page 1016.



Cross members

for drawer tray
For individual sub-division.

Material:
Aluminium, 3 mm

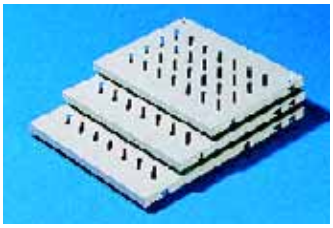
Colour:
RAL 7035

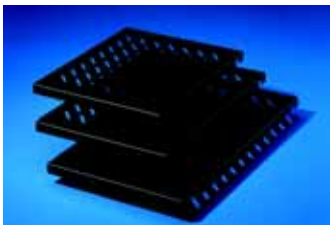
Supply includes:
Plastic holder.

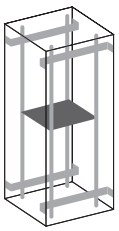
For sub-division in	Packs of	Model No. IW
the full width	4	**6902.710**
half the width	6	**6902.720**

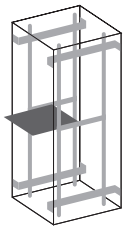
Note:
When sub-dividing the drawer tray, one cross member is always needed for the entire width (IW 6902.710).

Component shelves for attachment to the 482.6 mm (19″) frame











Component shelf, 482.6 mm (19″) installation

Enclosures with two 482.6 mm (19″) mounting levels
for TE, TS, FR(i), 19″ system punchings
Depending on their depth, the component shelves have several attachment points, so the distance between the 482.6 mm (19″) mounting angles is variable within certain limits. Each component shelf secured in this way can be retrospectively upgraded to full withdrawal using telescopic slides. For this purpose, the telescopic slides are screw-fastened in place of the spacers.

Load capacity:
50 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035/RAL 9005

Supply includes:
Assembly parts.

Note:
For installation in one 482.6 mm (19″) level:
In conjunction with 3 U side parts, mounting on only one 482.6 mm (19″) level is possible.
30 kg surface load, static.

Also required:

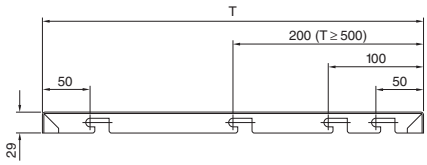
Adaptor for L-shaped mounting angles TS, see page 1023.
Installation kit, depth-variable, for installation on mounting frames and L-shaped mouning angles, see page 1023.

Accessories:

Telescopic slides, see page 1025.
Cable support, hinged, see page 1025.
Side parts 3 U, see page 1024.

Possible alternative:

Component shelf, heavy duty, for 482.6 mm (19″) population,
see page 1018 – 1019.



T = Depth

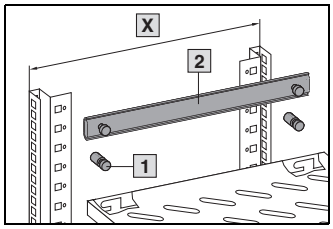
Component shelf width mm	409					Page
Component shelf depth mm	300	400	500	600	700	
Distance between levels (X)	298	348/398	348/448/498	448/548/598	548/648/698	
Model No. DK RAL 7035	**7143.035**	**7144.035**	**7145.035**	**7145.635**	**7145.735**	
Model No. DK RAL 9005	**–**	**–**	**7145.005**	**7145.605**	**7145.705**	

Accessories:

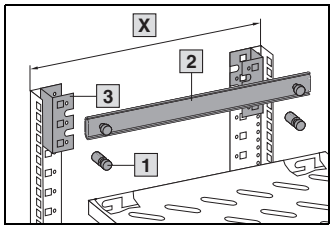
Telescopic slides for 50 kg	7051.000	7061.000	7081.000	7161.000	7161.700	1025
Handles for component shelf	3636.010	3636.010	3636.010	3636.010	3636.010	1025

1 Spacers
2 Telescopic slides
3 Adaptor
4 Installation kit, depth-variable
X Distance between levels

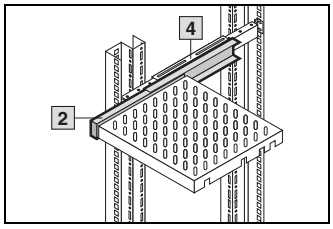
For TS:
Note for installation in network enclosures based on TS, cranked mounting angle:
The component shelves are mounted on the sides of the 482.6 mm (19″) cranked mounting angle with spacers on a U pitch pattern.



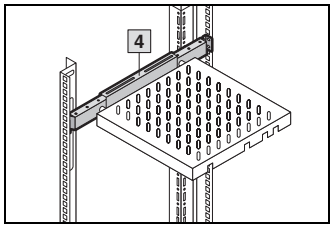
For TS:
Note for installation in network enclosures based on TS, L-shaped mounting angle:
If L-shaped mounting angles are used, adaptor DK 7827.300 is required.



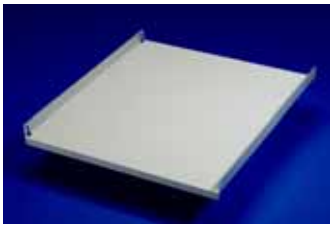
For TE, TS, FR(i), 19″ system punchings:
Note for installation between two mounting frames or L-shaped mounting angles:
May be mounted directly on the 482.6 mm (19″) system punchings using the depth-variable installation kit.



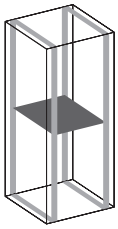
For TS, FR(i):
Note for installation between mounting angles and mounting frames:
May be mounted directly on the 482.6 mm (19″) system punchings using the depth-variable installation kit.



Component shelves for attachment to the 482.6 mm (19″) frame







Component shelf, static installation

on the 482.6 mm (19″) mounting angles for TE, TS, FR(i)
The component shelf is attached directly to the front and rear 482.6 mm (19″) mounting angles.

Load capacity:
30 kg surface load, static

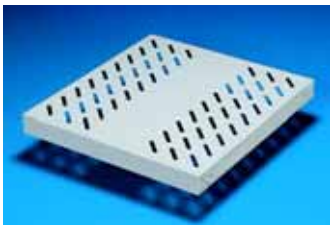
Material:
Sheet steel

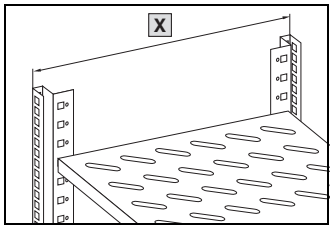
Colour:
RAL 7035

Supply includes:
Assembly parts.

Width mm	Height mm	Depth mm	Distance between 19″ levels mm	Model No. DK
511	22	413	495	**7000.620**

Note:
Not suitable for combination with telescopic slides.





Component shelf, heavy duty

for network enclosures TS with cranked mounting angles
For static installation between two 482.6 mm (19″) mounting levels.
The component shelf is located directly onto the **cranked** mounting angles.

Zinc-plated version:
Load capacity:
75 kg surface load, static

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Spray-finished version:
Load capacity:
100 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Zinc-plated version:

Dimensions			Distance between levels (X) mm	Model No. DK
Width mm	Height mm	Depth mm		
452.5	20	478	498	**7828.950**
452.5	20	578	598	**7828.960**
452.5	20	678	698	**7828.970**

Spray-finished version:

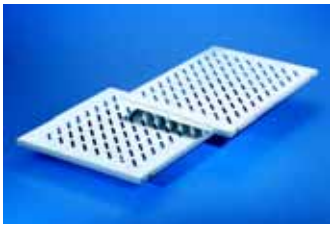
Dimensions			Distance between levels (X) mm	Model No. DK
Width mm	Height mm	Depth mm		
453	44	470	498	**7145.535**

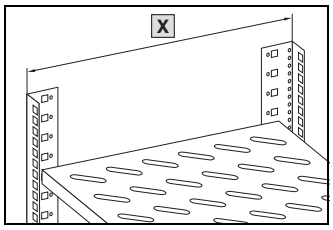
Note:
Not suitable for combination with telescopic slides.

Possible alternative:

Component shelf, heavy duty, for 482.6 mm (19″) population, may be combined with telescopic slides,
see page 1019.

Component shelves for attachment to the 482.6 mm (19″) frame/system punchings





Component shelf, heavy duty

for network enclosures TS
with L-shaped mounting angles
For static installation between two 482.6 mm (19″) mounting levels.
The component shelf is located directly onto the **L-shaped** mounting angles.

Load capacity:
75 kg surface load, static

Material:
Sheet steel, zinc-plated, passivated

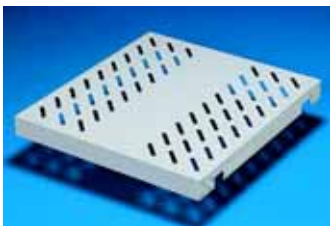
Supply includes:
Assembly parts.

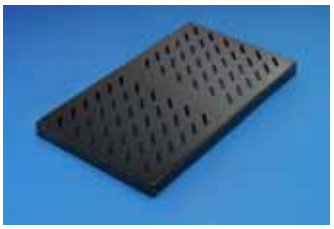
Dimensions			Distance between levels (X) mm	Model No. DK
Width mm	Height mm	Depth mm		
507.5	20	480	498	**7828.951**
507.5	20	580	598	**7828.961**
507.5	20	680	698	**7828.971**

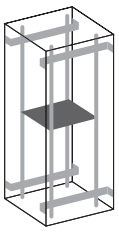
Note:
Not suitable for combination with telescopic slides.

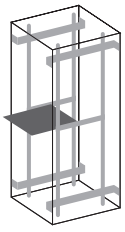
Possible alternative:

Component shelf, heavy duty, for 482.6 mm (19″) population, may be combined with telescopic slides,
see page 1019.











Component shelf, heavy duty

482.6 mm (19″)
for TE, TS, FR(i)
- L-shaped mounting angles
- Mounting frame 482.6 mm (19″)

Load capacity:
100 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035/RAL 9005

Supply includes:
Assembly parts.

Dimensions			Model No. DK	
Width mm	Height mm	Depth mm	RAL 7035	RAL 9005
409	45	500	**7063.895**	**7063.835**[1)]
409	45	700	**7063.897**	**7063.837**

[1)] Delivery times available on request.

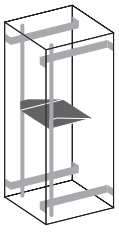
Also required:

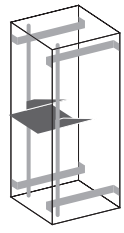
Installation kit, depth-variable DK 7063.890,
see page 1023.

Accessories:

Telescopic slides (100 kg) for 482.6 mm (19″) component shelf,
see page 1025.







Component shelf 2 U

482.6 mm (19″)
for TE, TS, FR(i), 19″ system punchings
Suitable for installation in all enclosures with only one 482.6 mm (19″) recess and all swing frames with flange mounting, 482.6 mm (19″).

Load capacity:
25 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

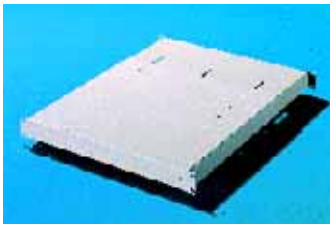
Supply includes:
Assembly parts.

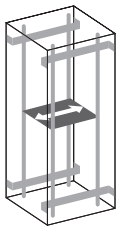
Width mm	Depth mm	Model No. DK
390	300	**7148.035**

Accessories:

Telescopic slides for component shelf,
see page 1025.
Handles,
see page 1025.

Component shelves for attachment to the 482.6 mm (19″) system punchings





Component shelf 1 U, depth-variable

482.6 mm (19″)
for TE, TS, FR(i), 19″ system punchings
For mounting between the front and rear 482.6 mm (19″) levels. The component shelf is infinitely depth-adjustable from 488 mm to 750 mm.

Load capacity:
50 kg surface load, static

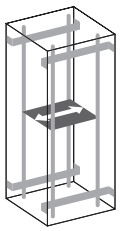
Material:
Sheet steel

Colour:
RAL 7035

Distance between levels mm	Model No. VR
488 – 750	**3861.580**

Note:
Not suitable for combination with telescopic slides.





Component shelf 1/2 U, depth-variable

482.6 mm (19″)
for TE, TS, FR(i), 19″ system punchings
This space-saving component shelf is screw-fastened to the front and rear 482.6 mm (19″) mounting angles. It is infinitely depth-adjustable and may be fitted independently from the enclosure.

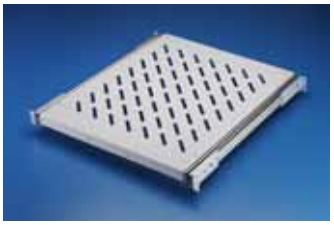
Load capacity:
50 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

Distance between levels mm	Model No. DK
400 – 600	**7063.710**
600 – 900	**7063.720**

Note:
Not suitable for combination with telescopic slides.







Component shelf, complete set, pull-out

for TE
Tailored to the distance between levels in enclosures as per their supplied state of 495 mm, this complete set contains a vented component shelf, telescopic slides and a mounting kit for direct attachment.
The mounting kit also offers depth-variable attachment within 200 mm with a 25 mm pitch pattern.

Load capacity:
50 kg, static

Material:
Base: Sheet steel, spray-finished in RAL 7035
Mounting kit/telescopic slides:
Zinc-plated, passivated

Supply includes:
1 component shelf, telescopic slides and mounting kit.

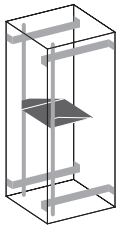
Base depth mm	Packs of	Model No. DK
500	1 set	**7000.625**

Accessories:

Handles for component shelf,
see page 1025.

Component shelves for attachment to the 482.6 mm (19″) system punchings





Component shelf 1 U, static installation

482.6 mm (19″)/535 mm (metric)
for TE, TS, FR(i), 19″ system punchings
The ideal support surface for small active components such as modems or mini-hubs in 482.6 mm (19″) or metric levels.

Load capacity:
10 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

Component shelf depth mm	Model No. DK	
	482.6 mm (19″)	Metric
140	**7119.140**	**7119.155**[1)]

[1)] Delivery times available on request.

Note:
Not suitable for combination with telescopic slides.

Also required:

Captive nuts,
see page 1010.
Screws,
see page 1011.



Component shelf 1 U, static installation

42 HP (1/2 19″)
The ideal support surface for small active components such as modems or mini-hubs.

Material:
Sheet steel

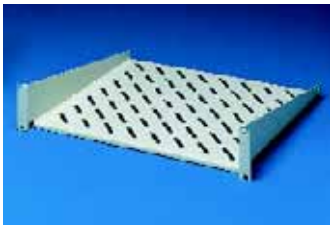
Colour:
RAL 7035

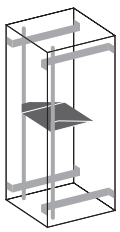
Note:
Not suitable for combination with telescopic slides.

Component shelf depth mm	Model No. DK
140	**7502.600**

Also required:

Captive nuts,
see page 1010.
Screws,
see page 1011.





Component shelf 2 U, static installation

482.6 mm (19″)/535 mm (metric)
for 482.6 mm (19″)/metric system punchings
If only one 482.6 mm (19″) or metric mounting level is available for mounting a component shelf, this variant offers a particularly cost-effective solution.

Load capacity:
25 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

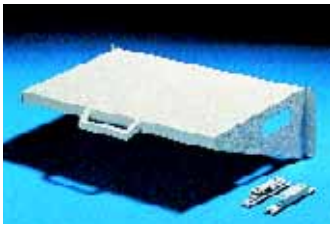
Note:
Not suitable for combination with telescopic slides.

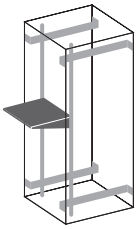
Component shelf depth mm	Model No. DK	
	482.6 mm (19″)	Metric
250	**7119.250**	**7119.255**
400	**7119.400**	**7119.455**

Also required:

Captive nuts,
see page 1010.
Screws,
see page 1011.

Component shelves for attachment to the 482.6 mm (19″) system punchings





Utility table

for location in the 482.6 mm (19″) level
for 482.6 mm (19″) system punchings
The utility table may be attached directly between the 482.6 mm (19″) mounting angles without any additional assembly work. The utility table has a height of 3 U and a support area of 450 x 295 mm; it can be used as a support for measuring devices or splicing equipment during maintenance and wiring work.

Material:
Sheet steel

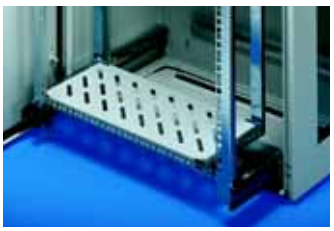
Colour:
RAL 7035

Supply includes:
Assembly parts.

Support surface mm	Model No. DK
450 x 295	**7183.100**

Note:
Installation in enclosures with a TS trim frame is not possible.





Shelf

for AE with pull-out frame
The vented shelf is inserted into the pull-out frame of wall-mounted distributor DK 7644.000 and may additionally be screw-fastened. In this way, an additional support surface can be created with very little effort. Cage nuts may be clipped into the punchings of the frame, even after the shelf has been inserted.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Width mm	Depth mm	Model No. DK
430	195	**7644.400**

Delivery times available on request.



TS punched section with mounting flange, 17 x 73 mm

as installation kit for component shelves
Simply locate and secure. One pack is sufficient for 2 component shelves.

Load capacity:
100 kg surface load, static

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Installation in enclosure depth mm	Packs of	Model No. TS	
		for TS	for FR(i)
500	4	**8612.050**	**–**
600	4	**8612.060**	**8612.140**
800	4	**8612.080**	**8612.160**
900	4	**8612.090**	**–**
1000	4	**8612.000**	**8612.180**
1200	4	**8612.020**	**8612.100**





Installation kit, depth-variable

for 482.6 mm (19″) component shelf
In conjunction with
- L-shaped mounting angles or
- Mounting frame 482.6 mm (19″)

Infinitely adjustable to the spacing between the two pairs of 482.6 mm (19″) mounting angles. Suitable for all 482.6 mm (19″) component shelves in 409 mm width.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
1 set =
2 mounting rails including assembly parts.

Length mm	Load capacity	Model No. DK
390 – 590	50 kg	**7063.858**
590 – 790	50 kg	**7063.860**
706.5 – 1006.5	100 kg	**7063.890**

Accessories:

Telescopic slides,
see page 1025.



Adaptor for L-shaped mounting angles

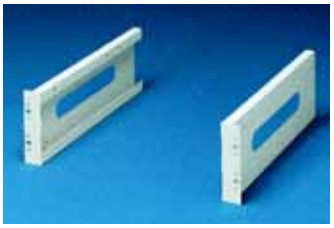
for TS network enclosures
For mounting component shelves and slide rails on L-shaped mounting angles.

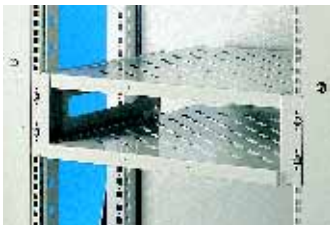
Material:
Sheet steel, zinc-plated, passivated

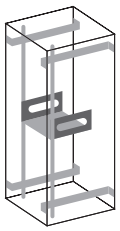
Supply includes:
Assembly parts.

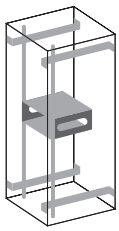
Packs of	Model No. DK
4	**7827.300**

Installation kits for component shelves









Side parts 3 U

for static installation of component shelves, 482.6 mm (19″)
For the attachment of component shelves to a single pair of 482.6 mm (19″) mounting angles. The component shelves are screw-fastened to the 3 U side part.
Either one or two component shelves may be secured.

Load capacity:
30 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
2 side parts.

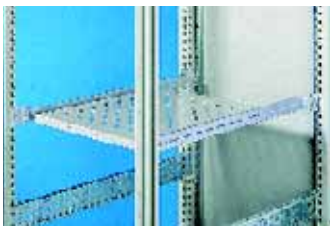
Note:
Not suitable for combination with telescopic slides.

Depth of side parts mm	For component shelves DK	Component shelf depth mm	Model No. DK
400	7143.035	300	**7147.035**
400	7144.035	400	
400	7145.035	500	

Accessories:

Component shelves, 482.6 mm (19″),
see page 1017.





Installation kit

for component shelves and drawers, 482.6 mm (19″) installation in TS, ES
For installation between the front and rear adaptor sections or adaptor pieces, 482.6 mm (19″) in 600 mm wide enclosures.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure depth mm	Packs of	For enclosure system	
		TS	ES
		Model No. TS	**Model No. PS**
500	1 set	**8800.550**	**–**
600	1 set	**8800.560**	**4544.000**
800	1 set	**8800.580**	**–**

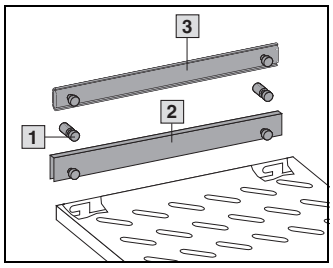
Max. depth of component shelves = enclosure depth minus 100 mm.

Also required:

Mounting angles, 482.6 mm (19″),
see page 1089.
Adaptor pieces, 482.6 mm (19″),
see page 1090.







Telescopic slides

for component shelves
Fixed component shelves are easily retro-converted to full withdrawal. For this purpose, the existing fastening bolts or mounting rails (heavy-duty version) are exchanged for the telescopic slides.

Technical specifications:
For installation and locking on a 25 mm pitch pattern in the enclosure depth.

Load capacity:
50 kg/100 kg per set

Material:
Sheet steel, zinc-plated, passivated

For component shelf depth mm	Packs of	Model No. DK	
		50 kg	100 kg
300	2	**7051.000**	**–**
400	2	**7061.000**	**7064.000**
500	2	**7081.000**	**7065.000**
600	2	**7161.000**	**7066.000**
700	2	**7161.700**	**7066.700**

1 Fastening bolts
2 Mounting rails
3 Telescopic slides



Cable support

hinged, with clamp
For secure routing of connection cables from the component shelf to the clamping point.
The attachment may be released on both sides thanks to clamps.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure depth mm	Model No. DK
< 600	**7163.500**
> 600	**7163.550**





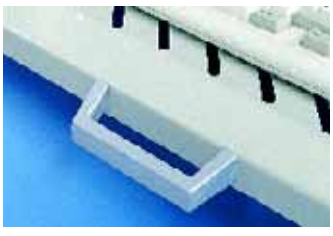
Cable support

hinged, with anti-kink device and clamp
For secure routing of connection cables from the component shelf to the clamping point. Kink-free cable routing in the central part via mobile chain links. The attachment may be released on both sides, thanks to clamps.

Material:
Sheet steel, zinc-plated, passivated
Centre part: Plastic

Supply includes:
Assembly parts.

For enclosure depth mm	Model No. DK
< 600	**7163.560**
> 600	**7163.565**



Handles

for pull-out component shelves
The component shelves are prepared for the attachment of handles.

Material:
Die-cast zinc

Surface finish:
Spray-finished, silver-grey

Supply includes:
Assembly parts.

Packs of	Model No. RP
2	**3636.010**

Accessories for component shelves

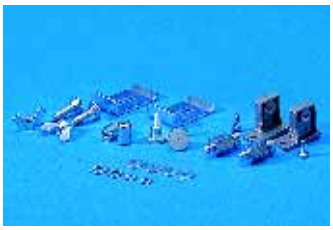


Fastening bolts

for slotted component shelves

For non-slip attachment of your components. The bolts are screwed into the slots of the component shelf support surface. Consequently, they are infinitely adjustable and can be adapted to suit any appliance.

Packs of	Model No. DK
4	**7115.000**



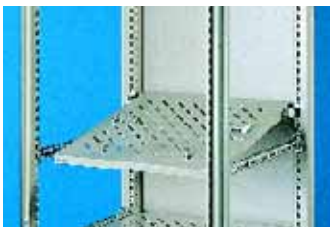
Monitor shelf mounting kit

for ES

For inclined installation of a component shelf in the enclosure when used as a monitor shelf.

Supply includes:
2 holders for inclined installation,
2 wire clamps for monitor base,
2 fastening bolts for positioning the monitor base.

	Model No. SZ
Monitor shelf mounting kit	**2306.000**





Drawer extension lock

for 600 mm wide enclosures based on TS 8

To increase work safety.
In conjunction with the stay, prevents simultaneous extension of up to 5 drawer trays or pull-out component shelves and thereby ensures stability.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
PS punched section with mounting flange 23 x 73 mm (to match the enclosure height) and assembly parts.

For enclosure height mm	Packs of	Model No. IW
900	1 set	**6902.730**
1000	1 set	**6902.740**

Note:
When installing more than one extendible component shelf/drawer tray, we recommend using the drawer extension lock for work safety reasons. For installation in taller enclosures, one PS punched section with mounting flange 23 x 73 mm (to match the enclosure height) is required.

Accessories:

Stay for drawer extension lock.



Stay

for drawer extension lock

For	Packs of	Model No. IW
Drawers	5	**6902.750**
Component shelves	5	**6902.760**





Compact light

Narrower – Faster – Brighter

- Narrower: Around 50 % less height and depth and also around 75 % less volume than conventional lights.
- Faster: Universal fast attachment via clips, screws, or powerful magnets (optional). Simply slide in at the side or rear, fit the light, and it's done!
- Brighter: Up to 75 % greater luminous efficiency from the lamp at the same output helps to cut electricity costs.
- Door-operated switch can also be connected via a 2-pole connection.
- Cable routing on the back of the light enables deflection, e. g. when mounted vertically in a TS 8.

Material:
Body:
PC-ABS (halogen-free)
Light cover:
Polycarbonate (halogen-free)

Colour:
Similar to RAL 7035

Protection category:
IP 20

Supply includes:
Compact light with clip and screw mounting kits, including assembly parts.

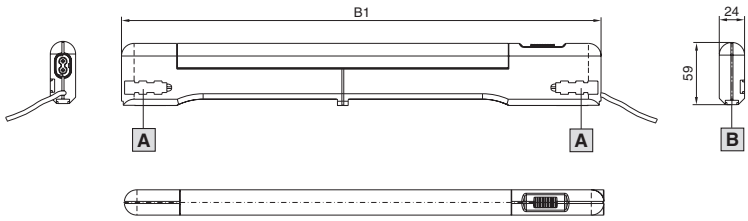
Accessories:

Mounting kit magnet,
see below.
Door-operated switch with connection cable,
see below.

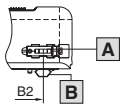


A Side attachment
B Rear fastening

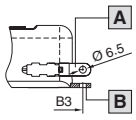
Model No. SZ	4140.010	4140.020	4140.110	4140.120
Rated voltage	**100 – 240 V AC ±10 % at 50 – 60 Hz**		**24 V DC ±10 %**	
Wattage	8	14	8	14
Protection category	II (all-insulated)			
Width (B1) mm	455	705	455	705
Mounting distance (B2) mm Clip/magnet	400	650	400	650
Mounting distance (B3) mm	475	725	475	725
Connection cable	3 m (open end)			
Cover colour	Yellow			
Rated current (A) – at 230 V AC – at 110 V AC – at 24 V DC	 0.045 – 0.088 0.083 – 0.149 –	 0.073 – 0.127 0.149 – 0.216 –	 – – 0.35	 – – 0.57
Light	Fluorescent lamp T5			
Operating unit	Wide-range electronic ballast		Electronic ballast	
Switches	Integral, on/off/door-operated switch mode			
Light cover	Transparent, grooved on the inside			
ENEC 24	■	■	■	■



Clip/magnet attachment



Screw attachment





Mounting kit magnet

For reliable adhesion on all sheet steel surfaces.

Packs of	Model No. SZ
2	**4140.000**



Door operated switch

With connection cable

Colour:
Yellow

Length mm	Packs of	Model No. SZ
600	1	**4315.700**

System lights



System lights

With assembly parts for mounting:
- On the enclosure profile:
  For TS, horizontally (directly), or vertically in conjunction with an adaptor angle
- Directly onto rail systems with 25 mm system punchings
- In AE, CM and TP using universal bracket SZ 2373.000.

Light:
Universal white

Protection category:
IP 20 to EN 60 529/09.2000

Also required:

Connection accessories,
see page 1030.

Accessories:

Adaptor bracket,
see page 1005.
Universal bracket,
see page 1009.

Components	Standard light	Courtesy light	Universal light	System light
Sockets and connectors for:				
– Power supply	■	■	■	■
– Through-wiring	■	■	■	■
– Door-operated switch: Facility for connecting/integral	■/■	■/■		■/–
Jack for normally open contact			■	■
Motion sensor			■	
Interference suppression via:				
– Radio interference suppression capacitor	■			
– Full-electronic ballast		■	■	
Additional manual switching with rocker or slide switch	■	■	■	■
Light cover		■	■	
Light cone adjustment			■	
Individual voltage supply 100/110 – 240 V		■	■	

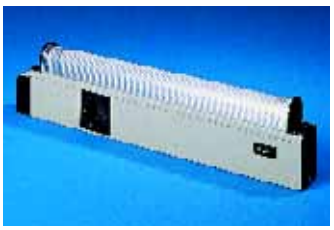




Standard light

Technical specifications	Socket	Width mm	Height mm	Depth mm	**Model No. SZ**	Approvals
14 kW, 230 V, 50 Hz	Yes	452	117	50	**4138.140** **4138.150**[1)]	ENEC
18 kW, 230 V, 50 Hz	Yes	682	117	50	**4138.180** **4138.190**[1)]	ENEC
30 kW, 230 V, 50 Hz	Yes	987	117	50	**4138.300** **4138.350**[1)]	ENEC

With fluorescent lamp, socket G13, length 375/604/908 mm
[1)] With door-operated switch





Courtesy light

Technical specifications	Socket	Width mm	Height mm	Depth mm	**Model No. SZ**	Approvals
14 W, 100 – 240 V, 50/60 Hz	Yes	452	117	50	**4139.140** **4139.150**[1)]	ENEC
18 W, 100 – 240 V, 50/60 Hz	Yes	682	117	50	**4139.180** **4139.190**[1)]	ENEC
30 W, 100 – 240 V, 50/60 Hz	Yes	987	117	50	**4139.300** **4139.350**[1)]	ENEC

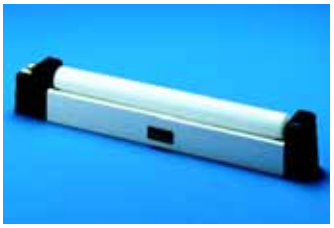
With fluorescent lamp, socket G13, length 375/604/908 mm
[1)] With door-operated switch



Universal light with integral motion sensor

Technical specifications	Socket	W mm	H mm	D mm	**Model No. SZ**	Approvals
26 W, 110 – 240 V, 50/60 Hz	Yes	345	95	55	**4155.100**	VDE
	No	345	95	55	**4155.000**	VDE
	No	345	95	55	**4155.500**	UL

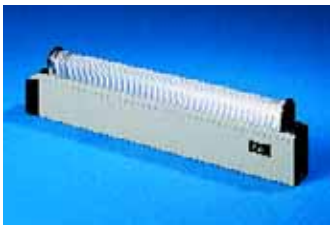
With compact fluorescent lamp, TC-DEL 26 W, base G24q-3, length 174 mm



System light with filament tube (Linestra)

Technical specifications	Socket	W mm	H mm	D mm	**Model No. SZ**
35 W, 230 V AC/DC	No	380	59	41	**4103.350**[1)]
60 W, 230 V AC/DC	No	580	59	41	**4103.600**[2)]

With filament tube.
[1)] Base 35 S14s, length 300 mm
[2)] Base 60 S14s, length 500 mm



Enclosure light, 48 V DC

Specifically designed for use in telecommunication when built-in equipment may require a battery back-up. For mounting on the 25 mm system punchings.

Technical specifications:
14 W, 48 V DC, rated current: 0.38 A

Width mm	Height mm	Depth mm	**Model No. CS**
452	117	50	**9765.100**

Connection cables for	Cable length m	Packs of	**Model No. CS**
Power supply with socket, without connector	3	1	**9765.137**
Through-wiring with socket and connector	1	1	**9765.138**



Enclosure light, 48 V DC

With connection cable
Robust light. For attachment vertically or horizontally in the frame section via spring brackets, or may be used as a direct light source during maintenance work by inserting the plastic swivel hook. Impact-resistant lamp housing of PMMA (polymethylmethacrylate) protection category II.

Protection category:
IP 64

Supply includes:
2 spring brackets
and assembly parts.

Packs of	**Model No. CS**
1	**9765.150**

Technical specifications:
Luminosity: 11 W
Luminous efficiency: 900 lm
Fluorescent tube: TC-SEL 11 W, 4-pin
Ambient temperature: –20°C to +40°C
Voltage: 48 V DC ±10 %
Supply lead 3000 mm, H05RN – 2 x 1 mm, without connectors, with crimped ferrules
Length:
450 mm overall
Protective tube 320 mm
Light outlet 195 mm
Diameter:
62 mm overall
Protective tube 38 mm



Light 1 U

Complete ready-to-connect light for installation in the 482.6 mm (19″) mounting angles. The slot attachment additionally allows it to be fastened to the 25 mm system punchings.

Technical specifications:
8 W, 230 V, 50 Hz.
With mains switch and 2.5 m connection cable with fitted earthing-pin plug.

Material:
Aluminium, anodised, plastic

Packs of	**Model No. DK**
1	**7109.200**

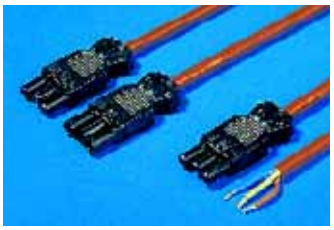
System lights

Connection accessories

The following components can be used for time-saving and simple installation of the lights:

Accessories:

Cable ties for quick assembly,
see page 1066.



Connection cable for	Length mm	Packs of	Model No. SZ		
			orange	yellow	grey
Power supply (with socket, without connector)	3000	5	**4315.100**	**4315.110**	**–**
Power supply (with socket and strain relief, without connector)	3000	1	**–**	**–**	**4315.150**
Through-wiring (with socket and connector)	600	1	**–**	**–**	**4315.450**
Power supply via connection component/through-wiring (with socket and connector)	600	5	**4315.400**	**4315.410**	**–**
	1000		**4315.200**	**4315.210**	**–**
	4000	1	**4315.600**	**4315.610**	**–**



Door-operated switch With mounting accessories	Length mm	Packs of	Model No. SZ	
			orange	yellow
With connection cable	600	1	**4315.500**	**4315.510**
	1000		**4315.300**	**4315.310**
Without connection cable	–		**4127.000**	
Also required: Mounting kit for installation in TE			**Model No. FR**	
			7952.100	



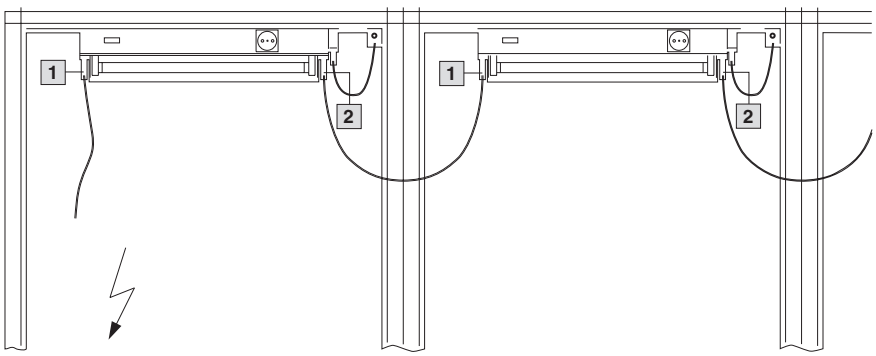
Door-operated switch With toggle	Technical specifications	Packs of	Model No. SZ
Without connection cable, for TS enclosures with installed large swing frame. The toggle is actuated via the tubular door frame of the sheet steel door, or in the case of glazed doors, via an adaptor included with the supply.	230 V AC, 6 A 24 V DC, 10 A	1	**4127.200**



Connection component with circuit-breaker 10 A	Packs of	Model No. SZ
Reduce assembly costs: Power is supplied rapidly and reliably to system lights and workstation via connection cables. For independently configured cables, connector SZ 2507.200 must be used. Connection component to be snapped onto the top hat rail.	1	**2507.500**



For self-assembly	Packs of	Model No. SZ
Sockets for power supply Through-wiring	5	**2507.100**
Connectors for connection component Through-wiring		**2507.200**
T distributor with 2 sockets, 1 connector		**2507.300**
Connector for door-operated switch cable		**2507.400**



1 Connector
2 Socket





Rail

for EMC shielding bracket and strain relief
Combined rail for strain relief and EMC contacting of inserted cables.

Mounting options:
- On the horizontal/vertical TS, PC, ES enclosure section
- On a mounting plate

May also be fitted without a retaining bracket.
Additional contacting on the left or right of the rail via existing holes (9 mm diameter).

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Width mm	Packs of	Model No. SZ
600	1	**2388.600**
800	1	**2388.800**

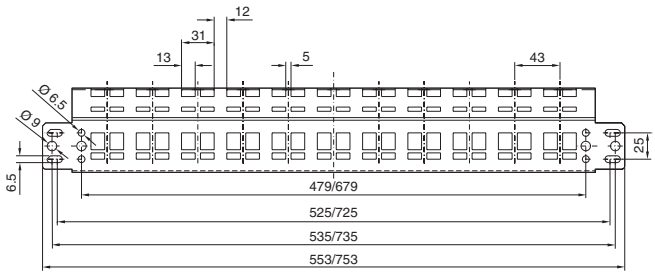
Also required:

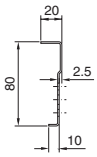
EMC shielding bracket,
see below 1031.
Cable clamps for strain relief,
see page 1031.

Accessories:

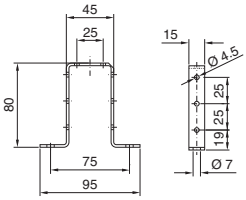
Earth straps,
see page 1034.
Earthing strap,
see page 1034.

Rail

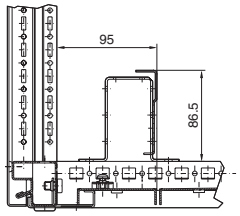




Retaining bracket



Mounting position





EMC shielding bracket

Diameter changes are compensated in full by the spring of the EMC shielding bracket.
Attachment without the use of tools:
Press the EMC shielding bracket against the cable shield and clip into the rail.

Material:
Sheet steel, zinc-plated, passivated

For shield diameter mm	Packs of	Model No. SZ
3 – 10	10	**2388.100**
4 – 15	10	**2388.150**
10 – 20	10	**2388.200**
15 – 28	10	**2388.280**



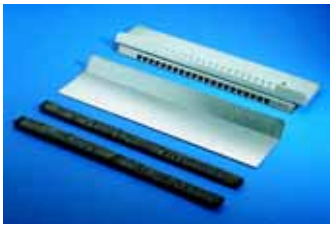
Cable clamps

Simply locate into the bottom of the rail and tighten the pressure plate for strain relief.

Material:
Sheet steel, zinc-plated, passivated

For cable diameter mm	Packs of	Model No. SZ
6 – 14	10	**2388.140**
12 – 18	10	**2388.180**
18 – 22	10	**2388.220**
22 – 26	10	**2388.260**

EMC



EMC gland plates

For shielded cables with a maximum diameter of 20 mm.
Combined EMC/IP seal provides low-resistance contact between cable shield and gland plate.
For all 400, 500, 600 and 800 mm deep enclosure in conjunction with standard gland plates.

Supply includes:
1 gland plate with twin hammer-head punching,
1 sliding gland plate,
2 IP/EMC gaskets.

Width mm	Packs of	Model No. TS
600	1 set	**8800.660**
800	1 set	**8800.680**
1000	1 set	**8800.600**[1)]
1200	1 set	**8800.620**[1)]

[1)] For one enclosure half only

German patent no. 196 04 219



Metal cable ties

For 360° contact of shielded cables on the EMC gland plate. The cable ties are not toothed, thereby eliminating the risk of damage to insulation and braided screens.

Material:
Stainless steel, anti-magnetic and rust-proof

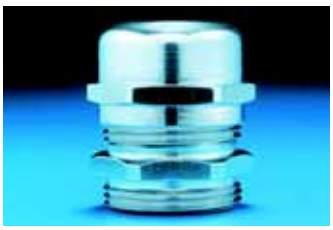
Length mm	Width mm	Packs of	Model No. SZ
125	4.6	50	**2598.125**
200	4.6	50	**2598.200**



Tightening tool

For simple tightening of the metal cable ties.

Packs of	Model No. SM
1	**2585.000**



EMC cable glands

The cable sheathing may optionally be interrupted at the contact point or removed completely inside the enclosure.
The cable shield in the enclosure is retained.
The supplied lock nut cuts automatically into the paint when screwed down, thus creating a conductive connection.

Protection category:
IP 68 to EN 60 529/09.2000
IP 69K to DIN 40 050-9

Possible alternative:

Cable gland Hygienic Design,
see page 1056.

Cable glands, metric

Size	Cable diameter mm	Minimum[1)] shield diameter mm	Packs of	Model No. SZ
M16	4.5 – 10	3	5	**2843.160**
M20	6 – 12	5	5	**2843.200**
M25	11 – 17	8	5	**2843.250**
M32	15 – 21	10	1	**2843.320**
M40	19 – 28	15	1	**2843.400**
M50	27 – 38	19	1	**2843.500**
M63	34 – 44	30	1	**2843.630**

Cable glands, PG

PG size	Cable diameter mm	Minimum[1)] shield diameter mm	Packs of	Model No. SZ
9	4 – 8	3	5	**2411.090**
11	5 – 10	4	5	**2411.110**
13.5	6 – 12	5	5	**2411.140**
16	10 – 14	8	5	**2411.160**
21	13 – 18	10	1	**2411.210**
29	18 – 25	15	1	**2411.290**

[1)] Minimum shield diameter = cable diameter minus cable sheathing



EMC shield bus

Made of yellow passivated steel strip, 75 mm² cross section, for cable shield contact.

Supply includes:
Assembly parts.

Rail length mm	Connections	Packs of	Model No. SZ
375	10	1	**2413.375**
550	16	1	**2413.550**



EMC earth clamps

The clamps may be used directly on the consumer or operating equipment on the mounting plate for cable shield contact.

Material:
Sheet steel, zinc-plated, passivated.

Size mm	Packs of	Model No. SZ
4	50	**2367.040**
6	50	**2367.060**
8	50	**2367.080**
12	50	**2367.120**
16	50	**2367.160**
20	25	**2367.200**[1)]

[1)] 2 assembly brackets



EMC baying seal

for TS
For baying enclosure systems. Seal with all-round, electrically conductive sheathing.

Cross section mm	Model No. TS
6.3 x 6.3	**8800.690**

Packs of 1 set consisting of 3 units, length 2 m each



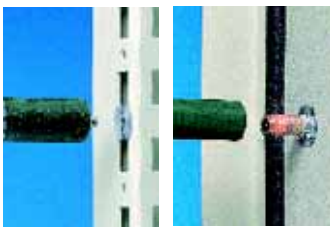
EMC divider panel seal

This seal ensures optimum contact in bayed EMC enclosure systems and when using a zinc-plated divider panel.

Material:
PU foam with electrically conductive sheathing.

Supply includes:
1 roll (12.7 x 12.7 x 5300 mm).

Packs of	Model No. SZ
1	**4348.000**



Contact cutter

The contact cutter enables EMC-compatible preparation of the contact point e. g. for earthing straps.
Plastic-bound abrasive with guide pin for round system punchings.
With location point for drill, grinder etc.

	Model No. SM
For frame section	**2414.000**
For earthing bolts[1)]	**2414.500**

[1)] Not necessary with TS 8

Contact paint

Contact paint prevents the corrosion of conductive, unprotected contact points.

Contents:
12 ml

Packs of	Model No. SZ
1	**2415.000**

Earthing



Earth straps

For configuring a reliable earthing connection with perfect contact.

- With ring terminals in M6 and M8 to match the earthing screw
- Length-optimised and ready to install

Cases	Connection options		
	Door/lid	Cases	Mounting plate
KL	M6	M6	M8
EB/BG/ IN 1510.280	M6	M6/M8[1)]	–
AE/ IN 1076.290	M6	M6[2)]/M8	M8
KE/KEL	M8	M8	M8
AP/CM/TP	M6	M8	M8
ES/TS	M8	M8	M8
PC	M8	M8	–

[1)] M8 with BG 1050.900
[2)] M6 with AE 1032.XXX/AE 1035.XXX

Connection	Cross section mm²	Length mm	Packs of	Model No. SZ
M8 – M8	4	170	5	**2564.000**
M6 – M8	4	170	5	**2564.010**
M6 – M6	4	170	5	**2564.020**
M8 – M8	16	170	5	**2565.000**
M8 – M8	25	170	5	**2566.000**
M6 – M6	10	200	5	**2565.100**
M8 – M8	4	300	5	**2567.000**
M6 – M8	10	300	5	**2565.110**
M8 – M8	10	300	5	**2565.120**
M8 – M8	16	300	5	**2568.000**
M8 – M8	25	300	5	**2569.000**



Earthing strap

Tin-plated copper, in various lengths and cross-sections with press-fitted contact rings. Earthing straps counteract the current displacement effect at high frequencies, whilst at the same time offering highly flexible connection opportunities.

For	Cross-section mm²	Length mm	Packs of	Model No. SZ
M6	10	200	10	**2412.210**
M8	16	200	10	**2412.216**
M8	25	200	10	**2412.225**
M6	10	300	10	**2412.310**
M8	16	300	10	**2412.316**
M8	25	300	10	**2412.325**



Assembly parts

For fastening the earth straps and earthing braids to:

- Horizontal TS enclosure sections
- RS rail system
- ES system punchings

Size	Packs of	Model No. SZ
M6	10 sets	**2570.000**
M8	10 sets	**2559.000**

Also required:

For mounting on the horizontal TS enclosure section: Captive nut, see page 1010.



Contact washers

Toothed contact washers facilitate secure PE conductor connection. As a result, there is no need to manually strip paint in the connection area.

Size	Packs of	Model No. SZ
M5	100	**2343.000**
M6	100	**2334.000**
M8	100	**2335.000**



Earthing plate

For installation in:

- Comfort Panel
- VIP 6000
- Optipanel
- TS
- ES

One earthing cable can be screw-fastened to the threaded bolt and can be distributed to up to 8 components via 6.3 mm flat-pin connectors.

Packs of	Model No. SZ
1	**2570.500**

Supply includes:
Assembly parts.



Central earthing point

For connecting
- Earth straps
- Earthing braids

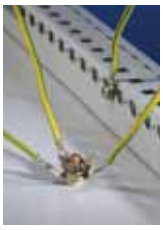
to the vertical and horizontal enclosure profile.
The connection bracket is connected to the enclosure frame with 2 screws and is securely contacted.
Earth connection is carried out via the threaded bolt M8 x 20 mm.

Material:
Sheet steel, zinc-plated, passivated.

Packs of	Model No. DK
1	**7829.200**

Supply includes:
1 connection bracket,
2 screws 5.5 x 13 mm,
2 serrated washers,
1 nut M8,
1 contact washer M8,
1 washer.





Potential equalisation star

for 8 mm earthing bolt
The earthing connector is used for simple potential equalisation on an 8 mm earthing bolt, or in conjunction with central earthing point DK 7829.200. Up to five flat connectors (6.3 mm) may be contacted on one earthing point.

Packs of	Model No. DK
10	**7548.210**

Supply includes:
10 earthing connectors, including assembly parts.

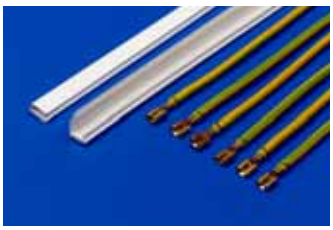


Complete earthing kit

for DK-TS
To DIN EN 60 950/VDE 0805, Ø 4 mm^2, $I_{max.}$ 40 A.
For system-compatible earthing of all enclosure parts on the enclosure frame according to VDE.
The earth conductors are pre-assembled ready for connection with connectors and cut to the right length.

Packs of	Model No. DK
1 set	**7829.150**

Supply includes:
Central earthing point and assembly parts.



Complete earthing kit

for TE
To DIN EN 60 950/VDE 0805, Ø 4 mm^2, $I_{max.}$ 40 A.
For system-compatible earthing of all enclosure parts on the enclosure frame according to VDE.
The earth conductors are pre-assembled ready for connection with connectors and cut to the right length.

Packs of	Model No. TE
1 set	**7000.675**

Supply includes:
Assembly parts.



Earthing kit KE

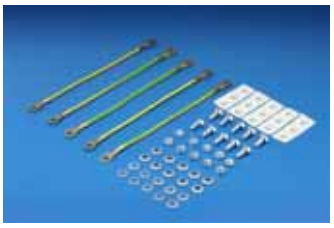
For producing the required external potential equalisation for painted series enclosures
- KL
- AE
- TS

For applications in Unit Group II, Category 3, in compliance with Directive 94/9 EU – Appendix VIII, internal production control.

Packs of	Model No. KE
5	**9214.000**

Supply includes:
Packs of 5

Earthing

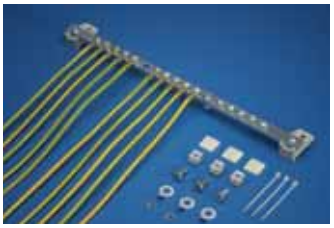


Earthing kit

for KL

Consisting of all the screws, nuts, contact washers and earthing strip needed to earth the cover; length 250 mm, cross-section 4 mm^2.

Packs of	Model No. KL
5	**2570.100**



Earthing kit

for TC Rack

To DIN EN 60 950/VDE 0805, $I_{max.}$ 40 A.
For star earthing. With the pre-assembled earth conductors, star potential equalisation is easily integrated.

Packs of	Model No. DK
1 set	**7277.000**

Supply includes:
Earthing leads 6 mm^2,
assembly parts for earthing leads,
earth rail.



Earthing kit

for QuickBox

Earth straps in the appropriate lengths to match the enclosure depth are included in the earthing kit, for earthing all enclosure panels on the wall mounting part. The earth strap is a fast-on connector which is quickly disconnected and conveniently accessible when the door is open. In this way, the enclosure cover can be removed completely.

For enclosure depth mm	Packs of	Model No. QB
300/400	1 set	**7502.240**
500/600	1 set	**7502.260**

Supply includes:
5 earth leads 1.5 mm^2,
4 cable retention clips,
assembly parts.



PE busbar

695 mm long PE busbar with pre-fitted screws, including terminal clamps up to 6 mm^2 (fine wire conductors), 10 mm^2 (single wire or multi-wire conductors) and main terminal clamp up to 35 mm^2.

Packs of	Model No. SZ
1	**2364.000**

Accessories:

Rail mounting bracket,
see page 1009.



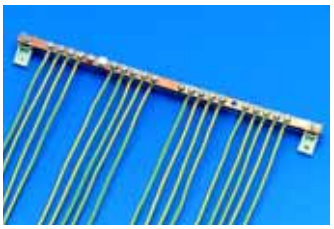
Earth rail, horizontal

for TS, FR(i)
Potential equalisation rail

Current carrying capacity approx. 200 A.

Supply includes:
Earth rail made from E-Cu 57 to DIN EN 12 163, DIN EN 13 601, 15 x 5 mm,
20 connection points with M5 screws,
2 earth connections 25 mm^2,
2 isolators, including assembly parts.

Length mm	Packs of	Model No. DK
450	1	**7113.000**



Earthing kit, pre-assembled

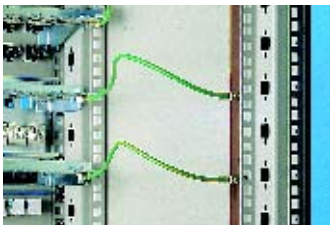
for DK-TS

For star earthing. With the pre-assembled earth conductors on a potential equalisation rail, star potential equalisation is easily integrated into network enclosures.

Supply includes:
Earth rail made from E-Cu 57 to DIN EN 12 163, DIN EN 13 601,
earthing leads 6 mm^2, 2 isolators,
incl. assembly parts.

For TS enclosures up to W x H x D mm	Packs of	Model No. DK
800 x 2000 x 800	1 set	**7829.100**
800 x 2200 x 1000	1 set	**7829.110**





Earth rail, vertical

for network enclosures
Easily fitted to the 25 mm DIN pitch pattern of distributors or to the 482.6 mm (19″) mounting angles. The supplied earth conductors facilitate star earthing of the cable clamp straps in the patch panels.
The earth terminals are fully adjustable.
Current carrying capacity of rail approx. 200 A.

Supply includes:
Earth rail made from E-Cu 57 to DIN EN 12 163, DIN EN 13 601, 15 x 5 mm,
16 conductor connection clamps with 2.5 – 16 mm^2,
15 earthing leads 6 mm^2, L = 500 mm,
including assembly parts.

For enclosure height mm	Length mm	Packs of	Model No. DK
800	600	1 set	**7541.000**
1000	800	1 set	**7542.000**
1200	1000	1 set	**7543.000**
1400	1200	1 set	**7544.000**
1600	1400	1 set	**7545.000**
1800	1600	1 set	**7546.000**
2000	1800	1 set	**7547.000**
2200	2000	1 set	**7548.000**



Expansion kit

for earth rail, vertical
For system-compatible expansion of the star earthing on the vertical potential equalisation rail.

Supply includes:
Earthing leads 6 mm^2, pre-configured, with ring terminals and wire end ferrules, L = 500 mm, with earth terminals 2.5 – 16 mm^2, including assembly parts.

Packs of	Model No. DK
10	**7549.000**



ESD connection point

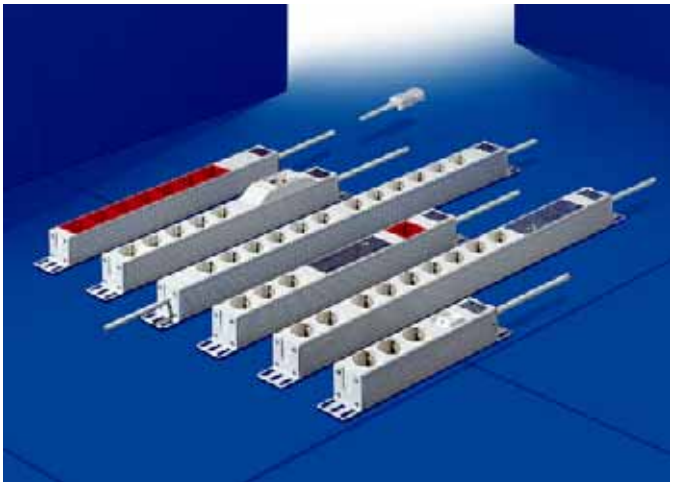
During maintenance or conversion work on the enclosure, dangerously high potential differences can occur. To protect sensitive electronic components, this standardised connection point (push-button) provides potential equalisation. The connection point is directly conductively connected to the enclosure frame via two screws.

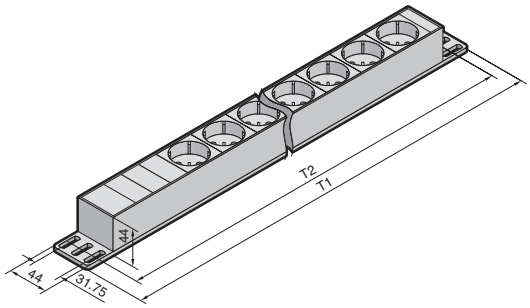
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. DK
1	**7752.950**

Socket strips





The socket strips in the aluminium channel are available in various lengths with different functional elements. Special attention has been devoted to practical, universal fastening: Variable attachment facilities have been created with an angle bracket which may be inserted in four positions. Hence, for example, the 482 mm long socket strip may optionally be mounted on 482.6 mm (19″) mounting angles, the 482.6 mm (19″) mounting frame, on the enclosure frame, or in the rear section of the wall-mounted distributor.

Without additional mounting accessories, the socket strip may be inserted into all sections with a 25 mm pitch pattern. This makes selection much easier, as well as providing additional flexibility and saving on warehousing. Provision has also been made for cable routing of the infeed, and when mounting in the 482.6 mm (19″) section there is adequate space to route the infeed between the socket strip and the mounting angle without kinks. The arrangement of the sockets at a 45° angle allows unrestricted use of angular connectors.

Technical specifications:
Rated voltage: 250 V
Rated current: 10/16 A
Connection cable: 2 m long H05VV-F3G1.5 with wall connector

Material:
Aluminium section natural-anodised, socket inserts polycarbonate

Supply includes:
Socket strip, two mounting brackets, assembly parts.

Standards:
Sockets:
DIN VDE 0620-1
(VDE 0620-1: 2005-04)
Sockets B/F:
UTE NFC 61-303, CEE 7/NV
Overvoltage protection for low voltage:
DIN EN 61 643-11
(VDE 0675 part 6-11): 2002: 12
EMC interference suppression filter:
DIN EN 60 939-2
(VDE 0565 part 3-1, 2006/5),
DIN VDE 0620-1
(VDE 06204-1: 2005-04)

Detailed drawing,
see page 1039.

Design	Number of sockets	Attachment			Length (T1) mm	Mounting dimension (T2) mm[1]	Model No. DK
		Frame	Wall-mounted distributor, horizontal	482.6 mm (19″) level			
Without rocker switch	3	■			262.6	232.5	**7240.110**
	7	■	■	■	482.6	452.5	**7240.210**
	12	■			658.6	628.5	**7240.310**
With rocker switch	3	■	■		306.6	276.5	**7240.120**
	7	■	■	■	482.6	452.5	**7240.220**
Overvoltage protection and interference suppression filter	5	■	■	■	482.6	452.5	**7240.230**
	9	■			658.6	628.5	**7240.330**
Overvoltage protection and interference suppression filter, with RJ 10 connector for connection to the CMC	9	■			812.6	782.5	**7200.630**
Miniature circuit-breaker	5	■	■	■	482.6	452.5	**7240.240**
Master-Slave	1 + 3	■	■	■	482.6	452.5	**7240.250**
UPS strip	7	■	■	■	482.6	452.5	**7240.260**
RCCB	5	■	■	■	482.6	452.5	**7240.280**
RCCB and line protection	5	■	■	■	482.6	452.5	**7240.290**
For IEC 320 connectors 10 A	12	■	■	■	482.6	452.5	**7240.200**
For IEC 320 connectors with IEC 320 input, 10 A	9	■	■	■	482.6	452.5	**7240.201**
For IEC 320 connectors with overvoltage protection and interference suppressor filter, 10 A	6	■	■	■	482.6	452.5	**7240.205**
With 2 circuits	6 + 6	■			720.6	690.5	**7240.370**
B/F sockets (Belgium, France)	7	■	■	■	482.6	452.5	**7240.510**
B/F sockets (Belgium, France)	12	■			658.6	628.5	**7240.512**

[1] Variable attachment distance within a range of 25 mm, the distance given is hole centre – hole centre of mounting bracket.

Socket strips

Technical properties depending on variant:

Rocker switch
Illuminated, 2-pole switch. The safety bars prevent accidental contact.

Master/Slave
2-pole electronic automatic switching unit. The operating point may be set from 9 W to 35 W. Equipment which switches to energy-saving or stand-by mode when switched on cannot be used as the master device. In the ON state, the master device must draw 9 W, and must not draw more than 35 W in the OFF state.

Overvoltage protection and interference suppression filter
The connected equipment is protected from voltage peaks in the mains and spikes. The EMC interference suppression filter provides protection from high-frequency interference voltage from both directions – the mains and the connected equipment. The green ready light is extinguished in the event of disconnection or malfunctions. Connected equipment remains disconnected.

Overvoltage protection device (SPD), type 3
Maximum continuous voltage Uc: 280 V AC
Rated current IL: 16 A
Maximum overvoltage protection on the mains side:
LS:B16A or 16AgL/gG
Protection level Up: 1.5 kV
Combined surge Uco (L-N): 5 kV
Combined surge Uco (L/N-PE): 10 kV
Rated discharge current In (L-N): 5 kA
Rated discharge current In (L/N-PE): 15 kA
Arrester disconnector: Permanently disconnects SPD and equipment from the mains.
Status display: Green ready light is extinguished upon disconnection.

Overvoltage protection and interference suppression filter, with RJ 10 connector for CMC connection
With the relay message contact, undervoltage and failures caused by overvoltage can be reported in the network via the CMC via SNMP trap.
Relay alarm output: RJ 10 jack
Load capacity of relay: 50 V DC, 100 mA

Circuit-breaker
Protects cables from short-circuit and overload. 2-pole switching (thermal/magnetic). Tripping characteristic B,
to DIN VDE 0641/A4/1188, 16 A/250 V~.

UPS strip
With red socket strip inserts. These indicate the items of equipment protected by a UPS. Connection cable with IEC 320 connector. Cable: H05VV-F3G1.0/rated current: 10 A.

2 circuits
Two circuits with two separate connection cables, 2.5 m.

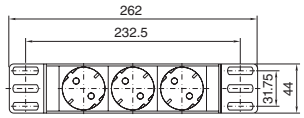
FI protection
For personal protection. With residual current circuit-breaker IΔn 30 mA to DIN VDE 0664 part 1/85.

RCBO protection
A combination of personal, overload and short-circuit protection. With residual-current circuit-breaker IΔn 30 mA to DIN VDE 0664 part 1/85 and residual-current circuit-breaker to DIN VDE 0641/A 4/11.88 16 A/250 V~.

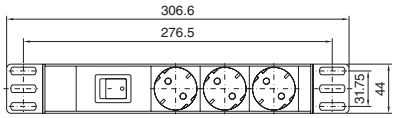
Version B/F (Belgium/France)
With 7 or 12 sockets to CEE 7-V UTE, with child-proof system.

IEC 320 connector
Standard E IEC 320,
Built-in IEC 320 socket
Standard F IEC 320,
DIN standard for both: up to 70°C,
DIN EN 60 320-2-2: 1999-09,
DIN EN 60 320-1: 2002-06,
DIN EN 60 320-1: 2001.
connection cable, 2 metres or IEC 320 input in the connector panel.
Cable: H05VV-F3G1.0/rated current: 10 A.

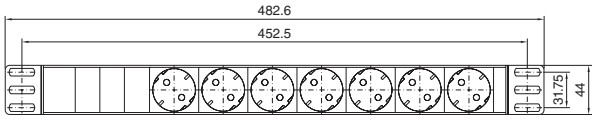
DK 7240.110



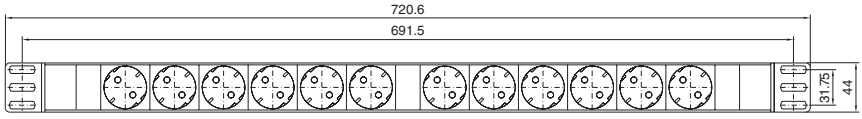
DK 7240.120



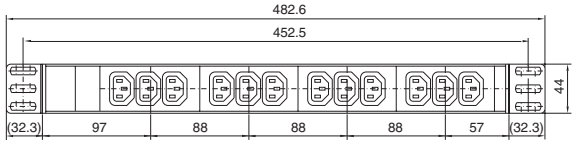
DK 7240.200 – DK 7240.290



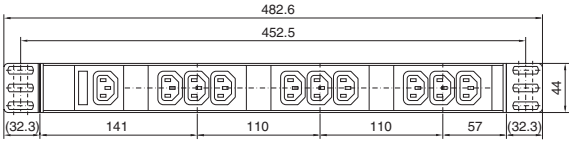
DK 7240.370



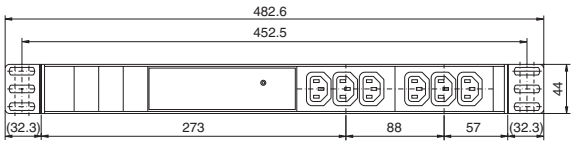
DK 7240.200



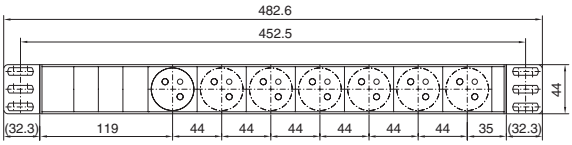
DK 7240.201



DK 7240.205



DK 7240.510







Socket strips

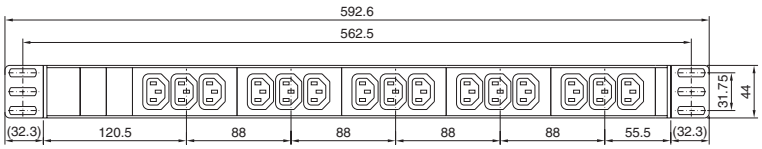
With C13/19 sockets

For further details, see page 1038.

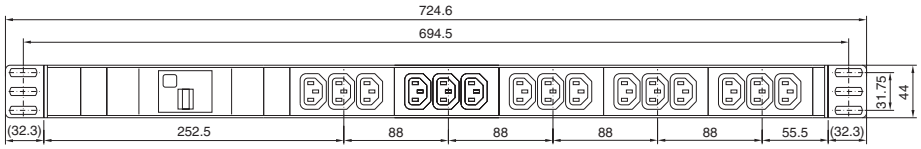
Design	Number of sockets	Attachment			Length mm	Mounting dimension mm[1]	Model No. DK
		Frame	Wall-mounted distributor, horizontal	482.6 mm (19″) level			
C13 IEC 320 socket[3]	15	■			592.6	562.5	**7240.130**
C13 IEC 320 socket[3] with RC protection	15	■			724.6	694.5	**7240.140**
C13 IEC 320 socket[3] with 2[2] infeeds	9 + 9	■			764.6	734.5	**7240.150**
C19 IEC 320 socket[4]	6	■	■	■	482.6	452.5	**7240.160**
C19 IEC 320 socket[4] with overvoltage protection device	4	■	■	■	482.6	452.5	**7240.170**
C19 IEC 320 socket[4] with RC protection	4	■	■	■	482.6	452.5	**7240.180**
C19 IEC 320 socket[4] with 2[2] infeeds	3 + 3	■	■	■	478.6	448.5	**7240.190**

All socket strips may also be ordered with a Wieland GST infeed.
[1] Variable attachment distance within a range of 25 mm, the distance given is hole centre – hole centre of mounting bracket.
[2] In order to make allowance for the higher output density e.g. in an IT environment, the socket strips are equipped with 2 independent infeeds. This means it is possible to supply 2 x 16 A/250 V with one socket strip.
[3] With IEC 320 socket to standard F EN 60 320-2-2
[4] With IEC 320 socket to standard J EN 60 320-2-2

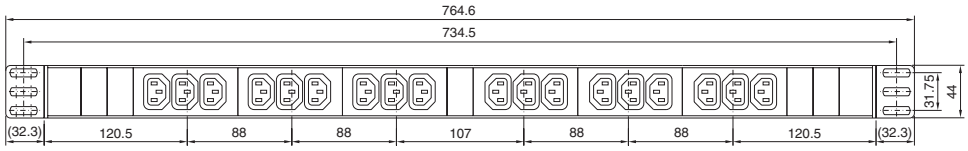
DK 7240.130



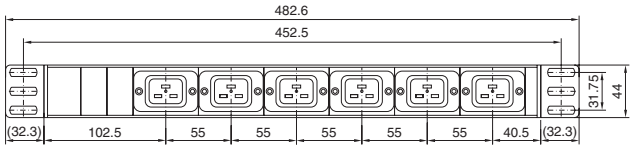
DK 7240.140



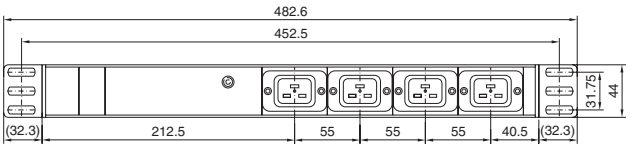
DK 7240.150



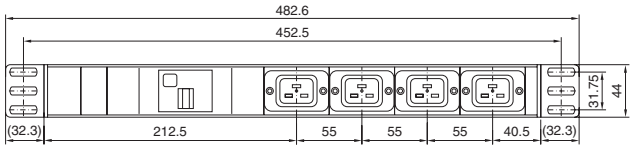
DK 7240.160



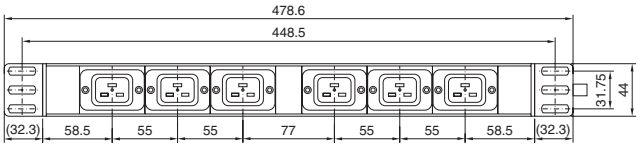
DK 7240.170



DK 7240.180



DK 7240.190





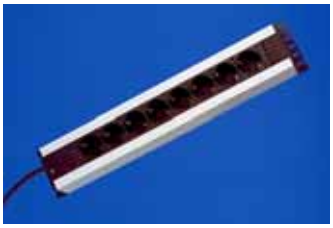
Socket strips 230 V

Technical specifications:
Rated voltage 250 V AC,
max. load
CH 10 A,
GB 13 A.

Material:
Plastic, halogen-free
Connection cable, 2 m long, without connector
H05VV-F3G1 (CH)
H05VV-F3G1.5 (GB)
Unrestricted use, even of angular connectors, by arranging the plug-in contacts in a long row.

UK, CH version		Model No. DK UK version	Model No. DK CH version
Number of sockets	Length mm		
6	470[1]	**7404.000**	**7604.000[2]**
12	793	**7408.510**	**7608.510[2]**
18	1153	**7412.510[2]**	**–**

[1] The socket strips can be mounted horizontally at the rear of the DK wall-mounted distributor based on EL/AE.
[2] Extended delivery times.



Socket strip TE

8-way socket strip for earthing-pin plug/version D. The strip is made of plastic and may be mounted vertically on the TE frame or in the rear 482.6 mm (19″) section. In the 482.6 mm (19″) section, more than 2 U of space is required. The sockets are arranged at an angle of 45° so that angular connectors are also easily used. The socket strip is supplied with a 2 m connection cable. The connection cable is attached in a terminal raceway in the strip.
The terminal slot is equipped with a separate cover, so that this connection point can always be quickly and easily accessed. Replacement of the connection cable is likewise simple. Furthermore, the socket strip has external terminals for separate earthing.

Socket strip TE	Model No. DK
8-way, earthing-pin	**7000.630**

Technical specifications:
Rated voltage: 230 Volt AC
Rated current: Max. 10/16 A
Connection cable: Length 2 m, H05VV-F3G1, 1.5 mm², without connectors, with wire end ferrules





Socket strip, 482.6 mm (19″)

with optional locking of the cable outlets
The socket strip is constructed from an aluminium channel and is 482.6 mm (19″) wide and 1 U high, and may be integrated into all standard 482.6 mm (19″) mounting frames. Special attention has been devoted to practical, universal fastening. The universal mounting bracket creates variable mounting opportunities. For example, the 439 mm long socket strip may optionally be mounted on the 482.6 mm (19″) mounting angle or on the punched section with mounting flange and enclosure frame.

Additionally, a locking option for the outgoing cables to the equipment has now been integrated. This protects the cables from unintentional loosening, which in turn increases the security and availability of applications.

Design	Model No. DK
12 x C13	**7240.600**

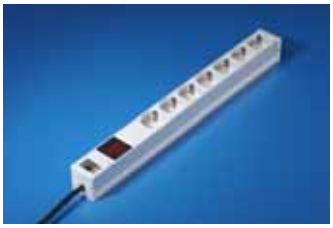
Technical specifications:
Mains voltage: 250 V
Rated current: 10/16 A
Connection cable: 1.5 m

Supply includes:
Socket strip, two mounting brackets, assembly parts.

Accessories:

PSM cable lock,
see page 790.

Socket strips





Socket strips

with ammeter

The socket strip with ammeter measures the active power of the connected equipment. The two variants “earthing pin contact” and “IEC 320 socket C13” provide the most commonly used plug-in contacts in data centres. The 482.6 mm (19″) long socket strip may optionally be mounted on the 482.6 mm (19″) mounting angles, on the 482.6 mm (19″) mounting frame, on the enclosure frame or in the rear section of wall-mounted distributors. The installation bracket may be mounted in four different positions for variable mounting. Without additional mounting accessories, the socket strip may be inserted into all sections with a 25 mm pitch pattern.

Material:
Aluminium section: Natural-anodised
Socket inserts: Polycarbonate

Supply includes:
Socket strip with two mounting brackets including assembly parts,
1.5 m connection cable with open ends.

Technical specifications:
Mains voltage: 250 V
Rated current: 10/16 A, C13 earthing-pin
Connection cable: 1.5 m

Design	Number of sockets	Attachment			Length mm	Mounting dimension mm[1)]	Model No. DK
		Frame	Wall-mounted distributor, horizontal	482.6 mm (19″) level			
Earthing-pin socket	6	■	■	■	482.6	464.1	**7240.300**
C13 IEC 320 socket	8	■	■	■	482.6	464.1	**7240.305**

[1)] Variable attachment distance within a range of 5 mm, the distance given is hole centre – hole centre of mounting bracket.



Junction box with multi-functional bracket

The angle bracket can be installed in all network enclosures in a system-compatible design. The junction box serves as a transfer point for the power supply to all equipment (fans, lamps and socket strips). As well as being used as a junction box or interchange point, the bracket may also accommodate the thermostat (SK 3110.000) or the hygrostat (SK 3118.000) thanks to its integral holes.

Packs of	Model No. DK
1 set	**7280.035**

Material of bracket:
Sheet steel

Colour of bracket:
RAL 7035

Supply includes:
1 bracket, 1 junction box,
6 m connection cable 3 x 1.5 mm² (flexible).



Socket

- For mounting on support rails TS 35/7.5 and TS 35/15 to EN 60 715
- Screw terminals uniformly from one side
- Enclosure width 45 mm

Technical specifications:
Rated voltage: 250 V AC
Rated current (DC/AC): 10 A/16 A

Material:
Polyamide

Colour:
Grey

Standards:
DIN VDE 0620-1
DIN 49 440-1

Design	Packs of	Model No. SZ
Germany	2	**2506.100**





Service socket

for enclosure frame attachment

Integration of a service socket within a separate supply circuit, independently of the IT network and UPS.
Simple installation via an angle bracket for attaching to the enclosure frame.

Material:
Angle bracket:
Sheet steel, zinc-plated, passivated.
Socket: Plastic

Supply includes:
Angle bracket, damp-proof socket (IP 44), including assembly parts.

Packs of	Model No. DK
1 set	**7280.100**



Socket strip

with three sockets, overvoltage protection and interference suppression filter

For connecting
- PC
- Monitor
- Printer

Attached to the horizontal or vertical TS enclosure section using the supplied mounting bracket. Socket inserts rotated through 45°. Connection socket for power infeed.

Technical specifications:
Rated voltage: 230 V AC
Rated current: 16 A
Sockets: DIN VDE 0620-1
Overvoltage protection for low voltage:
DIN EN 61 643-11 (VDE 0660 part 6-11)
EMC interference suppression filter: EN 133 200

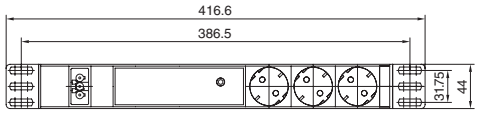
Material:
Extruded aluminium section natural-anodised, socket inserts polycarbonate

Supply includes:
Two mounting brackets and assembly parts.

Number of sockets	Model No. SM
3	**6446.500**

Also required:

Connection cable for infeed,
see page 1030.







Socket strip IW

For mounting on IW worktops or other surfaces via integrated wire clamps or by screw-fastening from above.
Connection of worktop light IW 6903.080 via the connector integrated into the socket strip at the side.

Material/Surface finish:
Extruded aluminium section, natural-anodised, socket strips and side section cover black plastic

Supply includes:
Assembly parts.

Technical specifications:
Rated voltage: 230 V AC
Rated current: 16 A
Connection cable: 2.5 m long H05VV-F
3G1.5 mm^2

Dimensions in mm	Model No. IW
340 x 88 x 72	**6902.040**

Design:
3 earthing-pin sockets, rotated 35°,
1 rocker switch for power supply to sockets,
1 jack on the left-hand side for through-wiring connection cable (e.g. for connecting a worktop light IW 6903.080, see page 189) with 1 rocker switch for power supply to jack.

Accessories:

Through-wiring connection cable,
see page 1030.
Workstation light IW 6903.080,
see page 189.

Energy-Box



Energy-Box, 482.6 mm (19″)

Technical specifications:
A depth-variable top hat rail for installed equipment to DIN 43 880, sizes 1 – 3 (e.g. to accommodate built-in sockets, miniature circuit-breakers etc.). Cable clamping at the rear, one N and one PE rail on an insulated plinth. Plastic cover including extension cover (UL 94-V0), maximum accommodation of 22 installed devices (width 18 mm). Maximum accommodation capacity = 22 HP (22 x 18 mm = 396 mm).

Packs of	U	Model No. DK
1	3	**7480.035**

Colour:
RAL 7035

Supply includes:
Energy-Box with plastic blanking covers.

Note:
Individual population with circuit-breakers at the factory available on request.

German patent no. 42 00 836





Energy-Box, 482.6 mm (19″), pull-out

This Energy-Box is designed to accommodate both DC and AC components. The pull-out component front affords optimum access to the wiring space from above and below.

Connection clamps
for DC current:
2 clamps 35 mm^2,
9 clamps 16 mm^2 (per rail)

for AC current:
1 clamp 16 mm^2 (PE or N),
20 clamps 4 mm^2 (per rail)

Technical specifications:
Depth-adjustable top hat rail for snap-in attachment of installed equipment to DIN 43 880 in sizes 1 – 3 (e.g. to accommodate built-in sockets, miniature circuit-breakers etc. or entire installation assemblies such as the ABB “smissline” system). Cable clamping at the rear, two power distribution rails with connection clamps on isolated base/plinth. Plastic cover including extension cover, maximum accommodation of 22 items of installed equipment (width 18 mm). Maximum accommodation capacity = 22 HP (22 x 18 mm = 396 mm).
Depth: 220 mm.

U	Model No. DK
3	**7480.300**

Colour:
RAL 7035

Supply includes:
Energy-Box with plastic blanking covers.



Cable entry plates

For
- Cable entry grommets
- Connector grommets

instead of segments of the standard divided gland plates.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For installation in TS and PC enclosures based on TS

Enclosure width mm	Cut-outs per plate	Packs of	Model No. TS
600	5	2	**8800.060**
800	8	2	**8800.080**
850	9	2	**8800.085**
1000	4	4	**8800.100**
1200	6	4	**8800.120**

For installation in CM enclosures and TP TopConsole system

Enclosure width mm	Cut-outs per plate	Packs of	Model No. CM
600	5	1	**5001.226**
800	8	1	**5001.227**
1000	4	1	**5001.228**
1200	6	1	**5001.229**
1600	8	1	**5001.237**

For installation in ES, PC enclosures based on ES and in AP universal console, CS basic enclosure

Enclosure width mm	Cut-outs per plate	Packs of[1)]	Model No. TS
600	5	2	**4320.700**
800	8	2	**4321.700**
1000	10	2	**4323.700**
1200[2)]	6	4	**4325.700**

[1)] Including compensating plate
[2)] For CS basic enclosures, two TS 4320.700 are required.

For TS stainless steel

Material:
Stainless steel 1.4301 (AISI 304)

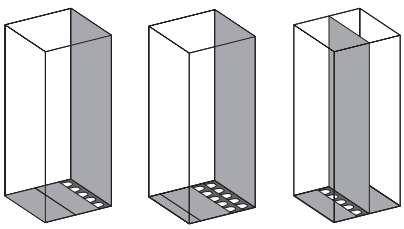
For installation in TS, stainless steel

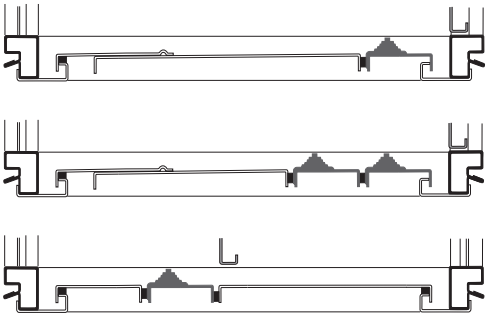
Enclosure width mm	Cut-outs per plate	Packs of	Model No. TS
600	5	2	**8700.600**
800	8	2	**8700.800**
1200	6	4	**8700.120**

Accessories:

Cable entry grommets,
see page 1046.

Three examples from a wide range of possibilities
The diagrams show three TS examples for the positioning of cable entry plates instead of segments of the three-piece gland plates supplied as standard. This facilitates positioning to fit the mounting plate.
Thanks to the enclosure symmetry, where dimensions permit, cable entry plates may also be inserted in the enclosure depth, right and left, analogous to the gland plates.





Cable entry



Cable entry grommets

In conjunction with the cable entry plate, simple and fast sealing of cables inserted in the base area of enclosures.

Material:
Body: Polypropylene
Cover: Thermoplastic elastomer

Protection category:
IP 55 subject to correct mounting.

Cables per grommet	Max. Ø mm	Packs of	Model No. PS
8	13	25	**4316.000**
3	21	25	**4317.000**
1	47	25	**4318.000**

German patent no. 42 07 281
European patent no. 0560119
with validity for FR, GB, IT, NL
Japan. patent no. 2533052
US patent no. 5,422,436



Connector grommets

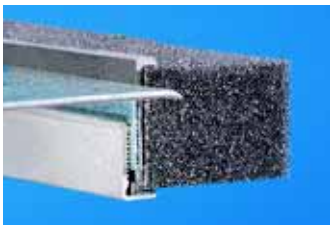
Suitable for cable diameters from 8 to 36 mm.

Material:
Outer cover: Polypropylene covered with thermo-plastic elastomer
Seal: Cellular rubber

Protection category:
IP 55 subject to correct mounting.

Packs of	Model No. PS
10	**4311.000**

German patent no. 44 05 328
Italian patent no. 0 127 3503
French patent no. 2 716 583





Section for cable entry, centre

for TS, CM, TP, FR(i)

For top-mounting on gland plates. A superior alternative to the foam rubber cable clamp strip, thanks to:

- Easier mounting
- Full-surface support
- High level of sealing of cables inserted into the enclosure

Material:
Extruded aluminium section,
seal PU foam, cross-section: 30 x 25 mm

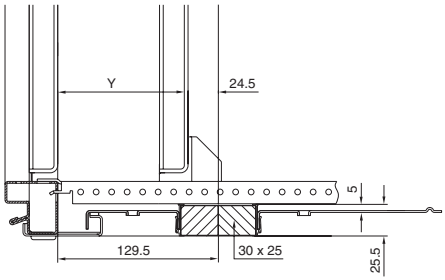
Protection category:
IP 55 subject to correct mounting.

Note:
1 set is sufficient for one base opening up to an enclosure width of 800 mm.
From an enclosure width of 1000 mm, two base openings are provided. 2 sets per enclosure may be fitted.

For enclosure width mm	Packs of	Model No. TS
600	1 set	**8802.060**
800	1 set	**8802.080**
1000	2 sets	**8802.100**
1200	2 sets	**8802.120**
1600	2 sets	**8802.160**

Accessories:

Cable clamp rail (right angle section),
see page 1061.
C rail,
see page 999.



Y = Mounting plate depth-adjustable on a 25 mm pitch pattern (final pitch 30 mm).



Section for cable entry, rear

for TS, CM, TP, FR(i)

Unlike the section for cable entry, centre, the rear section is mounted directly onto the base opening. In this way, when installing the mounting plate in the rearmost position (TS) or with CM, the cables may be routed directly on a cable clamping rail with no large radii. In conjunction with the cable clamp rail, optimum adjustment between the cable entry and mounting plate can be achieved.

Material:
Extruded aluminium section,
seal PU foam, cross-section: 30 x 25 mm

Protection category:
IP 55 subject to correct mounting.

For enclosure width mm	Packs of	Model No. TS
600	1 set	**8802.065**
800	1 set	**8802.085**
1000	2 sets	**8802.105**
1200	2 sets	**8802.125**
1600	2 sets	**8802.165**

Note:
1 set is sufficient for one base opening up to an enclosure width of 800 mm.
From an enclosure width of 1000 mm, two base openings are provided. 2 sets per enclosure may be fitted.

Accessories:

Cable clamp rail,
see page 1062.



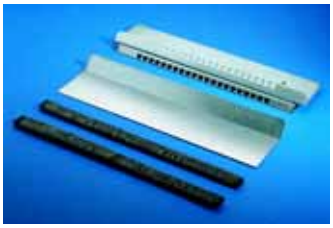
Foam rubber cable clamp strip

For sealing the cable entry between the gland plates. Particularly suitable for identical cable cross-sections.

Material:
PU foam,
cross-section: 30 x 30 mm

Protection category:
IP 55 subject to correct mounting.

Packs of	Model No. SZ
3 m	**2573.000**



EMC gland plates

see page 1032.

Gland plates



Plastic cable gland plates

With pre-punched PG holes for cable glands.
Used for sealing standard gland plates.
Temperature range:
suitable for use from –40°C to +70°C.

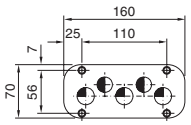
Colour:
RAL 7035

Note:
The applicable size can be taken from the respective product ordering page.

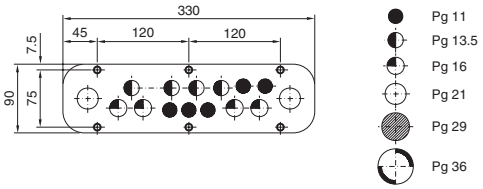
Size	Packs of	Model No. SZ
1	10	**2560.000**
3	10	**2561.000**
4	5	**2562.000**
5	5	**2563.000**

To order the version with knockouts for metric cable glands, please add extension .010 to the model no.

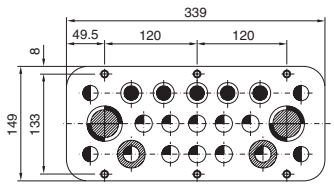
Size 1



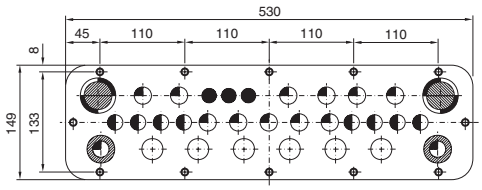
Size 3



Size 4



Size 5







Plastic cable gland plates

With pre-punched PG holes for cable glands.
Used for sealing standard gland plates.
Temperature range:
suitable for use from –40°C to +70°C.

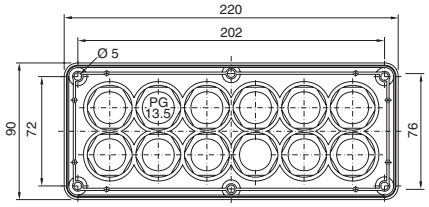
Material:
ABS

Colour:
RAL 7035

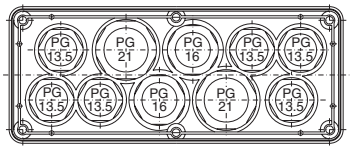
Note:
The applicable size can be taken from the respective product ordering page.

Size	PG	Qty.	Packs of	Model No. KL
2	13.5	12	5	**1581.000**
	13.5 16 21	6 2 2	5	**1582.000**

KL 1581.000



KL 1582.000





Plastic gland plates

with membranes
Simply pierce the plastic with a sharp object, and pull through the cable.

Material:
Plastic to UL 94-V2

Colour:
Similar to RAL 7035

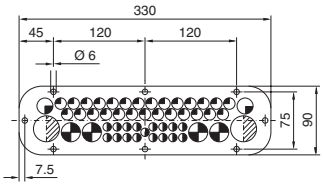
Protection category:
IP 65 with careful cable entry.

Note:
The applicable size can be taken from the respective product ordering page.

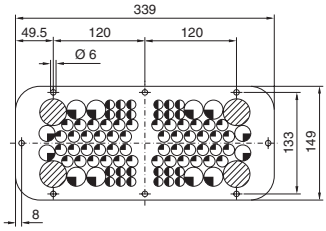
Size	Packs of	Model No. SZ
3	1	**2561.500**
4	1	**2562.500**
5	1	**2563.500**

	Diameter mm	Number of cable entries for Model No. SZ		
		2561.500	**2562.500**	**2563.500**
●	5 – 9	–	–	18
◑	6 – 11	17	–	–
◐	7 – 12	–	24	16
◔	10 – 15	27	48	36
◔	15 – 21	2	4	–
◕	15 – 24	–	–	6
◔	15 – 25	–	8	–
◕	16 – 25	4	–	–
◫	19 – 34	2	–	–
▩	23 – 30	–	–	2
▨	26 – 35	–	4	2
▨	26 – 54	–	–	4
○	50 – 110	–	–	1

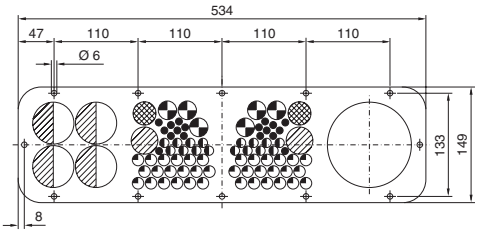
Size 3



Size 4



Size 5





Metal gland plates

Pre-punched
Simply knock out the holes for the cable glands using a screwdriver.

Material:
Sheet steel

Colour:
RAL 7035

Protection category:
IP 66 when mounting in the usual bottom position.

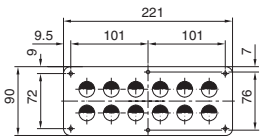
Note:
The applicable size can be taken from the respective product ordering page.

Size	Packs of	Model No. SZ
2	1	**1581.100**
3	1	**2561.100**
4	1	**2562.100**
5	1	**2563.100**

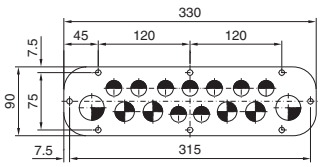
Number of cable entries

●	◔	◔	◕	◔	◕	Model No. SZ
Diameter						
M12	M16	M20	M25	M32	M40	
–	–	12	–	–	–	**1581.100**
–	–	9	4	2	–	**2561.100**
–	2	5	13	2	2	**2562.100**
1	–	12	11	8	4	**2563.100**

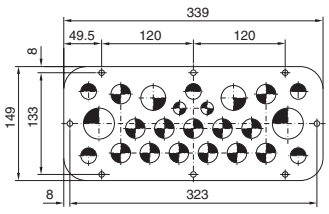
Size 2



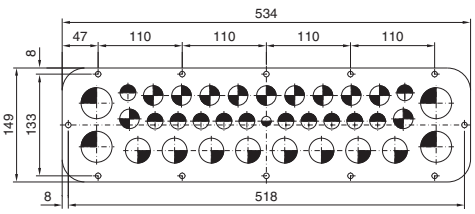
Size 3



Size 4



Size 5



Accessories:

Cable glands made from polyamide or brass, see page 1054.

Gland plates



Metal gland plates

As a spare/replacement part for gland plates supplied loose as standard, or for first-time installation of RiLAN industrial distributors.

Material:
Sheet steel

Colour:
RAL 7035

Protection category:
IP 66 when mounting in the usual bottom position.

Note:
The applicable size can be taken from the respective product ordering page.

Accessories:

Cable glands made from polyamide or brass, see page 1054.

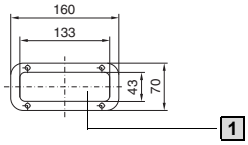
Rittal service:

Cut-outs according to customer specifications.

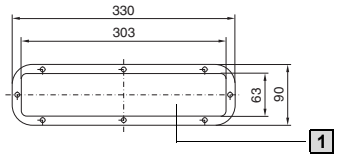
Size	Design	Packs of	Model No. SZ/IN
1	Solid	1	**2560.400**
3	Solid	1	**2561.400**
4	Solid	1	**2562.400**
5	Solid	1	**2563.150**
	Pre-punched 27 x M20	1	**2203.010**
	With 27 cable glands M20	1	**2203.020**[1)]
6	Solid	1	**2207.010**
	Pre-punched 27 x M20	1	**2207.020**
	With 27 cable glands M20	1	**2207.030**[1)]

[1)] Any cable glands that are not required must be sealed with sealing bungs SZ 2411.532 (see page 1055).

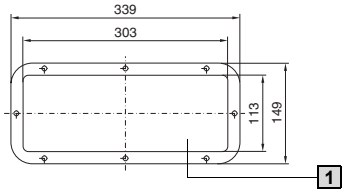
SZ 2560.400



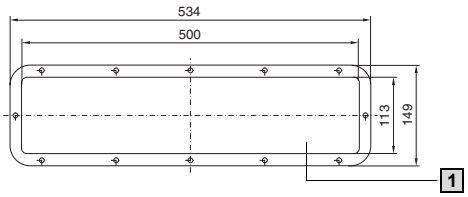
SZ 2561.400



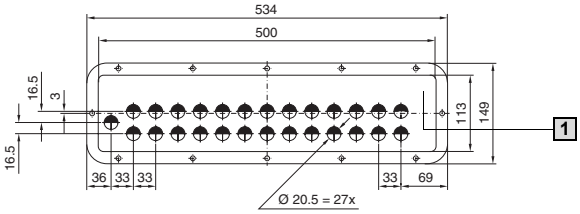
SZ 2562.400



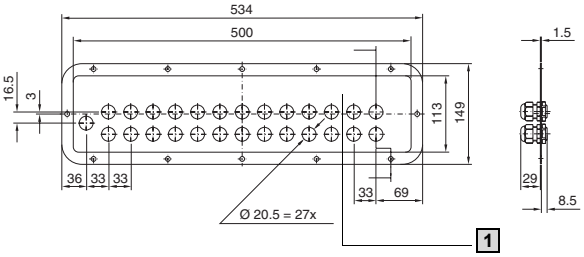
SZ 2563.150



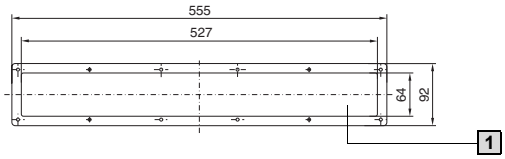
IN 2203.010



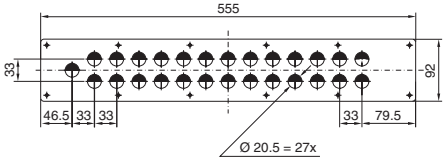
IN 2203.020



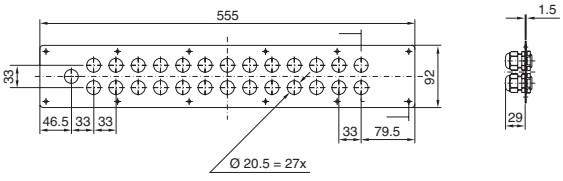
IN 2207.010



IN 2207.020



IN 2207.030



Knock-out Ø M20

Cable gland Ø M20

1 Area available for population



Metal gland plate

with grommets

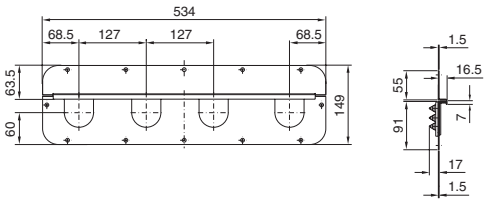
Design:
4 inserts each with 8 grommets for cable diameters up to 13 mm.

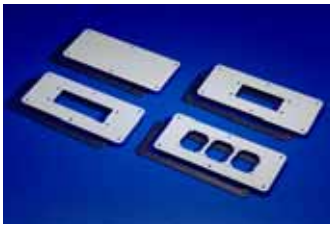
Material:
Gland plate: Sheet steel, zinc-plated, passivated,
Cable entry grommet:
Body: Polypropylene.
Cover: Thermoplastic elastomer.

Note:
The applicable size can be taken from the respective product ordering page.

Size	Dimensions	Packs of	Model No. IN
5	534 x 149 mm	1	**2203.030**

Protection category:
IP 54 to EN 60 529/09.2000 when mounted in the usual position, bottom.





Metal gland plates

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

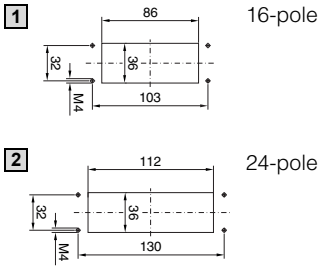
Note:
The applicable size can be taken from the respective product ordering page.

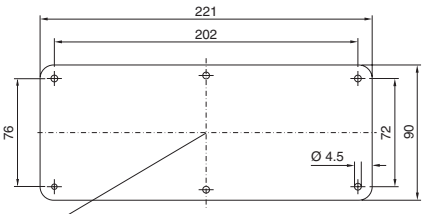
Size	Cut-out	Packs of	Model No. KL
2	Without	6	**1158.500**
2	1 x connector, 16-pole	6	**1158.560**
2	1 x connector, 24-pole	6	**1158.540**
2	3 x module plates	6	**1158.530**

Accessories:

Module plates for individual cable entry, see page 1051.

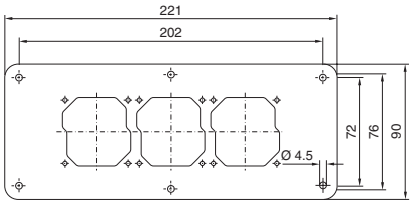
KL 1158.500

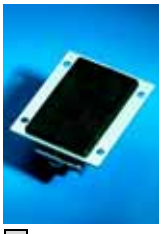




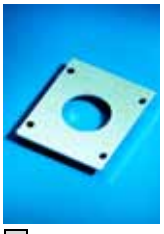
1 KL 1158.560
2 KL 1158.540

KL 1158.530





1



2



3



4

Module plates

for individual cable entry

Fig.	Design		Material	Packs of	Model No. BG
1	With connector grommet for 2 cables with connectors up to d = 8.5 mm		Module plate: Sheet steel, zinc-plated, passivated Connector gland: (For details, see SZ 2400.300, page 1057)	1	**1158.900**
2	Punched for metric cable gland	M25	Sheet steel, zinc-plated, passivated	10	**1158.910**
	Solid				**1158.930**
3	For direct, IP-protected insertion of sensor/ actuator cables	2 + 2[1)]	Plastic module plate with strain relief and flexible sealing membrane, including stoppers for any unused openings	1	**1158.940**
4		8[2)]			**1158.950**

To fit Ø
[1)] 2 cables from 6.8 to 8.8 mm and 2 cables from 7.8 to 10.7 mm
[2)] 8 cables from 3.8 to 6.3 mm

Gland plates



Gland plate

solid, for QuickBox
To conceal the cable entry openings. In exchange for the brush strip at the top and bottom that is used as standard.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Packs of	Model No. QB
2	7502.310



Gland plate

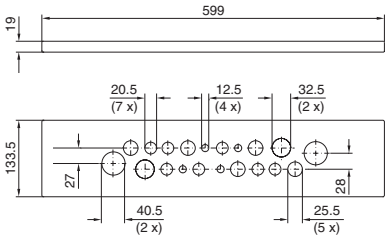
for metric cable glands, for EL
Folded gland plate with foamed-in seal and pre-punched, knock-out holes for metric cable glands M12, M20, M25, M32, M40.

Material:
1.5 mm sheet steel

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/09.2000

Packs of	Model No. DK
1	7705.235





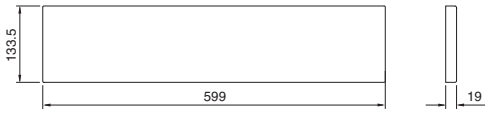
Gland plate

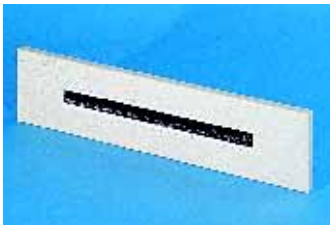
solid, for EL
Folded gland plate for the base box, with foamed-in seal.

Material:
1.5 mm sheet steel

Colour:
RAL 7035

Packs of	Model No. EL
1	2235.135





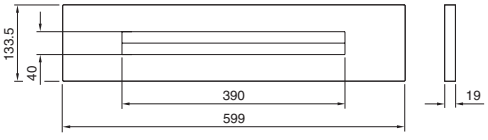
Gland plate

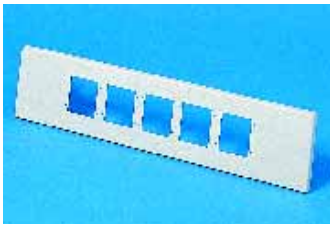
with brush insert, for EL
Folded gland plate with foamed-in seal and plastic brush inserts for simple cable entry.

Material:
1.5 mm sheet steel

Colour:
RAL 7035

Packs of	Model No. DK
1	7705.035





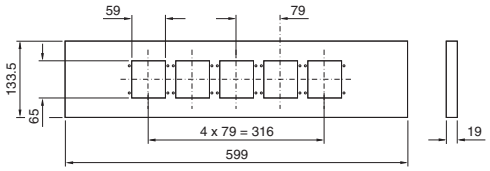
Gland plate

for PG segments, for EL
Folded gland plate with foamed-in seal and cut-outs for PG segments.

Material:
1.5 mm sheet steel

Colour:
RAL 7035

Packs of	Model No. EL
1	**2235.005**





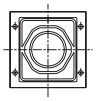
PG segments

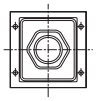
for EL
Plastic segments with pre-punched, knock-out holes for cable glands. Suitable for retrospective screw-fastening to gland plate EL 2235.005.

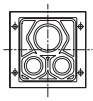
Material:
ABS, self-extinguishing to UL 94-V0

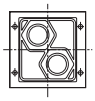
Colour:
RAL 7035

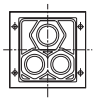
PG sizes	Packs of	Model No. EL
29	5	**2235.015**
21	5	**2235.025**
21/11	5	**2235.035**
16	5	**2235.045**
16/13.5	5	**2235.055**
13.5	5	**2235.065**
11	5	**2235.075**
neutral	5	**2235.085**

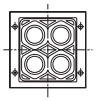
EL 2235.015 

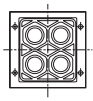
EL 2235.025 

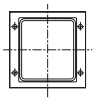
EL 2235.035 

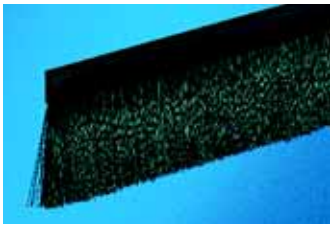
EL 2235.045 

EL 2235.055 

EL 2235.065 

EL 2235.075 

EL 2235.085 



Brush strip

For individual installation of enclosure panels, gland plates and panels. Cut-outs for cable routing at any given positions in the side panel, rear panel, doors, roof and gland plate may be finished off attractively by simply attaching the brush strip.

Packs of	Model No. DK
2 m	**7072.200**

Technical specifications:
Bristle length: 30 mm
Plastic sheathing: 18 mm
Surface available for top-mounting: 10 mm
Maximum cut-out height: 38 mm
For metal thickness: 1.5 – 2 mm



Brush strip, super-airtight

For individual installation of enclosure panels, gland plates and panels. Cut-outs for cable routing at any position in the side panel, rear panel, doors, roof and base plate.
These special brush strips may be used to create airtight entries for cable sections and conductors. The brush strips arranged in an offset configuration ensure good sealing from the routed cables even with large quantities of cables. In this way, unwanted system losses may be reduced to a minimum.

Packs of	Model No. DK
2 x 1 m	**7825.375**

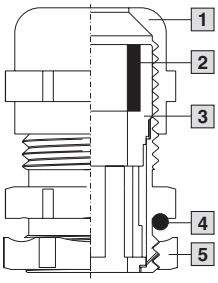
Material:
Brush strip: Plastic, UL 94-V0

Supply includes:
1 brush strip each,
1 m in length, right-hand and left-hand version.

Technical specifications:
For metal thickness: 1.5 – 2 mm
Bristle length: 51 mm
Plastic sheathing: 14 mm
Surface available for top-mounting: 11.5 mm
Maximum cut-out width: 88 – 90 mm

Cable gland





Cable gland, brass

Benefits:
- Because the gland and lock nut are sold together in a single pack, this saves additional ordering and storage.
- Clamping membranes for even tightening and strain relief which protects the cables.
- Insulation via plastic insert.
- Optimum seal on the connection thread, thanks to O-ring.
- The lock nut cuts automatically into the spray-finish, thereby creating a conductive connection.

1 Top-hat nut
2 Neoprene seal
3 Plastic insert
4 O-ring
5 Lock nut

Possible alternative:

Cable gland Hygienic Design,
see page 1056.

Size	Cable diameter mm	Packs of	Model No. SZ
M12 x 1.5	3 – 6.5	15	**2411.800**
M16 x 1.5	4.5 – 10	15	**2411.810**
M20 x 1.5	6 – 12	10	**2411.820**
M25 x 1.5	11 – 17	10	**2411.830**
M32 x 1.5	15 – 21	5	**2411.840**
M40 x 1.5	19 – 28	4	**2411.850**
M50 x 1.5	27 – 38	2	**2411.860**
M63 x 1.5	34 – 44	1	**2411.870**

Material:
Nickel-plated brass, neoprene seal

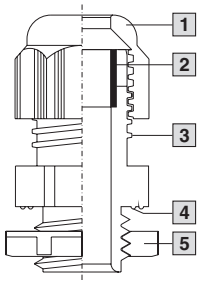
Protection category:
IP 68 (5 bar, 30 min.) to EN 60 529/09.2000
IP 69K to DIN 40 050-9

Approval:
VDE tested to EN 50 262

Accessories:

Sealing bungs,
see page 1055.
Multi-seal inserts,
see page 1055.





Cable gland, polyamide

Benefits:
- Because the gland and lock nut are sold together in a single pack, this saves additional ordering and storage.
- Clamping membranes for even tightening and strain relief which protects the cables.
- Spray-moulded sealing lip ensures an optimum seal against the enclosure.
- Trapezoid thread for secure screw-fastening of the cap nut.

1 Cap nut
2 Neoprene seal
3 Trapezoid thread
4 Sealing lip
5 Lock nut

Size	Cable diameter mm	Packs of	Model No. SZ
M12 x 1.5	3 – 6.5	50	**2411.600**
M16 x 1.5	4.5 – 10	50	**2411.610**
M20 x 1.5	6 – 12	50	**2411.620**
M25 x 1.5	11 – 17	25	**2411.630**
M32 x 1.5	15 – 21	15	**2411.640**
M40 x 1.5	19 – 28	5	**2411.650**
M50 x 1.5	27 – 38	5	**2411.660**
M63 x 1.5	34 – 44	3	**2411.670**

Material:
Polyamide 6, neoprene seal

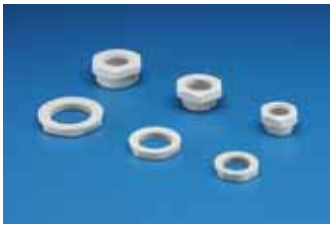
Colour:
RAL 7035

Protection category:
IP 68 (5 bar, 30 min.) to EN 60 529/09.2000
IP 69K to DIN 40 050-9 (except SZ 2411.660 and SZ 2411.670)

Approval:
VDE-tested to EN 50 262
CSA for USA and Canada

Accessories:

Polyamide reducers,
see page 1055.
Sealing bungs,
see page 1055.
Multi-seal inserts,
see page 1055.





Polyamide reducers

for polyamide cable glands
For adapting metric cable glands to larger diameter holes or threads.

Advantage:
Reducer and locking nut are sold together in a single pack; this saves additional ordering and storage.

Material:
Polyamide 6 GF30

Colour:
RAL 7035

Note:
Polyamide cable gland,
see page 1054.

Thread

Exterior	Inside	Packs of	Model No. SZ
M16 x 1.5	M12 x 1.5	50	**2411.550**
M20 x 1.5	M12 x 1.5	50	**2411.551**
M20 x 1.5	M16 x 1.5	50	**2411.552**
M25 x 1.5	M16 x 1.5	50	**2411.553**
M25 x 1.5	M20 x 1.5	50	**2411.554**
M32 x 1.5	M16 x 1.5	50	**2411.555**
M32 x 1.5	M20 x 1.5	50	**2411.556**
M32 x 1.5	M25 x 1.5	50	**2411.557**
M40 x 1.5	M25 x 1.5	25	**2411.558**
M40 x 1.5	M32 x 1.5	25	**2411.559**
M50 x 1.5	M40 x 1.5	5	**2411.560**
M63 x 1.5	M40 x 1.5	5	**2411.561**
M63 x 1.5	M50 x 1.5	5	**2411.562**



Sealing bung

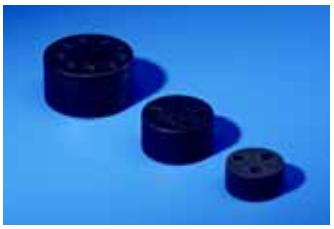
for cable glands M20 x 1.5

For use in all situations where preinstalled cable glands M20 x 1.5 must be kept free for future installations but properly sealed. Simply loosen the cap nut, mount the sealing bung, and retighten.

Packs of	Model No. SZ
25	**2411.532**

Material:
Polyamide 6

Colour:
RAL 7035



Multi-seal inserts

For the secure entry of several individual cables into a single cable gland.

Material:
Neoprene

Size	Cable diameter mm	Number of cables	Packs of	Model No. SZ
M20	3	4	25	**2411.500**
	4	3	25	**2411.501**
	5	3	25	**2411.502**
	6	2	25	**2411.503**
M25	3	7	25	**2411.504**
	4	6	25	**2411.505**
	5	4	25	**2411.506**
	6	3	25	**2411.507**
M32	3	9	25	**2411.508**
	4	9	25	**2411.509**
	5	6	25	**2411.510**
	6	6	25	**2411.511**



Stoppers

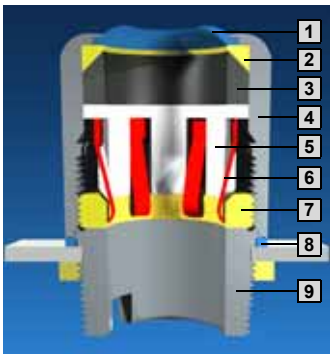
For the reliable sealing of unused cable entries. Simply insert into the multi-seal inserts instead of a cable, and clamp via the cable gland.
Length 14 mm.

Material:
Polyamide 6

Diameter mm	Packs of	Model No. SZ
3	25	**2411.520**
4	25	**2411.521**
5	25	**2411.522**
6	25	**2411.523**

Cable gland





1 External cable seal
2 Compression ring
3 Internal cable seal
4 Cap nut
5 Gripper jaws
6 Shield spring (EMC version only)
7 Clamping ring
8 Enclosure seal
9 Base with locator for assembly tool

Stainless steel cable gland, Hygienic Design

Suitable for use in the following areas
- Manufacturing and packaging of foodstuffs etc.
- Clean room technology (e.g. pharmaceuticals)
- Biotechnology
- Chemical industry

Benefits:
- Smooth, solid exterior surfaces effectively prevent the depositing of harmful micro-organisms. All threads are beneath the cap nut.
- Much easier, therefore cheaper, cleaning compared with conventional stainless steel cable glands.
- Reliable strain relief, thanks to duplicate cable attachment.
- Resistant to high-pressure cleaning (protection category IP 69K).

Material:
Cap nut: Stainless steel 1.4305 (AISI 303)
External seals: Made from FDA-approved material

Protection category:
IP 68 (5 bar, 30 min.) to EN 60 529/09.2000
IP 69K to DIN 40 050-9

Standard version

Size	Cable diameter mm	Packs of	Model No. HD
M12 x 1.5	3 – 6.5	5	**2410.000**
M16 x 1.5	4.5 – 10	5	**2410.010**
M20 x 1.5	6 – 12	5	**2410.020**
M25 x 1.5	11 – 17	5	**2410.030**

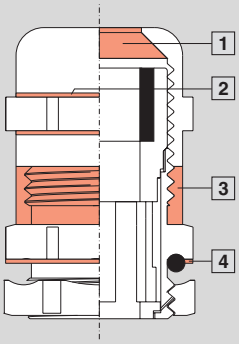
EMC version

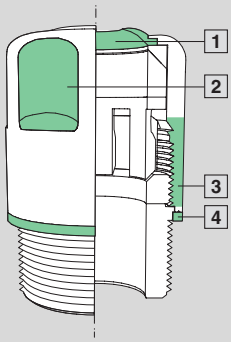
Size	Cable diameter mm	Packs of	Model No. HD
M16 x 1.5	4.5 – 10	5	**2410.110**
M20 x 1.5	6 – 12	5	**2410.120**
M25 x 1.5	11 – 17	5	**2410.130**

Why hygiene-compatible cable glands?

Critical points with conventional solutions

1 Cable entry in front of seal
2 No minimum radii on the hexagon
3 External thread
4 Gap caused by O-ring on the enclosure surface





Hygiene-compatible design features

1 Seal directly at the cable entry
2 Compliance with minimum radii on the hexagon
3 No external thread
4 Flush termination between the cap nut and the enclosure



Stainless steel lock nut

To fit the stainless steel Hygienic Design cable glands.

Material:
Stainless steel 1.4305 (AISI 303)

Size	Packs of	Model No. HD
M12 x 1.5	10	**2410.200**
M16 x 1.5	10	**2410.210**
M20 x 1.5	10	**2410.220**
M25 x 1.5	10	**2410.230**



Assembly tool

for cable gland, stainless steel Hygienic Design

For attaching a stainless steel Hygienic Design cable gland to an external thread or via locking nuts. This can be achieved either from the inside or from the outside using an Allen key.

Supply includes:
1 set =
adaptor for sizes from M12 – M25.

Packs of	Model No. HD
1 set	**2410.290**



Connector gland

for connector cut-outs (24-pole)
For the entry of 2 pre-assembled cables in the connector cut-out, without dismantling the connector.
For cable diameter from 8 – 36 mm.

Packs of	Model No. SZ
1 set	**2400.000**

Material:
Plastic
Clamp terminals:
Sheet steel, zinc-plated, passivated

Supply includes:
1 set =
2 half-shells, including seals,
with fastening clamp.



Connector gland

For pre-assembled cables with connectors.
- For material thickness of up to 4 mm.
- Strain relief of the pre-assembled cables can be achieved with cable ties.

Material:
Plastic

Colour:
RAL 9005

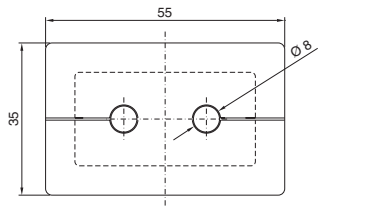
Protection category:
IP 65 subject to correct mounting.

Supply includes:
Assembly parts.

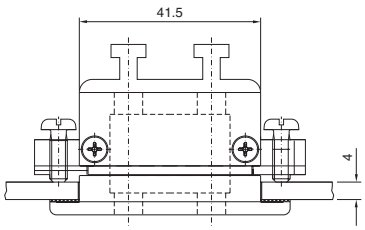
To fit	Packs of	Model No. SZ
2 cables Ø 6 to Ø 8 mm	1	**2400.300**
3 cables Ø 4 to Ø 6 mm	5	**2400.500**

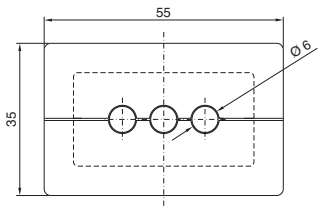
German patent no. 199 08 657

Rittal service:
The cut-outs may be made by our service centres.

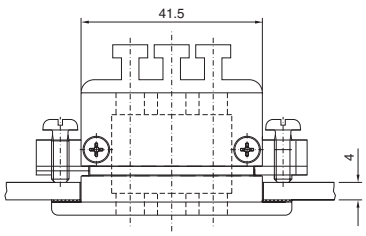


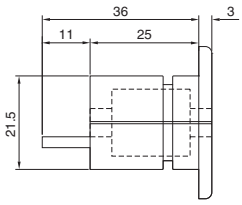
SZ 2400.300



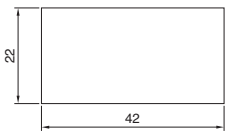


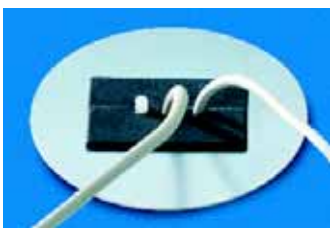
SZ 2400.500





Mounting cut-out





Adaptor plate

for connector entry
To fit
- IW worktop, prepared for turntable or enclosure attachment
- Operating housing with mounting cut-out CPL, round
- Surfaces

With 4 studs M6 x 45 mm.

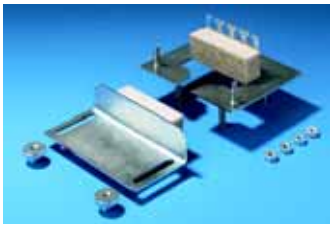
Material:
Sheet steel, zinc-plated, passivated.

Supply includes:
Seal and assembly parts.

Packs of	Model No. IW
1	**6902.660**

Also required:
Connector grommet
SZ 2400.300 or SZ 2400.500,
see page 1057.

Cable gland





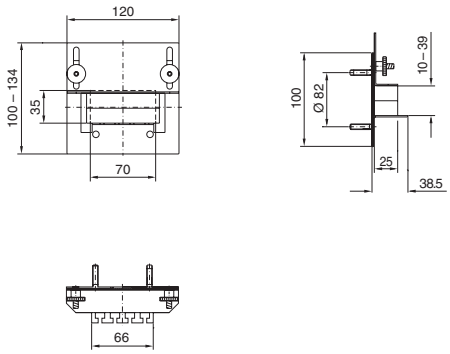
Cable gland module

CP-L, Ø 130 mm
Use of the support arm cut-out CP-L, round, with enclosures mounted on the wall, for sealed cable entry. May also be mounted retrospectively with the cables already inserted.
Fitted with T-heads for cable clamping.
Particularly well-suited to cables with identical cross-sections.

Material:
Sheet steel, zinc-plated, passivated.

Supply includes:
Assembly parts.

Packs of	Model No. CP
1	6052.500







Double-membrane gland

for wall thicknesses from 1.5 to 4.5 mm
A high protection category can be achieved with cable entry, thanks to the double seal.

Material:
Plastic to UL 94-HB

Protection category:
IP 66 with careful cable entry.

For hole	Sealing range mm	Packs of	Model No. SZ
M16	5 – 9	50	2898.160
M20	7 – 12	50	2898.200
M25	9 – 16	50	2898.250
M32	14 – 21	25	2898.320





Stepped collar

for wall thicknesses from 1.5 to 4.5 mm
For cable entry, simply cut off at the required level to match the cable diameter.

Material:
Plastic to UL 94-HB

Protection category:
IP 54 with careful cable entry.

For hole	Sealing range mm	Packs of	Model No. SZ
M20	5 – 16	100	2899.200
M25	5 – 21	50	2899.250
M32	13 – 26.5	25	2899.320
M40	13 – 34	20	2899.400



Edge protector

For covering sharp edges of cut-outs. Provides protection from injuries and prevents damage to inserted cables. The edge protector is suitable for material thicknesses of approx. 1.0 – 2.0 mm, and may be cut to length individually.

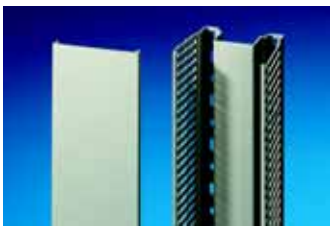
Material:
Plastic PVC

Colour:
Black

Packs of	Model No. DK
10 m	7072.100









Cable duct

for vertical TS section

For direct mounting on the vertical enclosure section.

Width 50 mm
For assembly on a vertical enclosure section in the area of the side panel.

Width 100 mm
For assembly on two bayed enclosure profiles in the baying area. Baying brackets and baying clamps which have already been fitted can be covered over with the cable duct.

The nominal break points of the members are also oriented towards combination with the cable ducts for mounting plates; in addition a further nominal break at the level of the mounting plate enables direct insertion into the cable duct.

The cable duct fastening points are co-ordinated with the TS system hole pattern; elaborate drilling, as in the case of DIN ducts, is dispensed with.

Width mm	Height mm	Packs of	Model No. TS
50	1600	8 sets	**8800.570**
50	1800	8 sets	**8800.520**
100	1600	4 sets	**8800.540**
100	1800	4 sets	**8800.510**

Technical specifications:
Depth: 80 mm
Length:
- 1600 mm (for enclosure height 1800 mm)
- 1800 mm (for enclosure height 2000 mm)

can be shortened for other enclosure sizes.
Member width: 5.5 mm
Slot width: 4.5 mm

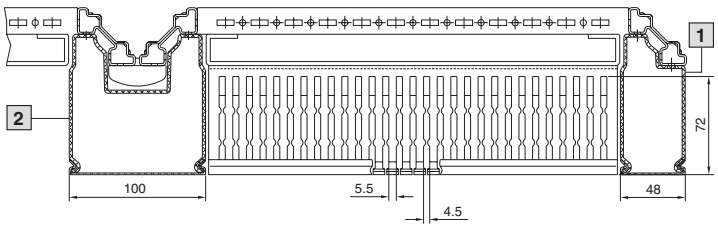
Material:
Hard PVC, flame-resistant,
self-extinguishing,
temperature-resistant to +60°C

Colour:
Similar to RAL 7030

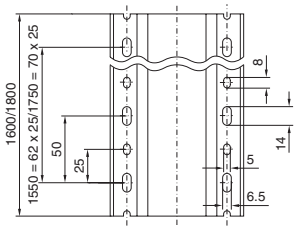
Supply includes:
1 set =
1 cable duct with cover.

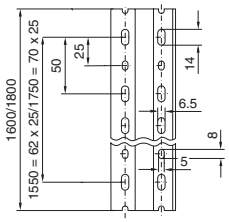
Accessories:

Plastic rivet for attachment,
see page 1060.
Aluminium rivet for attachment,
see page 1061.



1 TS 8800.570/TS 8800.520
2 TS 8800.540/TS 8800.510





Cable routing





Cable duct

for mounting plate

- To fit the cable ducts for vertical TS sections. If the TS mounting plate is installed in the rear-most position, the horizontally mounted cable ducts are flush with the vertical ones.
- For external mounting on surfaces.

Technical specifications:
Depth 80 mm
Length:
- Sized to the width of the TS, ES and TP mounting plates
- 2000 mm

Bar width: 5.5 mm
Slot width: 4.5 mm

Material:
Hard PVC, flame-resistant, self-extinguishing, temperature-resistant to +60°C

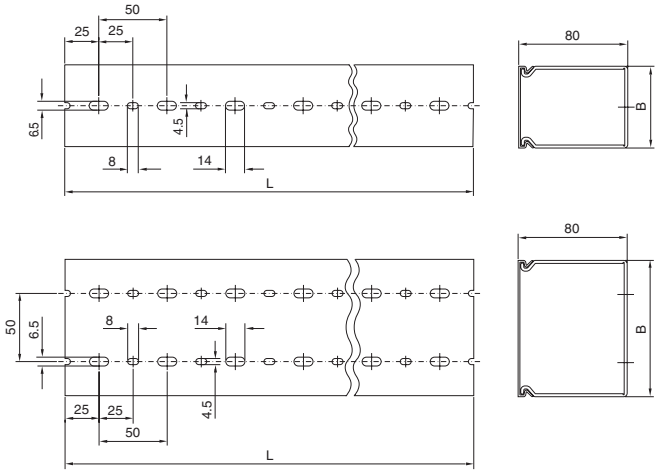
Colour:
Similar to RAL 7030

Supply includes:
1 set =
1 cable duct with cover.

Accessories:

Plastic rivet for attachment,
see page 1060.

For enclosure width mm		600	800	1000	1200	Fixed length 2000 mm
Length (L) mm		499	699	899	1099	
Width mm	Packs of	Model No. TS				
30	24 sets	**8800.730**	**8800.735**	**8800.740**	**8800.745**	**8800.750**
40	20 sets	**8800.731**	**8800.736**	**8800.741**	**8800.746**	**8800.751**
60	18 sets	**8800.732**	**8800.737**	**8800.742**	**8800.747**	**8800.752**
80	12 sets	**8800.733**	**8800.738**	**8800.743**	**8800.748**	**8800.753**
100	12 sets	**8800.734**	**8800.739**	**8800.744**	**8800.749**	**8800.754**





Plastic rivet

Easily mounted with a standard commercially available blind rivet tool.
For fastening the cable ducts in the
- TS system hole pattern
- Drilled hole Ø 4.0 mm

Packs of	Model No. TS
100	**8800.530**



Aluminium rivet

For secure assembly of cable ducts in conformity with the relevant standards. Also suitable for mounting support rails and punched rails. Simple mounting using hand-held rivet tool TS 8800.532.

To fit:
- TS system punchings
- Drilled hole Ø 4.5 mm.

Packs of	Model No. TS
100	**8800.531**

Accessories:

Cable ducts for vertical TS section,
see page 1059.
Cable ducts for mounting plate,
see page 1060.

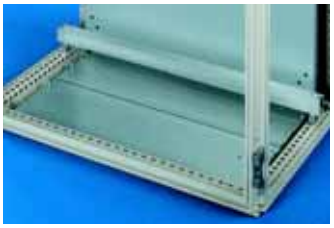


Hand-held rivet tool

for aluminium rivets

Reaches even poorly accessible rivet points in narrow or deep cable trunking. In conformity with the standard, the aluminium rivets are made without burrs, sharp edges or rough surfaces.

Packs of	Model No. TS
1	**8800.532**



Cable clamp rails

Right angle section
for TS, ES, PC, AP universal console, base/plinths

For strain relief with cable entry. Depth-variable mounting on a 25 mm pitch pattern on the horizontal enclosure section or in side base/plinth trim panels with assembly bolts.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Enclosure width mm	Length mm	Packs of	Model No. PS
400	385	2	**4193.000**
600	585	2	**4191.000**
800	785	2	**4192.000**
850	835	2	**4195.000**
1000	985	2	**4336.000**
1200	1185	2	**4196.000**
1600	1585	2	**4338.000**
1800	1785	2	**4339.000**

(may also be used for AP and AE base/plinths)

Accessories:

Assembly bolts for base/plinth,
see page 896.



Cable clamps

for cable clamp rails

For fastening the cables to the cable clamp rails.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Plastic insert.



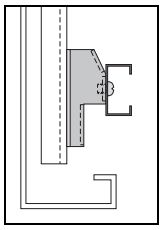
For cable diameter mm	Packs of	Model No. SZ
6 – 12	25	**2350.000**
12 – 16	25	**2351.000**
14 – 18	25	**2352.000**
18 – 22	25	**2353.000**
22 – 26	25	**2354.000**
26 – 30	25	**2355.000**
30 – 34	25	**2356.000**
34 – 38	25	**2357.000**
38 – 42	25	**2358.000**
42 – 46	25	**2359.000**
46 – 50	25	**2360.000**

Possible alternative:

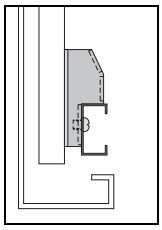
Rail for EMC shielding bracket and strain relief,
see page 1031.

Cable routing

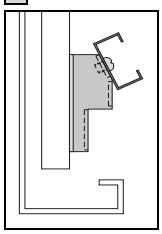




1



2



3

Cable clamp rails

C section
for TS, CM, TP
For strain relief with cable entry. The length of the cable clamp rail is tailored to the width of the mounting plate. The mounting bracket included with the supply supports three different installation situations on the mounting plate:

1 straight, at a distance of 23 mm from the mounting plate

2 straight, at a distance of 10 mm from the mounting plate

3 tilted, towards the mounting plate

Material:
Sheet steel

Surface finish:
Zinc-plated, passivated

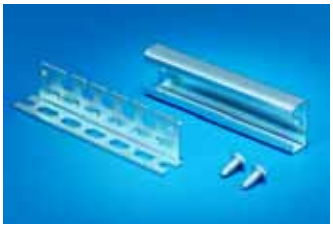
Supply includes:
Two mounting brackets and assembly screws.

For enclosure width mm	Length mm	Model No. CM
600	499	**5001.080**
800	699	**5001.081**
1000	899	**5001.082**
1200	1099	**5001.083**
1600	1499	**5001.084**[1)]

[1)] Including 3 mounting brackets.

Accessories:

Cable clamps for C rails,
see page 1064.





Cable clamping bracket

For installing in the operating housing with mounting cut-out CP-L and CP-XL.
Cable clamping optionally via:
- Cable clamps
  or
- Cable tie SZ 2597.000
- Commercially available cable ties.

Bracket height = 25 mm with fitted C rail 40 mm.

Material:
Sheet steel, zinc-plated, passivated.

Supply includes:
C rail
and screws.

Packs of	Model No. CP
1 set	**6052.000**

Accessories:

Cable clamps,
see page 1064.
Cable ties,
see page 1066.



C rails

may be found under rail systems
from page 999.



Cable clamp rails

see page 1068.





Combination rails

for QuickBox
For cable clamping and routing.
Cables and leads can be fastened to the hammer heads top and bottom with cable ties. In addition, the C section of the combination rail will accommodate cable clamps with inserts. For producing a contacting connection, the anodised coating of the rail must be broken.

Material:
Aluminium, anodised

Supply includes:
Assembly parts.

For enclosure depth mm	Length mm	Packs of	Model No. QB
300/400	200	6	**7502.302**
500/600	400	6	**7502.304**

For enclosure width mm	Length mm	Packs of	Model No. QB
600	400	6	**7502.304**

Accessories:

Cable ties,
see page 1066.
Cable clamps,
see page 1064.





Cascade cable routing

for frame attachment
for DK-TS, FR(i)
Professional cable routing system for cascading of cables in several levels of the enclosure depth. The cables are attached to the C rail by means of clamps. Suitable for installation on the inner enclosure level.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
6 mounting brackets and 3 C rails, including assembly parts.

For enclosure width mm	Packs of	Model No. DK
600	3	**7831.570**
800	3	**7831.571**

Accessories:

TS punched section with mounting flange for the inner mounting level,
see page 993.
PS punched section without mounting flange for vertical mounting in the enclosure frame,
see page 998.
Cable clamps,
see page 1064.

Cable routing





Cable clamps

for C rails
For attaching the cables to the C rails.

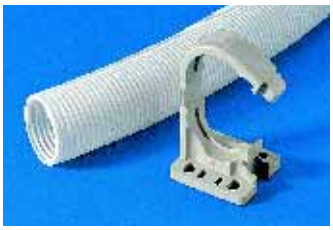
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Plastic insert.

For cable diameter mm	Packs of	Model No. DK
6 – 14	25	**7077.000**
12 – 18	25	**7078.000**
18 – 22	25	**7097.000**
22 – 26	25	**7097.220**
26 – 30	25	**7097.260**
30 – 34	25	**7097.300**
34 – 38	25	**7097.340**
38 – 42	25	**7098.000**
42 – 56	25	**7098.100**
56 – 64	25	**7099.000**

Accessories:

C rails,
see from page 999.





Cable conduit and cable conduit holder

For secure cable routing e.g. from the enclosure or mounting plate to the door.
Attachment facility for standard commercially available cable ties is provided on the cable conduit holder, so that cables may be attached upon entry to/exit from the cable conduit.

Material:
Cable conduit: Polyethylene
Cable conduit holder: Polyamide

Cable conduit

Internal Ø mm	Packs of	Model No. SZ
16	25 m	**2595.000**
29	25 m	**2589.000**
36	25 m	**2596.000**
48	25 m	**2590.000**

Cable conduit holder

For cable conduit Ø mm	Packs of	Model No. SZ
16	20	**2593.000**[1)]
29	20	**2591.000**[1)]
36	20	**2594.000**
48	20	**2592.000**

[1)] Installation in compact enclosures AE with universal bracket SZ 2373.000,
see page 1009.



Cable conduit

The stable, robust corrugated tubes ensure secure cable routing between the machine and control console or enclosure.

The split version offers the following benefits:
- Problem-free retrospective installation
- Simple insertion of pre-assembled cables
- Faster insertion of cables, particularly with long sections

Material:
Polyamide, self-extinguishing to UL 94

Nominal width	Ø interior in mm	Design	Model No. SZ
50	46	Solid	**2589.140**
50	43	Split	**2589.150**
29	27	Solid	**2589.100**

Packs of 25 m



1



2



3



4

Connection accessories

for cable conduit
Versions with a nominal width of 29 mm are easily inserted into a through-hole. There is no need for an internal thread or lock nut.

Material:
Polyamide, self-extinguishing to UL 94

Supply includes:
SZ 2589.160/SZ 2589.170:
2 connection glands,
2 hex nuts.

SZ 2589.110/SZ 2589.120:
2 plug-in connections.

Nominal width	Design	Straight	Bracket	Mounting hole Ø in mm	Packs of	Model No. SZ
1 50	Screwed cable gland	■		51	2	**2589.160**
2 50	Screwed cable gland		■	51	2	**2589.170**
3 29	Plug-in connection	■		37	2	**2589.110**
4 29	Plug-in connection		■	37	2	**2589.120**



Holder

for cable conduit

Material:
Polyamide, self-extinguishing to UL 94

Supply includes:
Support

Note:
Attachment using screws M6 or alternatively screws Ø 5.5 mm, see page 1011.

Nominal width	Packs of	Model No. SZ
50	10	**2589.180**
29	10	**2589.130**



Mounting on pedestal CP 6141.100, see page 290



Mounting on Compact Panel CP 6340.000 – .420, see page 231

Cable routing





Cable fastening

For professional, secure fastening of cables and conduits.

For fastening:
- Slide into the mounting rail 23 x 23 mm,
- screw-fasten onto the round punchings of the enclosures, as well as all punched rails and punched sections.

As the fastening attachments are bayable, several fastening attachments, even those of different sizes, can be assembled using just 2 screws.

Material:
Polyamide

For cable diameter from – to mm	Packs of	Model No. PS
6 – 9	50	**4319.090**
9 – 12	50	**4319.120**
12 – 16	50	**4319.160**
16 – 20	50	**4319.200**

Also required:

Posidrive raised countersunk screw M5 x 12 mm, SZ 2488.000, for screw-fastening to the round system punchings,
see page 1011.

Accessories:

Punched rail 23 x 23 mm,
see page 998.



Cable ties

The super-fast solution for fastening cables to the enclosure profile or mounting system parts. Simply clip into the round system punchings.

Length mm	Packs of	Model No. SZ
150	100	**2597.000**



Nylon loop

With the nylon loop, secured cables are easily released, allowing individual cables to be added or removed. Ideal for sensitive data cables (fibre-optic/Cu), as it avoids indentations on the cable sheathing.
In addition, the nylon loop may be screw-fastened to the round system punchings or attached using a quick-release fastener.

Colour:
Black

Supply includes:
Nylon loop and quick-release fastener.

Width mm	Length mm	Max. cable diameter mm	Packs of	Model No. DK
20	130	30	10	**7072.220**
20	200	50	10	**7072.230**
20	300	90	10	**7072.240**

Also required:

Screw SZ 2486.500 for screw-fastening to the round system punchings,
see page 1011.



Nylon loop

For tidy cable routing.
Supplied on a reel for cutting to the required length.

Unlike cable ties,
- protects the cable sheathing
- easily reopened
- reusable

Length mm	Width mm	Packs of	Model No. IN
5000	16	1	**2203.400**



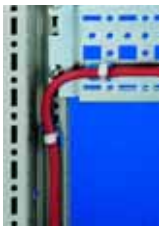

Nylon loop cable holder

self-adhesive
Suitable for universal use in all network enclosures and server racks, wall-mounted enclosures, mounting plates and gland plates.

Material:
Woven polyamide 6.6

Colour:
Black

Size length x width mm	Packs of	Model No. DK
70 x 16	10	**7111.350**


Cable tie fastener

for round system punchings and VIP 6000

For all commercially available cable ties up to a tie width of 4.8 mm.

Simply insert into the round system punchings or into the screw channel, and secure by hammering down the split rivet.

Material:
Polyamide 6.6

Packs of	Model No. CP
100	**6059.000**




Cable tie fastener

for Comfort Panel, Optipanel and Compact Panel

For secure cable routing of all standard commercially available cable ties up to a tie width of 4.0 mm.

Secured in the T channel by rotating through 45°.

Material:
Polyamide 6.6

Packs of	Model No. CP
100	**6059.500**





Snap-in cable routing

for clipping into the system punchings.
Cable routing suitable for universal use, for toolless, fast assembly, in two variants:

For locking:
- User-friendly opening for cable management via locating points
- For cable diameters 14 – 19 mm
- For system punchings 6.2 mm

For twisting:
- User-friendly opening for cable management
- For cable diameters 10.2 – 12.7 mm
- For system punchings 4.7 mm

Material:
Polyamide 6.6, self-extinguishing to UL 94 V2

Colour:
Natural

Design	Packs of	Model No. DK
For locking for system punchings 6.2 mm	10	**7111.300**
For twisting for system punchings 4.7 mm	10	**7111.310**

Cable routing



Cable clamp rails

for TS and 482.6 mm (19″) mounting frames
The cables may be attached to the cable clamp rails with cable ties or nylon tapes. The cable clamp rails are simply located onto the frame section and may additionally be secured with a screw.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Accessories:

Cable ties, see page 1066.
Nylon loop, see page 1066.

For the inner mounting level

For enclosures		Packs of	Model No. DK
Width mm	Depth mm		
600	600	4	**7828.061**
800	800	4	**7828.081**
900	900	4	**7828.091**
1000	1000	4	**7828.101**
1200	1200	4	**7828.121**

For the outer mounting level

For enclosures		Packs of	Model No. DK
Width mm	Depth mm		
600	600	4	**7828.062**
800	800	4	**7828.082**
900	900	4	**7828.092**
1000	1000	4	**7828.102**
1200	1200	4	**7828.122**





Cable clamp rails, depth-variable

for TS and 482.6 mm (19″) mounting frames
For strain relief of the routed cables. The cables may be attached to the cable clamp rails with cable ties or nylon tapes.
The cable clamp rails may be located directly on a 482.6 mm (19″) mounting frame horizontally at the rear or in the enclosure depth between two mounting frames. An additional screw-fastening secures the unit.
The depth variability of the rails facilitates flexible adaptation of their length to the existing attachment distance between the two 482.6 mm (19″) mounting frames.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Distance between 19″ levels mm	Packs of	Model No. DK
325 – 575	4	**7858.160**
500 – 895	4	**7858.162**

Accessories:

Cable ties,
see page 1066.
Nylon loop,
see page 1066.



1



2

Cable clamp, variable

for enclosure-independent mounting
Variable attachment of 450 to 800 mm for flexible cable clamping in two variants.

Supports attachment to punched sections with and without mounting flanges and direct screw-fastening onto mounting plates and other flat surfaces.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

1 C rail

2 T-head rail

Design	Packs of	Model No. DK
C rail	1	**7016.140**
T-head rail	1	**7016.150**

Shunting ring, plastic

For flexible cable routing, in two materials and three size variants.
Option of mounting to the 482.6 mm (19″) enclosure and swing frame profile of the data distributor, to the system strips of FM distribution enclosures, to all patch panels, to the Rittal Data Rack and all components on a 25 mm DIN pitch pattern.

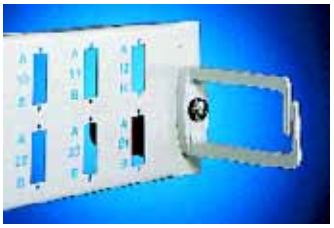


Polyamide version:
Infinitely variable mounting thanks to a longitudinal slot. The shunting ring DK 7218.035 may also be used on 1 U patch panels.

Colour:
RAL 7035

Material	Dimensions mm	Packs of	Model No. DK
Polyamide	70 x 44	10	**7218.035[1)]**
Polyamide	105 x 70	10	**7219.035[1)]**
Polycarbonate	95 x 50	10	**7228.035**

[1)] German patent no. 44 13 124



Polycarbonate version:
Variable mounting. With 45° attachment the cable shunting ring may be attached to a 1 U panel.

Colour:
RAL 7035

Possible alternative:

Cable management panel, 1 U,
see page 1076.

Cable shunting ring



For flexible, system-compatible cable routing at the side of the 482.6 mm (19″) mounting frame.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Dimensions mm	Packs of	Model No. DK
125 x 85	10	**7111.900**
125 x 65	10	**7111.000**
85 x 43	10	**7112.000**

Shunting ring



To accommodate large quantities of cables. Shunting ring for side attachment to 482.6 mm (19″) sections and mounting frames in 800 mm wide network enclosures. The ring is attached asymmetrically providing approx. 110 mm free space in front of the 482.6 mm (19″) level. In this way, even large quantities of cables can be effectively managed.

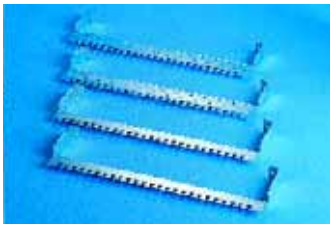
Material:
Round steel, zinc-plated, passivated

Supply includes:
Assembly parts.



Dimensions mm	Packs of	Model No. DK
330 x 90/70	4	**7220.600**

Cable routing



Cable clamp straps

for patch panels
To provide strain relief of incoming or outgoing data cables. Optionally available with spring brackets for accommodating and contacting the cable screen. Connection to the patch panel is by means of bolts on the panel itself.

Material:
Sheet steel 2 mm, zinc-plated, passivated

Supply includes:
Assembly parts.

Design	Model No. DK
Without cable screen contact	**7610.000**
With spring clips for contacting the cable screen	**7611.000**



System supports for cable routes

for TS, FR(i)
The depth-variable support system may be attached to all 800 – 1200 mm deep enclosures and all FR(i) enclosures with external screw-fastening of the roof plate. The integral system punchings, for screws or captive nuts, support the attachment of most common cable route systems.

Material:
Sheet steel

Surface finish:
Powder-coated, RAL 7035

Packs of	Model No. DK
2	**7831.472**

Accessories:

Metal multi-tooth screws
5.5 x 13 mm, SZ 2486.500,
see page 1011.
Captive nuts M6, TS 8800.340,
see page 1010.



Cable route on the mounting frame

The mounting kit facilitates rear, side attachment of a cable tray to mounting frames inside enclosure systems TE 7000, TS and FR(i). This allows the integration of vertical cable management independently of the enclosure frame.

Material:
Sheet steel

Packs of	Model No. DK
1 set	**7000.685**

Surface finish:
Zinc-plated, passivated

Supply includes:
1 cable route 100 mm wide, 1700 mm high, including mounting kit.



Fibre-optic shunting rings

The inner body is grooved, and fibre-optic shunting or jumper cables can be inserted into these. A rubber ring holds different fibre-optic cables with diameters of up to 4.5 mm. Strain relief and bending radius are ensured.
Length: 120 mm.

Material:
Dual compound plastic

Colour:
Outside: RAL 7035
Inner body: Black

Supply includes:
2 shunting rings,
2 rubber rings,
baying kit,
including assembly parts.

Assembly:
The supplied mounting brackets are suitable for universal use; the fibre-optic cables can be routed to the patch panel in all directions in various mounting positions:



1



2



3



4

1 At the side, directly on the patch panel

2 In front of the patch panel

3 At the side next to the patch panel

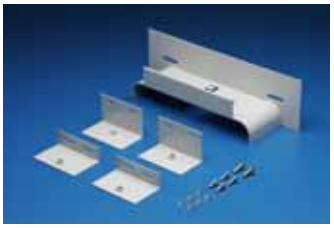
4 Behind the patch panel

Packs of	Model No. DK
2	**7116.500**

German patent no. 196 48 489
German patent no. 196 48 490

Possible alternative:

Fibre-optic cable management panel, 1 U,
see page 1078.



Cable route

for TS
For cable routing between two 482.6 mm (19″) mounting angles in bayed enclosure suites (enclosure width 800 mm, mounting angles fitted centrally). Suitable for L-shaped and cranked mounting angles.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.



Packs of	Model No. DK
1	**7827.050**



Surplus cable holder

For fastening at the rear area of the enclosure, or at the side of network enclosures. The surplus cable holder can be attached to all depth stays or to punched sections and rails with a 25 mm pitch pattern – mounting dimension 150 mm. Units may also be fastened to each other.

Material:
Sheet steel

Colour:
RAL 7035



W x H x D mm	Model No. DK
280 x 151 x 75	**7220.500**

Cable routing



Cable management duct

for TS

For side cable routing. The cable management duct is attached to 482.6 mm (19″) mounting angles at the sides of the 800 mm wide TS network enclosure. For this purpose, the mounting angles must be mounted on installation brackets. Thanks to the removable front trim panel equipped with quick-release fasteners, cables can also be retrospectively removed or added.

Dimensions:
W x D: 95 x 94 mm

Material:
Sheet steel, spray-finished

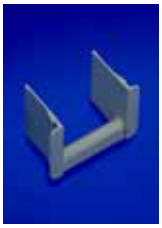
Colour:
RAL 7035

Supply includes:
Assembly parts.

U	For enclosure height mm	Model No. DK
31	1600	**7827.333**
36	1800	**7827.338**
40	2000	**7827.342**
45	2200	**7827.347**

Also required:

Installation brackets TS for mounting angles, see page 1096.





Cable routing components

for FR (i)

For snap-fastening into the vertical frame channel.

Type 1:
With horizontal bar for attaching the cables in the frame channel.





Type 2:
Additionally with semi-circular bead for kink-free cable entry and exit.

Type	Packs of	Model No. DK
1	10	**7218.100**
2	10	**7218.105**

Material:
Polycarbonate

Colour:
RAL 7035



Extension kit

horizontal cable management
for FR(i)

Allows the enclosure frame to be extended in the depth by approximately 100 mm. The space thereby acquired may be used for horizontal cable management between bayed enclosures.

Extension kit

Packs of	Model No. FR
1 set	**7856.740**

Note:
Combination of the extension kit with divided doors is not possible.



Material:
Sheet steel, zinc-plated, passivated

Supply includes:
1 set =
8 spacer supports, including assembly parts.

Trim panels

Enclosure height mm	Packs of	Model No. FR
2000	2	**7856.743**
2200	2	**7856.746**

Note:
Upon request, trim panels may be inserted on the outer sides of the bayed enclosure suites to protect the enclosures against unauthorised access.



Mounting/cable management panel

for QuickBox 3 U, 6 U with vertical 482.6 mm (19″) level

For structured cable routing or for mounting small components or distributors (such as hubs, switches etc.). The cable management panel is easily fitted in the front of the rear panel from the front.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Width mm	Length mm	Packs of	Model No. QB
485	450	1	**7502.270**

Accessories:

Nylon loop, see page 1066.
Cable ties, see page 1066.





Cable route

Universal cable tray. Ideal for large quantities of cable.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Width mm	Length mm	Packs of	Model No. DK
150	1700	1	**7858.150**
200	1700	1	**7858.152**
300	1700	1	**7858.154**

Accessories:

Punched section with mounting flange, see page 993.
Nylon loop, see page 1066.
Cable ties, see page 1066.





Cable glands

for fibre-optic technology

The standard sizes PG 7 and PG 13.5 have a slotted inner seal. This allows super-easy cable entry. Ideal for routing break-out cables, as this eliminates unnecessary bending of the fibre-optic cables.

Material:
Cable gland: Brass, nickle-plated
Inner seal: Soft PVC insert

Fibre-optic cable gland	Cable diameter mm	Packs of	Model No. DK
PG 7	3	12	**7455.010**[1)]
PG 13.5	2 x 3	12	**7455.030**

[1)] Delivery times available on request.

Cable routing 482.6 mm (19″




Cable routing bars

For structured routing of entire cable bundles, the cable bars may be secured to a variety of different positions inside the enclosure.

Material:
Support: Sheet steel,
Cable routing bars, connection combs: Plastic

Colour:
RAL 9005

Supply includes:
Cable routing bars and connection combs.



482.6 mm (19″) attachment
For horizontal cable routing within the distributor level.
Thanks to their open mounting holes, they can also be retrospectively slotted onto the 482.6 mm (19″) system punchings of the mounting level at any time and secured with the existing mounting screws of the installed components.

Packs of	No. of connection combs	Model No. DK
4	2	**7111.224**
10	5	**7111.214**



All-round attachment for universal use
For vertical and horizontal cable routing inside the enclosure or within the distributor level.

Packs of	No. of connection combs	Model No. DK
4	2	**7111.222**
10	5	**7111.212**



Cranked attachment
For mounting angles and mounting frames.
Horizontal, U-based cable routing to the distributor level.

Packs of	No. of connection combs	Model No. DK
4	2	**7111.220**
10	5	**7111.210**



Connection comb
For connecting individual cable routing bars into complete systems (included with the supply).




1




2

Distributor clip

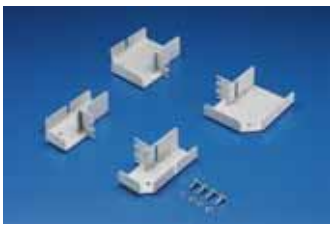
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

1 Distributor clip
For structured cable routing of entire cable bundles, the distributor clip may be secured to a variety of different positions inside the enclosure. It may be used for both horizontal and vertical distribution of the cables.

2 Distributor clip, horizontal
For mounting angles and mounting frames. Distribution of cables among the various height units of the patch level.

	Packs of	Model No. DK
1	4	**7111.252**
2	4	**7111.250**





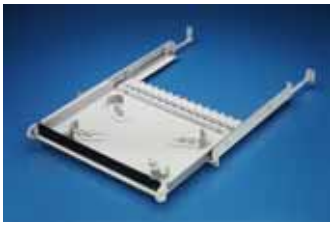
Cable deflector

for 482.6 mm (19″) mounting angles
For kink-free routing of fibre-optic cables from the 482.6 mm (19″) level around the mounting angle. The open 482.6 mm (19″) attachment facilitates screw-fastening together with the patch panel. The cable deflector may additionally be screw-fastened to the side edge fold.

Material:
Sheet steel, RAL 7035

Supply includes:
1 set =
4 cable deflectors, right,
4 cable deflectors, left,
including assembly parts
for screw fastening at the sides.

For enclosure width mm	Packs of	Model No. DK
600	1 set	**7111.460**
800	1 set	**7111.480**





Drawer 482.6 mm (19″)

to accommodate excess cable length
The 1 U drawer offers a convenient opportunity for storing excess length in an organised, compact and secure way within the 482.6 mm (19″) levels.

- With brush strip at the front for cable entry
- T-head rail in the rear section for cable clamping
- Ring-shaped kink-free routing of the conductors on adjustable elements in the interior
- May be fitted between two 482.6 mm (19″) levels at a distance of 435 – 750 mm
- Independent from the enclosure system
- Both on L-shaped and cranked mounting angles and mounting frames

Packs of	Distance between levels mm	Model No. DK
1	435 – 750	**7063.200**

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Accessories:

Nylon loop DK 7072.220/DK 7072.230,
see page 1066.

Cable routing 482.6 mm (19″

Cable management panel

482.6 mm (19″)
For horizontal management of the patch cables with 5 cable shunting rings, supplied loose.



Material:
Panel: Sheet steel
Ring: Polyamide

Colour:
RAL 7035

U	Ring size mm	Model No. DK
1	70 x 44	**7159.035**



Material:
Panel: Sheet steel
Ring: Polycarbonate

Colour:
RAL 7035

U	Ring size mm	Model No. DK
1	95 x 50	**7255.035**



Material:
Panel: Sheet steel
Ring: Sheet steel, zinc-plated, passivated

Colour:
RAL 7035

U	Ring size mm	Model No. DK
1	105 x 43	**7257.035**
2	125 x 85	**7257.100**



Material:
Panel: Sheet steel
Ring: Sheet steel, zinc-plated, passivated

Colour:
RAL 9005

U	Ring size mm	Model No. DK
1	105 x 43	**7257.005**
2	125 x 85	**7257.105**[1)]

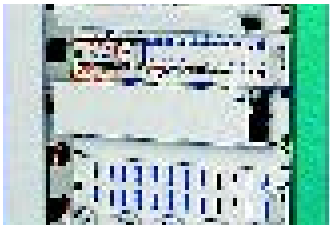
[1)] Delivery times available on request.

Note:
The indicated dimensions are external dimensions.

Cable management panel, 2 U

482.6 mm (19″)
The cable routing chamber has cut-outs from above, into which the patch cables can be inserted. The cable management panel is equipped with a flap and quick-release fasteners at the front, for optimum access to the cables. From the rear, the cables can be inserted via a cut-out with brush strips. With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.





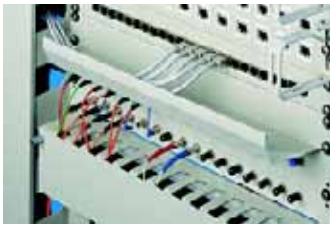
Material:
Sheet steel

Colour:
RAL 7035

U	Depth mm	Model No. DK
2	85	**7158.035**

Accessories:

Cable clamp strap,
see page 1070.



Cable routing channel

482.6 mm (19″)
To hold the patching cables.

Material:
Sheet steel

Colour:
RAL 7035

U	Depth mm	Model No. DK
1	85	**7149.135**
3	100	**7149.035**

Other versions available on request.



Cable management panel, 2 U

To accommodated fibre-optic and copper cables. Fibres from the patch panels are placed into the tray via openings and may be distributed at the sides. Rounded openings protect the cable sheathing.

Material:
Sheet steel

Colour:
RAL 7035

U	Model No. DK
2	**7269.135**





Cable management duct, horizontal

482.6 mm (19″)
The duct facilitates concealed, simple cable routing of large quantities of cables to equipment within the 482.6 mm (19″) attachment level. Large cut-outs ensure convenient, kink-free cable routing to the cables top and bottom.
For simple handling, the entire front panel may be removed via quick-release fasteners. After attaching the cables, these are held in position via nylon ties, whilst the duct may be resealed.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
5 nylon loops.

U	Model No. DK
2	**7158.100**
3	**7158.150**



Cable tray, 2 U

For side routing and distribution of fibre-optic and copper cables. In this way, cables inserted into the roof area may be routed at the side of the mounting angles in the upper section of the rack. Depth 85 mm.

Material:
Sheet steel

Colour:
RAL 7035

U	Model No. DK
2	**7269.235**

Cable routing 482.6 mm (19″



Fibre-optic cable management panel, 1 U

482.6 mm (19″)
The four fibre-optic cable shunting rings integrated into the front permit optimum management of up to 48 fibres.

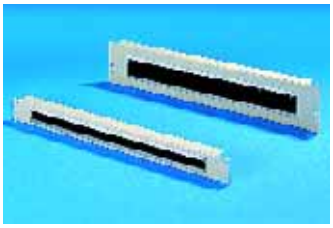
Material:
Panel: Sheet steel
Ring: 2 K plastic

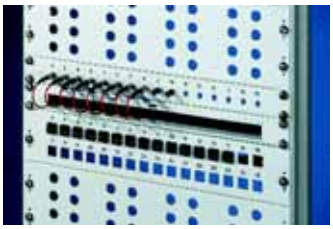
Colour:
Panel: RAL 7035
Cable shunting ring external: RAL 7035, black interior

U	Model No. DK
1	**7256.035**

Possible alternative:

Fibre-optic support guide DK 7116.500, see page 1071.





Cable entry panel

482.6 mm (19″)
Cut-out 390 x 40 mm (2 U) or 390 x 20 mm (1 U) with brush insert. With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

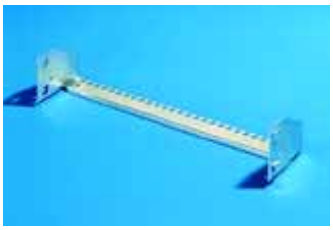
Colour:
RAL 7035

U	Model No. DK
1	**7140.535**
2	**7150.535**

Other versions available on request.

Accessories:

Cable clamp strap, see page 1070.





Cable routing across the 482.6 mm (19″) mounting level

There is a choice of five different cable clamping systems for system-compatible cable routing in 482.6 mm (19″) systems with one or two pairs of mounting angles:

C rail
for fastening across all 482.6 mm (19″) mounting angles.

C rail	Depth in mm	Model No. DK
482.6 mm (19″) level	–	**7016.100**

Cable clamp rails
for fastening across all 482.6 mm (19″) mounting angles, for cable ties.

Cable clamp rail	Depth in mm	Model No. DK
482.6 mm (19″) level	–	**7016.110**

Cable clamp straps for swing frames, large, and Data Rack
The cable clamp straps are mounted on frame at the rear, whilst the cables are clamped 250 mm behind the 482.6 mm (19″) mounting angles.

Cable clamp straps for DK-TS mounting angles
with side lugs for suspending from the cranked 482.6 mm (19″) mounting angles. Cable clamping is via cable ties.

Material:
Sheet steel, zinc-plated, passivated

Cable clamp strap for	Depth in mm	Model No. DK/FR
Data Rack and large swing frame	250	**7016.120**
DK-TS mounting angles	100	**7016.130**

Packs of 6

Also required:

With L-shaped TS mounting angles, adaptor DK 7827.300 is additionally required, see page 1023.











Swing frame, small

for 600 mm and 800 mm wide TS enclosures
For mounting 482.6 mm (19″) equipment.
The front installation situation, at the top or bottom of the enclosure frame, is achieved with the installation kit. The installation accessories required for other installation variants are described separately (see page 1080).
With 800 mm wide enclosures, central or side-offset installation is possible.

Technical specifications:
Torsionally stiff frame, welded from rectangular tube and triple folded support section.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Cam with double-bit lock insert and parts for attaching to the installation kit.

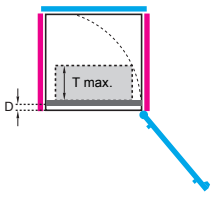
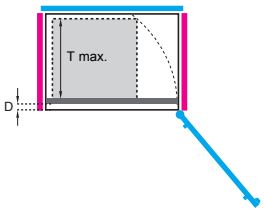
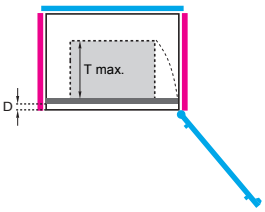
Also required:

Installation kit for swing frame, small,
see page 1080.

Accessories:

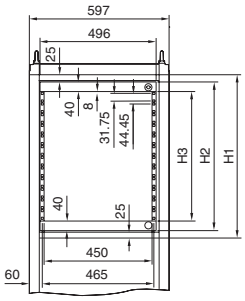
PS punched section without mounting frame,
see page 998.
TS support bracket,
see page 1007.
Lock inserts, version D,
see page 956.

Height units	3 U	6 U	9 U	12 U	15 U	18 U
Model No. SR	**2377.030**	**2377.060**	**2377.090**	**2377.120**	**2377.150**	**2377.180**
H1 mm	275	408	541	675	808	941
H2 mm	217	350	483	617	750	883
H3 mm	137	270	403	537	670	803

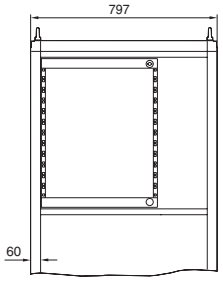
Installation depth T max. = mm with dimension D[1] of at least 45 mm			
Enclosure width mm	600	800	800
			
Installation	central	side	central
Enclosure depth mm 400 500 ≥ 600	T max. 185 185 185	T max. 310 410 500	T max. 310 370 370

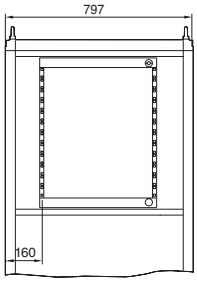
[1] D = Distance from the inner edge of the door to the front edge of the swing frame may be installed deeper on a 25 mm pitch pattern.

For 600 mm wide enclosures



For 800 mm wide enclosures optionally at the side or in the centre

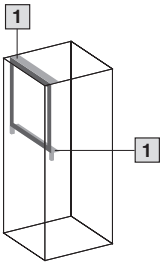




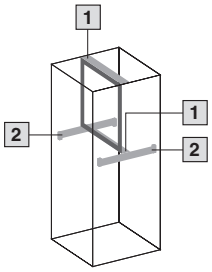
Swing frames

5 examples for TS

Partial installation with 600 and 800 mm wide enclosures, each in the uppermost or lowest position.

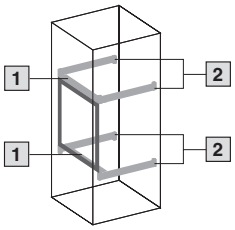


at the front

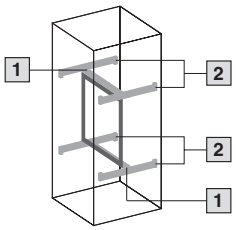


set back

Partial installation, centre
in 600 and 800 mm wide enclosures.



at the front



set back

Also required:

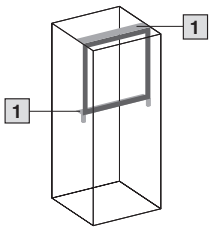
Depending on the installation position:

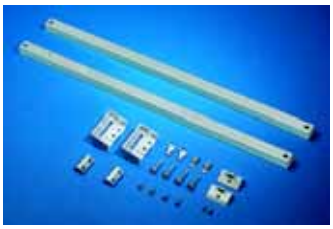
1 Installation kit for swing frame, small.

2 PS punched sections without mounting flanges 23 x 73 mm to match the enclosure depth in conjunction with 4 support brackets TS 8800.330 (two are included with the supply of the installation kit)

Note:
Height compensation between the 25 mm pitch pattern of holes in the enclosure and the height units of the swing frame is achieved by the support brackets TS (two are included with the supply of the installation kit).

Side installation
With an enclosure depth of 600 or 800 mm, side installation of a small swing frame is identical to installation parallel to the front.
For access to the swing frame we recommend the hinges for the TS side panel,
see page 918.





Installation kit

for swing frame, small, or hinge attachment for partial mounting plate in TS 8.

Material:
Cross member: Sheet steel, clear-chromated
Support bracket TS: Die-cast zinc

Supply includes:
2 cross members,
including assembly parts.

Enclosure width mm	Model No. SR
600	**2377.860**
800	**2377.880**

Accessories:

Depending on the installation position (see above):
Support brackets TS 8800.330,
see page 1007,
and PS punched sections without mounting flanges to match the enclosure depth,
see page 998.



Installation kit

for swing frame, small in ES, AP universal console.

Enclosure width mm	Packs of	Model No. SR
600	1 set	**2377.460**

Accessories:

Depending on the installation position:
Support brackets PS 4183.000,
see page 1007,
and PS punched sections without mounting flanges in accordance with the enclosure depth,
see page 998.







Swing frame, large

without trim panel
for TS, ES, CM, AP universal console
For mounting 482.6 mm (19″) equipment.
The installation accessories required for other installation variants are described separately (see page 1082).

Technical specifications:
Torsionally stiff frame, welded from rectangular tube and triple folded support section.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
2 cams with double-bit lock insert and parts for attaching to the installation kit.

Note:
If the enclosure height is not fully utilised by the swing frame, additional mounting accessories – see page 1082 – will be required.

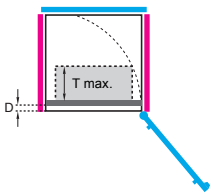
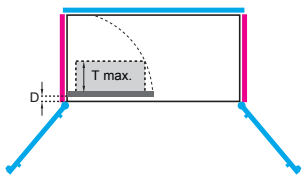
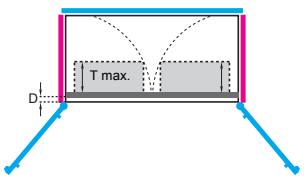
Also required:

Installation kit for swing frame, large,
see page 1082.

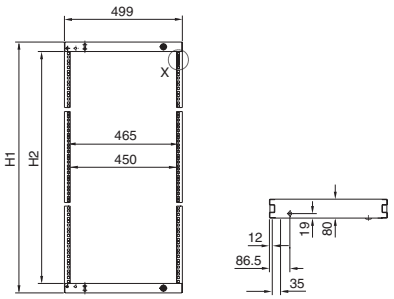
Accessories:

Depending on the installation position:
TS punched section with mounting flange, 23 x 73 mm,
see page 995.
TS punched rail 18 x 38 mm,
see page 996.
PS punched section with mounting flange,
see page 999.
Width divider,
see page 909.
Lock inserts, version D,
see page 956.

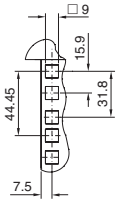
Height units	22 U	31 U	36 U	40 U	45 U
Model No. SR	**2322.700**	**2331.700**	**2336.700**	**2340.700**	**2345.700**
For enclosure height mm (or higher)	1200	1600	1800	2000	2200
H1 mm	1061.5	1461.5	1684.5	1861.5	2084.0
H2 mm	981.5	1381.5	1604.0	1781.5	2004.0

Installation depth T max. = mm with dimension D[1] of at least 49 mm			
Enclosure width mm	600	1200	1200
			
Installation	central	left or right	left and right
Enclosure depth mm	T max.	T max.	T max.
400	185	295	295
500	185	395	365
600	185	495	365
800	185	695	365

[1] D = Distance from the inner edge of the door to the front edge of the swing frame may be installed deeper on a 25 mm pitch pattern.



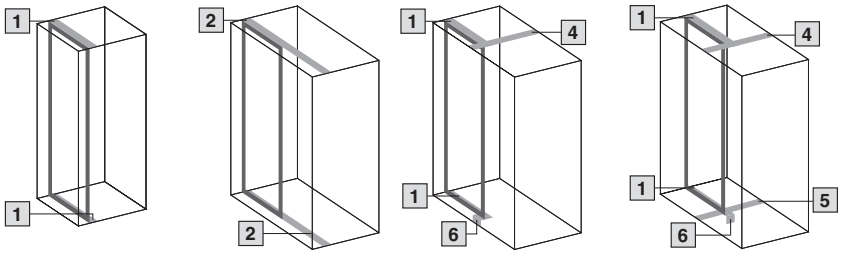
Cut-out “X”



Swing frames

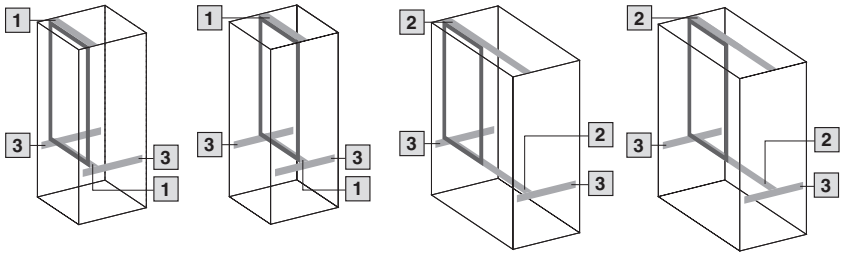
13 examples for TS

Full installation



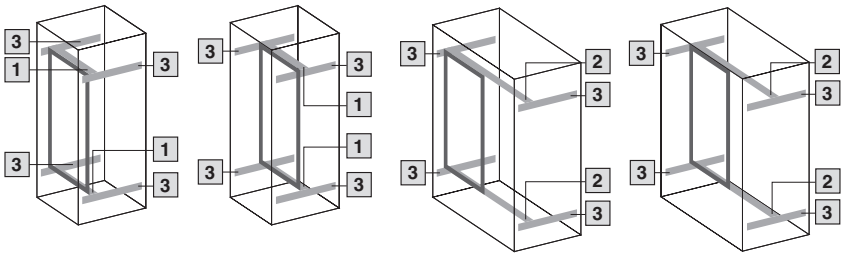
600 mm front | 1200 mm front | 1200 mm front with width divider | 1200 mm set back with width divider

Partial installation, top



600 mm front | 600 mm set back | 1200 mm front | 1200 mm set back

Partial installation, centre



600 mm front | 600 mm set back | 1200 mm front | 1200 mm set back

Also required:

Depending on the installation position:

1 Installation kit for 600 mm wide enclosures

2 Installation kit for 1200 mm wide enclosures

3 TS punched section with mounting flange 23 x 73 mm for the inner mounting level in the respective enclosure depth, for installation in ES = PS punched sections with mounting flanges

4 PS punched section without mounting flange in the respective enclosure depth in conjunction with support bracket PS

5 TS punched rail 18 x 38 mm in the corresponding enclosure depth[1)]

6 Width divider (left-hand or right-hand angle)[1)]

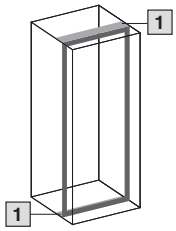
[1)] Not possible with ES, CM.

Notes:

- Height compensation between the 25 mm pitch pattern of holes in the enclosure and the height units of the swing frame is achieved by the upper installation kit.
- Partial installation at the bottom matches partial installation at the top.
- CM only supports full installation at the front.

Side installation

With an enclosure depth of 600 mm, side installation of a large swing frame is identical to installation parallel to the front.
For access to the swing frame we recommend the hinges for the TS side panel,
see page 918.





Installation kits

for swing frame, large without trim panel

With 800 mm wide enclosures, the swing frame may also be installed in the centre or offset to the side.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Parts for attaching to the enclosure.

Accessories:

Swing frame stay,
see page 1085.

Installation kits for swing frame, large without trim panel

For enclosures			Hinge design	Load capacity	For enclosure width mm		
					600	800	1200
TS	ES, AP universal console	CM			Model No. SR		
		■	130°	< 800 N	**1985.500**	**1986.500**	–
■	■			< 1500 N[2)]	**1994.835**	**1995.235**	–
	■			< 1500 N	–	–	**1996.835**
■				< 1500 N[1)]	–	**1995.835**	**1996.535**
■	■		180°	< 1200 N[2)]	–	**1997.235**	–
■				< 1200 N[1)]	–	**1997.835**	–

[1)] Installation only possible with the mounting plate slide rail dismantled.
[2)] Maximum load 800 N with the TS mounting plate slide rail dismantled.







Swing frame, large

with trim panel
for TS, ES, CM

For mounting 482.6 mm (19″) equipment.
The installation accessories required for other installation variants are described separately (see page 1084).

Technical specifications:
Torsionally stiff frame, welded from rectangular tube and six-folded support section. The side trim panels are screw-fastened to the frame. The right-hand trim panel has a handle strip at the side and is equipped with a locking rod system.

Material:
Sheet steel

Surface finish:
Frame, zinc-plated
Trim panels spray-finished

Colour:
RAL 7035

Supply includes:
Locking rod system with double-bit lock insert and parts for attaching to the installation kit.

Note:
If the enclosure height is not fully utilised by the swing frame, additional mounting accessories – see page 1084 – will be required.
For two-door enclosures with height 1800 and 2200 mm the next-smallest swing frame must be installed, due to collision with the lock.

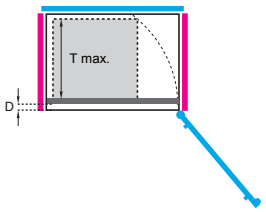
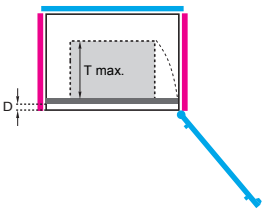
Also required:

Installation kit for swing frame, large, see page 1084.

Accessories:

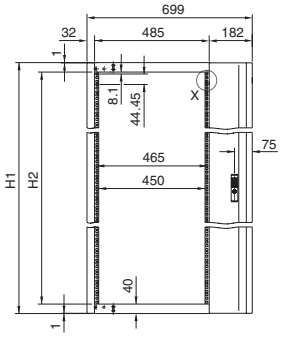
TS punched section with mounting flange, 23 x 73 mm, see page 995.
PS punched section with mounting flange, see page 999.
Lock inserts, version A, see page 956.
Ergoform-S lock system, see page 953.

Height units	22 U		31 U		36 U		40 U		45 U	
Trim panel	side	central	side	central	side	central	side	central	side	central
Model No. SR RAL 7035	**2323.235**	**2324.235**	**2332.235**	**–**	**2337.235**	**2338.235**	**2341.235**	**2342.235**	**2346.235**	**2347.235**
For enclosure height mm (or higher)	1200		1600		1800		2000		2200	
H1 mm	1061.5		1461.5		1684.5		1861.5		2084.0	
H2 mm	981.5		1381.5		1604.0		1781.5		2004.0	

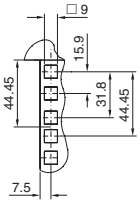
Installation depth T max. = mm with dimension D[1] of at least 49 mm with 130° hinge, 95 mm with 180° hinge			
Enclosure width mm	800		
			
Installation	side		central
Hinge	130°	180°	180°
Enclosure depth mm 400 500 600 800	T max. 295 395 470 470	T max. 252 352 428 428	T max. 252 345 345 345

[1] D = Distance from the inner edge of the door to the front edge of the swing frame may be installed deeper on a 25 mm pitch pattern.

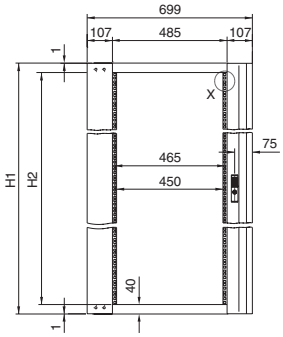
Equipment at sides



Cut-out “X”



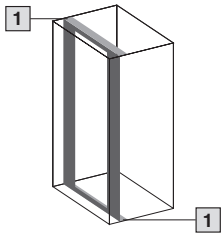
Equipment in centre



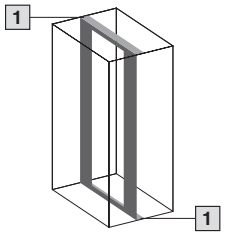
Swing frames

7 examples for TS

Full installation

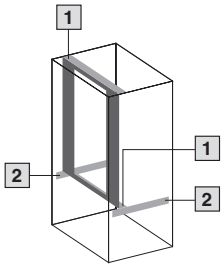


800 mm
front

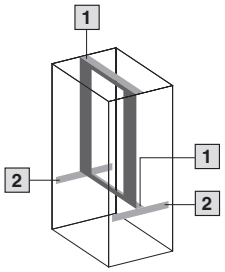


800 mm
set back

Partial installation, top

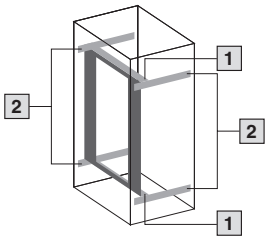


800 mm
front

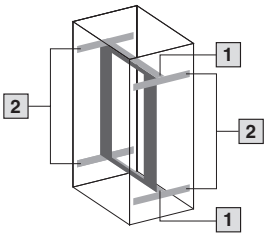


800 mm
set back

Partial installation, centre



800 mm
front



800 mm
set back

Also required:

Depending on the installation position:

1 Installation kit for 800 mm wide enclosures

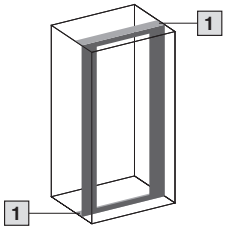
2 TS punched section with mounting flange 23 x 73 mm for the inner mounting level corresponding to the enclosure depth, for installation in ES = PS punched sections with mounting flanges

Notes:

- Height compensation between the 25 mm pitch pattern of holes in the enclosure and the height units of the swing frame is achieved by the upper installation kit.
- Partial installation at the bottom matches partial installation at the top.
- CM only supports full installation at the front.

Side installation

With an enclosure depth of 800 mm, side installation of a large swing frame is identical to installation parallel to the front. For access to the swing frame we recommend the hinges for the TS side panel, see page 918.





Installation kits

for swing frame, large with trim panel

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Parts for attaching to the enclosure.

Accessories:

Swing frame stay,
see page 1085.

Installation kits for swing frame, large with trim panel

For enclosures			Hinge design	Load capacity	For enclosure width 800 mm
TS	ES, AP universal console	CM			**Model No. SR**
		■	130°	< 800 N	**1986.500**
■	■			< 1500 N[2)]	**1995.235**
■				< 1500 N[1)]	**1995.835**
		■	180°	< 800 N	**1986.500 + 1978.200**
■	■			< 1200 N[2)]	**1997.235**
■				< 1200 N[1)]	**1997.835**

[1)] Installation only possible with the mounting plate slide rail dismantled.
[2)] Maximum load 800 N with the TS mounting plate slide rail dismantled.





Swing frame, 482.6 mm (19″)

Heavy-duty version
for 800 mm wide enclosures, based on TS 8
The swing frame facilitates the accommodation of a wide range of 482.6 mm (19″) components up to a weight load of 350 kg. By swinging the frame outwards, access can be gained to the rear of the equipment and its cabling at any time. The maximum opening angle is 130°.
At the side, the swing frame has a trim panel with integral handle strip and two-point locking bar. A semi-cylinder lock can be achieved by using the Ergoform-S handle system.
Several openings in the trim panel permit convenient cable routing from the rear of the swing frame in the front section. The openings may also be optionally top-mounted with standard commercially available plastic cable ducts.
An additional vertical row of holes integrated into the trim panel facilitates vertical and horizontal cable routing via cable shunting rings.
Installation is only possible in the form of full enclosure installation. The installation position may be varied in the enclosure depth.

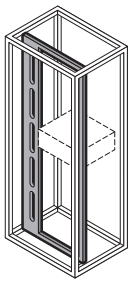
U	For enclosure height mm	Model No. DK
40	2000	**7858.100**

Load capacity:
350 kg

Material:
Swing frame: Sheet steel, zinc-plated, passivated
Trim panel and installation kit:
Sheet steel, spray-finished in RAL 7035

Supply includes:
Locking rod with double-bit lock insert, heavy-duty installation kit and assembly parts.

Note:
Max. installation depth of the equipment $T_{max.}$, see page 1083 (swing frame, large, with side trim panel).





Swing frame stay

Holds the swing frame in the open position.

For mounting on:
Swing frame, large
- SR 1979.200, at the top of the enclosure
- SR 1980.200, at the bottom of the enclosure (with safety stop at 160°)



For mounting on:
Swing frame, small
- SR 1979.200, may be mounted at the top or bottom of the installation kit.

	Packs of	Model No. SR
With 130° hinge	5	**1979.200**
With 180° hinge	1	**1980.200**



Slide rails

To support heavy slide-in electronic equipment, 482.6 mm (19″) in the swing frame.

Material:
Sheet steel, zinc-plated, passivated

For slide-in equipment with max. installation depth	Packs of	Model No. SR
T max. < 190 mm	10	**1962.200**
T max. > 190 mm	10	**1963.200**

Swing frames



Pull-out frame, 482.6 mm (19″)

for TS

For the installation of a pull-out 482.6 mm (19″) front. For 600 and 800 mm wide TS enclosures, from a depth of 800 mm.

Overall depth: 525 mm
Extension piece: 500 mm
Distance: 300 mm

Load capacity: 50 kg.

Colour:
RAL 7035

Supply includes:
Telescopic slides and assembly parts.

German patent no. 39 07 471

For U	Height mm	Model No. DK
12	637	**7124.035**
18	903	**7125.035**[1)]
21	1037	**7126.035**[1)]

[1)] Delivery times available on request.

Also required:

Installation kit according to the enclosure width.
As installation kit for enclosure width 600 mm:
TS punched section with mounting flange, 17 x 73 mm,
see page 1086.
As installation kit for enclosure width 800 mm:
Support strips,
see page 1086.

Note:
The slide rail DK 7963.310 (see page 1098) can be mounted directly in the pull-out frame to support heavy equipment.



TS punched sections with mounting flanges as installation kit

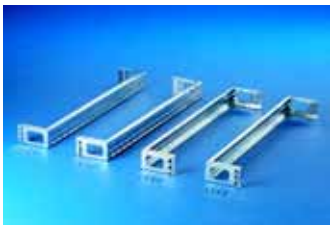
for pull-out frame

Installation in enclosure width 600 mm.
The installation kit comprises 4 TS punched sections with mounting flanges 17 x 73 mm.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosures		Packs of	Model No. TS
Width mm	Depth mm		
600	800	4	**8612.080**
600	900	4	**8612.090**
600	1000	4	**8612.000**



Depth stays as installation kit

for pull-out frame

Installation in enclosure width 800 mm.
The installation kit consists of 4 depth stays.

Material:
Sheet steel, zinc-plated, passivated

For enclosures		Packs of	Model No. TS
Width mm	Depth mm		
800	800	4	**7827.800**
800	900	4	**7827.900**
800	1000	4	**7827.000**



Vario swing frames

for ES, width 800 mm
For the installation of 482.6 mm (19″) equipment.

Technical specifications:
Torsionally stiff frame, welded from rectangular tube and triple-folded support section. Firmly linked extension panels on the left and right.

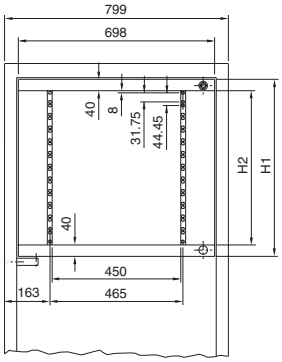
Material:
Sheet steel

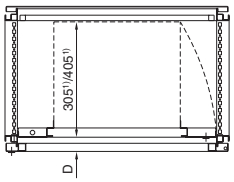
Colour:
RAL 7035

Supply includes:
Double-bit lock insert and assembly parts.

Accessories:

47 mm lock insert, version D,
see page 956.





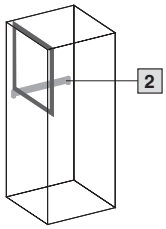
[1] at D 41.5 mm

For 800 mm wide enclosures

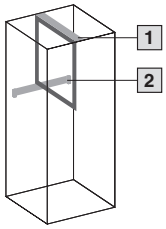
Height units		6 U	12 U	18 U
Model No. SR		**2004.235**	**2008.235**	**2011.235**
H1 mm		350	616.5	883
H2 mm		270	536.5	803
Max. installation depth with enclosure depth	400 mm	305 mm		
	500 mm	405 mm		
Dimension D mm		41.5 – 59.5 – 77.5 – 116.5 – 134.5 – 141.5 – 159.5		

Installation examples

Mounting accessories according to the installation position (swing frame in topmost position)



at the front



set back

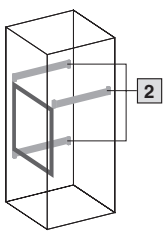
Also required:

Depending on the installation position:

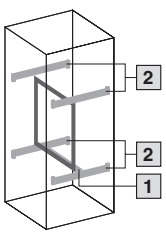
1 PS punched section with mounting flange for enclosure width 800 mm, see page 999.

2 PS punched section with mounting flange in accordance with the enclosure depth, see page 999.

Mounting accessories according to the installation position (swing frame offset downwards)



at the front



set back

Swing frames



Compact swing frame

for AE, AP one-piece console
For mounting slide-in electronic equipment, 482.6 mm (19″), across the entire height.

Technical specifications:
Torsionally stiff frame, welded from rectangular tube and triple-folded support section.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Double-bit lock insert and assembly parts.

Accessories:

41 mm lock insert, version C,
see page 956.

For AE

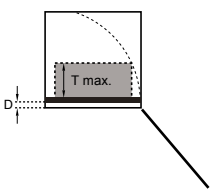
For compact enclosure AE			Height units	6 U	11 U	14 U
Enclosure		Max. installation depth (T max.) mm	**Model No. SR**	**2026.200**	**2027.200**	**2034.200**
Width mm	Depth mm		For enclosure height mm	380	600	760
			H1 (mm)	320	542	676
			H2 (mm)	270	492	626
600	210	145	Spray-finished	1039.500	1060.500	1076.500
			Stainless steel	1009.600	1010.600	1012.600
600	350	265	Spray-finished	1339.500	1360.500	1376.500
760	210	145	Spray-finished	–	–	1077.500
760	300	235	Spray-finished	–	–	1073.500
			Stainless steel	–	–	1014.600

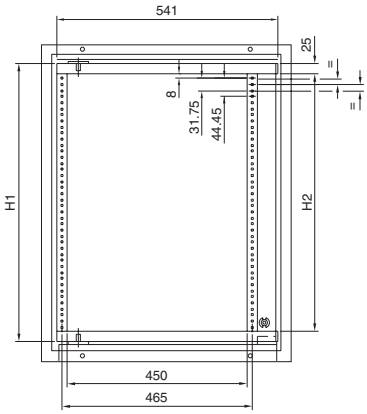
For AP one-piece console

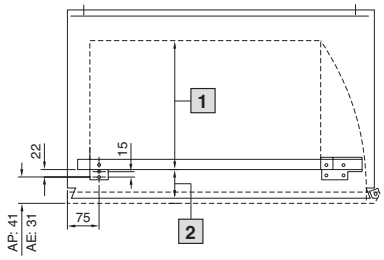
Height units	11 U
Model No. SR	**2027.200**
H1 mm	542
H2 mm	492

For AP one-piece consoles	Max. installation depth (T max.) mm
2668.500	315
2672.500	315
2684.500	295[1)]
2686.500	295[1)]

[1)] When fitting 2 swing frames.







1 T = max. installation depth (see table)
2 D = 38 (53, 68, 83)





Mounting angles, 482.6 mm (19″)

for TS, ES
For the installation of subracks and other equipment.
Mounting angles are easily shortened for partial assemblies.

Supply includes:
Assembly parts.

Accessories:

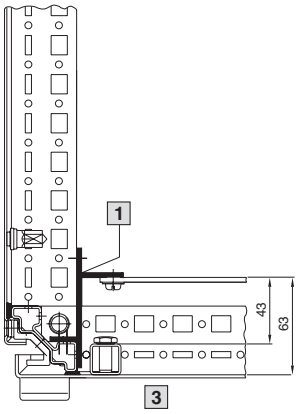
Infill panels,
see page 1090.
Captive nuts,
see page 1010.
Assembly screws,
see page 1011.
Slide rails with one-sided mounting,
see page 1097.
Slide rails with two-sided mounting,
see page 1097.
Installation kit for drawers,
see page 1102.
Installation kit for component shelves,
see page 1024.

For enclosure height mm	Packs of	For enclosure system TS[1]		For enclosure system ES		
		U	Extruded aluminium section	U	Extruded aluminium section	Sheet steel, spray-finished, RAL 7035
			Model No. TS		**Model No. PS**	
1600	4	33	**8613.060**	33	**4389.000**	–
1800	4	38	**8613.080**	37	–	–
2000	4	42	**8613.000**	42	–	**4358.200**
2200	4	47	**8613.020**	46	–	–
For PC enclosure[2]	4	17	**8613.070**	17	**4632.000**	–

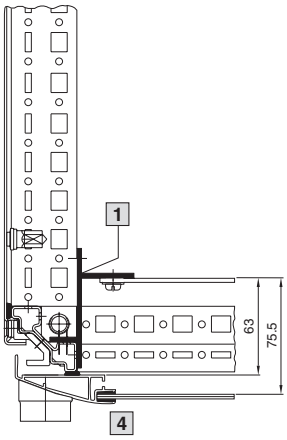
[1] For the rear of electronic enclosures, see page 1090.
[2] Behind bottom door.

Assembly examples of TS:

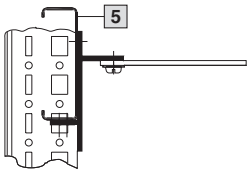
Drawing 1



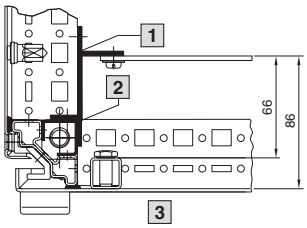
Drawing 2



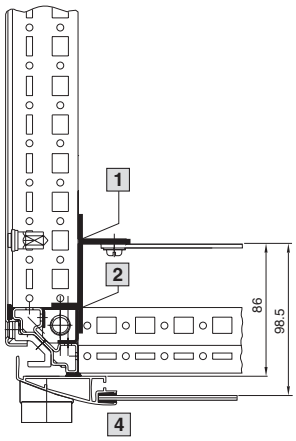
Drawing 3



Drawing 4



Drawing 5



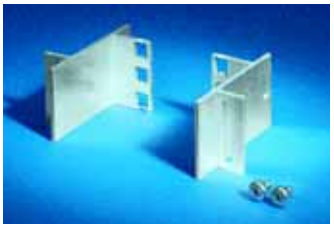
Drawing 1 and 2:
Mounting angle or adaptor piece fitted in the foremost installation position, directly on the vertical section.
When installing slide rails with two-sided mounting (see page 1097), the same mounting angles or adaptor pieces must also be mounted on the vertical section at the rear.

Drawing 3:
Mounting on two vertically installed PS punched sections permits fully flexible use of the enclosure depths.

Drawing 4 and 5:
Greater distance from the door is achieved by mounting on adaptor rails for PS compatibility. In this position, the slide rails can be fitted with one-sided mounting.

1 Mounting angles/piece
2 Adaptor rail
3 TS sheet steel door
4 TS glazed door
5 Punched section without mounting flange

Mounting angles





Adaptor pieces, 482.6 mm (19″)

for TS, ES
The “1 U” sub-section of mounting angles.
For the installation of individual subracks and other equipment.

Supply includes:
Assembly parts.

Note:
Assembly examples,
see page 1089.

For	U	Packs of	Model No. TS	Model No. PS
TS	1	4	**8613.010**	**–**
ES	1	8	**–**	**4547.000**

Accessories:

Captive nuts,
see page 1010.
Assembly screws,
see page 1011.
Slide rails with two-sided mounting,
siehe Seite 1097.
Installation kit for drawers,
see page 1102.
Installation kit for component shelves,
see page 1024.



Mounting angles, 482.6 mm (19″)

for rear installation in TS electronic enclosures
For installing subracks at the front and back, and for attaching the slide rails TS 8613.150, TS 8613.160 and TS 8613.180 (see page 1097). Assembly is carried out on the inner mounting level.
The outer mounting level can, e.g. still be used for cable routing on depth-mounted TS punched sections with mounting flange.

Material:
Extruded aluminium section

Supply includes:
Assembly parts.

Note:
Design similar to mounting angles, 482.6 mm (19″) (see page 1089), but asymmetrical height, suitable for TS electronic enclosure.

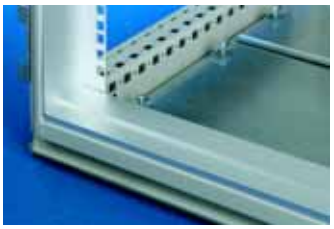
For enclosure height mm	U	Packs of	Model No. TS
1600	33	2	**8613.360**
2000	42	2	**8613.300**

Accessories:

Captive nuts,
see page 1010.
Assembly screws,
see page 1011.
Slide rails with two-sided mounting,
see page 1097.
Installation kit for drawers,
see page 1102.
Installation kit for component shelves,
see page 1024.

Possible alternative:

Adaptor pieces, 482.6 mm (19″),
see page 1090.



Infill panels, 482.6 mm (19″), horizontal

for TS electronic enclosure
To infill between installed 482.6 mm (19″) equipment positioned in the full enclosure height and the enclosure clearance height.

Material:
Extruded aluminium section

Supply includes:
Assembly parts.

For enclosure height mm	Packs of	Model No. TS
1600/2000	2	**8613.040**
1800/2200	2	**8613.030**



Aluminium cross rail

for TS electronic enclosure
for sub-division of the front.

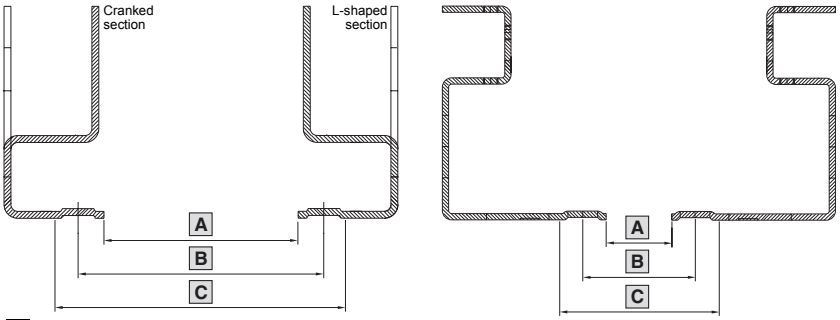
Material:
Extruded aluminium section

Colour:
RAL 7035

Height	Model No. TS
1 U	**8613.240**

Supply includes:
Assembly parts.

Explanation of the mounting dimensions in interior installations



A = Clearance width

B = Mounting dimension

C = External dimension of the rack-mounted equipment or of the front panels

Installation width	A mm	B mm	C mm
Š 19″	450	465	482.6
Š 21″	500	515	533.4
Š 23″	552	567	584.2
Š 24″	577	592	609.6
Š 10″/39 HP	221.4	236	254
Š 1/2 19″/42 HP	236.6	251.2	269.2
Š 9.5″	208.7	223.3	241.3
Š 18 SU	450	465	485
Š 20 SU	500	515	535





Mounting angles, 482.6 mm (19″)

for TS, FR(i), Toptec CR

Available in two versions:

Cranked
The integral U markings in the front facilitate systematic assembly within the 482.6 mm (19″) attachment level.

L-shaped
The L-shaped mounting angles accommodate the installation kits of server systems. The integral U markings in the front facilitate systematic assembly within the 482.6 mm (19″) attachment level.

Technical specifications:
2 mm sheet steel, with integral 482.6 mm (19″) punchings (EIA standard) and side round and square holes. Zinc-plated, passivated for conductive connection of the 482.6 mm (19″) installed equipment.

Supply includes:
Assembly parts.

Explanation of the mounting dimensions in interior installations, see page 1091.

Full installation rack height mm	U	Packs of	Model No. DK	
			Cranked	L-shaped
600	11	2	–	**7827.061**
800	15	2	**7827.080**	**7827.081**
1000	20	2	**7827.100**	**7827.101**
1200	24	2	**7827.120**	**7827.121**
1400	29	2	**7827.140**	**7827.141**
1600	33	2	**7827.160**	**7827.161**
1800	38	2	**7827.180**	**7827.181**
2000	42	2	**7827.200**	**7827.201**
2200	47	2	**7827.220**	**7827.221**

Note:
The mounting angles can also be used to accommodate 21″, 23″ and 24″ attachment dimensions.

Note FR(i):
Only full installation is possible in conjunction with the TS installation bracket (DK 7827.480), see page 1096.

Also required:

Punched sections with mounting flanges or depth stays for TS as installation kit for mounting angles, see page 1095 – 1096.
For L-shaped mounting angle variant:
for mounting slide rails or component shelves:
Adaptor DK 7827.300, see page 1023.

Mounting angles



Mounting angles, 482.6 mm (19″)

for FR(i), width 600 mm
For the installation of 482.6 mm (19″) components in the foremost mounting position.
The mounting angle may be rotated through 180°, so as to create additional free space for cable routing in the front section. Side openings allow the hollow section of the enclosure frame to continue being used for cable routing.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Explanation of the mounting dimensions in interior installations, see page 1091.

Enclosure height mm	Usable U with full installation	Packs of	Model No. FR(i)
600	11	2	**7856.800**
1200	24	2	**7856.803**
1800	38	2	**7856.806**[1)]
2000	42	2	**7856.809**
2200	47	2	**7856.812**[1)]

[1)] Delivery times available on request.



Mounting angles, 482.6 mm (19″)

for FlatBox
L-shaped bracket as 2nd attachment level.

Material:
Sheet steel

Supply includes:
Assembly parts for fast, toolless assembly.

U	Packs of	Model No. DK
6	2	**7507.706**
9	2	**7507.709**
12	2	**7507.712**
15	2	**7507.715**
18	2	**7507.718**
21	2	**7507.721**

Note:
The 2nd attachment level should always be ordered in the same height as the basic enclosure. Partial configuration is not possible.



Mounting angles, 482.6 mm (19″)

for QuickBox
For the installation of 482.6 mm (19″) rack-mounted equipment.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Explanation of the mounting dimensions in interior installations, see page 1091.

For enclosures U	Packs of	Model No. QB
6	2	**7502.201**
9	2	**7502.202**
12	2	**7502.203**
15	2	**7502.204**
18	2	**7502.205**[1)]
21	2	**7502.206**[1)]

[1)] Delivery times available on request.



Mounting angles, 482.6 mm (19″)

for DK-EL
This mounting angle kit allows you to integrate a second 482.6 mm (19″) level into EL enclosures.

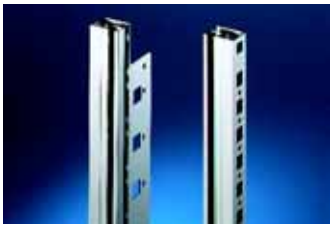
Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Explanation of the mounting dimensions in interior installations, see page 1091.

U	Packs of	Model No. DK
6	2	**7705.706**
9	2	**7705.709**
12	2	**7705.712**
15	2	**7705.715**
18	2	**7705.718**
21	2	**7705.721**



T-slot mounting angles, 482.6 mm (19″)/metric

for TS, FR(i), Toptec CR, CS basic and modular enclosures

With integral T-slot for U nuts. Holes on a U pitch pattern are integrated into the rear section of the T-slot. Round and square holes on a 25 mm DIN 43 660 pitch pattern of holes are provided for side attachment. The mounting angle may optionally be integrated using PS metric or 482.6 mm (19″) depth stays.

Material:
Extruded aluminium section, pickled

Supply includes:
Assembly parts.

Note:
In 600 mm wide enclosures, mounting angles may be alternatively depth-mounted on TS punched sections with mounting flanges.

Explanation of the mounting dimensions in interior installations, see page 1091.

Full installation rack height mm	U	SU	Packs of	Model No. DK
800	15	26	2	**7000.150**[1)]
1000	20	35	2	**7000.200**[1)]
1200	24	42	2	**7000.240**[1)]
1400	29	51	2	**7000.290**[1)]
1600	33	58	2	**7000.330**[1)]
1800	38	67	2	**7000.380**[1)]
2000	42	74	2	**7000.420**
2200	47	83	2	**7000.470**[1)]

[1)] Delivery times available on request.

Also required:

TS punched secion with mounting flange as installation kit for mounting angles, see page 1095,
or
depth stay for PS, see page 1093.

Accessories:

Spring nuts with screws, see page 1104.



Mounting angles, 482.6 mm (19″)

for CS basic and modular enclosures

For mounting 482.6 mm (19″) components in Outdoor enclosures. The mounting angles are depth-adjustable on a 25 mm pitch pattern. An installation bracket is required to attach the mounting angles.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Explanation of the mounting dimensions in interior installations, see page 1091.

Enclosure height mm	U	Packs of	Model No. DK
800	15	2	**7685.000**
1200	24	2	**7688.000**
1400	29	2	**7689.000**
1600	33	2	**7690.000**

Also required:

Depth stay for PS, see page 1093.



Depth stay for PS

for TS, FR(i)

- T-slot mounting angles
- Mounting angles

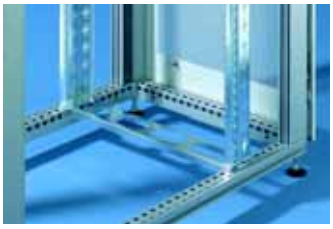
Material:
Sheet steel, zinc-plated, passivated

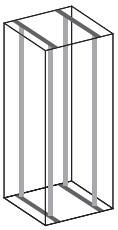
Note:
Only full installation with FR(i).

Enclosure width mm		600/1200	800		
Standards		482.6 mm (19″)	482.6 mm (19″)/metric (465 mm)		metric (515 mm)
Installation position		central	central	side	central
Model No. DK	2	**7696.000**	**7698.000**	**7697.000**	**7000.100**

Mounting angles







Mounting frame, 482.6 mm (19″)

for TS, FR(i), CS basic and modular enclosures
The welded 482.6 mm (19″) mounting frame may be attached with complete depth variability and is used to structure the front and rear 482.6 mm (19″) level.
The mounting frame has the same system punchings as the TS 8 enclosure section at the sides and rear, and therefore supports the mounting of various TS 8 system accessories such as cable clamp rails, cable shunting rings etc.

Load capacity:
Up to 1000 kg static load, with even load distribution on two 482.6 mm (19″) mounting frames, with full installation.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Note:
A combination of 482.6 mm (19″) mounting frame plus fan mounting plate is not possible. For active ventilation, we recommend use with modular fan roof.

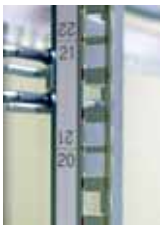
Explanation of the mounting dimensions in interior installations, see page 1091.

For enclosures		U	Model No. FR(i)
Width mm	Height mm		
600	600	11	**7856.710**
600	1200	24	**7856.713**
600	1800	38	**7856.716**
600	2000	42	**7856.719**
600	2200	47	**7856.722**
800	1200	24	**7856.725**
800	1800	38	**7856.728**
800	2000	42	**7856.731**
800	2200	47	**7856.734**

Accessories:

Captive nuts,
see page 1105.
Assembly screws,
see page 1011.
Cable clamp rails TS,
see page 1068.
C rails,
see page 1000.
Component shelves,
see page 1013 and page 1017.
Fan roof, modular,
see page 705.





Adhesive measurement strip, 482.6 mm (19″)

Of stable aluminium foil, guarantees simple processing and durability. With numerical labelling on an imperial pitch pattern for clear identification of the various height units. The double-sided labelling allows the counting direction to be freely selected, up to a maximum of 56 U. In this way, clear documentation of the various mounting parts is easily achieved.

Material:
Aluminium foil

Labelling range U	Packs of	Model No. DK
1 – 56	1	**7950.100**



Mounting angles, metric

for TS
The L-shaped mounting angles accommodate metric assemblies and components. Depending on the installation kit, mounting dimensions 465 mm and 515 mm can be configured.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Explanation of the mounting dimensions in interior installations, see page 1091.

Full installation rack height mm	SU	Packs of	Model No. DK
–	17	2	**7831.611**
1000	37	2	**7831.621**
1200	43	2	**7794.420**
1600	59	2	**7794.740**
2000	76	2	**7831.631**
2200	84	2	**7831.641**

Also required:

Punched sections with mounting flanges or depth stays for TS as installation kit for mounting angles, see page 1095 – 1096.





Mounting angles additional fastening attachment

for 800 mm wide TS network enclosures

The additional fastening attachment counteracts bending of the mounting angles mounted on installation brackets in case of unevenly distributed loads. It is attached directly to 482.6 mm (19″) mounting angles and to the punched section with mounting flange fitted in the depth (inner mounting level).

Material:
Sheet steel, zinc-plated, passivated

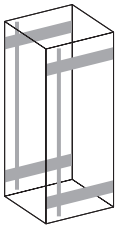
Supply includes:
Assembly parts.

Packs of	Model No. DK
2	**7284.135**

Also required:

TS punched section with mounting flange for the inner mounting level,
see page 993 – 995.





TS punched section with mounting flange as installation kit

for

- **Mounting angles, 482.6 mm (19″)**
- **Mounting angles, metric, Mounting dimension 465 mm**

Installation in enclosure width 600 mm

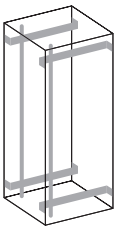
The installation kit consists of 4 TS punched sections with mounting flange 17 x 73 mm to accommodate mounting angles. One pack is sufficient for installing one or two 482.6 mm (19″) attachment levels. For exceptionally heavy installed equipment, we recommend the installation of additional punched sections.

For enclosures		Packs of	Model No. TS
Width mm	Depth mm		
600	600	4	**8612.060**
600	800	4	**8612.080**
600	900	4	**8612.090**
600	1000	4	**8612.000**
600	1200	4	**8612.020**

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.





Depth stays as installation kit

for mounting angles, 482.6 mm (19″)

Installation in enclosure width 800 mm

One installation kit consists of 4 depth stays to accommodate mounting angles. One pack is sufficient for installing one or two 482.6 mm (19″) attachment levels. For exceptionally heavy installed equipment, we recommend the installation of an additional depth stay in the centre. The front cut-out makes cable routing easier with full configuration

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosures		Packs of	Model No. DK
Width mm	Depth mm		
800	600	4	**7827.600**
800	800	4	**7827.800**
800	900	4	**7827.900**
800	1000	4	**7827.000**

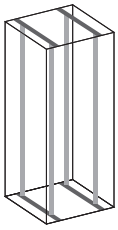
Possible alternative:

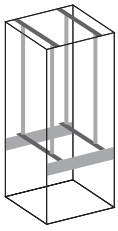
Depth stays TS for mounting angles,
see page 1096.

Installation kits for mounting angles









Depth stays for TS

for mounting angles in TS, FR(i), 482.6 mm (19″)

Installation in enclosure width 800 mm

Depth stays are screw-fastened to the enclosure frame in the enclosure width.
The mounting angle is attached to the depth stay at the top and bottom. The depth stay ensures optimum clearance at the sides for cable routing.
For partial enclosure configuration, the depth stays may be attached to the TS punched sections with mounting flanges 17 x 73 mm on the outer attachment level of the enclosure frame.
Fully depth-variable attachment is facilitated by the attachment slots. Either cranked or L-shaped mounting angles may be used.

Material:
Sheet steel, zinc-plated, passivated
(DK 7827.480)
Sheet steel, spray-finished in RAL 7035
(DK 7827.490)

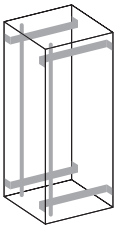
Supply includes:
Assembly parts.

Packs of	Model No. DK	
	Installation position	
	central	side
2	**7827.480**	**7827.490**

Accessories:

For partial installation,
TS punched section with mounting flange,
see page 993 – 994.
Mounting angles, cranked or L-shaped,
see page 1091.





Depth stays as installation kit

for Toptec CR

Installation in enclosure width 800 mm

One installation kit consists of 4 depth stays to accommodate mounting angles. One pack is sufficient for installing one or two 482.6 mm (19″) attachment levels. The installation kit is secured to the inner mounting level.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosures		Packs of	Model No. DK
Width mm	Depth mm		
800	600	4	**7794.580**

Note:
For frame size 600 x 600 mm you will need:
TS punched section with mounting flange as installation kit, Model No. TS 8612.060,
see page 1095.



Depth stays as installation kit

for mounting angles, 482.6 mm (19″), mounting dimensions 23″ and 24″

Installation in enclosure width 800 mm

When using depth stays in 800 mm wide enclosures, attachment spacings of 23″ and 24″ are achieved. Either cranked or L-shaped, 482.6 mm (19″) mounting angles may be used.

Material:
Sheet steel, zinc-plated, passivated

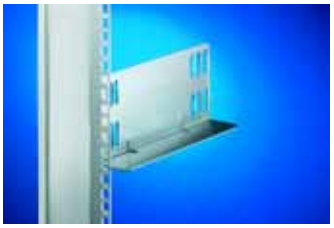
Supply includes:
Assembly parts.

For enclosures		Model No. DK	
Width mm	Depth mm	Design	
		23″	24″
800	800	**7827.823**	**7827.824**
800	900	**7827.923**	**7827.924**
800	1000	**7827.023**	**7827.024**

Delivery times available on request.

Accessories:

Mounting angles 482.6 mm (19″),
cranked or L-shaped,
see page 1091.



Slide rails

for TS mounting angles
With one-sided mounting on the 482.6 mm (19″) mounting angles.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Length mm	Packs of	Model No. PS
185	10	**4530.000**
270	10	**4531.000**

Also required:

Mounting angles, 482.6 mm (19″),
see page 1089.



Slide rails

for TS mounting angles
With two-sided mounting between the 482.6 mm (19″) front and rear mounting angles or 482.6 mm (19″) adaptor pieces.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure depth mm	Packs of	Model No. TS	Model No. PS
500	10	**8613.150**	**–**
600	10	**8613.160**	**4546.000**
800	10	**8613.180**	**4549.000**

Also required:

Mounting angles, 482.6 mm (19″),
see page 1089.
Adaptor pieces, 482.6 mm (19″),
see page 1090.







Slide rails, heavy-duty

for TS, FR(i), TE
With L-shaped mounting angles or 482.6 mm (19″) mounting frame and a clearance between levels of 740 mm.
Easily and quickly installed thanks to locating brackets for the rear level.

Load capacity:
100 kg static load

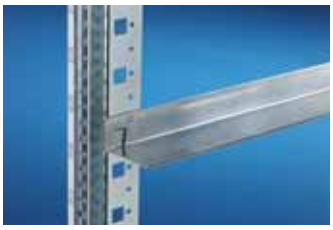
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Distance between 19″ levels mm	Contact surface		Packs of	Model No. DK
	Width mm	Depth mm		
740	50	734	2	**7063.740**

Slide rails





Slide rails, heavy-duty

for TS network enclosures with two 482.6 mm (19″) levels

To support heavy installed equipment. The slide rails are simply located into the cranked mounting angles and secured with screws. The combined use with additional depth stays or, in case of 80 mm wide enclosures, with the additional fastening attachment counteracts possible bending of the mounting angles in case of unevenly distributed loads.

Load capacity:
80 kg, static load

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Note:
Not suitable for use in 482.6 mm (19″) mounting frames.

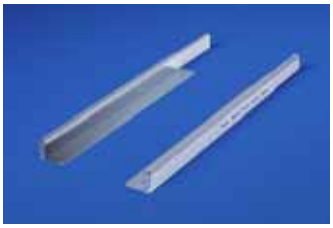
Distance between 19″ levels mm	Contact surface		Packs of	Model No. DK
	Width mm	Depth mm		
298	55	261	2	**7492.300**
398	55	361	2	**7492.400**
498	55	461	2	**7492.500**
598	55	561	2	**7492.060**
698	55	661	2	**7492.070**

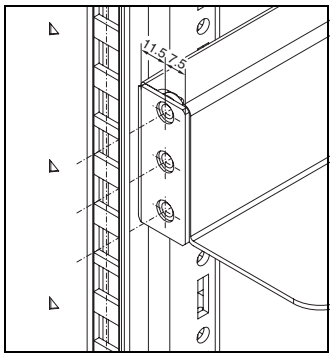
Also required:

For fastening to L-shaped TS mounting angles:
Adaptor DK 7827.300,
see page 1023.

Possible alternative:

For mounting on the front and rear mounting angles:
Slide rail SR 1962.200,
see page 1085.





Slide rails, depth-variable, 1 U

for server and network enclosures with two 482.6 mm (19″) mounting levels and L-shaped mounting angles

The slide rail is pulled out to the required length and secured between the front and rear mounting level. Rear location lugs and front screw-fastening enable convenient one-man assembly. The mounting component to be integrated is inserted horizontally onto the slide rail and optionally secured to the mounting level via its attachment slots.

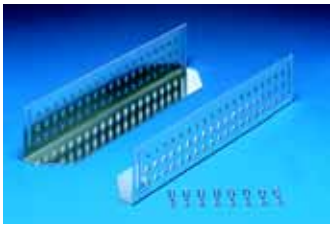
Load capacity:
80 kg/150 kg, static load

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Length mm	Load capacity kg	Contact surface mm	Packs of	Model No. DK
390 – 600	80	50	2	**7063.882**
590 – 930	80	50	2	**7063.883**
590 – 930	150	25	2	**7063.884**

Note:
The super-slimline design of the slide rail allows it to be used in most integration cases for 482.6 mm (19″) mounting components. Because it is secured to the standardised mounting level, it is manufacturer-independent.
The slide rail slightly reduces the installation space below the slide rail so that the U below it is only available for limited use.



Slide rails

for FR(i), TE and 482.6 mm (19″) mounting frames

For mounting between a front and a rear pair of mounting angles. The slide rails can be used to support heavy 482.6 mm (19″) components.

Load capacity:
80 kg, static load

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Distance between 19″ levels mm	Contact surface		Packs of	Model No. DK
	Width mm	Depth mm		
395	85	324	2	**7963.310**
495	85	424	2	**7963.410**
595	85	524	2	**7963.510**
695	85	624	2	**7963.610**
795	85	724	2	**7963.710**

Possible alternative:

Slide rail, depth-variable,
see page 1098.



Slide rails

for EL
For the installation of heavy slide-in equipment.

Material:
Sheet steel, zinc-plated, passivated

For centre part depth mm	Packs of	Model No. EL
216	10	**2240.000**
316	10	**2250.000**
416	10	**2260.000**



Universal server installation kit, 482.6 mm (19″)

for TS, FR(i)
The universal server installation kit is ideally suited for integrating most standard server types into Rittal enclosures with L-shaped mounting angles and a minimum enclosure depth of 900 mm. The installation kit is specially designed to ensure free access to the 482.6 mm (19″) level, for securing the individual servers in the retracted position using the screws (M5) provided.
Distance between angles: 750 mm

For	Packs of	Model No. DK
all common server types	1 set	**7063.100**

Load capacity:
80 kg, static load

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Also required:
Mounting adaptor depending on the server type.
For FR(i) and enclosures with two 482.6 mm (19″) mounting frames:
Installation kit DK 7063.102,
see page 1099.



Mounting adaptor

The adaptors (additionally required) allow servers to be secured to the universal installation kit using the original installation kits supplied by the server manufacturers. The adaptor should be chosen according to the server type being installed. This specific mounting adaptor allows problem-free configuration of combined systems and facilitates flexible use of the individual enclosures in future.

For server types	Packs of	Model No. DK
With front 482.6 mm (19″) server attachment	1 set	**7063.110**
With side attachment (SUN)	1 set	**7063.120**
With side attachment (HP rack system/E)	1 set	**7063.130**

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
1 set of mounting adaptors,
sufficient for integration of an individual server,
including assembly parts.



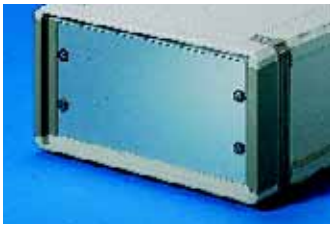
Installation kit

for FR(i) and 482.6 mm (19″) mounting frames
This installation kit makes it possible to mount the universal server installation kit DK 7063.100 both in FR(i) server racks and on two 482.6 mm (19″) mounting frames.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. DK
1 set	**7063.102**

482.6 mm (19″)/metric installation

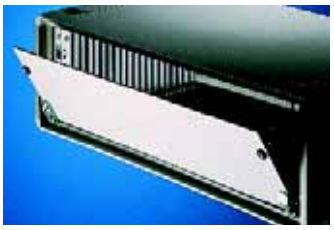


Blanking plate, 482.6 mm (19″)

For the installation in electronic enclosures or housings.

Material:
Aluminium, natural-anodised

U	Packs of	Model No. VC	
		269.2 mm (1/2 19″)	482.6 mm (19″)
1	3	**3746.000**	**1931.200**
2	3	**3747.000**	**1932.200**
3	3	**3748.000**	**1933.200**
4	3	**3749.000**	**1934.200**
6	3	–	**1936.200**
7	3	–	**1935.200**
9	3	–	**1939.200**
12	3	–	**1937.200**



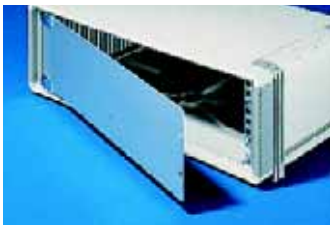
Blanking plate, horizontally hinged

For the installation in electronic enclosures or housings.

Material:
3 mm aluminium, natural-anodised
Hinge: Die-cast zinc, zinc-plated

Supply includes:
Assembly parts.

Width	U	Packs of	Model No. EL
482.6 mm (19″)	3	1	**1944.000**
482.6 mm (19″)	6	1	**1945.000**



Blanking plate, vertically hinged

For the installation in electronic enclosures or housings.

Material:
3 mm aluminium, natural-anodised
Hinge: Die-cast zinc, zinc-plated

Supply includes:
Assembly parts.

Width	U	Packs of	Model No. EL
482.6 mm (19″)	3	1	**1940.000**
482.6 mm (19″)	6	1	**1941.000**



Hinge

for blanking plates

Material:
Die-cast zinc, zinc-plated

Supply includes:
Assembly parts.

Packs of	Model No. EL
2	**1950.000**

German patent no. 40 04 264



Ventilation front panels

For venting enclosures and cases.

Material:
Aluminium, natural-anodised

Width	U	Packs of	Model No. EL
482.6 mm (19″)	1	3	**2231.000**
482.6 mm (19″)	2	3	**2232.000**
482.6 mm (19″)	3	3	**2233.000**





Infill panel, hinged

for 800 mm wide TS network enclosures

To cover the side cable chamber. The infill panel is attached to the vertical enclosure frame at the front. The generous curved design will conceal even large quantities of cables, and facilitates combined use with large-scale shunting rings DK 7220.600.

The infill panel has a hinged design and allows easy access to the cabling level by simply swinging it out. Locating points keep the panel in its open and closed state.

With an offset 482.6 mm (19″) mounting level the panel may likewise be offset in the enclosure depth and secured to TS punched sections with mounting flange on the inner mounting level.

For mounting the 482.6 mm (19″) attachment level in front-most mounting position, version with straight trim panel.

Material:
Sheet steel, spray-finished in RAL 7035

Supply includes:
Assembly parts.

For installation height U	Packs of	Model No. TS	
		Trim panel curved	Trim panel straight
33	2	**7827.530**	**–**
38	2	**7827.532**	**7827.518**[1)]
42	2	**7827.534**	**7827.520**
47	2	**7827.536**	**7827.522**[1)]

[1)] Delivery times available on request.

Accessories:

TS punched section with mounting flange 17 x 73 mm for the inner mounting level,
see page 993 – 994.
PS punched section without mounting flange, 23 x 73 mm,
see page 998.

Note:
The installation of depth stays, e.g. DK 7827.600/.800 is not possible.







Brush strip, vertical

for TS, TE

Within the network distributor, this serves as a flexible infill panel which stylishly conceals the cable management area to the side of the 482.6 mm (19″) mounting level. The brush strip facilitates convenient cable routing from the side and rear distributor area to the front connection level. The clearance required in front of the mounting level is at least 75 mm.

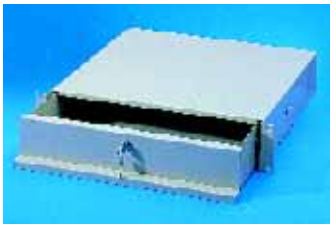
Within the TS, the brush strip is mounted at the side on the vertical frame section, on horizontal or vertical punched sections. It may also be mounted directly on the mounting level of the TS or TE 7000. For direct mounting on the 482.6 mm (19″) mounting frame of the TS or TE, the brush strip should be cut to length accordingly.

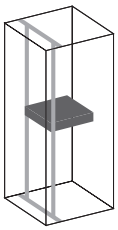
Material:
Aluminium section with brush strip:
Plastic, UL 94-V0

Supply includes:
1 set = 4 brush strips, length 950 mm each.

For enclosure height mm	Packs of	Model No. DK
2000	1 set	**7827.544**

482.6 mm (19″)/metric installation





Drawer, 2 U, 3 U

for a 482.6 mm (19″) attachment level
For front attachment to mounting angles, 482.6 mm (19″). With cover and telescopic slides to accommodate assignment lists, operating manuals and small parts. The small version of the 2 U variant is also suitable for mounting inside a swing frame.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Fully assembled, including assembly parts.

Height	Clearance openings		Installation depth mm	Model No. DK
	Width mm	Depth mm		
2 U	411	244	250	**7282.135**
2 U	411	419	427	**7282.035**
3 U	411	419	427	**7283.035**



Drawer for 482.6 mm (19″)

with shelf
For keyboards, operating manuals etc. The perforated plate in the base helps air to circulate in the enclosure. Load capacity 50 kg. The 1 U drawer can be installed rotated through 180°, allowing it to be used as a utility table.

Material:
Drawer: Aluminium, anodised
Telescopic slides:
Sheet steel, zinc-plated, passivated

Supply includes:
Telescopic slides.

U	Model No. PS
1	**4541.000**
3	**4542.000**

Also required:

Installation kit, corresponding to the chosen enclosure system or depth-variable installation kit, see page 1102.



Installation kit

for component shelves and drawers, with 482.6 mm (19″) installation in TS, ES
For installation between the front and rear adaptor sections or adaptor pieces, 482.6 mm (19″) in 600 mm wide enclosures.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure depth mm	Packs of	For enclosure system	
		TS	ES
		Model No. TS	Model No. PS
500	1 set	**8800.550**	**–**
600	1 set	**8800.560**	**4544.000**
800	1 set	**8800.580**	**–**

Also required:

Mounting angles, 482.6 mm (19″) or adaptor pieces, 482.6 mm (19″), see page 1090.



Installation kit, depth-variable

for 482.6 mm (19″) component shelves and drawers
Depending on the distance between the two 482.6 mm (19″) mounting levels, the installation kit is screw-fastened in the depth between the cranked or L-shaped mounting angles.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Distance between 19″ levels mm	Packs of	Model No. DK
550 – 850	2	**7063.850**

German patent no. 197 10 023

482.6 mm (19″)/metric installation





Adaptor, 3 U

Depth offset 100 mm
This adaptor is used to recess 482.6 mm (19″) mounting of equipment inside enclosures with 19″ installation in the foremost position, such as server or electronic enclosures. In this way, sufficient space can be gained in front of the mounting equipment to integrate patch panels or switches, whilst at the same time exploiting the maximum enclosure depth.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. DK
2	**7246.400**





Mounting kit, 2 U

for 482.6 mm (19″) equipment
Facilitates fast, simple integration of additional 2 U mounting space within an enclosure by attaching to the enclosure frame or to the existing mounting angles at the sides. The flexible slot fastening of the brackets means that the distance between the two installation brackets may be freely selected, so that other 482.6 mm (19″) attachment dimensions may be implemented. The second row of holes is used for the optional configuration of additional mounting surfaces.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. DK
2	**7246.420**





Adaptor, metric to 482.6 mm (19″), 21″/19″

With this adaptor, 482.6 mm (19″) assemblies may be fastened to metric (535 mm) mounting angles, or combined systems may be configured.

Material:
Extruded aluminium section

Supply includes:
Assembly parts.

SU	U	Packs of	Model No. DK
2	1	2	**7246.010**
6	3	2	**7246.030**
11	6	2	**7246.060**

482.6 mm (19″)/metric installation





Adaptor kit 3 U

for 800 mm wide TS enclosures

For fastening individual 482.6 mm (19″) components, or as an additional mounting facility at the rear of the enclosure. The mounting level in the adaptor angle can be adjusted by 100 mm in the depth, leaving sufficient space for baying where patch panels or splicing boxes are used.

Material:
Sheet steel

Colour:
RAL 7035

Height	Mounting position	Model No. DK
3 U	central	**7246.100**

Also required:

Adaptor rail,
see page 997 or
assembly block,
see page 997.





Mounting frame 54 U

for TS, FR(i)

The mounting frame allows configuration of a side-offset 482.6 mm (19″) level with 42 U useful installation space plus the additional integration of a further 12 U for vertical installation. The additional side extension is divided into three installation levels arranged on top of one another, each with 4 U.
The mounting frame may be installed at either the front or rear.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
12 U mounting trim at the side.

For enclosures		Additional vertical installation area	Model No. DK
Width mm	Height mm		
800	2000	12 U	**7827.554**

Delivery times available on request.

Also required:

Mounting angles, 482.6 mm (19″),
see page 1091.



Spring nuts with screws

M6 x 10 mm for T-slot mounting angle

The spring nuts ensure flexible, secure mounting of accessory components on the T-slot of the FR(i) frame and on the T-slot mounting angles.

Supply includes:
50 spring nuts,
50 screws, 10 mm, self-locking.

Design	Packs of	Model No. DK
Phillips-head, M6	50	**7000.990**

482.6 mm (19″)/metric installation



Assembly screws

M5 x 16 mm/M6 x 16 mm
For electronic equipment, 482.6 mm (19″) installed components and blanking plates.

Supply includes:
Plastic washers.

Design	Packs of	Model No. EL
Phillips-head screw M5	100	**2099.500**
Cheese-head screw M6	100	**2093.200**
Phillips-head screw M6	100	**2089.000**



Multi-tooth screws

M5 x 16 mm/M6 x 16 mm
For optimum transmission of torques, an extended tool life and increased safety and reliability when tightening and loosening screw connections.

Supply includes:
Plastic washers.

	Bit size	Packs of	Model No. DK
M5	Multi-tooth 25	100	**7094.500**
M6	Multi-tooth 30	100	**7094.600**





Captive nuts M5/M6

For the attachment of rack-mounted electronic equipment, 482,6 mm (19″) installed equipment and blanking plates to mounting angles, 482,6 mm (19″).
For use with metal thickness from 0.8 – 2.0 mm. In areas of narrow tolerance, captive nuts for metal thicknesses of 1.2 – 1.5 mm should be used. Optionally with or without contact of the installed equipment to the 482.6 mm (19″) section/ enclosure.

Captive nut M5

Design	For metal thicknesses mm	Packs of	Model No. EL
With contact	0.8 – 2.0	50	**2094.500**
Without contact	0.8 – 2.0	50	**2092.500**

Captive nut M6

Design	For metal thicknesses mm	Packs of	Model No. EL
With contact	0.8 – 2.0	50	**2094.200**
Without contact	0.8 – 2.0	50	**2092.200**
With contact	1.2 – 1.5	50	**2094.300**
Without contact	1.2 – 1.5	50	**2092.300**





Cage nut – front mounting, 482.6 mm (19″)

The cage nut consists of an expanding nut which is simply inserted into the square attachment hole at the front and then secured with the assembly screw.
When tightening the screw, the cage expands and thus secures the required components. Clamping range from 1.2 – 4.5 mm. Multi-tooth screw head, bit size T 30.

Material:
Sheet steel

Dimensions mm	Size of mounting hole mm	Packs of	Model No. DK
M6 x 16	9.5 x 9.5	50	**2094.400**

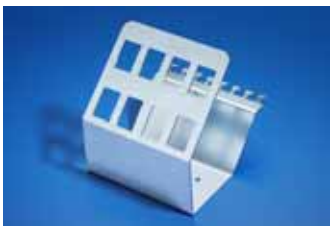
Surface finish:
Zinc-plated, passivated

Supply includes:
50 expanding nuts including assembly screws and plastic washers.

Patch panels for copper technology







Patch panels

With slots, prepared for cable clamping with cable ties SZ 2597.000.

Design:
Suitable for direct attachment on mounting plates and, by using mounting clip SZ 2309.000, also on support rails.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Accessories:

Mounting clip SZ 2309.000,
see page 1002.
Cable tie SZ 2597.000,
see page 1066.

Manufacturer	Usable modules	Packs of	Model No. IN		
			1 slot	2 slots	8 slots
ADC KRONE	RJ 45 KM8 STP	1	–	**2203.260**	**2203.270**
BTR	RJ 45 E-DAT module 8 (8) Cat. 6	1	–	**2203.200**	**2203.210**
Corning Cable Systems	RJ 45 FutureCom™ S250 module	1	–	**2203.220**	**2203.230**
Dätwyler	RJ 45 unilan® module MS 1/8 Cat. 6	1	–	**2203.200**	**2203.210**
Reichle & De-Massari (R&M)	RJ 45 connection module Cat. 5e and Cat. 6, fibre-optic couplings SC-RJ and E2000™ Compact (via module recess)	1	**2203.110**	**2203.120**	**2203.160**
Tyco Electronics Corporation (AMP NETCONNECT)	RJ 45 SL series (Toolless Jacks, 110Connect Jacks, AMP-TWIST-6S Jacks)	1	–	**2203.240**	**2203.250**

FutureCom is a brand name of Corning Cable Systems Brands, Inc.
unilan is a registered trademark of Dätwyler Kabel+Systeme.
AMP NETCONNECT and AMP-TWIST are brand names of Tyco Electronics Corporation.



Top-hat rail module

Top-hat rail module with mounting clip for top-hat rails to DIN 50 002, robust metal housing, with strain relief.
Cat. 6, 2 x RJ 45, System Corning Future Com S 250 (cables are attached without the use of tools).

Design	Cat.	Packs of	Model No. DK
2 x Corning Future Com S 250	6	3	**7870.614**



Data distributors

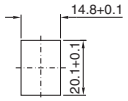
LSA-plus system

1 U (1/2 19″) 42 HP
8 x RJ 45 jacks, shielded, cover with quick-release fastener, with strain relief and earth connection.

1 U (19″) 84 HP
24 x RJ 45 jacks, shielded, cover with quick-release fastener, with strain relief and earth connection.

Design	HP	Cat.	Packs of	Model No. DK
8 ports, UTP, RJ 45/LSA, including 8 patch cables 0.25 m, yellow	42	6	1	**7870.822**
24 ports, STP, RJ 45/LSA, including 12 patch cables 0.6 m, yellow	84	6	1	**7870.830**





For shielded RJ 45 modular jacks

To accommodate screened RJ 45 jacks. Cut-outs and rear of patch panels electrically conductive to contact the fitted jacks with the patch panel and the zinc-plated, passivated 482.6 mm (19″) mounting angles. With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel, zinc-plated, passivated

Colour:
Front: RAL 7035,
Rear: Zinc-plated, passivated

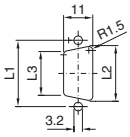
U	Number of locations	Model No. DK
1	16	**7394.035**
2	32	**7395.035**

Other versions available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 1070.





For 24 V interfaces

For the installation of 16 sub-D (trapezoid) jacks and connectors.
With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

L1 mm	L2 mm	L3 mm	
25	21	16.5	9-pole
33.3	29.2	24.7	15-pole
47	43	38.5	25-pole

Material:
Sheet steel

Colour:
RAL 7035

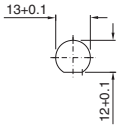
U	For no. of poles	Number of locations	Model No. DK
2	9	16	**7087.535**
2	15	16	**7086.535**
2	25	16	**7089.535**

Other versions available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 1070.





To accommodate BNC jacks (version E)

With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

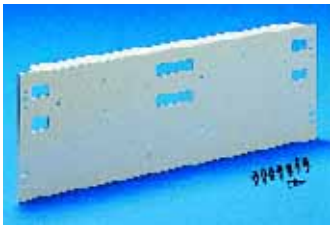
Colour:
RAL 7035

U	Number of locations	Model No. DK
3	32	**7069.535**

Other versions available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 1070.



To accommodate the AT & T Connector System 110

For the attachment of 2 wiring blocks each with 100 paired wires and accommodation facility for 2 cable holders (backboards). With rear accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

Colour:
RAL 7035

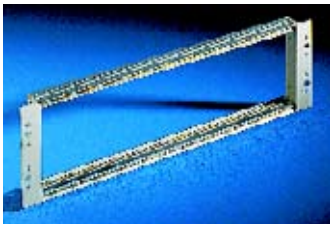
Supply includes:
12 quick-release fasteners for wiring blocks and cable holders.

U	Paired wires	Model No. DK
4	200	**7049.035**

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 1070.

Patch panels for copper technology



Module panel, 482.6 mm (19″) 3 U/84 HP

To accommodate various partial front plates and hence for individual assembly of a patch panel with any given combination of data connectors and couplings. The useful width is 84 HP.

Material:
Aluminium

Colour:
RAL 7035

Supply includes:
Two 482.6 mm (19″) flanges,
2 horizontal rails
including 2 tapped strips.

Packs of	Model No. DK
1	**7330.035**

Also required:

Partial front plates,
see page 1108.



Partial front plates

To accommodate various data connectors and couplings in the module panel DK 7330.035.

Material:
Sheet steel

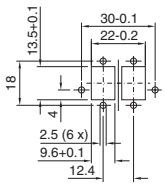
Colour:
RAL 7035

For socket/coupling	Number of locations	HP	Packs of	Model No. DK
ST	4	4	2	**7334.035**[1)]
BNC-E	4	6	2	**7339.035**
D-Sub 9-pole	3	4	2	**7342.035**
D-Sub 15-pole	2	4	2	**7343.035**
D-Sub 25-pole	1	4	2	**7344.035**
RJ 11 – 45	4	8	2	**7349.035**[1)]
Filler panel	–	4	2	**7355.035**
Filler panel	–	6	2	**7356.035**[1)]
Filler panel	–	8	2	**7357.035**[1)]
Filler panel	–	24	1	**7359.035**[1)]

Other versions available on request.
[1)] Extended delivery times.

Note:
For drawings of the cut-outs,
see page 1107, 1109.





To accommodate E-2000, E-2000 duplex or SC fibre-optic couplings

For 1 U with accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

Colour:
RAL 7035

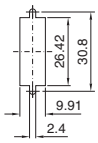
U	Number of locations single/duplex	Model No. DK
1	16/8	**7433.035**

Other versions available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 1070.





To accommodate SC duplex fibre-optic couplings

With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

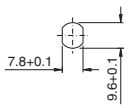
Colour:
RAL 7035

U	Number of locations	Model No. DK
1	12	**7154.035**
2	24	**7155.035**

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 1070.





To accommodate ST fibre-optic couplings

With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

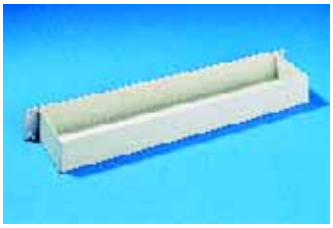
Colour:
RAL 7035

U	Number of locations	Model No. DK
1	16	**7437.035**
2	24	**7137.535**
2	32	**7637.035**[1)]

[1)] Extended delivery times.
Other versions available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 1070.



Panel 1 U, 482.6 mm (19″)

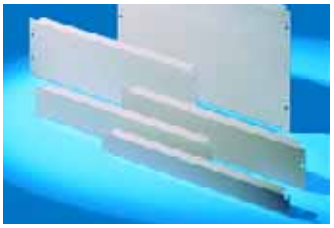
with solid tray
For the storage of fibre-optic coupling covers or assembly parts.
Depth: 100 mm

Material:
Sheet steel

Colour:
RAL 7035

U	Model No. DK
1	**7300.335**

Patch panels





Blanking panel, 482.6 mm (19″)

As an extension cover or for population as required.

Material:
Sheet steel

U	Installation height mm	Packs of	Model No. DK	
			RAL 7035	RAL 9005
1	44	2	**7151.035**	**7151.005**
1,5	66	2	**7157.035**	**–**
2	88	2	**7152.035**	**7152.005**
3	132,5	2	**7153.035**	**7153.005**[1)]
6	266	2	**7156.035**	**7156.005**[1)]

[1)] Delivery times available on request.





Blanking panel, 1 U

Toolless attachment, 482,6 mm (19″)
The blanking panel is used to seal unused areas within the 482.6 mm (19″) mounting level. Quick toolless attachment means that it is easily integrated anywhere, and can also be removed again if necessary. Thanks to the consistent use of blanking panels, targeted air routing can be ensured in partially configured racks.

Colour	Packs of	Model No. DK
RAL 7035	10	**7151.110**
RAL 9005	10	**7151.105**

Material:
Plastic

Supply includes:
10 blanking panels with integral quick-fastening.



Identification strips

for patch panels
For individual labelling of different slots, self-adhesive.
Length: 210 mm, height: 10 mm.

Packs of	Model No. DK
32	**7167.000**



Splicing cassette holder

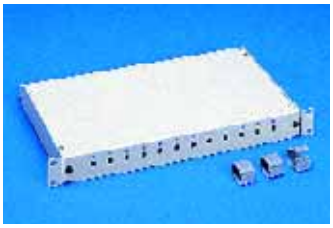
To accommodate differently sized splicing cassettes with variable cassette accommodation. Up to 8 splicing cassettes may be fitted in one holder. The splicing cassette holder can be flexibly secured to any mounting surface, and is particularly suitable for retro-fitting tor small fibre-optic distributors without patch panels.
One extra holder may be fitted in small fibre-optic distributor DK 7452.035
→ max.: 16 splicing cassettes.
Two extra holders may be fitted in small fibre-optic distributor DK 7453.035
→ max.: 32 splicing cassettes.

Height		Model No. DK
Overall height mm	Threaded bolts mm	
93	85	**7450.035**

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Holder with threaded bolts,
variable angle bracket, cassette cover,
knurled nut and assembly parts.





Fibre-optic splicing box, depth-variable

The 482.6 mm (19″) splicing box is designed to accommodate splicing cassettes and can be installed in any network distributor with 482.6 mm (19″) accommodation and used as a fibre-optic termination or distributor. The variable cassette fixture permits twist-proof installation of all standard splicing cassettes. The rear section of the splicing box is completely open for cable entry; a rubber cable clamp strip provides protection against dust. The fibre-optic cables can be secured with cable ties or cable clamps.
The splicing box is infinitely depth-adjustable up to 100 mm within the 482.6 mm (19″) flanges. In addition, the splicing box may be fully withdrawn from the 482.6 mm (19″) flanges. Two strain relief clips and cable routing clips for the fibre stock provide a solution to suit any fibre-optic wiring system.

U	Maximum no. of splicing cassettes	Model No. DK
1	2	**7241.005**
2	4	**7242.005**

Other versions available on request.

German patent no. 196 08 385

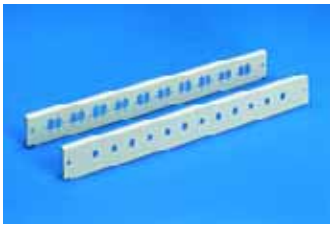
Installation depth:
302 mm

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Splicing box, cable routing clips and cassette cover and assembly parts for patch panel.

Note:
Supplied without patch panel and splicing cassettes.



Patch panels

for fibre-optic splicing box, depth-variable
There is a choice of 9 panels with appropriate cutouts for the installation of various fibre-optic couplings, together with 2 blanking panels for individual population or as a cover.
The patch panels are fastened to the splicing box with quick-release fasteners.

Material:
Sheet steel

Colour:
RAL 7035

For coupling	Number of locations	Model No. DK 1 U	Number of locations	Model No. DK 2 U
ST	12	**7241.015**	24	**7242.015**
	16	**7241.065**		
E-2000, E-2000 Duplex[2] or SC	24	**7241.024**	–	**–**
SC duplex	12	**7241.045**	24	**7242.045**[1]

[1] Extended delivery times.
[2] For E-2000 Duplex only half of the locations are available.
Other designs available on request.

Splicing boxes



Fibre-optic splicing box with telescopic pull-out

lockable

The 482.6 mm (19″) splicing box is designed to accommodate splicing cassettes and can be installed in any network distributor with 482.6 mm (19″) accommodation and used as a fibre-optic termination or distributor. The telescopic pull-out provides optimum access to the splicing cassettes and cable clamp. The variable cassette fixture permits twist-proof installation of all standard splicing cassettes. The security lock fitted at the front protects against unauthorised access. The rear section of the splicing box is completely open for cable entry; a rubber cable clamp strip provides protection against dust. The fibre-optic cables can be secured with cable ties or cable clamps; two strain relief clips and cable routing clips for the fibre stock provide a solution to suit any fibre-optic wiring system.

U	Maximum no. of splicing cassettes	Model No. DK
1	2	**7170.535**
2	4	**7470.535**
3	6	**7570.535**[1]

Other versions available on request.
[1] **German patent no. 44 13 136**

Installation depth:
363 mm

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Splicing box, cable routing clips, security lock and cassette cover and assembly parts for patch panel.

Note:
Supplied without patch panel and splicing cassettes.



Patch panels

for fibre-optic splicing box, lockable

There is a choice of 20 panels with appropriate cut-outs for the installation of various fibre-optic couplings, together with 3 blanking panels for individual population or as a cover.

Material:
Sheet steel

Colour:
RAL 7035

For coupling	Number of locations	Model No. DK 1 U	Number of locations	Model No. DK 2 U	Number of locations	Model No. DK 3 U
DIN 47 256	12	**7173.535**[1]	–	**–**	–	**–**
ST	12	**7174.535**	24	**7474.535**	48	**7574.535**
	16	**7174.135**[1]				
FC-PC	12	**7175.535**[1]	–	**–**	–	**–**
E-2000, E-2000 Duplex[2] or SC	20	**7178.535**	24	**7478.535**	48	**7578.535**
SC duplex	12	**7169.535**	24	**7469.535**	–	**–**
Blanking panel	–	**7179.535**	–	**–**	–	**–**

[1] Delivery times available on request.
[2] For E-2000 Duplex only half of the locations are available.
Other designs available on request.



Blanking cover

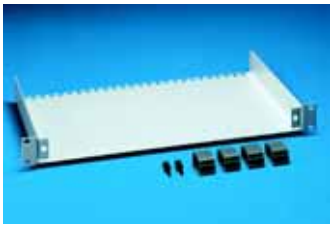
for fibre-optic cut-outs

To cover unused cut-outs in patch panels.

Material:
Plastic PA 6.6

Colour:
Black

	Packs of	Model No. DK
SC, E-2000	20	**7300.230**
E-2000 Duplex	20	
SC duplex	20	**7300.240**
ST	20	**7300.250**



Fibre-optic breakout box 1 U

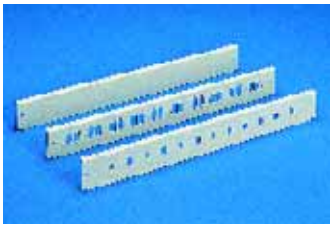
For splice-free cabling of fibre-optic breakout cables.
Cable bundles may be clamped on the hammer heads at the rear. 4 self-adhesive cable clips are supplied loose for cable clamping and for storing excess lengths inside the box.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Breakout box, cable routing clips, assembly parts for patch panel.

Installation depth	Model No. DK
250 mm	**7241.500**



Patch panels

for fibre-optic breakout box 1 U
There is a choice of 5 panels for the breakout box with appropriate cut-outs for the installation of various fibre-optic couplings, together with 1 blanking panel for individual population or as a cover.

Material:
Sheet steel

Colour:
RAL 7035

For coupling	Number of locations	Model No. DK
ST	12	**7241.015**
ST	16	**7241.065**
E-2000, E-2000 Duplex[2] or SC	24	**7241.024**
SC duplex	12	**7241.045**
Blanking panel	–	**7241.055[1]**

[1] Delivery times available on request.
[2] For E-2000 Duplex 10 locations are available.
Other designs available on request.





Fibre-optic splicing distributor

Unlike the splicing box, the splicing distributor may optionally be installed inside or outside of network distribution enclosures.
The splicing distributor is designed to accommodate fibre-optic splicing cassettes. These are mounted individually between mounting trays which can be stacked on top of one another as required. Strain relief for the cables and individual fibres is provided by cable ties.
The basic unit can accommodate up to 2 additional packs of 4 extension units DK 7381.035.

Dimensions:
W x H x D: 190 x 250 x 90 mm

Threaded bolts:
75 mm

	Model No. DK
Fibre-optic splicing distributor	**7380.035**

German patent no. 40 08 840

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Base including one pair of mounting trays, lid and assembly parts.



Fibre-optic splicing distributor extension unit

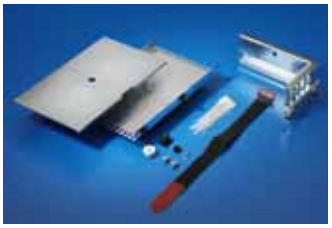
Additional pairs of mounting trays, each of which can accommodate one splicing cassette and the fibre stock, are used to extend the splicing distributor.

Material:
Sheet steel

Colour:
RAL 7035

Packs of	Model No. DK
2	**7381.035**

Splicing boxes/LSA connection system







Fibre-optic splicing cassette support

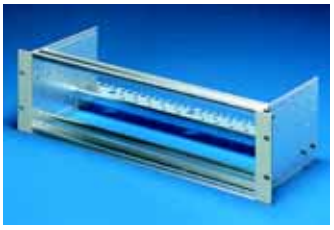
To accommodate up to 4 splicing cassettes to DIN 47 662.
The cassettes may be removed individually, to avoid damaging intact connections during maintenance work.
May be installed in two positions on the mounting plate or on punched sections, to ensure space-saving integration.
There is plenty of space for buffered fibres. Strain relief of buffered fibres and cable pigtails may be provided from above and below using cable ties.

	Packs of	Model No. IN
Holder and support for 1 splicing cassette (maximum configuration: 4 supports)	1	**2203.300**
Support for 1 splicing cassette (extension)	1	**2203.310**

Dimensions:
W x H x D: 104 x 250 x 165 mm

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.



Fixture with rods, 3 U

for LSA strips
To accommodate
15 LSA profile dividing strips 2/10 on 2 rods, Ø 12 mm.
The fixture unit may be integrated in all 482.6 mm (19″) mounting levels. With cable clamp rail at the rear.

Dimensions:
W x H x D:
482.6 mm (19″) x 132.5 mm (3 U) x 180 mm

U	Model No. DK
3	**7050.200**

Material:
Side panels: Aluminium plates
482.6 mm (19″) side panels/horizontal rail: Extruded aluminium section

Supply includes:
Fixture with rods as modular system.



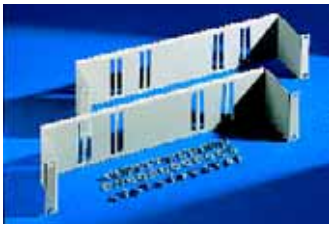
Support unit, 3 U

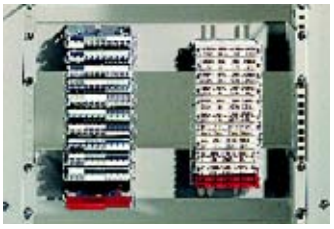
for LSA-Plus strips, max. 150 paired wires
To accommodate a maximum of 15 LSA-Plus strips (each with 10 paired wires). 3 x 5 LSA-Plus connection strips 2/10, series 2, may be installed horizontally. Strip length 124 mm, height pitch pattern 22.5 mm. The support unit may be integrated in all 482.6 mm (19″) mounting levels.
The mounting level is recessed 75 mm behind the 482.6 mm (19″) flanges. Integral shunting rings enable tidy routing and distribution of the telecommunication cables.

U	Model No. DK
3	**7050.100**

Material:
Stainless steel

Supply includes:
Support unit, 8 shunting rings.





Accommodation system, 2 U

for LSA installation kit
To accommodate LSA mounting troughs/cable retainers on the 482.6 mm (19″) mounting angle.

Dimensions:
Total depth: 98.5 mm
Height: 2 U

Material:
Sheet steel

Colour:
RAL 7035

U	Packs of	Model No. DK
2	2	**7050.035**

Accessories:

FM universal mounting bracket,
see page 861.





Handle set

for Comfort Panel

For external mounting on corner pieces, also suitable for retro-fitting.

Material:
Handle tube: Aluminium, natural-anodised
Handle holder: Die-cast zinc, powder-coated in RAL 7024
Covers: Polyamide, similar to RAL 7024

Note:
Shorter heights and widths can be achieved by cutting the handle tube to length.

For enclosures with 74 mm depth, cannot be mounted on the same side as the
- Support arm connection.

Accessories:

Clipboard, display board
see page 1118.

For horizontal mounting

With front panel width	Packs of	Model No. CP
482.6 mm (19″)	1 set	**6375.010**
As specified	1 set	**6375.019**[1)]

Supply includes:
Handle tube, Ø 20 mm,
2 handle holders,
2 covers,
Assembly parts.

For vertical mounting

With front panel height	Packs of	Model No. CP
7 U	1 set	**6375.020**
As specified	1 set	**6375.029**[1)]

[1)] Please additionally state when ordering:
– Number/dimensions of front panel
– Number of cross members

Supply includes:
2 handle tubes, Ø 20 mm,
4 handle holders,
4 covers,
assembly parts.





Handle set

for Optipanel

For external mounting on corner pieces, also suitable for retro-fitting.

Material:
Handle tube: Aluminium, natural-anodised
Handle holder:
Die-cast zinc, powder-coated in RAL 7035
Covers: Polyamide, RAL 7024

Note:
Shorter heights and widths can be achieved by cutting the handle tube to length.

For enclosures with 100 mm depth, cannot be mounted on the same side as the support arm connection.

Accessories:

Clipboard, display board
see page 1118.

For horizontal mounting

With front panel width	Packs of	Model No. CP
482.6 mm (19″)	1 set	**6385.010**
As specified	1 set	**6385.019**[1)]

Supply includes:
Handle tube, Ø 25 mm,
2 handle holders,
2 covers.

For vertical mounting

With front panel height	Packs of	Model No. CP
7 U	1 set	**6385.020**
As specified	1 set	**6385.029**[1)]

[1)] Please additionally state when ordering:
– Number/dimensions of front panel
– Number of cross members/sealing bars
– Order number of enclosure

Supply includes:
2 handle tubes, Ø 25 mm,
4 handle holders,
4 covers.

Handles, external mounting accessories



Handle set VIP

for VIP 6000 with wide frame

For mounting on the corner connectors of the enclosure frame.

Material:
Handle tube:
Extruded aluminium section, natural-anodised
Handle holder:
Die-cast zinc, powder-coated in RAL 7035



For horizontal mounting

With front panel width	Packs of	Model No. CP
482.6 mm (19″)	1 set	**6101.000**
As specified	1 set	**6101.009**[1)]

Supply includes:
2 handle holders,
1 handle tube,
2 screws.

For vertical mounting

With front panel height	Packs of	Model No. CP
7 U	1 set	**6102.000**
As specified	1 set	**6102.009**[1)]

[1)] Please additionally state when ordering:
– Number and dimensions of front panel
– Number of cross members/sealing bars
– Order number of your enclosure

Supply includes:
Packs of 4 handle holders,
2 handle tubes,
4 screws.

Note:
Shorter heights and widths can be achieved by cutting the handle tube to length.

Accessories:

Clipboard, display board
see page 1118.



Handle set

For vertical and horizontal mounting on all surfaces.
Overall length: 420 mm.

Material:
Handle tube: Aluminium, natural-anodised
Conduit holder: Die-cast zinc, RAL 7035

Supply includes:
1 set =
4 conduit holders,
2 handle tubes.



Packs of	Model No. SZ
1 set	**2389.000**

Accessories:

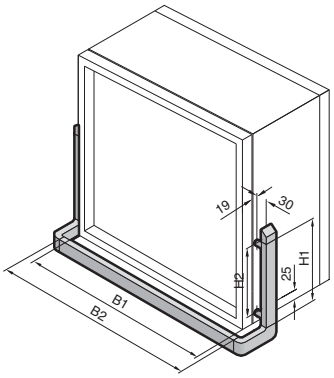
Clipboard, display board
see page 1118.



Handle frame

for operating housing with display panel front

For operating housing with display panel front	CP 6442.500 CP 6462.500	CP 6552.500	CP 6662.500
Model No. CP	**6191.000**	**6192.000**	**6190.000**
Operating housing width (B1) mm	380	500	600
Width of the horizontal rectangular tube (B2 = B1 + 48) mm	428	548	648
Height of the vertical rectangular tube (H1) mm	345	465	299
Hole distance between the assembly holes (H2) mm	295	415	249



Colour:
RAL 8019

Supply includes:
Rectangular aluminium tube,
plastic corner bracket,
end caps,
assembly parts.

Handles

For horizontal or vertical attachment to the enclosure panel of:
- Comfort Panel,
- VIP 6000 with combined or narrow front frame,
- Optipanel,
- other enclosures or
- surfaces.

Mounting holes and surfaces without fins are required for assembly purposes. For the VIP 6000 version with fins, corresponding milling work may be carried out. With the operating/keyboard housing, please specify “Prepared for handle set CP 6107.XXX”.

Material:
Handle holder: Die-cast zinc, RAL 7035
Cover bungs: Plastic, similar to RAL 7035
Handle tube: Aluminium, powder-coated similar to RAL 9006

German patent no. 19 937 966
French patent no. 2 797 555
Italian patent no. 0 131 8210
US patent no. 6,507,978



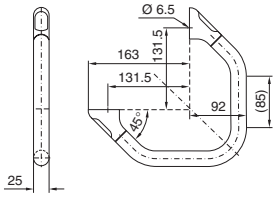
Corner handle

Supply includes:
4 handle holders,
2 handle tubes,
assembly parts.

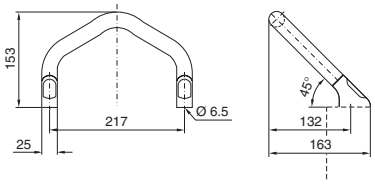
Packs of	Model No. CP
1 set	**6107.000**



Mounting on enclosure corner



For external mounting on straight surfaces (90° rotation of handle holder)





U handle

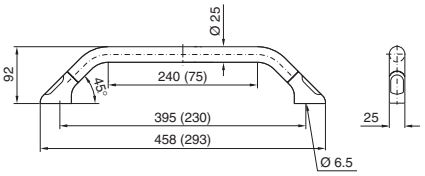
Supply includes:
2 handle holders,
1 handle tube,
assembly parts.

For front panel size	Packs of	Model No. CP
≥ 7 U	1 set	**6107.100**
482.6 mm (19″)	1 set	**6107.200**

Accessories:

For CP 6107.200:
Clipboard, display board
see page 1118.





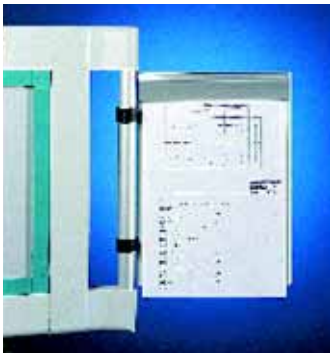
Note:
Dimensions in brackets for CP 7 U.



Display board with wall bracket

see page 1118.

Handles, external mounting accessories/connection components



Clipboard

For securing operating instructions or plans (A4 size) at eye level.
Prepared for mounting on the right-hand side; mounting on the left is also possible by unscrewing and moving the clip part.
For mounting purposes, a straight tube length of ≥ 200 mm, Ø 20 mm or Ø 25 mm, is required.

Material:
Sheet steel, RAL 7035
Clip: Aluminium, natural-anodised.

Width mm	Height mm	Model No. CP
225	315	**6013.000**

Clipboard in conjunction with Command Panel VIP 6000:
European patent no. 0 839 093 with validity for DE, FR, GB, IT

Also required:

Handle set SZ 2389.000, see page 1116
or
Handle set for Comfort Panel, see page 1115
or
Handle set for VIP 6000, see page 1116
or
Handle set for Optipanel, see page 1115
or
U handle CP 6107.200, see page 1117.



Display board with wall bracket

To accommodate test plans, documents etc. in A4 format.

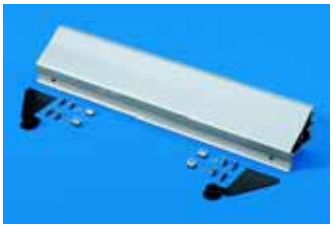
Installation:
- On surfaces,
- On a 25 mm pitch pattern of the TS frame or rail system,
- On handle set Ø 20 mm or Ø 25 mm.

Supply includes:
10 display boards, wall brackets and assembly parts.

Packs of	Model No. CP
1 set	**6013.100**

Accessories:

Handle set SZ 2389.000, see page 1116
or
Handle set for Comfort Panel, see page 1115
or
Handle set for VIP 6000, see page 1116
or
Handle set for Optipanel, see page 1115
or
U handle CP 6107.200, see page 1117.





Enclosure surface connector

To accommodate:
- Support for keyboards (SM 2383.000)
- Optipanel keyboard housing for front panel width = 482.6 mm (19″) CP 6384.009. Please state front panel height and installation depth (50 or 100 mm) in addition to Model No.

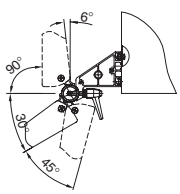
Material:
Extruded aluminium section, natural-anodised,
Side cover, sheet steel RAL 7024.

Supply includes:
Assembly parts.

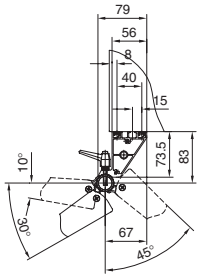
Packs of	Model No. SM
1 set	**2383.010**

Note:
Other widths available on request.

Mounting on surfaces



Mounting underneath surfaces





Enclosure duct connector

for Comfort Panel and VIP 6000

To fit
- Comfort Panel in conjunction with the switch housing 74 mm and 113 mm deep.
- VIP 6000 with narrow and combined frames in conjunction with the keyboard housing 105 mm deep.

The angle between the operating and keyboard housing is 120°.
At the same time, the duct connector is used for cable routing from the operating housing to the keyboard housing.

Material:
Aluminium

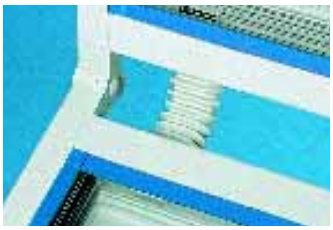
Colour:
RAL 7035

Supply includes:
Assembly parts.

Weight kg	Packs of	Model No. CP
2.0	1 set	**6006.000**

Delivery times available on request.

Note:
When retro-fitting, appropriate mounting holes and cut-outs must be made in the operating and keyboard housings for assembly purposes.



Cable tube, flexible

for VIP 6000

Suitable for cable routing from the operating housing to the keyboard housing.
Suitable for use with
- Frame connector, adjustable
- Hinged frame connector
- Frame connector, rigid
- Enclosure bar connector

May be mounted on the following keyboard housings:
- Keyboard housing: 105 mm
- Keyboard housing: 44 mm
- Keyboard housing: 27 mm
  with connection for flexible cable conduit (design 4.1, see page 223).

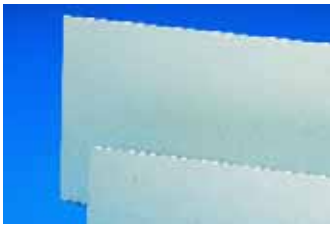
Corresponding cut-outs are required for connecting the cable tube in the operating and keyboard housing.

A cable tube is included with the supply to selection 4.5, see page 226.

Colour:
RAL 7035

Supply includes:
Assembly parts.

For keyboard housings	Model No. CP
CP 6351.009, design **4.1, 2 and 4**	**6017.100**
Others	**6017.000**



Front panels

for Comfort Panel, VIP 6000 and Optipanel

Material:
3 mm aluminium, natural-anodised

Note:
If more than one front panel is used cross members are required,
see page 1122.

Width mm	Height mm	Model No. CP	
		with mounting hole	with threaded bolts M5
482.6 (19″)	155.0 (3.5 U)	**6027.000**	**6027.010**
482.6 (19″)	310.3 (7 U)	**6028.000**	**6028.010**

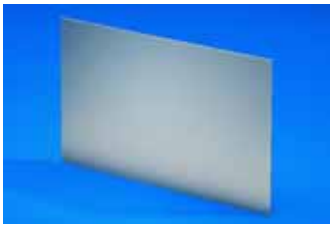
Also required:

Mounting kit
for Comfort Panel
CP 6053.800,
see page 1122,
for VIP 6000 and Optipanel
CP 6053.000/.500,
see page 1121.

Rittal service:

Other sizes and versions with threaded bolts, cut-outs and engravings available on request.

Front assembly



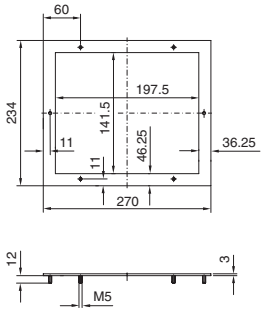
Front panels
for Optipanel CP 6380.100
With threaded bolts M5.

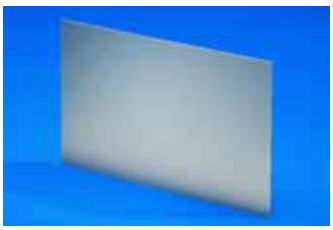
Dimensions:
270 x 234 mm

Material:
3 mm aluminium, natural-anodised

Supply includes:
Mounting kit.

Mounting cut-out	Packs of	Model No. CP
Without	1	**6027.500**
For Siemens Simatic TP 177 A/B	1	**6027.520**
According to specifications	1	**6027.509**





Front panels
for Compact Panel

Material:
3 mm aluminium, natural-anodised

Size W x H mm	To fit Compact Panel	Model No. CP
178 x 200	CP 6340.0X0	**6028.500**
178 x 350	CP 6340.1X0	**6028.510**
178 x 482.6	CP 6340.2X0	**6028.520**[1)]
252 x 200	CP 6340.3X0	**6028.530**
252 x 350	CP 6340.4X0	**6028.540**

[1)] Delivery times available on request.





Front panels, hinged
for VIP 6000 and Optipanel

Dimensions:
19″ x 7 U (482.6 x 310.3 mm)

Opening angle:
Optipanel: 125°
VIP 6000: 95°

Material:
Front panel: 3 mm aluminium, natural-anodised
Extruded aluminium section: Natural-anodised

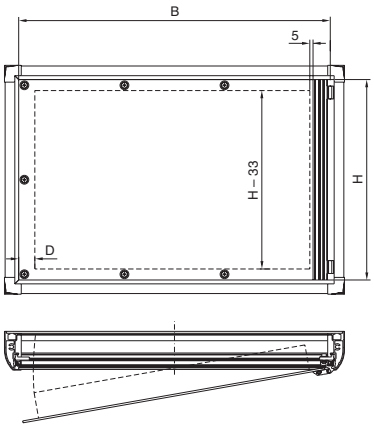
Supply includes:
Hinge section, hinge strip, 2 end trims and assembly parts.

Front panel for	Design	Model No. CP
Opti-panel	Screw-fastened from the outside	**6027.100**
	Screw-fastened from the inside	**6027.110**
	With cam	**6027.120**
VIP 6000	Screw-fastened from the outside[1)]	**6027.200**
	Screw-fastened from the inside[1)]	**6027.210**
	With cam[1)]	**6027.220**

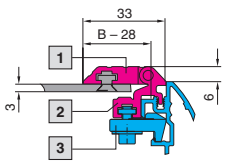
Delivery times available on request. For other sizes, please add the extension .XX9 to the model no.
[1)] When ordering, please specify the colour of the required end trim (see page 219).

Required distance from edge “D” to avoid collisions

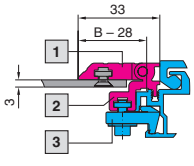
Installation depth	Dimension "D"
Optipanel 50 mm	25 mm
Optipanel 100 mm	34 mm
Optipanel 150 mm	48 mm
VIP 6000 44 mm	25 mm
VIP 6000 105 mm	36 mm
VIP 6000 155 mm	52 mm



Installation situation Optipanel



Installation situation VIP 6000



1 Hinge strip
2 Hinge section
3 Retaining claw

B = Width




Mounting kit

for VIP 6000 and Optipanel

For installing
- Aluminium front plates
- Command panels
- Keyboards




For holes

Supply includes:
Packs of
30 retaining claws, captive nuts, screws and sealing washers.

For front panels	Thread	Model No. CP
Others	M4	**6058.000**
Rittal and others	M5	**6053.000**

For threaded bolts

Supply includes:
Packs of
10 retaining claws and cap screws.

For front panels	Thread	Model No. CP
Others	M4	**6058.500**
Rittal and others	M5	**6053.500**[1)]

[1)] For the installation of TFT monitors 15″, 17″ and 19″.

For screw clamp

Supply includes:
Packs of
4 pressure plates,
4 attachment strips.

For direct installation of	Model No. CP
Siemens Sinumerik: OP 010, OP 010C, OP 012, OP 015, MCP 483, PP 012, Querty 19″, KB 483C	**6053.210**
Siemens Simatic: Panel PC 477, 577, 677, 677B: 12.1″ touch, 15.1″ touch, 12.1″ keys, 15.1″ keys, 19″ touch[1)] Panel PC 877: 15.1″ touch, 12.1″ keys, 15.1″ keys, 19″ touch[1)]	
Command panels Siemens Simatic: OP 270 10″ MP 270B 10″ keys, MP 277 10″ key MP 370 12″ key, MP 377 12″ key	**6053.220**

The mounting set can only be installed vertically.
Installation in VIP 6000 only in conjunction with end trim.
[1)] 2 packs are required.

Installation of command panels TP 270 6″, TP 277 6″, TP 270 10″, OP 270 6″, OP 277 6″, MP 270B 6″, MP 270B 10″ touch, MP 277 10″ touch, MP 370 12″ touch, MP 377 12″ touch, MP 370 15″, MP 377 15″ touch is achieved via an adaptor plate (included with the supply of the enclosure if the appropriate selection is made, or else available on request).

Front assembly



1



2



3

Mounting kit

for Comfort Panel
For the installation of aluminium front panels, command panels and keyboards.

Supply includes:
CP 6058.800, CP 6053.800:
20 each of retaining claws, captive nuts, screws, nuts and sealing washers.

CP 6053.300:
6 medium retaining claws, 8 short retaining claws

CP 6053.400:
4 long retaining claws, 6 short retaining claws

1 6058.800, 6053.800
2 6053.300
3 6053.400

For drilled holes/bolts/front panel mounting from behind

Thread	Model No. CP
M4	**6058.800**
M5	**6053.800**

For screw clamp

For installing:	Model No. CP
Siemens Sinumerik: OP 010, OP 010 C, OP 012, TP 012, OP 015, OP 015 A, MCP 483 C, MCP 483, PP 012, PP 012 extension, MCP, KB 483 C, Querty 19″ Siemens Simatic: Panel PC 477, 577, 677, 677B: 12.1″ keys, 12.1″ touch, 15.1″ keys, 15.1″ touch, 19″ touch Panel PC 877: 12,1″ keys, 15.1″ keys, 15.1″ touch, 19″ touch, TP 270 6″, TP 277 6″ MP 270 B 6″ MP 370 15″ touch, MP 377 15″ touch, MP 370 12″ touch, MP 377 12″ touch, MP 377 19″ touch B & R: Automation Panel Panel PC	**6053.300**
Siemens Simatic: OP 270 6″, OP 277 6″ TP 270 10″, MP 270 B 10″ touch, MP 277 10″ key, MP 377 10″ touch, OP 270 10″, MP 270 B 10″ keys, MP 370 12″ key, MP 377 12″ key	**6053.400**





Cross member

for VIP 6000 and Optipanel
For horizontal and/or vertical division of the Command Panel front.
With mounting channel on both sides to accommodate mounting kits.

Material:
Extruded aluminium section

Supply includes:
2 retaining claws,
2 screws with washers,
2 trim sections.

Front panel width mm	Model No. CP	
	for VIP 6000[2]	for Optipanel
482.6 (19″)	**6015.000**	**6386.000**
As specified[1]	**6015.009**	**6386.009**

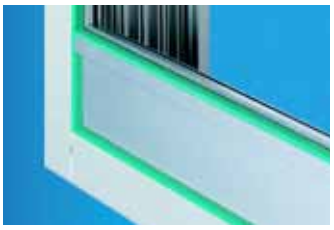
[1] Please specify width/height of front panel.
[2] Trim type and trim colour, see page 219. Please state on the order.

Accessories:

Mounting kit,
see page 1121.

Detailed drawing,
for VIP 6000,
see page 1210.
for Optipanel,
see page 1204.







Spacer panel and built-in trim panel

for VIP 6000 and Optipanel

For additional space with cable entry and for installing

- Switches/indicator lamps
- Emergency-off switches/key switches
- CD-ROM/disk drives
- Interfaces

etc.

For mounting (horizontally or vertically) on the enclosure, snap into position and screw-fasten from behind.
Other spacer panels and built-in trim panels, front panels and operator panels may be installed without an additional cross member.

Material:
Extruded aluminium section, natural-anodised

Supply includes:
Assembly parts and end trim (VIP 6000), spacer trim (Optipanel).

For VIP 6000

For front panel width mm	Model No. CP[2)]
482.6 (19″)	**6015.300**
As specified[1)]	**6015.309**

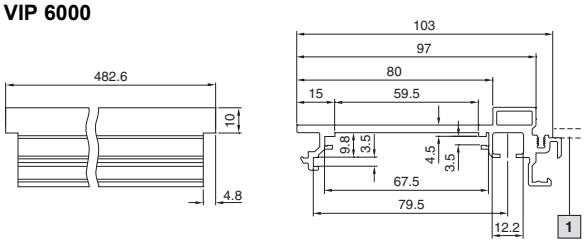
Height corresponding to a front panel height of 103 mm.
[1)] Please specify width of front panel.
[2)] Trim colour see page 219.
Please state on the order.

For Optipanel

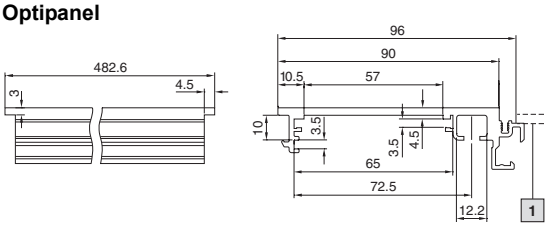
Front panel width mm	Model No. CP
482.6 (19″)	**6386.300**
As specified[1)]	**6386.309**

Height corresponding to a front panel height of 96 mm.
[1)] Please specify width of front panel.

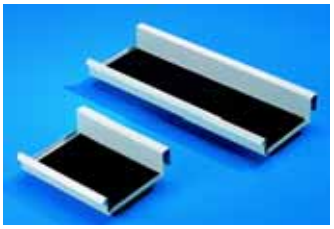
VIP 6000



Optipanel



1 Other spacer panels and built-in trim panels, front panel or operator panel





Utility shelf

screw-fastened

With support mat for:
Measuring tools, writing equipment, mouse, scanner, small parts etc.

For mounting

- Underneath:
  - Comfort Panel
  - VIP 6000
  - Optipanel
  - Command Panel housing with door
  - Operating housing
  - IW worktop

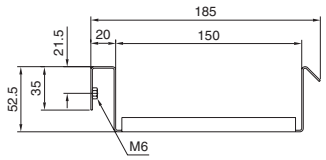
  For visual reasons, not drilled for assembly.
- On surfaces (doors, rear panels) via rear assembly holes
- To TS punched section with mounting flange 17 x 73 mm, locatable, without screw fastening,
  - For servicing work on the enclosure.

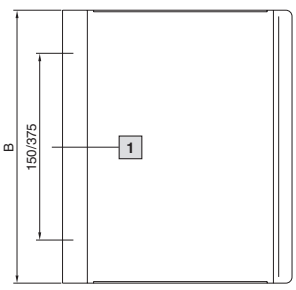
Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Width (B) mm	Model No. CP
220	**6514.110**
450	**6514.100**





1 Additional central thread only for CP 6514.100

General accessories



Cover plate

for support arm connection
For secure sealing of an unrequired support arm connection in the enclosure.

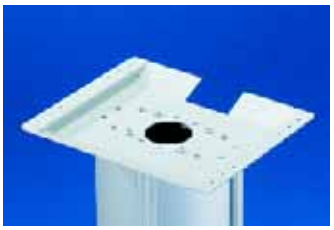
Material:
Sheet steel

Supply includes:
Seal and assembly parts.

Note:
If with
- Comfort Panel
- VIP 6000
- Optipanel
- Compact panel

command panels, there are already 2 support arm cut-outs provided, a cover plate is included with the supply of the enclosure.

Support arm connection	Surface finish	Model No. CP
CP-S,	Spray-finished 7024	**6505.200**
CP-L, Ø 130 mm	Zinc-plated, passivated	**6505.500**
CP-L, ▭ 120 x 65 mm	Zinc-plated, passivated	**6505.100**





Worktop attachment

for pedestal and support arm system
For mounting worktops on:
- Lifting pillar, electric
- Enclosure attachment CP-L, round
- Enclosure coupling CP-L, round
- Enclosure attachment CP-XL, round
- Enclosure coupling CP-XL

Material:
Sheet steel

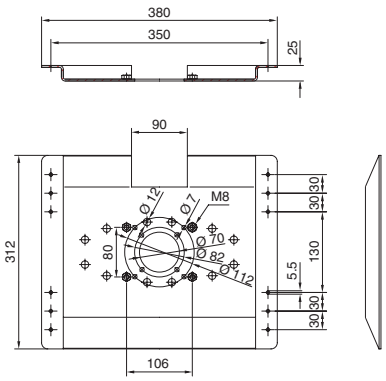
Colour:
RAL 7035

Supply includes:
Assembly parts.

Packs of	Model No. IW
1	**6902.780**

Accessories:

Accessories	Model No. CP	See page
Lifting pillar, electric	6142.000	287
Enclosure attachment, CP-L, Ø 130 mm	6525.5X0	256
Housing coupling, CP-L, Ø 130 mm	6525.0X0	262
Enclosure attachment, CP-XL, round	6130.6X0	271
Housing coupling, CP-XL	6130.0X0	272





Aluminium strip

For
- AP one-piece console
- Surfaces

Prevents wiring plans etc. from slipping.

For console	Length mm	Packs of	Model No. AP
AP 2666.500	583	3	**2676.000**
AP 2668.500	783	3	**2678.000**
AP 2672.500	1183	3	**2682.000**

May be cut to length for other dimensions.



Signal pillars, LED compact

Benefits:
- Complete, ready-to-connect solution
- Minimal build height
- Extremely long service life of the LEDs (at least 70,000 h) – therefore maintenance-free
- Minimal assembly work and warehousing costs

Technical specifications:
Operating voltage: 24 V AC/DC
Electrical connection: Screw terminals
Light: LED
Transmission angle: 3 x 120°
Operating temperature: –20 to +70°C
Flash function: Controllable via PLC
Cable entry: Metric gland
M12 x 1.5 for cable diameter 3.0 – 6.5 mm

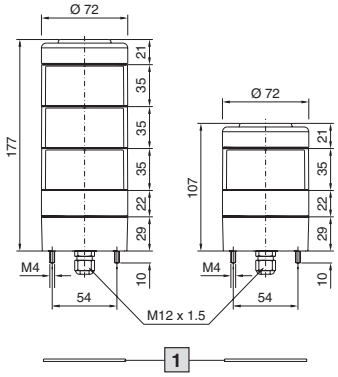
Protection category:
IP 65 to EN 60 529/09.2000

Design	Packs of	H mm	Model No. SG non-con-figurable	Model No. SG con-figurable
3-stage, red, yellow, green	1	177	**2372.100**	–
1-stage, red	1	107	**2372.130**	–
1-stage, yellow	1	107	**2372.140**	–
As per specifications	1	–	–	**2372.109**[1)]

[1)] Please additionally give the design code.
Minimum order volume 10 units.
Delivery times available on request.

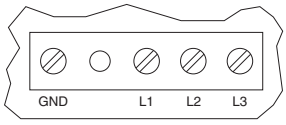
Also required:

For wall mounting:
Bracket for wall mounting, see page 1128.
For conduit mounting/support arm systems:
Connection adaptor, see page 1125.
Other mounting components, see page 1129.

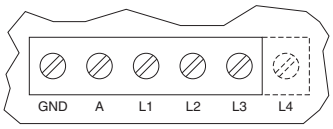


1 Seal

Connection picture SG 2372.100/.130/.140

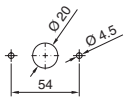


Connection picture SG 2372.109



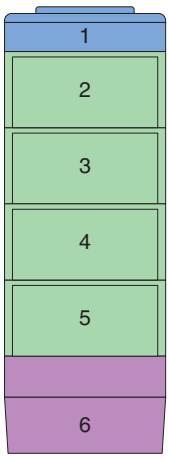
GND – 0 V (Ground)
A – +24 V DC (acoustic, where included with the supply)
L1 – L4 – +24 V DC (LED light stages, from bottom to top, unneeded contacts are left free)

Mounting cut-out

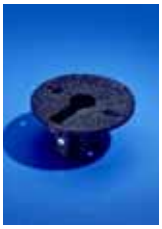


Ordering example/
LED compact, configurable
(from top to bottom):
Signal pillar, 2-stage, acoustic component, red continuous light, green flashing light, screw fastening

Position	1	2	3	4	5	6
Code no.	1	1D	2B	0	0	1



Description	Design	Code number[1)]
Acoustic element in cover, controllable up to 90 dB, may be switched between intermittent and continuous tone	Without acoustic element	0
	With acoustic element	1
LED light stages (max. 4 units)	None	0
	Red steady light	1D
	Red flashing light	1B
	Green steady light	2D
	Green flashing light	2B
	Yellow steady light	3D
	Yellow flashing light	3B
	Clear steady light	4D
	Clear flashing light	4B
	Blue steady light	5D
	Blue flashing light	5B
Connection component	Screw fastening (cable infeed at bottom)	1
	Magnetic attachment (cable infeed at side)	2





Connection adaptor

for signal pillar, LED compact
For conduit mounting and mounting on support arm systems.

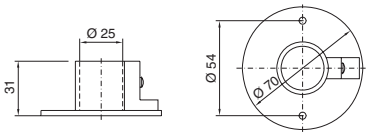
Material:
Plastic

Colour:
Black

Packs of	Model No. SG
1	**2372.120**

Accessories:

Mounting components for conduit mounting, see page 1129.
Mounting components for support arm system, see page 1129.





Signal pillars, modular

Benefits:

- Simple assembly and contact via bayonet fastener.
- Configuration of up to five components with the same voltage.
- The incandescent lamps are replaced in seconds – no need for tools.
- Components are available in a range of colours and voltages.

For modular configuration from:

- Connection components
- Optical components
- Incandescent lamps/LED lamps
- Acoustic components
- Label panel



Connection component

for signal pillars, modular

Optionally for conduit or wall/base mounting. Screw terminals in the connection component. With cover for optical components. Contact hazard protection to VDE.

Material:
Enclosure of polyamide

Colour:
Black

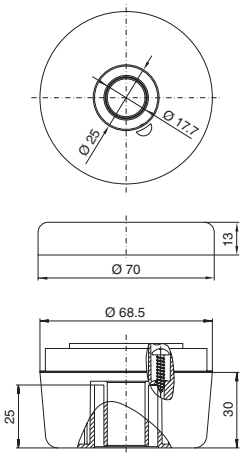
Protection category:
IP 54

Connection component	Model No. SG
For conduit mounting	**2368.000**
For wall/base mounting	**2368.010**

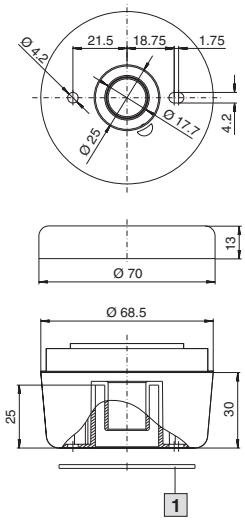
Accessories:

Mounting components for wall/base mounting, see page 1128.
Mounting components for conduit mounting, see page 1129.
Mounting components for support arm systems, see page 1129.

Connection component for conduit mounting
SG 2368.000

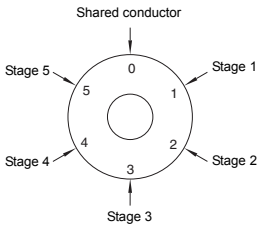


Connection component for wall/base mounting
SG 2368.010



1 Seal

Connection diagram





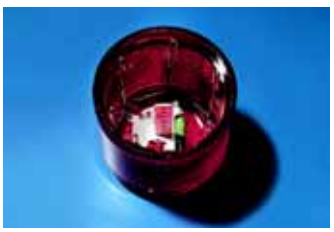
1



2



3



4

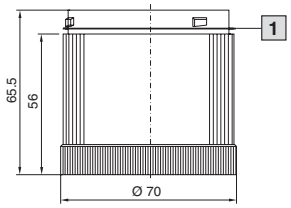
Optical components

for signal pillars, modular
With 360° signal transmission thanks to optimised prism system.
No. of potential stages = 5 components, with identical voltage.
115 V components available on request.

Material:
Enclosure: Polyamide
Spherical cap: Transparent polycarbonate

Protection category:
IP 54 if a cover or acoustic component is fitted at the top.

Also required:
Incandescent or LED lamps for steady and flashing light component,
see page 1127.



1 Pre-configured seal

Optical components	Model No. SG				
Colour	Red	Green	Yellow	Clear	Blue
1 Steady light component[1] 12 – 240 V AC/DC	**2369.000**	**2369.010**	**2369.020**	**2369.030**	**2369.040**
2 Flashing light component[1] 24 V AC/DC	**2370.000**	**2370.010**	**2370.020**	**2370.030**	**2370.040**
2 Flashing light component[1] 230 V AC/DC	**2370.050**	**2370.060**	**2370.070**	**2370.080**	**2370.090**
3 Flashing light component 24 V DC, 125 mA	**2371.000**	**2371.010**	**2371.020**	**2371.030**	**2371.040**
3 Flashing light component 230 V DC, 35 mA	**2371.050**	**2371.060**	**2371.070**	**2371.080**	**2371.090**
4 LED steady light component 24 V AC/DC, 45 mA	**2372.000**	**2372.010**	**2372.020**	**2372.030**	**2372.040**

[1] Incandescent or LED lamps not included with the supply.



Incandescent lamps

for steady and flashing light components
With BA 15d base/plinth.
For new orders or replacements.

Incandescent lamp	Packs of	Model No. SG
24 V, 5 W	3	**2374.060**
230 V, 5 W	3	**2374.070**



LED lamp

for steady and flashing light components
The energy-saving alternative with a long service life.
The LEDs have a transmission angle of 2 x 180°.

LED lamp	Packs of	Model No. SG				
Colour		Red	Green	Yellow	Clear	Blue
24 V AC/DC	1	**2374.200**	**2374.210**	**2374.220**	**2374.230**	**2374.240**
		For steady and flashing light components from SG 2369.000 to SG 2370.040				
230 V AC	1	**2374.300**	**2374.310**	**2374.320**	**2374.330**	**2374.340**
		For steady light components SG 2369.000 to SG 2369.040				



Acoustic components

for signal pillars, modular
To indicate warnings or malfunctions. The sound level is 85dB/100 dB. Mounting only on the upper end of the optical components or directly on the connection component.

Material:
Enclosure: Polyamide

Colour:
Black

Acoustic components	Model No. SG	
	24 V AC/DC	230 V AC
85 dB[1] max. 25 mA	**2376.000**	**2376.020**
100 dB[2] max. 25 mA	**2376.010**	**2376.030**

[1] Continuous tone or pulsating
[2] Volume and 8 tones may be set



Label panel

for signal pillars, modular
For text additions for up to 5 optical components, with break point for any fields that are not required (50 x 150 mm), including clamping section for base or tube with a diameter of 25 mm.

Material:
Acrylic, transparent

Label panel	Model No. SG
for 5 optical components	**2374.150**



1





2





3



Mounting components

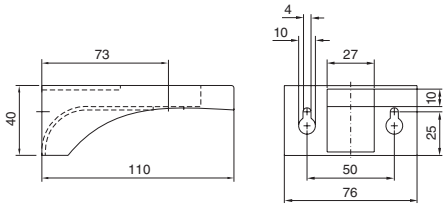
for wall/base mounting

Fig.	Mounting component	Colour	Suitable for signal pillar		Model No. SG
			LED compact	modular	
1	Bracket for wall mounting, including rubber gland for concealed cable routing	Black	■		**2372.110**
2	Bracket for connection component	Black		■[1]	**2374.040**
3	For side cable outlet	Black		■[1]	**2374.080**

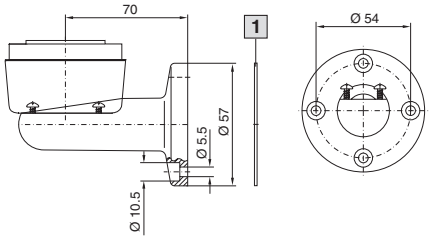
Also required:

[1] Connection component SG 2368.010, see page 1126.

Bracket for wall mounting

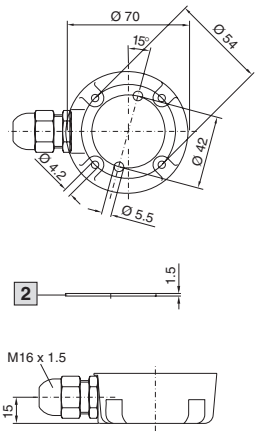


Bracket for connection component



1 Seal
2 Flat seal

For side cable outlet





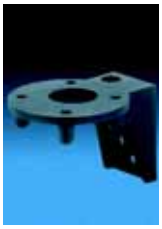

4




5



6




7

Mounting components

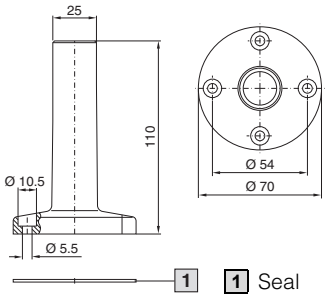
for conduit mounting

Fig.	Mounting component	Colour	Suitable for signal pillar		Model No. SG
			LED compact	modular	
4	Base with integral conduit, Ø 25 mm, 110 mm long	Black	■[1]	■[2]	**2374.000**
5	Individual base	Black	■	■	**2374.010**
6	Single conduit, 250 mm long	Aluminium	■[1]	■[2]	**2374.020**
	Single conduit, 400 mm long	Aluminium	■[1]	■[2]	**2374.030**
7	Angle bracket for conduit mounting	Black	■	■	**2374.050**

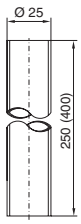
Also required:

[1] Connection adaptor SG 2372.120, see page 1125.
[2] Connection component SG 2368.000, see page 1126.

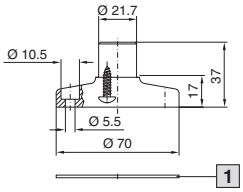
Base with integral conduit



Single conduit

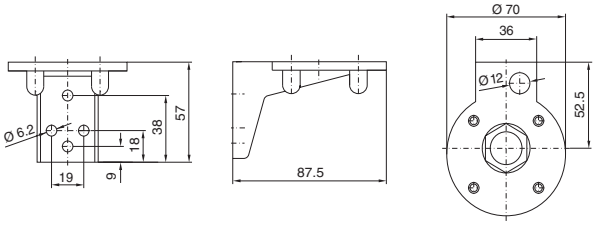


Individual base, plastic



1 Seal

Angle bracket for conduit mounting






8




9




10

Mounting components

for support arm systems

Fig.	Mounting component	Colour	Suitable for signal pillar		Model No. SG
			LED compact	modular	
8	For support arm system CP-L – Angle piece CP 6524.0X0 – Angle coupling CP 6526.0X0	RAL 9017 (traffic black)	■[1]	■[2]	**2375.000**
9	For support arm system CP-L – Intermediate hinge CP 6523.0X0 – Wall mounted hinge CP 6521.0X0 – Top mounted joint CP 6522.0X0	RAL 9017 (traffic black)	■[1]	■[2]	**2375.020**
10	For support arm system CP-S – Angle piece 90° CP 6501.140	RAL 7024 (graphite grey)	■[1]	■[2]	**2375.030**

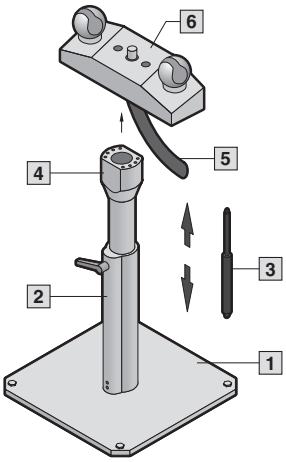
Also required:

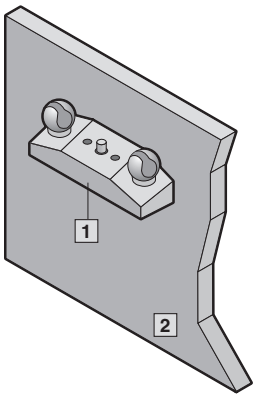
[1] Connection adaptor SG 2372.120, see page 1125.
[2] Connection component SG 2368.000, see page 1126.

Two-handed operating console

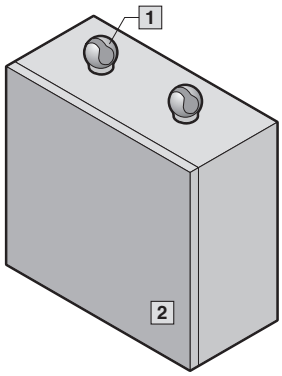
1 Pedestal base (see page 289)
2 Support section, height-adjustable (see page 288)
3 Gas pressurised spring (see page 288)
4 CP-S attachment (see page 244)
5 Cable conduit (see page 1065)
6 Two-handed operating console (see page 1131)

Note:
The plant installation engineer is responsible for observing the safety clearance between moving parts and the hazard zone in accordance with prEN 999.





1 Two-handed operating console (see page 1131)
2 Wall/machine



1 Safety switch (see page 1130)
2 Enclosures





Safety switch

for two-handed controls

Thanks to the new design with two trigger fields, the hand remains fully in contact with the safety switch for the duration of operation. In this way, it is possible to configure two-handed controls which adhere to the distances prescribed by the relevant standards, without the need for additional covers.

Properties:
- Maximum safety level EN 574 (type IIIC), EN 954-1 (safety category 4) in conjunction with safety relay SM 6451.200.
- Minimal operating force of approx. 2 N.
- Flexible choice of mounting location, e.g. enclosure or surfaces.
- Two switches for each hand that must be pressed simultaneously.
- Long mechanical service life.

Dimensions:
Height: 71 mm, ball diameter: 68 – 72 mm

Technical specifications:
Weight: 0.2 kg per safety switch (including cable)
Operating temperature: 0°C to +55°C
Storage temperature: –20°C to +70°C
Actuator travel: 1.3 ± 0.6 mm
Switching capacity:
Recommended load: 24 V/10 mA DC
Minimum: 6 V/10 mA DC (Ohmic load)
Maximum: 30 V/2 A DC (Ohmic load)
Contact material: Silver alloy, gold-plated
Contact resistance: 100 mΩ
Lifecycle:
Mechanical: 1 x 10^6 switching cycles at max. 1 Hz
Electrical: Depending on the electrical load
Connection cable: PVC, 4 x 0.75 mm^2, length: 2 m, black

Design	Packs of	Model No. SM
1 normally closed contact/ 1 normally open contact	2	**6451.100**

Material:
Polypropylene

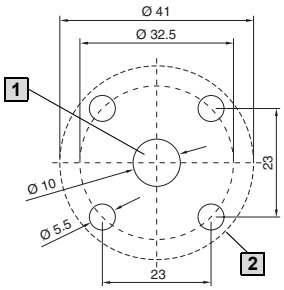
Colour:
Yellow/black

Protection category:
IP 67 to EN 60 529/09.2000

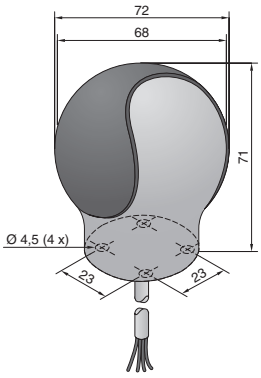
Supply includes:
Safety switch, seal, assembly parts.

Also required:
Safety relay, see page 1132.

Accessories:
Ball joint support, see page 1131.

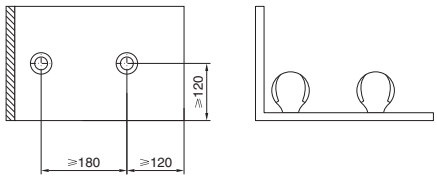


1 Optional hole for cable entry
2 Contact surface

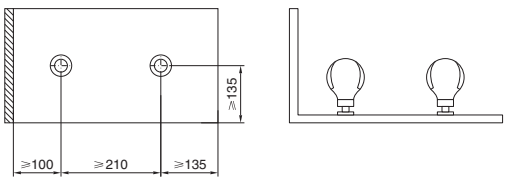


Minimum distance between individually installed safety switches SM 6451.100

Without ball joint support



With ball joint support



For all other mounting situations, the installation technician should perform an analysis to EN 574.





Two-handed operating console

Maximum safety levels EN 574 (type IIIC), EN 954-1 (safety category 4) are met in conjunction with safety relay SM 6451.200.

Design with
- 2 safety switches (1 normally closed contact/ 1 normally open contact)
- 1 emergency off button (2 normally closed contacts/1 normally open contact)
- 2 locations for other command devices Ø 22.5 mm, covered

While observing the safety distances prescribed by the relevant standards, prepared for attachment optionally via the rear of the enclosure
- to walls
- to machines

or via the gland plate
- on height-adjustable pedestal, modular, CP-S (see page 288)

Material:
Enclosure and gland plate: Sheet steel 3 mm

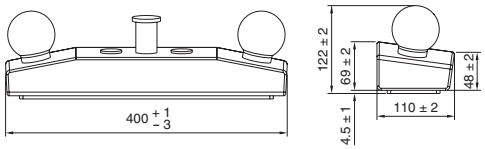
Surface finish:
Enclosure and gland plate:
Spray-finished in RAL 7035

Supply includes:
Depending on the design (see above).

Technical specifications:
Operating temperature: 0°C to +55°C
Storage temperature: –20°C to +70°C

Safety switch prewired on clamping strip

Emergency off switch: Prewired on clamping strip
Design: 2 normally closed contacts/1 normally open contact
Properties of auxiliary contacts:
Rated insulating voltage: 690 V
Max. permissible fuse: 10 A gG
Switch actuating force: 5 N each
Electrical lifecycle: 1 x 10^6 switching cycles



1 Switch cut-out Ø 22.5 mm

2 Holes for M20 cable glands

3 Holes for M25 cable glands

All openings are equipped with plugs.

Packs of	Model No. SM
1	6451.000

Protection category:
IP 65 to EN 60 529/09.2000
(subject to correct cable entry and attachment)

Dimensions:
W x H x D 400 x 122 x 110 mm (including switch)

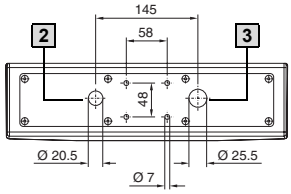
Also required:

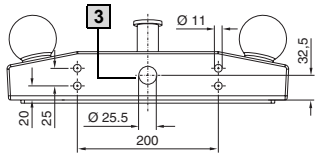
Safety relay, see page 1132.

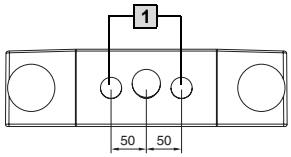
Accessories:

Pedestal, modular, CP-S, comprised of:
- Pedestal base plate (CP 6146.100), see page 289.
- Support section, height adjustable (CP 6146.200), see page 288.
- Attachment CP-S (CP 6501.070), see page 244.

Ball joint support (SM 6451.190), see page 1131.
Cable conduit NW29 (SZ 2589.100), see page 1065.
Plug-in connection NW29, angled (SZ 2589.120), see page 1065.









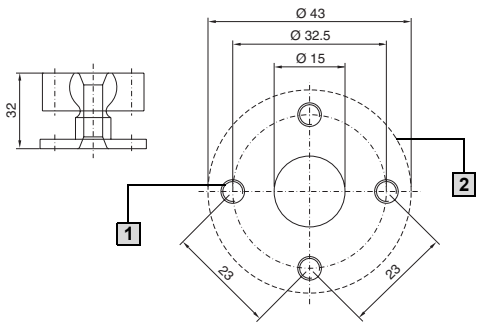
Ball joint support

For individual adjustment of the safety switches to an ergonomic position. Recommended for long-term operation or for use by alternating personnel. May be twisted and tilted, rotation range limited to protect the cable.

Material:
Brass, nickel-plated

Supply includes:
Ball joint support, seal, including assembly parts.

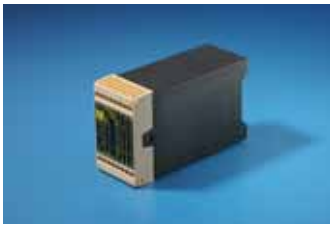
Packs of	Model No. SM
2	6451.190



1 M5, optional hole Ø 5.5 mm

2 Contact surface

Two-handed operating console



Safety relay

Applications
- Configuration of two-hand controls, type IIIC to EN 574
- Connection of EMERGENCY OFF switches

Product features:
- Two-channel system
- Monitored reset
- Test input
- LED display for power supply, inputs and outputs
- 3 normally open contacts/1 normally closed contact
- Operating voltage 24 V DC
- Simple interconnection and rapid exchange via removable clamping strips
- Support rail mounting TS 35

Functional description:
The safety relay has dual inputs which must be closed in order for the safety outputs to close. A short-circuit between the inputs will effect an immediate stop, as they have different potentials. The inputs may be permanently short-circuited without damaging the safety relay.

To close the safety outputs, the RESET input must close and then reopen. This prevents unintentional resets in the event of short-circuits in cables or if a RESET button becomes jammed in the depressed position.

The reset input is also provided as a test for the monitoring e.g. of contactors or valves which must have dropped out or fallen back prior to restarting.

When using the safety relay as a two-handed relay, all push-buttons must be actuated within 0.5 sec.

Packs of	Model No. SM
1	6451.200

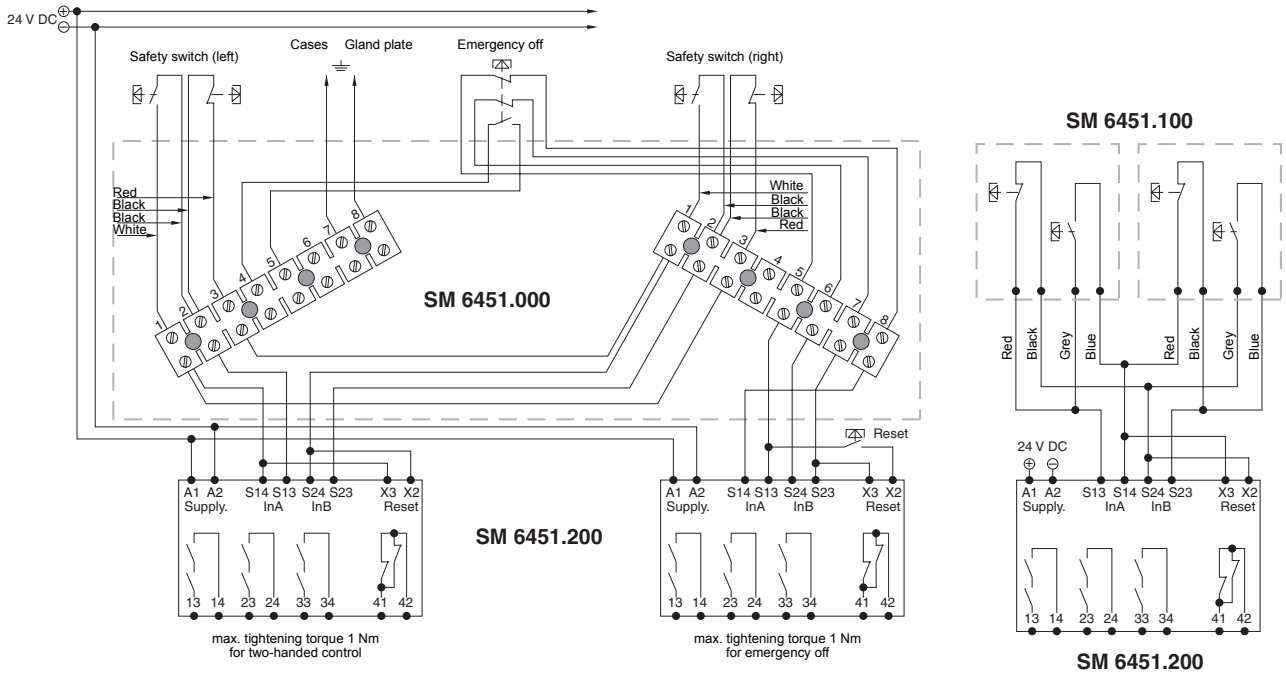
Dimensions:
W x H x D 45 x 74 x 120 mm

Safety level:
- Two monitored control circuits of different potentials.
- Short-circuits, interruptions, device malfunctions or external defects will not lead to a dangerous situation.
- Safety category 4 to EN 954-1.

Technical specifications:
Operating voltage: 24 V DC ±15 %
Power consumption: < 2 W
Switching capacity:
Min. 10 mA/10 V (if contact load has not exceeded 100 mA)
Max. 6 A/250 V AC/1500 W (Ohmic load AC)
Max. 6 A/24 V DC/150 W (Ohmic load DC)
Max. input resistance:
at rated voltage 300 Ω (S13/S14 and S23/S24)
Clearance and creepage distance:
4 kV/2 DIN VDE 0110 (IEC 60 664-1)
Reaction time for stop:
< 15 ms (input – output),
145 ms in the event of a mains failure
Connection clamps:
Single conductor: 1 x 4.0 mm² or 2 x 1.5 mm²
Conductor with end ferrule:
1 x 2.5 mm² or 2 x 1.0 mm²
Operating temperature: –10°C to +55°C
Weight: 350 g

Protection category:
IP 40/20 to EN 60 529/09.2000
(enclosure/terminals)

Electrical connection





Premium TFT 17″, IP 69K

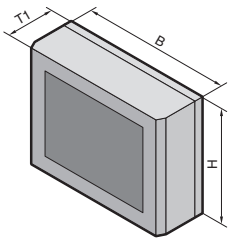
The complete solution, resistant to high-pressure cleaning.

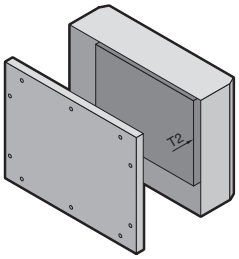
Technical specifications:
see TFT monitor 17″.

Material:
Stainless steel 1.4301 (AISI 304)

Surface finish:
Brushed, grain 240

Protection category:
IP 69K to DIN 40 050-9





B = Width
T = Depth

Support arm connection	W (B) mm	H mm	T1 mm	T2 mm	Model No. SM
Bottom	530	360	120	70	**6450.100**
Top	530	360	120	70	**6450.110**

Stainless steel design 1.4404 (AISI 316L) available on request.

Also required:

Power pack SM 6450.050 and connection cable SM 6450.060, see page 1134, if an operating voltage of only 100 – 240 V AC is available instead of 12 V DC.

Accessories:

Rear panel holder CP 6682.000, see page 962.
Support arm system CP-S, stainless steel, see page 313.



TFT monitor

Installation variant for surfaces and command panels.

Benefits:
- High-quality industrial design
- Reduced installation work thanks to integral front frame
- No additional ventilation required
- Very small installation depth (45 mm)

Resistive touchscreen for operation with a pen, finger or glove.

Front frame:
Aluminium, powder-coated, RAL 7035
Rear threaded bolts M5 (14 off)

Protection category:
IP 65 to EN 60 529/09.2000, front

Supply includes:
Seal, hex nuts (for installation in surfaces), VGA cables and (where applicable) DVI cables. Touch variants additionally with integral connection cable and driver CD-ROM.

Size	Interfaces	Model No. SM		
		Touch		
		without[2]	resistive, serial	resistive, USB
15″	VGA	**6450.010**	**6450.030**	**–**
	VGA + DVI	**6450.150**[1]	**6450.120**[1]	**6450.070**[1]
17″	VGA	**6450.020**	**6450.040**	**–**
	VGA + DVI	**6450.160**[1]	**6450.130**[1]	**6450.080**[1]
19″	VGA + DVI	**6450.170**[1]	**6450.140**[1]	**6450.090**[1]

[1] Extended delivery times.
[2] With anti-reflection coated safety glass.

Also required:

Mounting kit CP 6053.800 (when installing in Comfort Panel), see page 1122.
Mounting kit CP 6053.500 (when installing in VIP 6000 and Optipanel), see page 1121.
Power pack SM 6450.050 and connection cable SM 6450.060, see page 1134, if an operating voltage of only 100 – 240 V AC is available instead of 12 V DC.

Detailed drawing,
see page 1304.

Technical specifications	15″	17″	19″
Resolution of display (max. pixels)	1024 x 768	1280 x 1024	
Resolution of controller/colours	VGA-SXGA/16.2 million		
Brightness (cd/m²)	400	300	250
Contrast ratio	500 : 1		
Reading angle horizontal (right/left)	65°/65°	75°/75°	88°/88°
Reading angle vertical (top/bottom)	45°/65°	65°/65°	88°/88°
Lamp life[1] (h)	min. 35,000	typ. 50,000	min. 40,000
On-screen display (OSD)	At rear		
VGA input	D-Sub HD 15-pole		
DVI input (if available)	DVI-D single TMDS (all pins on display side)		
Operating temperature (°C)/Storage temperature (°C)	0 to +50/–20 to +60		
Voltage input	12 V DC		
Power consumption (W)	30	35	40
H-Sync. (kHz)/V-Sync. (Hz)	31.5 to 80/60 to 75		
Humidity in operation (%)	20 to 80 (non-condensing)		
Humidity in storage (%)	5 to 95 (non-condensing)		

[1] Until half the original brightness is achieved.



Power pack

for TFT monitor and Premium TFT 17″, IP 69K

- With IEC 320 socket,
- With connection cable (1.5 m) and connector for connecting to the TFT monitor.

Dimensions: 107 x 30 x 59 mm.

Technical specifications:
Input voltage: 100 – 240 V AC
Output voltage: 12 V DC

Packs of	Model No. SM
1	**6450.050**

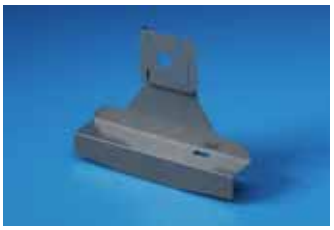
Material:
Enclosure: Plastic



Connection cable

for power pack
With IEC connector at one end, length: 1.5 m.

Packs of	Model No. SM
1	**6450.060**







TFT holder

for the attachment of TFTs up to 20.1″ prepared for the external mounting of:

Dimensions in mm	Model No. SM
477 x 372 x 110.5	**2383.030**

1
- VESA 75 or 100 rigid
- VESA 75 and tilt adjustment via IW 6902.670 (page 243)

2
- Enclosure attachments CP-S (page 242) or CP-L ▭ 120 x 65 mm (page 251)

3
- Enclosure attachments on the horizontal support arm CP-S or CP-L ▭ 120 x 65 mm, for mounting on the vertical support arm via tilt adjuster IW 6902.670

4

4a Support for keyboards SM 2383.000 (page 1140) via enclosure surface connector SM 2383.010 (page 1118)

4b Utility shelf CP 6514.100 (page 1123)

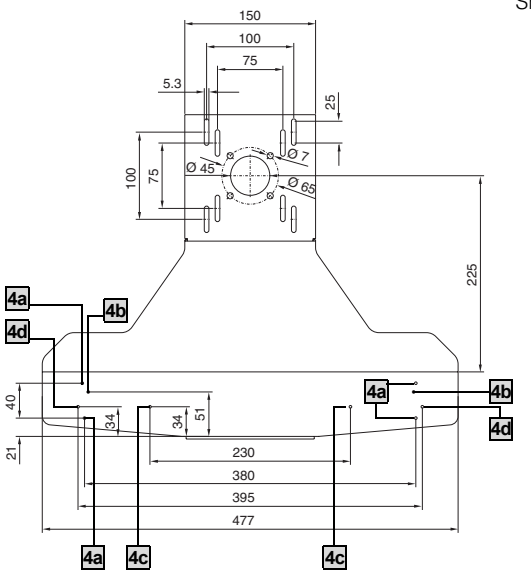
4c U handle CP 6107.100 (page 1117)

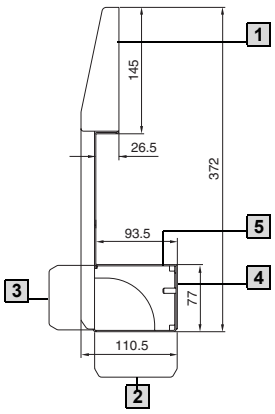
4d U handle CP 6107.200 (page 1117)

via marked points

5
- Connector gland SZ 2400.300/.500 (page 1057) as strain relief for the connection cable

Material:
Sheet steel, spray-finished in RAL 7024









Support arm, height adjustable, compact

For small panels and TFTs with mounting cut-out
- VESA 75
- VESA 100 via adaptor plate CP 6510.010

Mounting bracket with
- Desk clamp for worktops up to 75 mm thick
- Hole pattern for support section CP-L horizontal or wall mounting

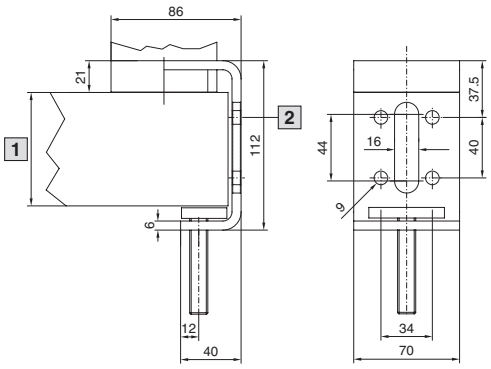
Almost any position is individually adjustable:
- Height-adjustable +90°,
- Vertically hinged 350°,
- VESA attachment, tiltable ±90°,
- VESA attachment, vertically hinged ±90°

Material:
Support arm:
Sheet steel, aluminium, RAL 7024
Panel mouldings:
Plastic, similar to RAL 7035
Optional adhesive design film, RAL 7024

Supply includes:
Assembly parts.

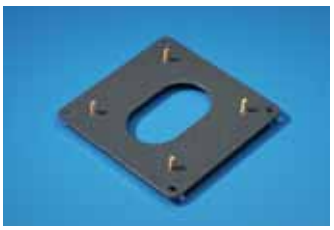
Weight range:
2.5 – 8.5 kg infinitely adjustable.

Jib length mm	Model No. CP
400	**6510.110**



1 Max. 75 mm

2 Support section CP-L may be mounted here



Adaptor plate

from VESA 75 to VESA 100

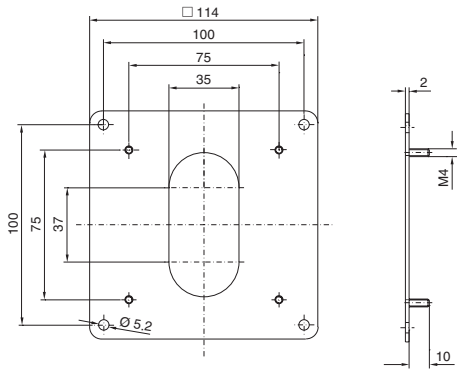
For mounting panels, enclosures and TFTs with VESA 100 connection on
- Support arm, height adjustable, compact, CP6510.110,
- Enclosure attachment, tilting, IW 6902.670, see page 243.

Material:
Sheet steel

Colour:
RAL 7024

Supply includes:
Assembly parts.

Packs of	Model No. CP
1	**6510.010**





Mounting on surfaces



Mounting in niches

Pedestal, height-adjustable, CP

The ideal attachment for lightweight operating units such as:
- Compact Panel
- TFT up to 20.1″
- Other assemblies

up to max. 15 kg.

Assembly
- Rear: Attachment using cage nuts
- Front: Via mounting bracket CP 6510.520 (accessories, see below).

Adjustment range 200 mm
- Sliding height adjustment, may be secured using a knurled screw
- With integral 10 kg gas pressurised spring for pressure relief during height adjustment
- For a suspended load, to adjust the operator simply the differential weight to the spring force of the gas pressurised springs

Swivel area max. 180°
- Adjustable in 7.2° increments.

Note:
Other gas pressurised springs available on request.

Detailed drawings,
available on the Internet.



1

1 With holder for Compact Panel

For Compact Panel	Width mm	Height mm	Depth mm
CP 6340.020	241	238	87
CP 6340.320	315		

Material:
Connection and slide profile: Natural-anodised
Pedestal unit: Sheet steel, RAL 7024

Supply includes:
Connection profile, slide profile, pedestal unit including assembly parts.

Packs of	Model No. CP
1	**6510.500**

End stop on left of machine as standard, right on request.



2

2 With support for TFT up to 20.1″

Material:
Connection and slide profile:
Natural-anodised
Hinges:
Die-cast zinc, RAL 7024
End cover, support for TFT:
Sheet steel, RAL 7024

Supply includes:
Connection profile, slide profile, hinges, holder for TFT: including assembly parts.

Packs of	Model No. CP
1	**6510.510**

End stop on left of machine as standard, right on request.



Mounting angles

For front mounting of height-adjustable pedestals CP 6510.500 and CP 6510.510.

Material:
Sheet steel, RAL 7024

Packs of	Model No. CP
1 set	**6510.520**





Keyboard, pull-out

with integral trackball

Super-slimline keyboard with cursor keys and trackball. The handle also serves as a hand rest. The versions without lock insert of the 10° angled pullout ensure ergonomic working.

For installation in:
- Comfort Panel (see page 192), Optipanel (see page 204) and VIP 6000 (see page 213) from an installation depth of 150 mm
- 482.6 mm (19″) systems
- Any sufficiently large surface (e.g. door, side panel)

Technical specifications:
- Keyboard:
  - 84 short-stroke keys, IBM-AT compatible (MF2), incl. cursor keys
  - With integral 16 mm trackball
  - Interface: 2 x 6-pole PS/2 DIN connector
  - Operating temperature: +5°C to +50°C
  - Storage temperature: –10°C to +60°C
  - Humidity: Max. 95 % (non-condensing)
- Front panel, powder-coated in RAL 7035

Protection category:
IP 65 (front, solid) to EN 60 529/09.2000

Keyboard layout	Features	Packs of	Model No. SM
German	10° angled pull-out	1	**6002.100**
US English		1	**6002.101**[1)]
UK English		1	**6002.102**[1)]
As specified[2)]		1	**6002.109**[1)]
German	3 mm double-bit lock insert	1	**6002.110**
As specified[2)]		1	**6002.119**[1)]

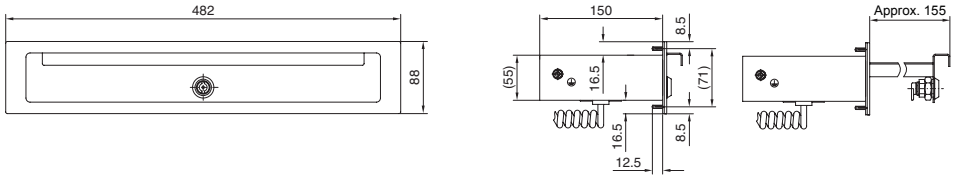
[1)] Extended delivery times.
[2)] Available layouts:
BE, DK, FR, IT, NO, PO, ES, RU, SE/FI, CH, CZ

Note:
For sub-division of the operating front when installing in command panels, a cross member is required:
- Comfort Panel (see page 199, version 2.2.).
- VIP 6000 (see page 218, version 3.2). At the same time, the end trim (see page 219, version 3.4) must be selected.
- Optipanel (see page 208, version 2.2).

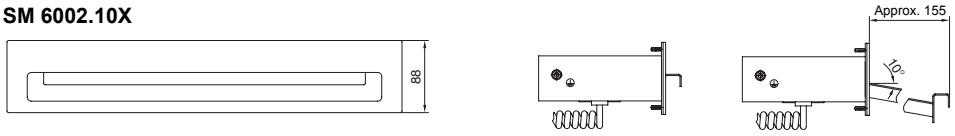
Accessories:

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, version A, see page 956, or lock cylinder inserts, version B, see page 957.

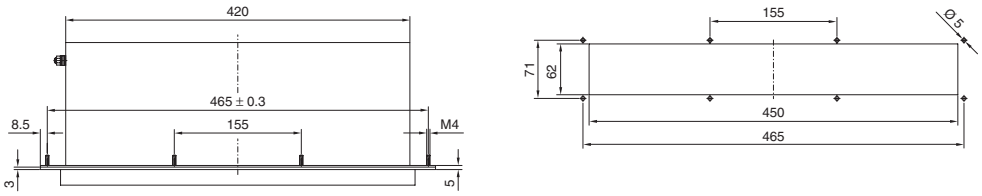
SM 6002.11X

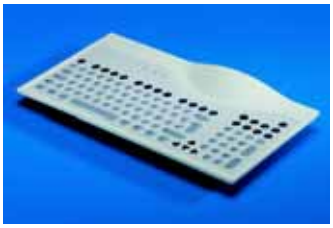


SM 6002.10X



Mounting cut-out







Desktop keyboard IP 65

Particularly well-suited to all areas with dusty or damp industrial atmospheres and places where hygiene is particularly crucial, such as in the food industry or medical technology.

- Sealed, wipeable surface finish.
- High level of mechanical and chemical resistance to DIN 42 115.
- Lenticular key caps and minimal typing force for optimum finger guidance and fast operation.

This makes it ideally suited for workstations where it is necessary to input large quantities of data.

Supply includes:
Connection cable with PS/2 connector, length 1.8 m.

	Model No. SM
Desktop keyboard	**6446.000**

Technical specifications:
Dimensions: 410 x 220 x 25 mm
105 keys
Actuator travel/force: 0.4 mm/2 N
Service life: ≥ 1 million switching cycles
Operating temperature: –20°C to +70°C
German layout

Rittal service:

Country-specific layout and USB connection available on request.





Built-in keyboard 19″/4 U

with integrated touchpad

The integrated touchpad means that the installation of an additional, correct protection category mouse is no longer required and cabling is also reduced. The short stroke keys are easily identified by edge embossing, less force is required to operate them and they have good positive key actuation.

Benefits:
- The separate number pad enables the parameters to be entered quickly
- Sealed, wipeable surface finish
- High level of mechanical and chemical resistance as per DIN 42 115

Technical specifications:
- Number of keys: 105
- Front panel dimensions: 482.6 x 177.0 mm (19″ x 4 U)
- Installation depth: 23 mm
- 12 M5 x 20 threaded bolts at back
- Actuation travel/force: 0.3 mm/2.6 N
- Service life: 3 million switching cycles
- Operating temperature: –40°C to +90°C
- Touchpad resolution, capacitive: 40 pixels/mm
- Interfaces: 2 x PS/2 (1 USB adaptor supplied)

Material:
Front panel: Aluminium

Protection category:
IP 65 to EN 60 529/09.2000, front

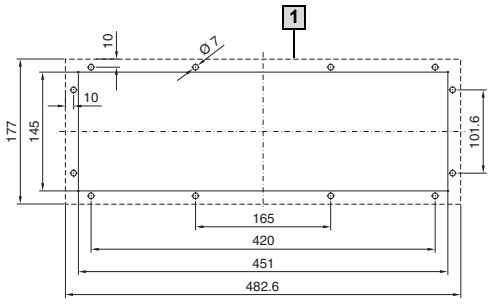
Supply includes:
Y-supply cable, 1.8 m long, with PS/2 connections, seal, USB adaptor, drilling template and surface assembly parts.

Keyboard layout	Packs of	Model No. SM
German	1	**6446.020**
As specified[1)]	1	**6446.029[2)]**

[1)] Layouts available: BE/FR, CH, DK, ES, HU, IT, PO, SE/FI, TU, UK, US, US Arabic, US Cyrillic
[2)] Extended delivery times.

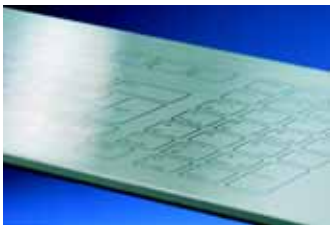
Also required:

Mounting kit CP 6053.800
(when installing in Comfort Panel),
see page 1122.
Mounting kit CP 6053.500
(when installing in VIP 6000 and Optipanel),
see page 1121.



1 Contact surface





Stainless steel keyboard 19″/4 U

based on the piezo system.
With this innovative technology, merely tapping lightly with your finger is sufficent to initiate switching. There are no edges, cracks or hollows, as with conventional keyboards. It is therefore particularly well-suited for the food industry (compact enclosures Hygienic Design, see page 299).

Technical specifications:
- Dimensions of front panel: 482.6 x 177 x 25 mm
- Installation depth: 25 mm
- 105 keys
- Actuator travel/force: 0 mm/0.7 N
- Service life: ≥ 10 million switching cycles
- Keypad: Abrasion-resistant electrolyte lettering
- Operating temperature: –25°C to +55°C
- PS/2 and USB connection
- German layout

Material:
Stainless steel 1.4301

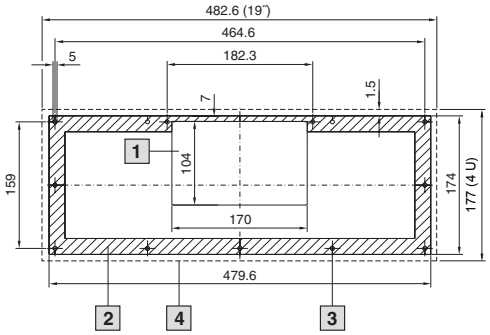
Protection category:
IP 69K to DIN 40 050-9

Supply includes:
Connection cable, length 1.8 m, with PS/2 connector and hex nuts.

	Model No. SM
Stainless steel keyboard	**6446.010**

Rittal service:

Country-specific layout available on request.



1 Front panel cut-out
2 Seal
3 Holes for fastening bolts
4 Contact surface





Fold-out tray

for keyboard and mouse
For installation in
- 600 and 800 mm wide doors
- 482.6 mm (19″) swing frames and enclosures

Standard double-bit lock insert which may be exchanged for lock inserts 27 mm, version A, see page 956 and for lock cylinder SZ 2571.000, see page 957.

Material:
Flap: Sheet steel
Side parts: Cast aluminium
Tray: Extruded aluminium section

Surface finish:
Cover, side parts: RAL 7035
Tray: Natural-anodised

Protection category:
IP 55 to EN 60 529/09.2000

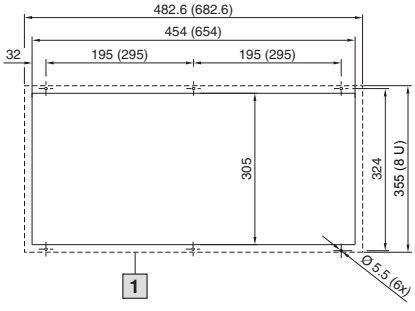
Accessories:

Mousepad support, pull-out, see page 1140.

Rittal service:

Other widths available on request.

Mounting cut-out



1 Contact surface

For door width mm	External dimensions WHD mm	Installation depth mm	Max. keyboard size WHD mm	Model No. SZ
600	482.6 (19″) x 355 (8 U) x 126	93	405 x 50 x 250 405 x 50 x 195[1)]	**2379.600**
800	682.6 x 355 (8 U) x 126	93	605 x 50 x 250 605 x 50 x 195[1)] 475[1)] x 50 x 250	**2379.800**

[1)] Maximum keyboard size with holder for mouse.

Monitors, keyboards

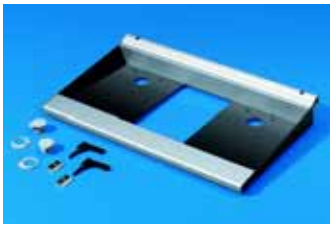


Support for mousepad, pull-out

with mouse holder
For screw-fastening into the fold-out tray SZ 2379.600/SZ 2379.800.
To fit all standard mousepads up to 250 x 205 mm.

Note:
When installing the fold-out tray into the swing frame, the swing frame must be open in order to pull the mousepad out of the fold-out tray.

Packs of	Model No. SZ
1 set	**2379.900**





Support

for keyboards
for max. 473 x 210 mm.
Prepared for
- Cable gland
- Support for mousepad, vertically hinged (SM 2383.020)

Material/surface finish:
Side parts: Sheet steel, RAL 7024
Front and rear:
Extruded aluminium section, natural-anodised

Supply includes:
2 clamping screws, end stoppers, cover plate, cable entry grommet and nylon loop tape.

Rittal service:
Other widths available on request.
May be ordered as a complete unit with Comfort Panel operating housing (see page 197), VIP 6000 (see page 216) or Optipanel (see page 207) via design code number.

Packs of	Model No. SM
1 set	**2383.000**

Also required:
For mounting on surfaces:
Enclosure surface connector, see page 1118.

Accessories:
Mousepad support, pull-out, see page 1146.

Detailed drawing
for Comfort Panel, see page 1202,
for VIP 6000, see page 1213,
for Optipanel, see page 1205.





Utility bars, vertically hinged

To support standard keyboards during programming and servicing work.
Mounting distance between utility bars at least 300 mm to allow problem-free insertion.
Depth adequate for keyboards up to max. 210 mm.

For mounting beneath:
- Comfort Panel[1)]
- VIP 6000 with narrow or combined frame[2)]
- Optipanel[3)]
- Any sufficiently large surface, such as:
  – Worktops IW
  – Quickline panel
  – Operating housing
  – Command Panel housing with door

on:
- Vertical services (doors/side panels)

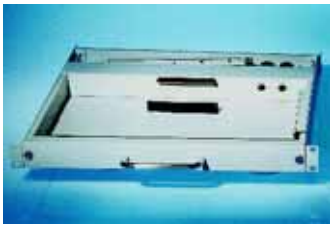
Min. front panel width
[1)] 385 mm
[2)] 370 mm
[3)] 405 mm

After use, the utility bars fit securely and neatly under the mounting surface, thus giving the operator more space to move around.

Packs of	Model No. CP
1 set	**6514.200**

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.



Keyboard rack, 482.6 mm (19″)

- 482.6 mm (19″) rack-mounted chassis 1 U, 430 mm deep
- Prepared for the installation of 482.6 mm (19″) keyboards with touchpad or trackball with the following dimensions:
  max. height: 39 mm,
  max. width: 417 mm,
  max. depth: 210 mm
- Solid, lockable front
- Telescopic slides with integral clamp
- Prepared for installation of a mousepad

Material:
Sheet steel

Packs of	Model No. RP
1	**3659.520**

Colour:
RAL 7035

Supply includes:
19″ keyboard rack **without keyboard,**
connection cable,
mounting bracket for 800 and 900 mm enclosure depth,
assembly parts.



Mousepad

for keyboard drawer

- For optional mounting on the left, right or front of the keyboard rack (fold-away design)
- Maybe folded into the keyboard drawer after use
- Only suitable for use in conjunction with 482.6 mm (19″) keyboards with a total height of max. 39 mm (Model No. RP 3659.590)

Material:
Sheet steel

Packs of	Assembly	Model No. RP
1	right/left	**3659.620**
1	at the front	**3659.630**

Colour:
RAL 7035

Supply includes:
Assembly parts.

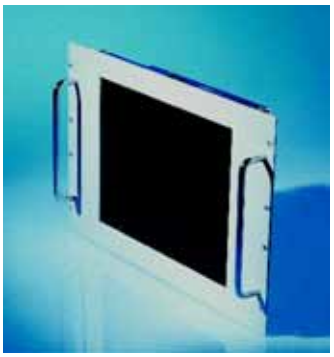


Keyboard, 482.6 mm (19″)

- 482.6 mm (19″) keyboard for installation in the 482.6 mm (19″) keyboard drawer in conjunction with the touchpad mouse
- German keyboard layout
- 38.9 mm high keys facilitate installation in 1 U keyboard drawers
- PS/2 connector
- IP 20
- Touch-sensitive technology
- W x H x D = 405 x 38.9 x 180 mm
- 105 keys (including WIN 95 keys)
- Actuating force 0.6 N/4.0 mm
- Operating temperature: 0°C to 50°C

Packs of	Model No. RP
1	**3659.590**

Supply includes:
Connection cable.



TFT display, 15″

- 19″ front panel 7 U, RAL 7035
- TFT LCD 15.1″
- Automatic brightness control depending on the ambient light
- Anti-reflection coated safety glass screen
- Brightness: 250 cd/m²
- On-screen display
- Colours: 16.7 million
- Power pack: Input voltage: 100 – 240 V AC, output: 12 V DC/3.75 A
- OSD membrane keyboard and infrared sensor
- VGA + SVGA, non-interlaced
- Maximum resolution 1024 x 768 pixels
- Contrast ratio: 300 : 1
- Viewing angle: 160° (H+V)
- Video input 15-pin D-SUB (analog RGB)
- RS-232 monitor interface

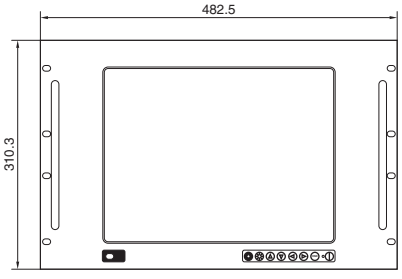
Packs of	Model No. RP
1	**3659.530**

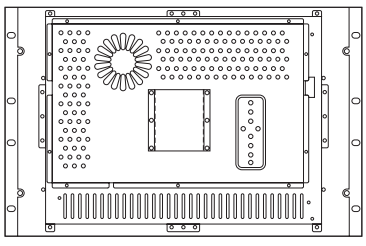
Material:
Front panel: Aluminium, powder-coated

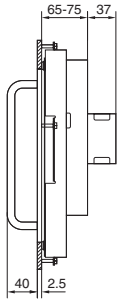
Colour:
RAL 7035

Protection category:
Tested to EN 60 950 and
EMC directive 89/336/EEC.

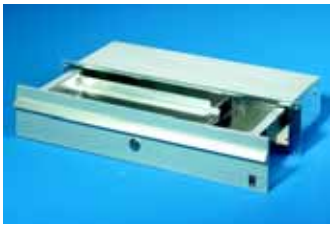
Note:
Depth varies according to the display design (protective glass, touchscreen etc.).

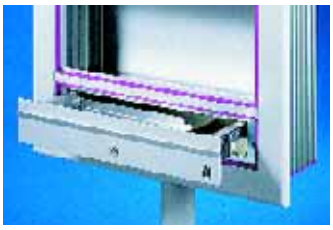






Drawers for keyboards





Keyboard drawer 19″/2 U

for keyboard and mouse

For installation in:

- Comfort Panel[1)]
  (from an installation depth **A2** = 152 mm, see page 198).
- VIP 6000 Command Panel[1)]
  (all installation depths **1** to **9**, see page 217).
- Optipanel command panel[1)]
  (installation depth **3** = 150 mm, see page 207).
- Any sufficiently large surface
  (e.g. door, side panel).
- 482.6 mm (19″) systems.

Suitable for

- Accommodation of keyboards
  up to max. 390 x 32 x 139 mm.
- Support of standard commercially available mouse or trackball.

Design:

- Drawer:
  – with stay
- Front panel
  – with security lock (lock no. 12321)
  – with handle strip

Width mm	Height	Depth mm	Model No. CP
482.6 (19″)	2 U	150	**6002.000**

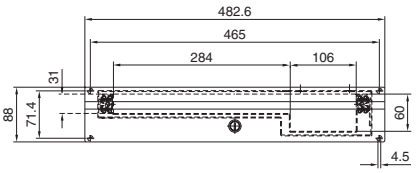
Material:
Drawer housing:
Sheet steel, zinc-plated, passivated
Drawer and front panel:
Aluminium, natural-anodised.

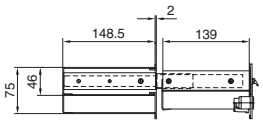
Supply includes:
Assembly parts for installation in Comfort Panel/ VIP 6000/Optipanel command panels.

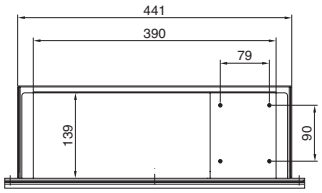
Also required:

[1)] For sub-division of the operating front:

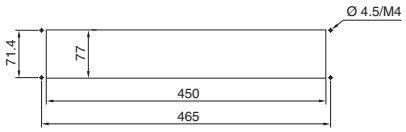
- Comfort Panel requires one cross member
  (see page 199, version 2.2).
- VIP 6000 requires one cross member
  (recommended) or sealing bar
  (see page 218, version 3.2).
  At the same time, the end trim
  (see page 219, version 3.4) must be selected.
- Optipanel requires one cross member
  (see page 208, version 2.2).

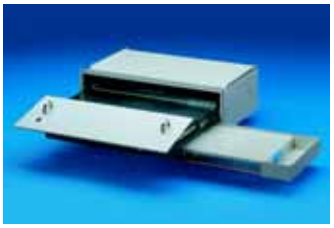






Mounting cut-out
(for installation in surfaces)







Drawer for keyboard and mouse

with mousepad support

For installation in:
- VIP 6000 Command Panel[1)] (installation depth **4**, **6** or **8**, see page 217, 3.1)
- Any sufficiently large surface (e.g. door, side panel).

Suitable for accommodating
- Keyboards up to a maximum of 460 x 42 x 170 mm.
- Standard mouse and mousepad

Design:
- Drawer and enclosure
  – with side pull-out mousepad support and tray
- Front panel
  – with 3 mm double-bit lock insert
  – folds out as a wrist support

Width mm	Height	Depth mm	Model No. CP
482.6 (19″)	3.5 U	261	**6003.000**

Material:
Keyboard and drawer: Sheet steel
Front panel: Aluminium, natural-anodised.

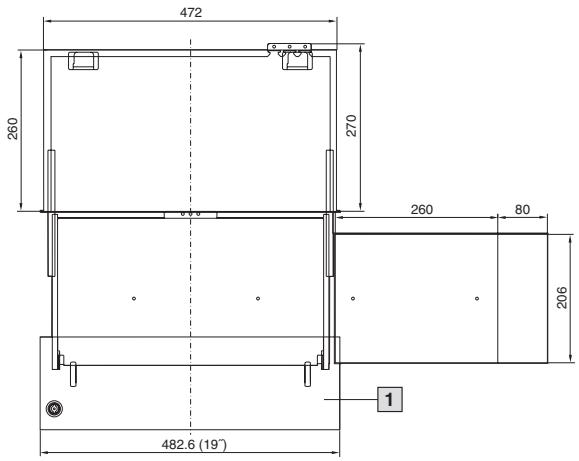
Supply includes:
Assembly parts for installation in VIP 6000 Command Panel.

Also required:

[1)] For sub-division of the operating front, a cross member (see page 218, version 3.2) is required. The end trim (see page 219, version 3.4) must be selected at the same time.

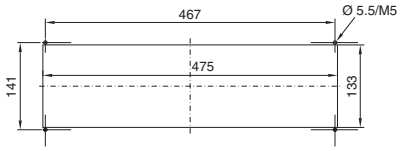
Accessories:

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, version A, see page 956.



1 Front trim panel

Mounting cut-out
for installation in surfaces









Keyboard drawer 1 U

for 482.6 mm (19″) attachment level

This space-saving keyboard drawer is screw-fastened to the front and rear 482.6 mm (19″) attachment level.
The installation spacing is infinitely adjustable from 460 – 800 mm.
It is fully extendible, lockable, with strain relief and hinged cable support.
The drawer is suitable to accommodate 482.6 mm (19″) keyboards.

Interior dimensions:
W x H x D approx. 420 x 40 x 220 mm

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts, excluding keyboard.

Note:
Monitor/keyboard unit, 1 U, see page 840.

Distance between levels mm	Model No. DK
460 – 800	**7281.200**

Accessories:

482.6 mm (19″) long-stroke keyboard with numeric keypad and touchpad, connection cable (approx. 1.15 m) and PS/2 connector, colour RAL 7035.

W x H x D mm	Keyboard layout	Model No. DK
415 x 37 x 193	German	**9004.400**
	US English	**9004.402**
	French	**9004.403**
	Spanish	**9004.404**
	Finnish	**9004.406**
	Swedish	**9004.407**

Monitors/drawers for keyboards



Panel for monitors

for monitors with screen diagonals of up to 17″
For mounting between 482.6 mm (19″) mounting angles. Fitted with safety glass.

Material:
Sheet steel

Colour:
RAL 7035

U	Model No. DK
9	**7300.135**



Monitor drawer 1 U

with 15″ TFT

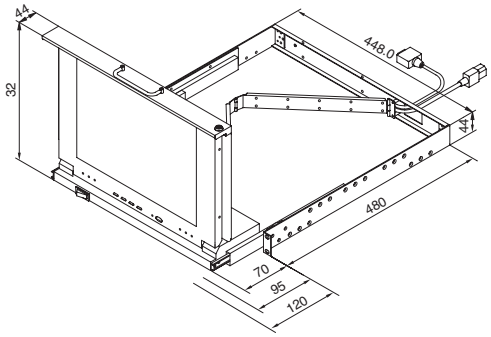
- 19″ rack-mounted chassis 1 U, 480 mm deep
- Including installation kit for depth-variable mounting in enclosures/cases with depths from 600 – 900 mm
- Display pulls out forwards
- Lockable at the front
- Telescopic slides with integral clamp

Material:
Sheet steel, spray-finished

Colour:
RAL 7035
Special colours available on request

Supply includes:
Monitor drawer fully populated, assembly parts.

Protection category:
IP 40



Model No. RP	3659.660
Technical design	
TFT screen with anti-reflection coated safety glass	15″ (381 mm)
Maximum resolution	1024 x 768
Full screen	VGA + SVGA
Colours	16.7 million
Brightness	250 cd/m²
Contrast ratio	350 : 1
Mains voltage	100 – 240 V AC, 48 – 62 Hz
Connections on the rear	
Mains voltage	IEC 320 connection
Video input	Analog (D-SUB 15-pole, jack)
	Digital (DVI-D, jack)



Keyboard drawer 2 U

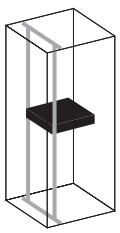
for one 482.6 mm (19″) attachment level
For keyboards up to 430 mm wide and 250 mm deep with the front panel folded over.

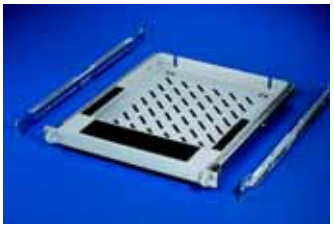
Material:
Sheet steel with aluminium front, spray-finished in RAL 7035.

Supply includes:
Lockable drawer with handles,
hinged front,
pull-out mouse pad,
mouse support,
practical cable entry and strain relief.

Height	Model No. DK
2 U	**7281.035**

Installation depth: 390 mm.





Drawer 482.6 mm (19″)

for keyboard
For attaching to the 482.6 mm (19″) mounting angles front and rear. Suitable for standard keyboards > 482.6 mm (19″). Keyboard support with non-slip base, plus wrist support.
Depth-variable installation from 610 – 950 mm.
Clearance opening W x H x D:
408 x 40 x 550 mm.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts, excluding keyboard.

Packs of	Model No. DK
1	**7063.888**

Note:
Installation only possible on L-shaped and cranked 482.6 mm (19″) mounting angles and/or 482.6 mm (19″) mounting frames.







Support for mousepad

for command panels and surfaces
The angle of the mousepad support is individually adjustable.
Two holes are needed on the enclosure for attachment purposes.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Weight kg	Model No. SM
1.0	**2381.000**

Also required:

Vertical handle set for wide frame
(for mounting on VIP 6000 with wide front frame),
see page 1116.

Accessories:

Holder for mouse,
see page 1145.





Holder for mouse

To fit mousepad support and for secure accommodation of a standard mouse.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Weight kg	Model No. SM
0.3	**2382.000**

Also required:

Support for mousepad,
see page 1145.

Drawer for keyboards/mouse, mousepad





Mousepad, passive

For installing in PC enclosures based on ES.
Pulls out to the front or on the left or right.

For fold-out tray of PC enclosure/case	Model No. PC
4603.920 4617.920	**4613.000**

German patent no. 43 30 926

For drawer of PC enclosure/case	Model No. PC
4603.603 4603.913 4609.703 4617.703	**4614.000**





Support for mousepad, vertically hinged

For mounting on the left/right, beneath support for keyboards. Latches home automatically, both when retracted and extended.
With mounting holes for mouse holder (SM 2382.000).
With cut-outs for cable routing and holes for attachment via cable ties, for fast assembly (SZ 2597.000).

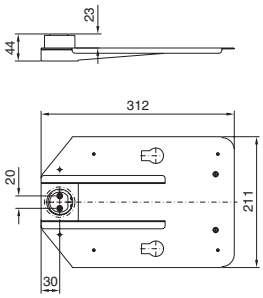
Material:
Sheet steel, zinc-plated, passivated

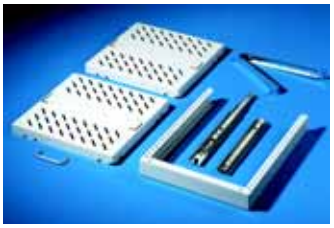
Supply includes:
Assembly parts.

Packs of	Model No. SM
1	**2383.020**

Accessories:

Holder for mouse,
see page 1145.
Cable ties,
see page 1066.







Mobile workstation

for tower PCs, printers, UPS, servers etc.

Load capacity: 75 kg

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
1 mounting frame,
2 shelves top/bottom,
1 set of telescopic slides,
1 handle,
1 cable support, hinged,
mounting accessories.

Packs of	Model No. PC
1	**4641.000**

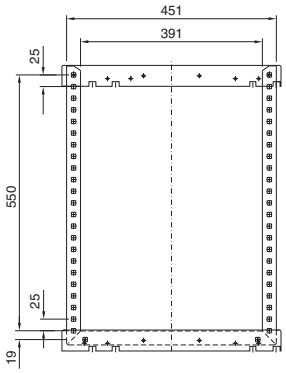
Also required:

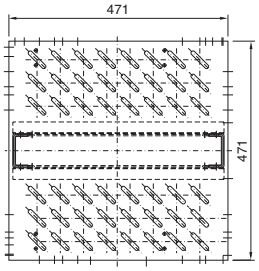
For enclosure depth mm	For installation in: TS, PC based on TS, IW 2 punched sections with mounting flanges, see page 993	For installation in: ES, PC based on ES, AP universal console 2 punched sections without mounting flanges[1], see page 998
600	TS 8612.060	PS 4376.000
800	TS 8612.080	PS 4377.000

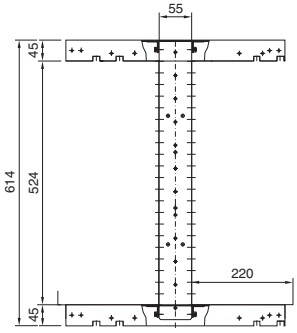
[1] plus:
4 support brackets, PS 4183.000, see page 1007,
8 threaded blocks M6, PS 4162.000, see page 1010,
8 screws M6, SZ 2504.500, see page 1011.

Accessories:

Fastening bolt DK 7115.000,
see page 1026.
Shelf,
see page 1147.









Shelf

for mobile workstation

For additional equipment such as modems, power packs etc. or simply as a paper tray. Installation heigth-adjustable on a 25 mm pitch pattern.

Material:
Sheet steel

Colour:
RAL 7035

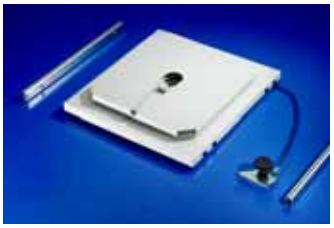
Supply includes:
Assembly parts.

Packs of	Model No. PC
1	**4642.000**

Accessories:

Fastening bolt DK 7115.000,
see page 1026.

Printer accessories





Printer base, swivel

Operation of the printer for servicing purposes is possible, even in enclosures with are only accessible from the front.

Load capacity: 20 kg.
Surface for printer 340 x 360 mm.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Component shelf,
turntable with cable routing and stay,
telescopic slides.

To fit TS width x depth mm	Model No. IW
600 x 600	**6902.990**

Also required:

2 TS punched sections with mounting flages for enclosure depth of 600 mm,
see page 993.

Accessories:

Paper tray,
see page 1148.



Paper removal flap

for printer cabinet IW 6900.110
Facilitates easy removal of pages from the printer without opening the enclosure door. Plexiglass flap with magnetic lock.

Paper removal flap	Colour RAL	Model No. IW
DIN A4	7015	**6903.200**
With cut-out to specifications	7015	**6903.299**[1)]

[1)] Delivery times available on request.





Paper tray

for laser printers with rear output.
Printed pages are routed to the outside and collated. The door only needs to be opened for servicing purposes. This protects the printer against dust, humidity and theft. The paper tray may be mounted on surfaces with a width of 600 mm or more (e.g. door, side panel) and accommodates up to 20 pages of standard A4 paper.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Width x height x depth mm	Model No. IW
270 x 390 x 122	**6903.000**

Accessories:

Printer base, swivel,
see page 1148.

Rittal service:

Installation in doors and side panels on request.



Base

for tubular door frame
The space-saving alternative instead of component shelves to accommodate tower PCs (maximum 20 kg). For screw-fastening to the tubular door frame of 600 mm wide enclosures based on TS.

Load capacity: 20 kg.

Material:
Sheet steel, spray-finished

Colour:
RAL 7015

Supply includes:
Retaining strap and assembly parts.

Width x height x depth mm	Model No. IW
495 x 159 x 230	**6902.950**

Also required:

Support strips for direct screw-fastening to the tubular door frame,
see page 997.



Interface box

For secure accommodation for all common computer ports, 3½" disk drives and sockets. The lockable metal cover provides a high mechanical load-bearing capacity, protects against unauthorised access and ensures an increased shielding effect for the installed equipment.

Modifications such as
- Other sizes
- Acrylic covers
- Cut-outs for connectors etc.

are possible on request.

Material:
Frame:
Extruded aluminium section, powder-coated
Mounting tray:
Sheet steel, 1.5 mm, powder-coated
Flap:
3.0 mm aluminium, natural-anodised

Colour:
RAL 7035

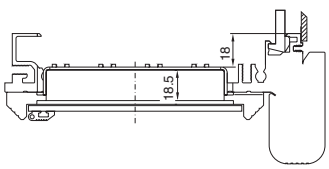
Supply includes:
Frame with hinged flap,
cam with security lock (no. 12321).
Mounting tray including seal and assembly parts.

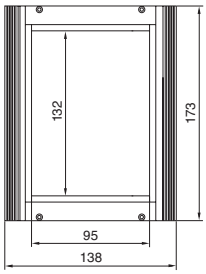
Weight kg	Model No. SZ
0.8	**2482.000**

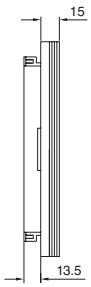
Rittal service:

Upon request, the interface box can be supplied with customer-specific cut-outs, pre-installed in the operating housing. If required, please specify the desired treatment and installation position.

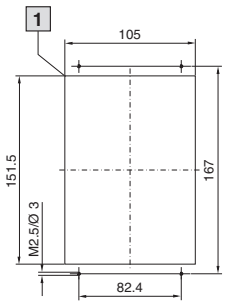
Mounting example in the VIP 6000:







Mounting cut-out



1 Max. R3

Interface accessories





Interface flap

The compact alternative to the interface box SZ 2482.000.
For secure accommodation of all standard sockets, computer ports, 3½″ or CD-ROM drives.
The cast aluminium flap ensures a high mechanical load-bearing capacity, and guards against unauthorised access.

For:
- Comfort Panel from D = 113 mm
- Optipanel from D = 100 mm
- Any sufficiently large surface

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, version F, see page 956.

Material:
Flap: Cast aluminium, finely-textured
Board: Sheet steel 2 mm, zinc-plated, passivated

Colour:
RAL 7035

Protection category:
IP 65 to EN 60 529/09.2000

Supply includes:
Seal and assembly parts.

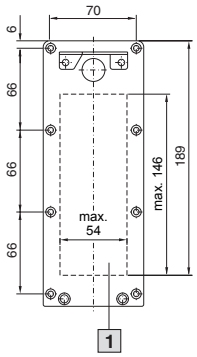
Packs of	Model No. SZ
1	**2482.200**

Note:
For side mounting in 100 mm deep Optipanels, a handle set (CP 6385.0XX, see page 1115), may be mounted, although not in the same place.

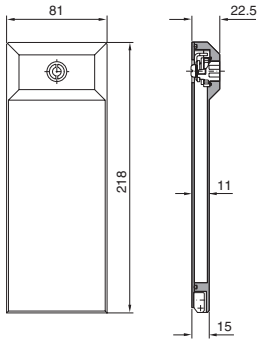
Rittal service:

Cut-outs are possible in the cover plate and enclosure.
Available without cover plate on request.

View without flap



View with flap



1 Surface for interface cut-outs





Interface extension with wall connection and built-in RJ 45 module

For extending the internal enclosure interfaces – e.g. from industrial PCs and switches – up to the outside of the enclosure. The wall connection only needs the same space as a switch.

Benefits:
- Rapid access for maintenance work
- The protection category of the enclosure is preserved
- The lock nut cuts automatically into the spray-finish or eloxal layer, thereby creating a conductive connection
- Captive protective cap

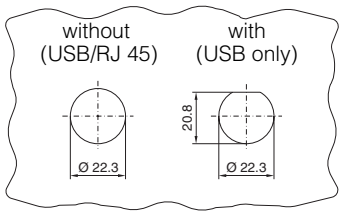
Material:
Enclosure: Brass, nickel-plated
Cover: Aluminium, anodised
Seal: Polyamide

Protection category:
IP 66/67 to EN 60 529/09.2000
(with the protective cap closed)

Rittal service:

Slots or installation ex-works in the Comfort Panel, Optipanel and VIP 6000 (via version code).
Cut-outs in many Rittal enclosures.

Anti-twist guard



Material thickness: 1 – 6 mm

Design	Wall connection	Inside	Length m	Packs of	Model No. SZ
USB	Type A jack	Type A connector	0.5	1	**2482.210**
			1.0	1	**2482.220**
			2.0	1	**2482.230**
RJ 45	Jack	Connector	0.5	1	**2482.700**
			1.0	1	**2482.710**
			2.0	1	**2482.720**
RJ 45	Jack	Jack	–	1	**2482.730**

Other versions and lengths available upon request.





Interface flaps, modular

For universal use in all situations where rapid access to interfaces and sockets is needed. The affected enclosure remains closed and is therefore protected from ambient influences and unauthorised access.
Space-saving installation e.g.

- in **small enclosures and compact enclosures** as a programming interface for controllers
- in **IT and industrial enclosures** as maintenance access for networks
- in **PC enclosures and console systems** for the temporary connection of additional equipment
- in mobile **Industrial Workstations** for rapid connection to existing network structures
- in **Command Panel systems** for programming and maintenance of integral components.

The mounting frame has a flap which snaps into position in various stages at opening angles of 90 to 180°. A snap fastener ensures a reliable seal. This may be locked if required.

Material:
Mounting frame and metal flap:
Fine die-cast zinc, matt nickel-plated
Plastic flap: Polycarbonate (semi-transparent)
Lock: Polycarbonate, RAL 7024

Protection category:
IP 65 to EN 60 529/09.2000 with sealed flap and proper assembly.

Rittal service:

Cut-outs and mounting in many Rittal enclosures.

Detailed drawing and installation dimensions, see page 1304.

Description	C-UL	UL	Packs of	Model No. SZ
Mounting frame[1)]				
1 Single, with plastic flap (semi-transparent)			1	**2482.300**
2 Double, with plastic flap (semi-transparent)			1	**2482.310**
3 Single, with metal flap	■	■	1	**2482.320**
4 Double, with metal flap	■	■	1	**2482.330**
Socket modules				
5 Germany (VDE), spring-action terminals max. 2 x 2.5 mm², connection at rear			1	**2482.400[3)]**
6 Germany (VDE), screw terminals max. 6 mm², connection at rear, colour: yellow (RAL 1016), for installation in front of main switch			1	**2482.410[3)]**
7 USA NEMA 5-15, plug-in solder connection 4.8 x 0.8 mm	■	■	1	**2482.420[4)]**
8 USA NEMA 5-15, plug-in solder connection 4.8 x 0.8 mm (N, PE) 6.3 x 0.8 mm (phase), fuse 3 A	■	■	1	**2482.430[4)]**
Interface inserts				
9 2 x SUB-D9 (jack/pin)	■	■	1	**2482.500**
10 SUB-D9 (jack/jack)	■	■	1	**2482.510**
11 SUB-D9 (jack/pin), SUB-D25 (jack/pin)	■	■	1	**2482.520**
12 SUB-D25 (jack/pin)	■	■	1	**2482.530**
13 2 x USB A (jack/jack)	■	■	1	**2482.540[2)]**
14 RJ 45 (jack/jack, Cat. 5e), SUB-D9 (jack/jack), SUB-D9 (pin/pin)	■	■	1	**2482.550**
15 2 x RJ 45 (jack/jack, Cat. 5e)	■	■	1	**2482.560[2)]**
16 USB A (jack/jack), RJ 45 (jack/jack, Cat. 5e), SUB-D9 (jack/pin)	■	■	1	**2482.570[2)]**
17 RJ 45 (jack/jack, Cat. 5e), SUB-D9 (jack/pin), SUB-D25 (jack/pin)	■	■	1	**2482.580**
18 Blanking plate (slimline), for individual population, usable area: 45 x 75 mm	■	■	1	**2482.590**

[1)] Electrically conductive.
[2)] Conductively linked to mounting frame.
[3)] Rated voltage: 250 V AC, rated current: 10 – 16 A
[4)] Rated voltage: 125 V AC, rated current: 15 A (SZ 2482.420)/3 A (SZ 2482.430)
All SUB-D interfaces may be rotated while in operation.
Other socket modules and interface inserts available on request.


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18

Planning/project management/selection



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- Shopping basket with Excel interface
- Item data for EPLAN
- Contract tender texts
- DWG catalogue drawings
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German language only.



PlanIT

From Rittal's extensive range of products and solutions, we have compiled the information that is specifically relevant for the planning of IT enclosures, IT infrastructure and data centres.

The following applications are contained on this CD:
- Product overview
- Product search
- Documentation
- Enclosure monitoring software
- Drawings (VISIO)
- Brochures
- Tender texts (TXT, DOC, PDF, GAEB format)
- Contacts and contact details
- Lists of materials

Note:
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For an online preview, go to:
www.rittal.com/planit

Planning/project management/selection



Rittal Power Engineering

The configurator for Ri4Power low-voltage switchgear

For
- Form 1: High-current power distributor
- Form 1: Distribution enclosure
- Forms 2-4: Low-voltage switchgear

The multi-lingual software package includes the following functions:
- Project handling, from the initial enquiry through to ordering
- Complete, automatic function for the generation of bills of materials and a calculation program for producing a quote
- Input and evaluation of assembly times to determine labour values
- Access to the entire range of Rittal products
- Output of orders including combining several projects into one order

Supply includes	
CD-ROM	
Language: German/English/French/Dutch/Swedish/ Czech/Italian/Polish/Russian	
Model No. SV	**3020.300**

- Generation of special fields configured by the customer with graphical processing in the CAD view
- Import/export interfaces for product and CAD data
- Export function of order and parts lists in Excel or CSV format
- Calculation based on current copper price
- Integration of the new product range form subdivisions as per Forms 2, 3 and 4 (Ri4Power).
- Interface to Eplan Electric P8, for the export of CAD data and bills of materials
- The extra benefit for engineering and planning offices: Output of detailed tender texts on the basis of plant project-planned in Power Engineering in MS Word/GAEB format



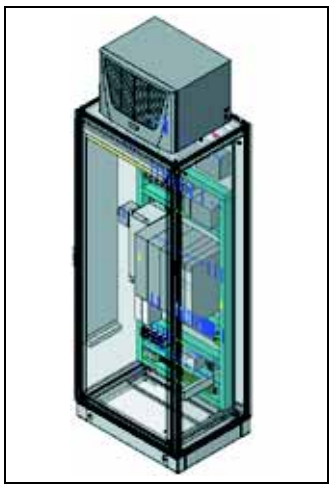
Rittal PlanSV

Software support for engineering and planning offices.
With PlanSV, Rittal makes an extensive range of information available for the planning of Rittal Ri4Power low-voltage switchgear.

The German-language planning software includes the following functions:
- Contract tender texts
- Drawing templates
- Calculation aids
- References
- Application images
- Assembly instructions
- Documentation

Note:
Rittal PlanSV is available free of charge at **www.rittal.com.**

German language only.



EPLAN Cabinet

Productivity increases, from electrical planning, to enclosure population, through to production

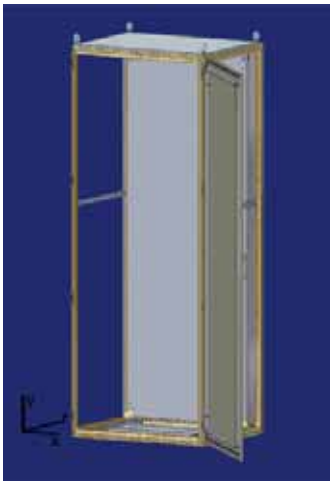
The electrical planning and mechanical installation of an enclosure are combined into an integrated workflow with EPLAN Cabinet.

Equipment and component data is transferred from the wiring schematic from EPLAN Electric P8 or earlier versions of EPLAN into the layout plan. Rittal enclosures are integrated as original 3D models via component libraries (Rittal RiCAD-3D). Cable trunking, support rails, terminals and devices may be positioned in the 3D representation of the enclosure at a click of the mouse. Collision controls ensure compliance with distances and blocked surfaces, and help to avoid design errors.

Automatic generation of bills of materials and order lists are, of course, included, as are high-quality, dimensioned drawings for plant documentation.

Supplementary modules such as routing or NC generate drilling plans and programs, optimised wiring paths and lists, as well as information for drilling and milling machines. The simple planning and detailed documentation of EPLAN Cabinet support an optimum workflow, from the wiring schematic through to the populated enclosure.

Planning/project management/selection



RiCAD 3D

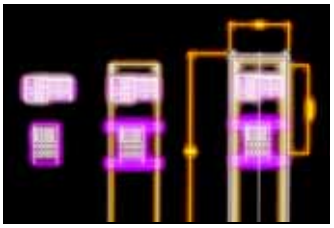
The download platform for seamless integration of Rittal CAD data into your plant designs
Irrespective of which CAD system you use, RiCAD-3D effectively supports the efficiency and productivity of your plant design.

- Considerable reduction of engineering and design work
- Shorter assembly times
- Error-free detailed Rittal data
- Generic original files in 2D and 3D format – no conversion of neutral formats

Online access to original data for virtually any CAD system via:
www.rittal.com/RiCAD3D

Supply includes	
CD-ROM	
Language: German/English/Russian/Chinese	
Model No. SZ	**2406.110**

CD-ROM with CAD data for the following formats:
- AUTOCAD DWG, DXF (>R12)
- ProE 2001
- ProE Wildfire
- SolidWorks 3D (= 2003)
- SolidWorks 3D (≥ 2004)
- EPLAN Cabinet
- Neutral Step format



RiGeo

From the design into the CNC machine
With the RiGeo CD-ROM, Rittal offers an extensive library of geometry data for virtually all Rittal products in a variety of views and data formats. The files on the CD-ROM are divided into directories based on individual product groups to simplify the search process. It also supports a database search function.
Installation on the hard disk is not necessary, since the data may be read directly from the CD-ROM into your CAD system.

Features in brief:
- No unnecessary, memory-consuming storage on the hard disk.
- Simple positioning of accessory components.
- The correct format to suit every application.
- Representation to scale, suitable for CNC machining.

Supply includes	
CD-ROM	
Language: German/English/French/Dutch	
Model No. SZ	**2406.100**



RiDiag II

RiDiag II is a tool for diagnosing the operating behaviour of Comfort controller-regulated cooling units. By connecting a PC, it is possible to retrieve error messages, temperatures and capacity utilisation levels of the cooling units which are stored in the Comfort controller. The system includes integrated temperature measurement from four sensors in the cooling unit, and also features graphical representation of the temperature development over time.

Supply includes	
CD-ROM	
Language: German/English/Italian/French	
Connection cable	
Model No. SZ	**3159.100**



Therm Software

Rittal Therm is a calculation program for climate control of enclosures.
All electrical and electronic components have a certain power loss which is dissipated to the environment in the form of heat. Because an increasing number of components are now being housed in ever smaller spaces, the heat produced can soon reach levels which are harmful to electronic components and may severely curtail their useful lives.
The Therm software package takes care of the complex calculation of climate control requirements. A user-friendly interface guides the operator to the most suitable, correctly dimensioned climate control component.
All evaluations are closely based on the requirements of IEC/TR 60 890 AMD 1/02.95 and DIN 3168 for enclosure cooling units.

Supply includes	
CD-ROM	
Languages: Available in 13 languages	
Model No. SK	**3121.000**

Note:
Your 30-day trial version may be downloaded at **www.rittal.com**



RiWatchIT

Video edition (for Rittal IP-Cams)
This client/server application is the management centre for the Rittal video monitoring system. This software allows several cameras to be monitored, controlled, and on request linked to CMC-TC sensors.

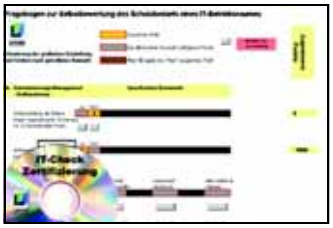
Note:
The RiWatchIT "Video Edition" software can only be used with Rittal IP-Cams (DK 7555.xxx)!

Further information:
www.rimatrix5.com

	Model No. DK
RiWatchIT Video Edition	**7555.300**

Benefits and functions:
- Cost-effective, because it uses the existing network infrastructure
- Future-proof IP technology
- Flexible use for data centre and indoor building monitoring
- Global access is supported via IP networks
- Scalability – the system grows along with your requirements
- Free monitoring software for Rittal IP-Cams
- Supports a unique link with the CMC-TC sensors
- 16 camera views may be represented simultaneously

For detailed information,
see page 847/848.



IT-Check certification

IT-check certification offers:
- Planning confidence for data centres and server rooms
- Review of the sensitivity of IT applications to failure
- Automatic determination of protection requirements
- Target description of the technical supply infrastructure
- Target description of the security equipment

Supply includes	
CD-ROM	
Language: German/English	
Model No. DK	**7200.950**



- Five global service support points in the world's economic hubs
- More than 60 other service sites with
- Over 250 qualified partners and our own technical specialists, worldwide!

Rittal global service

Customer satisfaction from the outset.

Every purchase decision is based on expectations. Our global service is a promise to meet these expectations at all times. After all, as a customer, your requirements do not begin and end with the acquisition itself.

Our service contracts are a part of global service engineering, and ensure the optimum worldwide operation of your systems. The Rittal Global Service comprises the following individual services:

Pre-sales

We smooth the way for your decision.
- Requirement analysis
- Load test
- Thermal imaging
- Simulation and calculation

Implementation

Because we are pleased to be on board when you arrive at a solution.
- Installation/integration
- Commissioning
- Instruction
- Certification

After-sales

We face up to our responsibilities.
- Service contracts
- Maintenance/servicing
- Repairs
- Spare parts management

Details of the Rittal service packages

	Reachability	Response time	Spare parts availability	Maintenance	Warranty extension
BASIC	Business hours	Next working day	Standard	1 x/year	No
COMFORT	Business hours	Next day	Standard	2 x/year	No
ADVANCED	24 hours 365 days/year	Next day	24 hours	2 x/year	Yes
FULL	24 hours 365 days/year	8 hours	Individual concept	(at least 2 x/year)	Yes
CUSTOMIZED					

Ensure your individual global service from Rittal.
In order to additionally safeguard the reliability and availability of your Rittal solution, we offer four standard service packages worldwide. From Basic, to Comfort, to Advanced, to Full, you have the option of defining the scope of your service package. Moreover, we can also address your individual requirements with the customised service package.

Extend the guarantee on your systems to up to 5 years: with the Advanced or Full service packages from Rittal Global Service.

Central Service Helpdesk, Europe: +49(0)2772 505-1855

Further information may be found on our Catalogue 32 CD-ROM, or on the Internet at www.rittal.com.

System integration

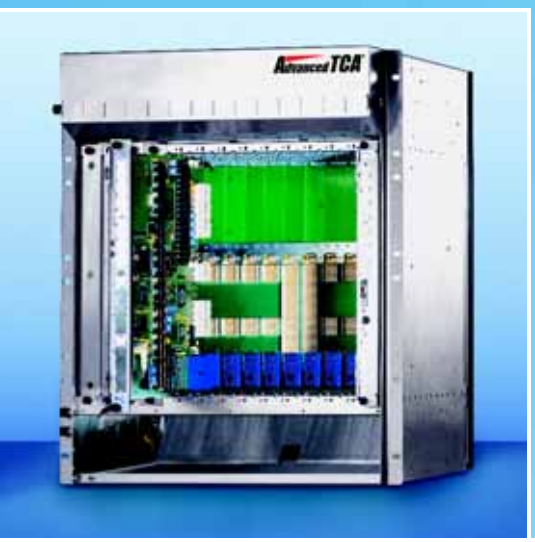
Rittal IT solutions – a spectrum of services for individual, complete packages.

Thanks to modular, mass-produced system components, Rittal is able to achieve the optimum individual solution for every client, quickly and cost-effectively. Complete solutions, with no ifs or buts.

The extensive Rittal range, including climate control components, control and monitoring technology, system accessories and hardware components such as monitors/keyboard units or keyboard-video-mouse switches, is available to help us achieve this. System integration offers a wealth of benefits:

Only one project partner, significantly reduced planning and assembly work, and minimal logistics and procurement input.

Rittal IT solutions – Simple, perfect and complete.



Rittal system integration up to Level 4

This is the cumulative result of extensive in-depth consultations and precision planning, e.g. with climate control, power supply and security management through to Level 4 system integration.



Level 5: Level 4 with I/O and application software, tested

Level 4: Level 3 with integral boards, tested

Level 3: Integration, wiring of various components (e.g. MPS systems including backplane, power pack)

Level 2: Pre-configuration, population (e.g.subracks, backplanes, front panels)

Level 1: Components (e.g. guide rails, connectors, etc.)

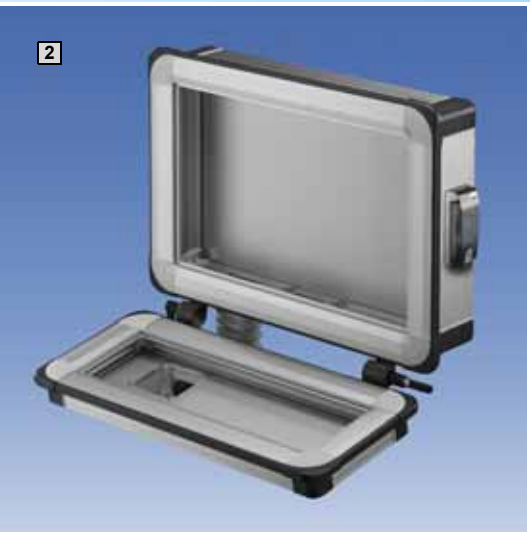
The complete Rittal IT solutions know-how for products and services is a coordinated, integrative system. It comprises advice, planning, prototype construction, individual production and assembly, as well as distribution tailored to customer requirements.





To suit your applications

These days, virtually any customer requirement can be solved with Rittal standard components. The extensive product range with matching system accessories, coupled with the comprehensive service portfolio, ensure that your requirements are met.







Top quality ex-works

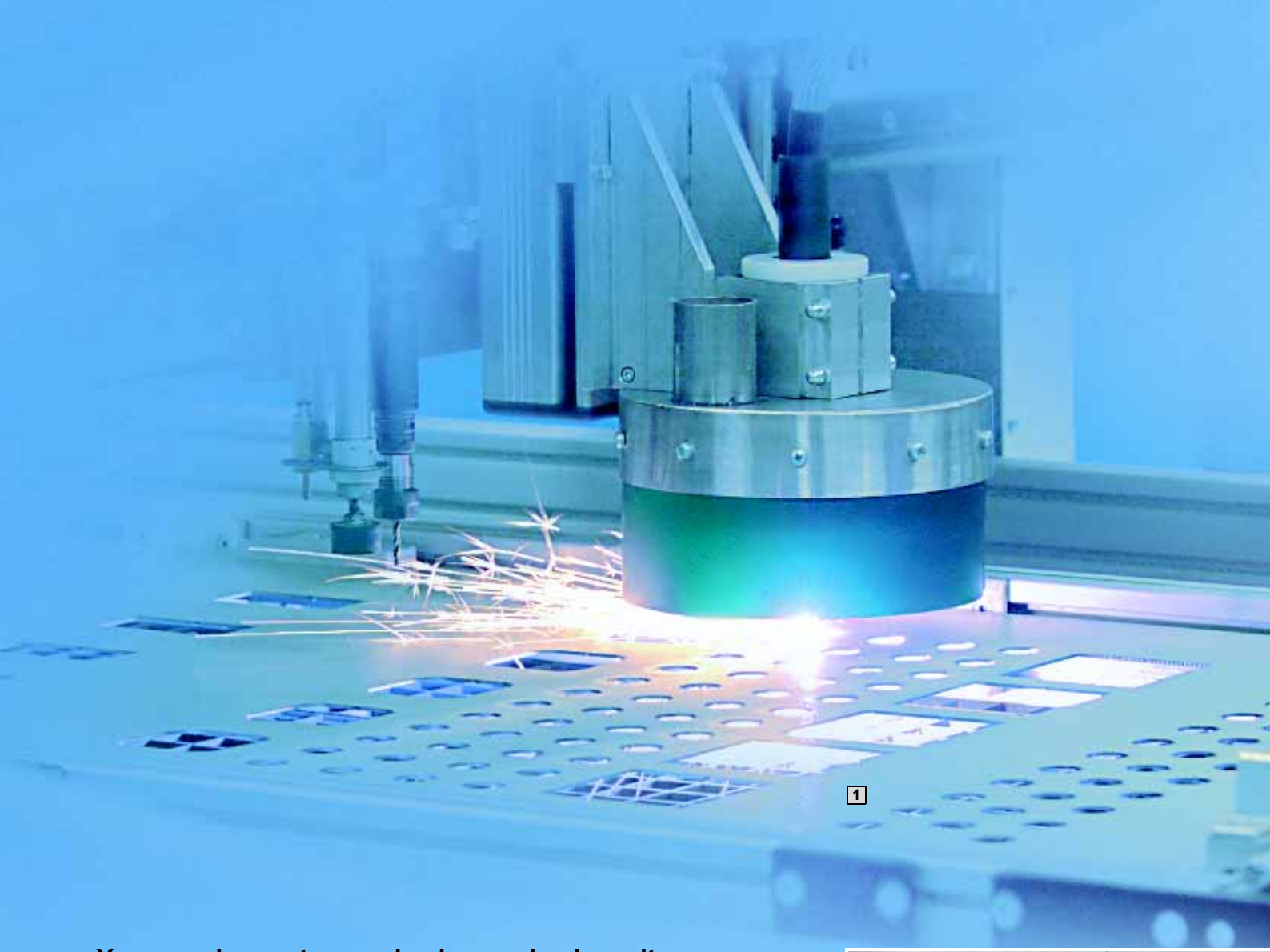
Rittal combines mass production with customisation in a variety of ways, to your benefit.

1 **Individuality from our standard range**
Cut-outs and holes are made in the factory, prior to surface coating. Advantage: Unrestricted corrosion resistance.

2 Modified **dimensions**
Individual dimensions come as standard with the Comfort Panel command panel.
Special sizes can also be achieved with other series.

3 **Mounting of accessories**
The comprehensive range of Rittal system accessories and assembly ex-works offer attractive cost advantages.

4 **Custom-manufacturing**
Such as this rack for mobile railway technology.



Your requirements can also be resolved on site

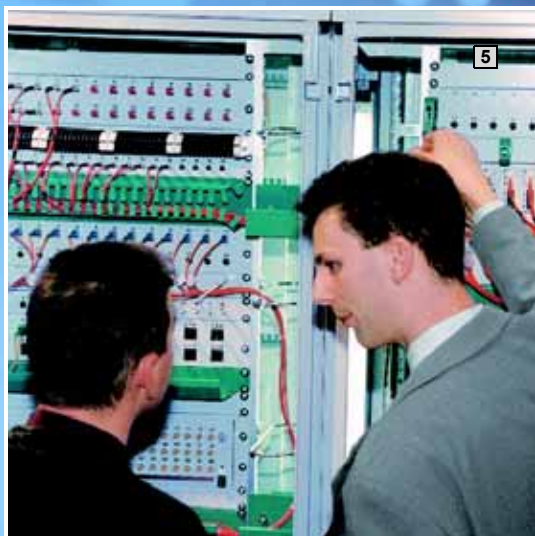
We put our good advice into practice. Impressive solutions, achieved with partners in your proximity. Availability and service combine to create convincing results. Fast and cost-effective.

5 Advice, exhibits, training
Get your product information hands-on! Discover new routes to practical, inexpensive solutions.

6 Production of cut-outs
Cut-outs and drilled holes for climate control components, switches, instruments and monitors. Take the easy option.

7 Ready to plug & play with system accessories
Choose your finished solution. Opt to install base/plinths, side panels, fan-and-filter units, lights, punched sections, earth rails, monitoring systems and many other modules from our extensive range of accessories.

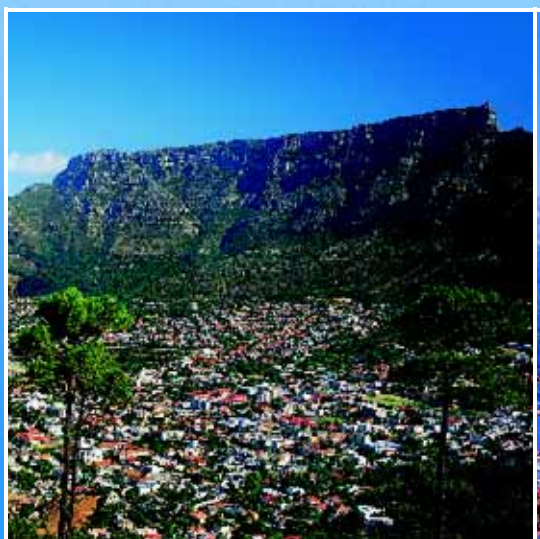
This Rittal service offers substantial time and money savings.

















Wherever in the world you happen to be, we are close at hand



Customer proximity is a key Rittal philosophy:

With global solutions, with local advisors, and with **100 % availability** of our products and services.

19 production sites, more than 60 subsidiaries, over 70 agents and 150 distribution and logistic centres around the globe are testimony to our consistent customer orientation.

When it comes to technical applications, quality and reliability, Rittal is your first choice.

All our products meet the very latest technical findings, globally recognised quality standards with certifications, and **internationally valid approvals.**

Our comprehensive Total Quality Management system ensures consistently high product quality worldwide.

We meet all your requirements, globally and locally, in close partnership with our customers – our advantage, your value-added benefit.



RITTAL®



1 **Herborn** is a melting-pot for outstanding ideas from all the world's markets, as well as being our research and development site. Herborn is also a highly automated production plant. Compact enclosures are produced here on state-of-the-art transfer lines.

2 **Rittershausen –** Rittal's birthplace, and the production site for our large enclosure systems. New techniques have been developed here for manufacturing the "ri-volutionary" profile of the new Top enclosure system TS 8, the system platform for a broad, future-oriented application range.

3 In **Burbach** we produce a broad spectrum of products with a high proportion of individual customised solutions (large enclosures, console systems, individual free-standing enclosures, compact system enclosures CM, accessory components).







Rittal in Germany

Rittal draws on the technological expertise of entire regions. At the heart of Rittal's success: Innovations consistently tailored to market requirements, encompassing the product range, the production techniques and our customer services. Specialist expertise is concentrated at each of our sites, using state-of-the-art production techniques. Day after day, we produce thousands of products whose quality and perfection are a constant source of delight to our customers worldwide.

4 Climate control is a crucial safety factor in modern factory automation. In order to meet these growing requirements, the Rittal climate control factory in **Rennerod** has been fitted according to the very latest criteria.



5 Rittal **Wissenbach** specialises in the production of stainless steel enclosures and cases. The requirement profiles are corrosion protection and hygiene – particularly for the chemical and food industries.



6 The new Rittal logistics centre in **Haiger** boasts an ideal location, with excellent motorway and rail links. CS Outdoor enclosures, with an emphasis on mobile communications applications, are developed and manufactured here.



Rittal in Asia and Australia

China is a key market for Rittal. The domestic market is booming, the regional proximity to Japan also offers a host of benefits, and the presence of multinational companies is constantly growing. For this reason, we also manufacture in China according to international standards, in one of the world's most cutting-edge enclosure and case production plants.

The Indian economy is likewise showing impressive growth rates. In order to ensure that products are available within the shortest possible time, we have been producing enclosures and climate control components to international standards in India since 1997, for distribution throughout Asia and Australia.

1





1 Since November 2000, Rittal **Shanghai, China** has supplied the Chinese market, which already has a successfully established distribution network. Apart from industrial enclosures and cases, our Shanghai plant also focusses on OEM production.

2 At the Rittal production site in **Bangalore, India,** standardised enclosures and cases are mass-produced for the large Asian market. Here too, Rittal offers its internationally renowned customer service, as well as local advice and expertise.





3 Since 1988, a Rittal subsidiary in **Japan** has been offering customised solution diversity. The modification centre with state-of-the-art machinery and a flexible assembly team achieves customised requirements with speed and perfection, as well as the integration of system accessories.
Four locations with more than 6,000 m^2 of storage space ensure market proximity and availability.

4 The modification centre in Rittal **Australia** carries out mechanical modifications, as well as producing special panels and spray-finishes. These services are a perfect representation of the Rittal concept, “individual solutions on the basis of standard modules”.

Rittal in Europe and America

Europe: At our plant in Plymouth, England, the main focus is on enclosure technologies for electronics, while effective cooling is the theme of our plant in Valeggio, Italy, which produces recooling systems with cooling outputs of up to 172 kW, either as standard products or manufactured to individual specifications. With its favourable location, the Ertop plant in France supplies high-tech application sectors with packaging products. Meanwhile, in the USA, state-of-the-art, flexible production plants in Urbana and Springfield serve the markets on the American continent. Here, the emphasis is on speed and meeting customer-specific requirements.

1 Rittal **Plymouth** is a production site for large enclosures and OEM, primarily serving the European market.

2 System climate control is the theme of the Rittal plant in **Valeggio,** Italy.
In 2003 a brand new production line commenced operation, producing recooling systems, cooling units, heat exchangers and fan-and-filter units on a 9,500 m^2 site. A particular strength of this plant is the production of customised recooling systems.

3 On a production and administration site of 8,700 m^2, this plant manufactures products for discerning applications, as well as providing a comprehensive customer service. Integral 482.6 mm (19″) solutions and enclosures for the aviation and aerospace industries are just some of the specialities of the Rittal plant in **Ertop,** France.

4 Rittal has been represented in **Brazil** since 1996, where it has been producing TS 8 enclosures for the industrial and IT sectors since 1996.

5 Rittal's largest distribution and production site outside of Europe is the plant in **Urbana,** USA. Here, predominantly large enclosures, PC enclosure systems and Top-Therm cooling units are produced on a site of around 20,000 m^2, together with OEM production. The affiliated logistics centre serves the entire US market.



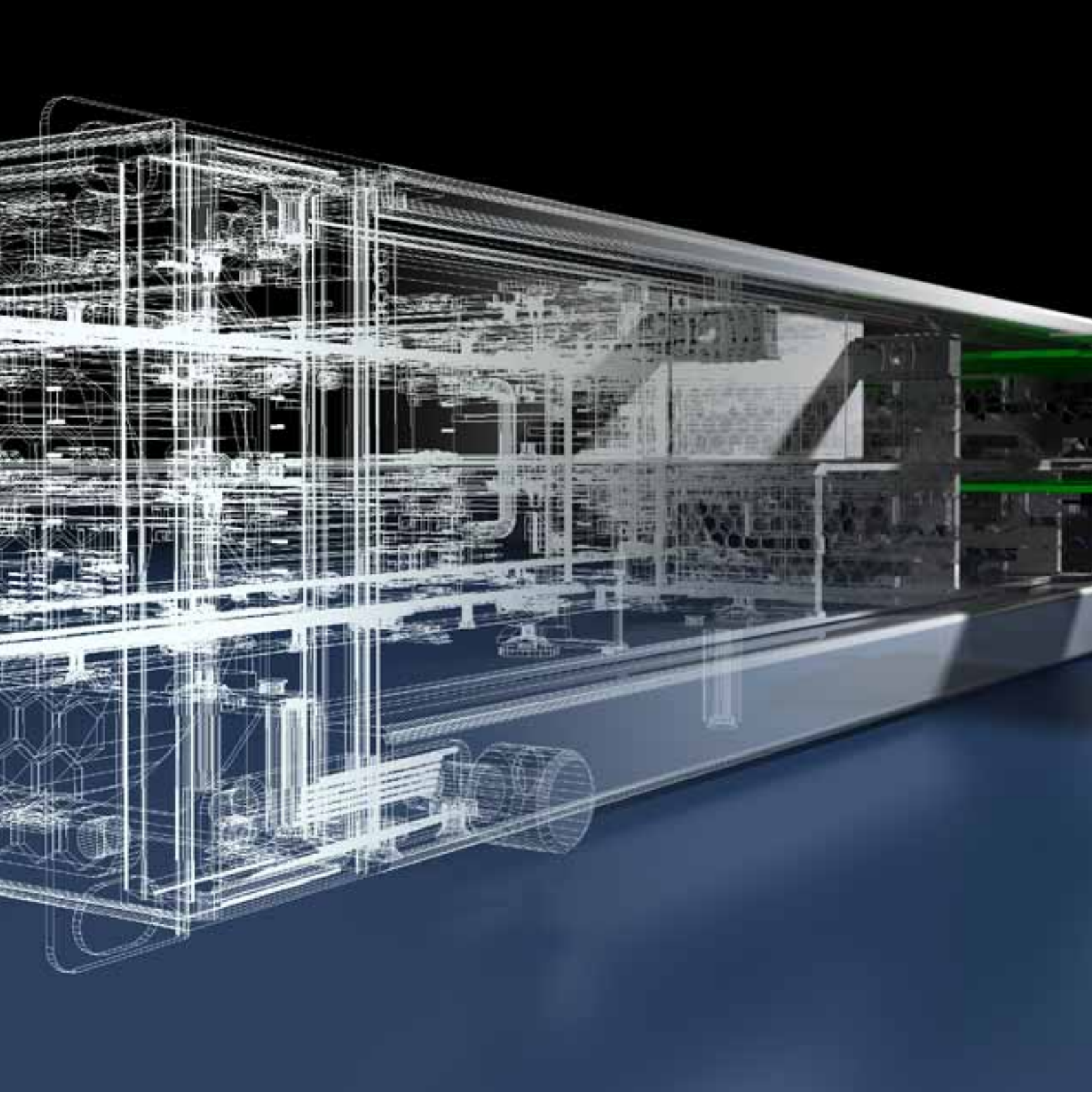






5

4



To ensure a perfect solution, the final element needed is **technical background information.** Here, we supplement the order information with detailed drawings, load curves, parts lists and performance diagrams. Additional **information and download options** such as approvals, CAD drawings or assembly instructions are available from **www.rittal.com.**

The CD-ROM contains the same information as the Catalogue – with the added convenience of links to all cross-references, helping you to arrive at a solution even faster. What is more, whilst online, any Model Number will take you directly to further information in the Rittal database on the Internet.

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Surface protection

The triple treatment of outer surfaces – nanoceramic pretreatment, electrophoretic dipcoat-priming and textured powder-coating – provides optimum corrosion protection for enclosures such as TS, AE, KL. In order to ensure optimum corrosion protection in all climatic zones, aluminium or zinc-plated metal with subsequent zinc-phosphating and powder-coating are used as the materials for outdoor enclosures.

The standard coating is resistant to:

- Mineral oils
- Lubricants
- Machining emulsions
- Solvents (briefly, e.g. during cleaning)
- Weak acids and alkalines

This has been tested and confirmed by various independent test institutes.

Quality is ensured by continuous process monitoring.

Priming or powder coating suitable for overpainting

After careful cleaning of the surface, the standard coating may be overpainted with:

- DD gloss paints
- Single and dual-component gloss paints
- Car repair paints
- Powder paints
- Water-based paints

If in doubt, perform a compatibility test. Always follow the paint manufacturer's instructions. When overpainting, take care not to exceed 180°C and a baking time of 15 minutes.

Special coatings

For use in particularly demanding conditions, such as warm damp atmospheres or in the presence of chemicals, we can supply special surface finishes. Please contact us for advice.

Outdoor use of enclosures

In order to guarantee satisfactory long-term function of enclosures in outdoor use, the relevant environmental factors need to be taken into account.

These include:

- UV radiation, the corrosive action of air pollution, rain, icing, snow, wind or other factors in special climatic conditions.

Enclosures with 3-phase spray-finishing are suitable for use in dry climates, but a UV-resistant top coat should be used.
For more demanding climates, please contact us. We will be happy to advise you on more resilient materials and surface treatments.

Condensation inside the enclosure
Condensation needs to be prevented by means of appropriate measures, e.g. by venting or heating the enclosure.

Protection rating
The enclosure is exposed to extreme weather conditions during outdoor use.
Long periods of rain, snow, ice, high winds and temperature fluctuations place particularly high demands on the enclosure sealing. The protection category IP X3 as envisaged for external weather conditions in DIN VDE 0100, part 737, point 5.2 is often insufficient to provide permanent protection for electrical equipment.

Standard IEC 60 529/09.2000 offers the option of labelling with the supplementary letter "W". Enclosures thus labelled are suitable for use in weather conditions agreed between the manufacturer and the user, and are equipped with additional pro-tective features or techniques (e.g. rain canopy, special spray finish, special colour shade).

The three-phase coating process for enclosures

Coating procedures	Technical properties	Technical specifications	
Degreasing, nanoceramic pretreatment, rinsing	Used for passivation, as corrosion protection, and to improve paint adhesion.	Nanoceramic conversion layer	
Anodic dipcoat priming	Even layer formation on all surfaces, edges and in cavities, which produces a high level of corrosion protection even at the assembly stage.	Erichsen cupping DIN EN ISO 1520	≥ 4 mm
		Buchholz hardness DIN EN ISO 2815	≥ 80
		Cross cutting DIN EN ISO 2409	Gt 0
	The primer is readily overpainted and free from heavy metals, chromate and silicone.		
Stove enamelling			
Textured powder coating	Powder coating is distinguished by a high level of mechanical resistance, excellent corrosion protection, good resistance to chemicals, temperature and weather, and its facility for decontamination.	Erichsen cupping DIN EN ISO 1520	≥ 3.5 mm
		Buchholz hardness DIN EN ISO 2815	≥ 80
		Cross cutting DIN EN ISO 2409	Gt 0
		Salt spray test to DIN EN ISO 9227 NSS	Test period: 168 hrs
		Condensate test to DIN EN ISO 6270-2 CH	Test period: 500 hrs
		Condensate test to DIN EN ISO 6270-2 AHT	Test period: 20 cycles
	The powder coating is readily overpainted and is free from heavy metals, chromate and silicone.		
Stove enamelling			

Protection categories to IEC 60 529 (EN 60 529)

The IP protection category is characterised by 2 numbers.

Example of protection category: e.g. IP 43:

Code letters	
IP	
First characteristic numeral	Second characteristic numeral
4	3

Degrees of protection for protection against contact and foreign bodies: First characteristic numeral			**Degrees of protection for protection against water: Second characteristic numeral**		
First characteristic numeral	Degree of protection		Second characteristic numeral	Degree of protection	
	Description	Explanation		Description	Explanation
1	Protected against solid foreign objects with a diameter of 50 mm and greater	The object probe, a sphere 50 mm in diameter, must not penetrate fully[1].	1	Protected against vertically falling water drops	Vertically falling drops shall have no harmful effects.
2	Protected against solid foreign objects with a diameter of 12.5 mm and greater	The object probe, a sphere 12.5 mm in diameter, must not penetrate fully[1]. The articulated test finger may penetrate up to its length of 80 mm, but adequate distance must be adhered to.	2	Protected against vertically falling water drops when the enclosure is tilted up to 15°	Vertically falling drops must not have any harmful effects when the enclosure is tilted up to 15° in both directions from the vertical.
3	Protected against solid foreign objects with a diameter of 2.5 mm and greater	The object probe, a sphere 2.5 mm in diameter, must not penetrate at all[1].	3	Protected against spraying water	Water sprayed at an angle of up to 60° on either side of the vertical must have no harmful effects.
4	Protected against solid foreign objects with a diameter of 1.0 mm and greater	The object probe, a sphere 1.0 mm in diameter, must not penetrate at all[1].	4	Protected against splashing water	Water splashed on the enclosure from every direction must not have any adverse effects.
5	Dust-protected	The ingress of dust is not fully prevented, but dust may not enter to such an extent as to impair satisfactory operation of the device or safety.	5	Protected against water jets	Water directed at the enclosure from every direction in a jet must not have any harmful effects.
6	Dust-tight	No ingress of dust at a partial vacuum of 20 mbar inside the enclosure.	6	Protected against powerful water jets	Water directed at the enclosure from every direction in a powerful jet must not have any harmful effects.
			7	Protected against the effects of temporary immersion in water	Water must not ingress to such an extent as to cause harmful effects when the enclosure is temporarily immersed in water under standardised pressure and time conditions.
			8	Protected against the effects of continuous immersion in water	Water must not penetrate to such an extent as to cause adverse effects when the enclosure is permanently immersed in water under conditions which must be agreed between the manufacturer and the user. However, the conditions must be more difficult than for characteristic numeral 7.
			9K[2]	Water with high-pressure/ steam-jet cleaning[2]	Water directed at the enclosure from every direction under greatly increased pressure must not have any adverse effects.

[1] The full diameter of the object probe must not pass through an opening of the enclosure.
[2] This test is not regulated by IEC 60 529/09.2000 (EN 60 529/09.2000), but by DIN EN 40 050, part 9.
Extracts from BS EN 60 259: 1991 are reproduced with the permission of BSI. Complete editions of the standards can be obtained from BSI Customer Services, 889 Chiswick High Road, London W4 4AL

NEMA

The **N**ational **E**lectrical **M**anufacturers **A**ssociation (NEMA) is a standards organisation in Washington, USA, which publishes a number of technical standards but does not test or certify products itself.

The following NEMA classification outlines the protection of individuals from unintentional contact with equipment and the protection of an enclosure from external factors.

Further information on protection categories may be found on the Internet at: **www.rittal.com**

UL/NEMA Type	Intended use and description
1	Enclosures for use predominantly indoors. Protection against the penetration of foreign bodies.
3	Enclosures for use predominantly outdoors. Protection from rain, sleet, dust, icing and the damage caused by icing.
3R	Enclosures for use predominantly outdoors. Protection from rain, sleet, icing and the damage caused by icing.
3S	Enclosures for use predominantly outdoors. Protection from rain, sleet and dust. External mechanisms remain usable despite being coated in ice.
4	Enclosures for indoor or outdoor use. Protection against rain, foreign bodies, splashed water and hosed water and against damage caused by icing on the exterior of the enclosure.
4x	Enclosures for indoor or outdoor use. Protection against rain, foreign bodies, splashed water and hosed water and against damage caused by icing on the exterior of the enclosure. Increased protection from corrosion.
12, 12K	Enclosures for use predominantly indoors. Protection against dust deposits, foreign bodies and non-corrosive dripping liquids.
13	Enclosures for use predominantly indoors. Protection against dust deposits, sprayed water, oil, and non-corrosive coolants.

The UL/NEMA classifications are not directly comparable with IP protection categories, since both the test conditions and the evaluation of the test results are different.

Approvals and permits

Product certifications and approvals are key requirements for the global acceptance of industrial products.

Rittal products meet the highest internationally recognised quality yardsticks. All components are subjected to the most stringent testing in accordance with international standards and regulations.

The consistently high product quality is ensured by a comprehensive quality management system. Regular production inspections by external test institutes also guarantee compliance with global standards.

A precise allocation of products to marks of conformity can be found on our product and service pages on the Internet. **www.rittal.com**

The CE symbol

All Rittal products subject to an EU Directive which requires labelling are labelled “CE”.

Up-to-date manufacturer declarations for the respective products are available on the Internet at: **www.rittal.com**

Note:
The CE symbol is not a quality symbol. Conformity is certified by the manufacturer on an independent basis. This distinguishes CE labelling from approvals, which are issued by independent bodies.

Earthing

The earthing must be designed by the manufacturer of switchgear in accordance with the relevant local regulations.

The enclosure packs generally contain earthing materials (screws, nuts, washers). The assembly instructions contain recommendations on installing a protective earth.

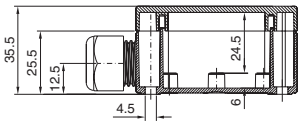
The pre-assembled earth straps available in various cross-sections and lengths, are intended to make assembly of a PE conductor easier.

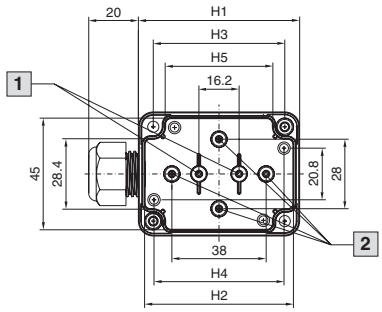
Further information can be found in our technical documentation “PE conductor connection, current carrying capacity”.

1.1 Polycarbonate enclosures PK

with cable gland Page 110

Model No. PK with cable gland	H1	H2	H3	H4	H5
9530.000	52	47	40	39.4	30.4
9531.000	65	60	53	52.4	43.4





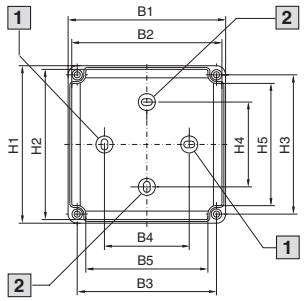
1 Does not apply to PK 9531.000

2 Does not apply to PK 9530.000

1.1 Polycarbonate enclosures PK

Page 110 – 112

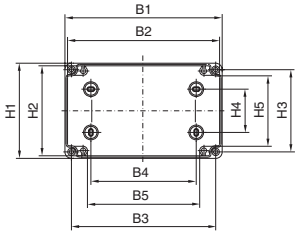
Version A



1 Does not apply to PK 9500.XXX, PK 9501.XXX

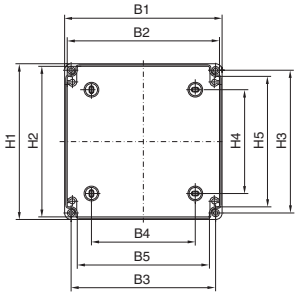
2 Does not apply to PK 9502.XXX, PK 9503.XXX

Version B

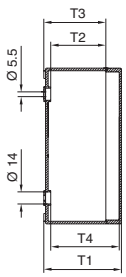


B1 = Enclosure width
B2 = Configurable width
B3 = Centre/centre wall mounting outside of seal
B4 = Centre/centre wall mounting inside the enclosure
B5 = Clearance width

Version C



H1 = Enclosure height
H2 = Configurable height
H3 = Centre/centre wall mounting outside of seal
H4 = Centre/centre wall mounting inside the enclosure
H5 = Clearance height



T1 = Overall depth
T2 = Configurable enclosure depth
T3 = Enclosure depth
T4 = Clearance height available for installation

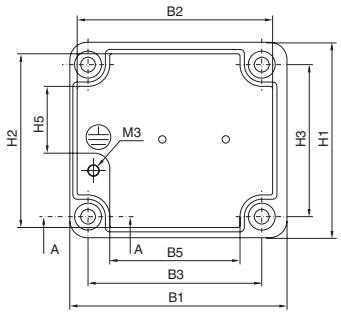
Model No. PK	Design	Width dimensions mm					Height dimensions mm					Depth dimensions mm			
		B1	B2	B3	B4	B5	H1	H2	H3	H4	H5	T1	T2	T3	T4
9500.XXX	A	65	59	50	–	36	65	59	50	25	36	57	33	41	45
9501.XXX	A	65	59	50	–	36	65	59	50	25	36	81	33	41	69
9502.XXX	A	94	88	79	50	64	65	59	50	–	36	57	33	41	45
9503.XXX	A	94	88	79	50	64	65	59	50	–	36	81	33	41	69
9504.XXX	A	94	88	79	50	64	94	88	79	50	64	57	33	41	45
9505.XXX	A	94	88	79	50	64	94	88	79	50	64	81	33	41	69
9506.XXX	A	110	104	95	65	80	110	104	95	65	80	66	42	50	53
9507.XXX	A	110	104	95	65	80	110	104	95	65	80	90	42	50	77
9508.XXX	A	130	124	115	90	101	94	88	79	50	64	57	33	41	45
9509.XXX	A	130	124	115	90	101	94	88	79	50	64	81	33	41	69
9510.XXX	A	130	124	115	70	101	130	124	115	70	101	75	51	59	63
9511.XXX	A	130	124	115	70	101	130	124	115	70	101	99	51	59	87
9512.XXX	A	180	174	165	120	150	94	88	79	50	64	57	33	41	45
9513.XXX	A	180	174	165	120	150	94	88	79	50	64	81	33	41	69
9514.XXX	B	180	173	165	120	128	110	103	95	50	80	90	63	71	75
9515.XXX	B	180	173	165	120	128	110	103	95	50	80	111	63	71	97
9516.XXX[1)]	B	180	173	165	120	128	110	103	95	50	80	165	63	71	150
9517.XXX	C	182	175	167	120	152	180	173	165	120	128	90	63	71	75
9518.XXX	C	182	175	167	120	152	180	173	165	120	128	111	63	71	97
9519.XXX[1)]	C	182	175	167	120	152	180	173	165	120	128	165	63	71	150
9520.XXX	C	254	247	239	190	224	180	173	165	120	128	90	63	71	75
9521.XXX	C	254	247	239	190	224	180	173	165	120	128	111	63	71	97
9522.XXX[1)]	C	254	247	239	190	224	180	173	165	120	128	165	63	71	150
9523.XXX	B	360	355	346	240	309	254	248	239	190	224	111	63	71	97
9524.XXX[1)]	B	360	355	346	240	309	254	248	239	190	224	165	63	71	150

[1)] Version .000 with slanted lid

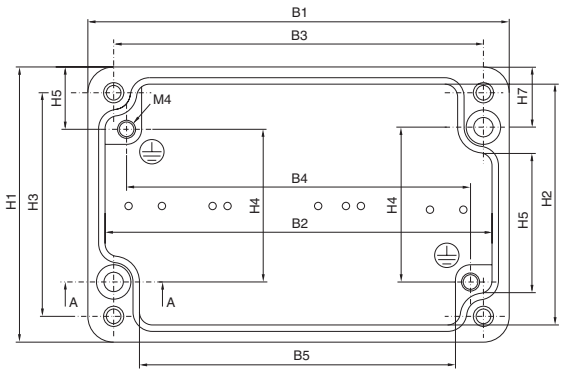
1.1 Cast aluminium enclosures GA

Page 114

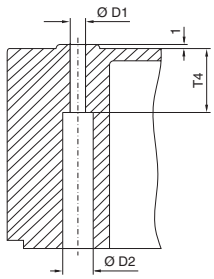
Version A



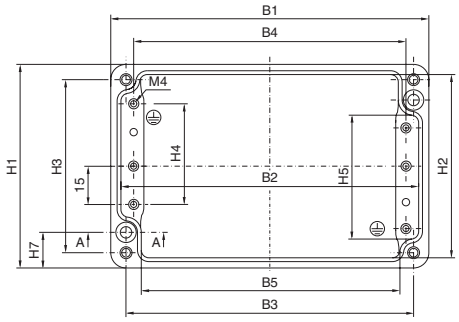
Version B



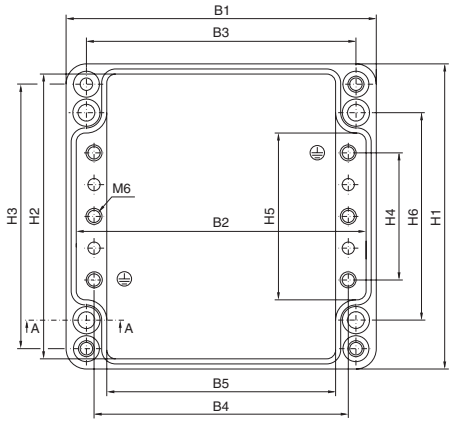
Section A – A

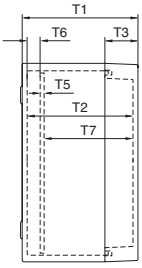


Version C



Version D





Note:
For installations manufactured by the customer, the width and height dimensions of the mounting plate (see page 113) must not be exceeded. For enclosures where no mounting plate is available, the following dimensions shall apply analogously:

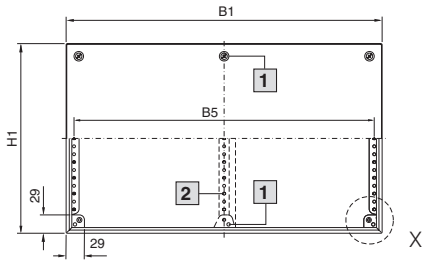
Model No. GA	Width mm	Height mm
9100.210	43	38
9101.210	48	54
9102.210	88	54
9103.210	140	54
9104.210	64	69

Model No. GA	Design	Width dimensions mm					Height dimensions mm							Depth dimensions mm							Diameter mm	
		B1	B2	B3	B4	B5	H1	H2	H3	H4	H5	H6	H7	T1	T2	T3	T4	T5	T6	T7	D1	D2
9100.210	A	50	45	40	–	30	45	40	35	–	18	–	–	30	25	6	5	–	–	–	4.3	7
9101.210	B	58	50	46	40	34	64	56	52	33	32	–	14	34	29	9	8	–	–	–	4.5	8
9102.210	B	98	90	86	81	74	64	57	52	33	32	–	14	35	29	10	8	–	–	–	4.5	8
9103.210	B	150	142	138	132	126	64	56	52	33	32	–	14	35	28	10	9	–	–	–	4.5	7.8
9104.210	C	75	66	63	56	52	80	71	68	39	48	–	14	57	50	15	9.5	–	–	–	4.5	8
9105.210	C	125	116	113	106	99	80	71	68	39	48	–	14	57	50	15	10	1.5	6	42.5	4.5	8
9106.210	C	175	166	163	156	152	80	71	68	39	48	–	14	57	50	15	8	1.5	6	42.5	4.5	7
9107.210	C	250	241	238	231	226	80	71	68	39	48	–	14	57	50	15	9.5	1.5	6	42.5	4.5	7.5
9108.210	D	122	112	106	95	90	120	111	104	52	64	82	–	80	72	20	15.5	1.5	8	62.5	6.5	10.5
9110.210	D	220	211	204	195	183	120	111	104	50	64	82	–	91	82	30	15	1.5	9	71.5	6.7	11
9111.210	D	360	349	344	333	322	120	111	104	48	62	82	–	82	72	20	9	2	8.5	61.5	6.5	10.8
9112.210	D	160	151	140	130	120	160	151	140	76	89	110	–	91	82	20	20	2	8.5	71.5	7	12
9113.210	D	260	251	240	230	220	160	151	140	76	90	110	–	91	82	20	19	1.5	8.5	72	7	13
9114.210	D	360	350	340	330	316	160	151	140	76	89	110	–	91	82	20	19	2	9	71	7	13.5
9116.210	D	202	190	180	170	159	232	221	210	144	159	180	–	111	102	20	21	2	9	91	6	13
9117.210	D	280	271	260	250	239	232	221	210	144	159	180	–	111	102	20	21	2	9	91	6	13
9118.210	D	334	321	310	300	289	233	223	210	144	160	180	–	111	102	20	25	2	9	91	6.4	13.5
9119.210	D	330	321	310	300	290	230	221	210	144	160	180	–	181	170	20	9	2	9	159	7.5	11

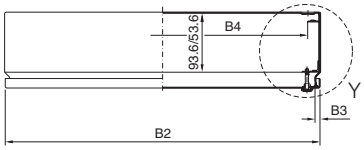
1.1 Terminal boxes KL

Spray-finished Page 116 – 118

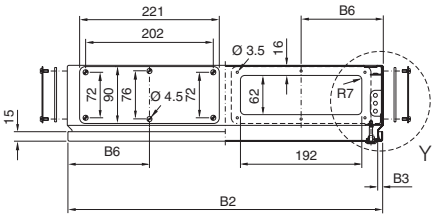
Stainless steel Page 305



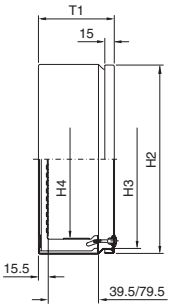
without gland plate



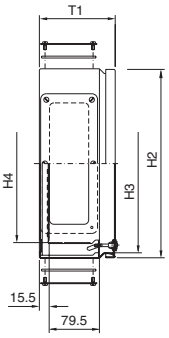
with gland plate



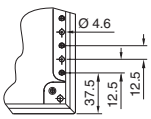
without gland plate



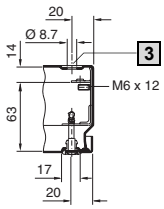
with gland plate



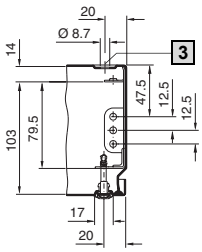
Detail X



Detail Y,
T1 = 80



Detail Y,
T1 = 120



B1 = Overall width
B2 = Cover width
B3 = Clearance width of enclosure
B4 = Clearance frame/width between profile strips
B5 = Distance between axes of the mounting holes in the profile strips
B6 = Distance from outer edge of enclosure – centre of gland plate

H1 = Overall height
H2 = Cover height
H3 = Clearance height of enclosure
H4 = Clearance frame/height between profile strips

T1 = Overall depth

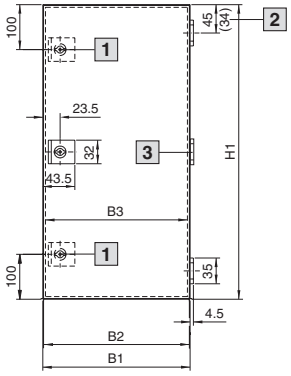
1 Only with W ≥ 600 mm
2 Only with W = 800 mm
3 Drilled hole does not apply to stainless steel version

Model No. KL			Width dimensions mm						Height dimensions mm				Depth dimensions mm
without gland plate	with gland plate	Stainless steel without gland plate	B1	B2	B3	B4	B5	B6	H1	H2	H3	H4	T1
1514.510	**–**	**1521.XX0**	150	148	132	109	125	–	150	148	132	–	80
1528.510	**–**	**–**	200	198	182	159	175	–	150	148	132	–	80
1516.510	**–**	**1523.XX0**	200	198	182	159	175	–	200	198	182	–	80
1515.510	**–**	**1522.XX0**	300	298	282	259	275	–	150	148	132	–	80
1517.510	**–**	**1524.XX0**	300	298	282	259	275	–	200	198	182	–	80
1518.510	**–**	**–**	400	398	382	359	375	–	200	198	182	–	80
1519.510	**–**	**–**	600	598	582	559	575	–	200	198	182	–	80
1500.510	**–**	**–**	150	148	132	109	125	–	150	148	132	100	120
1529.510	**–**	**–**	200	198	182	159	175	–	150	148	132	100	120
1502.510	**–**	**–**	200	198	182	159	175	–	200	198	182	150	120
1501.510	**1530.510**	**–**	300	298	282	259	275	150	150	148	132	100	120
1503.510	**1531.510**	**–**	300	298	282	259	275	150	200	198	182	150	120
1507.510	**1535.510**	**1526.XX0**	300	298	282	259	275	150	300	298	282	250	120
1589.510	**–**	**–**	400	398	382	359	375	–	150	148	132	100	120
1504.510	**1532.510**	**1525.XX0**	400	398	382	359	375	200	200	198	182	150	120
1508.510	**1536.510**	**–**	400	398	382	359	375	200	300	298	282	250	120
1511.510	**1539.510**	**–**	400	398	382	359	375	200	400	398	382	350	120
1505.510	**1533.510**	**–**	500	498	482	459	475	130	200	198	182	150	120
1509.510	**1537.510**	**–**	500	498	482	459	475	130	300	298	282	250	120
1506.510	**1534.510**	**–**	600	598	582	559	575	150	200	198	182	150	120
1510.510	**1538.510**	**–**	600	598	582	559	575	150	300	298	282	250	120
1512.510	**1540.510**	**–**	600	598	582	559	575	150	400	398	382	350	120
1527.510	**1542.510**	**–**	800	798	782	759	775	150	200	198	182	150	120
1513.510	**1541.510**	**–**	800	798	782	759	775	150	400	398	382	350	120

Small enclosures

1.1 E-Box EB

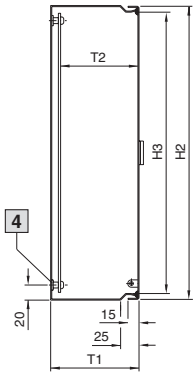
Page 119



1 For EB 1557.500/ EB 1578.500/EB 1579.500 two locks

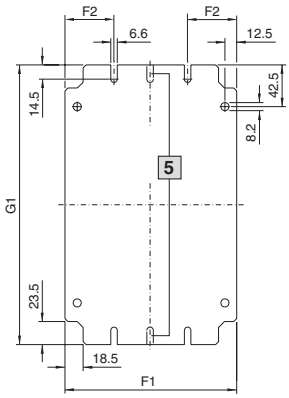
2 For EB 1551.500 and EB 1553.500

3 Only for EB 1579.500



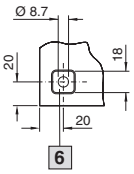
4 View A

Mounting plate



5 For 125 mm wide mounting plates, attachment is in the centre only

View A
for
wall mounting



6 2 mm recessed

Model No. EB	Width dimensions mm			Height dimensions mm			Depth dimensions mm		Mounting plate dimensions in mm		
	B1	B2	B3	H1	H2	H3	T1	T2	F1	F2	G1
1551.500	150	148	132	150	148	132	80	65	125	62.5	135
1545.500	150	148	132	300	298	282	80	65	125	62.5	285
1546.500	200	198	182	200	198	182	80	65	175	50	185
1552.500	200	198	182	300	298	282	80	65	175	50	285
1547.500	200	198	182	400	398	382	80	65	175	50	385
1553.500	150	148	132	150	148	132	120	105	125	62.5	135
1548.500	150	148	132	300	298	282	120	105	125	62.5	285
1549.500	200	198	182	200	198	182	120	105	175	50	185
1554.500	200	198	182	300	298	282	120	105	175	50	285
1550.500	200	198	182	400	398	382	120	105	175	50	385
1555.500	300	298	282	300	298	282	120	105	275	50	285
1556.500	300	298	282	400	398	382	120	105	275	50	385
1557.500	200	198	182	500	498	482	120	105	175	50	485
1577.500	300	298	282	400	398	382	155	140	275	50	385
1578.500	300	298	282	600	598	582	155	140	275	50	585
1579.500	300	298	282	800	798	782	155	140	275	50	785

B1 = Overall width
B2 = Door width
B3 = Clearance width

H1 = Overall height
H2 = Door height
H3 = Clearance height

T1 = Overall depth
T2 = Clearance depth available for installation

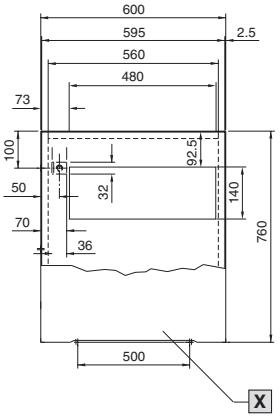
F1 = Mounting plate width
F2 = Outer edge to centre mounting holes

G1 = Mounting plate height

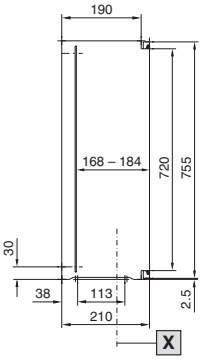
1.1 RiLAN Industrial

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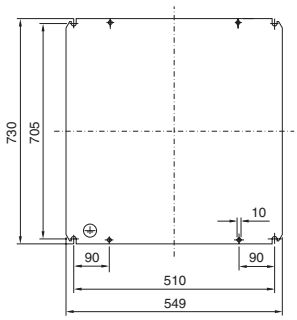
IN 1076.290

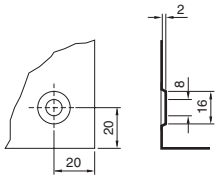


X Door interior view



Mounting plate

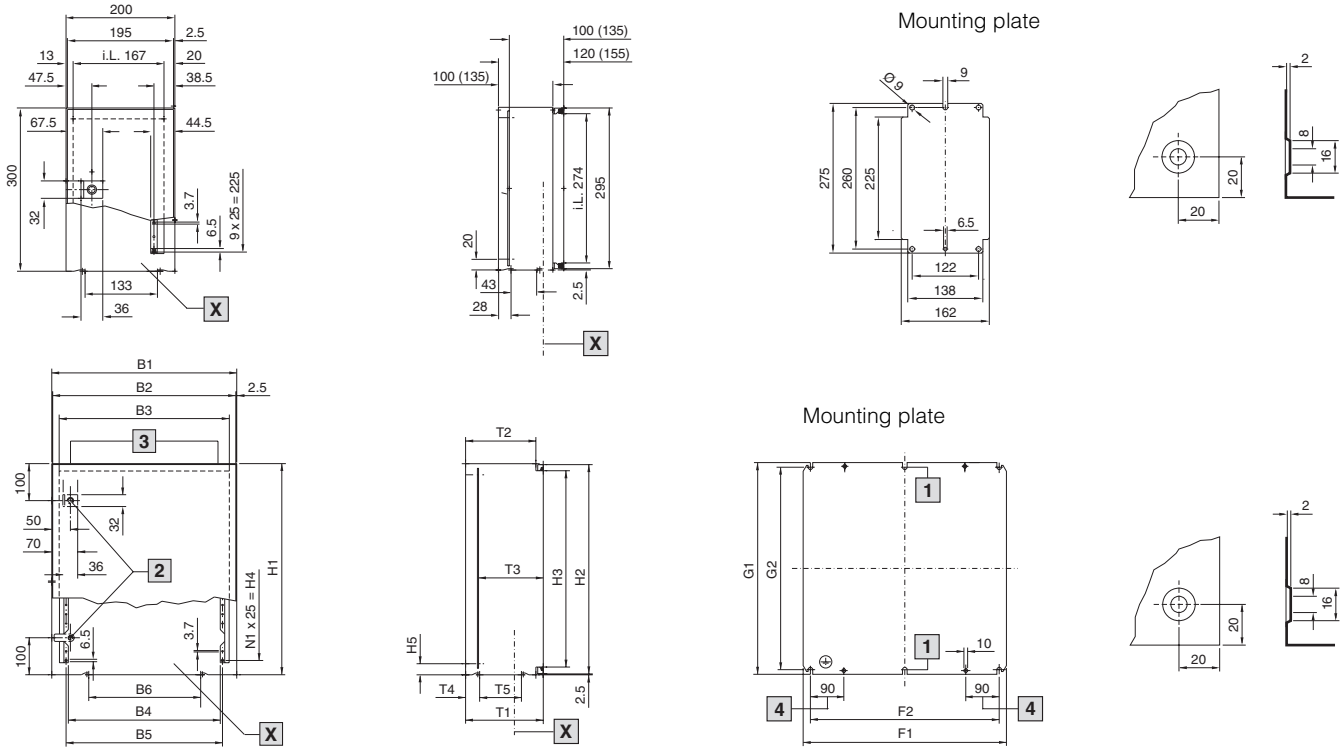




1.2 Compact enclosures AE

Spray-finished Page 128 – 129

AE 1032.500 (AE 1035.500)



X Door interior view

1 Only for AE 1180.500

2 From 500 mm high with 2 cam locks, less than 500 mm with 1 cam lock in the centre

3 AE 1073.500 and AE 1180.500 with holes for eyebolts, detail Y, see page 1178 below

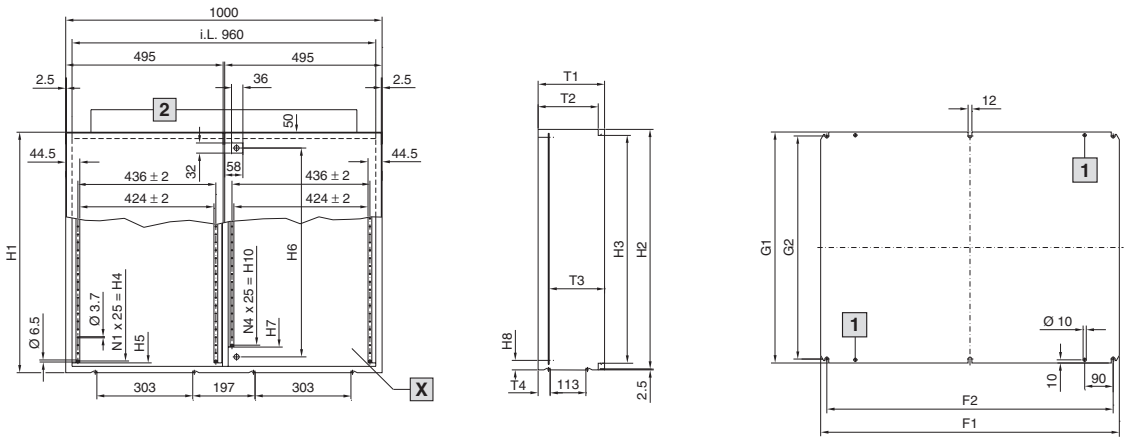
4 (50) for AE 1033.500 and AE 1034.500

i.L. = Clearance width

Model No. AE	Width dimensions mm						Height dimensions mm						Depth dimensions mm					Mounting plates mm			
Spray-finished	B1	B2	B3	B4	B5	B6	H1	H2	H3	H4	H5	N1	T1	T2	T3	T4	T5	F1	F2	G1	G2
1036.500	300	295	260	211	223	233	300	295	260	225	27.5	9	155	132	113 – 129	47	63	254	215	275	250
1033.500	300	295	260	211	223	233	300	295	260	225	27.5	9	210	190	168 – 184	43	45	254	215	275	250
1034.500	300	295	260	211	223	233	400	395	360	325	27.5	13	210	190	168 – 184	43	45	254	215	375	350
1030.500	380	375	340	291	303	303	300	295	260	225	27.5	9	155	132	113 – 129	33	63	334	295	275	250
1031.500	380	375	340	291	303	303	300	295	260	225	27.5	9	210	190	168 – 184	33	63	334	295	275	250
1380.500	380	375	340	291	303	303	380	375	340	275	27.5	11	210	190	168 – 184	33	63	334	295	355	330
1039.500	600	595	560	511	523	500	380	375	340	275	27.5	11	210	190	168 – 184	38	113	549	510	355	330
1339.500	600	595	560	511	523	500	380	375	340	275	27.5	11	350	330	308 – 324	38	113	549	510	355	330
1038.500	380	375	340	291	303	303	600	595	560	525	30	21	210	190	168 – 184	33	63	334	295	570	545
1338.500	380	375	340	291	303	303	600	595	560	525	30	21	350	330	308 – 324	84	113	334	295	570	545
1045.500	400	395	360	311	323	303	500	495	460	425	30	17	210	190	168 – 184	38	113	354	315	475	450
1037.500	400	395	360	311	323	303	800	795	760	725	30	29	300	280	258 – 274	38	113	349	310	770	745
1050.500	500	495	460	411	423	303	500	495	460	425	30	17	210	190	168 – 184	38	113	449	410	470	445
1350.500	500	495	460	411	423	303	500	495	460	425	30	17	300	280	258 – 274	38	113	449	410	470	445
1057.500	500	495	460	411	423	303	700	695	660	625	30	25	250	230	208 – 224	38	113	449	410	670	645
1060.500	600	595	560	511	523	500	600	595	560	525	30	21	210	190	168 – 184	38	113	549	510	570	545
1054.500	600	595	560	511	523	500	600	595	560	525	30	21	250	230	208 – 224	38	113	549	510	570	545
1360.500	600	595	560	511	523	500	600	595	560	525	30	21	250	230	208 – 224	38	113	549	510	570	545
1076.500	600	595	560	511	523	500	760	755	720	675	30	27	210	190	168 – 184	38	113	549	510	730	705
1376.500	600	595	560	511	523	500	760	755	720	675	30	27	350	330	308 – 324	38	113	549	510	730	705
1058.500	600	595	560	511	523	500	800	795	760	725	30	29	250	230	208 – 224	38	113	549	510	770	745
1090.500	600	595	560	511	523	500	1000	995	960	925	35	37	250	230	208 – 224	38	113	539	500	955	930
1077.500	760	755	720	671	683	500	760	755	720	675	30	27	210	190	168 – 184	38	113	704	665	730	705
1073.500	760	755	720	671	683	500	760	755	720	675	30	27	300	280	258 – 274	38	113	704	665	730	705
1055.500	800	795	760	711	723	500	600	595	560	525	30	21	300	280	258 – 274	38	113	749	710	570	545
1180.500	800	795	760	711	723	500	1000	995	960	925	35	37	300	280	258 – 274	70	113	739	700	955	930

1.2 Compact enclosures AE

Spray-finished Page 130



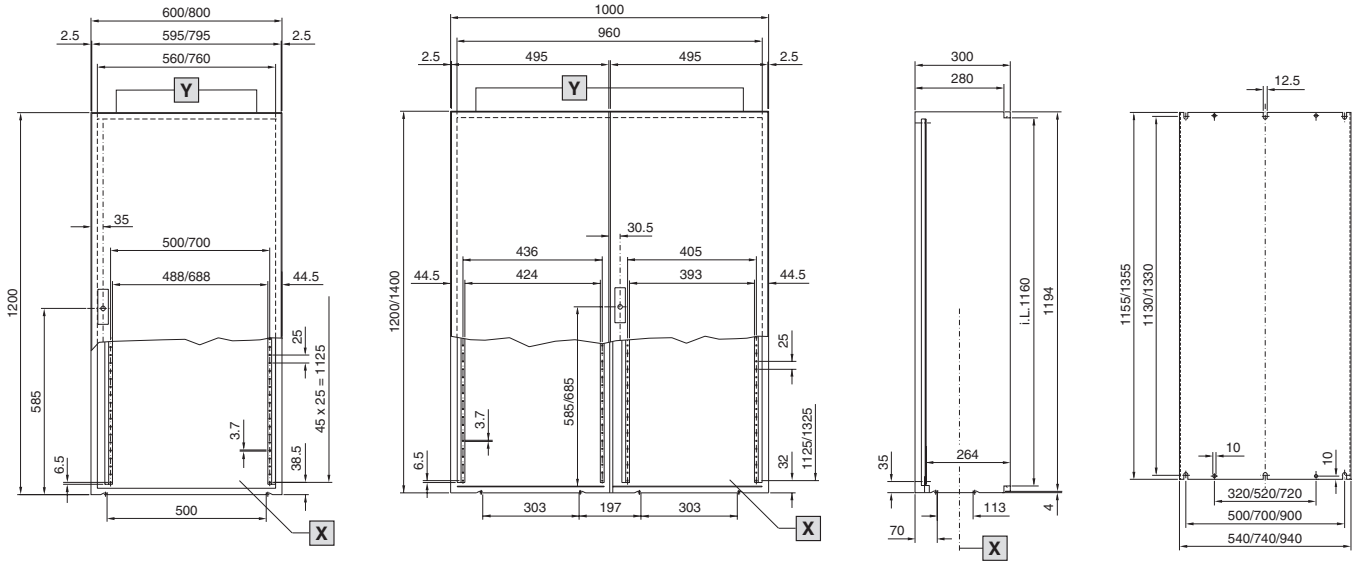
X Door interior view i.L. = Clearance width

1 Only for AE 1100.500

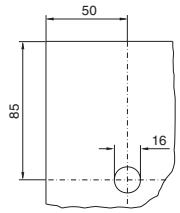
2 AE 1110.500 and AE 1130.500 with holes for eyebolts, detail Y, see page 1178 below

Model No. AE Spray-finished	H1	H2	H3	H4	H5	H6	H7	H8	H10	N1	N4	T1	T2	T3	T4	F1	F2	G1	G2
1100.500	760	755	720	675	698	660	598	30	575	27	23	210	190	168 – 184	38	944	905	730	705
1130.500	760	755	720	675	698	660	598	30	575	27	23	300	280	258 – 274	70	944	905	730	705
1110.500	1000	995	960	925	938	900	838	35	825	37	33	300	280	258 – 274	70	939	900	955	930

Spray-finished Page 130



Detail Y



X Door interior view

Y Hole for eyebolts

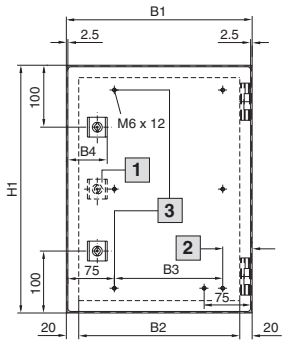
i.L. = Clearance width

Model No. AE Spray-finished	W mm	H mm	D mm	Door(s)
1260.500	600	1200	300	1
1280.500	800	1200	300	1
1213.500	1000	1200	300	2
1114.500	1000	1400	300	2

1.2 Compact enclosures AE

Stainless steel Page 308/309

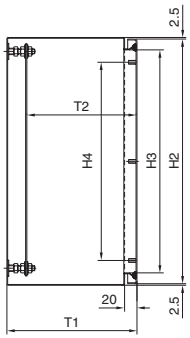
AE 1001.XX0 – AE 1016.XX0



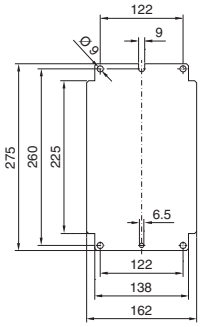
1 For AE 1001.XX0, AE 1002.XX0, AE 1004.XX0, AE 1005.XX0, AE 1006.XX0, AE 1009.XX0 only one cam in the centre and without central bolts

2 50 for AE 1001.XX0, AE 1002.XX0

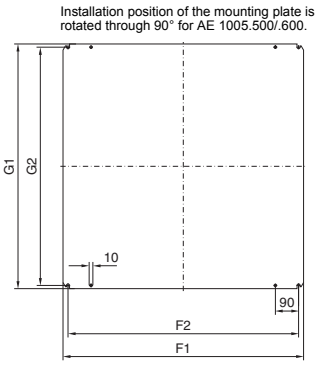
3 Does not apply to AE 1001.XX0, AE 1002.XX0



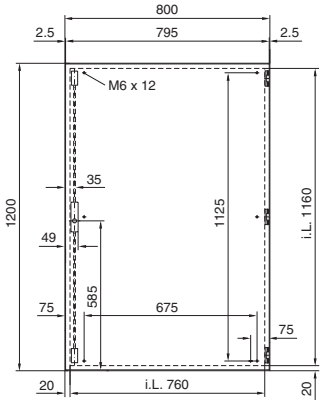
Mounting plates AE 1001.XX0, AE 1002.XX0



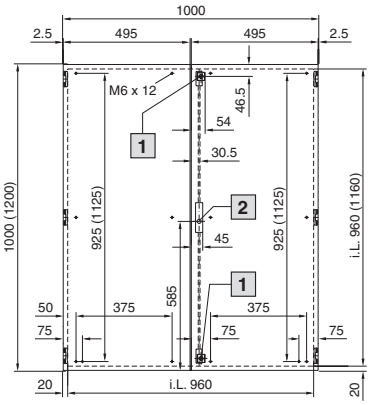
AE 1003.XX0 – AE 1016.XX0



AE 1017.XX0



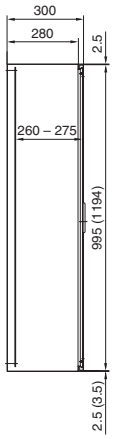
AE 1018.XX0 (AE 1019.XX0)



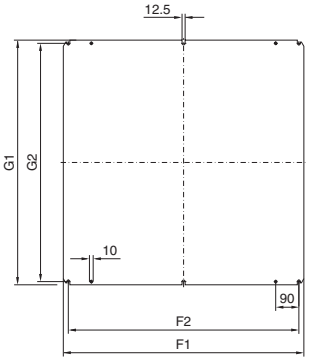
1 Cam for AE 1018.XX0

2 Locking rod for AE 1019.XX0

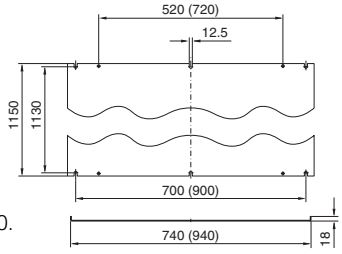
i.L. = Clearance width



Mounting plates AE 1018.XX0



AE 1017.XX0 (AE 1019.XX0)

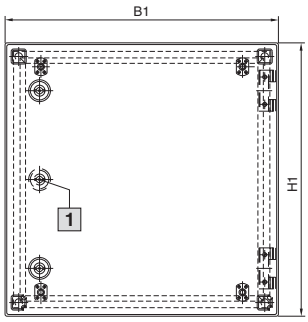


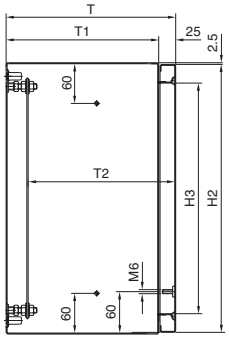
Dimensions in brackets for AE 1019.XX0.

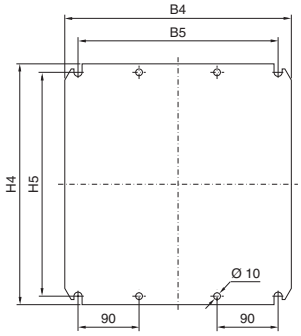
Model No. AE	Width dimensions mm				Height dimensions mm				Depth dimensions mm		Mounting plates mm				Material thickness mm		
Stainless steel	B1	B2	B3	B4	H1	H2	H3	H4	T1	T2	F1	F2	G1	G2	Enclosure	Door	Mounting plate
1001.XX0	200	167	–	56	300	295	274	225	120	100	–	–	–	–	1.25	1.5	2.0
1002.XX0	200	167	–	56	300	295	274	225	155	135	–	–	–	–	1.25	1.5	2.0
1003.XX0	300	260	175	66	300	295	260	225	210	168 – 184	254	215	275	250	1.38	1.5	2.0
1004.XX0	380	340	250	66	300	295	260	225	155	113 – 129	334	295	275	250	1.38	1.5	2.0
1011.XX0	380	340	250	66	300	295	260	225	210	168 – 184	334	295	275	250	1.38	1.5	2.0
1005.XX0	300	260	175	66	380	375	340	275	210	168 – 184	254	215	355	330	1.38	1.5	2.0
1006.XX0	380	340	250	66	380	375	340	275	210	168 – 184	334	295	355	330	1.38	1.5	2.5
1015.XX0	400	360	275	66	500	495	460	425	210	168 – 184	354	315	475	450	1.38	1.5	2.0
1007.XX0	500	460	375	66	500	495	460	425	210	168 – 184	449	410	470	445	1.38	1.5	2.5
1013.XX0	500	460	375	66	500	495	460	425	300	258 – 274	449	410	470	445	1.50	1.5	2.5
1008.XX0	380	340	250	66	600	595	560	525	210	168 – 184	334	295	570	545	1.38	1.5	2.5
1009.XX0	600	560	475	66	380	375	340	275	210	168 – 184	549	510	355	330	1.38	1.5	2.5
1010.XX0	600	560	475	66	600	595	560	525	210	168 – 184	549	510	570	545	1.38	2.0	2.5
1012.XX0	600	560	475	66	760	755	720	675	210	168 – 184	549	510	730	705	1.38	2.0	3.0
1014.XX0	760	720	625	66	760	755	720	675	300	258 – 274	704	665	730	705	1.50	2.0	3.0
1016.XX0	800	760	675	66	1000	955	960	925	300	258 – 274	739	700	955	930	1.50	2.0	3.0
1017.XX0	800	–	–	–	1200	–	–	–	300	–	–	–	–	–	1.50	2.0	3.0
1018.XX0	1000	–	–	–	1000	–	–	–	300	–	939	900	955	930	1.50	2.0	3.0
1019.XX0	1000	–	–	–	1200	–	–	–	300	–	–	–	–	–	1.50	2.0	3.0

1.2 Compact enclosures AE

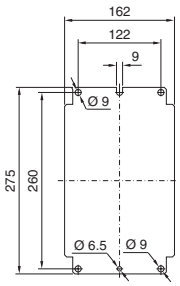
Protection category IP 69K Page 131



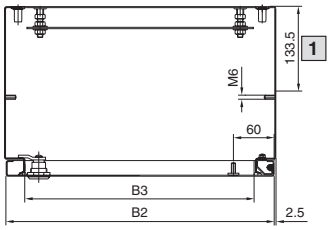




Mounting plate
AE 1101.010



1 For AE 1101.010 and AE 1101.020 one cam lock



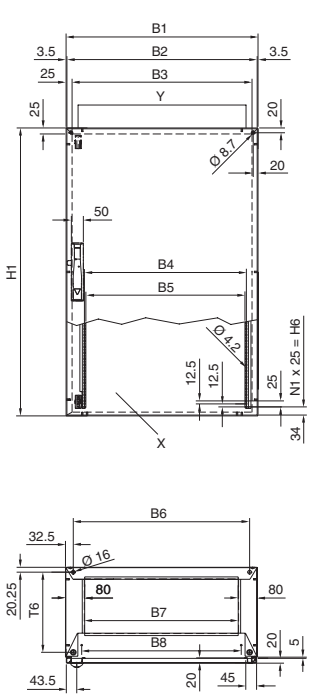
1 58.5 for AE 1101.010

Model No. AE	1101.010	1101.020	1101.030	1101.040
Width (B1) mm	230	400	400	650
Height (H1) mm	330	400	650	650
Depth (T) mm	155	250	250	250
Door width (B2) mm	225	395	395	645
Door height (H2) mm	325	395	645	645
Clearance width (B3) mm	170	340	340	590
Clearance height (H3) mm	270	340	590	590
Enclosure depth (T1) mm	130	225	225	225
Installation depth (T2) mm	135	208 – 224	208 – 224	208 – 224
Mounting plate width (B4) mm	–	334	334	549
Centre-to-centre spacing of the attachment holes (B5) mm	–	295	295	510
Mounting plate height (H4) mm	–	355	570	570
Centre-to-centre spacing of the attachment holes (H5) mm	–	330	545	545
Mounting plate thickness mm	2	2	2.5	2.5

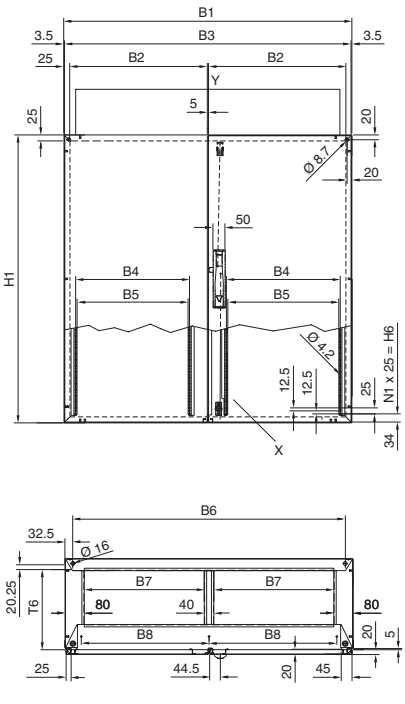
1.2 Compact system enclosures Rittal CM

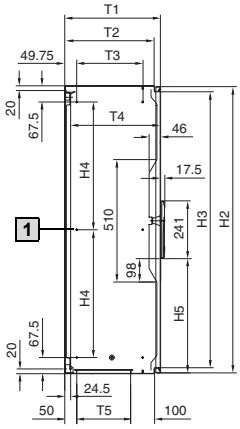
Page 132 – 133

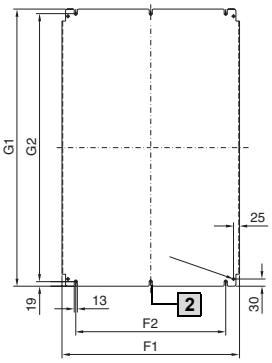
CM 5110.500 – 5117.500

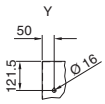


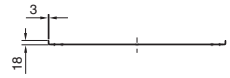
CM 5118.500 – 5123.500











X Door interior view

Y Hole for eyebolts

1 Does not apply to H = 800

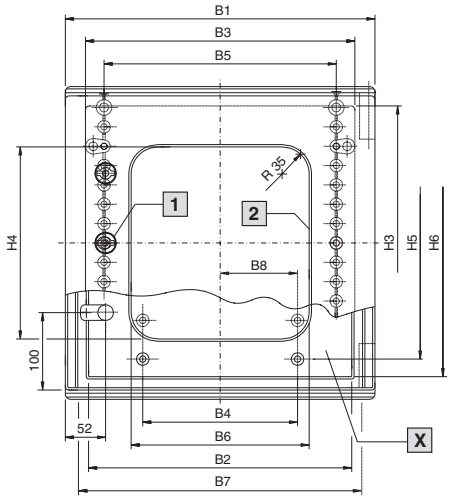
2 Only for enclosure width from 1000 mm

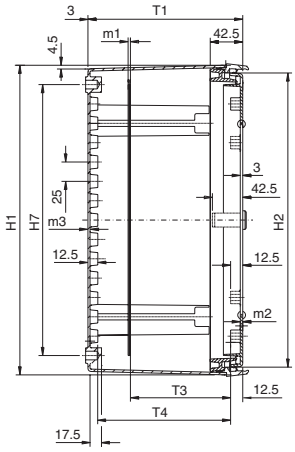
Model No. CM		Enclosure width mm								Enclosure height mm							Enclosure depth mm						Mounting plate			
																							Width mm		Height mm	
		B1	B2	B3	B4	B5	B6	B7	B8	H1	H2	H3	H4	H5	H6	N1	T1	T2	T3	T4	T5	T6	F1	F2	G1	G2
5110.500	single-door	600	593	550	475	463	535	440	465	800	793	750	665	276	725	29	400	374.5	275	373	224.5	334	540	425	755	717
5111.500		600	593	550	475	463	535	440	465	1000	993	950	432.5	376	925	37	400	374.5	275	373	224.5	334	540	425	955	917
5112.500		600	593	550	475	463	535	440	465	1200	1193	1150	532.5	476	1125	45	300	274.5	175	273	124.5	234	540	425	1155	1117
5113.500		600	593	550	475	463	535	440	465	1200	1193	1150	532.5	476	1125	45	400	374.5	275	373	224.5	334	540	425	1155	1117
5114.500		800	793	750	675	663	735	640	665	1000	993	950	432.5	376	925	37	300	274.5	175	273	124.5	234	740	625	955	917
5115.500		800	793	750	675	663	735	640	665	1000	993	950	432.5	376	925	37	400	374.5	275	373	224.5	334	740	625	955	917
5116.500		800	793	750	675	663	735	640	665	1200	1193	1150	532.5	476	1125	45	300	274.5	175	273	124.5	234	740	625	1155	1117
5117.500		800	793	750	675	663	735	640	665	1200	1193	1150	532.5	476	1125	45	400	374.5	275	373	224.5	334	740	625	1155	1117
5118.500	double-door	1000	494	950	375	363	935	400	432.5	1000	993	950	432.5	376	925	37	300	274.5	175	273	124.5	234	940	825	955	917
5119.500		1000	494	950	375	363	935	400	432.5	1200	1193	1150	532.5	476	1125	45	300	274.5	175	273	124.5	234	940	825	1155	1117
5120.500		1000	494	950	375	363	935	400	432.5	1200	1193	1150	532.5	476	1125	45	400	374.5	275	373	224.5	334	940	825	1155	1117
5121.500		1000	494	950	375	363	935	400	432.5	1400	1393	1350	632.5	576	1325	53	300	274.5	175	273	124.5	234	940	825	1355	1317
5122.500		1000	494	950	375	363	935	400	432.5	1400	1393	1350	632.5	576	1325	53	400	374.5	275	373	224.5	334	940	825	1355	1317
5123.500		1200	594	1150	475	463	1135	500	532.5	1200	1193	1150	532.5	476	1125	45	400	374.5	275	373	224.5	334	1140	1025	1155	1117

1.2 Plastic enclosures KS/Ex enclosures, plastic

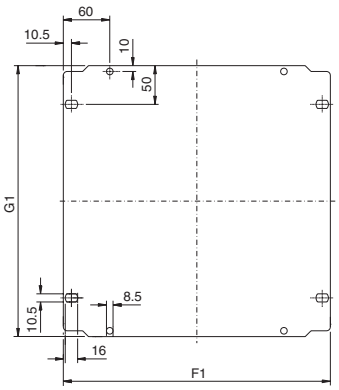
Page 134/326

KS 1423.500, KS 1432.500, KEL 9201.600 and KEL 9202.600
with only one cam in the centre





Mounting plate



B7 = Separation width for wall mounting hole

H7 = Separation height for wall mounting hole

1 Only KS 1423.500, KS 1432.500, KEL 9201.600 and KEL 9202.600

2 Viewing window only with KS 1448.500, KS 1449.500, KS 1454.500, KS 1467.500

X Door interior view

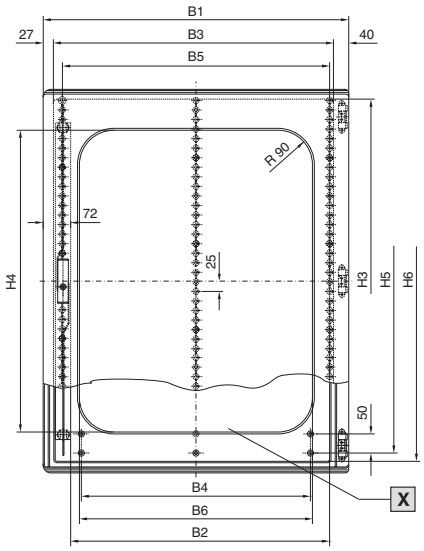
Model No. KS	Model No. KEL	Width dimensions mm								Height dimensions mm							Depth dimensions mm			Mounting plates mm				
		B1	B2	B3	B4	B5	B6[1)]	B7	B8	H1	H2	H3	H4[1)]	H5	H6	H7	T1	T3	T4	m1	m2	m3	F1	G1
1423.500	**9201.600**	200	140	150	–	100	–	150	25	300	280	256	–	200	245	250	150	80 – 110/117	119	2.0	3.0	3.0	145	250
1432.500	**9202.600**	250	190	200	75	150	–	200	50	350	330	306	–	250	295	300	150	80 – 110/117	119	2.0	3.0	3.0	195	300
1434.500	**9203.600**	300	240	249	100	200	–	250	50	400	380	355	–	300	345	350	200	80 – 160/167	169	2.0	3.0	3.0	245	350
1444.500/ 1448.500	**9204.600**	400	340	348	200	300	230	350	100	400	380	354	250	300	345	350	200	80 – 159/166	168.5	2.5	3.2	3.2	345	350
1446.500/ 1449.500	**9205.600**	400	340	348	200	300	230	350	100	600	580	554	450	500	545	550	200	80 – 158/165	168	2.5	3.5	3.5	345	550
1466.500/ 1467.500	**9206.600**	600	540	548	400	500	430	550	200	600	580	554	450	500	545	550	200	80 – 158/165	168	2.5	3.5	3.5	545	550
1453.500/ 1454.500	**9207.600**	500	440	434	300	400	330	450	150	500	480	454	350	400	445	450	300	80 – 258/265	268	2.5	3.5	3.5	417	450

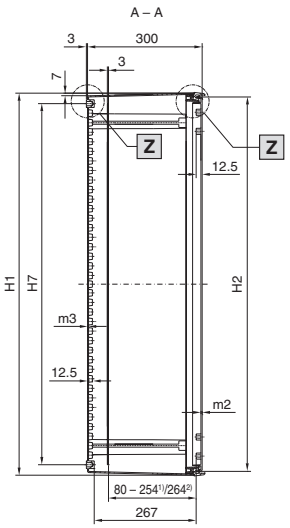
[1)] Only in enclosures with viewing window.

1.2 Plastic enclosures KS/Ex enclosures, plastic

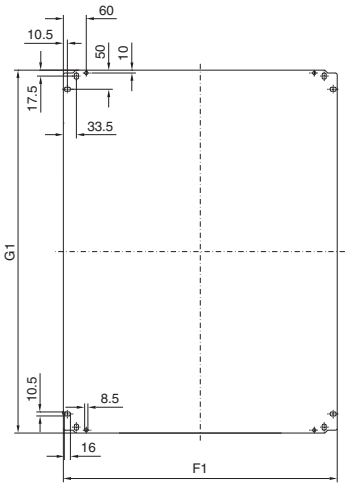
Page 135/326

KS 1469.500/KS 1479.500
KS 1468.500/KS 1480.500 without viewing window
KEL 9208.600/KEL 9209.600 without viewing window

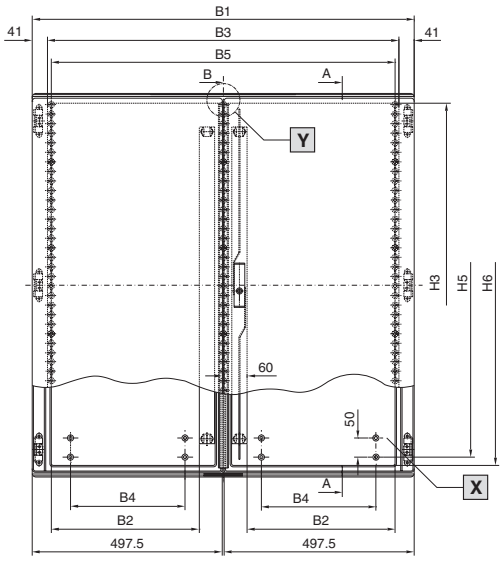




Mounting plate



KS 1400.500



1) Infinite with mounting plate depth adjustment KS 1491.000

2) When mounting on studs directly on the threaded insert

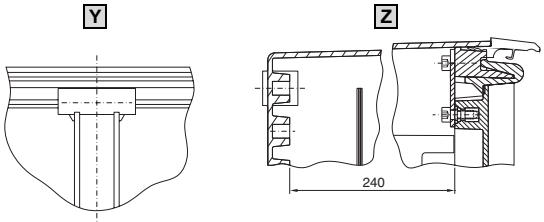
B7 = Separation width Wall mounting hole

H7 = Separation height Wall mounting hole

X Door interior view

Y Screw-fastened centre bar for KS 1400.500

Z Distance from mounting insert to centre bar



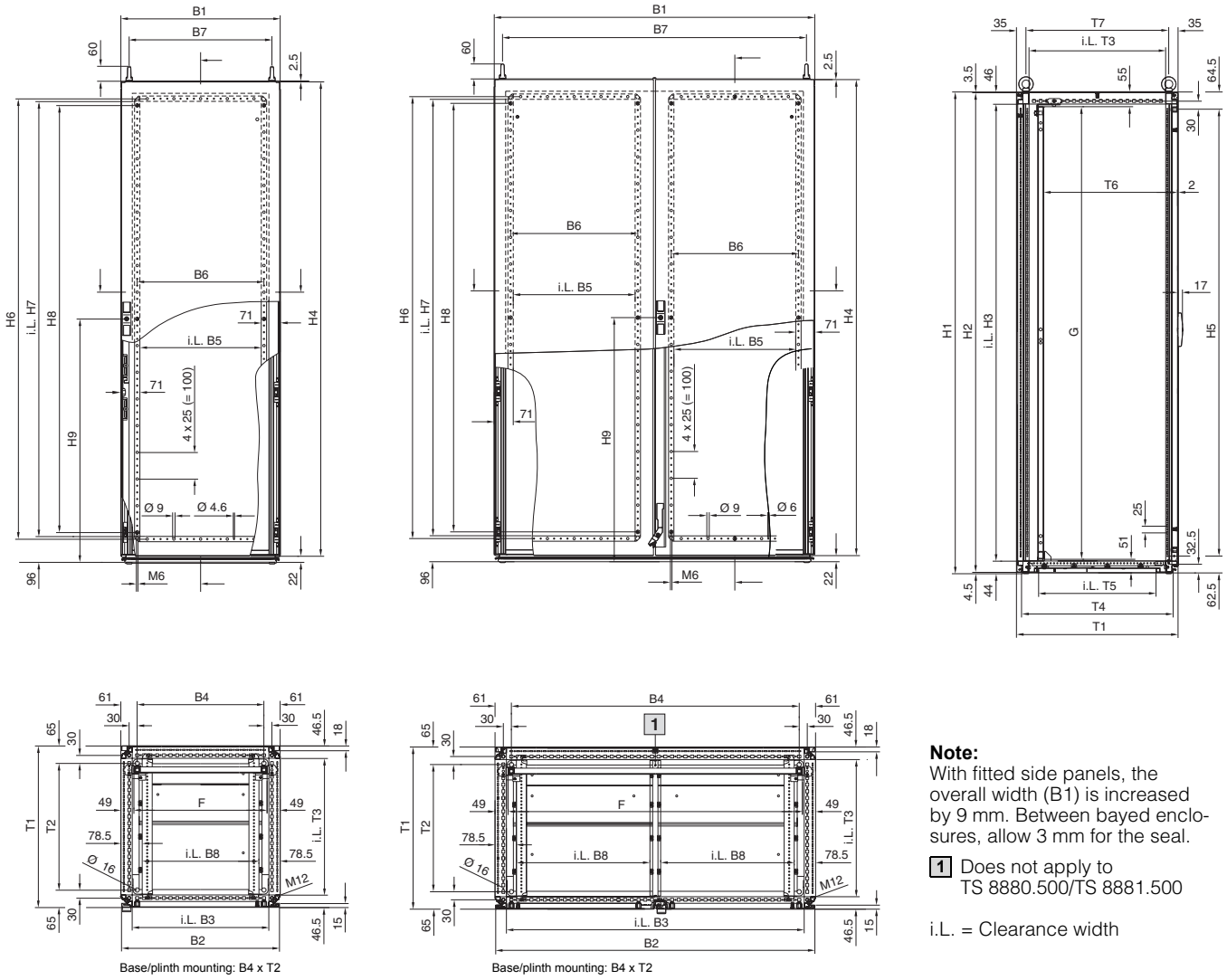
Model No. KS	Model No. KEL	Width dimensions mm							Height dimensions mm							Mounting plates mm			
		B1	B2	B3	B4	B5	B6[1]	B7	H1	H2	H3	H4[1]	H5	H6	H7	m2	m3	G1	F1
1468.500/1469.500	**9208.600**	600	485	533	400	500	410	550	800	780	753	590	700	740	750	3.7	3.7	750	517
1479.500/1480.500	**9209.600**	800	685	733	600	700	610	750	1000	980	953	790	900	940	950	3.7	4.0	950	717
1400.500	**–**	1000	387	918	300	900	–	950	1000	980	952	–	900	940	950	3.5	4.0	950	917

[1] Only in enclosures with viewing window.

1.3 Baying system TS 8

Spray-finished Page 138 – 147

Stainless steel Page 322



Base/plinth mounting: B4 x T2

Base/plinth mounting: B4 x T2

Note:
With fitted side panels, the overall width (B1) is increased by 9 mm. Between bayed enclosures, allow 3 mm for the seal.

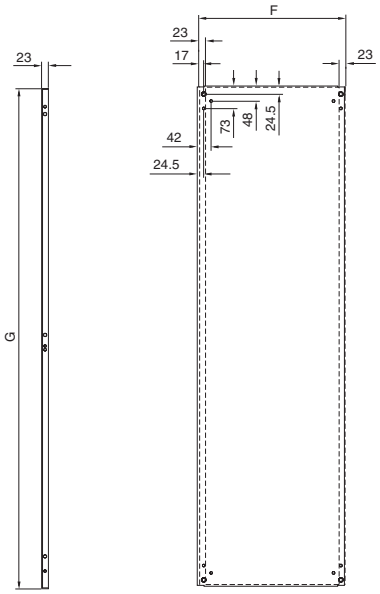
1 Does not apply to TS 8880.500/TS 8881.500

i.L. = Clearance width

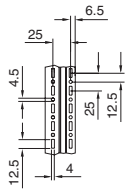
Double-door

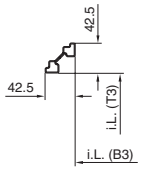
Model No. TS		Width dimensions mm								Height dimensions mm									Depth dimensions mm							Mounting plates mm	
Spray-finished	Stainless steel	B1	B2	B3	B4	B5	B6	B7	B8	H1	H2	H3	H4	H5	H6	H7	H8	H9	T1	T2	T3	T4	T5	T6	T7	F	G
8215.500	–	1197	1192	1112	1075	455	475	1135	500	1205	1197	1112	1177.5	1075	1050	1030	1000	611	505	375	412	468	340	130 – 455	435	1099	1096
8245.500	–	1197	1192	1112	1075	455	475	1135	500	1405	1397	1312	1377.5	1275	1250	1230	1200	711	505	375	412	468	340	130 – 455	435	1099	1296
8080.500	–	997	992	912	875	355	375	935	400	1805	1797	1712	1777.5	1675	1650	1630	1600	911	405	275	312	368	240	130 – 355	335	899	1696
8284.500	**8456.X00**	1197	1192	1112	1075	455	475	1135	500	1805	1797	1712	1777.5	1675	1650	1630	1600	911	405	275	312	368	240	130 – 355	335	1099	1696
8880.500	–	797	792	712	675	255	275	735	640	1805	1797	1712	1777.5	1675	1650	1630	1600	911	505	375	412	468	340	130 – 455	435	699	1696
8285.500	**8453.X00**	1197	1192	1112	1075	455	475	1135	500	1805	1797	1712	1777.5	1675	1650	1630	1600	911	505	375	412	468	340	130 – 455	435	1099	1696
8881.500	–	797	792	712	675	255	275	735	640	1805	1797	1712	1777.5	1675	1650	1630	1600	911	605	475	512	568	440	130 – 555	535	699	1696
8286.500	–	1197	1192	1112	1075	455	475	1135	500	1805	1797	1712	1777.5	1675	1650	1630	1600	911	605	475	512	568	440	130 – 555	535	1099	1696
8004.500	–	997	992	912	875	355	375	935	400	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	405	275	312	368	240	130 – 355	335	899	1896
8204.500	–	1197	1192	1112	1075	455	475	1135	500	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	405	275	312	368	240	130 – 355	335	1099	1896
8005.500	–	997	992	912	875	355	375	935	400	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	505	375	412	468	340	130 – 455	435	899	1896
8205.500	–	1197	1192	1112	1075	455	475	1135	500	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	505	375	412	468	340	130 – 455	435	1099	1896
8006.500	–	997	992	912	875	355	375	935	400	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	605	475	512	568	440	130 – 555	535	899	1896
8206.500	**8451.X00**	1197	1192	1112	1075	455	475	1135	500	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	605	475	512	568	440	130 – 555	535	1099	1896
8208.500	–	1197	1192	1112	1075	455	475	1135	500	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	805	675	712	768	640	130 – 755	735	1099	1896
8226.500	–	1197	1192	1112	1075	455	475	1135	500	2205	2197	2112	2177.5	2075	2050	2030	2000	1111	605	475	512	568	440	130 – 555	535	1099	2096
8265.500	–	1197	1192	1112	1075	455	475	1135	500	1605	1597	1512	1577.5	1475	1450	1430	1400	811	505	375	412	468	340	130 – 455	435	1099	1496

Mounting plate

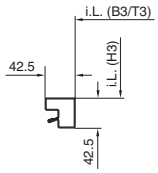


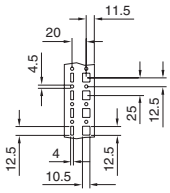
Cross-sections
vertical





horizontal





i.L. = Clearance width

Enclosure

B1 = Overall width
B2 = Width of door
B3 = Clearance between the enclosure frames
B4 = Section length of system punchings/ hole spacing base/plinth attachment
B5 = Clearance between the tubular door frames
B6 = Distance between axes of tubular door frame holes
B7 = Distance between the lifting eyes
B8 = Clearance in the base opening

H1 = Overall height
H2 = Height of rear panel
H3 = Clearance between the enclosure frame
H4 = Height of door
H5 = Section length of system punchings
H6 = Distance between axes of tubular door frame holes
H7 = Clearance between the tubular door frame
H8 = Distance between the fastening bolts of the tubular door frame
H9 = Distance from base to centre of lock

T1 = Overall depth
T2 = Section length of system punchings/ hole spacing
T3 = Clearance between the enclosure frames
T4 = Depth of base frame
T5 = Clearance of base opening
T6 = Possible mounting depth (mounting plate assembly) depth-adjustable on a 25 mm pitch pattern
T7 = Centre of lifting eye to centre of lifting eye

Mounting plate

F = Overall width
G = Overall height

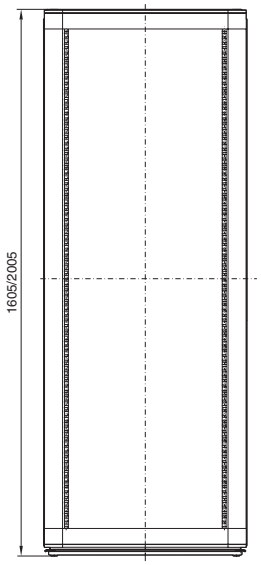
Single-door

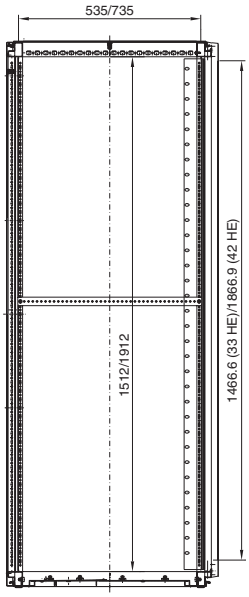
Model No. TS		Width dimensions mm								Height dimensions mm									Depth dimensions mm							Mounting plates mm	
Spray-finished	Stainless steel	B1	B2	B3	B4	B5	B6	B7	B8	H1	H2	H3	H4	H5	H6	H7	H8	H9	T1	T2	T3	T4	T5	T6	T7	F	G
8615.500	–	597	592	512	475	455	475	535	440	1205	1197	1112	1177.5	1075	1050	1030	1000	611	505	375	412	468	340	130 – 455	435	499	1096
8815.500	–	797	792	712	675	655	675	735	640	1205	1197	1112	1177.5	1075	1050	1030	1000	611	505	375	412	468	340	130 – 455	435	699	1096
8645.500	–	597	592	512	475	455	475	535	440	1405	1397	1312	1377.5	1275	1250	1230	1200	711	505	375	412	468	340	130 – 455	435	499	1296
8845.500	–	797	792	712	675	655	675	735	640	1405	1397	1312	1377.5	1275	1250	1230	1200	711	505	375	412	468	340	130 – 455	435	499	1296
8684.500	–	597	592	512	475	455	475	535	440	1805	1797	1712	1777.5	1675	1650	1630	1600	911	405	275	312	368	240	130 – 355	335	499	1696
8884.500	**8454.X00**	797	792	712	675	655	675	735	640	1805	1797	1712	1777.5	1675	1650	1630	1600	911	405	275	312	368	240	130 – 355	335	699	1696
8084.500	–	997	992	912	875	855	875	935	840	1805	1797	1712	1777.5	1675	1650	1630	1600	911	405	275	312	368	240	130 – 355	335	899	1696
8485.510	–	397	392	312	275	255	275	335	240	1805	1797	1712	1777.5	1675	1650	1630	1600	911	505	375	412	468	340	130 – 455	435	–	–
8685.500	**8457.X00**	597	592	512	475	455	475	535	440	1805	1797	1712	1777.5	1675	1650	1630	1600	911	505	375	412	468	340	130 – 455	435	499	1696
8885.500	**8455.X00**	797	792	712	675	655	675	735	640	1805	1797	1712	1777.5	1675	1650	1630	1600	911	505	375	412	468	340	130 – 455	435	699	1696
8486.510	–	397	392	312	275	255	275	335	240	1805	1797	1712	1777.5	1675	1650	1630	1600	911	605	475	512	568	440	130 – 555	535	–	–
8686.500	–	597	592	512	475	455	475	535	440	1805	1797	1712	1777.5	1675	1650	1630	1600	911	605	475	512	568	440	130 – 555	535	499	1696
8886.500	–	797	792	712	675	655	675	735	640	1805	1797	1712	1777.5	1675	1650	1630	1600	911	605	475	512	568	440	130 – 555	535	699	1696
8604.500	–	597	592	512	475	455	475	535	440	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	405	275	312	368	240	130 – 355	335	499	1896
8804.500	–	797	792	712	675	655	675	735	640	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	405	275	312	368	240	130 – 355	335	699	1896
8405.510	–	397	392	312	275	255	275	335	240	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	505	375	412	468	340	130 – 455	435	–	–
8605.500	–	597	592	512	475	455	475	535	440	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	505	375	412	468	340	130 – 455	435	499	1896
8805.500	–	797	792	712	675	655	675	735	640	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	505	375	412	468	340	130 – 455	435	699	1896
8406.510	–	397	392	312	275	255	275	335	240	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	605	475	512	568	440	130 – 555	535	–	–
8606.500	**8452.X00**	597	592	512	475	455	475	535	440	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	605	475	512	568	440	130 – 555	535	499	1896
8806.500	**8450.X00**	797	792	712	675	655	675	735	640	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	605	475	512	568	440	130 – 555	535	699	1896
8608.500	–	597	592	512	475	455	475	535	440	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	805	675	712	768	640	130 – 755	735	499	1896
8808.500	–	797	792	712	675	655	675	735	640	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	805	675	712	768	640	130 – 755	735	699	1896
8626.500	–	597	592	512	475	455	475	535	440	2205	2197	2112	2177.5	2075	2050	2030	2000	1111	605	475	512	568	440	130 – 555	535	499	2096
8826.500	–	797	792	712	675	655	675	735	640	2205	2197	2112	2177.5	2075	2050	2030	2000	1111	605	475	512	568	440	130 – 555	535	699	2096
8665.500	–	597	592	512	475	455	475	535	440	1605	1597	1512	1577.5	1475	1450	1430	1400	811	505	375	412	468	340	130 – 455	435	499	1496
8865.500	–	797	792	712	675	655	675	735	640	1605	1597	1512	1577.5	1475	1450	1430	1400	811	505	375	412	468	340	130 – 455	435	699	1496

Large enclosures

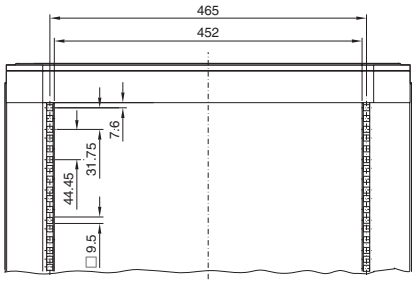
1.3 Baying system TS 8

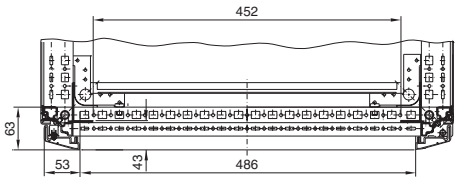
Electronic enclosures Page 148

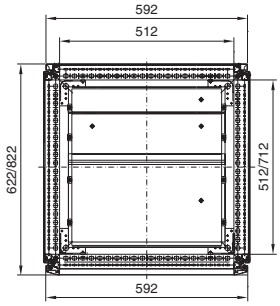




HE = U

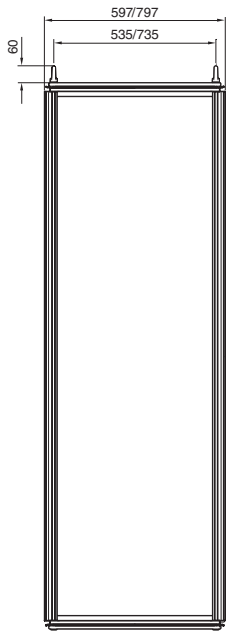


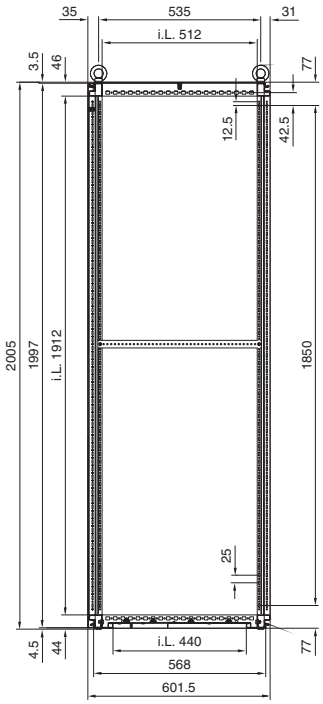


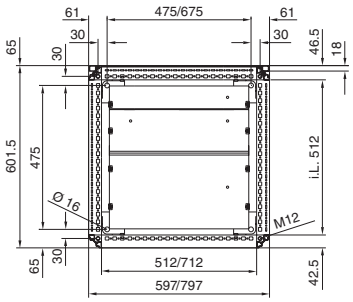


1.3 Baying system TS 8

For modular front design Page 149



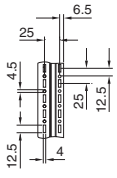


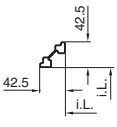


i.L. = Clearance width

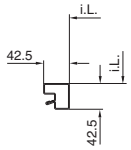
Cross-sections

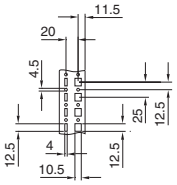
vertical





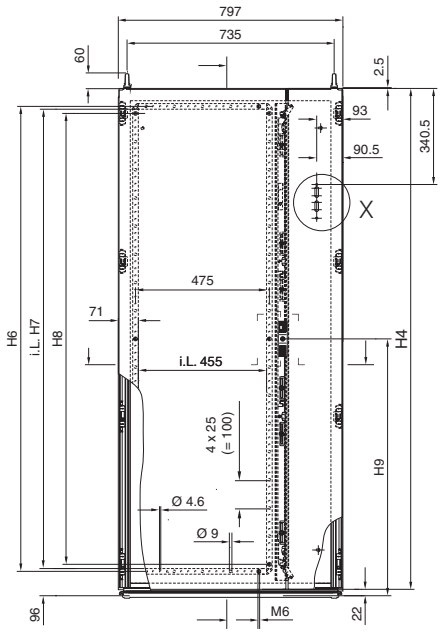
horizontal

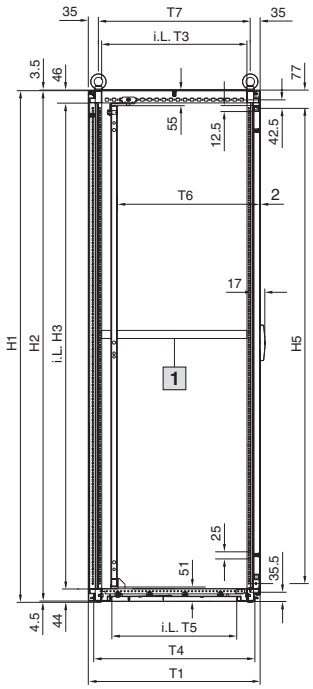




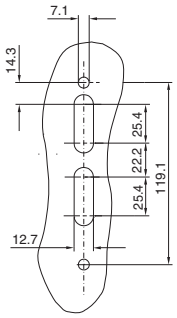
1.3 Baying system TS 8

For isolator door locking Page 150

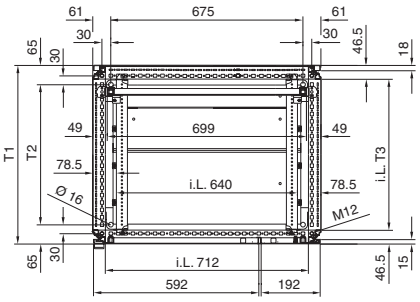




Detail X



1 Only for TS 8906.500



i.L. = Clearance width

Enclosure

H1 = Overall height
H2 = Height of rear panel
H3 = Clearance between the enclosure frame
H4 = Height of door and trim panel
H5 = Section length of system punchings
H6 = Distance between axes of the tubular door frame rows of holes
H7 = Clearance between the tubular door frame
H8 = Distance between the fastening bolts of the tubular door frame
H9 = Distance from base to centre of lock

T1 = Overall depth
T2 = Section length of system punchings/ distance between holes of base/ plinth attachment
T3 = Clearance between enclosure frames
T4 = Depth of base frame
T5 = Clearance of base opening
T6 = Possible mounting depth (mounting plate assembly)
T7 = Centre of lifting eye to centre of lifting eye

Note:
The cut-outs in the right-hand trim piece are suitable for the following isolator actuators: Allen Bradley 1494 V-H11, Square D9422A1, ITE Siemens[1)] Max-Flex series/F HOH, General Electric TDA Type 1 and 2, Moeller NZM-XSHGVR12-NA.

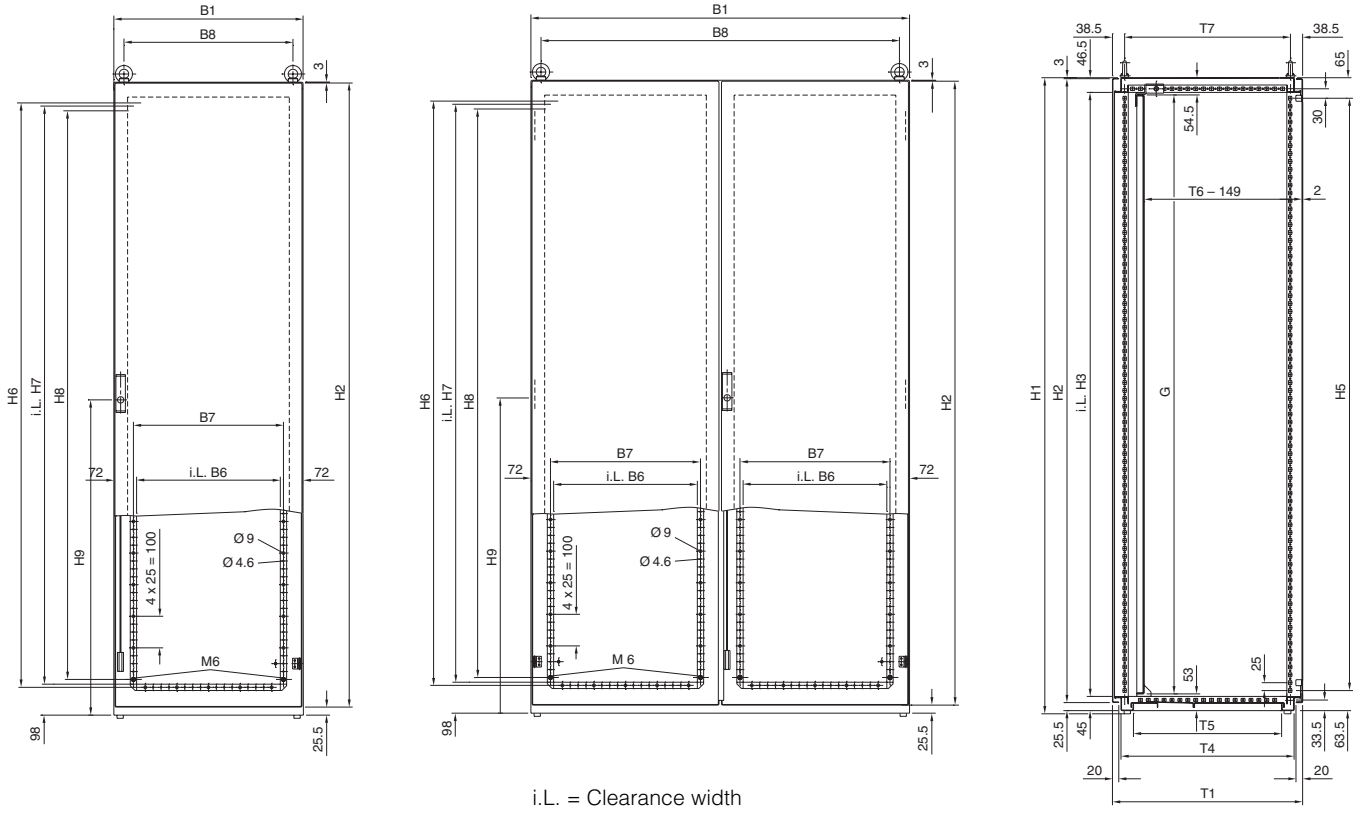
[1)] Available in USA only.

Model No. TS	Height dimensions mm									Depth dimensions mm						
	H1	H2	H3	H4	H5	H6	H7	H8	H9	T1	T2	T3	T4	T5	T6	T7
8984.500	1805	1797	1712	1754	1675	1650	1630	1600	911	405	275	312	368	240	130 – 355	335
8985.500	1805	1797	1712	1775	1675	1650	1630	1600	911	505	375	412	468	340	130 – 455	435
8905.500	2005	1997	1912	1975	1875	1850	1830	1800	1011	505	375	412	468	340	130 – 455	435
8906.500	2005	1997	1912	1975	1875	1850	1830	1800	1011	605	475	512	568	440	130 – 555	535

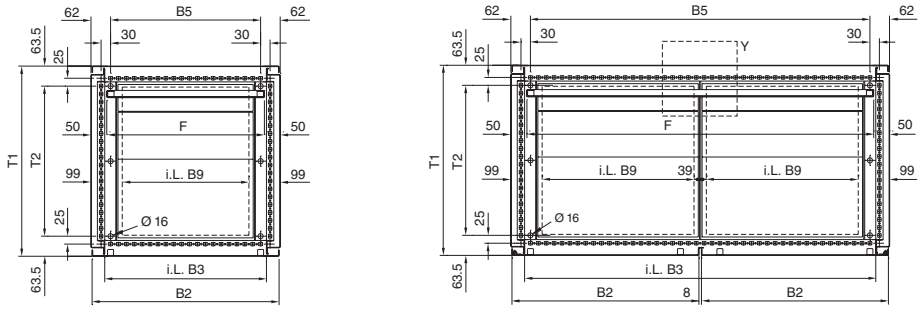
1.3 Free-standing enclosure ES 5000

Spray-finished Page 154

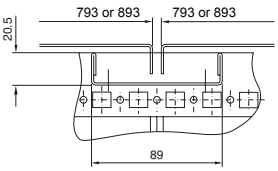
Stainless steel Page 323



i.L. = Clearance width



Detail Y
(only for ES 5784.500
and ES 5905.500)



Single-door

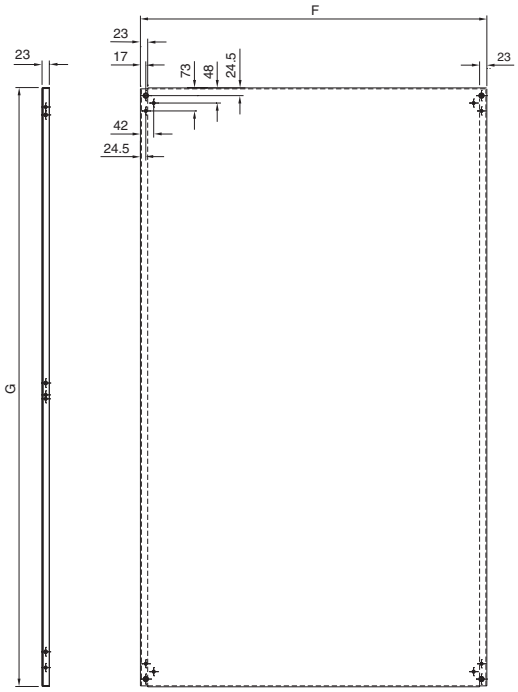
Model No. ES		Width dimensions mm								Height dimensions mm								Depth dimensions mm						Mounting plates mm	
Spray-finished	Stainless steel	B1	B2	B3	B5	B6	B7	B8	B9	H1	H2	H3	H5	H6	H7	H8	H9	T1	T2	T4	T5	T6	T7	F	G
–	**5450.X00**	599	592	512	475	455	475	535	401	1610	1575	1512	1475	1450	1430	1400	798	402	275	349	269	349	325	499	1496
5665.500	–	599	592	512	475	455	475	535	401	1610	1575	1512	1475	1450	1430	1400	798	502	375	449	369	449	425	499	1496
5684.500	–	599	592	512	475	455	475	535	401	1810	1775	1712	1675	1650	1630	1600	898	402	275	349	269	349	325	499	1696
–	**5451.X00**	599	592	512	475	455	475	535	401	1810	1775	1712	1675	1650	1630	1600	898	502	375	449	369	449	425	499	1696
5605.500	–	599	592	512	475	455	475	535	401	2010	1975	1912	1875	1850	1830	1800	998	502	375	449	369	449	425	499	1896
5865.500	–	799	792	712	675	655	675	735	601	1610	1575	1512	1475	1450	1430	1400	798	502	375	449	369	449	425	699	1496
5884.500	–	799	792	712	675	655	675	735	601	1810	1775	1712	1675	1650	1630	1600	898	402	275	349	269	349	325	699	1696
5805.500	–	799	792	712	675	655	675	735	601	2010	1975	1912	1875	1850	1830	1800	998	502	375	449	369	449	425	699	1896
5084.500	**5454.X00**	999	992	912	875	855	875	935	801	1810	1775	1712	1675	1650	1630	1600	898	402	275	349	269	349	325	899	1696
–	**5452.X00**	799	792	712	675	655	675	735	601	1810	1775	1712	1675	1650	1630	1600	898	502	375	449	369	449	425	699	1696
–	**5453.X00**	799	792	712	675	655	675	735	601	2010	1975	1912	1875	1850	1830	1800	998	602	475	549	469	549	525	699	1896

1.3 Free-standing enclosure ES 5000

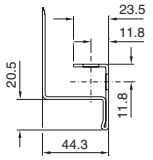
Spray-finished Page 154, 155

Stainless steel Page 323

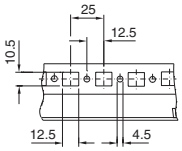
Mounting plate



Cross-section



Pitch pattern of holes



Enclosure

B1 = Overall width
B2 = Width of door
B3 = Clearance between the enclosure frames
B5 = Section length of system punchings/ hole spacing base/plinth attachment
B6 = Clearance between the tubular door frames
B7 = Distance between axes of tubular door frame holes
B8 = Distance between the lifting eyes
B9 = Clearance in the base opening

H1 = Overall height
H2 = Height of rear panel and door
H3 = Clearance between the enclosure frame
H5 = Section length of system punchings
H6 = Distance between axes of tubular door frame holes
H7 = Clearance between the tubular door frame
H8 = Distance between the fastening bolts of the tubular door frame
H9 = Distance from base to centre of lock

T1 = Overall depth
T2 = Section length of system punchings/ hole spacing base/plinth attachment
T4 = Depth of base frame
T5 = Clearance of base opening
T6 = Possible mounting depth (mounting plate assembly) up to 149 mm, depth-adjustable on a 25 mm pitch pattern
T7 = Centre of lifting eye to centre of lifting eye

Mounting plate

F = Overall width
G = Overall height

Double-door

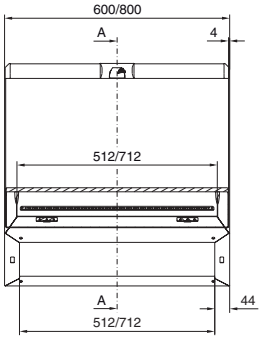
Model No. ES		Width dimensions mm								Height dimensions mm								Depth dimensions mm						Mounting plates mm	
Spray-finished	Stainless steel	B1	B2	B3	B5	B6	B7	B8	B9	H1	H2	H3	H5	H6	H7	H8	H9	T1	T2	T4	T5	T6	T7	F	G
5080.500	**–**	999	492	912	875	355	375	935	801	1810	1775	1712	1675	1650	1630	1600	898	402	275	349	269	349	325	899	1696
5265.500	**–**	1199	592	1112	1075	455	475	1135	481	1610	1575	1512	1475	1450	1430	1400	798	502	375	449	369	449	425	1099	1496
5284.500	**–**	1199	592	1112	1075	455	475	1135	481	1810	1775	1712	1675	1650	1630	1600	898	402	275	349	269	349	325	1099	1696
5205.500	**5455.X00**	1199	592	1112	1075	455	475	1135	481	2010	1975	1912	1875	1850	1830	1800	998	502	375	449	369	449	425	1099	1896
5784.500	**–**	1599	792	1512	1475	655	675	1535	681	1810	1775	1712	1675	1650	1630	1600	898	402	275	349	269	349	325	1499	1696
5905.500	**–**	1799	892	1712	1675	755	775	1735	781	2010	1975	1912	1875	1850	1830	1800	998	502	375	449	369	449	425	1699	1896

Consoles TP

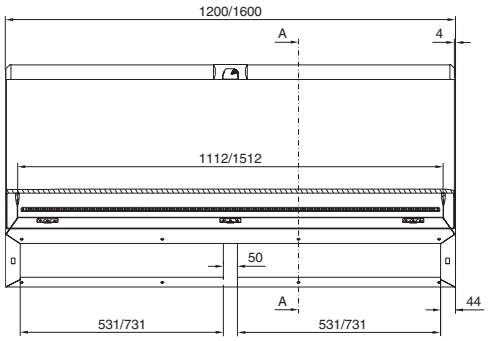
1.4 Consoles

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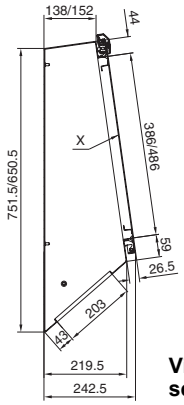
600/800 mm width
TP 6720.500, TP 6721.500
TP 6724.500, TP 6725.500



1200/1600 mm width
TP 6722.500, TP 6723.500
TP 6726.500, TP 6727.500



Section A – A

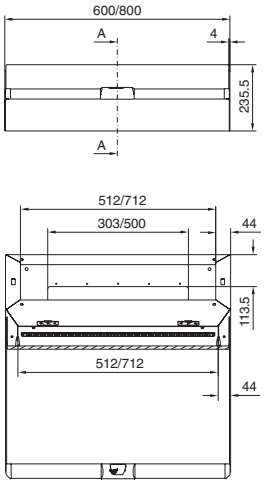


View X, see below.

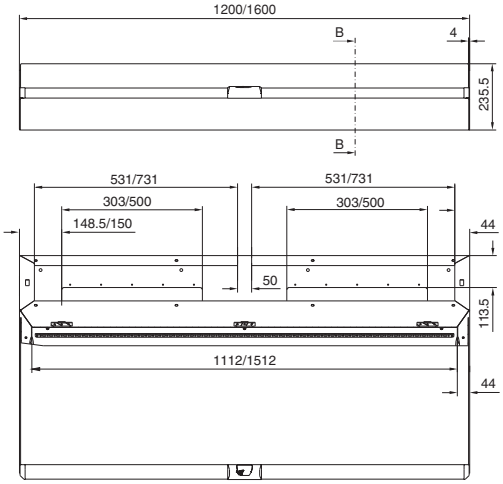
1.4 Desk units, prepared for consoles

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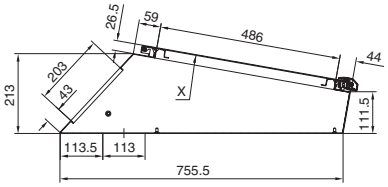
600/800 mm width
TP 6714.500, TP 6715.500



1200/1600 mm width
TP 6716.500, TP 6717.500



Section A – A

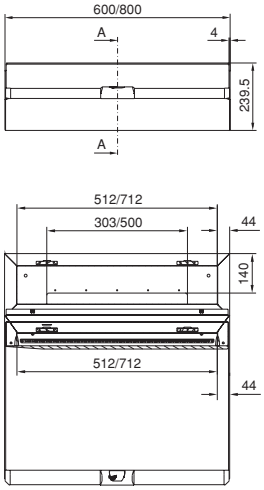


View X, see below.

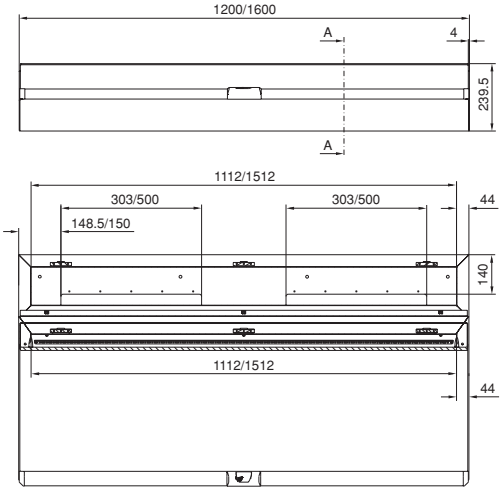
1.4 Desk units, rear with hinged lid

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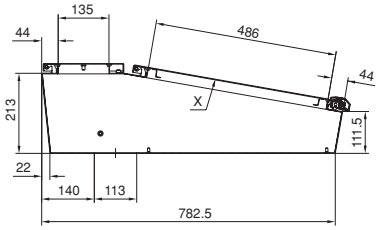
600/800 mm width
TP 6710.500, TP 6711.500



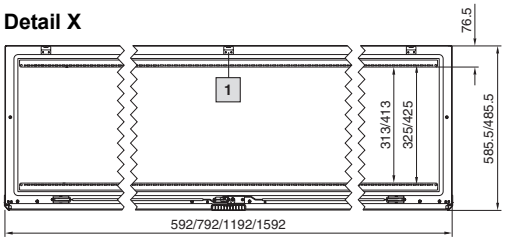
1200/1600 mm width
TP 6712.500, TP 6713.500



Section A – A



Detail X

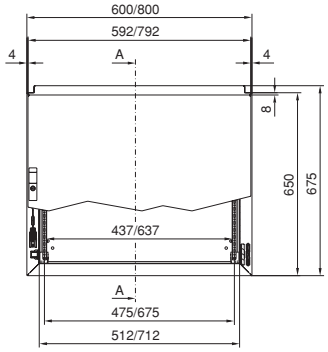


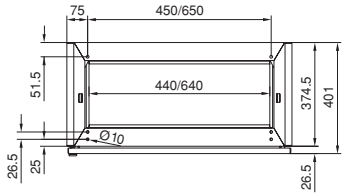
1 Does not apply to width 600/800 mm

1.4 Pedestals, 400 mm deep

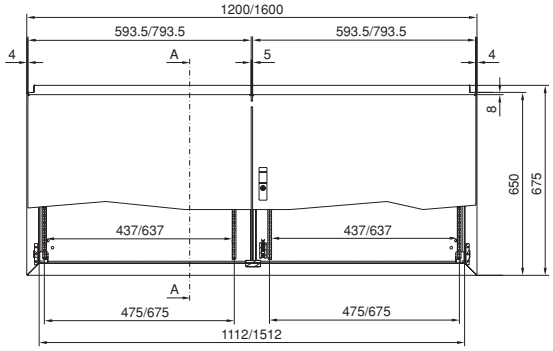
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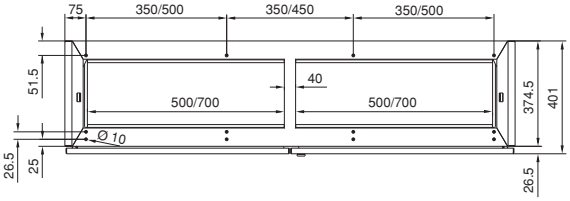
600/800 mm width
TP 6700.500, TP 6701.500



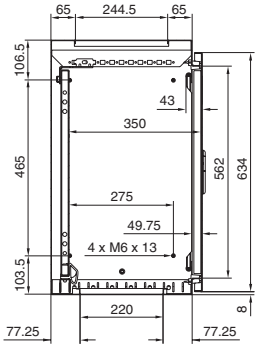


1200/1600 mm width
TP 6702.500, TP 6703.500

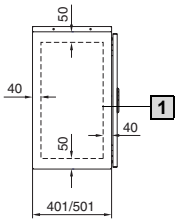




Section A – A



Mounting cut-out



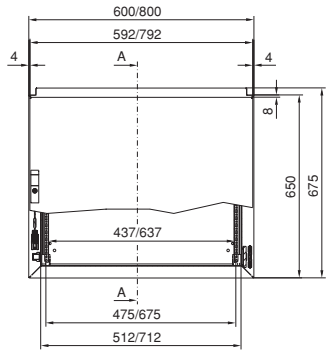
1 Max. mounting cut-out

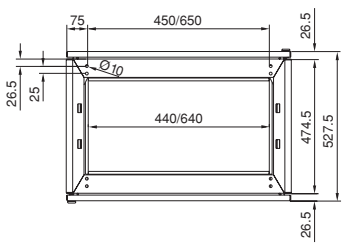
Note:
Dimensions of mounting plate – see depth 500 mm.

1.4 Pedestals, 500 mm deep

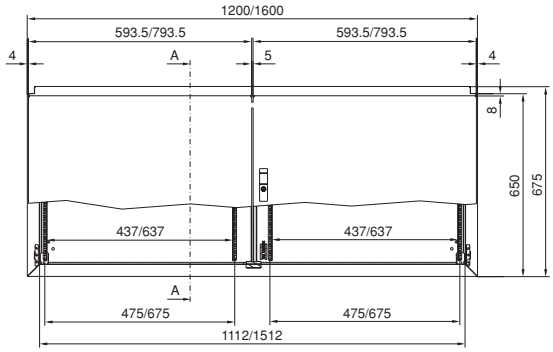
Page 162

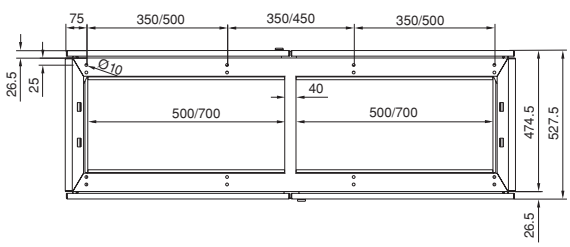
600/800 mm width
TP 6704.500, TP 6705.500



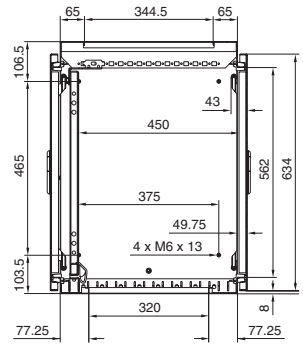


1200/1600 mm width
TP 6706.500, TP 6707.500

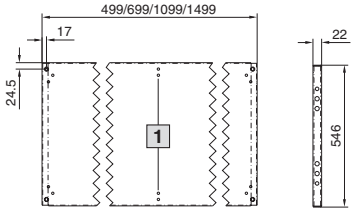




Section A – A



Mounting plate



1 Does not apply to width 600/800 mm

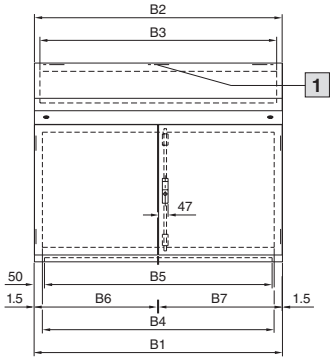
Note:
Dimensions of mounting cut-out – see depth 400 mm.

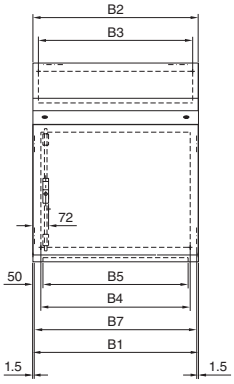
Consoles AP

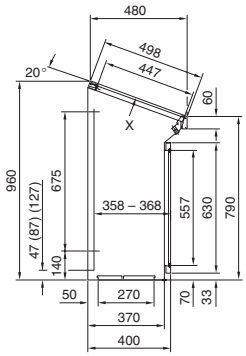
1.4 One-piece consoles AP

Sheet steel Page 165

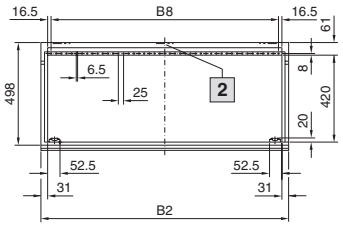
Stainless steel Page 320



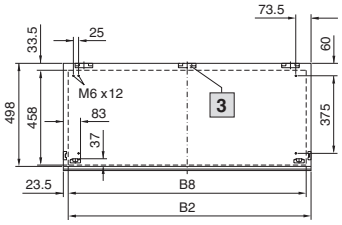


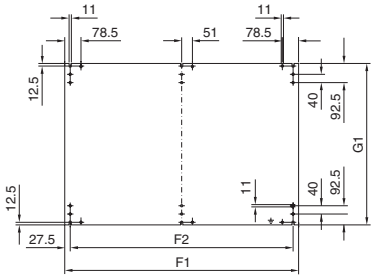


Sheet steel – view in direction X



Stainless steel – view in direction X





1 Hinge does not apply to AP 2670.500, 2685.600

2 Hinge does not apply to AP 2666.500, 2668.500

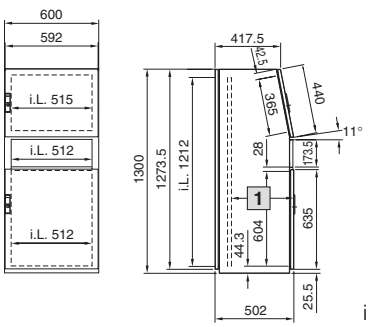
3 Hinge does not apply to AP 2683.600, 2684.600

Model No. AP, sheet steel	**2666.500**	**2668.500**	**2670.500**	**2672.500**
Model No. AP, stainless steel	**2683.600**	**2684.600**	**2685.600**	**2686.600**
Width (B1) mm	600	800	1000	1200
Height mm	960			
Depth mm	400 /480			
B2 = Width	597	797	997	1197
B3 = Clearance width, top	544	744	944	1144
B4 = Clearance width, front	524	724	924	1124
B5 = Clearance width, bottom	500	700	900	1100
B6 = Wide adjacent door	–	–	495	595
B7 = Wide lockable door	597	797	497	597
B8 = Punched length	500	700	900	1100
F1 = Mounting plate width	530	730	930	1130
F2 = Distance between mounting holes	475	675	875	1075
G1 = Mounting plate height	780	780	780	780

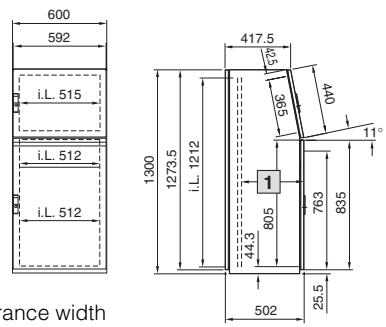
1.4 Universal consoles AP

Sheet steel Page 166

With short front door
AP 2694.500

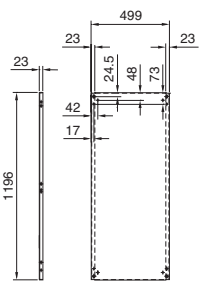


With tall front door
AP 2695.500



i.L. = Clearance width

Mounting plate

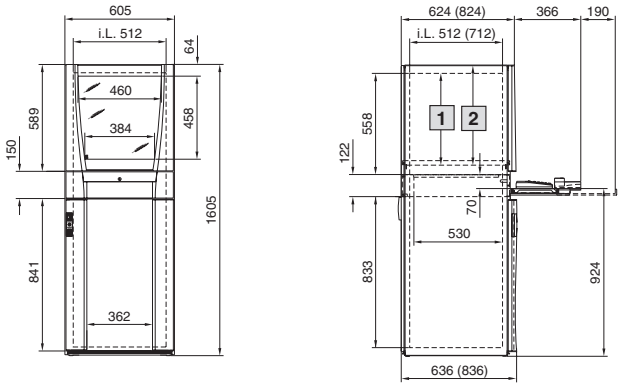


1 Adjustable from 200 to 400 mm on a 25 mm pitch pattern

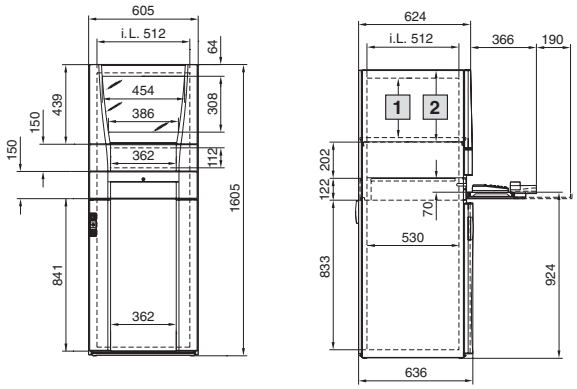
1.4 Based on TS 8

With keyboard drawer Page 168

With drawer
PC 8366.000, PC 8368.000



With mounting compartment, small and drawer
PC 8366.300



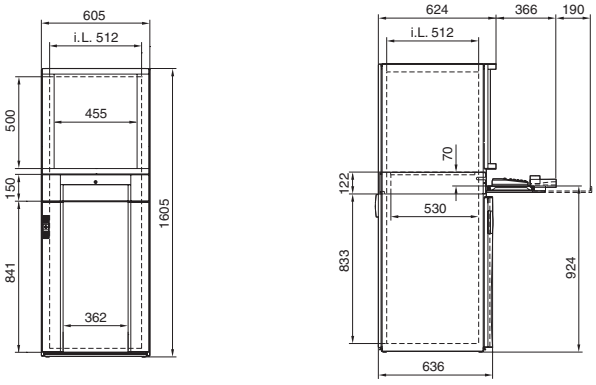
1 Max. 505, adjustable on a 25 mm pitch pattern

2 Max. 549, adjustable on a 25 mm pitch pattern

1 Max. 355, adjustable on a 25 mm pitch pattern

2 Max. 397, adjustable on a 25 mm pitch pattern

With mounting compartment, large and drawer
PC 8366.400



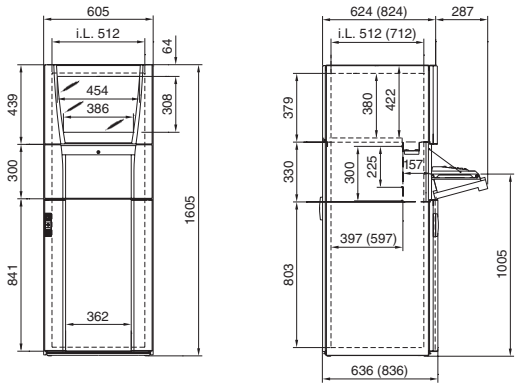
i.L. = Clearance width

				Model No. PC		
			Depth 636 mm	**8366.000**	**8366.300**	**8366.400**
			Depth 836 mm	**8368.000**	**–**	**–**
Supply includes	**Design**	**Material**	**Colour RAL**			
Enclosure	Frame construction with side panels and roof secured from the inside	Sheet steel 1.5 mm	7035 textured	■	■	■
	Gland plates, three-part	Sheet steel 1.5 mm	Zinc-plated			
Rear door	With locking rod and double-bit insert, hinged on r/h side	Sheet steel 2.0 mm	7035 textured	■	■	■
Glazed door, top	With support frame latched from the inside[1)], r/h hinge	Sheet steel 1.5 mm	7015	■	■	
	Vertical decorative trim panels	Plastic to UL 94-V0	7035			
	Pane with screen-printed mask	Toughened safety glass 4.0 mm	7015			
Mounting compartment, large, top	Vertical bars, latched from the inside[1)], hinged on r/h side	Aluminium section	7035			■
	Installation plate	Sheet steel 1.5 mm	7015			
	End strip top/bottom	Plastic to UL 94-V0	7035			
Component shelf for monitor	Slotted, permanently installed	Sheet steel 1.5 mm	7015	■	■	
Drawer for keyboard	Enclosure	Sheet steel 1.5 mm	7035	■	■	■
	Keyboard extension piece with cable support, pull-out mousepad and keyboard cradle	Sheet steel 1.5 mm	7035			
	Trim panel with handle strip, folded as handrest, with lock no. 3524 E	Plastic to UL 94-V0	7035/7015/9006			
Mounting compartment, small	R/h hinge, screw-fastened from the inside on the left, folded mounting plate	Sheet steel 1.5 mm	7015		■	
	Decorative side trim panels	Plastic to UL 94-V0	7035			
Bottom door	Vertical bars with locking rod and double-bit insert, hinged on r/h side	Aluminium section	7035	■	■	■
	Door or installation plate folded	Sheet steel 1.5 mm	7015			
	[1)] With unlatching for top glazed door.					

1.4 Based on TS 8

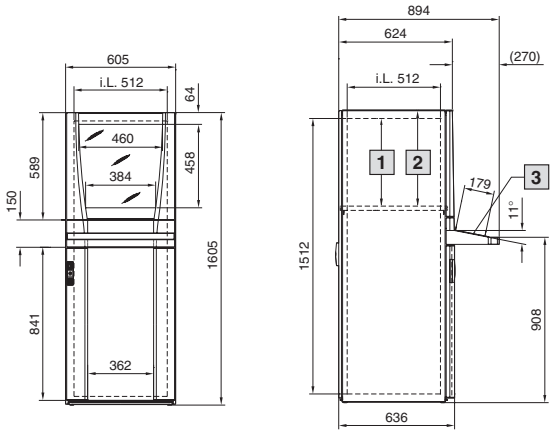
With folding keyboard or desk section Page 169

With fold-out tray
PC 8366.100, PC 8368.100



i.L. = Clearance width

With desk section
PC 8366.200



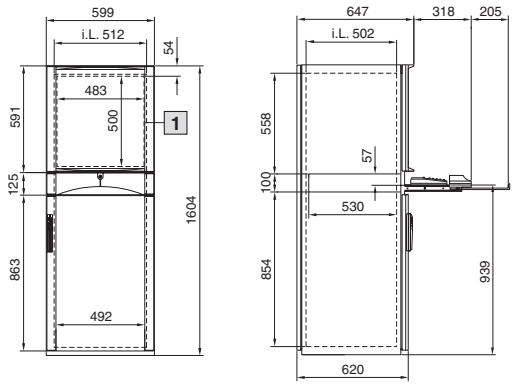
1 Max. 505, adjustable on a 25 mm pitch pattern
2 Max. 549, adjustable on a 25 mm pitch pattern
3 Max. installation surface 540 x 179 mm

				Model No. PC	
			Depth 636 mm	**8366.100**	**8366.200**
			Depth 836 mm	**8368.100**	**–**
Supply includes	**Design**	**Material**	**Colour RAL**		
Enclosure	Frame construction with side panels and roof secured from the inside	Sheet steel 1.5 mm	7035 textured	■	■
	Gland plates, three-part	Sheet steel 1.5 mm	Zinc-plated		
Rear door	With locking rod and double-bit insert, hinged on r/h side	Sheet steel 2.0 mm	7035 textured	■	■
Glazed door, top	With support frame latched from the inside[1)], r/h hinge	Sheet steel 1.5 mm	7015	■	■
	Vertical decorative trim panels	Plastic to UL 94-V0	7035		
	Pane with screen-printed mask	Toughened safety glass 4.0 mm	7015		
Component shelf for monitor	Slotted, permanently installed	Sheet steel 1.5 mm	7015	■	■
Fold-out tray for keyboard	Enclosure with mouse support and cut-out in the rear panel, width 482.6 mm (19″) x height 4 U, for rear attachment	Sheet steel 1.5 mm	7035	■	
	Trim panel hinged at the bottom, with 2 retaining cords, with lock no. 3524 E	Plastic to UL 94-V0	7035/7015/9006		
	Keyboard support with mousepad extension piece and 2 nylon tapes for keyboard	Sheet steel 1.5 mm	7035		
Desk section	Enclosure with removable cover top and bottom	Sheet steel 1.5 mm/2.0 mm	7035		■
	Trim strip, top and handle strip	Plastic to UL 94-V0	7035/7015/9006		
Bottom door	Vertical bars with locking rod and double-bit insert, hinged on r/h side	Aluminium section	7035	■	■
	Door or installation plate folded	Sheet steel 1.5 mm	7015		
	[1)] With unlatching for top glazed door.				

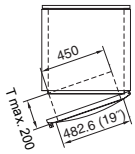
1.4 Based on ES

With keyboard drawer Page 170

With mounting compartment, large and drawer
PC 4603.603

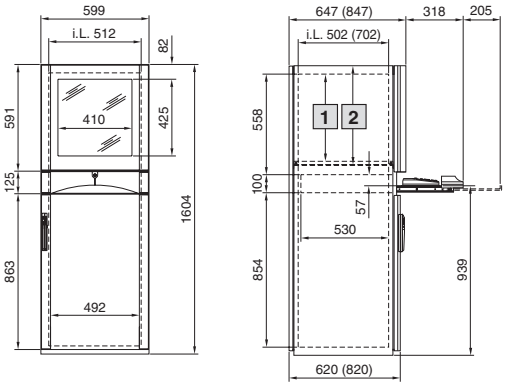


1 External surface available for population



i.L. = Clearance width
T = Depth

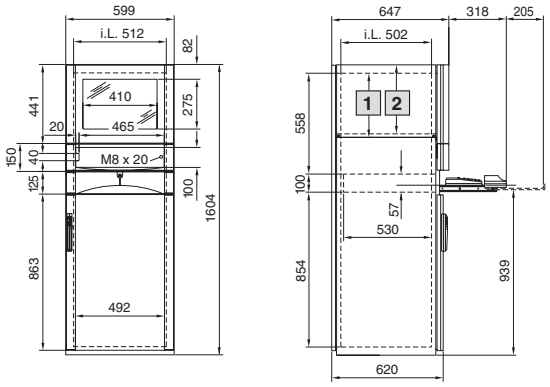
With drawer
PC 4603.703, PC 4609.703



1 Max. 505, adjustable on a 25 mm pitch pattern

2 Max. 547, adjustable on a 25 mm pitch pattern

With mounting compartment, small and drawer
PC 4603.913



1 Max. 355, adjustable on a 25 mm pitch pattern

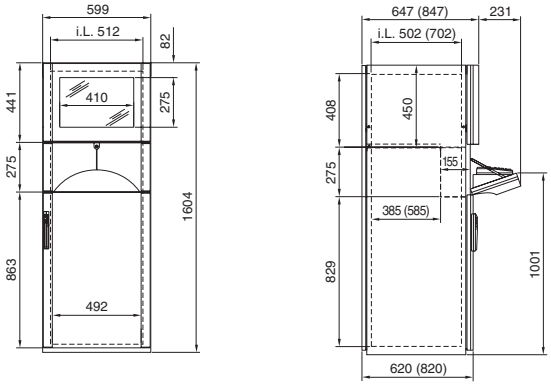
2 Max. 397, adjustable on a 25 mm pitch pattern

Supply includes	Design	Material	Colour RAL	PC 4603.603	PC 4603.703, PC 4609.703	PC 4603.913
Enclosure	Solid, open at bottom	Sheet steel 1.5 mm	7035 textured	■	■	■
	Gland plates, three-part	Sheet steel 1.5 mm	Zinc-plated			
Rear door	With locking rod and double-bit insert, hinged on r/h side	Sheet steel 2.0 mm	7035 textured	■	■	■
Mounting compartment, large, top	Vertical bars, latched from the inside[1], hinged on r/h side	Aluminium section	5018	■		
	Folded installation plate	Sheet steel 1.5 mm	7035			
	End strip top/bottom	Plastic to UL 94-V0	7035			
Glazed door, top	Curved outwards, vertical bars, latched from the inside[2], hinged on r/h side	Aluminium section	5018		■	■
	End strip top/bottom	Plastic to UL 94-V0	7035			
	Pane with screen-printed mask	Toughened safety glass 4.0 mm	7015			
Component shelf for monitor	Slotted, permanently installed	Sheet steel 1.5 mm	7035		■	■
Drawer for keyboard	Enclosure	Sheet steel 1.5 mm	7035	■	■	■
	Keyboard extension with 1 pair of telescopic slides	Sheet steel 1.5 mm	7035			
	Trim panel with handle strip, folded as handrest, with lock no. 3524 E	Plastic to UL 94-V0	7035			
	Decorative side trim panels	Aluminium section	5018			
	2 spacers for slimline keyboards	Cellular rubber				
	[1] With unlatching for glazed door, top					
Mounting compartment, small	R/h hinge, screw-fastened from the inside on the left, folded mounting plate	Sheet steel 1.5 mm	7035			■
	End strip at the bottom	Plastic to UL 94-V0	7035			
	Vertical bars	Aluminium section	5018			
Bottom door	Vertical bars with locking rod, Ergoform-S handle and double-bit insert, hinged on r/h side	Aluminium section	5018	■	■	■
	Door or installation plate folded	Sheet steel 1.5 mm	7035			
	[2] With unlatching for top glazed door with desk section					

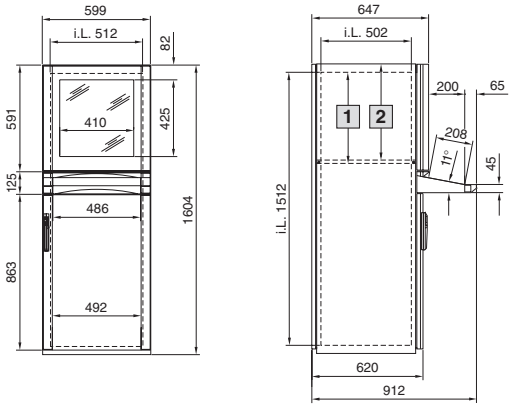
1.4 Based on ES

With folding keyboard or desk section Page 171

With fold-out tray
PC 4603.920



With desk section
PC 4603.704



i.L. = Clearance width

1 Max. 505, adjustable on a 25 mm pitch pattern

2 Max. 547, adjustable on a 25 mm pitch pattern

Supply includes	Design	Material	Colour RAL	PC 4603.920	PC 4603.704
Enclosure	Solid, open at bottom	Sheet steel 1.5 mm	7035 textured	■	■
	Gland plates, three-part	Sheet steel 1.5 mm	Zinc-plated		
Rear door	With locking rod and double-bit insert, hinged on r/h side	Sheet steel 2.0 mm	7035 textured	■	■
Glazed door, top	Curved outwards, vertical bars, latched from the inside[1)], hinged on r/h side	Aluminium section	5018	■	■
	End strip top/bottom	Plastic to UL 94-V0	7035		
	Pane with screen-printed mask	Toughened safety glass 4.0 mm	7015		
Component shelf for monitor	Slotted, permanently installed	Sheet steel 1.5 mm	7035	■	■
Fold-out tray for keyboard	Enclosure with cut-out in rear panel, width 19″ x height 4 U, with screw-fastened lid	Sheet steel 1.5 mm	7035	■	
	Trim panel hinged at the bottom, with 2 retaining shears, with lock no. 3524 E	Plastic to UL 94-V0	7035		
	Decorative side trim panels	Aluminium section	5018		
	Keyboard support, with 2 nylon tapes for keyboard	Sheet steel	7035		
	[1)] With unlatching for glazed door, top				
Desk section	Enclosure with removable cover top and bottom	Sheet steel 1.5 mm/2.0 mm	7035		■
	Trim strip, top and handle	Plastic to UL 94-V0	7035		
	Decorative side trim panels	Aluminium section	5018		
Bottom door	Vertical bars with locking rod, Ergoform-S handle and double-bit insert, hinged on r/h side	Aluminium section	5018	■	■
	Door or installation plate folded	Sheet steel 1.5 mm	7035		
	[1)] With unlatching for top glazed door with desk section				

1.4 Enclosures

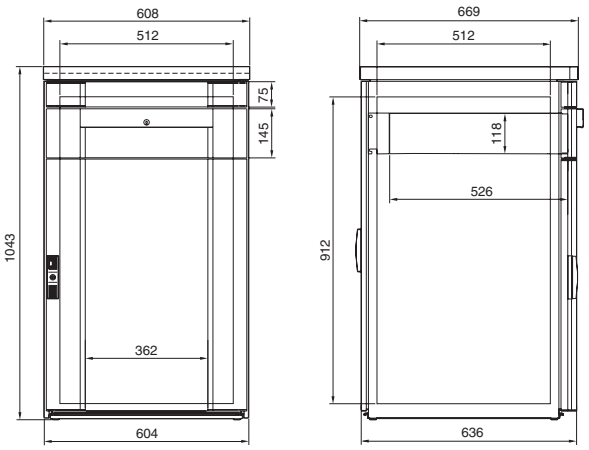
Page 180

		Model No. IW	W/D mm 600/600	6900.000	6900.100	6900.110	6900.200	6900.400	6900.410	6900.600	6901.000	6901.100
			H mm	900	900	900	900	900	900	900	1000	1000
Supply includes	**Design**	**Material**	**Colour RAL**									
Enclosure	Frame structure with side panels, screw-fastened from inside	Sheet steel, 1.5 mm	7035 textured	■	■	■	■	■	■	■	■	■
	Base with gland plate for cable entry											
	Levelling feet to compensate for floor irregularities											
Trim panel, top	To finish off the enclosure at the top	Plastic to UL 94-V0	7035/ 7015							■		■
Keyboard drawer	Drawer housing	1.5 mm sheet steel	7035									
	Extension piece with cable support, pull-out mousepad and keyboard cradle											■
	Trim panel with recessed handle, folded as handrest, with lock no. 3524 E	Plastic to UL 94-V0	7035/ 7015/ 9006									
Drawer section	Drawer tray, fitted with drawer trim panel and telescopic slides	1.5 mm sheet steel	7035					■				
	Extension piece with cable support and pull-out mousepad	1.5 mm sheet steel	7035						■			
	Drawer trim panel with recessed handle, with lock no. 3524 E	Plastic to UL 94-V0	7035/ 7015/ 9006					■	■			
Designer door	Vertical bars with locking rod and double-bit insert, hinged on r/h side	Aluminium section	7035	■	■	■		■	■		■	■
	Door or installation plate, folded, solid	Sheet steel, 1.5 mm	7015	■	■			■	■		■	■
	Door or installation plated, folded, pre-pared for mounting a paper tray	Sheet steel, 1.5 mm	7015			■						
Glazed door	Vertical decorative trim panels	Plastic to UL 94-V0	7035									
	Pane with screen-printed mask	Toughened safety glass 4.0 mm	7015				■					
Drawer front	Drawer tray, slotted all round for cross member retainers, 1 x with short trim panel, 2x with tall trim panel, each with recessed handle, telescopic slides	1.5 mm sheet steel	7035/ 7015/ 9006							■		
Worktop	Solid	Chipboard, plastic-laminated on both sides, with edge strip	Similar to 7035 Edge strip: similar to 7015									■
Rear panel	Screw-fastened from the inside	1.5 mm sheet steel	7035 textured	■						■		
	Screw-fastened from the outside										■	
Rear door	With locking rod and double-bit insert, hinged on the right-hand side	1.5 mm sheet steel	7035 textured		■	■	■	■	■			■

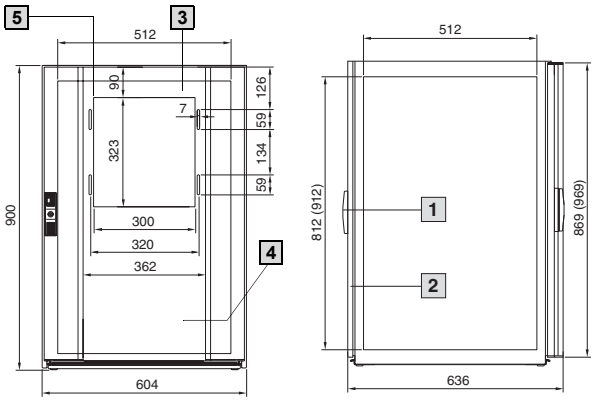
1.4 Enclosures

Page 180/181/185

Enclosure
IW 6901.100



Enclosure
IW 6900.000
IW 6901.000
IW 6900.100
IW 6900.110
IW 6900.200



Dimensions in brackets for IW 6901.000.

1 Rear door for IW 6900.100, IW 6900.110 and IW 6900.200

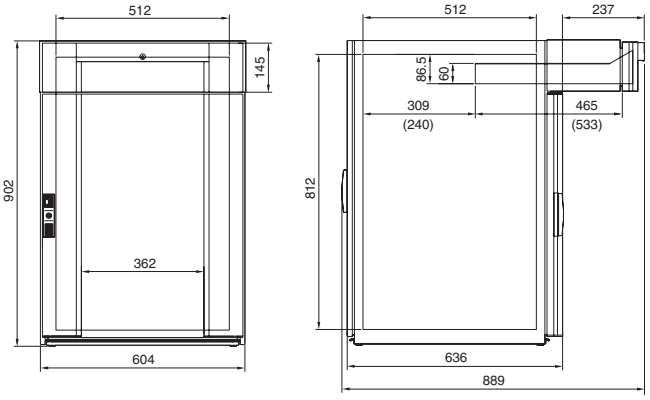
2 Rear panel for IW 6900.000 and IW 6901.000

3 Design door for IW 6900.000, IW 6901.000, IW 6900.100 and IW 6900.110

4 Glazed door for IW 6900.200

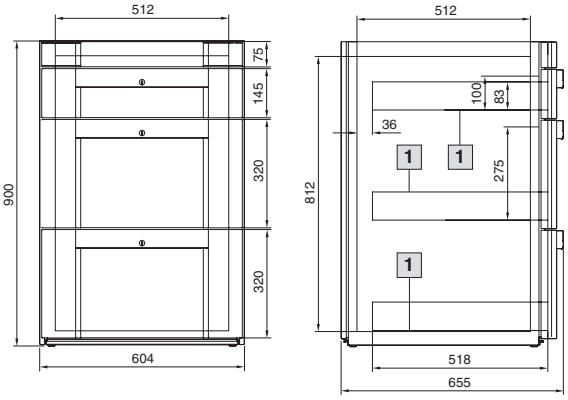
5 Cut-out only for IW 6900.110

Enclosure
IW 6900.400
IW 6900.410



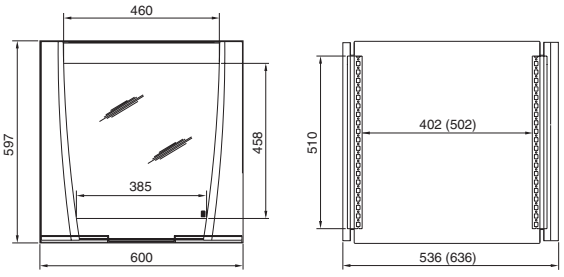
Dimensions in brackets for IW 6900.410.

Enclosure
IW 6900.600



1 Shelves with punchings for cross members

Monitor housing
IW 6902.500
IW 6902.510

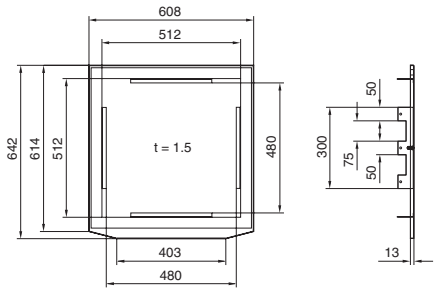


Dimensions in brackets for IW 6902.500.

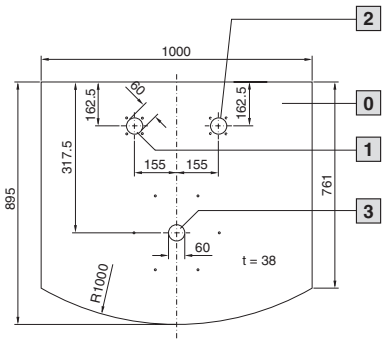
1.4 Worktops

Page 182 – 184

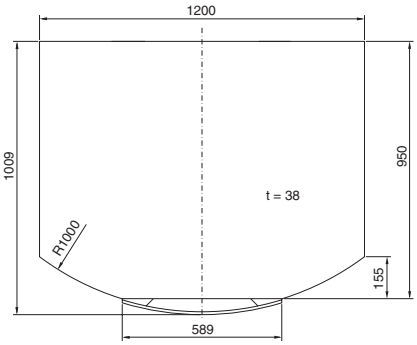
Roof
IW 6902.400



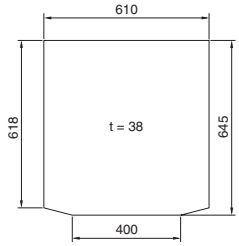
Worktop, without handle
IW 6902.100
IW 6902.110
IW 6902.120
IW 6902.130



Worktop, with handle
IW 6902.000



Worktop
IW 6902.300



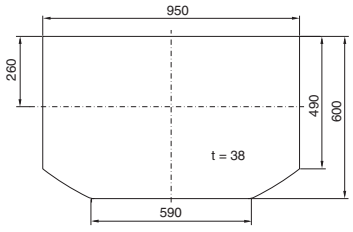
0 Without mounting cut-out for IW 6902.100

1 Mounting cut-out, left, for enclosure attachment, only for IW 6902.120

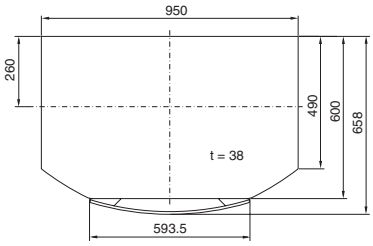
2 Mounting cut-out, right, for enclosure attachment, only for IW 6902.130

3 Mounting cut-out, prepared for turntable, only for IW 6902.110

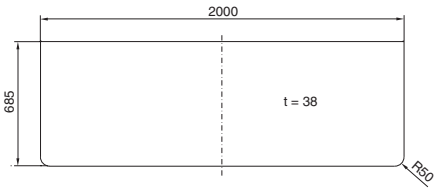
Worktop, without handle
IW 6902.310



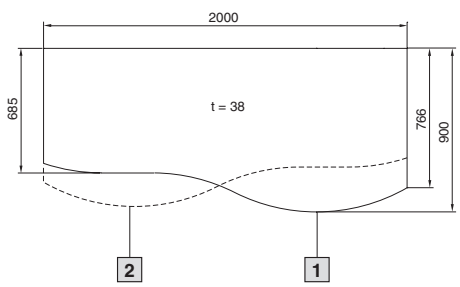
Worktop, with handle
IW 6902.320



Worktop
IW 6902.200



Worktop
IW 6902.210
IW 6902.220

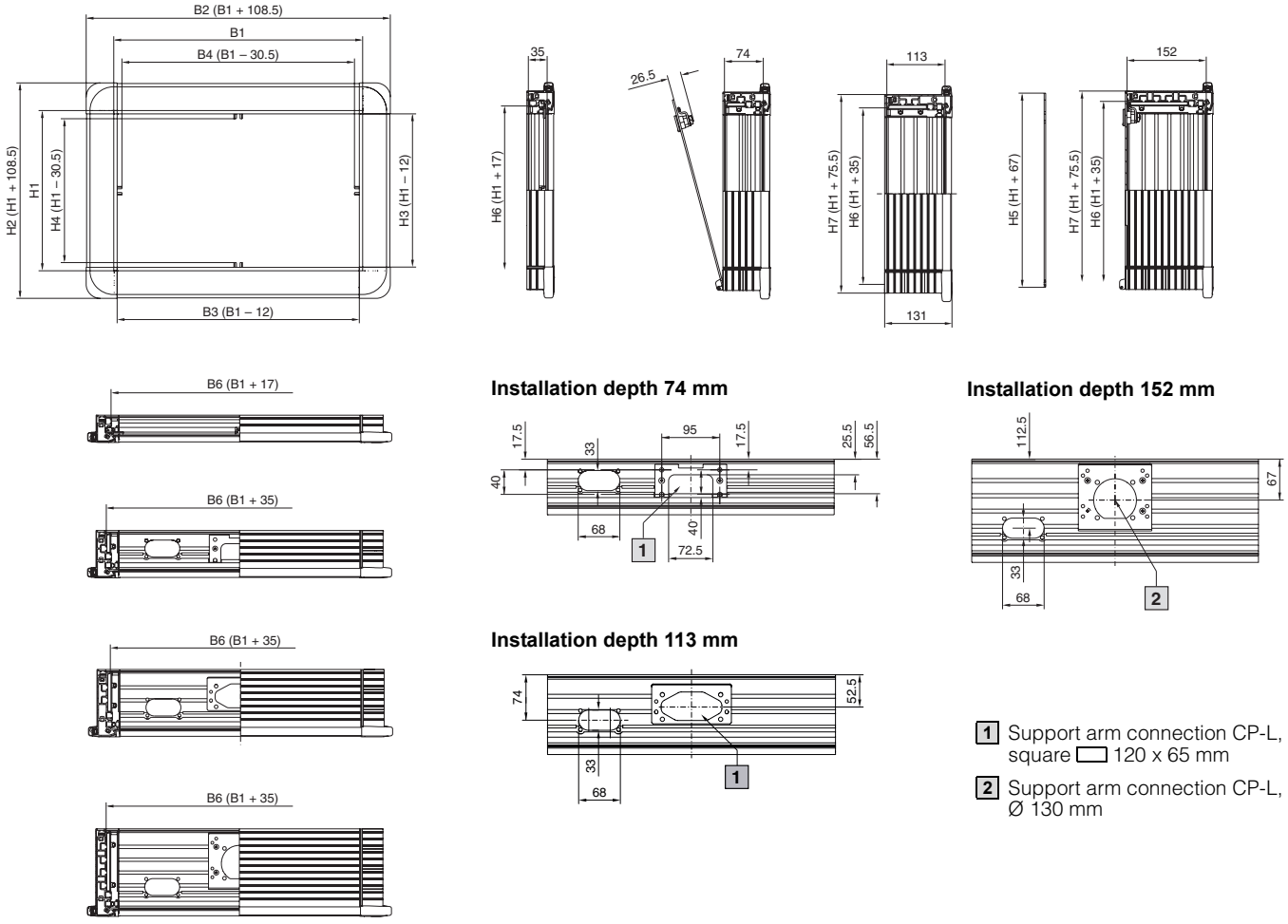


1 IW 6902.210

2 IW 6902.220 (mirror image)

1.4 Comfort Panel

Standard sizes Page 194/195/**2.1 Installation depth** Page 198



1 Support arm connection CP-L, square ▭ 120 x 65 mm

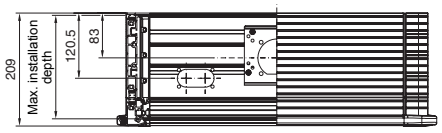
2 Support arm connection CP-L, Ø 130 mm

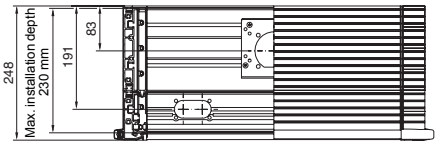
	Operating housing							Keyboard housing			
	Model No. CP							Model No. CP			
Support arm connection CP-L	▭ 120 x 65 mm		Ø 130 mm			▭ 120 x 65 mm		–	–	–	–
Top or bottom, rotate the enclosure	**6371.000**	**6371.220**	**6371.030**	**6371.060**	**6371.090**[2]	**6371.120**	**6371.150**	**6371.180**	**6371.200**	**6371.250**	**6371.270**
With cable tube cut-out at the top[1]	**6371.010**	**6371.230**	**6371.040**	**6371.070**	**6371.100**[2]	**6371.130**	**6371.160**	**6371.190**	**6371.210**	**6371.260**	**6371.280**
With cable tube cut-out at the bottom[1]	**6371.020**	**6371.240**	**6371.050**	**6371.080**	**6371.110**[2]	**6371.140**	**6371.170**	–	–	–	–
B1 = Width of front panel	482.6	482.6	482.6	482.6	482.6	430	482.6	482.6	482.6	482.6	482.6
H1 = Height of front panel	310.3	310.3	310.3	310.3	310.3	343	354.8	155	177	155	177
Max. installation depth	74	113	152	191	308	74	74	74	74	113	113
Overall depth	92	131	170	209	326	92	92	92	92	131	131
B2 = Overall width	591	591	591	591	591	538	591	591	591	591	591
B3 = Clearance width between enclosure sections	470.6	470.6	470.6	470.6	470.6	418	470.6	470.6	470.6	470.6	470.6
B4 = Clearance width between retaining claws of mounting kit[1]	452	452	452	452	452	399.4	452	452	452	452	452
B5 = Width of rear panel	550.1	550.1	550.1	550.1	550.1	497.5	550.1	550.1	550.1	550.1	550.1
B6 = Clearance width for assembly	517.6	517.6	517.6	517.6	517.6	465	517.6	517.6	517.6	517.6	517.6
B7 = Enclosure width	558.1	558.1	558.1	558.1	587.6	505.5	558.1	558.1	558.1	558.1	558.1
H2 = Overall height	419	419	419	419	419	452	464	264	286	264	286
H3 = Clearance height between enclosure sections	298.3	298.3	298.3	298.3	298.3	331	342.8	143	165	143	165
H4 = Clearance height between retaining claws of mounting kit[1]	279.7	279.7	279.7	279.7	279.7	312.4	324.2	124.4	146.4	124.4	146.4
H5 = Height of rear panel	377.9	377.9	377.9	377.9	377.9	410.5	422.3	222.5	244.5	222.5	244.5
H6 = Clearance height for assembly	345.3	345.3	345.3	345.3	345.3	378	389.8	190	212	190	212
H7 = Enclosure height	385.8	385.8	385.8	385.8	385.8	418.5	430.3	230.5	252.5	230.5	252.5

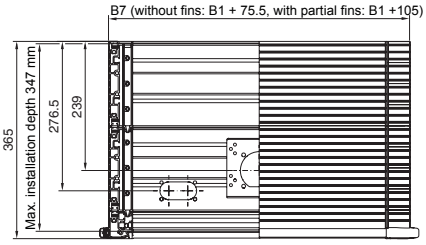
[1] Retaining claws for holes/bolts; installation of other retaining claws, see installation criteria on page 207.
[2] Enclosure version with fins at the sides.

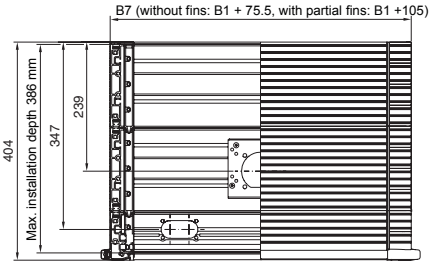
1.4 Comfort Panel

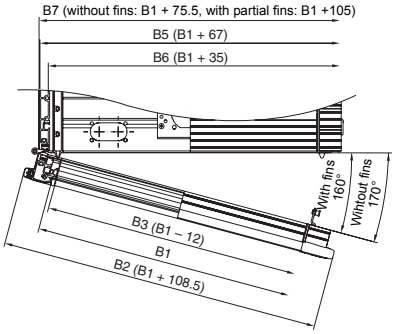
Standard sizes Page 194/195/**2.1 Installation depth** Page 198

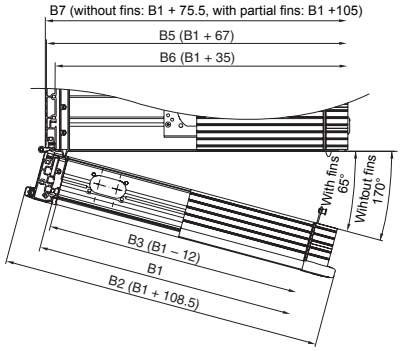


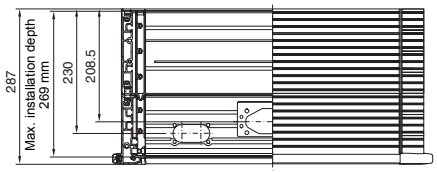


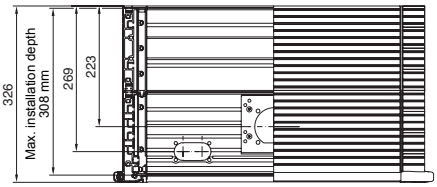


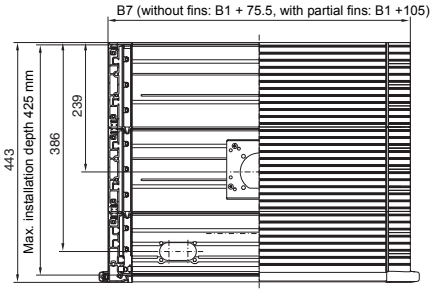


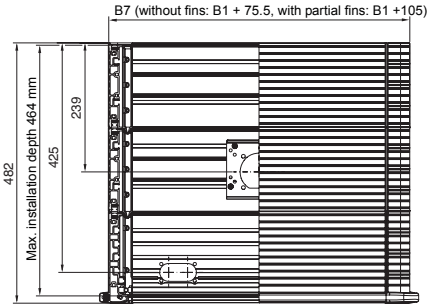


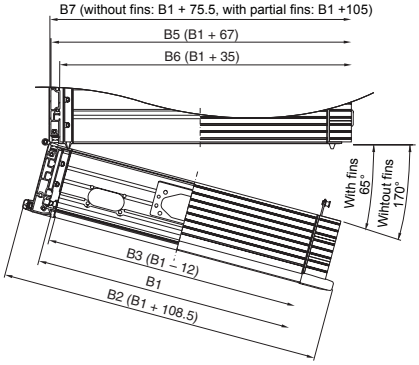


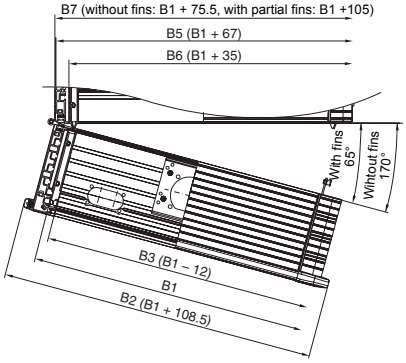




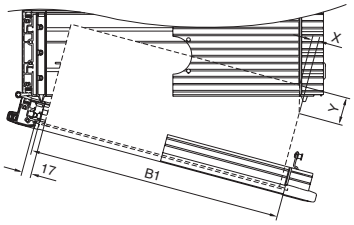








Calculating the swivel mounting space

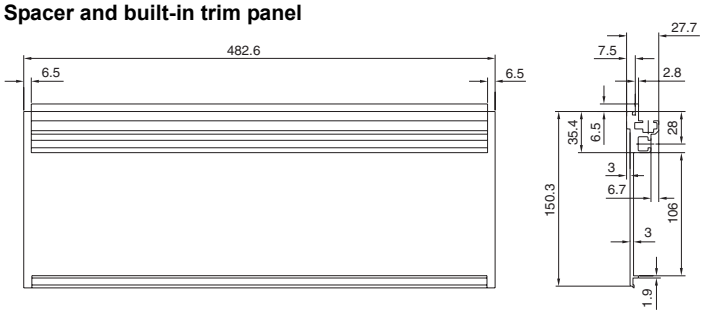


Front panel width (B1) mm	Installation depth mm			
	191, 230, 269, 308		347, 386, 425, 464	
	X	Y	X	Y
300	26	71	187	226
350	21	65	141	221
400	17	59	116	215
450	14	54	99	209
482.6	12	51	91	206
500	12	49	87	204
550	10	45	77	201
600	9	40	70	196
650	7	36	63	193
700	6	32	58	183

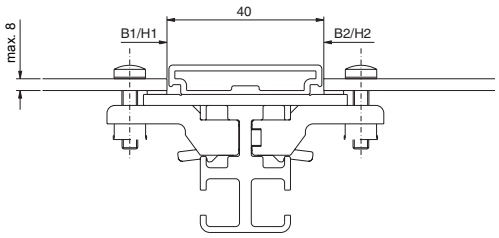
1.4 Comfort Panel

2.2 Front design Page 199

Spacer and built-in trim panel

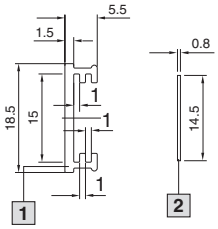


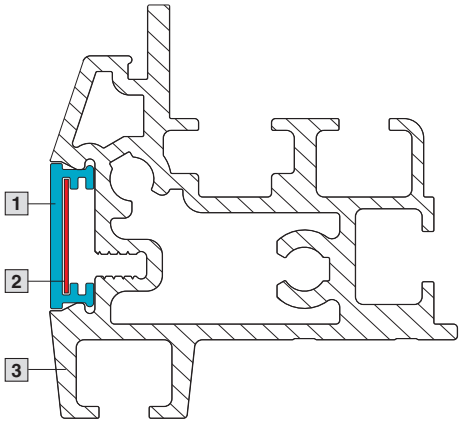
Cross member



1.4 Comfort Panel

2.4 Design strip Page 200





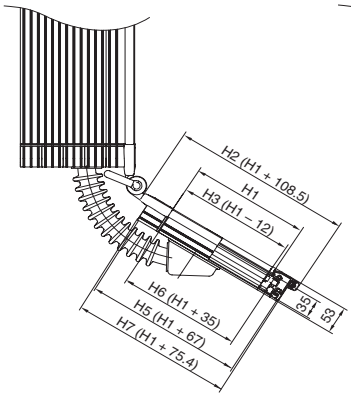
1 Design strip
2 Identification strips, max. 0.8 mm
3 Enclosure section

Dimensions of identification strips:
Front panel width/height – 16 mm

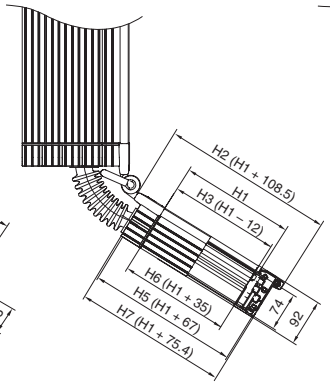
1.4 Comfort Panel

2.7 Keyboard housing Page 201

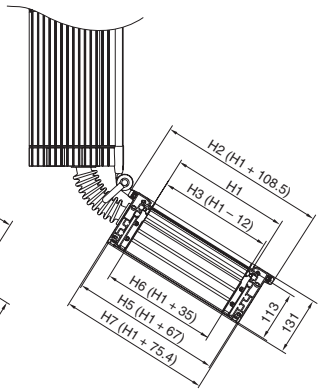
External mounting situation Keyboard housing 35 mm



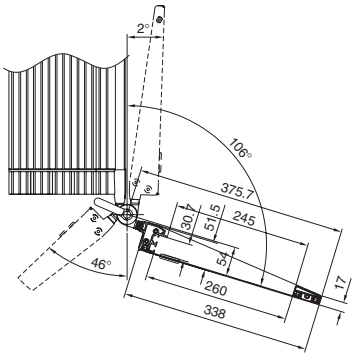
External mounting situation Keyboard housing 74 mm



External mounting situation Keyboard housing 113 mm

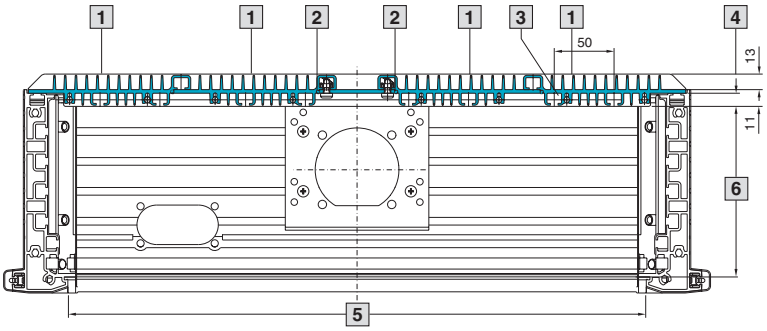


External mounting situation Support for keyboards



1.4 Comfort Panel

2.6 Rear wall Page 201



Recommendation:
The minimum front panel width for the installation of at least 2 heat sink sections is 240 mm and should not be undercut, if possible.

1 Rear cooling panel section, unless otherwise specified the cooling fins are arranged vertically.

2 Width compensating trim panel, fitted in the centre with an even number of heat sinks, or on the right with an uneven number. This position may be modified individually by rotating the entire rear panel through 180°.

3 Spring nut M5, CP 6108.000 for interior installation on screw channels.

4 The total depth of the enclosure is increased by 13 mm.

5 Front panel width for determining the cooling modules and compensating panel.

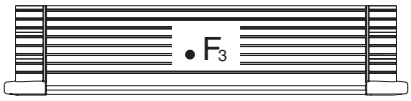
6 Installation depth is reduced by 11 mm.

1.4 Comfort Panel

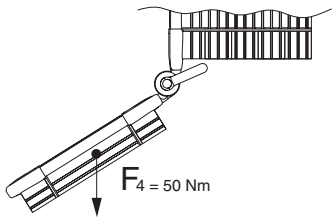
Load specifications for installed equipment

Design code number 2.1 Page 198

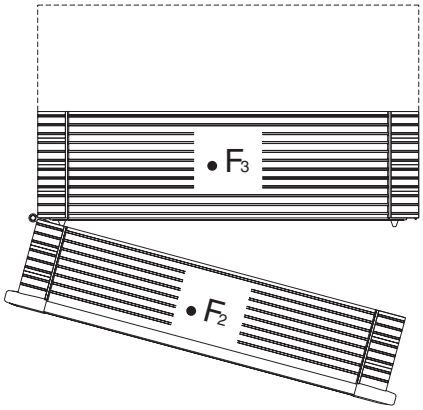
One-piece enclosure/screw-fastened
Installation depths:
A1, A2, A3, B1, B2, B3, B4, B5, B6, B7, B8
F1 = 500 N
F1 = F3



Keyboard housing



Multi-piece enclosure/hinged
Installation depths:
C1, C2, C3, C4, C5, C6, C7, C8
F2 = 150 N
F2 = 100 N when mounting keyboard housing
F3 = 350 N
F1 = 500 N



Key:
F1 = Overall installed weight (N)
F2 = Permissible installed weight, hinged part (N)
F3 = Permissible installed weight of enclosure frame with support arm connection (N)
F4 = Permissible installed weight of keyboard housing (N)

1.4 Comfort Panel

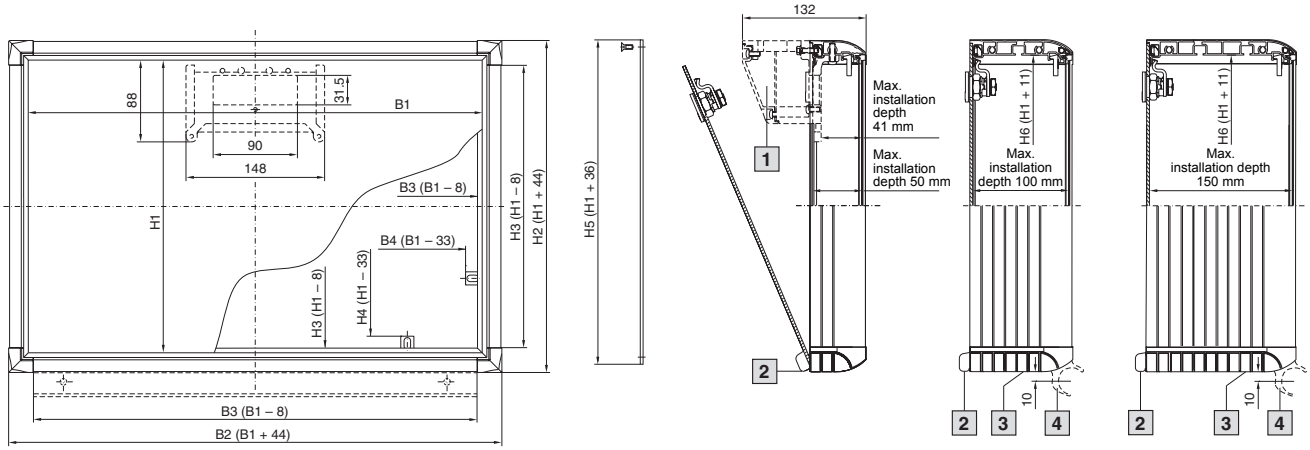
Minimum front panel width (B1)

Depending on:
- Installation depth of the operating housing
- With or without keyboard housing
- Position of the support arm connection

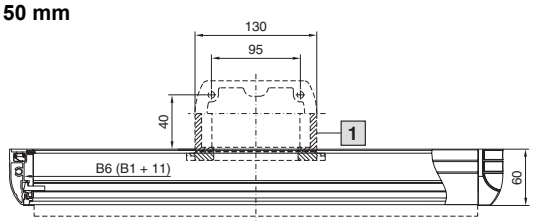
Design		Installation depths, command panels mm				
Keyboard housing (see design code number 2.7, page 201).	Support arm and pedestal connection (see design code number 2.5, page 200).	74	113	152	191, 308, 347, 269	230, 386, 464, 425
0 = without keyboard housing	0 to 6 top or bottom	150				
with 1, 2 or 5	0, 1 or 4	200				
	with 2, 3, 5 or 6	335				200
with 2A or 5A	2 or 5	335				200
	0, 1 or 4	200				
0 = without keyboard housing	4A, 5A, 6A	–		250	250[1)]	250
with 1, 2 or 5	4A	–		440	440[1)]	440
0, 1, 2, 5	4B, 5B, 6B	–		460	460[1)]	460
with 3	0 to 6 top or bottom	335				
with 4		385				

1.4 Optipanel

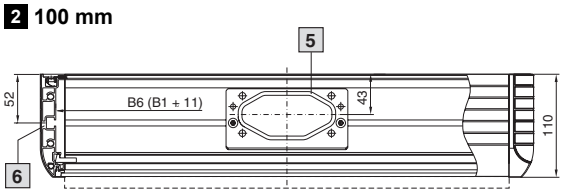
2.1 Installation depth Page 207



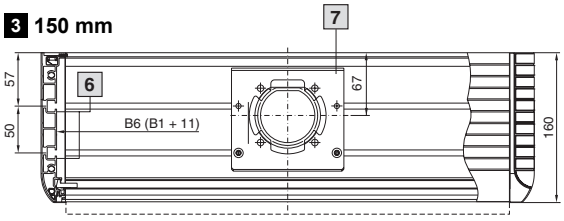
1 50 mm



2 100 mm



3 150 mm



1 When preparing for rear support arm connection CP-L, ▭ 120 x 65 mm
2 Hinge
3 Cable tube
4 When preparing for keyboard housings
5 Prepared for CP-L, ▭ 120 x 65 mm
6 Channels for inserting the spring nuts M5
7 Prepared for CP-L, Ø 130 mm

Width dimensions:

B1 = Width of the front panel
B2 = Overall width
B3 = Clearance width between enclosure sections
B4 = Clearance width between the retaining claws of the mounting kit
B5 = Width of rear panel (B1 + 36)
B6 = Clearance width for assembly

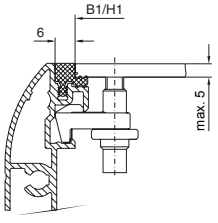
Height dimensions:

H1 = Height of the front panel
H2 = Overall height
H3 = Clearance height between enclosure sections
H4 = Clearance height between the retaining claws of the mounting kit
H5 = Height of rear panel
H6 = Clearance height for assembly

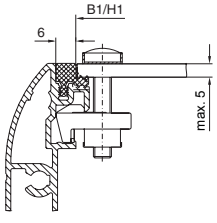
1.4 Optipanel

2.2 Front design Page 208

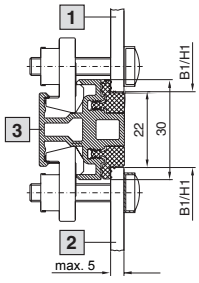
Front panel screw-fastened from the inside



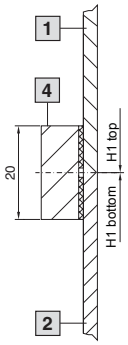
Front panel screw-fastened from the outside



Cross member



Sealing bar

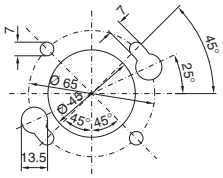


1 Front panel 1
2 Front panel 2
3 Cross member
4 Sealing bar

1.4 Optipanel/Command Panel VIP 6000

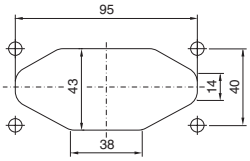
2.3/3.6 Support arm/wall and pedestal connection Page 209/220

CP-S
For installation depths 100/150 mm



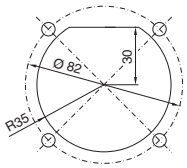
External mounting of support arm components, see page 241.

CP-L ▭ 120 x 65 mm
For installation depth 100 mm



External mounting of support arm components, see page 241.

CP-L, Ø 130 mm
For installation depth 150 mm

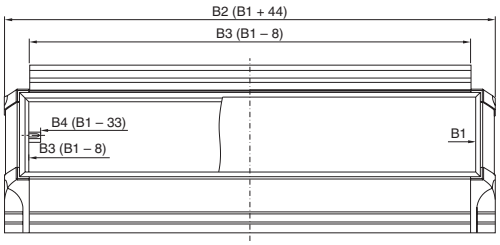


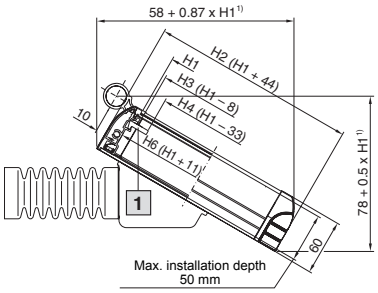
External mounting of support arm components, see page 241.

1.4 Optipanel

2.5 Keyboard housing Page 211

1 Installation depth 50 mm

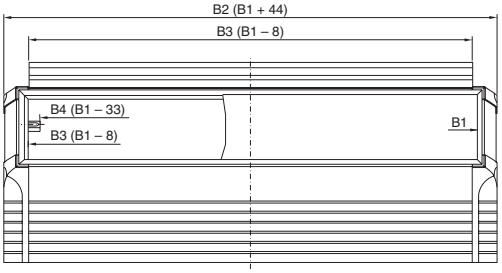


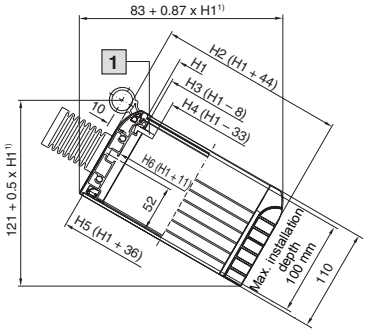


1 CP 6053.XXX: M5
CP 6058.XXX: M4

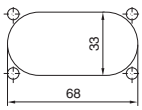
1) Applies to a tilting angle of 30° to the horizontal.

2 Installation depth 100 mm



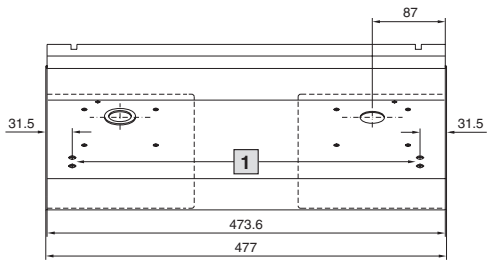


Cross-section, cable tube connection

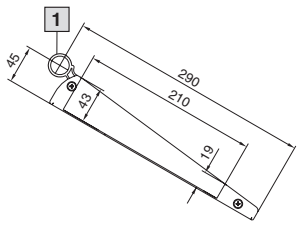


3 Support for keyboards

Front frame, narrow and combined with cable entry grommet

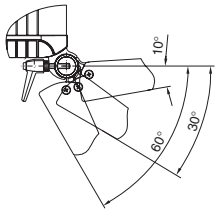


1 Prepared for the support for mousepad, vertically hinged SM 2383.020



1 Hinged frame connector

Rotation range



Width dimensions:

B1 = Width of the front panel
B2 = Overall width
B3 = Clearance width between enclosure sections
B4 = Clearance width between the retaining claws of the mounting kit
B5 = Width of rear panel (B1 + 36)
B6 = Clearance width for assembly

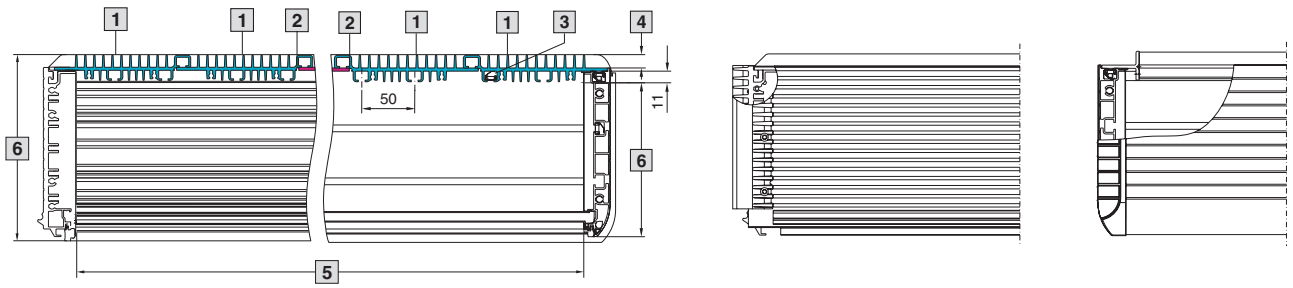
Height dimensions:

H1 = Height of the front panel
H2 = Overall height
H3 = Clearance height between enclosure sections
H4 = Clearance height between the retaining claws of the mounting kit
H5 = Height of rear panel
H6 = Clearance height for assembly

1.4 Optipanel/Command Panel VIP 6000

Rear cooling panel Page 210/221

VIP 6000 **Optipanel** **VIP 6000** **Optipanel**



1 Rear cooling panel section, unless otherwise specified the cooling fins are arranged vertically.

2 Width compensating trim panel, fitted in the centre with an even number of heat sinks, or on the right with an uneven number. This position may be modified individually by rotating the entire rear panel through 180°.

3 Spring nut M5, CP 6108.000 for interior installation on screw channels.

4 The total depth of the enclosure is increased by 13 mm.

5 Front panel width for determining the cooling modules and compensating panel.

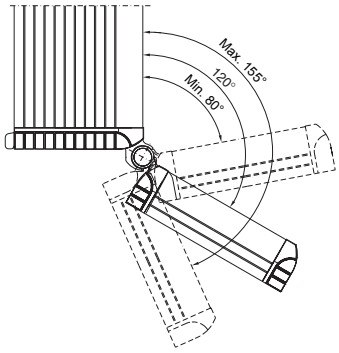
6 Installation depth is reduced by 11 mm.

Recommendation:
The minimum front panel width for the installation of at least 2 heat sink sections is 240 mm and should not be undercut, if possible.

1.4 Optipanel

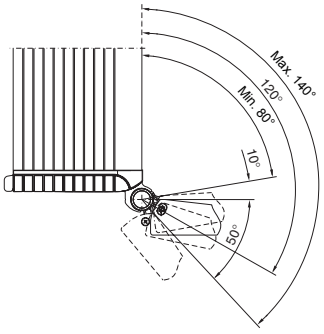
Keyboard housing connection Page 211

1 2 Frame hinge connector with Optipanel keyboard housing



Tilting angle infinitely ajustable from 80° to 155°.

3 Frame hinge connector with support for keyboards



Tilting angle infinitely ajustable from 80° to 140°.

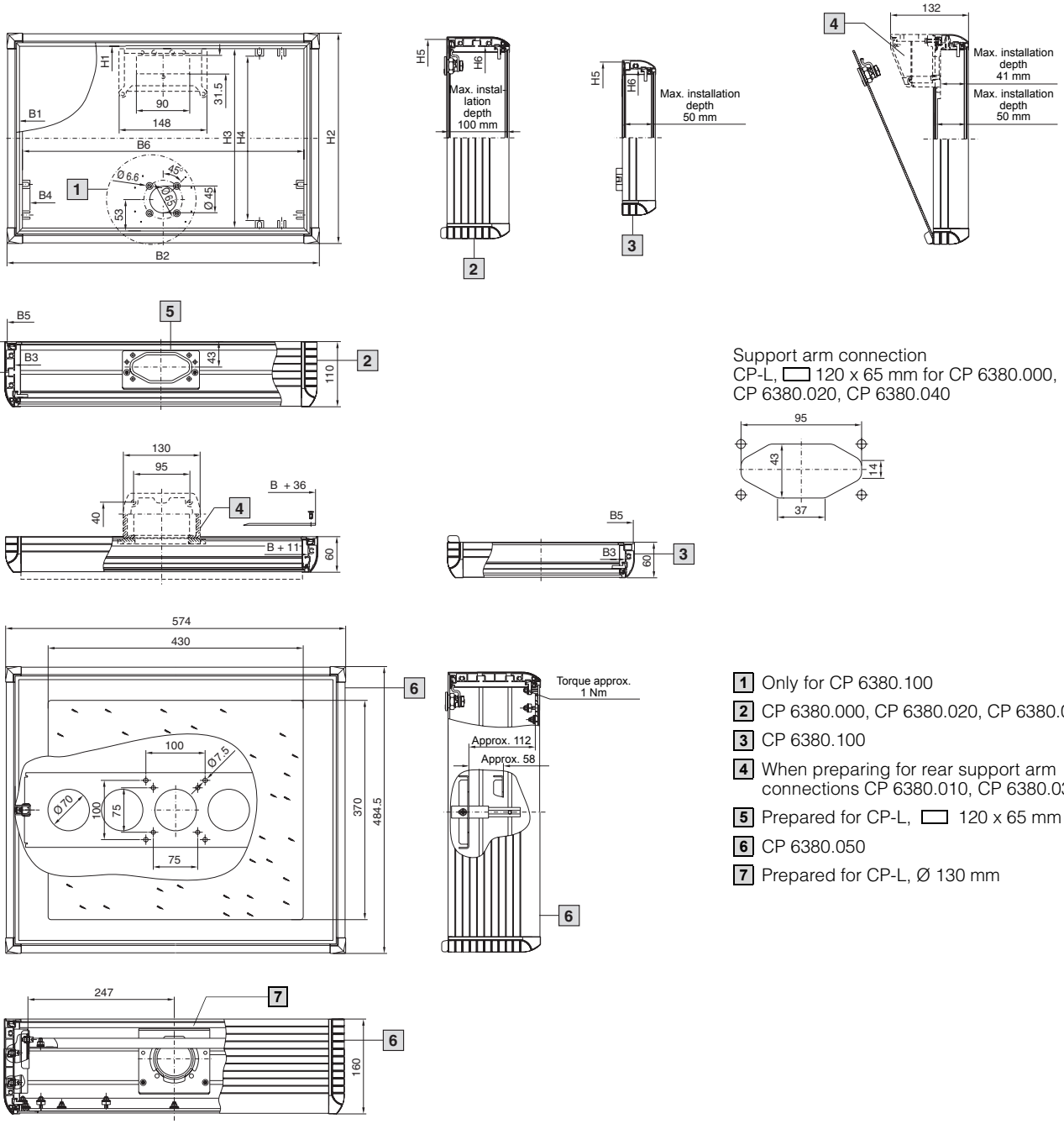
Minimum front panel width (B1):
Depending on the
- Installation depth of the operating housing
- With or without keyboard housing
- Position of the support arm connection

Design		Installation depths of operating housings mm		
Keyboard housing (see design code number 2.5, page 211)	Support arm, wall and pedestal connection (see design code number 2.3, page 209)	50	100	150
		Minimum front panel width mm		
0 without	0 to 8 top, bottom or rear	160 (265)	150	150
1 and 2 with	1, 4, 7, 8	–		
	2, 3, 5, 6	–	339[1)]	339[1)]
1 and 2 with	4A, 5A, 6A	–	–	244
1 and 2 with	4B, 5B, 6B	–	–	432
with 3	0 to 8 top, bottom or rear	–	320	320
with 4	0 to 8 top, bottom or rear	–	405	–

() Figures in brackets:
Only with the combination hinged rear panel (see page 210)
Version 2 and 4 with connection at rear (see page 209) Version 7 and 8.
[1)] If these values are not met, each individual requirement can be examined, and it is often possible to find a special solution (such as an off-centre support arm connection)!

1.4 Optipanel

Standard sizes and for desktop TFT up to 20.1″ Page 205



Support arm connection
CP-L, ▭ 120 x 65 mm for CP 6380.000, CP 6380.020, CP 6380.040

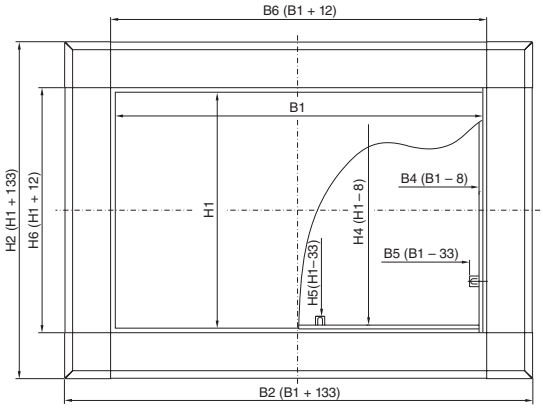
1 Only for CP 6380.100
2 CP 6380.000, CP 6380.020, CP 6380.040
3 CP 6380.100
4 When preparing for rear support arm connections CP 6380.010, CP 6380.030
5 Prepared for CP-L, ▭ 120 x 65 mm
6 CP 6380.050
7 Prepared for CP-L, Ø 130 mm

Model No. CP	6380.100	6380.000	6380.010	6380.020	6380.030	6380.040
B1 = Width of front panel mm	270	482.6	430	430	482.6	482.6
H1 = Height of front panel mm	234	310.3	343	343	354.8	354.8
Max. installation depth mm	50	100	50	100	50	100
Overall depth mm	60	110	60	110	60	110
B2 = Overall width mm	314	527	475	475	527	527
B3 = Clearance width between enclosure sections mm	281	494	441	441	494	494
B4 = Clearance width between the retaining claws of the mounting kit mm	237	450	397	397	450	450
B5 = Width of rear panel mm	306	519	466	466	519	519
B6 = Clearance width for assembly mm	262	475	422	422	475	475
H2 = Overall height mm	278	354	387	387	399	399
H3 = Clearance height between enclosure sections mm	245	321	354	354	365	365
H4 = Clearance height between the retaining claws of the mounting kit mm	201	277	310	310	321	321
H5 = Height of rear panel mm	270	346	379	379	391	391
H6 = Clearance height for assembly mm	226	302	335	335	347	347

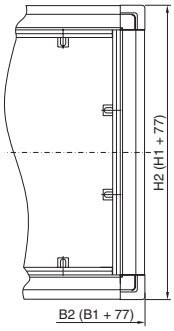
1.4 Command Panel VIP 6000

3.1 Installation depth Page 217

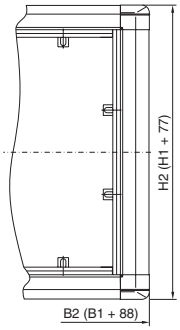
Front frame, wide



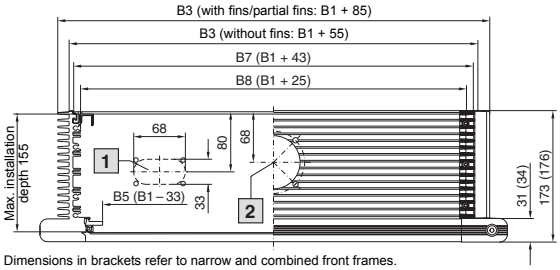
Narrow



Combined



1 155 mm



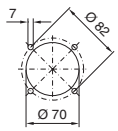
Dimensions in brackets refer to narrow and combined front frames.

1 Cross section of the cable duct

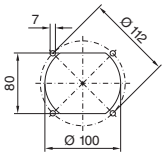
2 Support arm cut-out for CP-L system, Ø 130 mm

Support arm connections

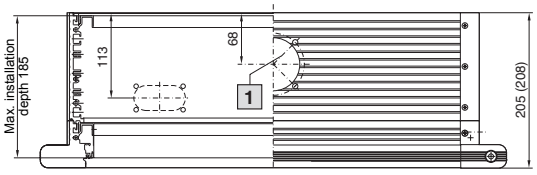
CP-L, Ø 130 mm



CP-XL



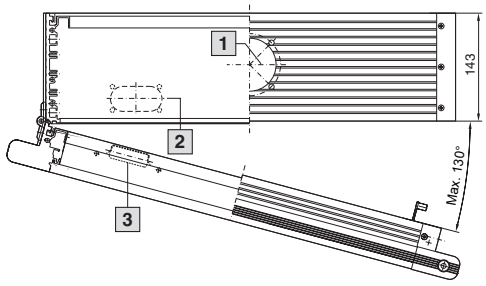
2 185 mm, screw-fastened



Dimensions in brackets refer to narrow and combined front frames.

1 Support arm connection for system Ø 130 mm

3 185 mm, hinged



1 Support arm cut-out for CP-L system, Ø 130 mm

2 Only for CP 6392.109, CP 6392.209

3 Only for CP 6392.009

Width dimensions:

B1 = Width of the front panel

B2 = Overall width

B3 = Enclosure width

B4 = Clearance width between enclosure sections

B5 = Clearance width between the retaining claws of the mounting kit

B6 = Clearance width between the front frames

B7 = Width of the rear panel

B8 = Internal clearance of enclosure, width

Height dimensions:

H1 = Height of the front panel

H2 = Overall height

H3 = Enclosure height (with fins: H1 + 85; without fins: H1 + 55)

H4 = Clearance height between enclosure sections

H5 = Clearance height between retaining claws

H6 = Clearance height between front frames

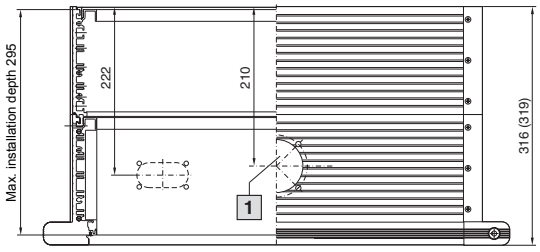
H7 = Height of the rear panel (H1 + 43)

H8 = Internal clearance of enclosure height (H1 + 25)

1.4 Command Panel VIP 6000

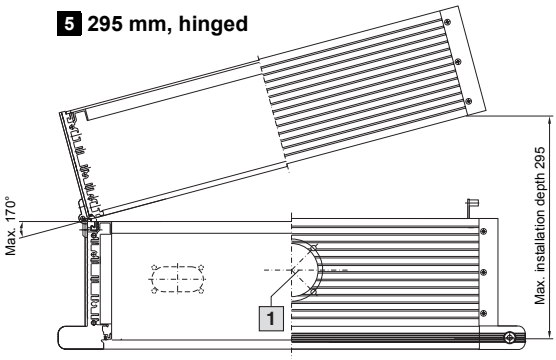
3.1 Installation depth Page 217

4 295 mm, screw-fastened

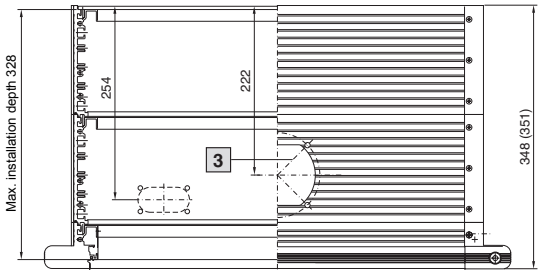


Dimensions in brackets refer to narrow and combined front frames.

5 295 mm, hinged

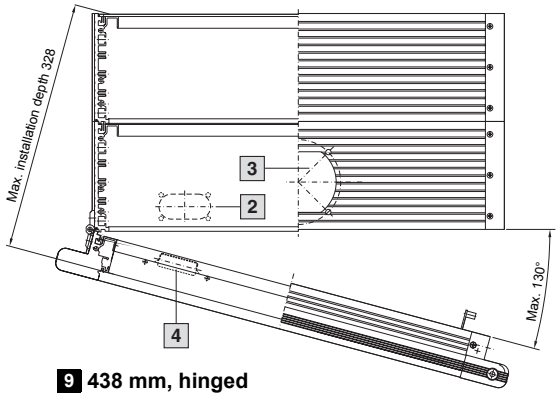


6 328 mm, screw-fastened

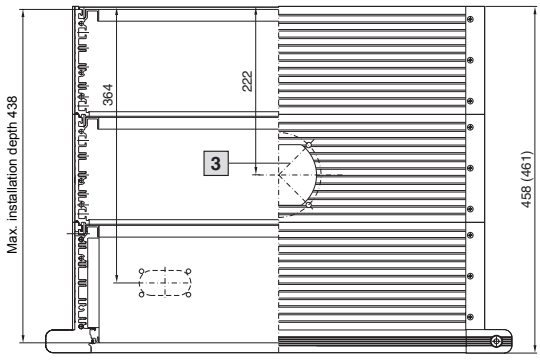


Dimensions in brackets refer to narrow and combined front frames.

7 328 mm, hinged

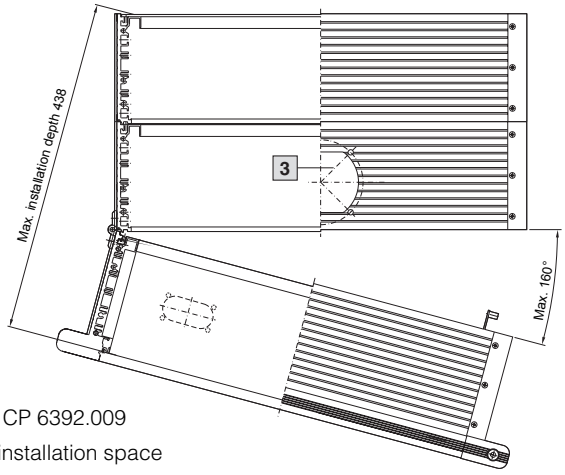


8 438 mm, screw-fastened



Dimensions in brackets refer to narrow and combined front frames.

9 438 mm, hinged



1 Support arm cut-out for CP-L system, Ø 130 mm

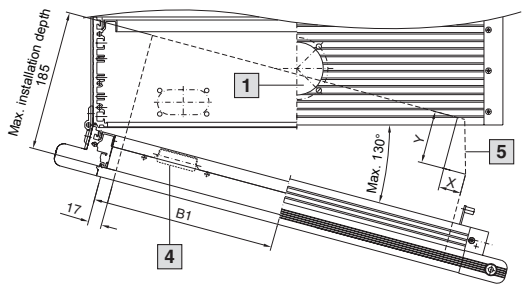
2 Only for CP 6392.109 and CP 6392.209

3 Support arm connection for system CP-XL, CP-Q

4 Only for CP 6392.009

5 Limit of installation space

Calculating the swivel mounting space

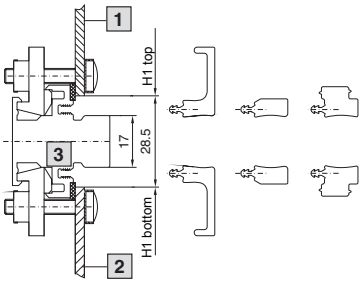


Front panel width (B1) mm	Installation depth mm			
	185, 295		328, 438	
	X	Y	X	Y
300	31	91	154	235
350	27	85	122	227
400	24	78	101	220
450	22	72	88	214
482.6	21	69	82	210
500	20	67	78	208
550	18	61	71	204
600	17	56	65	199
650	16	51	59	195
700	15	47	55	191

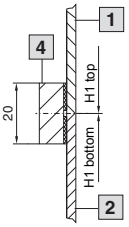
1.4 Command Panel VIP 6000

3.2 Front design Page 218

1 3 5 Cross member



2 4 5 Sealing bar



1 Front panel 1
2 Front panel 2
3 Cross member
4 Sealing bar

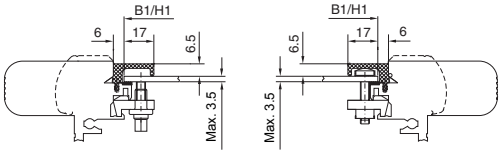
Minimum front panel width (B1)
Depending on the
- Installation depth of the operating housing
- Connection between the operating housing/keyboard housing
- Position of the support arm connection

Dimensions in mm		Installation depth of operating housing (see page 217)				
		155	185	295	328	438
Preparations for mounting keyboard housings (see design code no. 3.7, page 220)	Support arm/wall and pedestal connection (see design code no. 3.6, page 220)	1	2 Screw-fastened 3 Hinged	4 Screw-fastened 5 Hinged	6 Screw-fastened 7 Hinged	8 Screw-fastened 9 Hinged
0 None	**0** to **3** top or bottom	Minimum front panel width				
		169	265	169	265	265
1 frame connector or **4** frame hinge connector	**1** top	169	265	169	265	
	2 and **3** bottom	339[1)]	445[1)]	339[1)]	445[1)]	
2 enclosure duct connector	**1** top	189	265	189	265	
	2 and **3** bottom	339	445	339	445	
3 enclosure bar connector	**1** top	169	265	169	265	
	2 and **3** bottom	397[1)]	445[1)]	397[1)]	445[1)]	

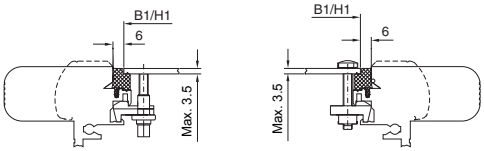
[1)] Smaller front panel widths for asymmetrical support arm connection available on request.

3.4 Trim types page 219

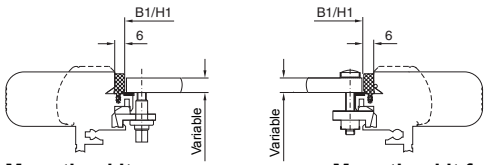
1 Cover trim
Front panel recessed, screws concealed



3 Spacer trim
Front panel flush



2 End trim
Front panel recessed



Mounting kit for threaded bolts:
M5: CP 6053.500
M4: CP 6058.500

Mounting kit for screw clamp:
CP 6053.210, CP 6053.220

Mounting kits,
see page 1121.

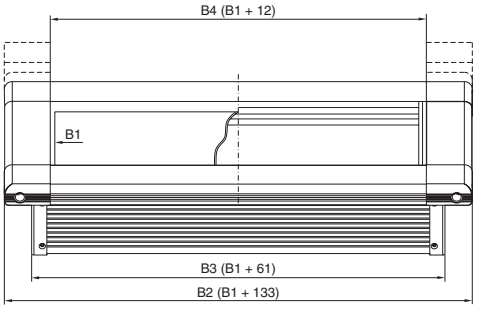
Mounting kit for holes:
M5: CP 6053.000
M4: CP 6058.000
M6: CP 6053.000/6058.000
+ EL 2092.200
+ screws M6 x 25

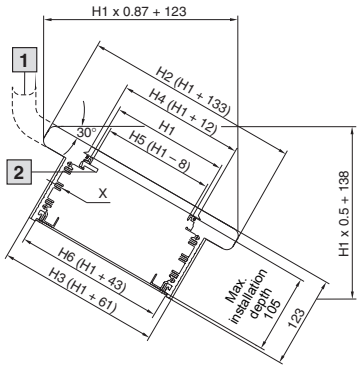
1.4 Command Panel VIP 6000

4.1 Keyboard housing Page 223

1 Installation depth 105 mm

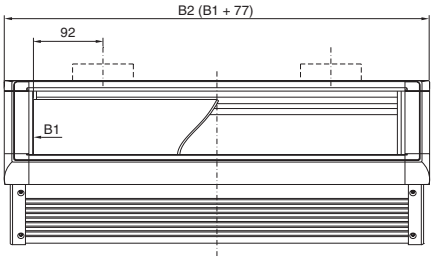
Front frame
Wide

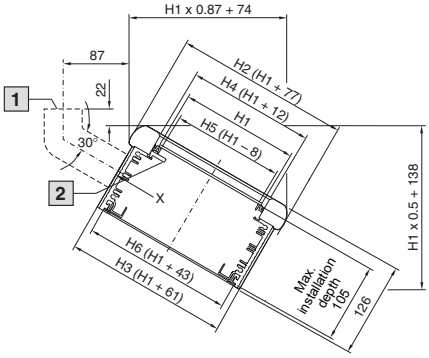




1 Frame connector, rigid/adjustable
2 CP 6058.XXX: M4
CP 6053.XXX: M5

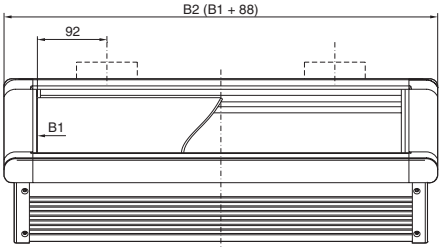
Narrow

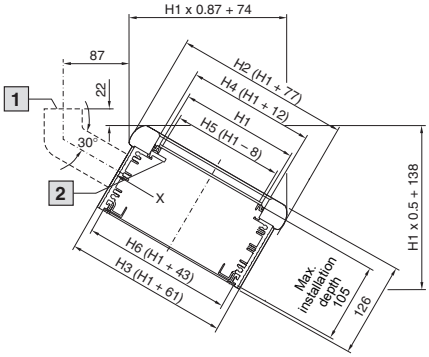




1 Enclosure duct connector
2 CP 6058.XXX: M4
CP 6053.XXX: M5

Combined





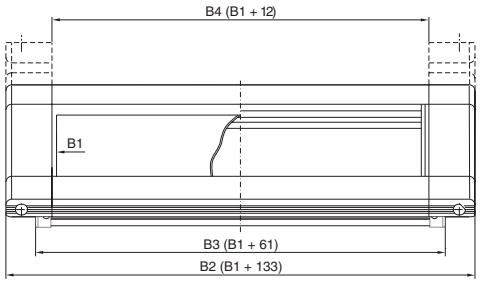
1 Enclosure duct connector
2 CP 6058.XXX: M4
CP 6053.XXX: M5

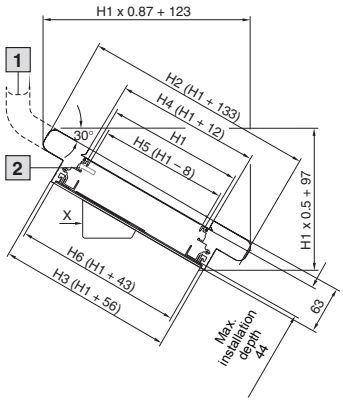
1.4 Command Panel VIP 6000

4.1 Keyboard housing Page 223

2 Installation depth 44 mm

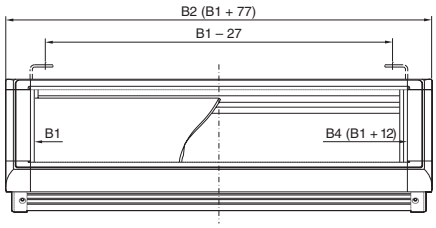
Front frame
Wide

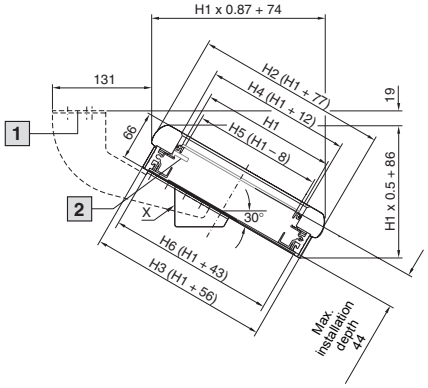




1 Frame connector, rigid/adjustable
2 CP 6058.XXX: M4
CP 6053.XXX: M5

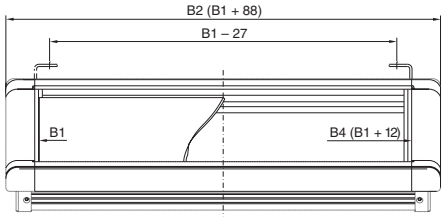
Narrow

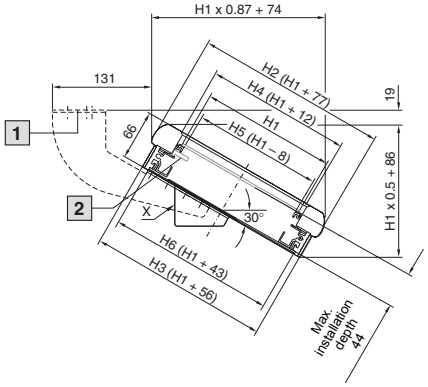




1 Enclosure bar connector
2 CP 6058.XXX: M4
CP 6053.XXX: M5

Combined





1 Enclosure bar connector
2 CP 6058.XXX: M4
CP 6053.XXX: M5

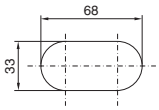
Width dimensions:

B1 = Width of front panel
B2 = Overall width
B3 = Enclosure width
B4 = Clearance width between the front frames
B6 = Width of rear panel
B7 = Distance between rear panel holes, width

Height dimensions:

H1 = Height of the front panel
H2 = Overall height
H3 = Enclosure height
H4 = Clearance height between front frames
H5 = Clearance height between enclosure sections
H6 = Height of rear panel
H7 = Distance between rear panel holes, width

X = Cross-section of cable tube connection

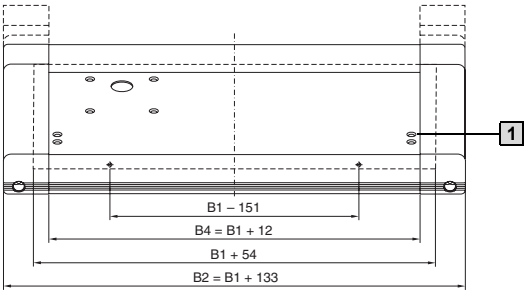


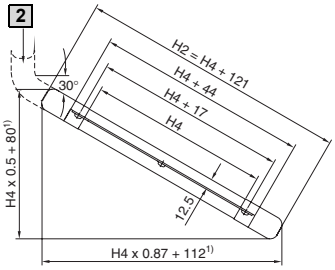
1.4 Command Panel VIP 6000

4.1 Keyboard housing Page 223

3 Support for keyboards

Front frame, wide
with cable entry grommet





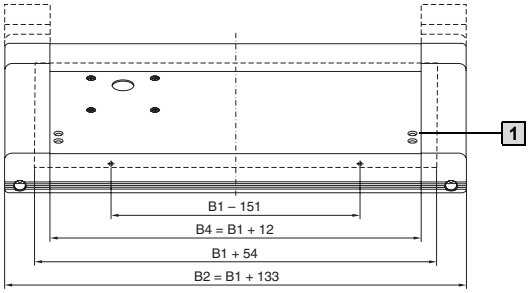
1 Prepared for SM 2383.020

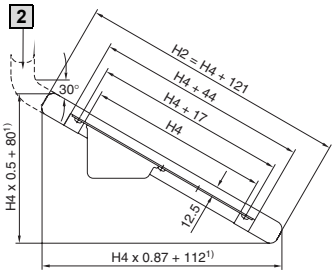
2 Frame connector, rigid/adjustable

1) Applies to an angle of 30° from the horizontal

4 Support for keyboards

Front frame, wide
for cable tube, flexible





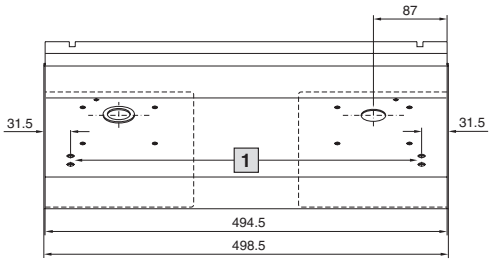
1 Prepared for SM 2383.020

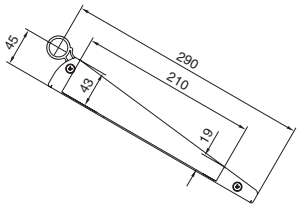
2 Frame connector, rigid/adjustable

1) Applies to an angle of 30° from the horizontal

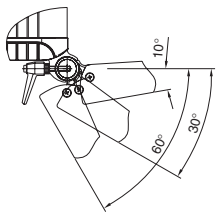
5 Support for keyboards

Front frame, narrow and combined
with cable entry grommet





Swivel area
VIP 6000/Optipanel



1 Prepared for the support for mousepad, vertically hinged SM 2383.020

Width dimensions:

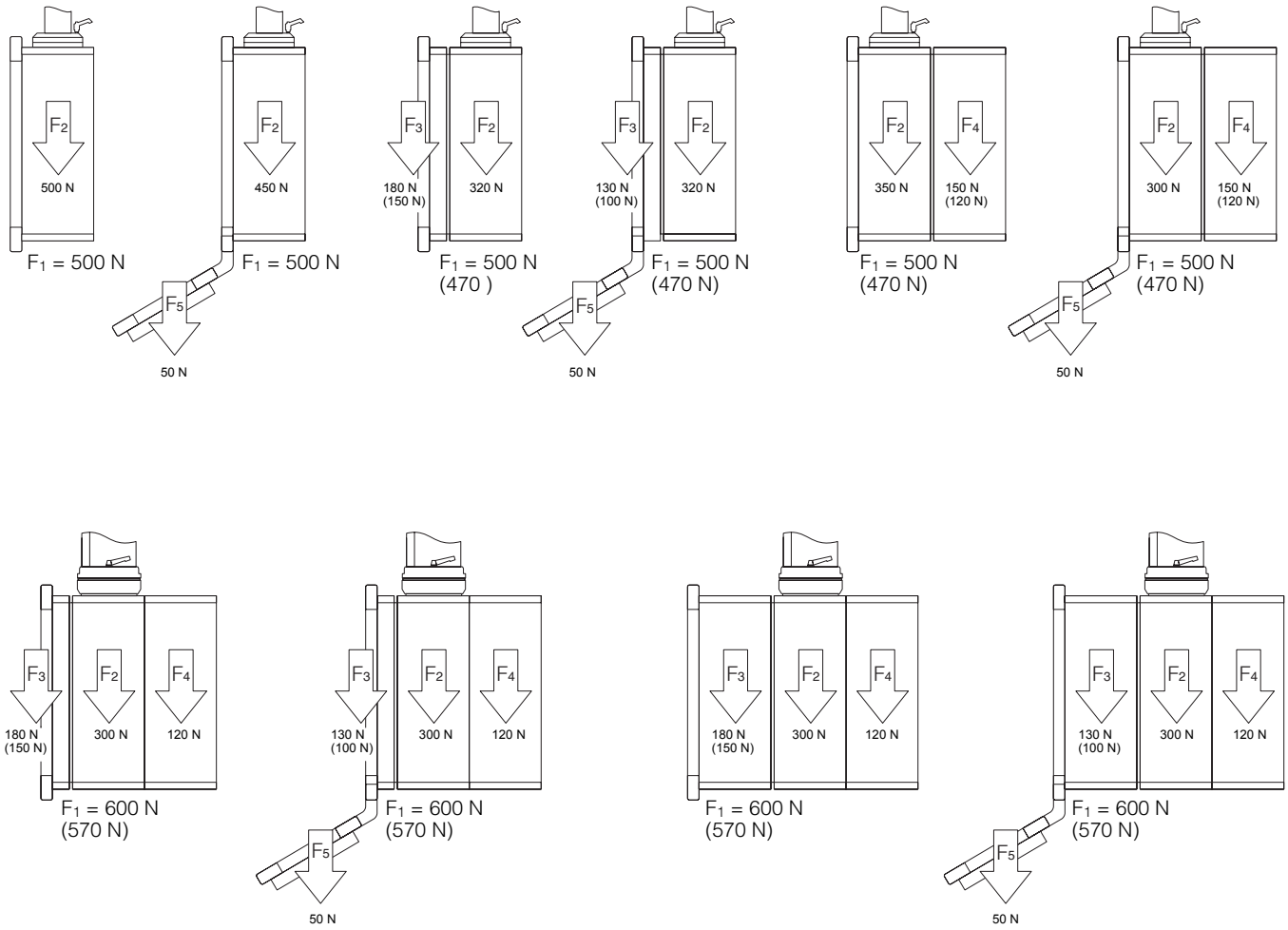
B1 = Width of the front panel
B2 = Overall width
B3 = Enclosure width
B4 = Clearance width between the front frames
B6 = Width of the rear panel
B7 = Distance between rear panel holes, width

Height dimensions:

H1 = Height of the front panel
H2 = Overall height
H3 = Enclosure height
H4 = Clearance height between front frames
H5 = Clearance height between enclosure sections
H6 = Height of rear panel
H7 = Distance between rear panel holes, width

1.4 Command Panel VIP 6000

Load specifications for installed equipment



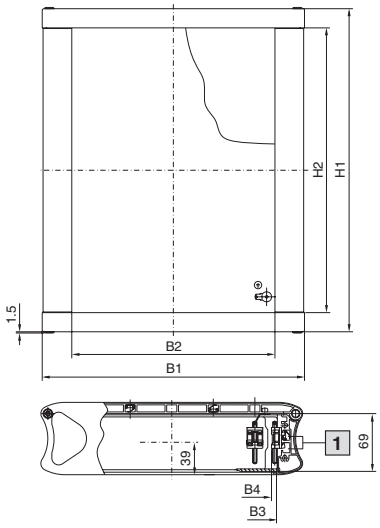
Permissible installed weight

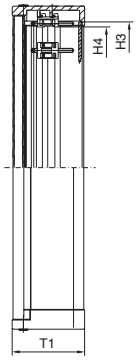
F_1 = Total
F_2 = Enclosure part (with support arm connection)
F_3 = Front part
F_4 = Rear part
F_5 = Keyboard housing

Figures in brackets are for hinged version (see 3.1 installation depth, page 217).
Enclosures for larger weights available on request.

1.4 Compact Panel

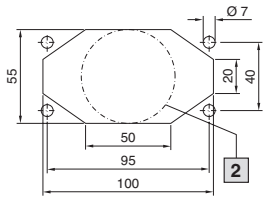
Page 231



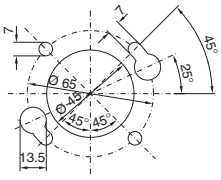


Mounting cut-out for support arm connections

CP-L, ▭ 120 x 65 mm



CP-S



1 Channels for M5 spring nuts

2 Alternative max. Ø 55 mm

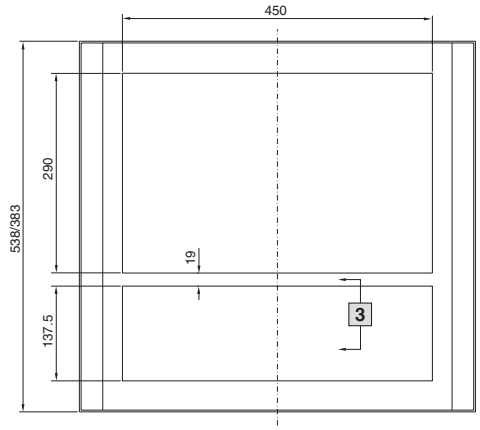
Model No. CP (with support arm connection CP-S)	**6340.000**	**6340.100**	**6340.200**[1)]	**6340.300**	**6340.400**
Model No. CP[1)] (with support arm connection CP-L, ▭ 120 x 65 mm)	**6340.010**	**6340.110**	**6340.210**	**6340.310**	**6340.410**
Model No. CP[1)] (without support arm connection)	**6340.020**	**6340.120**	**6340.220**	**6340.320**	**6340.420**
Width (B1) mm	241	241	241	315	315
Height (H1) mm	238	388	521	238	388
Depth (T1) mm	87	87	87	87	87
B2 = Enclosure clearance width	170	170	170	244	244
B3 = Front panel width	178	178	178/4 U	252	252
B4 = Clearance width between screw clamps	164	164	164	238	238
H2 = Enclosure clearance height	192	342	475	192	342
H3 = Front panel height	200	350	482.6/19″	200	350
H4 = Clearance height between screw clamps	186	336	469	186	336

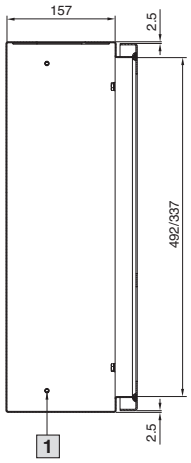
[1)] Extended delivery times.

1.4 Quickline panel

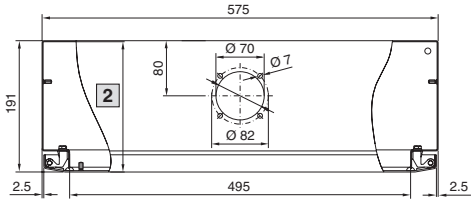
Page 232

CP 6691.500/CP 6690.500





CP 6690.500



1 Welded stud for the attachment of mounting bracket CP 6205.100

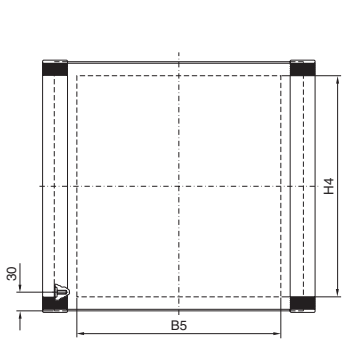
2 Max. installation depth 185 mm

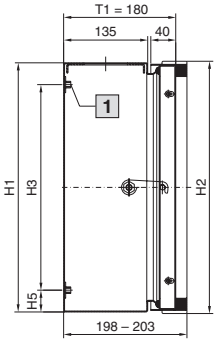
3 Does not apply to CP 6690.500

Operating housings

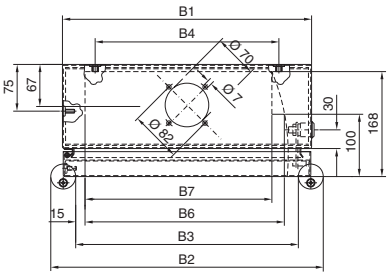
1.4 Command Panles with door

based on AE Page 233





Top view

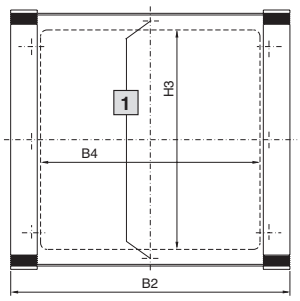


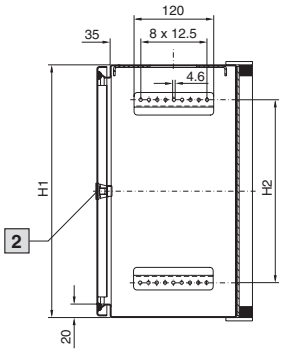
1 Welded nut M6 (6534.000 only)/M8 for the attachment of mounting plates or support rails

Model No. CP	1	6534.000	6535.000	6537.000	6536.000	6538.000	6544.000
Width (B1) mm	Packs of	300	300	300	400	400	500
Height (H1) mm		200	300	400	300	400	500
Depth (T1) mm		180	180	180	180	180	180
B2 = Enclosure width with handle strips		338	338	338	438	438	538
B3 = Clearance opening, front between handle strips		258	258	258	358	358	458
B4 = Spacing of mounting plate attachment		260	215	215	295	295	410
B5 = Max. front cut-out, width		227	227	227	327	327	427
B6 = Hinged width for depth 100 mm		220	220	220	320	320	420
B7 = Hinged width for depth 168 mm		200	200	200	300	300	400
H2 = Enclosure height with handle strips		205	305	405	305	405	505
H3 = Spacing of mounting plate attachment		122	250	350	250	330	445
H4 = Max. front cut-out, height		155	255	355	255	355	455
H5 = Distance from base – mounting plate attachment		39	25	25	25	35	27.5

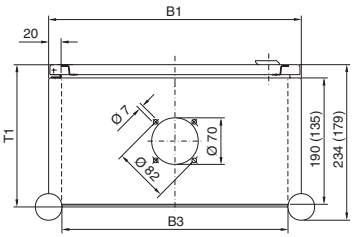
1.4 Command Panels

based on AE Page 234





Top view



1 Only for CP 6532.200, CP 6533.200

2 For CP 6532.200 2 cams

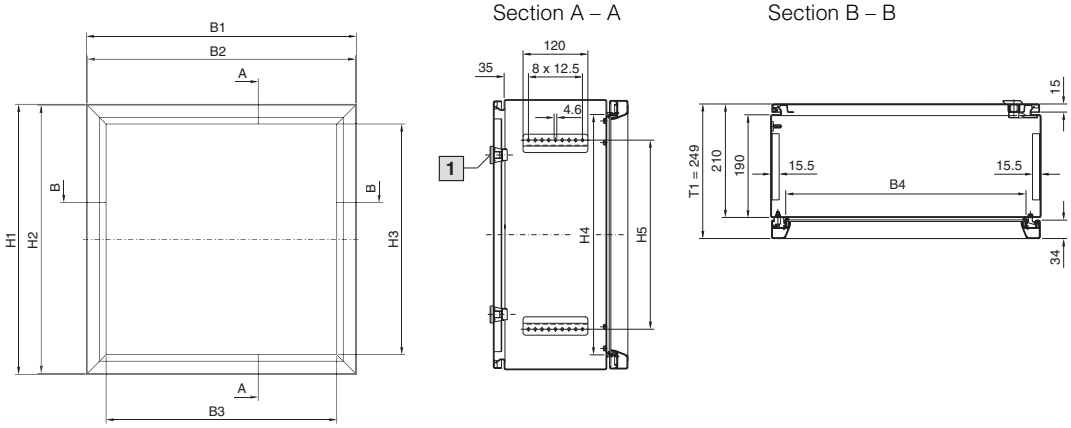
Note:
Dimensions in brackets for CP 6540.200.

Model No. CP	1	6540.200[1)]	6531.200	6530.200	6532.200	6533.200
Width (B1) mm	Packs of	300	380	380	500	600
Height (H1) mm		200	300	380	500	380
Depth (T1) mm		155	210	210	210	210
B2 = Enclosure width with handle strips		340	420	420	540	640
B3 = Clearance opening, front		260	340	340	460	560
B4 = Cut-out, in enclosure		250	330	330	450	550
H2 = Hole distance of side mounting angles		75	175	275	375	275
H3 = Cut-out, in enclosure		150	250	330	450	330

[1)] Support arm connection and door hinge at the bottom.

1.4 Command Panels

based on AE with display panel front Page 235



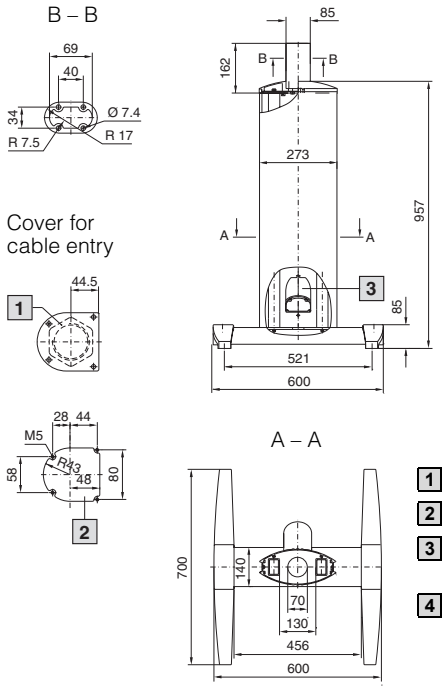
1 For CP 6442.500 only 1 cam in the centre

Model No. CP	1	6442.500	6462.500	6552.500	6662.500
Width (B1) mm	Packs of	380	380	500	600
Height (H1) mm		380	600	500	600
Depth (T1) mm		249	249	249	249
B2 = Width of display panel front		379	379	499	599
B3 = Clearance opening, front		309	309	429	529
B4 = Width of front panel		323	323	443	543
H2 = Height of display panel front		377	597	497	597
H3 = Clearance opening, front		307	527	427	527
H4 = Height of front panel		321	541	441	541
H5 = Hole distance of side mounting angles		250	450	350	450

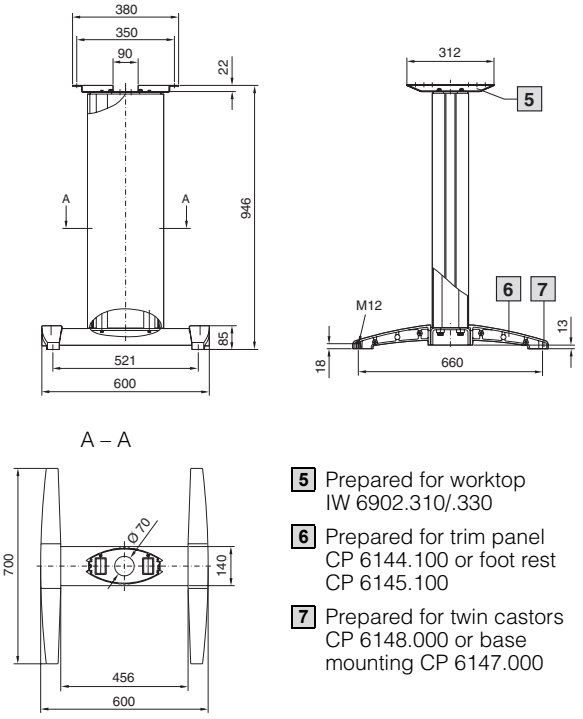
1.4 Pedestal

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for Command Panel



for IW worktops



1 Max. PG 48/M50

2 Cross-section, cable entry

3 Cut-out only for CP 6141.100

4 Cable conduit adaptor only for CP 6141.100

5 Prepared for worktop IW 6902.310/.330

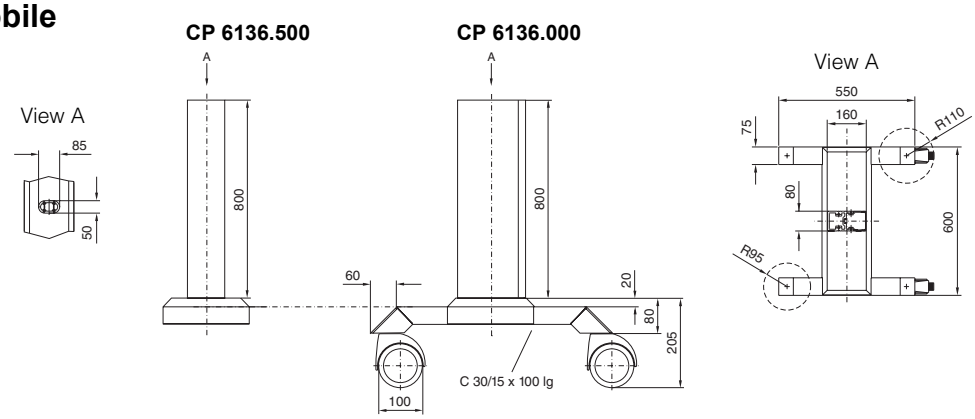
6 Prepared for trim panel CP 6144.100 or foot rest CP 6145.100

7 Prepared for twin castors CP 6148.000 or base mounting CP 6147.000

Stand systems

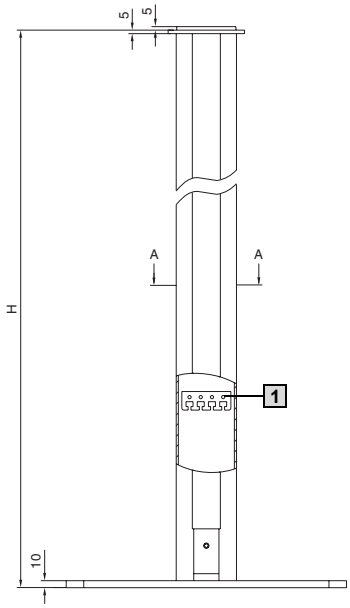
1.4 Pedestal, mobile

Page 293



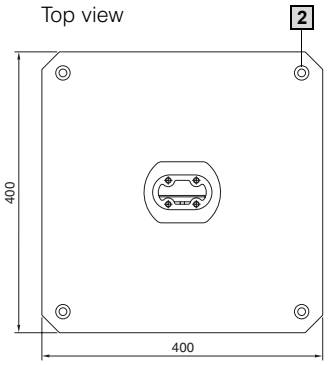
1.4 Pedestal, open

Page 294

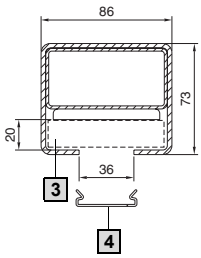


H mm	Model No. CP
1093	**6215.000**
as per specifications	**6215.100**

Top view

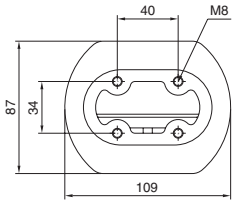


Section A – A



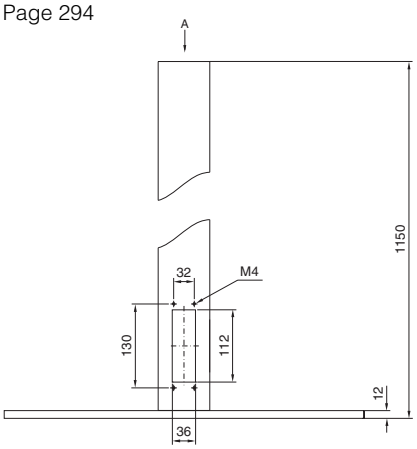
1 Cable clamping bracket
2 Countersink Ø 11 mm
3 Cable laying space
4 Cable space cover

Connection plate, top

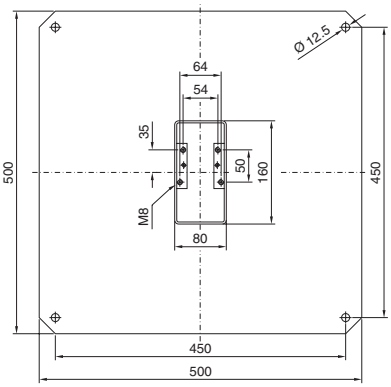


1.4 Pillar, small

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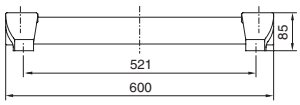
View A

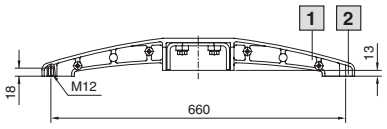


1.4 Cross member/pedestal base plate

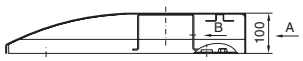
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Cross member with cast feet





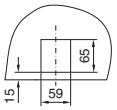
Pedestal base plate, large



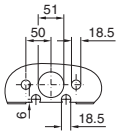
1 Prepared for trim panel CP 6144.100 or foot rest CP 6145.100

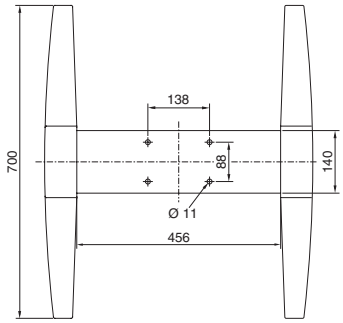
2 Prepared for twin castors CP 6148.000 or base mounting CP 6147.000

View A



View B



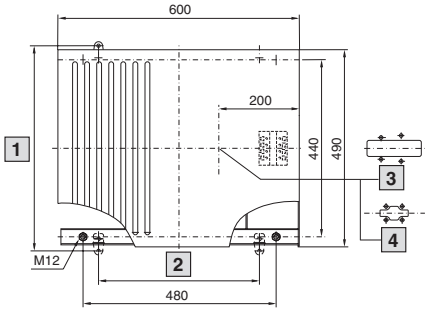


1 510 for base anchoring with KL 1580.000, KL 1590.000

2 400 for base anchoring with KL 1580.000, KL 1590.000

3 Cut-out for CP 6137.035

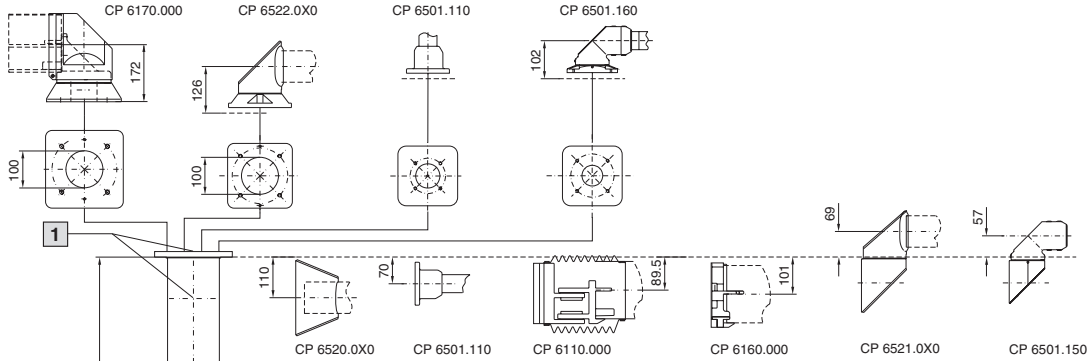
4 Cut-out for CP 6137.535

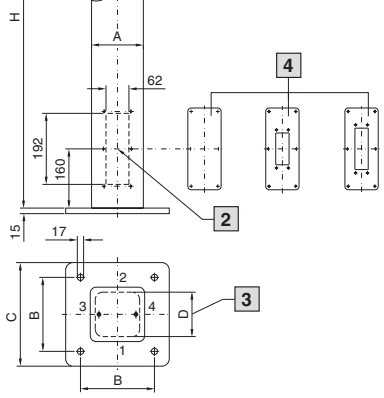


1.4 Pillar

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Model No. CP	A	B	C	D
6214.XX0	140	200	280	120
6220.XX0	200	300	400	180





1 Support arm connection according to the design code number

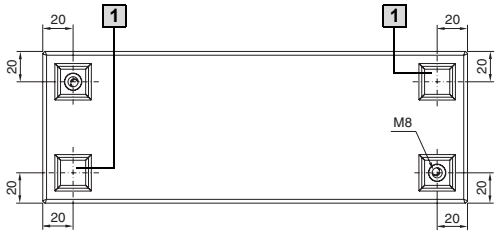
2 Cut-out for cable entry according to the design code number

3 Cut-out in base plate

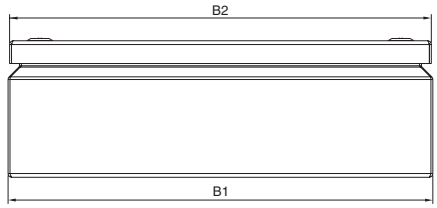
4 Metal gland plate, size 2, see from page 1048.

1.6 Switch housings

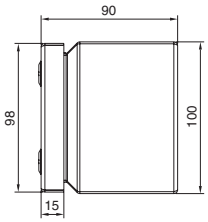
Page 304

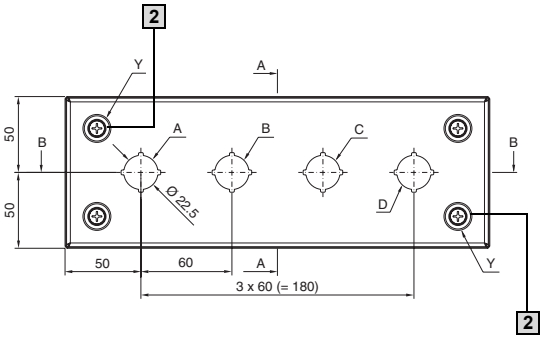


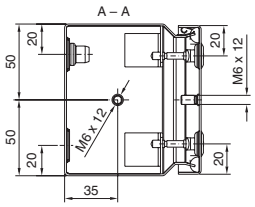
Model No. SM	B1	B2	Punchings
2384.X10	100	98	A
2384.X20	160	158	A, B
2384.X30	220	218	A, B, C
2384.X40	280	278	A, B, C, D

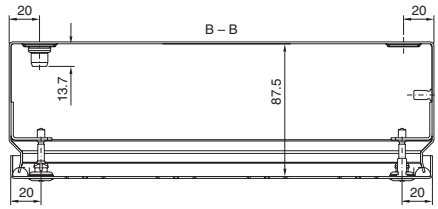


B = Width







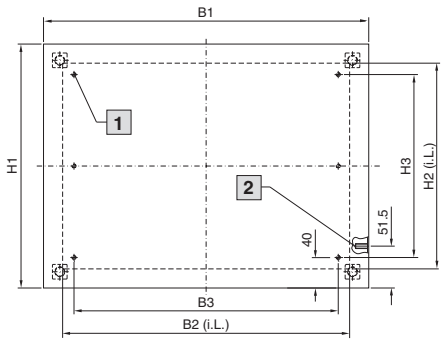


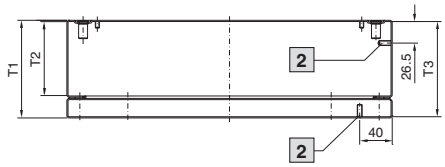
1 Additional attachment possible

2 Does not apply to SM 2384.X10

1.6 Premium Line KL, protection category IP 69K

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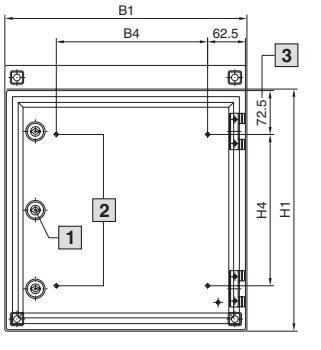


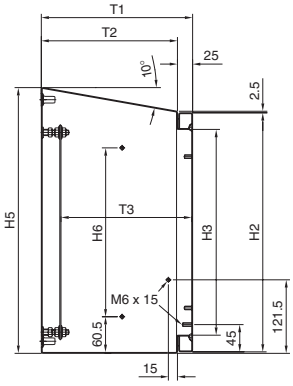
1 Welded stud M5 x 8 (6x)
2 Earthing bolts M6 x 15
i.L. = Clearance width

Model No. KL	1024.X10	1024.X20	1024.X30	1024.X40
B1 = Overall width in mm	150	150	300	400
H1 = Overall height in mm	150	150	200	300
T1 = Overall depth in mm	80	120	120	120
B2 = Clearance width of enclosure	103	103	253	353
B3 = Distance between axes of bolts	75	75	225	325
H2 = Clearance height of enclosure	103	103	153	253
H3 = Distance between axes of bolts	75	75	125	225
T2 = Clearance depth, enclosure only	51.5	91.5	91.5	91.5
T3 = Clearance depth	77	117	117	117
Possible mounting depth with built-in mounting plate, see page 978.	60	100	100	100

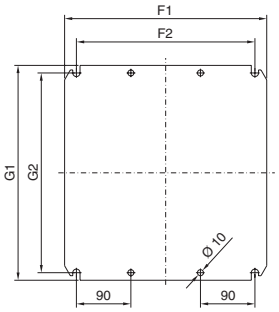
1.6 Compact enclosures AE, protection category IP 69K

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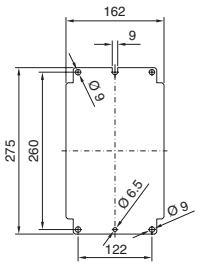


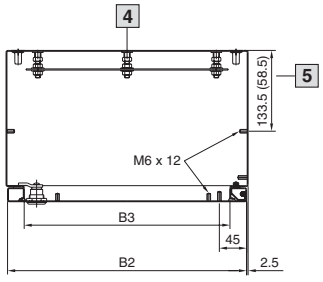


AE 1101.120 – AE 1101.140

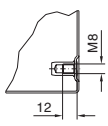


AE 1101.110









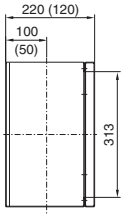
1 For AE 1101.110/.120 one cam lock
2 Does not apply to AE 1101.110
3 75 for AE 1101.110
4 For AE 1101.110 only one mounting plate attachment at the top
5 58.5 for AE 1101.110

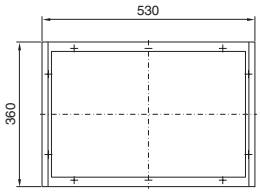
Model No. AE	B1	B2	B3	B4	H1	H2	H3	H4	H5	H6	T1	T2	T3	F1	F2	G1	G2
1101.110	230	225	170	–	330	325	270	175	352	209	155	130	135	–	–	–	–
1101.120	400	395	340	250	400	395	340	250	439	279	250	225	208 – 224	334	295	355	330
1101.130	400	395	340	250	650	645	590	500	689	529	250	225	208 – 224	334	295	570	545
1101.140	650	645	590	500	650	645	590	500	689	529	250	225	208 – 224	549	510	570	545

1.6 Premium Panel, protection category IP 69K

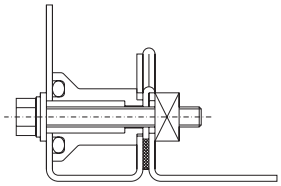
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Operating housing

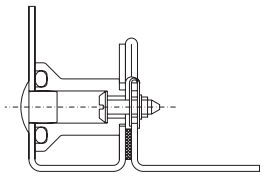




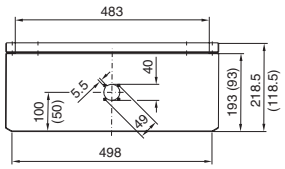
Hex screw, exposed



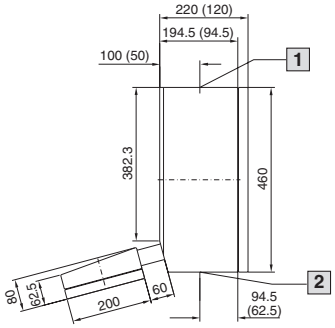
Internal screw
with plastic stoppers

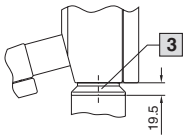


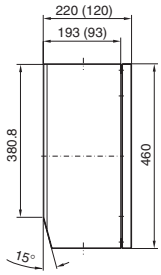
Support arm connection at the bottom, by rotating the enclosure. Dimensions in brackets for CP 66X1.000.

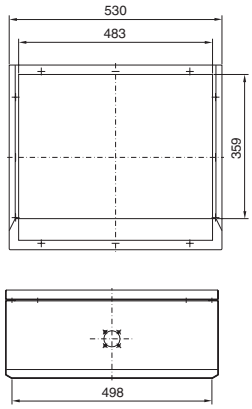


Operating and keyboard housing









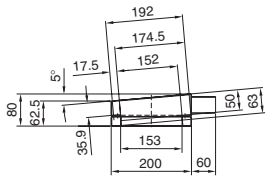
1 Support arm connection at the top only for CP 66X0.000, CP 66X0.100

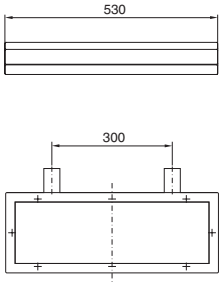
2 Support arm connection at the bottom only for CP 66X0.010 (see **3**), CP 66X0.110

Dimensions in brackets for CP 66X0.010.

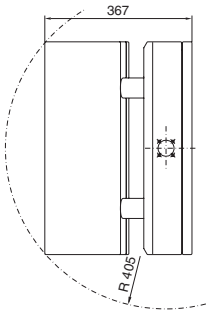
3 Connector pieces for CP 66X0.010 included with the supply.

Keyboard housing

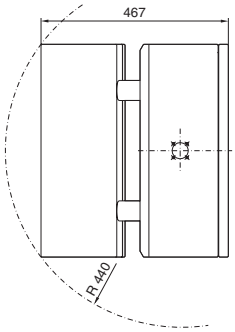




Top view
Depth 120 mm

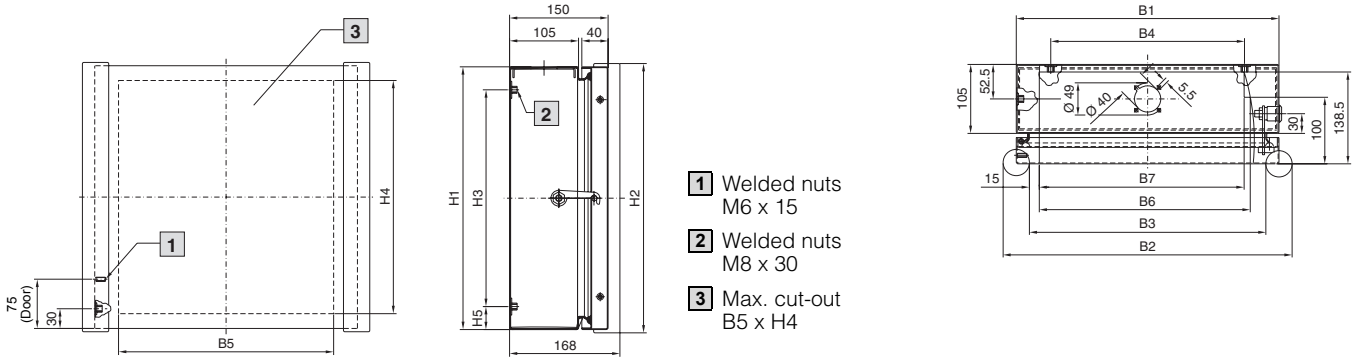


Top view
Depth 220 mm



1.6 Command panels with door

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1 Welded nuts M6 x 15

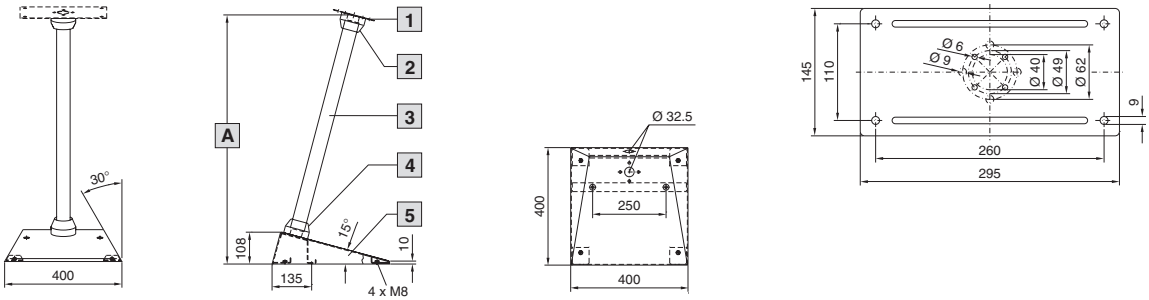
2 Welded nuts M8 x 30

3 Max. cut-out B5 x H4

Model No. CP	6535.X10	6536.X10	6538.X10	6539.X10
Width (B1) mm	300	400	400	600
Height (H1) mm	300	300	400	400
Depth (T1) mm	150	150	150	150
B2 = Enclosure width with handle strips	340	440	440	640
B3 = Clearance opening, front	260	360	360	560
B4 = Spacing of mounting plate attachment	215	295	295	510
B5 = Max. front cut-out, width	225	325	325	525
B6 = Hinged width for depth 100 mm	220	320	320	520
B7 = Hinged width for depth 118 mm	206	310	310	510
H2 = Enclosure height with handle strips	310	310	410	410
H3 = Spacing of mounting plate attachment	250	250	330	330
H4 = Max. front cut-out, height	255	255	355	355
H5 = Distance from base – mounting plate attachment	25	25	35	35

1.6 Modular pedestal CP-S

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A 1104 mm for support section length 1000 mm

1 Enclosure reinforcement CP-S stainless steel, CP 6143.310

2 Enclosure attachment CP-S stainless steel, CP 6664.500

3 Support section CP-S stainless steel, CP 6660.0X0

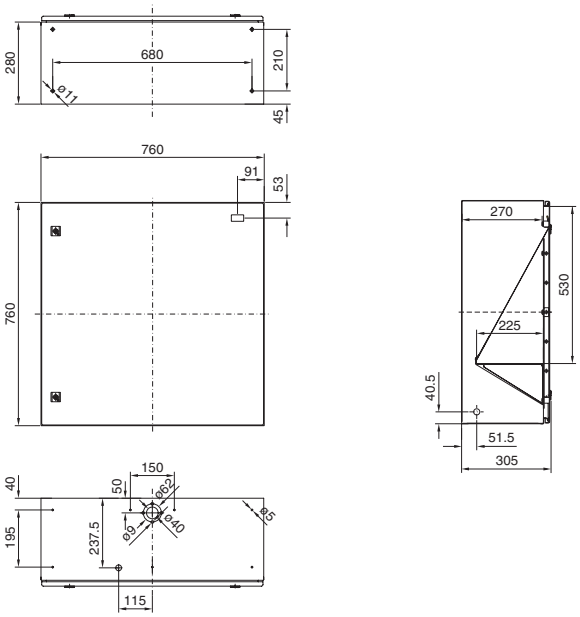
4 Enclosure attachment CP-S, stainless steel, CP 6664.500

5 Pedestal base plate, small, CP 6143.300

Stainless steel

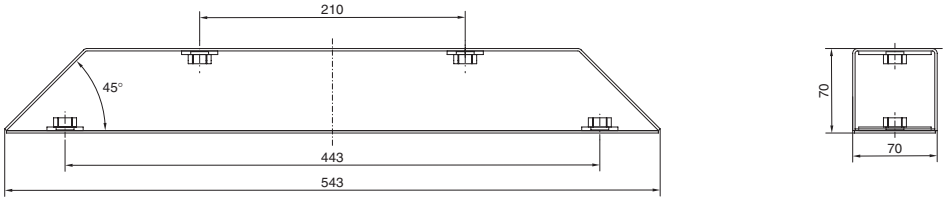
1.6 IW Tower PC

Page 319



1.6 Cross member

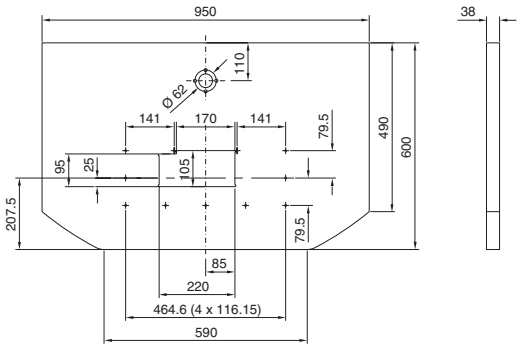
Page 319



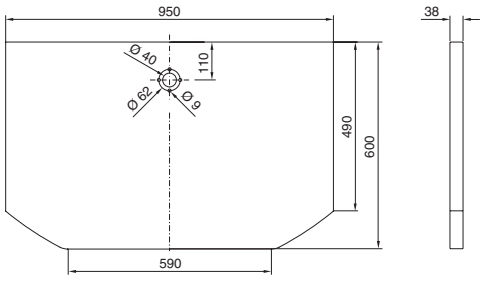
1.6 Worktop

Page 319

IW 6902.340



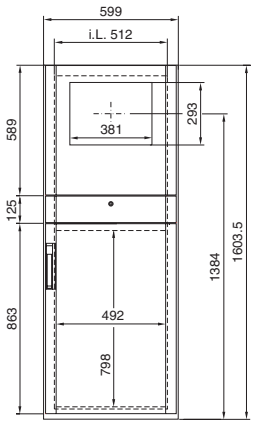
IW 6902.350

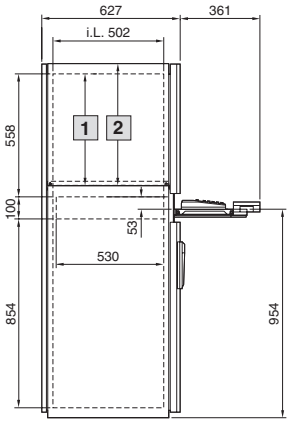


1.6 PC enclosure system

Page 321

With keyboard drawer





1 Max. 505, adjustable on a 25 mm pitch pattern

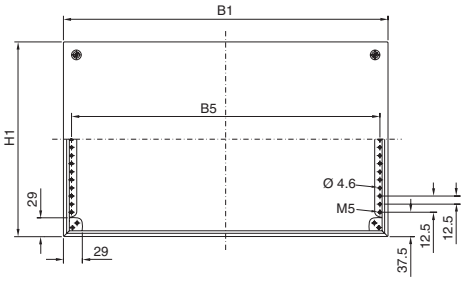
2 Max. 547, adjustable on a 25 mm pitch pattern

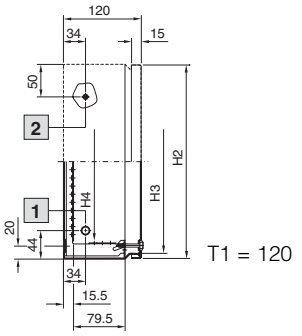
i.L. = Clearance width

				Model No. PC
				4650.X00
			Width mm	600
			Height mm	1600
			Depth mm	620
Supply includes	**Design**	**Material**	**Surface finish/Colour**	
Enclosure	Solid top and sides, open at the bottom	Stainless steel, 1.8 mm	Brushed, grain 240	■
	Gland plates, three-part	Stainless steel, 1.5 mm		
Rear door	With locking rod and double-bit insert, hinged on the r/h side	Stainless steel, 2.0 mm	Brushed, grain 240	■
Glazed door, top	Latched from the inside[1)], r/h hinge	Stainless steel, 1.5 mm	Brushed, grain 240	■
	Viewing window	Toughened safety glass 4.0 mm		
Component shelf	Slotted, permanently installed	Sheet steel, 1.5 mm	RAL 7035	■
Drawer	Enclosure	Sheet steel, 1.25 mm	RAL 7035	■
	Keyboard extension piece with cable support, hinged, plus pull-out mousepad	Sheet steel, 1.5 mm	RAL 7035	
	Trim panel, folded as handrest, with fastener, lock no. 3524 E	Stainless steel, 1.25 mm	Brushed, grain 240	
	[1)] With unlatching for glazed door, top			■
Bottom door	With locking rod and double-bit insert, hinged on the r/h side	Stainless steel, 1.5 mm	Brushed, grain 240	■

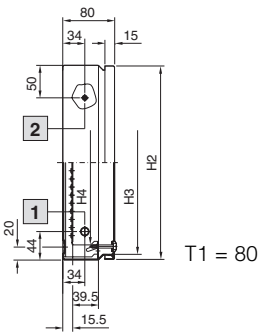
1.6 Ex enclosures KEL with screw-fastened lid

Page 325

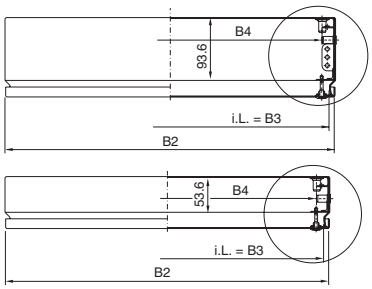




T1 = 120



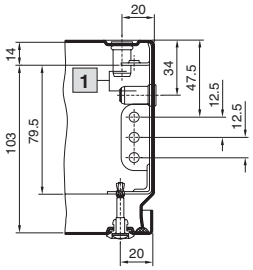
T1 = 80



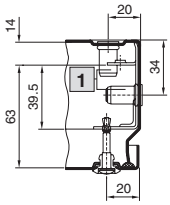
X
T1 = 120

Y
T1 = 80

Detail X, T1 = 120



Detail Y, T1 = 80



1 Blind threaded bush with internal thread M8 x 12

2 Earthing bolts M8 x 20

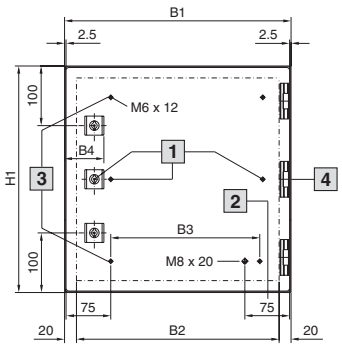
i.L. = Clearance width

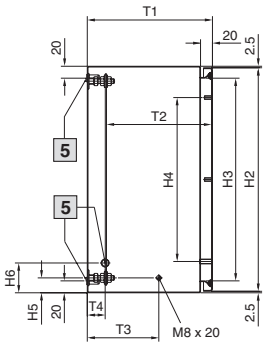
Model No. KEL	9301.X00	9302.X00	9303.X00	9304.X00	9305.X00	9306.X00
Width (B1) mm	150	300	200	300	400	300
Height (H1) mm	150	150	200	200	200	300
Depth (T1) mm	80	80	80	80	120	120
B2 = Cover width	148	298	198	298	398	298
B3 = Clearance opening width	132	282	182	282	382	282
B4 = Clearance width between profile strips	109	259	159	259	359	259
B5 = Hole-centre distance of profile strips	125	275	175	275	375	275
H2 = Lid height	148	148	198	198	198	298
H3 = Clearance opening height	132	132	182	182	182	282
H4 = Clearance height between profile strips	100	100	150	150	150	250

1.6 Ex enclosures KEL with hinged door

Page 325

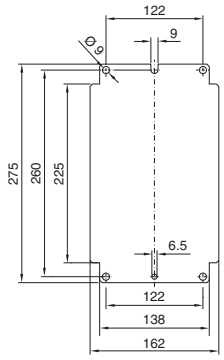
KEL 9401.X00 – KEL 9409.X00



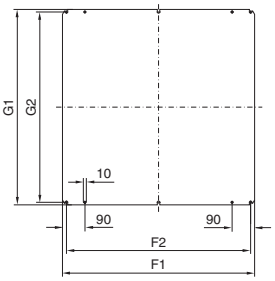


Mounting plates

KEL 9401.X00



KEL 9402.X00 – KEL 9409.X00



1 Where H1 = 300/380 only one cam lock in the centre and without bolts in the centre

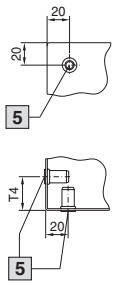
2 50 for KEL 9401.X00

3 Not applicable to KEL 9401.X00

4 KEL 9408.X00 only

5 Blind threaded bush M8

Detail Rear view



Installation position of the mounting plate is rotated through 90° for AE 1005.600, KEL 9409.X00.

Ex enclosure KEL with hinged door

Model No. KEL	Dimensions of enclosures														Dimensions of mounting plate				Material thicknesses in mm		
	B1	B2	B3	B4	H1	H2	H3	H4	H5	H6	T1	T2	T3	T4	G1	G2	F1	F2	Enclosure	Door	Mounting plate
9401.X00	200	167	–	56	300	295	274	225	20	50	155	135	60	30	–	–	–	–	1.25	1.5	2.0
9402.X00	380	340	250	66	300	295	260	225	25	50	155	113 –129	75	30	275	250	334	295	1.38	1.5	2.0
9409.X00	300	260	175	66	380	375	340	275	25	20	210	168 –184	120	60	275	250	334	295	1.38	1.5	2.0
9403.X00	380	340	250	66	380	375	340	275	42.5	50	210	168 –184	120	30	355	330	334	295	1.38	1.5	2.5
9404.X00	380	340	250	66	600	595	560	525	25	50	210	168 –184	120	30	570	545	334	295	1.38	1.5	2.5
9405.X00	600	560	475	66	600	595	560	525	27.5	50	210	168 –184	120	30	570	545	549	510	1.38	2.0	2.5
9406.X00	600	560	475	66	760	755	720	675	27.5	50	210	168 –184	120	30	730	705	549	510	1.38	2.0	3.0
9407.X00	760	720	625	66	760	755	720	675	27.5	50	300	258 –274	120	30	730	705	704	665	1.50	2.0	3.0
9408.X00	800	760	675	66	1000	995	960	925	35	50	300	258 –274	120	30	955	930	739	700	1.50	2.0	3.0

Short-circuit resistance diagrams

2.1 Mini-PLS busbar support

up to 250 A, 3-pole Page 336

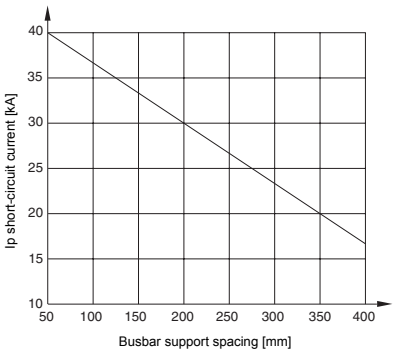
Model No. SV 9600.000

40 mm bar centre distance,
for Mini-PLS special busbars.

Rated operating voltage:
Up to 690 V AC
Level of contamination: 3
Rated frequency: 50/60 Hz

Basis of test:
VDE 0660, part 500/IEC 60 439.

Test implemented:
Dynamic short-circuit resistance to IEC 60 439.



2.1 Busbar support

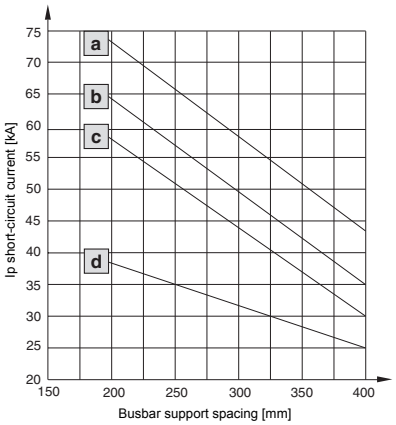
up to 360 A, 3-pole Page 342

Model No. SV 9350.000

40 mm bar centre distance,
for busbars 12 x 5 – 15 x 10 mm.

Rated operating voltage:
Up to 690 V AC
Level of contamination: 3
Rated frequency: 50/60 Hz

Calculation basis:
VDE 0103/IEC 60 865.



Busbar E-Cu mm	Rated current up to A	Curve
12 x 5	210	d
12 x 10	340	b
15 x 5	260	c
15 x 10	360	a

2.2 Rittal RiLine60 busbar systems

Type testing to DIN EN 60 439-1
During the course of system type-testing, the following tests were conducted on the Rittal RiLine60 busbar systems and on representative Rittal RiLine60 top-mounting components:

Proof of insulating properties (to DIN EN 60 439-1, 8.2.2)
Test piece: Representative system configuration.
Test with surge voltage 1.2/50 µs, 9.8 kV.

Proof of short-circuit resistance (to DIN EN 60 439-1, 8.2.3)
see short-circuit resistance diagrams below.

Proof of creepage distances and clearance (to DIN EN 60 439-1, 8.2.5)
Test piece: Representative system configuration.

Proof of IP protection category (to DIN EN 60 439-1, 8.2.7)
Test piece: Representative system configuration. Proven protection category: IP 2X.

2.2 Busbar support

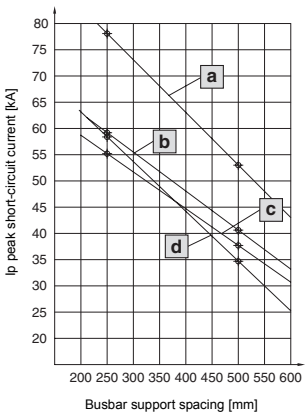
up to 800 A, 3-pole Page 350

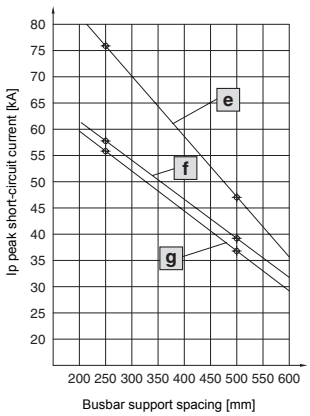
Model No. SV 9340.000/SV 9340.010

60 mm bar centre distance,
for busbars 15 x 5 – 30 x 10 mm.

Rated operating voltage: Up to 690 V AC
Rated insulation voltage: 1000 V AC
Rated surge voltage: 8 kV
Overvoltage category: IV
Level of contamination: 3
Rated frequency: 50/60 Hz

Test implemented:
- Rated surge current resistance I_{pk} (see diagram)
- Rated short-time current resistance I_{cw}





Busbar mm	l mm	I_{cw} kA
30 x 10	250	37.6
30 x 5	250	25.4
20 x 10	250	29.0

Busbar mm	Curve
30 x 10	a
20 x 10	b
25 x 5	c
15 x 5	d

Busbar mm	Curve
30 x 5	e
20 x 5	f
15 x 10	g

2.2 PLS busbar supports

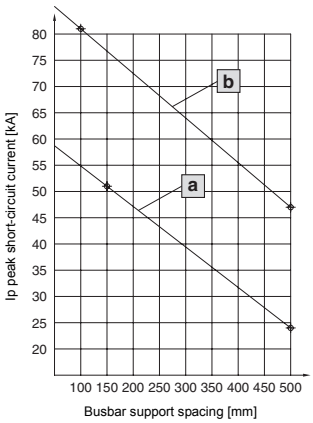
up to 800 A/1600 A, 3-pole Page 352

Model No. SV 9341.000/SV 9342.000

60 mm bar centre distance,
for Mini-PLS special busbars.

Rated operating voltage: Up to 690 V AC
Rated insulation voltage: 1000 V AC
Rated surge voltage: 8 kV
Overvoltage category: IV
Level of contamination: 3
Rated frequency: 50/60 Hz

Test implemented:
- Rated surge current resistance I_{pk} (see diagram)
- Rated short-time current resistance I_{cw}



Busbar mm	l mm	I_{cw} kA
PLS 800 A	150	25.9
PLS 1600 A	150	37.5

Busbar mm	Curve
PLS 800 A	a
PLS 1600 A	b

Short-circuit resistance diagrams

2.2 Rittal RiLine60 UL 508

The short-circuit resistance of Rittal RiLine60 has been extensively tested. Short-circuit resistance to UL criteria is assessed via the root-mean-square value of the short-circuit current (I_{RMS}), which must be applied for at least 3 periods.

During the course of testing, the test equipment has been adjusted to the respective root-mean-square values (I_{RMS}). The resultant peak short-circuit currents I_p are shown in the short-circuit protection diagrams below.

Note:
For further information on busbar systems UL 508, see page 1233 – 1235.

2.2 Busbar support

for feeder circuits 700 A, 3-pole Page 354

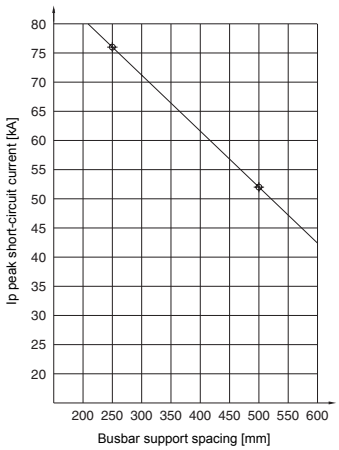
60 mm bar centre distance, for busbars 15 x 5 – 30 x 10mm.

I_{RMS} settings of the test equipment:

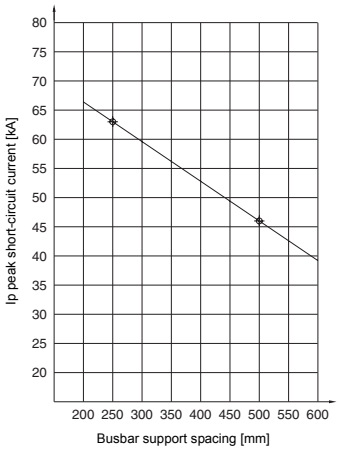
l mm	I_{RMS} kA
250	35
500	25

l mm	I_{RMS} kA
250	30
500	22

Model No. SV 9340.050
with 30 x 5/10 mm



Model No. SV 9340.050
with 25 x 5 mm
20 x 5/10 mm
15 x 5/15 mm



2.2 PLS busbar supports

for feeder circuits 700 A/1400 A, 3-pole Page 355

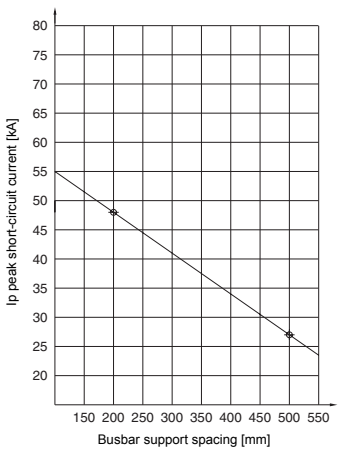
60 mm bar centre distance, for Mini-PLS special busbars.

I_{RMS} settings of the test equipment:

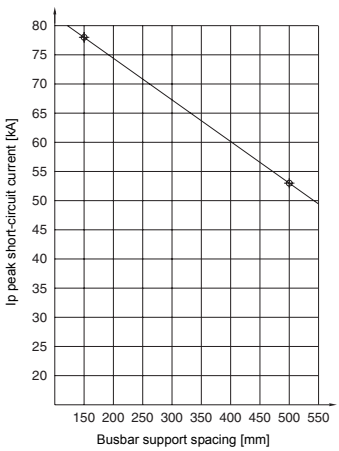
l mm	I_{RMS} kA
200	22
500	14

l mm	I_{RMS} kA
150	35
500	25

Model No. SV 9341.050 (PLS 800)



Model No. SV 9342.050 (PLS 1600)



2.2 Busbar support

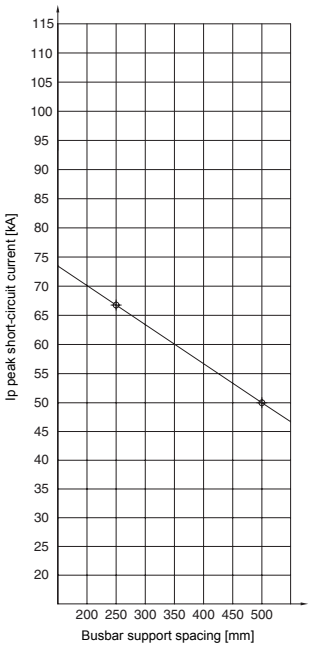
up to 800 A, 4-pole Page 380/382

Model No. SV 9340.004/SV 9342.014

60 mm bar centre distance,
for 30 x 10 mm busbars.

Rated operating voltage:
Up to 690 V AC
Rated insulation voltage:
1000 V AC
Rated surge voltage: 8 kV
Overvoltage category: IV
Level of contamination: 3
Rated frequency: 50/60 Hz

Test implemented:
- Rated surge current resistance I_{pk} (see diagram)
- Rated short-time current resistance I_{cw}



Busbar mm	l mm	I_{cw} kA
30 x 10	250	29
	500	23

2.2 PLS busbar supports

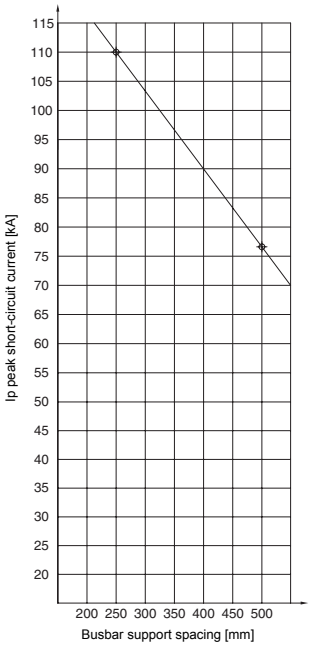
up to 1600 A, 4-pole Page 382

Model No. SV 9342.004

60 mm bar centre distance,
for PLS special busbar 1600 A.

Rated operating voltage:
Up to 690 V AC
Rated insulation voltage:
1000 V AC
Rated surge voltage: 8 kV
Overvoltage category: IV
Level of contamination: 3
Rated frequency: 50/60 Hz

Test implemented:
- Rated surge current resistance I_{pk} (see diagram)
- Rated short-time current resistance I_{cw}



Busbar mm	l mm	I_{cw} kA
PLS 1600 A	250	53
	500	38

Short-circuit resistance diagrams

2.3 Busbar support

up to 1250 A, 3-pole Page 387

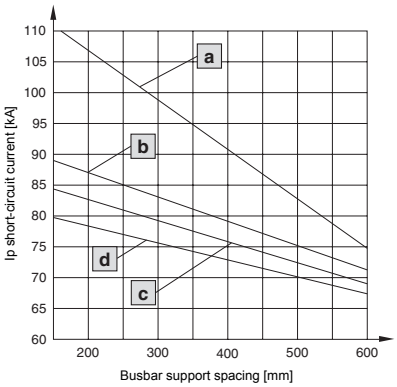
Model No. SV 3073.000

100 mm bar centre distance,
for busbars 30 x 10 – 60 x 10 mm.

Rated operating voltage:
Up to 1000 V AC
Level of contamination: 3
Rated frequency: 50/60 Hz

Basis of test:
VDE 0660, part 500/IEC 60 439.

Test implemented:
Dynamic short-circuit resistance
to IEC 60 439.



Busbar E-Cu mm	Rated current up to A	Curve
30 x 10	800	d
40 x 10	850	c
50 x 10	1000	b
60 x 10	1250	a

2.4 Busbar support

up to 1600 A, 3-pole Page 391

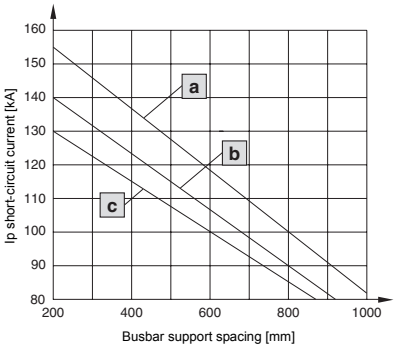
Model No. SV 3052.000

185 mm bar centre distance,
for busbars 50 x 10 – 80 x 10 mm.

Rated operating voltage:
Up to 1000 V AC
Level of contamination: 3
Rated frequency: 50/60 Hz

Basis of test:
VDE 0660, part 500/IEC 60 439.

Test implemented:
Dynamic short-circuit resistance to
IEC 60 439.



Busbar E-Cu mm	Rated current up to A	Curve
50 x 10	1000	c
60 x 10	1250	b
80 x 10	1600	a

2.5 Busbar support

up to 2500 A/3000 A, 3-pole Page 394

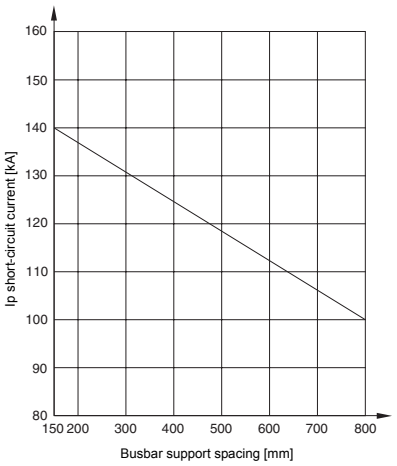
150 mm bar centre distance.

Rated operating voltage:
Up to 1000 V AC
Level of contamination: 3
Rated frequency: 50/60 Hz

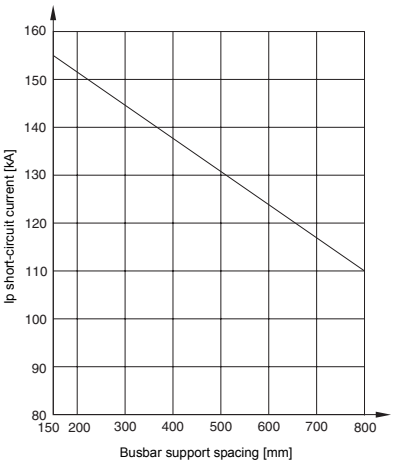
Basis of test:
VDE 0660, part 500/IEC 60 439.

Test implemented:
Dynamic short-circuit resistance to
IEC 60 439.

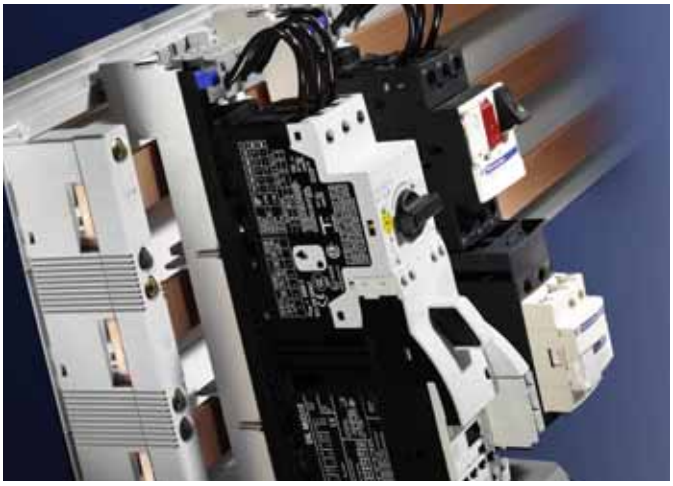
Model No. SV 3055.000 (2500 A),
bar accommodation
3 x 2 x 80 x 10 mm.



Model No. SV 3057.000 (3000 A),
bar accommodation
3 x 2 x 100 x 10 mm.



Background information busbar systems UL 508



UL or Underwriter Laboratory was founded in 1894 as a non-profit-making organisation for testing and certification. UL operates five testing laboratories in the United States and subsidiaries worldwide, with an emphasis on product testing aimed at general safety.

Why are UL approvals important?

International regulations and standards such as NEMA and IEC are used as a basis by manufacturers for product developments and subsequent testing. Nationally recognised testing laboratories confirm and certify that a product meets specific standards. In North America, this is carried out by organisations such as UL or CSA (Canadian Standard Association). For many applications, only UL and/or CSA-approved products are acceptable. It is therefore advisable to ensure that electrical control systems intended for use in North America are designed with UL-approved components.

How does the US system for electrical safety work?

Every piece of electrical equipment (machine/plant) is tested by the competent local inspector (AHJ = Authority Having Jurisdiction) prior to commissioning. The AHJ has the final say with regard to commissioning.
All AHJs use Standard NFPA 70 (NFPA = National Fire Protection Association) as a basis, which is generally regarded as the NEC (National Electrical Code). NFPA 70 is therefore an important basis for UL 508A (Industrial Control Panels). The AHJ considers the use of UL-recognized or UL-listed components an important indication that a system complies with the safety requirements to NFPA 70. This saves time and money during construction and commissioning of the equipment, as the UL symbol indicates that testing of the components and/or of the system did not reveal any foreseeable risks with regard to fire, electric shock and associated dangers.

The UL symbol: “UL listed” or “UL recognized”

When labelling UL-approved products, a general distinction is made between Recognized Components and Listed Devices:

- Recognized Components
  This label is used on products which are not complete in terms of their application. These products are listed in the UL’s “yellow component database”. The correct use of such components must make due allowance for the “Conditions of Acceptability”, listing the framework conditions and application parameters approved by the UL.
- Listed Devices
  This symbol is used in products which offer a complete function in themselves. These products are listed in the UL’s “green component database”. They may be used without restriction in accordance with the tested rating data.

Application areas for UL 508 and UL 508A

UL 508 describes industrial control components and is therefore the decisive standard for the assessment of Rittal SV components. For example, this standard contains information on:

- Starters
- Relays and contactors
- Switches
- Controllers

UL 508A describes industrial control panels and is therefore the decisive standard for switchgear manufacturers.
For example, this standard contains information on:

- Machine controllers
- Elevator controllers
- Crane controllers
- Equipment for heating, air-conditioning and ventilation systems

Both standards describe control systems for general industrial applications with a rated voltage of up to 600 V.
The maximum permissible ambient temperature is 40°C.

Background information busbar systems UL 508

Distinguishing between feeder and branch circuits

Standard UL 508A makes a distinction between feeder circuits and branch & control circuits. Generally speaking, the term “feeder circuits” refers to the part of the circuit located at the supply end before the last over-current protective device. Increased requirements with regard to creepage distances and clearances apply to this part of the circuit. The term “branch & control circuits” refers to the part of the circuit located after the last over-current protective device. When using busbar systems, it is important to know whether the application is in the feeder section or the branch section, as the requirements governing the required creepage distances and clearances are significantly higher for feeder circuits.

Important notes for the use of busbar systems to UL 508/508A

1. Creepage distances and clearances

One of the principal changes in UL 508A is the amendment to the required creepage distances and clearances for feeder circuits. The following distances are required for applications > 250 V:

Between phases:

- Creepage distance 50.8 mm (2 inches)
- Clearance 25.4 mm (1 inch)

Between phase and earthed, uninsulated metal parts:

- Creepage distance 25.4 mm (1 inch)
- Clearance 25.4 mm (1 inch)

Rittal RiLine60 complies with these requirements. All busbar connection adaptors and component adaptors (OM/OT with standard AWG connection cables and circuit-breaker adaptors) in the new system have been designed in accordance with these requirements. However, users should bear in mind a small number of differences from the IEC version:

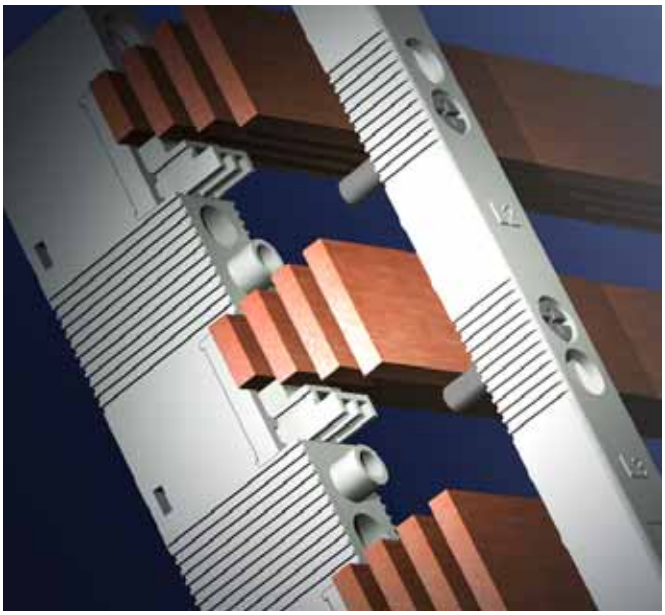
- Special UL busbar supports for flat bars and Rittal PLS with increased creepage distances and clearances.
- In order to guarantee the required distances between live parts and the earthed mounting plate, the use of a Rittal RiLine60 base tray is compulsory.

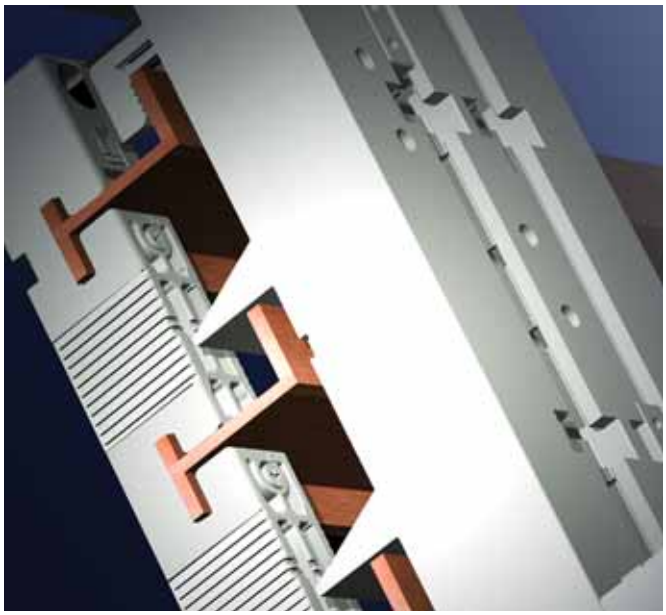
2. Rated currents

For untested busbar applications, UL 508A specifies a current carrying capacity of 1000 A/inch^2 (1.55 A/mm^2) in the absence of testing. This value may be higher if the product or application has been subjected to suitable testing. Rittal has conducted extensive testing in this respect in order to give users the maximum benefits when using the SV busbar system. The benefit of such testing is that SV busbar systems with higher rated currents may be used than permitted by the default value. For example, a busbar with the dimensions 30 x 10 mm can carry 700 A instead of 465 A.

3. Terminals for factory or field wiring

In accordance with the UL standards, connection clamps may be approved for factory or field wiring. If a terminal is approved for factory wiring, it may only be used in switchgear assembly by suitably trained professionals. If connection clamps are to be used in the field (e.g. on a construction site), the component must be approved for field wiring. The terminals of the busbar connection adaptors and component adaptors in the Rittal RiLine60 series have therefore been tested for field wiring applications.





Components with UL 508 approvals

Model No. SV	For feeder circuits up to 600 V	Rated current
3509.000	■	
3516.000	■	
3524.000	■	
3525.000	■	
3525.010	■	
3526.000	■	
3527.000	■	
3528.000	■	
3528.010	■	
3529.000	■	
3581.000	■	
3581.100	■	
3582.000	■	
3583.000	■	
3584.000	■	
3585.000	■	
3586.000	■	
9340.050	■	
9340.070	■	
9340.100	■	
9340.110	■	
9340.120	■	
9340.130	■	
9340.140	■	
9340.150	■	
9340.160	■	
9340.200	■	
9340.210	■	
9340.220	■	
9340.260	■	
9340.270	■	
9340.310	■	25 A
9340.340	■	25 A
9340.350	■	30 A
9340.370	■	25 A
9340.410	■	60 A
9340.430	■	60 A
9340.450	■	60 A
9340.460	■	30 A
9340.700	■	60 A
9340.710	■	40 A
9341.050	■	
9341.070	■	
9341.100	■	
9341.110	■	
9341.120	■	
9341.130	■	
9341.140	■	
9341.150	■	
9341.160	■	
9341.260	■	
9341.270	■	
9341.310	■	25 A
9341.340	■	25 A
9341.370	■	25 A
9341.410	■	60 A
9341.430	■	60 A
9341.450	■	60 A
9341.460	■	30 A
9342.050	■	
9342.070	■	
9342.100	■	
9342.110	■	

Model No. SV	For feeder circuits up to 600 V	Rated current	Specification to UL Connection cross-section
9342.120	■		
9342.130	■		
9342.140	■		
9342.150	■		
9342.160	■		
9342.200[1)]	■	60 A	6 – 16 mm² (AWG 10 – AWG 6)
9342.210[1)]	■	60 A	6 – 16 mm² (AWG 10 – AWG 6)
9342.230[1)]	■	125 A	16 – 35 mm² (AWG 6 – AWG 2)
9342.240[1)]	■	125 A	16 – 35 mm² (AWG 6 – AWG 2)
9342.250[1)]	■	250 A	35 – 120 mm² (AWG 2 – MCM250)
9342.260[1)]	■	250 A	35 – 120 mm² (AWG 2 – MCM250)
9342.270[1)]	■	250 A	35 – 120 mm² (AWG 2 – MCM250)
9342.290[1)]	■	800 A	95 – 300 mm² (AWG 4/0 – MCM600)
9342.300[1)]	■	800 A	95 – 300 mm² (AWG 4/0 – MCM600)
9342.310	■	700 A	95 – 300 mm² (AWG 4/0 – MCM600) Clamping area for laminated copper: 33 x 22 mm
9342.320	■	1400 A	Clamping area for laminated copper: 65 x 22 mm
9342.400[1)]	■	100 A	16 – 35 mm² (AWG 6 – AWG 2)
9342.410[1)]	■	100 A	16 – 35 mm² (AWG 6 – AWG 2)
9342.540[1)]	■	125 A	35 – 120 mm² (AWG 2 – MCM250)
9342.550[1)]	■	125 A	35 – 120 mm² (AWG 2 – MCM250)
9342.600[1)]	■	250 A	35 – 120 mm² (AWG 2 – MCM250)
9342.610[1)]	■	250 A	35 – 120 mm² (AWG 2 – MCM250)
9342.700	■	600 A	Clamping area for laminated copper: 32 x 10 mm
9342.710	■	600 A	Clamping area for laminated copper: 32 x 10 mm

[1)] Tightening torque to UL

Model No. SV	Terminal screw for	
	Round conductors	laminated copper bars
9342.200	5 Nm	–
9342.210	5 Nm	–
9342.230	5 Nm	5 Nm
9342.240	5 Nm	5 Nm
9342.250	12 Nm	8 Nm
9342.260	12 Nm	8 Nm
9342.270	12 Nm	8 Nm
9342.290	18 Nm	14 Nm
9342.300	18 Nm	14 Nm
9342.400	5 Nm	5 Nm
9342.410	5 Nm	5 Nm
9342.540	12 Nm	8 Nm
9342.550	12 Nm	8 Nm
9342.600	12 Nm	8 Nm
9342.610	12 Nm	8 Nm

Allocation of switchgear

Current carrying capacity of connection cables

Current carrying capacity of insulated PVC cables at an ambient temperature of +40°C, installation type E (DIN EN 60 204-1:1998-11)	
Nominal cross-section mm²	Current capacity A
1.5	16
2.5	22
4	30
6	37
10	52
16	70
25	88
35	114

Conversion factors for the load capacity of cables (DIN EN 60 204-1:1998-11)	
Ambient temperature °C	Factor
30	1.15
35	1.08
40	1.00
45	0.91
50	0.82
55	0.71
60	0.58

2.1 Busbar systems up to 250 A (40 mm)

Mini-PLS component adaptors 12 A/25 A Page 338

Manufacturer/model	Model No. SV	
ABB		
MS25-TM-..	9614.000	9615.000
MS116-..	9614.100	9615.100
MS225-..	9614.000	9615.000
MS325-..	9614.000	9615.000
MS450-.. (max. 25 A)	9615.000	–
MS451-.. (max. 25 A)	9615.000	–
AEG		
Mbs25	9614.100	9615.100
Mbs28	9614.000	9615.000
Allen Bradley		
103-...R	9614.100	9615.100
107-...R	9629.010	–
140M-...-...	9614.100	9615.100
140-MN-...	9614.100	9615.100
190-M1-...	9615.100[1)]	–
190-M2-...	9615.100[1)]	–
Moeller Electric		
PKM0...	9614.100	9615.100
PKZM0-...	9614.100	9615.100
PKZM0-...T	9614.100	9615.100
PKZM0-../E-10-D	9614.100	9615.100
PKZM0-../0.-	9614.100	9615.100
PKZM0-../S00-11	9614.100	9615.100
PKZM0-../SE00-11	9614.100	9615.100
PKZ2/ZM-... (max. 25 A)	9625.000	9626.000
PKZ2/ZM-...-8 (max. 25 A)	9625.000	9626.000
PKZM0-.../E01-G-W	9629.010	–
PKZM0-.../.-..-W	9629.010	–
PKZM0-.../.-..WMF	9629.030	–
PKZM4-... (max. 25 A)	9615.000	–

Manufacturer/model	Model No. SV	
Siemens		
S0		
3RA11 20..00.2.-0...	9614.100[1)]	–
3RA12 20-....-...	9629.020	–
3RV1. 21-...1.	9614.100	9615.100
3RW30 2.-1AB..	9614.100	9615.100
S00		
3RA11 10..0.1.-1...	9614.100[1)]	–
3RA12 10-...-...	9629.010	–
3RV10 11-..A1.	9614.100	9615.100
3RW30 1.-1CB.4	9614.100	9615.100
S00 Cage Clamp		
RV10 11-..A20	9614.110	–
S2		
3RV1. 31-4..10 (max. 25 A)	9615.000	–
3RW30 3.-1AB.. (max. 25 A)	9615.000	–
Telemecanique		
GK3-EF.. (max. 25 A)	9626.000	–
GV2-....	9614.100	9615.100
GV2-M..K1..	9614.100	9615.100
GV2-M..K2..	9629.010	–
GV2-P..D2..	9629.030	–
GV2-P..D1..	9615.100[1)]	–
GV3-M...	9626.000	–
LD1-L.030 (max. 25 A)	9615.100	–
LH4-N1....7	9614.100	9615.100
LH4-N2....7	9629.010	–

[1)] Support rail must be offset

Mini-PLS quick-fit component adaptors 25 A/32 A Page 339

Manufacturer/model	Model No. SV
ABB	
MS25-TM-..	9622.000
AEG	
Mbs25	9618.000
Allen Bradley	
140M-...-...	9620.000
General Electric	
SFKO1	9618.000
Moeller Electric	
PKM0...	9619.000
PKZM0-...	9619.000
PKZM0-...T	9619.000
PKZM0-../S00-11	9620.000
PKZM0-../SE00-11	9620.000

Manufacturer/model	Model No. SV
Schiele	
MSU-K	9618.000
Siemens	
S0	
3RA11 20..00.2.-0...	9622.000
3RV1. 21-...1.	9622.000
Telemecanique	
GV2-LE	9621.000
GV2-M	9621.000
GV2-P	9622.000

2.1 Busbar systems up to 250 A (40 mm)

Mini-PLS component adaptors 40 A/100 A Page 340

Manufacturer/model	Model No. SV		Accessories Model No. SV
ABB			
MS450-.. (max. 40 A)	9617.000	–	–
MS450-..	9629.000	–	9320.120
MS451-.. (max. 40 A)	9617.000	–	–
MS451-..	9629.000	–	9320.120
MS495-..	9629.000	–	9320.120
MS496-..	9629.000	–	9320.120
MS497-..	9629.000	–	9320.120
LNA 32	9629.000	–	–
LNA 63	9629.000	–	–
LNA 100	9629.000	–	–
Tmax			
T1	9629.000	–	–
T2	9629.000	–	–
AEG			
Mbs100	9629.000	–	9320.120
Allen Bradley			
140M-F8.-... (max. 40 A)	9616.000	9617.000	–
140-CMN-....	9629.000	–	9320.120
Merlin Gerin			
Compact NS 80H-MA	9629.000	–	–

Manufacturer/model	Model No. SV		Accessories Model No. SV
Moeller Electric			
NZM 1	9629.000	–	–
PKZ2/ZM-...	9627.000	9628.000	–
PKZ2/ZM-...-8	9627.000	9628.000	–
PKZ2/ZM-.../SE1A/11	9628.000	–	–
PKZ2/ZM-.../S	9628.000	–	–
PKZ2/SE1A/11	9628.000	–	–
PKZ2/S	9628.000	–	–
PKZM4-... (max. 40 A)	9617.000	–	–
PKZM4-...	9629.000	–	9320.120
Siemens			
S2			
3RV1. 31-4..10 (max. 40 A)	9617.000	–	–
3RV1. 31-4..10	9629.000	–	9320.120
3RW30 3.-1AB.. (max. 40 A)	9617.000	–	–
3RW30 3.-1AB..	9629.000	–	9320.120
S3			
3RV1. 4.-4..10	9629.000	–	9320.120
3RW30 4.-1AB..	9629.000	–	9320.120
Telemecanique			
GK3-EF.. (max. 40 A)	9628.000	–	–
GK3-EF..	9629.000	–	9320.120
GV3-M... (max. 40 A)	9628.000	–	–
GV3-M...	9629.000	–	9320.120

Allocation of switchgear

2.1 Busbar systems up to 360 A (40 mm)

Multi-functional component adaptor 12 A/25 A Page 346 and 347

Manufacturer/model	For bar thickness 5 mm Model No. SV	For bar thickness 10 mm Model No. SV	Accessories Model No. SV
ABB			
MS116-..	9350.100	9350.110	–
AEG			
Mbs25	9350.100	9350.110	–
Allen Bradley			
103-...R	9350.100	9350.110	–
107-...R	9350.280	9350.290	–
140M-...-...	9350.100	9350.110	–
140-MN-...	9350.100	9350.110	–
190-M1-...	9350.260	9350.270	–
190-M2-...	9350.260	9350.270	–
Moeller Electric			
PKM0...	9350.100	9350.110	–
PKZM0-...	9350.100	9350.110	–
PKZM0-...T	9350.100	9350.110	–
PKZM0-../0.-.	9350.100	9350.110	–
PKM0.../E01-G-W	9350.280	9350.290	–
PKZM0-../E-10-D	9350.100	9350.110	–
PKZM0-../S00-11	9350.100	9350.110	9320.140
PKZM0-../SE00-11	9350.100	9350.110	9320.140
PKZM0-.../.-..-W	9350.280	9350.290	–
PKZM0-.../.-..-WMF	9350.320[1]	9350.330[1]	–

Manufacturer/model	For bar thickness 5 mm Model No. SV	For bar thickness 10 mm Model No. SV	Accessories Model No. SV
Siemens			
S0			
3RA11 20-...2.-0...	9350.100	9350.110	9320.140
3RA12 20-....-...	9350.300	9350.310	–
3RV1. 21-...1.	9350.100	9350.110	–
3RW30 2.-1AB..	9350.100	9350.110	–
S00			
3RA11 10..0.1.-1...	9350.100	9350.110	9320.140
3RA12 10-....-...	9350.280[2]	9350.290[2]	9320.140
3RV10 11-..A1.	9350.100	9350.110	–
3RW30 1.-1CB.4	9350.100	9350.110	–
S00 Cage Clamp			
3RV10 11-..A20	9350.080	9350.090	–
Telemecanique			
GV2-....	9350.100	9350.110	–
GV2-M..K1..	9350.100	9350.110	–
GV2-M..K2..	9350.280	9350.290	–
GV2-P..D1..	9350.260	9350.270	–
GV2-P..D2..	9350.320[1]	9350.330[1]	–
LD1-L.030 (max. 25 A)	9350.100	9350.110	–
LH4-N1....7	9350.100	9350.110	–
LH4-N2....7	9350.280	9350.290	–

[1] Moeller: The bottom support rail is eliminated
Telemecanique: The upper support rail is offset at a distance of 125 mm from the lower support rail (support rail centre-to-centre spacing)
[2] Support rail must be offset

Multi-functional component adaptor 40 A Page 349

Component adaptor 100 A Page 349

Manufacturer/model	For bar thickness 5 mm Model No. SV	For bar thickness 10 mm Model No. SV
ABB		
DLA..-30	9350.200[1]	9350.210[1]
MS25-TM-..	9350.200[2]	9350.210[2]
MS225-..	9350.200[2]	9350.210[2]
MS325-..	9350.200[2]	9350.210[2]
MS450-.. (max. 40 A)	9350.340	9350.350
MS450-..	9350.420	9350.430
MS451-.. (max. 40 A)	9350.340	9350.350
MS451-..	9350.420	9350.430
MS495-..	9350.420	9350.430
MS496-..	9350.420	9350.430
MS497-..	9350.420	9350.430
LNA 32/63/100	9350.420	9350.430
AEG		
Mbs28	9350.200[2]	9350.210[2]
Mbs100	9350.420	9350.430
Allen Bradley		
140M-F8.-... (max. 40 A)	9350.200[2]	9350.210[2]
140-CMN-...	9350.420	9350.430
Merlin Gerin		
Compact NS 80H-MA	9350.420	9350.430

Manufacturer/model	For bar thickness 5 mm Model No. SV	For bar thickness 10 mm Model No. SV
Moeller Electric		
NZM 1	9350.420	9350.430
PKZM4-... (max. 40 A)	9350.340	9350.350
PKZM4-...	9350.420	9350.430
Siemens		
S2		
3RV1. 31-4..10 (max. 40 A)	9350.340	9350.350
3RV1. 31-4..10	9350.420	9350.430
3RW30 3.-1AB.. (max. 40 A)	9350.340	9350.350
3RW30 3.-1AB..	9350.420	9350.430
S3		
3RV1. 4.-4..10	9350.420	9350.430
3RW30 4.-1AB..	9350.420	9350.430
Telemecanique		
GK3-EF..	9350.420	9350.430
GV3-M...	9350.420	9350.430

[1] The top support rail is eliminated
[2] The bottom support rail is eliminated

2.2 Busbar systems up to 800 A/1600 A (60 mm)

Multi-functional component adaptor 12 A/25 A Page 359/360

Manufacturer/model	For bar thickness 5 mm Model No. SV	For bar thickness 10 mm Model No. SV	Accessories Model No. SV
ABB			
MS116-..	9320.180	9320.190	–
AEG			
Mbs25	9320.180	9320.190	–
Allen Bradley			
103-...R	9320.180	9320.190	–
107-...R	9320.380	9320.390	–
140M-...-...	9320.180	9320.190	–
140-MN-...	9320.180	9320.190	–
190-M1-...	9320.440	9320.450	–
190-M2-...	9320.440	9320.450	–
Moeller Electric			
PKM0...	9320.180	9320.190	–
PKZM0-...	9320.180	9320.190	–
PKZM0-...T	9320.180	9320.190	–
PKZM0-../0.-.	9320.180	9320.190	–
PKZM0.../E01-G-W	9320.380	9320.390	–
PKZM0-../E-10-D	9320.180	9320.190	–
PKZM0-../S00-11	9320.180	9320.190	9320.140
PKZM0-../SE00-11	9320.200	9320.210	–
PKZM0-.../.-..-W	9320.380	9320.390	–
PKZM0-.../.-..WMF	9320.420[1]	9320.430[1]	–

Manufacturer/model	For bar thickness 5 mm Model No. SV	For bar thickness 10 mm Model No. SV	Accessories Model No. SV
Siemens			
S0			
3RA11 20-...2.-0...	9320.180	9320.190	9320.140
3RA12 20-....-...	9320.400	9320.410	–
3RV1. 21-...1.	9320.180	9320.190	–
3RW30 2.-1AB..	9320.180	9320.190	–
S00			
3RA11 10..0.1.-1...	9320.180	9320.190	9320.140
3RA12 10-....-...	9320.380[1]	9320.390[1]	9320.140
3RV10 11-..A1.	9320.180	9320.190	–
3RW30 1.-1CB.4	9320.180	9320.190	–
S00 Cage Clamp			
3RV10 11-..A20	9320.160	9320.170	–
Telemecanique			
GV2-....	9320.180	9320.190	–
GV2-M..K1..	9320.180	9320.190	–
GV2-M..K2..	9320.380	9320.390	–
GV2-P..D1..	9320.440	9320.450	–
GV2-P..D2..	9320.420[2]	9320.430[2]	–
LD1-L.030 (max. 25 A)	9320.180	9320.190	–
LH4-N1....7	9320.180	9320.190	–
LH4-N2....7	9320.380	9320.390	–

[1] The bottom support rail is eliminated
[2] The upper support rail is offset at a distance of 125 mm from the lower support rail (support rail centre-to-centre spacing)

Multi-functional component adaptor 40 A Page 361

Manufacturer/model	For bar thickness 5 mm Model No. SV	For bar thickness 10 mm Model No. SV
ABB		
MS25-TM-..	9320.300[1]	9320.310[1]
MS225-..	9320.300[1]	9320.310[1]
MS325-..	9320.300[1]	9320.310[1]
MS450-.. (max. 40 A)	9320.460	9320.470
MS451-.. (max. 40 A)	9320.460	9320.470
DLA..-30	9320.300[2]	9320.310[2]
AEG		
Mbs28	9320.300[1]	9320.310[1]
Allen Bradley		
140M-F8.-... (max. 40 A)	9320.300[1]	9320.310[1]

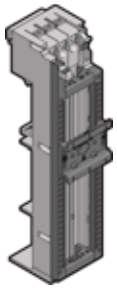
Manufacturer/model	For bar thickness 5 mm Model No. SV	For bar thickness 10 mm Model No. SV
Moeller Electric		
PKZM4-... (max. 40 A)	9320.460	9320.470
Siemens		
S2		
3RV1. 31-4..10 (max. 40 A)	9320.460	9320.470
3RW30 3.-1AB.. (max. 40 A)	9320.460	9320.470

[1] The bottom support rail is eliminated
[2] The top support rail is eliminated

Allocation of switchgear

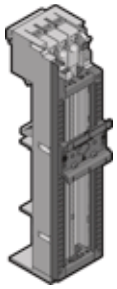
2.2 OM adaptor with tension spring clamp

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For manufacturer/model	ABB												Moeller Electric								
	MCB				Starter				Rev. Starter				MCB			Starter			Rev. Starter		
	MS-116	MS-225	MS-325	MS-450	MS-116 B6-7, A9-16	MS-225 B6-7, A9-A12-A16	MS-325 B6-7, A9-A12-A16, A26-30	MS-450 A30-A40-A50	MS-116 B6-7, A9-16	MS-225 B6-7, A9-A12-A16	MS-325 B6-7, A9-A12-A16, A26-30	MS-450 A30-A40-A50	PKZM0	PKZM01	PKZM4	PKZM0 + DILM7-9	PKZM0 + DILM12-32	PKZM4 + DILM17-65	PKZM0 + DILM7-9	PKZM0 + DILM12-32	PKZM4 + DILM17-65
Construction width	45	54	54	55	48	54	54	70	90	110	110	140	45	45	55	45	45	55	90	90	110
Model No. SV / **Design**	**Required quantity (units)**												**Required quantity (units)**								
9340.530 OM adaptor 32 A, 690 V~, 1.5 – 6 mm² 1)	1												1	1			1			1	
9340.550 OM adaptor 32 A, 690 V~, 1.5 – 6 mm² 1)					1				1							1			1		
9340.630 OM adaptor 65 A, 690 V~, 2.5 – 16 mm² 2)				1											1						
9340.650 OM adaptor 65 A, 690 V~, 2.5 – 16 mm² 2)								1				1						1			1
9340.660 OM adaptor 32 A, 690 V~, 1.5 – 6 mm² 2)		1	1			1	1			1	1										
9340.260 OM support, 45 mm wide									1										1	1	
9340.270 OM support, 55 mm wide										1	1	1									1
9340.290 Insert strip, 10 mm wide								2				3									
9340.280 Connection pin									3	3	3	3							3	3	3
9340.860 Cable set AWG 12	3	3			3	3			3	3				3		3			3		
9340.870 Cable set AWG 10			3				3				3		3				3			3	
9340.890 Cable set AWG 6				3				3				3			3			3			3
9342.840 Support rail TS45 B	1				1				1												
9342.870 Support rail TS45 B-V																	1			2	
9342.940 Support rail TS55 B-V						1	1			1	1										

1) 45 mm construction width
2) 55 mm construction width

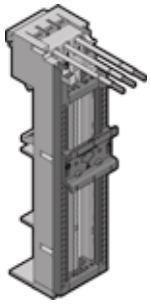


For manufacturer/model	Siemens									Telemecanique (Schneider Electric)											
	MCB			Starter			Rev. Starter			MCB				Starter					Rev. Starter			
	S00	S0	S2	S00 + S00	S0 + S0	S2 + S2	S00 + S00	S0 + S0	S2 + S2	GV2-ME	GV2-P	LUB12	GV3 to 65 A	GV2-P + LC1K AC	GV2-P + LC1K DC	GV2-ME + LC1D AC	GV2-ME + LC1D DC	GV3 + LC1D65	GV2-P + LC2K AC	GV2-P + LC2K DC	GV2-ME + LC2D AC	GV2-ME + LC2D DC
Construction width	45	45	55	45	45	55	90	100	120	45	45	45	62	45	45	45	45	62	90	90	90	90
Model No. SV / **Design**	**Required quantity (units)**									**Required quantity (units)**												
9340.530 OM adaptor 32 A, 690 V~, 1.5 – 6 mm² 1)	1	1								1	1	1										
9340.550 OM adaptor 32 A, 690 V~, 1.5 – 6 mm² 1)				1	1		1	1						1	1	1	1		1	1	1	1
9340.630 OM adaptor 65 A, 690 V~, 2.5 – 16 mm² 2)			1										1									
9340.650 OM adaptor 65 A, 690 V~, 2.5 – 16 mm² 2)						1			1									1				
9340.260 OM support, 45 mm wide							1	1											1	1	1	1
9340.270 OM support, 55 mm wide									1													
9340.290 Insert strip, 10 mm wide								1	1				1					1				
9340.280 Connection pin							3	3	3										3	3	3	3
9340.860 Cable set AWG 12	3			3			3															
9340.870 Cable set AWG 10		3			3			3		3	3	3		3	3	3	3		3	3	3	3
9340.890 Cable set AWG 6			3			3			3				3					3				
9342.820 PinBlock Plus														1		1			2		2	

1) 45 mm construction width
2) 55 mm construction width

2.2 OM adaptor with connection cables

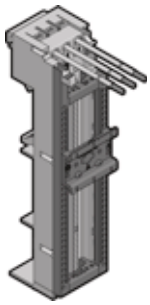
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For manufacturer/model

		ABB												Moeller Electric								
		MCB				Starter				Rev. Starter				MCB			Starter			Rev. Starter		
		MS-116	MS-225	MS-325	MS-450	MS-116 B6-7, A9-16	MS-225 B6-7, A9-12-A16, A26-30	MS-325 B6-7, A9-12-A16, A26-30	MS-450 A30-A40-A50	MS-116 B6-7, A9-16	MS-225 B6-7, A9-12-A16, A26-30	MS-325 B6-7, A9-12-A16, A26-30	MS-450 A30-A40-A50	PKZM0	PKZM01	PKZM4	PKZM0 + DILM7-9	PKZM0 + DILM12-32	PKZM4 + DILM17-65	PKZM0 + DILM7-9	PKZM0 + DILM12-32	PKZM4 + DILM17-65
		Construction width												Construction width								
		45	54	54	55	48	54	54	70	45	110	110	140	45	45	55	45	45	55	90	90	110
Model No. SV	**Design**	**Required quantity (units)**												**Required quantity (units)**								
9340.340	OM adaptor 25 A, 690 V~, AWG 12[1)]	1													1							
9340.370	OM adaptor 25 A, 690 V~, AWG 12[1)]									1							1			1		
9340.350	OM adaptor 32 A, 690 V~, AWG 10[1)]					1								1								
9340.380	OM adaptor 32 A, 690 V~, AWG 10[1)]																	1			1	
9340.460	OM adaptor 32 A, 690 V~, AWG 10[2)]		1	1																		
9340.470	OM adaptor 32 A, 690 V~, AWG 10[2)]						1	1			1	1										
9340.430	OM adaptor 65 A, 690 V~, AWG 6[2)]				1											1						
9340.450	OM adaptor 65 A, 690 V~, AWG 6[2)]								1				1						1			1
9340.260	OM support, 45 mm wide									1										1	1	
9340.270	OM support, 55 mm wide										1	1	1									1
9340.290	Insert strip, 10 mm wide								2				3									
9340.280	Connection pin									3	3	3	3							3	3	3
9342.840	Support rail TS45 B	1								1												
9342.870	Support rail TS45 B-V																				1	

[1)] 45 mm construction width
[2)] 55 mm construction width



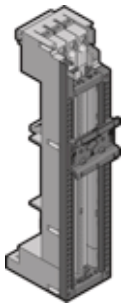
For manufacturer/model

		Siemens									Telemecanique (Schneider Electric)												
		MCB			Starter			Rev. Starter			MCB					Starter					Rev. Starter			
		S00	S0	S2	S00 + S00	S0 + S0	S2 + S2	S00 + S00	S0 + S0	S2 + S2	GV2-ME	GV2-P	LUB12	LUB32	GV3 to 65 A	GV2-P + LC1K AC	GV2-P + LC1K DC	GV2-ME + LC1K AC	GV2-ME + LC1K DC	GV3 + LC1D65	GV2-P + LC2K AC	GV2-P + LC2K DC	GV2-ME + LC2K AC	GV2-ME + LC2K DC
		Construction width									Construction width												
		45	45	55	45	45	55	90	100	120	45	45	45	45	62	45	45	45	45	62	90	90	90	90
Model No. SV	**Design**	**Required quantity (units)**									**Required quantity (units)**													
9340.340	OM adaptor 25 A, 690 V~, AWG 12[1)]	1	1								1	1	1											
9340.370	OM adaptor 25 A, 690 V~, AWG 12[1)]				1	1		1	1															
9340.350	OM adaptor 32 A, 690 V~, AWG 10[1)]										1	1	1	1		1	1	1	1		1	1	1	1
9340.380	OM adaptor 32 A, 690 V~, AWG 10[1)]															1		1			1		1	
9340.430	OM adaptor 65 A, 690 V~, AWG 6[2)]			1											1									
9340.450	OM adaptor 65 A, 690 V~, AWG 6[2)]						1			1										1				
9340.260	OM support, 45 mm wide							1	1												1	1	1	1
9340.270	OM support, 55 mm wide									1														
9340.290	Insert strip, 10 mm wide								1	1					1					1				
9340.280	Connection pin							3	3	3											3	3	3	3
9342.800	PinBlock 45 mm													1										
9342.820	PinBlock Plus															1		1			2		2	

[1)] 45 mm construction width
[2)] 55 mm construction width

2.2 OT adaptor with tension spring clamp

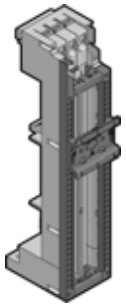
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For manufacturer/model

		ABB												Moeller Electric								
		MCB				Starter				Rev. Starter				MCB			Starter			Rev. Starter		
		MS-116	MS-225	MS-325	MS-450	MS-116 B6-7, A9-16	MS-225 B6-7, A9-A12-A16	MS-325 B6-7, A9-A12-A16-A30	MS-450 A30-A40-A50	MS-116 B6-7, A9-16	MS-225 B6-7, A9-A12-A16	MS-325 B6-7, A9-A12-A16-A30	MS-450 A30-A40-A50	PKZM0	PKZM01	PKZM4	PKZM0 + DILM7-9	PKZM0 + DILM12-32	PKZM4 + DILM17-65	PKZM0 + DILM7-9	PKZM0 + DILM12-32	PKZM4 + DILM17-65
		Construction width												Construction width								
		45	54	54	55	45	54	54	70	45	110	110	110	45	45	55	45	45	55	90	90	110
Model No. SV	**Design**	**Required quantity (units)**												**Required quantity (units)**								
9341.530	OT adaptor 32 A, 690 V~, 1.5 – 6 mm² [1]	1												1	1			1			1	
9341.550	OT adaptor 32 A, 690 V~, 1.5 – 6 mm² [1]					1				1							1			1		
9341.630	OT adaptor 65 A, 690 V~, 2.5 – 16 mm² [2]				1											1						
9341.650	OT adaptor 65 A, 690 V~, 2.5 – 16 mm² [2]								1				1						1			1
9341.660	OT adaptor 32 A, 690 V~, 1.5 – 6 mm² [2]		1	1			1	1			1	1										
9341.260	OM support, 45 mm wide									1										1	1	
9341.270	OM support, 55 mm wide										1	1	1									1
9341.290	Insert strip, 10 mm wide								2				3									
9340.280	Connection pin									4	4	4	4							4	4	4
9340.860	Cable set AWG 12	3	3			3	3			3	3				3		3			3		
9340.870	Cable set AWG 10			3				3				3		3				3			3	
9340.890	Cable set AWG 6				3				3				3			3			3			3
9342.840	Support rail TS45 B	1				1				1												
9342.870	Support rail TS45 B-V																	1			2	
9342.940	Support rail TS55 B-V						1	1			1	1										

[1] 45 mm construction width
[2] 55 mm construction width



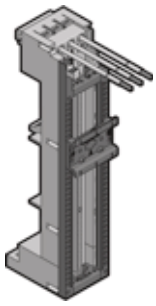
For manufacturer/model

		Siemens									Telemecanique (Schneider Electric)												
		MCB			Starter			Rev. Starter			MCB				Starter					Rev. Starter			
		S00	S0	S2	S00 + S00	S0 + S0	S2 + S2	S00 + S00	S0 + S0	S2 + S2	GV2-ME	GV2-P	LUB12	GV3 to 65 A	GV2-P + LC1K AC	GV2-P + LC1K DC	GV2-ME + LC1D AC	GV2-ME + LC1D DC	GV3 + LC1D65	GV2-P + LC2K AC	GV2-P + LC2K DC	GV2-ME + LC2D AC	GV2-ME + LC2D DC
		Construction width									Construction width												
		45	45	55	45	45	55	90	100	120	45	45	45	62	45	45	45	45	62	90	90	90	90
Model No. SV	**Design**	**Required quantity (units)**									**Required quantity (units)**												
9341.530	OT adaptor 32 A, 690 V~, 1.5 – 6 mm² [1]	1	1								1	1	1										
9341.550	OT adaptor 32 A, 690 V~, 1.5 – 6 mm² [1]				1	1		1	1						1	1	1	1		1	1	1	1
9341.630	OT adaptor 65 A, 690 V~, 2.5 – 16 mm² [2]			1										1									
9341.650	OT adaptor 65 A, 690 V~, 2.5 – 16 mm² [2]						1			1									1				
9341.260	OM support, 45 mm wide							1	1											1	1	1	1
9341.270	OM support, 55 mm wide									1													
9341.290	Insert strip, 10 mm wide								1	1				1					1				
9340.280	Connection pin							4	4	4										4	4	4	4
9340.860	Cable set AWG 12	3			3			3															
9340.870	Cable set AWG 10		3			3			3		3	3	3		3	3	3	3		3	3	3	3
9340.890	Cable set AWG 6			3			3			3				3					3				
9342.820	PinBlock Plus														1		1			2		2	

[1] 45 mm construction width
[2] 55 mm construction width

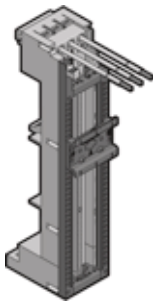
2.2 OT adaptor with connection cables

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For manufacturer/model	ABB												Moeller Electric								
	MCB				Starter				Rev. Starter				MCB			Starter			Rev. Starter		
	MS-116	MS-225	MS-325	MS-450	MS-116 B6-7, A9-16	MS-225 B6-7, A9-A12-A16	MS-325 B6-7, A9-A12-A16-A30	MS-450 A30-A40-A50	MS-116 B6-7, A9-16	MS-225 B6-7, A9-A12-A16	MS-325 B6-7, A9-A12-A16-A30	MS-450 A30-A40-A50	PKZM0	PKZM01	PKZM4	PKZM0 + DILM7-9	PKZM0 + DILM12-32	PKZM4 + DILM17-65	PKZM0 + DILM7-9	PKZM0 + DILM12-32	PKZM4 + DILM17-65
	Construction width												Construction width								
	45	54	54	55	45	54	54	70	45	110	110	110	45	45	55	45	45	55	90	90	110
Model No. SV	**Design**	**Required quantity (units)**											**Required quantity (units)**								
9341.340	OT adaptor 25 A, 690 V~, AWG 12[1)]	1											1	1			1			1	
9341.370	OT adaptor 25 A, 690 V~, AWG 12[1)]					1			1							1			1		
9341.430	OT adaptor 65 A, 690 V~, AWG 6[2)]				1										1						
9341.450	OT adaptor 65 A, 690 V~, AWG 6[2)]							1				1						1			1
9341.460	OT adaptor 32 A, 690 V~, AWG 10[2)]		1	1			1	1		1	1										
9341.260	OM support, 45 mm wide								1										1	1	
9341.270	OM support, 55 mm wide									1	1	1									1
9341.290	Insert strip, 10 mm wide							2				3									
9340.280	Connection pin								4	4	4	4							4	4	4
9342.840	Support rail TS45 B	1				1			1												
9342.870	Support rail TS45 B-V																1			2	
9342.940	Support rail TS55 B-V						1	1		1	1										

[1)] 45 mm construction width
[2)] 55 mm construction width



For manufacturer/model	Siemens									Telemecanique (Schneider Electric)											
	MCB			Starter			Rev. Starter			MCB				Starter					Rev. Starter			
	S00	S0	S2	S00 + S00	S0 + S0	S2 + S2	S00 + S00	S0 + S0	S2 + S2	GV2-ME	GV2-P	LUB12	GV3 to 65 A	GV2-P + LC1K AC	GV2-P + LC1K DC	GV2-ME + LC1D AC	GV2-ME + LC1D DC	GV3 + LC1D65	GV2-P + LC2K AC	GV2-P + LC2K DC	GV2-ME + LC2K AC	GV2-ME + LC2K DC
	Construction width									Construction width											
	45	45	55	45	45	55	90	100	120	45	45	45	62	45	45	45	45	62	90	90	90	90
Model No. SV	**Design**	**Required quantity (units)**									**Required quantity (units)**											
9341.340	OT adaptor 25 A, 690 V~, AWG 12[1)]	1	1								1	1	1									
9341.370	OT adaptor 25 A, 690 V~, AWG 12[1)]				1	1		1	1						1	1	1	1		1	1	1	1
9341.430	OT adaptor 65 A, 690 V~, AWG 6[2)]			1										1								
9341.450	OT adaptor 65 A, 690 V~, AWG 6[2)]						1			1									1				
9341.260	OM support, 45 mm wide							1	1											1	1	1	1
9341.270	OM support, 55 mm wide									1													
9341.290	Insert strip, 10 mm wide								1	1				1					1				
9340.280	Connection pin							4	4	4										4	4	4	4
9342.820	PinBlock Plus													1		1			2		2		

[1)] 45 mm construction width
[2)] 55 mm construction width

Technical information

NH fused isolators, sizes 00 to 3

Page 374, 389, 393

- The cable outlet – top or bottom – is selected directly during assembly on the same device. The switch cover unit is simply rotated through 180° (sizes 1 to 3).
- Reliable isolated or off-load position of the switch cover unit, thanks to the integral multi-function key (sizes 1 to 3).
- Switch may be locked via the installation of padlocks in the closed and isolated position.
- For inspection purposes, there are viewing windows with integral holes in the switch cover unit or sliding viewing windows.
- Simple external/internal mounting of micro-switches to indicate the switch position of the NH unit (lid unit).

Technical specifications to VDE 0660, part 107/IEC 60 947-3					
Size (NH fuse inserts to DIN 43 620)		00	1	2	3
Rated operating current I_e Conventional thermal current I_{th}		160 A 160 A	250 A 250 A	400 A 400 A	630 A 630 A
Rated operating voltage U_e		AC 690 V			
Rated insulation voltage U_i		800 V			
Rated surge voltage resistance U_{imp}		8 kV			
Conditional rated short-circuit current when protected with fuses		50 kA	50 kA	50 kA	50 kA
Rated breaking capacity to VDE 0660, part 107/IEC 60 947-3 (utilisation category)	400 V	AC-22B I_e = 160 A	AC-22B I_e = 250 A	AC-22B I_e = 400 A	AC-22B I_e = 630 A
	690 V	AC-21B I_e = 160 A	AC-21B I_e = 250 A	AC-21B I_e = 400 A	AC-21B I_e = 630 A
Mechanical life (switching cycles)		1600	1000	1000	1000
Permissible ambient temperature		–25°C to +55°C			
Fire protection corresponding to		UL 94-V0			
$P_{v\ max.}$/fuse insert		12 W	23 W	34 W	48 W

NH isolator, sizes 00 to 3

Easy changeover of the cable outlet

The uniform design of the RiLine NH generation of isolators combines optimum functionality with an attractive design. This feature supports system-compatible integration into the RiLine60 contact hazard protection concept with base tray.

In just 3 seconds, the same device may be used to swap the cable outlet from top to bottom for all RiLine NH bus-mounting on-load isolators by simply rotating the mounting hook.

In this way, there is no need to decide whether the cable outlet will go at the top or bottom until immediately prior to assembly. This function offers a clear benefit for customers, by halving the required warehousing and associated costs.



Lid lock and seal

All designs have a screwdriver-operated lock as standard, to prevent unintentional opening of the isolator lid.
In addition, the lock position may also be sealed with sealing wire.



Lid lock



Lid seal

NH isolators, size 00 to 3

Simple signalling of the switching position with micro-switches

All sizes have the option of accommodating micro-switches to indicate the switching position. The micro-switch simply clips into the relevant position in the isolator chassis. Two micro-switch locators are available as standard for each device. This allows the switching position of the isolator lid to be communicated to a PLC, while using the second micro-switch to operate the load contactor at the same time. The micro-switch wiring is routed through the device to the rear or through the pre-punched knock-out of the contact hazard protection cover plates.



Size 00



Sizes 1 to 3



Cable gland

Top-mounting of supports even with flat bars

The panels (removable at the side) allow top-mounting of Rittal RiLine60 busbar supports for all flat bars, enabling very compact configuration of the units. In conjunction with the super-slimline design, this allows a space-saving configuration.



Electronic fuse monitoring

Electronic fuse monitoring has a test button for easy simulation of a defective fuse during commissioning. The auxiliary power for the electronics is generated from the input side of the three-phase network. For technical reasons, the rated frequency of the supplying network (see technical specifications on page 1246) must not be exceeded, otherwise the electronic fuse monitor will be damaged.

Use in conjunction with motors in frequency converter mode is one such example. In such cases, electronic fuse monitoring must only be used as rotary current fusing for the frequency converter on the input side, and not in the frequency-modulated motor supply leads.

A green and a red LED display indicate the operating status of the electronic fuse monitor.

Details of how to evaluate the LEDs and the floating alarm contacts may be found in the technical specifications. In the event of a mains failure or if the isolator lid is opened, the current operating status of the alarm contacts is retained.

Note:
The fuses used MUST be designed with live puller lugs.



Electromechanical fuse monitoring

The isolator lids may be removed by simply loosening the connection. Unlike electronic monitoring, this system operates without auxiliary power, yet still performs the same functions. The rocker switch on the operating housing additionally provides a visual display of the operating status.

Note:
The fuses used MUST be designed with live puller lugs.



Technical information

NH isolators, size 000 to 3

Page 341, 345, 375 – 379, 390, 396 – 399

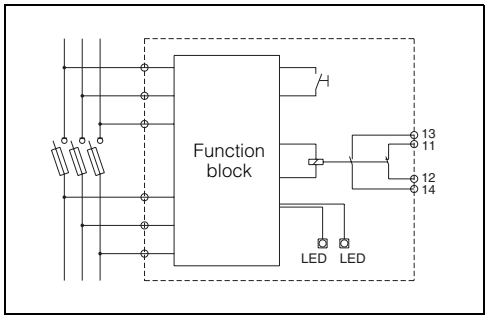
Technical specifications IEC 60 947-3						
Size (NH fuse inserts to VDE 0636-201)		Size 000	Size 00	Size 1	Size 2	Size 3
Rated operating current I_e		100 A, 160 A[1)]	160 A	250 A	400 A	630 A
Rated operating voltage U_e		690 V AC	690 V AC[2)]	690 V AC[2)]	690 V AC[2)]	690 V AC[2)]
Rated insulation voltage U_i		690 V	1000 V	1000 V	1000 V	1000 V
Rated surge voltage resistance U_{imp}		6 kV	8 kV[2)]	8 kV[2)]	8 kV[2)]	8 kV[2)]
Rated frequency		50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Conditional rated short-circuit current (when protected with fuses)	at 690 V AC	80 kA	80 kA	80 kA	50 kA	80 kA
	at 500 V AC	–	80 kA	80 kA	80 kA	80 kA
Utilisation category	400 V AC	AC-22B (I_e = 100 A)	AC-23B	AC-23B (AC-23B[3)])	AC-23B (AC-23B[3)])	AC-23B (AC-23B[3)])
	500 V AC	–	AC-22B	AC-23B (AC-23B[3)])	AC-22B (AC-23B[3)])	AC-22B (AC-23B[3)])
	690 V AC	AC-21B (I_e = 100 A)	AC-21B	AC-22B (AC-23B[3)])	AC-21B (AC-23B[3)])	AC-21B (AC-23B[3)])
	220 V DC[4)]	–	DC-22B	DC-21B (DC-22B[3)])	DC-21B (DC-22B[3)])	DC-21B (DC-22B[3)])
	440 V DC[4)]	DC-21B (I_e = 100 A)	–	DC-22B[3)]	DC-22B[3)]	DC-22B[3)]
Mechanical life (switching cycles)		2000	1400	1400	800	800
Electrical life (switching cycles)		200	200	200	200	200
Permissible ambient temperature		–25°C to +55°C	–20°C to +60°C	–20°C to +60°C	–20°C to +60°C	–20°C to +60°C
$P_{v\,max.}$/fuse insert		7.5 W (9 W)[1)]	12 W	23 W	34 W	48 W

[1)] For 95 mm² connection cross-section (95 mm² connection pieces available on request).
[2)] When using NH isolators with electronic or electromechanical fuse monitoring, the rating data in the following table will apply.
[3)] With arcing chambers (Model No. SV 9344.680) for increased switching capacity.
[4)] DC application with population of phase L_1 and L_3.

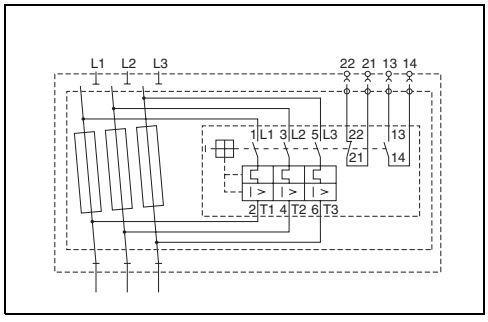
Electronic and electromechanical fuse monitoring

Technical specifications	Electronic fuse monitoring	Electromechanical fuse monitoring
Rated operating voltage U_e	AC 400 V to AC 500 V (50/60 Hz)	AC 24 V to AC 690 V (50/60 Hz) DC 24 V to DC 250 V
Rated surge voltage resistance U_{imp}	3.5 kV	6 kV
Response time	< 0.5 s	< 2 s
Auxiliary contacts	1 NO, 1 NC	1 NO, 1 NC
Load capacity of auxiliary contacts	5 A	4 A
Permissible ambient temperature	–20°C to +60°C	–20°C to +60°C
Display	LED constantly green (operational) 13/14: open 11/12: closed	Rocker switch position “1” (operational) 13/14: closed 21/22: open
	LED flashing red (error message) 13/14: closed 11/12: open	Rocker switch position “0” (error message) 13/14: open 21/22: closed
Connection of auxiliary contacts	Terminal up to 1.5 mm²	Terminal up to 1.5 mm²
NH fuse inserts	With contacted, live puller lugs	

Wiring diagram



Electronic fuse monitoring



Electromechanical fuse monitoring

Rated currents of busbars E-Cu (DIN 43 671)

DIN 43 671 specifies the constant currents for busbars at an ambient temperature of 35°C and an average busbar temperature of 65°C. With the aid of a correction factor (k_2), the continuous currents specified in the following table may be adjusted to alternative operating temperatures.

For safe operation with thermal reserve, it is advisable to limit the busbar temperature to a maximum of 85°C. However, the decisive factor is the lowest permissible continuous temperature of the components which directly contact the busbar sytem (fuse bases, outgoing cables etc.). The ambient air temperature of the busbars or busbar system should not exceed 40°C; an average of 35°C maximum is recommended.

For the continuous temperatures specified in the table, an emission level of 0.4 applies, equivalent to an oxidating copper bar. In modern busbar systems – built into enclosures with a protection category of IP 54 and above – a more favourable emission level can be assumed. The lower emission level facilitates an additional increase in continuous currents compared with the figures in DIN 43 671, irrespective of the specified air and busbar temperature. Experience has shown an increase in the continuous current of 6 – 10% compared with the table figures for uncoated copper bars, and 60 % for surface-oxidised copper bars.

Example:
For a Cu bar 30 x 10 mm (E-Cu F30), DIN 43 671 specifies a constant current of I_{N65} = 573 A.
The correction factor diagram for square cross-sections indicates a correction factor k_2 = 1.29 at an air temperature of 35°C and a busbar temperature of 85°C. Thanks to the favourable emission level, the continuous current is increased by a further 6 – 10 %. In this example, a mean value of 8 % is used. Compared with the table figure from DIN 43 671, the Rittal rated current specification for a Cu bar 30 x 10 mm is:

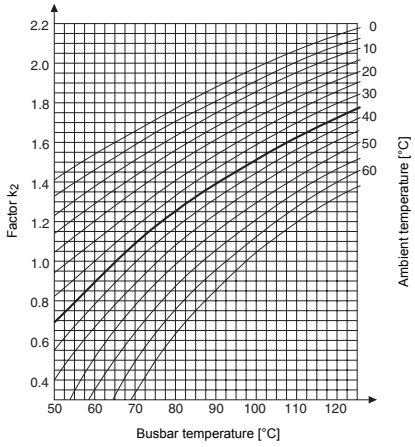
$$I_{N85} = I_{N65} \cdot k_2 + 8\ \%$$
$$= 573\ A \cdot 1.29 \cdot 1.08$$
$$I_{N85} = 800\ A$$

Continuous currents for busbars
Made from E-Cu with square cross-section in indoor locations at 35°C air temperature and 65°C bar temperature, vertical position or horizontal position of the bar width.

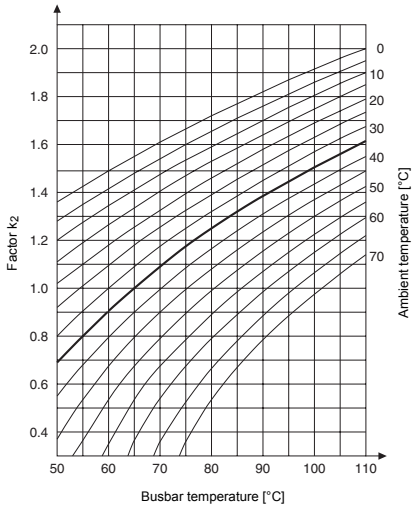
Width x thickness mm	Cross-section mm²	Weight[1]	Material[2]	Continuous current in A			
				AC current up to 60 Hz		DC current + AC current 16 Hz	
				Uncoated bar	Coated bar	Uncoated bar	Coated bar
12 x 2	23.5	0.209		108	123	108	123
15 x 2	29.5	0.262		128	148	128	148
15 x 3	44.5	0.396		162	187	162	187
20 x 2	39.5	0.351		162	189	162	189
20 x 3	59.5	0.529		204	237	204	237
20 x 5	99.1	0.882		274	319	274	320
20 x 10	199.0	1.770		427	497	428	499
25 x 3	74.5	0.663		245	287	245	287
25 x 5	124.0	1.110		327	384	327	384
30 x 3	89.5	0.796		285	337	286	337
30 x 5	149.0	1.330	E-Cu F30	379	447	380	448
30 x 10	299.0	2.660		573	676	579	683
40 x 3	119.0	1.060		366	435	367	436
40 x 5	199.0	1.770		482	573	484	576
40 x 10	399.0	3.550		715	850	728	865
50 x 5	249.0	2.220		583	697	588	703
50 x 10	499.0	4.440		852	1020	875	1050
60 x 5	299.0	2.660		688	826	696	836
60 x 10	599.0	5.330		985	1180	1020	1230
80 x 5	399.0	3.550		885	1070	902	1090
80 x 10	799.0	7.110		1240	1500	1310	1590

[1] Calculated with a density of 8.9 kg/dm³
[2] Reference basis for the continuous current levels (figures taken from DIN 43 671)

Correction factor diagram to DIN 43 671



Correction factor diagram for PLS



Rittal PLS current load
According to DIN 43 671, the correction factor k_2 (correction diagram) is used to correct the basic current with reference to the existing temperatures of the ambient air and the busbar. In accordance with DIN 43 671, the load figures of the Rittal PLS special bars have been determined on the basis of measurement trials, as follows:

PLS special busbars	Rated current AC 50/60 Hz	
	for 35/75°C	for 35/65°C (basic value)
E-Cu 800 A	800 A	684 A
E-Cu 1600 A	1600 A	1368 A



2.7 Laminated copper bars Rittal Flexibar “S”

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Configuration[1] mm	I_n for 50 K[2]	I_n for 30 K[2]	I_n for 10 K[2]	Curve (short-circuit resistance)	Installation type	**Model No. SV**
8 x 0.6 x 0.5	165 A	125 A	–	–	–	3565.010
6 x 9.0 x 0.8	250 A	220 A	120 A	–	–	3565.000
6 x 13.0 x 0.5	200 A	150 A	110 A	–	–	3566.000
4 x 15.5 x 0.8	300 A	210 A	140 A	–	–	3567.000
6 x 15.5 x 0.8	350 A	290 A	170 A	a	1	3568.000
10 x 15.5 x 0.8	450 A	350 A	190 A	a	1	3569.000
5 x 20.0 x 1.0	400 A	300 A	180 A	a	1	3570.000
5 x 24.0 x 1.0	450 A	370 A	230 A	a	1	3571.000
10 x 24.0 x 1.0	800 A	600 A	340 A	b	1	3572.000
5 x 32.0 x 1.0	550 A	470 A	280 A	b	2/3	3573.000
10 x 32.0 x 1.0	1000 A	800 A	460 A	c	2/3	3574.000
5 x 40.0 x 1.0	800 A	600 A	340 A	b	2/3	3575.000
10 x 40.0 x 1.0	1200 A	950 A	500 A	c	2/3	3576.000
5 x 50.0 x 1.0	900 A	700 A	400 A	b	2/3	3577.000
10 x 50.0 x 1.0	1400 A	1000 A	600 A	c	2/3	3578.000
10 x 63.0 x 1.0	1600 A	1240 A	715 A	d	2/3	3579.000

[1] Number of lamina x lamina width x lamina thickness

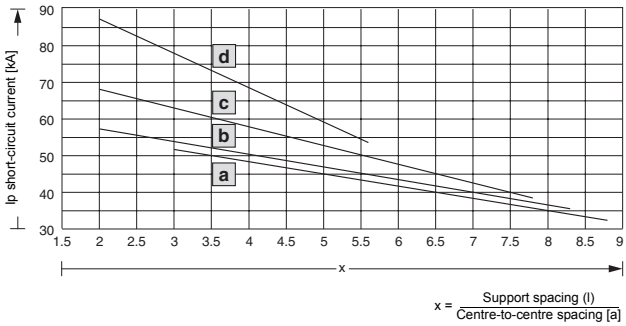
[2] The conductor temperature of the laminated copper bar is derived by adding the ambient temperature and the temperature increase together.

Example:
SV 3565.000 carrying 220 A, i.e. the temperature increases by 30 K. At an ambient temperature of 35°C, this produces a resultant conductor temperature of 35°C + 30 K = 65°C.

Short-circuit resistance diagrams

Basis of test:
VDE 0660, part 500/IEC 60 439-1.
Test implemented:
Dynamic short-circuit resistance to IEC 60 439-1.

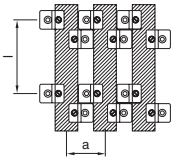
The dimensions for the support spacing (l) and for the centre-to-centre spacing (a) must be within the specified min./max. limits. The quotients of l/a can be used to determine the permissible short-circuit current I_p by using curves a to d. The prescribed installation type must be taken into account.



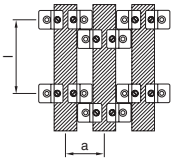
Curve	Support spacing (l) mm		Centre-to-centre spacing (a) mm	
	min.	max.	min.	max.
a	150	300	34	60
b	150	350	42	85
c	200	400	51	85
d	200	450	81	100

Type of assembly with universal support SV 3079.000

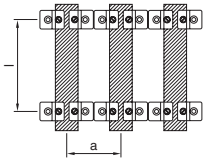
1



2



3

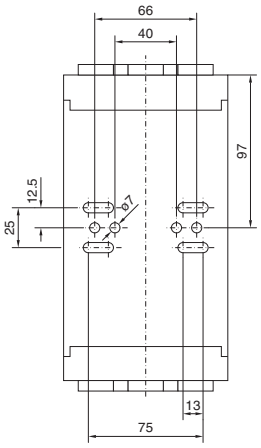


2.6 NH on-load isolator

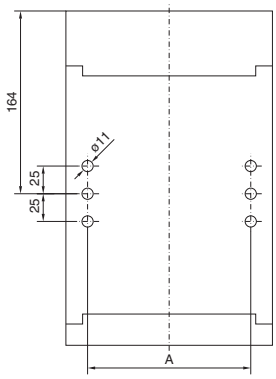
Page 396 – 399

Hole size

Size 00 (SV 9344.000 – 9344.050)

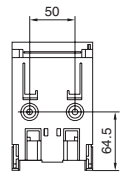


Size 1 (SV 9344.100 – 9344.150)
Size 2 (SV 9344.200 – 9344.250)
Size 3 (SV 9344.300 – 9344.350)



Size	A
1	150
2	166
3	195

Size 000 (SV 3431.000)



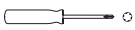
Busbar adaptor 100 mm

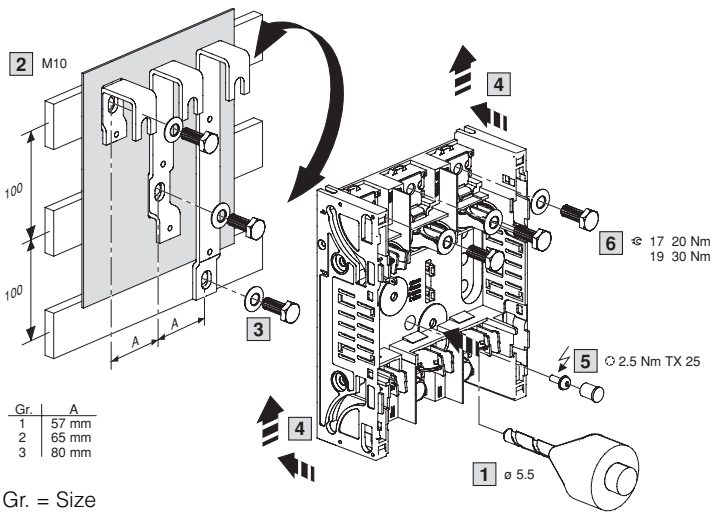
for NH on-load isolator sizes 1 to 3, for mounting plate assembly

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Assembly instructions







Gr.	A
1	57 mm
2	65 mm
3	80 mm

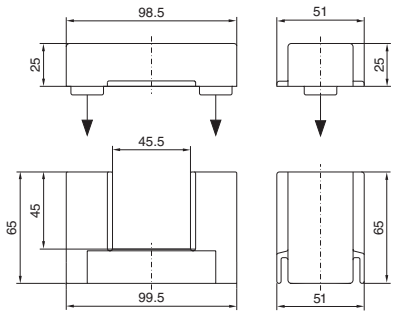
Gr. = Size

Note:
For mounting NH on-load isolators size 1 to 3 on busbar systems with 100 mm bar centre distance, an additional mounting hole (d = 5.5 mm) must be drilled in the respective isolator chassis as shown in the assembly instructions, stage **1** opposite. The busbar adaptor is then mounted on the busbar using M10 screws, see stages **2** and **3**, and the isolator is secured onto the adaptor as shown in stages **4** to **6**.

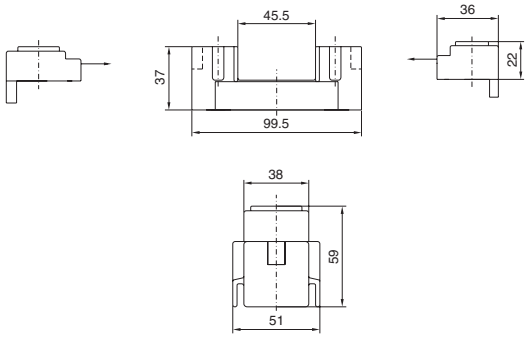
2.8 System components

Maxi-PLS 1600 A/2000 A Page 422

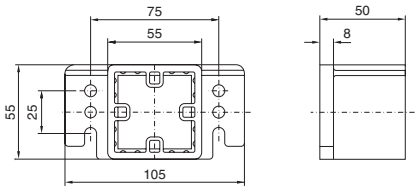
Busbar supports
Model No. SV 9640.000, SV 9649.000



Busbar support, suitable for top mounting
Model No. SV 9640.160

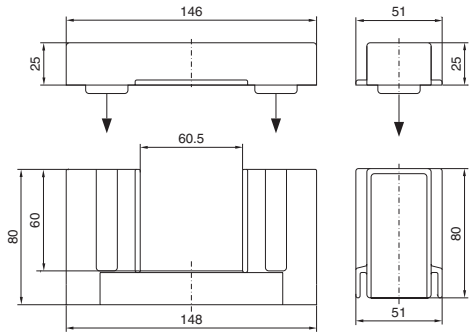


End supports
Model No. SV 9640.010, SV 9649.010

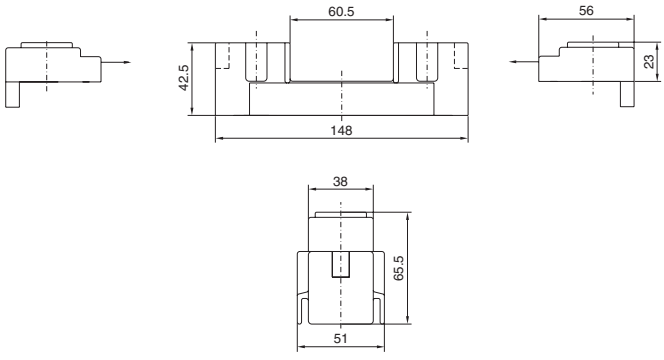


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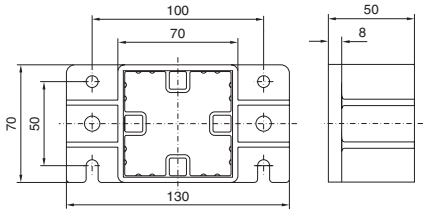
Busbar supports
Model No. SV 9650.000, SV 9659.000



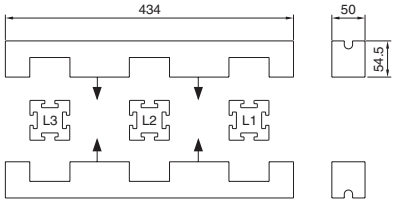
Busbar support, suitable for top mounting
Model No. SV 9650.160



End supports
Model No. SV 9650.010, SV 9659.010



Stabiliser
Model No. SV 9650.140

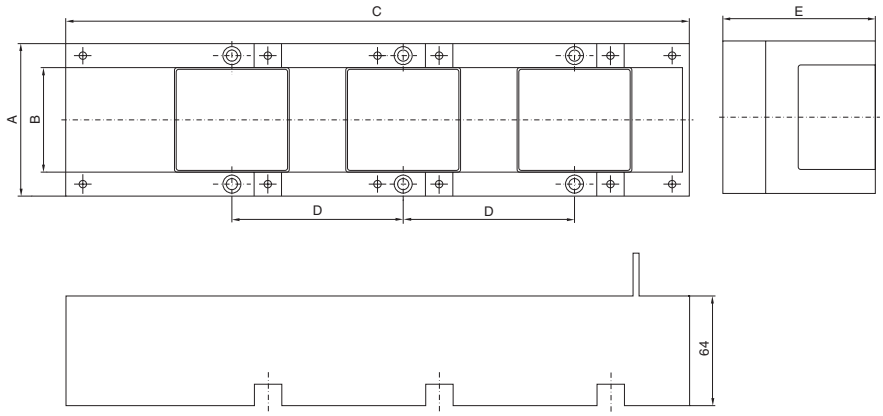


2.8 Connection components

Maxi-PLS up to 1600 A/2000 A Page 423

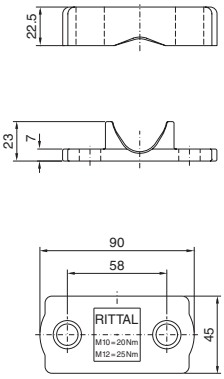
Maxi-PLS up to 3200 A Page 437

Isolator chassis

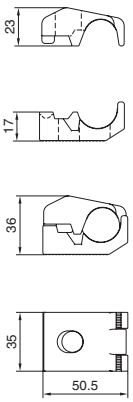


Model No. SV	A	B	C	D	E
9640.020	89	61	346	100	89
9650.020	89	61	479	150	94
9650.030	129	101	479	150	94

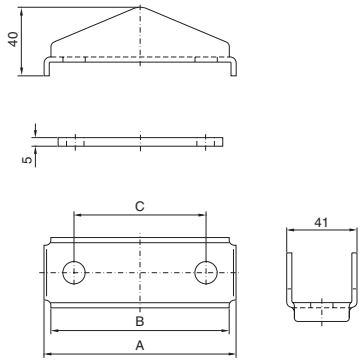
Connection clamp
Model No.
SV 9640.320,
SV 9650.320



Connection clamp
Model No.
SV 9640.325

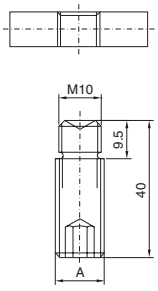


Connection plates

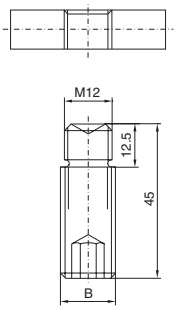


Model No. SV	Size	A	B	C	T-head screws	Tightening torque
9640.330	1	81	73	46	M10	20 Nm
9640.340	2	112	104	77	M10	25 Nm
9640.350	3	149	141	114	M10	30 Nm
9650.330	1	81	73	46	M12	25 Nm
9650.340	2	112	104	77	M12	30 Nm
9650.350	3	149	141	114	M12	35 Nm

Terminal studs
(2000 A)

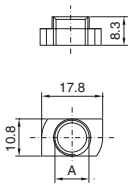


Terminal studs
(3200 A)

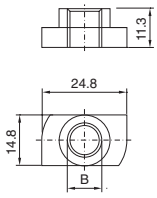


Model No. SV	A	B
9640.370	M12	–
9640.380	M16	–
9650.370	–	M12
9650.380	–	M16

Sliding nuts
(2000 A)



Sliding nuts
(3200 A)

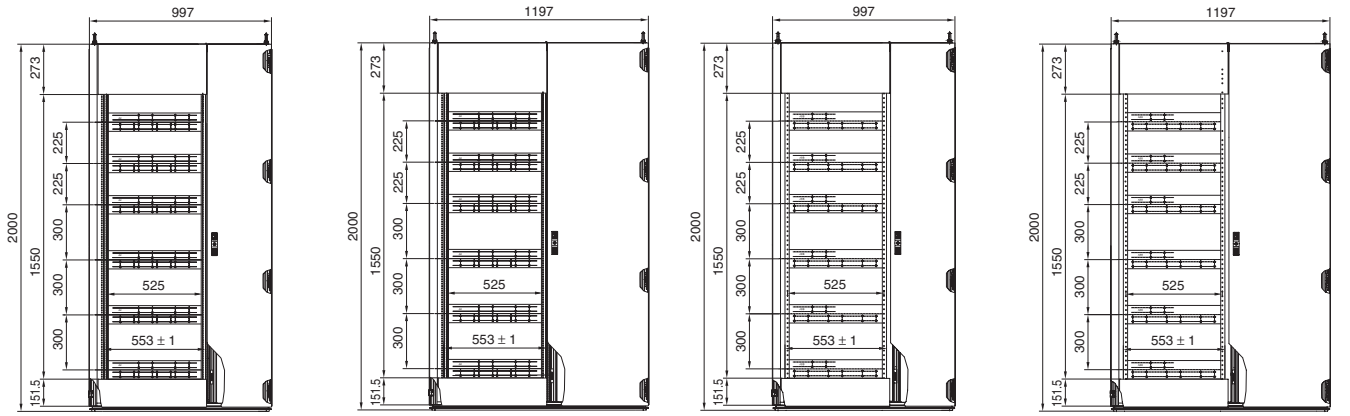


Model No. SV	A	B
9640.900	M6	–
9640.910	M8	–
9640.920	M10	–
9650.900	–	M6
9650.910	–	M10
9650.920	–	M12

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2.8 SV-TS 8 enclosures

for NH fused isolators, 4-pole Page 443



Model No. SV	Depth mm	For[1)]
9649.645	600	B
9659.645	800	B

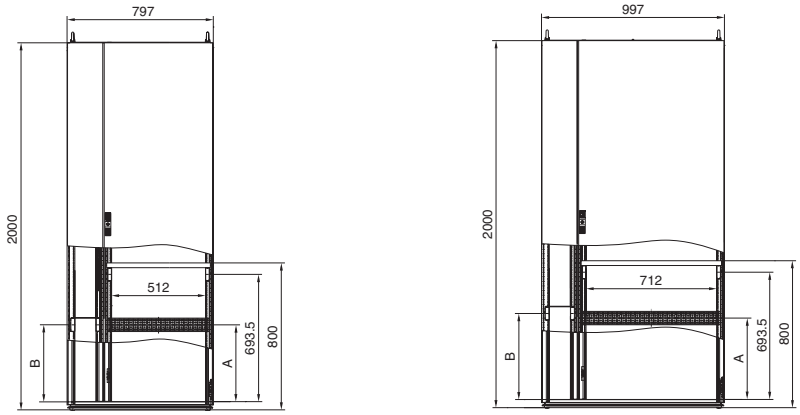
Model No. SV	Depth mm	For[1)]
9649.655	600	B
9659.655	800	B

Model No. SV	Depth mm	For[1)]
9649.665	600	A
9659.665	800	A

Model No. SV	Depth mm	For[1)]
9649.675	600	A
9659.675	800	A

[1)] NH-fused isolators brand A = ABB SlimLine, B = Jean Müller SASIL

for coupling sets Page 445

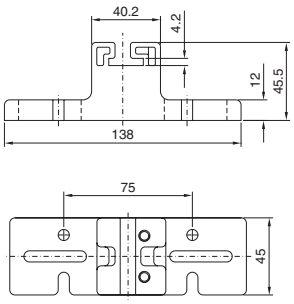


Model No. SV	Depth mm	A mm	B mm
9660.305	600	418.5	406

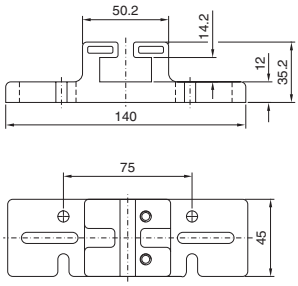
Model No. SV	Depth mm	A mm	B mm
9660.355	600	443.5	456
9649.685	600	418.5	406
9659.695	800	443.5	456

System components for NH fused isolator panels Page 444

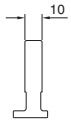
T-bar supports up to 800 A
Model No. SV 9660.000/.010,
SV 9649.100/.110



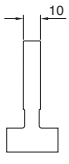
T-bar supports up to 1600 A
Model No. SV 9660.100/.010,
SV 9659.100/.110



T-busbars E-Cu
up to 800 A
Model No. SV 9660.030,
SV 9649.130



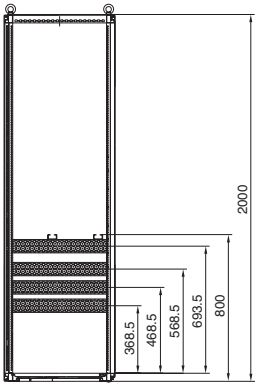
T-busbars E-Cu
up to 1600 A
Model No. SV 9660.130,
SV 9659.130



2.8 SV-TS 8 enclosures

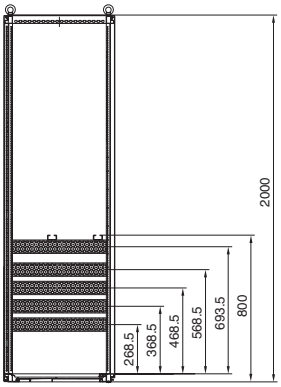
for incoming/outgoing circuit, 3-pole Page 438, **4-pole** Page 439

3-pole



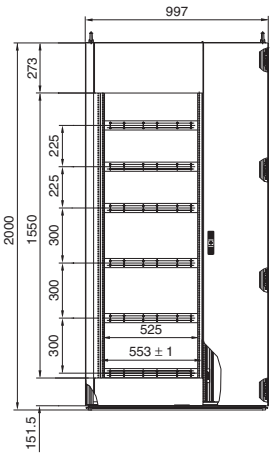
Model No. SV	Width mm	Depth mm	Door(s)
9660.665	600	600	1
9660.675	600	600	3
9660.865	800	600	1
9660.875	800	600	3

4-pole

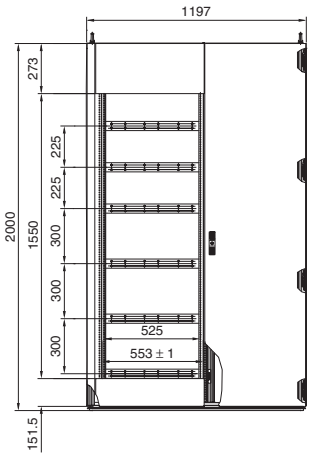


Model No. SV	Width mm	Depth mm	Door(s)
9649.625	800	600	1
9649.635	800	600	3
9659.625	800	800	1
9659.635	800	800	3

for NH fused isolators, 3-pole Page 442



Model No. SV	Depth mm	For[1)]
9660.515	600	A
9660.415	600	B



Model No. SV	Depth mm	For[1)]
9660.545	600	A
9660.445	600	B

[1)] NH-fused isolators brand
A = ABB SlimLine
B = Jean Müller SASIL

Rittal Ri4Power Form 1

2.8 SV-TS 8 enclosures

for incoming/outgoing circuit Page 438

Maxi-PLS busbar system (incoming panel)			**1600 A**	**2000 A**	**3200 A**	
Electrical characteristics	Rated voltage	Rated insulation voltage U_i	1000 V			EN 60 439-1
		Rated operating voltage U_e	690 V			
		Rated surge voltage resistance U_{imp}	8 kV			
		Overvoltage category	IV			
		Level of contamination	3			
		Rated frequency	50 Hz			
	Rated current (primary busbar)	Rated operating current I_e	1400 A	1700 A	2100 A	For IP 54
			1900 A	2000 A	2600 A	For IP 2X[1]
			–	2500 A	3000 A	For IP 2X[2]
			–	–	3200 A	[3]
		Rated surge current resistance I_{pk}	110 kA		165 kA (264 kA)[4]	EN 60 439-1
		Rated short-time current resistance I_{cw}	50 kA		70 kA (124 kA)[4]	
	Testing under accidental arc conditions	Permissible uninfluenced short-circuit current	50 kA		70 kA	EN 61 641
		Test voltage	420 V			
		Permissible arc duration	0.3 sec.			
Mechanical characteristics	Dimensions	Enclosure width Enclosure height Enclosure depth	600/800 mm 2000 mm[5] 600 mm[5]			
		Pitch pattern	25 mm			
	Protection rating		Max. IP 54			EN 60 529
	Design		1			EN 60 439-1
	Surface protection/ material	Enclosure frame	Dipcoat-primed			
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside			
		System attachment	Stainless steel			
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated			
	Busbar	Material	E-Cu, bare			
		External dimensions (cross-section)	45 x 45 mm (1000 mm²)	45 x 45 mm (1380 mm²)	60 x 60 mm (2700 mm²)	
Operating and ambient conditions	Ambient temperature	Short-term peak	+40°C			EN 60 439-1
		Maximum on a 24 h average	+35°C			
		Low	–5°C			
	Atmospheric conditions	Normal climatic stress				EN 60 439-1
		Relative humidity	50 % at 40°C			
			Operation up to 1000 m above sea level			

[1] Using outlet filter SK 3326.207 and roof plate SV 9660.235/.245/.255/.265
[2] Using fan-and-filter unit SK 3325.107 (700 m³/h) and roof plate SV 9660.235/.245
[3] Busbars in open frame (free air convection) or special climate control measures to maintain the enclosure internal temperature
[4] Using stabiliser SV 9650.140
[5] Other sizes available on request.

2.8 SV-TS 8 enclosures

for NH fused isolators Page 440/441

Maxi-PLS busbar system (185 mm busbar system in the rear section of the enclosure)			**1600 A**	**2000 A**	**3200 A**	
Electrical characteristics	Rated voltage	Rated insulation voltage U_i	1000 V			EN 60 439-1
		Rated operating voltage U_e	690 V			
		Rated surge voltage resistance U_{imp}	8 kV			
		Overvoltage category	IV			
		Level of contamination	3			
		Rated frequency	50 Hz			
	Rated current (primary busbar)	Rated operating current I_e	1400 A	1700 A	2100 A	For IP 54
			1900 A	2000 A	2600 A	For IP 2X[1]
			–	2500 A	3000 A	For IP 2X[2]
			–	–	3200 A	[3]
		Rated surge current resistance I_{pk}	143 kA[4]		176 kA[5]	
		Rated short-time current resistance I_{cw}	65 kA[4]		80 kA[5]	
	Testing under accidental arc conditions	Permissible uninfluenced short-circuit current	50 kA		70 kA	EN 61 641
		Test voltage	420 V			
		Permissible arc duration	0.3 sec.			
Mechanical characteristics	Dimensions	Enclosure width Enclosure height Enclosure depth	600/800/1000/1200 mm 2000 mm[6] 500/600/800 mm			
		Pitch pattern	25 mm			
	Protection rating		Max. IP 54			EN 60 529
	Design		1			EN 60 439-1
	Surface protection/ material	Enclosure frame	Dipcoat-primed			
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside			
		System attachment	Stainless steel			
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated			
	Busbar	Material	E-Cu, bare			
		External dimensions (cross-section)	45 x 45 mm (1380 mm²)		60 x 60 mm (2700 mm²)	
Operating and ambient conditions	Ambient temperature	Short-term peak	+40°C			EN 60 439-1
		Maximum on a 24 h average	+35°C			
		Low	–5°C			
	Atmospheric conditions	Normal climatic stress				EN 60 439-1
		Relative humidity	50 % at 40°C			
			Operation up to 1000 m above sea level			

[1] Using outlet filter SK 3326.207 and roof plate SV 9660.235/.245/.255/.265
[2] Using fan-and-filter unit SK 3327.107 (700 m³/h) and roof plate SV 9660.235/.245/.255/.265
[3] Busbars in open frame (free air convection) or special climate control measures to maintain the enclosure internal temperature
[4] Using busbar support, suitable for top mounting SV 9640.160
[5] Using busbar support, suitable for top mounting SV 9650.160
[6] Enclosure height 1800 and 2200 mm available on request.

2.8 SV-TS 8 enclosures

for NH fused isolators Page 442/443

T-bar system			**800 A**	**1600 A**	
Electrical characteristics	Rated voltage	Rated insulation voltage U_i	1000 V		EN 60 439-1
		Rated operating voltage U_e	690 V		
		Rated surge voltage resistance U_{imp}	8 kV		
		Overvoltage category	IV		
		Level of contamination	3		
		Rated frequency	50 Hz		
	Rated current (primary busbar)	Rated operating current I_e	1000 A	1600 A	For IP 3X
		Rated surge current resistance I_{pk}	110 kA		
		Rated short-time current resistance I_{cw}	50 kA		
	Testing under accidental arc conditions	Permissible uninfluenced short-circuit current	50 kA		EN 61 641
		Test voltage	420 V		
		Permissible arc duration	0.3 sec.		
Mechanical characteristics	Dimensions	Enclosure width Enclosure height Enclosure depth	1000/1200 mm 2000 mm[1)] 600 mm[1)]		
		Pitch pattern	25 mm		
	Protection rating		IP 3X		EN 60 529
	Design		1		EN 60 439-1
	Surface protection/ material	Enclosure frame	Dipcoat-primed		
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside		
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated		
		System attachment	Stainless steel		
	Busbar	Material	E-Cu, bare		
		Width contact strip	10 mm		
		Cross-section	470 mm²	910 mm²	
Operating and ambient conditions	Ambient temperature	Short-term peak	+40°C		EN 60 439-1
		Maximum on a 24 h average	+35°C		
		Low	–5°C		
	Atmospheric conditions	Normal climatic stress			EN 60 439-1
		Relative humidity	50 % at 40°C		
			Operation up to 1000 m above sea level		

[1)] Other sizes available on request.

2.8 SV-TS 8 enclosures

for coupling sets Page 445

Maxi-PLS busbar system (coupling section)			**1600 A**	**2000 A**	**3200 A**	
Electrical characteristics	Rated voltage	Rated insulation voltage U_i	1000 V			EN 60 439-1
		Rated operating voltage U_e	690 V			
		Rated surge voltage resistance U_{imp}	8 kV			
		Overvoltage category	IV			
		Level of contamination	3			
		Rated frequency	50 Hz			
	Rated current (primary busbar)	Rated operating current I_e	1400 A	1700 A	2100 A	For IP 54
			1900 A	2000 A	2600 A	For IP 2X[1]
			–	2500 A	3000 A	For IP 2X[2]
			–	–	3200 A	[3]
		Rated surge current resistance I_{pk}	110 kA			
		Rated short-time current resistance I_{cw}	50 kA			
	Testing under accidental arc conditions	Permissible uninfluenced short-circuit current	50 kA		70 kA	EN 61 641
		Test voltage	420 V			
		Permissible arc duration	0.3 sec.			
Mechanical characteristics	Dimensions	Enclosure width Enclosure height Enclosure depth	800 mm[4] 2000 mm[4] 600 mm[4]		1000 mm[4] 2000 mm[4] 600 mm[4]	
		Pitch pattern	25 mm			
	Protection rating		Max. IP 54			EN 60 529
	Design		1			EN 60 439-1
	Surface protection/ material	Enclosure frame	Dipcoat-primed			
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside			
		System attachment	Stainless steel			
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated			
	Busbar	Material	E-Cu, bare			
		External dimensions (cross-section)	45 x 45 mm (1000 mm²)	45 x 45 mm (1380 mm²)	60 x 60 mm (2700 mm²)	
Operating and ambient conditions	Ambient temperature	Short-term peak	+40°C			EN 60 439-1
		Maximum on a 24 h average	+35°C			
		Low	–5°C			
	Atmospheric conditions	Normal climatic stress				EN 60 439-1
		Relative humidity	50 % at 40°C			
			Operation up to 1000 m above sea level			

[1] Using outlet filter SK 3326.207 and roof plate SV 9660.255
[2] Using fan-and-filter unit SK 3327.107 (700 m³/h) and roof plate SV 9660.235/.245/.255
[3] Busbars in open frame (free air convection) or special climate control measures to maintain the enclosure internal temperature
[4] Other sizes available on request.

Rittal Ri4Power – Technical information

Planning and project management in line with regulations

As a general principle, low-voltage switchgear and distributors should be planned to meet the operating conditions of their final installation site. To this end, the operator of the plant, in collaboration with the manufacturer, should stipulate the operating and ambient conditions. Moreover, as a general rule, the operator or planning office should also supply the manufacturer with full electrical specifications of both the mains supply end and the distributor outlet end. This makes it possible to plan and manufacture a cost-effective system with optimum adaptation to the technical requirements.

Important operating and ambient conditions

- Rated operating voltage U_e
- Mains frequency f_N
- Rated insulation voltage U_i
- Busbar rated current I_{sas}
- Rated current for the supply end I_{zu}
- Rated surge current resistance I_{pk}
- Rated short-time current resistance I_{cw}
- Ambient temperature condition ϑ
- Atmospheric climatic stress, specifying the relative humidity and temperature
- Protection category of the overall system IP . . .
- Specification to DIN EN 60 529
- Protection category

Important basic data for planning and project management

- Applicable regulations and standards, both regional and international
- Electricity supply company conditions
- Operator-specific regulations
- Mains-specific protective measures/mains type
- Rated voltage and frequency
- Rated current with due regard for the number of conductors (infeed and busbars)
- Rated insulation voltage
- Short-circuit current at the point of installation
- Location of incoming cables, from above or below
- Number of incoming cables, specifying the type and cross-section
- Number of outlets, specifying the operating load and the envisaged outgoing cables with type and cross-section
- For the outlet side, specification of the simultaneity factor and rated load factor of the relevant equipment items

Rated load factor

The rated load factor of a switchgear enclosure or part thereof (e.g. a field) comprising several main circuits refers to the ratio between the largest sum total of all currents anticipated at any given time in the affected main circuits and the sum total of the rated currents of all main circuits of the switchgear enclosure or observed part thereof.

Number of main circuits	Load factor
2 and 3	0.9
4 and 5	0.8
6 and 7	0.7
10 or more	0.6

Rated currents and short-circuit currents of standard transformers

Rated voltage U_N = 400 V	400 V		
Short-circuit voltage U_k		4 %[1]	6 %[2]
Power consumption S_{NT} [kVA]	Rated current I_N [A]	Short-circuit current $I_{k''}$[3] [kA]	
50	72	1.89	1.20
100	144	3.61	2.41
160	230	5.77	3.85
200	288	7.22	4.81
250	360	9.02	6.01
315	455	11.36	7.58
400	589	14.43	9.62
500	722	18.04	12.03
630	910	22.73	15.15
800	1156	28.86	19.24
1000	1444	36.08	24.05
1250	1805	45.09	30.06
1600	2312	57.72	38.48
2000	2882	72.15	48.10

[1] U_k = 4 % standardised to DIN 42 503 for S_{NT} = 50 . . . 630 kVA
[2] U_k = 6 % standardised to DIN 42 511 for S_{NT} = 100 . . . 1600 kVA
[3] $I_{k''}$ = Initial symmetrical short-circuit current of transformer when connecting to a mains supply with unlimited short-circuit lead

Design differences between TTA and PTTA

The following regulation applies to the manufacture of low-voltage switchgear and distributors with Rittal SV technology:
DIN EN 60 439-1 (DIN VDE 0660 part 500)
Low-voltage switchgear enclosures – requirements for type-tested and partially type-tested enclosures.

This standard makes a distinction between
- type-tested switchgear enclosures (TTA) and
- partially type-tested switchgear enclosures (PTTA).

This refers to the following:
Type-tested switchgear enclosures (TTA) are switchgear enclosures or parts thereof (e.g. functional units, assemblies) which match the switchgear enclosure type-tested under the standard, without any major deviations from the original type or system.

Partially type-tested switchgear enclosures (PTTA)
are switchgear enclosures which are manufactured individually or in small quantities for specific application conditions and which contain both type-tested and non-type-tested assemblies, provided the latter are derived from type-tested assemblies (e.g. by means of calculation) which have passed the appropriate tests.

There are no quality differences defined between the two design variants TTA and PTTA. In other words, they are deemed to be of equal value.
However, both design variants require different proof and tests.

The following proof and tests must be provided for system configuration in line with regulations and evidence of CE conformity:

TTA/PTTA to DIN EN 60 439-1
- Compliance with the limit overtemperature
- Dielectric strength
- Short-circuit resistance
- Effectiveness of the PE conductor
- Creepage distances and clearances
- Mechanical function
- IP protection categories
- Wiring, electrical function
- Insulation
- Protective measures

Amongst type-tested switchgear enclosures TTA, this evidence is provided by one-off type testing and unit testing following assembly.

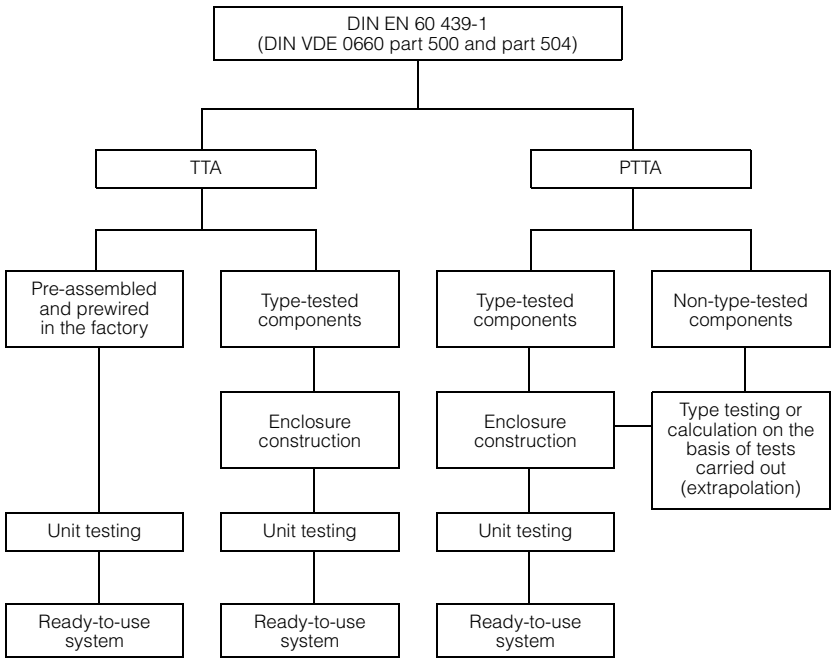
In the case of partially type-tested switchgear enclosures PTTA, complete evidence must be provided for each system installed, either by means of testing or by means of calculation based on the tests performed.

For details of the scope of testing for both design variants, please refer to table 7 in DIN EN 60 439-1 which contains references to the standard section number.

This standard specifies that random variation e.g. of switchgear and protective devices of different makes or models within a switchgear installation is no longer possible without evidence of testing or calculation. This evidence can only be supplied by the manufacturer/workshop.

Special consideration must be made for this fact, both when planning and when purchasing switchgear and distributors.

Difference between TTA and PTTA



Unit testing (final inspection of installations)

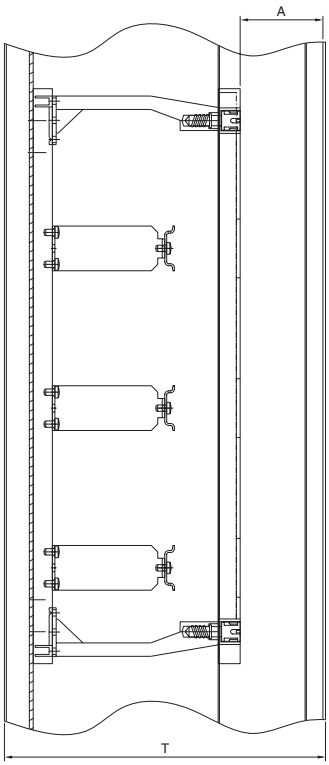
According to DIN VDE 0100 part 610 (original inspection), low-voltage installations, including switchgear and distributors, should be subjected to an original inspection prior to commissioning and handover to the customer.

On-site inspection of the customer's system is not necessary for switchgear and distributors, provided an inspection record from the manufacturer/workshop is available.

This cost-saving variant should be the norm in all cases where no retrospective modifications have been implemented on site.

2.9 ISV wall-mounted distributor

based on compact enclosures AE Page 458

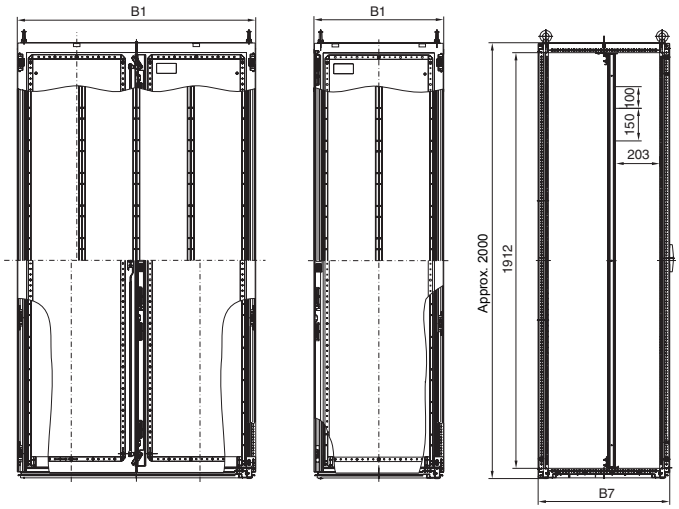


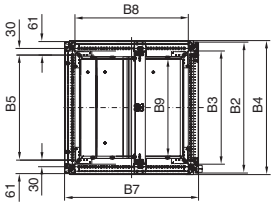
Model No. SV	Depth (T) mm	A mm
9665.805 9665.825	210	24.5
9665.815 9665.835	250	64.5
9665.845 9665.855	300	115.5

2.9 ISV-TS 8 enclosures

for ISV distribution enclosures up to 630 A Page 459

Technical specifications		
Rated current up to	400 A	630 A
Rated surge current resistance I_{pk} at a maximum busbar support centre distance of 300 mm	30 kA	48 kA
Rated insulation voltage U_i to VDE 0110	1000 V AC	
cos phi	0.3	
Cross-section of phase conductor L1 – L3	30 x 5 mm	30 x 10 mm
Cross-section of neutral conductor N	25 x 10 mm	25 x 10 mm
Cross-section of PE conductor	12 x 10 mm	12 x 10 mm
Protective measures	Protection class 1 (with PE conductor)	
Overvoltage category	3	3
IP protection category	IP 20 without door, IP 55 with door	





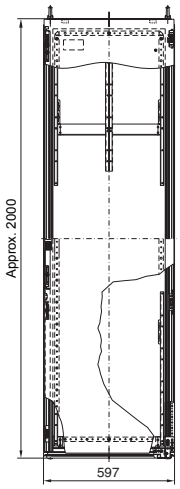
Top view with side panels shown (B4).

Width dimensions mm									Model No. SV
B1	B2	B3	B4	B5	B6	B7	B8	B9	
597	592	512	606	475	455	605	512	440	9665.905
847	842	762	856	725	705	605	512	690	9665.915
1097	1092	1012	1106	975	955	605	512	940	9665.925
597	592	512	606	475	455	405	312	440	9665.945
847	842	762	856	725	705	405	312	690	9665.955
1097	1092	1012	1106	975	955	405	312	940	9665.965

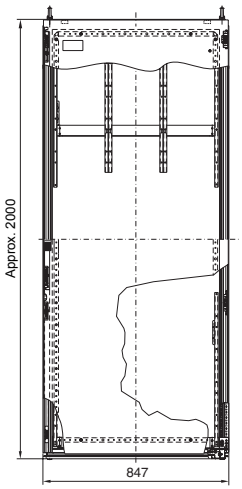
2.9 SV-TS 8 enclosures

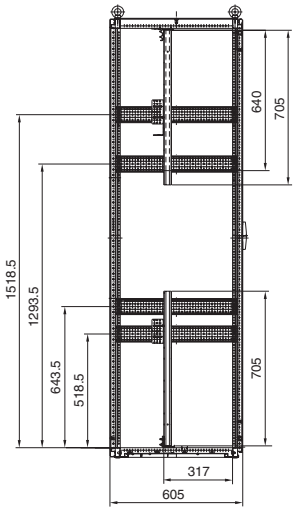
for ISV distribution enclosures up to 1600 A Page 460

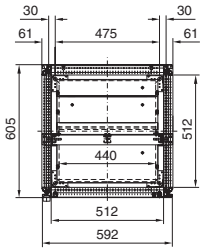
SV 9665.975

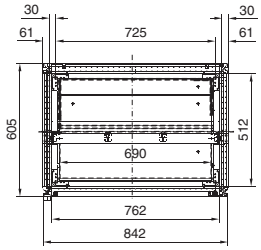


SV 9665.985









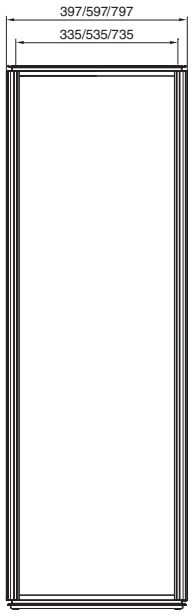
			Maxi-PLS 1600	Flat copper 80 x 10 mm	
Electrical characteristics	Rated voltage	Rated insulation voltage U_i	1000 V		EN 60 439-1
		Rated operating voltage U_e	690 V		
		Rated surge voltage resistance U_{imp}	8 kV		
		Overvoltage category	IV		
		Level of contamination	3		
		Rated frequency	50 Hz		
	Rated current (primary busbar)	Rated operating current I_e	1300 A	1200 A	For IP 55
			1600 A	1500 A	For IP 1x[1]
			1600 A	1600 A	For IP 54[2]
		Rated surge current resistance I_{pk}	105 kA		EN 60 439-1
		Rated short-time current resistance I_{cw}	50 kA		
Mechanical characteristics	Dimensions	Enclosure width Enclosure height Enclosure depth	600/850 mm 2000 mm[3] 600 mm[3]		
		Pitch pattern	25 mm		
	Protection rating		Max. IP 55		EN 60 529
	Design		1		EN 60 439-1
	Surface protection/ material	Enclosure frame	Dipcoat-primed		
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside		
		System attachment	Stainless steel		
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated		
	Busbar	Material	E-Cu, bare		
		External dimensions (cross-section)	45 x 45 mm (1000 mm²)	80 x 10 mm	
Operating and ambient conditions	Ambient temperature	Short-term peak	+40°C		EN 60 439-1
		Maximum on a 24 h average	+35°C		
		Low	–5°C		
	Atmospheric conditions	Normal climatic stress			EN 60 439-1
		Relative humidity	50 % at 40°C		
			Operation up to 1000 m above sea level		

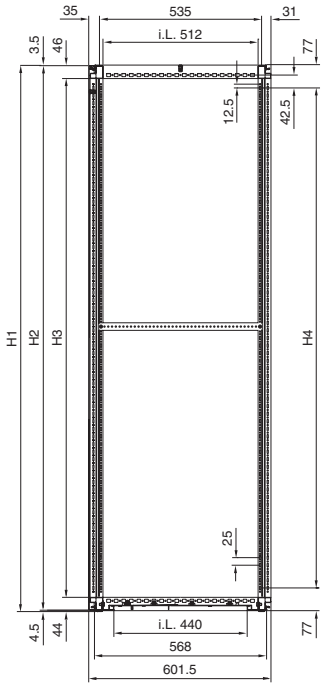
[1] Using spacer DK 7967.000 for raising the roof.
[2] Using fan-and-filter unit SK 3326.107 (500 m³/h) and outlet filter SK 3326.207.
[3] Other sizes available on request.

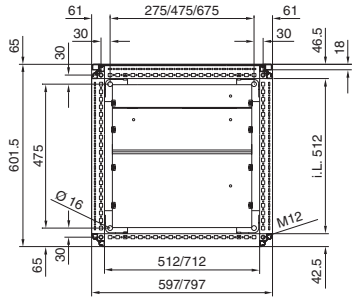
Rittal Ri4Power Form 2-4

2.10 SV-TS 8 modular enclosures

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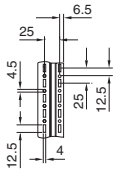


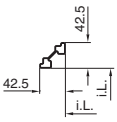


i.L. = Clearance width

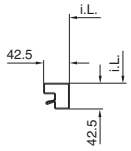
Cross-sections

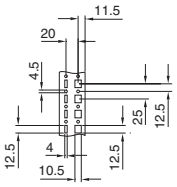
vertical





horizontal

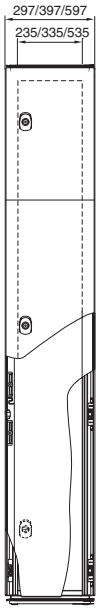


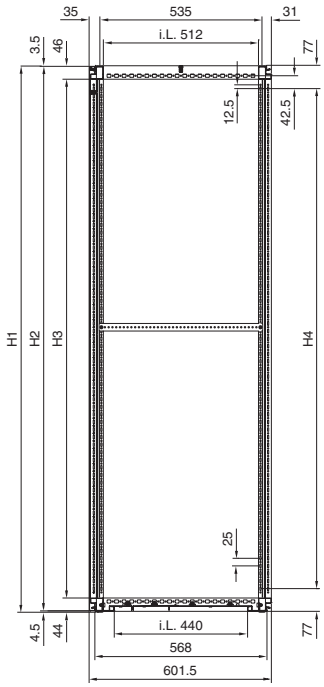


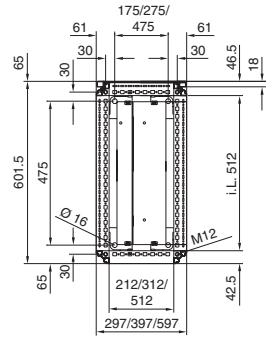
Model No. SV	H1 mm	H2 mm	H3 mm	H4 mm
9670.486	1805	1797	1712	1650
9670.686	1805	1797	1712	1650
9670.886	1805	1797	1712	1650
9670.406	2005	1997	1912	1850
9670.606	2005	1997	1912	1850
9670.806	2005	1997	1912	1850
9670.426	2205	2197	2112	2050
9670.626	2205	2197	2112	2050
9670.826	2205	2197	2112	2050

2.10 SV-TS 8 cable chamber enclosures

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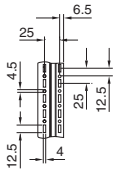


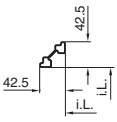


i.L. = Clearance width

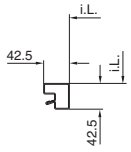
Cross-sections

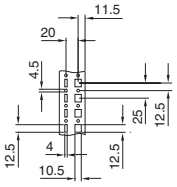
vertical





horizontal





Model No. SV	H1 mm	H2 mm	H3 mm	H4 mm
9670.396	1805	1797	1712	1650
9670.496	1805	1797	1712	1650
9670.696	1805	1797	1712	1650
9670.316	2005	1997	1912	1850
9670.416	2005	1997	1912	1850
9670.616	2005	1997	1912	1850
9670.336	2205	2197	2112	2050
9670.436	2205	2197	2112	2050
9670.636	2205	2197	2112	2050

2.10 SV-TS 8 modular enclosures/cable chamber enclosures

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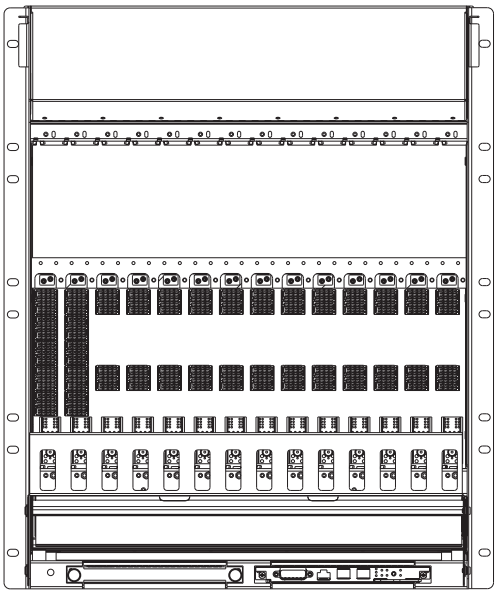
			up to 800 A	up to 1600 A	
Electrical characteristics	Rated voltage	Rated insulation voltage U_i	1000 V		EN 60 439-1
		Rated operating voltage U_e	690 V		
		Rated surge voltage resistance U_{imp}	8 kV		
		Overvoltage category	IV		
		Level of contamination	3		
		Rated frequency	50 Hz		
	Rated current (primary busbar)	Rated operating current I_e	800 A	1150 A	For IP 54
			860 A	1300 A	For IP 43
			1000 A[1)]	1600 A[2)]	For IP 2X
		Rated surge current resistance I_{pk}	68 kA	110 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	32 kA, 1 sec.	50 kA 1 sec./50 kA 3 sec.	
	Testing under accidental arc conditions	Permissible uninfluenced short-circuit current	30 kA	50 kA	EN 61 641
		Test voltage	420 V		
		Permissible arc duration	0.3 sec.		
Mechanical characteristics	Dimensions	Enclosure width Enclosure height Enclosure depth	300/400/600/800 mm 1800/2000/2200 mm 600 mm[3)]		
		Pitch pattern	25 mm		
	Protection rating		Max. IP 54		EN 60 529
	Design		up to 4a/4b		EN 60 439-1
	Surface protection/ material	Enclosure frame	Dipcoat-primed		
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside		
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated		
	Busbar	Material	E-Cu, bare		
		Number of poles	3-pole or 4-pole		
		Design	PLS 800 (300 mm^2)/ 30 x 10 mm	PLS 1600 (900 mm^2)	
Operating and ambient conditions	Ambient temperature	Short-term peak	+40°C		EN 60 439-1
		Maximum on a 24 h average	+35°C		
		Low	–5°C		
	Atmospheric conditions	Normal climatic stress			EN 60 439-1
		Relative humidity	50 % at 40°C		
			Operation up to 1000 m above sea level		

[1)] Using fan-and-filter unit SK 3325.107 (130 m^3/h)
[2)] Using fan-and-filter unit SK 3326.107 (550 m^3/h)
[3)] Other sizes available on request.

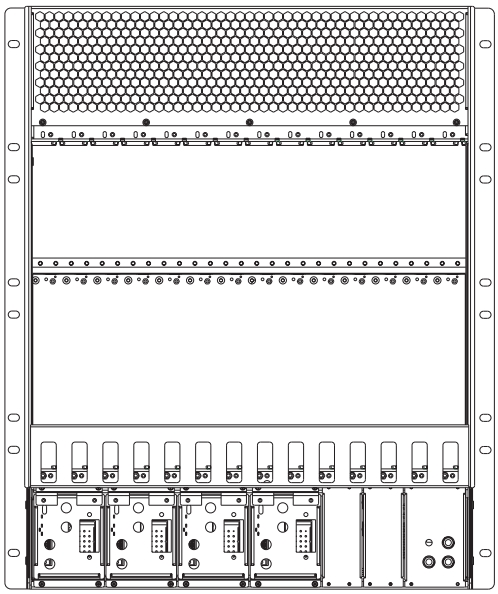
3.1 ATCA

AdvancedTCA Shelf Page 490

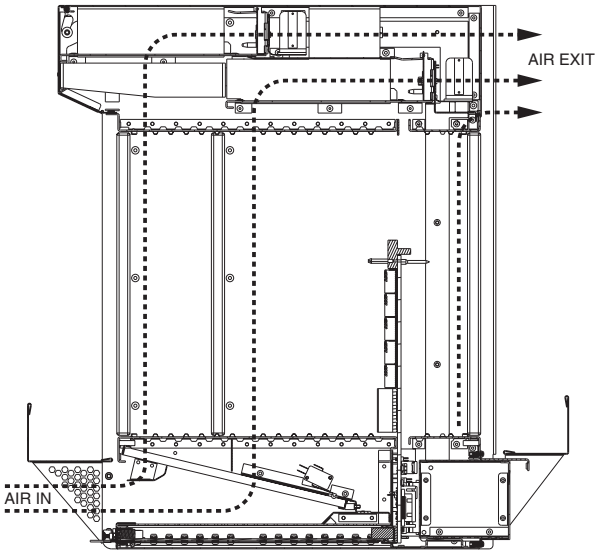
Front view, version VS1



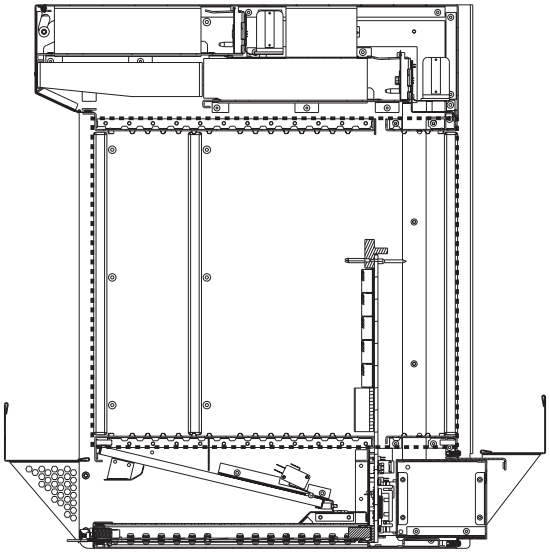
Rear view, version VS1



Air routing, version VS1



EMC provision, version VS1



3.4 Power supplies

Ripac power supplies – Open Frame 250 and 400 W Page 541

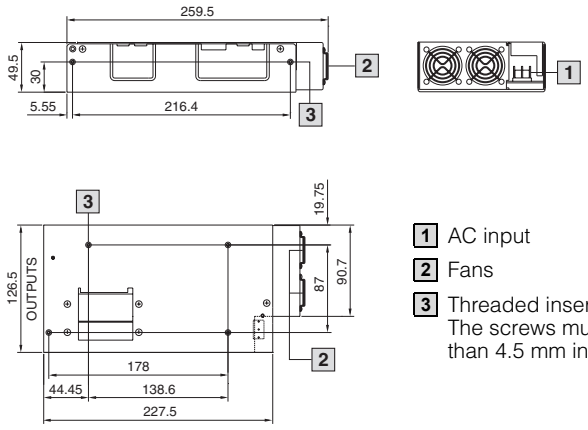
General specifications

	250 watts	400 watts
Model No. RP 35 A	**3686.622**	**–**
Model No. RP 60 A	**–**	**3686.623**
Model No. RP 85 A	**–**	**3686.629**
Operating temperature range	0°C to +70°C (derating from 50°C)	0°C to +70°C (derating from 50°C, 2.5 %/K)
Storage temperature	–40°C to +85°C	–40°C to +85°C
Mains buffering time (min. at 90 V AC)	16 ms minimum	15 ms minimum
Cooling	Fan-cooled	Fan-cooled
Isolation voltages	Input – output: 4350 V DC Input – enclosure: 2350 V DC Output – enclosure: 100 V DC	Input – output: 3000 V AC Input – enclosure: 1500 V AC Output – enclosure: 500 V DC
Radio interference suppression	EN 55 022 curve B	EN 55 022 curve B
Immunity to interference/emmission	EN 61 000-4-2 (level 4) EN 61 000-4-3 (level 3) EN 61 000-4-4 (level 4) EN 61 000-4-5 (level 3) EN 61 000-4-6 (level 3) EN 61 000-4-11 compliant	EN 61 000-4-2 (level 4) EN 61 000-4-3 (level 3) EN 61 000-4-4 (level 4) EN 61 000-4-5 (level 3) EN 61 000-4-6 (level 3) EN 61 000-4-11 compliant
Approvals	UL 1950, VDE 0805, EN 60 950, CSA 22.2, CE	EN 60 950, UL 1950, CSA 22.2 no. 234, CE

[1] All outputs short-circuit resistant to a maximum of 30 seconds.

Ripac power supply unit
Open Frame 250 W

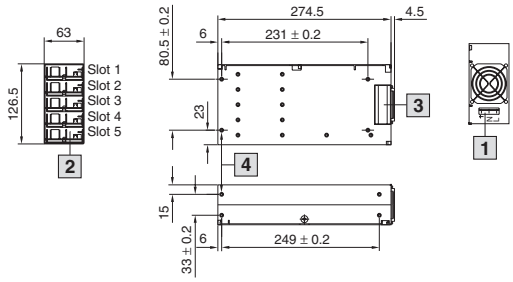
- On/off controller with three outputs
- Design: Solid
- 85 – 265 V AC/120 – 340 V DC
- Radio interference suppressed to EN 55 022 curve B, FCC curve B
- Approvals: EN 60 950, UL 1950, VDE 0805, CSA 22.2/CE



1 AC input
2 Fans
3 Threaded inserts M4 for fastening. The screws must not protrude more than 4.5 mm into the unit.

Ripac power supply unit
Open Frame 400 W

- Modular power supply unit
- 3 outputs
- Wide-range input (85 – 253 V AC)
- Power factor in accordance with EN 61 000-3-2
- Radio interference suppressed to EN 55 022 curve B
- Immunity to interference in accordance with EN 61 000-4-3, -5, -6 (level 3) EN 61 000-4-2, -4 (level 4) EN 61 000-4-11 compliant
- FASTON connectors mean faster installation in the terminal equipment
- Tested to EN 60 950, UL 1950 and CSA 22.2 no. 234



1 AC input
2 DC outputs
3 Fans
4 Threaded inserts M4 for fastening. The screws must not protrude more than 4.5 mm into the unit.

3.4 Power supplies

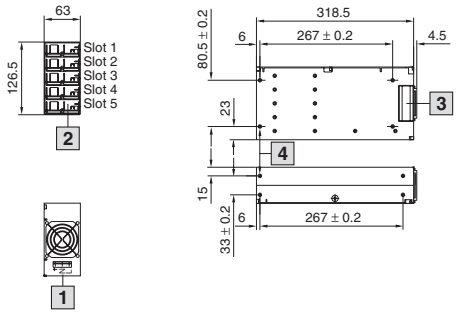
Ripac power supplies – Open Frame 600 and 1000 W Page 541

General specifications

	600 watts	1000 watts
Model No. RP 85 A	**3686.624**	**–**
Model No. RP 110 A	**–**	**3686.625**
Operating temperature range	0°C to +70°C (derating from 50°C, 2.5 %/K)	0°C to +70°C (derating from 50°C, 2.5 %/K)
Storage temperature	–40°C to +85°C	–40°C to +85°C
Mains buffering time (min. at 90 V AC)	15 ms minimum	13 ms minimum
Cooling	Fan-cooled	Fan-cooled
Isolation voltages	Input – output: 3000 V AC Input – enclosure: 1500 V AC Output – enclosure: 500 V DC	Input – output: 3000 V AC Input – enclosure: 1500 V AC Output – enclosure: 500 V DC
Radio interference suppression	EN 55 022 curve B	EN 55 022 curve A
Immunity to interference/emmission	EN 61 000-4-2 (level 4) EN 61 000-4-3 (level 3) EN 61 000-4-4 (level 4) EN 61 000-4-5 (level 3) EN 61 000-4-6 (level 3) EN 61 000-4-11 compliant	EN 61 000-4-2 (level 4) EN 61 000-4-3 (level 3) EN 61 000-4-4 (level 4) EN 61 000-4-5 (level 3) EN 61 000-4-6 (level 3) EN 61 000-4-11 compliant
Approvals	EN 60 950, UL 1950, CSA 22.2 no. 234, CE	EN 60 950, UL 1950, CSA 22.2 no. 234, CE

Ripac power supply unit Open Frame 600 W

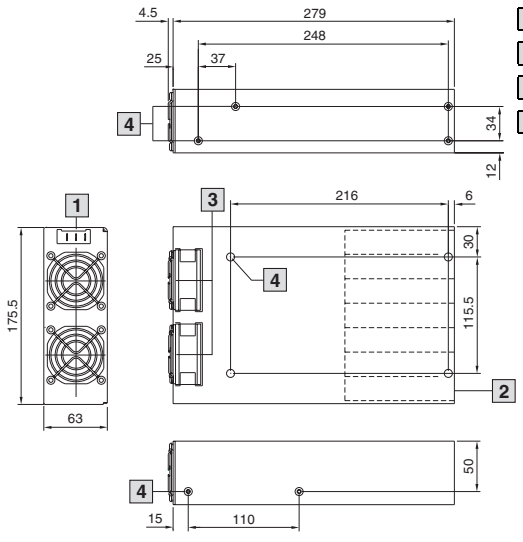
- Modular power supply unit
- 3 outputs
- Wide-range input (85 – 253 V AC)
- Power factor in accordance with EN 61 000-3-2
- Radio interference suppressed to EN 55 022 curve B
- Immunity to interference in accordance with EN 61 000-4-3, -5, -6 (level 3) EN 61 000-4-2, -4 (level 4) EN 61 000-4-11 compliant
- FASTON connectors mean faster installation in the terminal equipment
- Tested to EN 60 950, UL 1950 and CSA 22.2 no. 234



1 AC input
2 DC outputs
3 Fans
4 Threaded inserts M4 for fastening. The screws must not protrude more than 4.5 mm into the unit.

Ripac power supply unit Open Frame 1000 W

- Ultra-compact units with 3 outputs
- Suitable for universal applications, as the outputs can be set within a broad range
- No base load required
- Peak current may be loaded for start-up operation of drives (up to 3 times the rated current for 10 seconds)
- Immunity to interference in accordance with EN 61 000-4-3, -5, -6 (level 3) EN 61 000-4-2, -4 (level 4) EN 61 000-4-11 compliant
- Power factor correction to EN 61 000-3-2
- Long-range input: 85 – 265 V AC
- Radio interference suppressed to EN 55 022 curve A
- EN 60 950, EN 41 003, IEC 950, UL 1950, CSA 234 M 90, BS 6301
- SELV (all models < 48 V U_A)
- 48 V DC input for telecom applications available on request



1 AC input
2 DC outputs
3 Fans
4 Threaded inserts M4 for fastening. The screws must not protrude more than 4.5 mm into the unit.

3.4 Power supplies

Ripac power supplies for VME, plug-in Page 542

General specifications

Height	3 U		6 U	
Width (HP)	10	12	8	12
Model No. RP power supply	**3686.469**	**3686.470**	**3686.471**	**3685.306**
Model No. RP front panel	**3685.304**	**3685.305**	**3686.472**	**3685.307**
Operating temperature range	0°C to +70°C with free convection		0°C to +70°C with free convection	
Storage temperature	–20°C to +85°C		0°C to +85°C	
Output reduction	3 %/K from +50°C		3 %/K from +50°C	
Size/weight	10 HP: 0.7 kg, 12 HP: 0.8 kg		8 HP: 1.2 kg, 12 HP: 2 kg	
Mains buffering	> 20 ms at 100 % load		> 20 ms at 100 % load	
Radio interference suppression	EN 50 081-1, EN 55 011/EN 55 022 curve B Interfering radiation depending on installation		EN 50 081-1, EN 55 011/EN 55 022 curve B Interfering radiation depending on installation	
Immunity to interference/emmission	EN 50 082-2 EN 61 000-4-2 level 4 EN 61 000-4-3 level 3 EN 61 000-4-4 level 4 EN 61 000-4-5 level 4 EN 61 000-4-11 compliant		EN 50 082-2 EN 61 000-4-2 level 4 EN 61 000-4-3 level 3 EN 61 000-4-4 level 4 EN 61 000-4-5 level 4 EN 61 000-4-11 compliant	
Connection	Connector H15, IEC 60 603-2 keyable		2 connectors H15, IEC 60 603-2 keyable	
Approvals LGA design-tested	IEC 950/EN 60 950/VDE 0805 Protection category I/VDE 0100 EN 61 000-4-3 interference level 10 V/m EN 61 000-4-11		IEC 950/EN 60 950/VDE 0805 Protection category I/VDE 0100 EN 61 000-4-3 interference level 10 V/m EN 61 000-4-11	

- 482.6 mm (19″) module to IEC 60 297-3.
- Automatic changeover 115/230 V AC.
- All outputs are continuously short-circuit resistant.
- Overtemperature protection.
- AC-FAIL and SYSRESET signals.
- Integrated VME bus signals (AC-FAIL, SYSRESET).
- Design-tested: EN 60 950/VDE 0805 protection category I, VDE 0100.
- EMC standards EN 50 081-1 and 50 082-2.

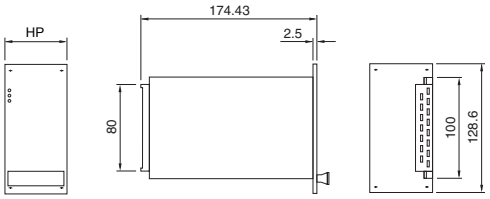
PE earthing contact:
Must be connected to the PE conductor of the mains supply network!
L1/N: Mains conductors
L: Load connection
F: Sensor connection (sense)
0 VL: Common ground for outputs 1 – 3.

With sensor lead operation (5 V only):
Max. voltage compensation per lead 0.25 V.
The sensor lead must be connected to the load.

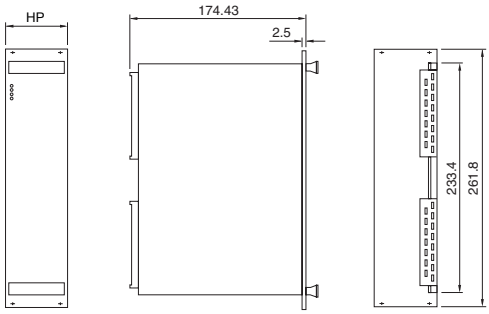
Without sensor lead operation:
For safe operation of the unit, +5 VL must be connected to +5 VF and 0 VL to 0 VF.

Caution:
Fire protection must be provided via the superordinate enclosure system!

3 U

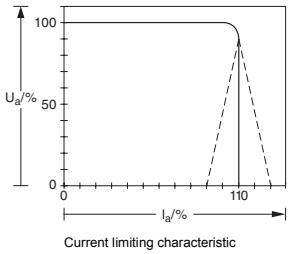


6 U

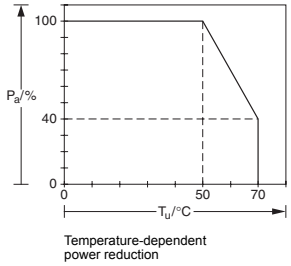


Connector assignment H15, IEC 60 603-2 (DIN 41 612)

	3 U	6 U	
Pin	Function	Function (P1)	Function (P2)
4	+5 VF	+5 VL	AC-FAIL
6	0 VF	+5 VL	SYSRESET
8	+5 VF	+5 VL	assigned internally
10	0 VF	+5 VL	assigned internally
12	+5 VF	+5 VF	assigned internally
14	0 VL	+5 VF	assigned internally
16	SYSRESET	–12 VL	assigned internally
18	0 VL	0 VL	mains-related
20	+12 VL	0 VL	mains-related
22	–12 VL	0 VL	mains-related
24	AC-FAIL	0 VL	mains-related
26	assigned internally (mains-related)	0 VL	mains-related
28	L1	+12 VL	L1
30	N	+12 VL	N
32	PE	0 VF	PE



Current limiting characteristic



Temperature-dependent power reduction

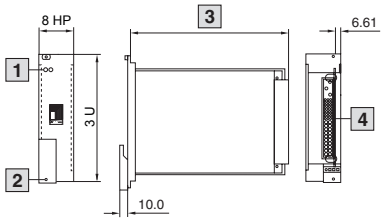
3.4 Power supplies

Ripac power supplies for CPCI, plug-in Page 543

General specifications

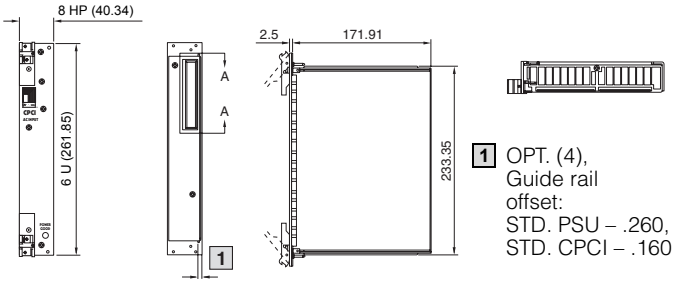
Height	3 U			6 U
Width (HP)	8 HP			8 HP
Model No. RP AC power supply	**3688.534**	**3688.694**	**3688.695**	**3688.528**
Model No. RP DC power supply	**3688.537**	**3688.655**	**3688.696**	**3688.530**
Current sharing parallel N+1 operation (redundancy)	U_1, U_2 and U_3, internal diodes, "hotswap"-compatible			
Operating temperature range	0° to 70°C (0° – 50°C full load), 50° to 70°C, linear derating to 50 %			
Cooling	Min. 15 cfm for full load			Min. 90 cfm for full load
Storage temperature	–40°C to +85°C			
Rel. humidity	< 90 % non-condensing			
Weight	Approx. 1 kg			Approx. 2.4 kg
MTBF	150,000 h at an ambient temperature of 25°C			
Handle	Type VII, Model No. RP 3686.135			
Guide rail	2.54 mm offset, Model No. RP 3687.832			
EMC	FCC Level B, EN 55 022 Level B (conducted)			FCC Level A, EN 55 022 Level A
Connectors	Positronic 47-pin, PICMG 2.11			
Approvals	EN 60 950 A1 – A4, CSA 22.2, UL 1950, CE			

3 U



1 LED display
2 Injector/extractor handle IEEE 1101.10-compatible
3 For 160 mm insertion depth
4 Power supply connector Positronic

6 U



1 OPT. (4), Guide rail offset: STD. PSU – .260, STD. CPCI – .160

Connector assignment 3 U

Pin#	SEQ[1)]	FUNCTION	
01 – 04	2	+5.0 V	V 1 Output
05 – 12	2	GND	V 1 + V 2 Return
13 – 18	2	+3.3 V	V 2 Output
19	2	GND	V 3 Return
20	2	+12.0 V	V 3 Output
21	2	–12.0 V	V 4 Output
22	2	RTN	Signal Return
23	2	N/C	No Connection (Reserved)
24	2	GND	V 4 Return
25, 26	2	N/C	No Connection (Reserved)
27	3	R/EN	Remote Enable, Close circuit to GND
28, 29	2	N/C	No Connection (Reserved)
30	2	+ S 1	+5.0 V (V 1) Remote Sense
31, 32	2	N/C	No Connection (Reserved)
33	2	+ S 2	+3.3 V (V 2) Remote Sense
34	2	S-RTN	Sense Return for V 1, V 2, V 3
35	3	N/C	No Connection (Reserved)
36	2	+ S 3	+12.0 V (V 3) Remote Sense
37	2	N/C	No Connection (Reserved)
38	2	DEG	Overtemperature
39	2	R/INH	Remote Inhibit, Close circuit to GND
40	2	N/C	No Connection (Reserved)
41	3	N/C	No Connection (Reserved)
42	2	PF	Power Fail Signal
43	2	N/C	No Connection (Reserved)
44	3	N/C	No Connection (Reserved)
45	1	PE	Protective Earth (chassis) Safety Ground
46	2	ACC	Neutral (N) AC Power Input/+DC Input
47	2	AC	Line (L) AC Power Input/–DC Input

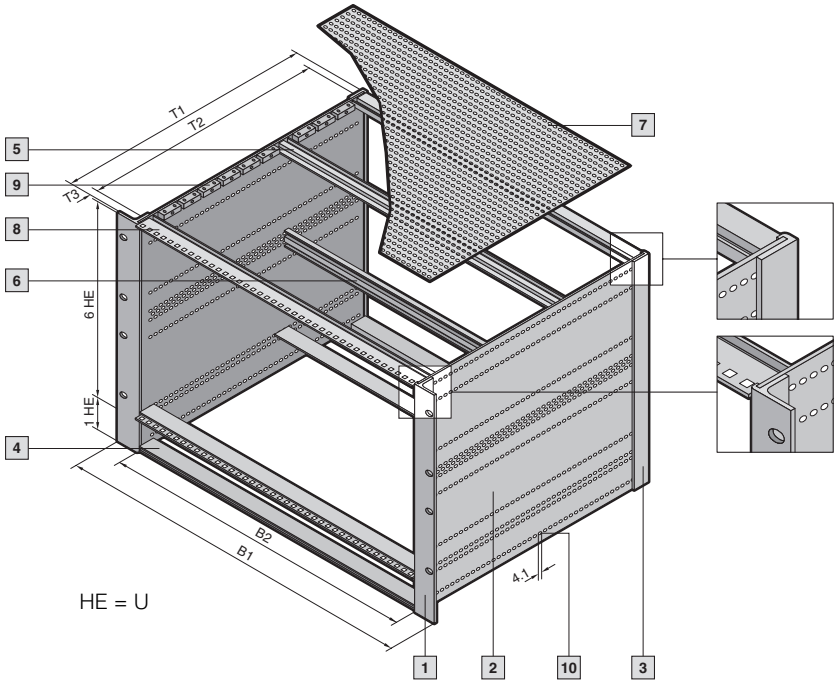
[1)] Contact mating sequence
1 = First to make/Last to break

Connector assignment 6 U

Pin#	SEQ[1)]	FUNCTION	
01 – 04	2	+5.0 V	V 1 Output
05 – 12	2	GND	V 1 + V 2 Return
13 – 18	2	+3.3 V	V 2 Output
19	2	GND	V 3 Return
20	2	+12.0 V	V 3 Output
21	2	–12.0 V	V 4 Output
22	2	RTN	Signal Return
23	2	N/C	No Connection (Reserved)
24	2	GND	V 4 Return
25, 26	2	N/C	No Connection (Reserved)
27	3	R/EN	Remote Enable, Close circuit to GND
28	2	N/C	No Connection (Reserved)
29	2	V 1-ADJ	+5.0 V Remote Voltage Adjust
30	2	+ S 1	+5.0 V (V 1) Remote Sense
31	2	N/C	No Connection (Reserved)
32	2	V 2-ADJ	+3.3 V Remote Voltage Adjust
33	2	+ S 2	+3.3 V (V 2) Remote Sense
34	2	S-RTN	Sense Return for V 1, V 2, V 3
35	3	ISHR-1	+5.0 V (V 1) Current Share
36	2	+ S 3	+12.0 V (V 3) Remote Sense
37	2	N/C	No Connection (Reserved)
38	2	DEG	Overtemperature
39	2	R/INH	Remote Inhibit, Close circuit to GND
40	2	N/C	No Connection (Reserved)
41	3	ISHR-2	+3.3 V (V 2) Current Share
42	2	PF	Power Fail Signal
43	2	N/C	No Connection (Reserved)
44	3	ISHR-3	+12.0 V (V 3) Current Share
45	1	PE	Protective Earth (chassis) Safety Ground
46	2	ACC	Neutral AC Power Input/+DC Input
47	2	AC	Line AC Power Input/–DC Input

3.5 Subracks

Key to all Ripac subrack drawings Page 550 – 557

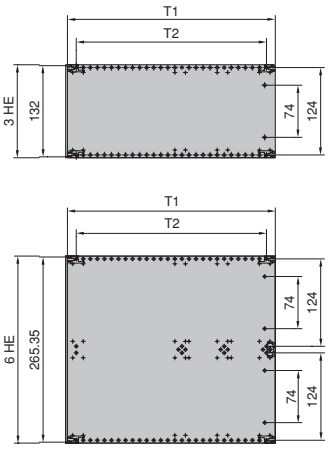


Ripac Vario EMC
7 U taken as an example

B1	482.6 mm (19″)
B2	HP horizontal pitch (with 19″: 84 HP)
T1	Side panel depth
T2	Mounting position depth
T3	12.5 mm (position of the front horizontal rail)
10	Attachment holes Ø 4.1 mm for screws M4 x 12

Ripac ECO 3 U, 6 U – supply includes Page 550

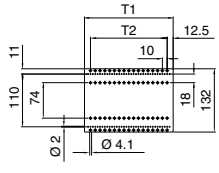
Height units U					3	6	Page
			T1 mm	T2 mm	Packs of			
2	Side panels		175	150	1	3688.100	3688.102	561
			235	210	1	3688.101	3688.103	
1		Flanges 3 U		3688.110	1	2	–	562
		Flanges 6 U		3688.111	1	–	2	
2		Side panels		see above	1	2	2	561
4	A	Horizontal rails, front		3684.562	1	2	2	563
	I	Threaded inserts		3684.610	1	4	4	570
5	C4	Horizontal rails, rear		3688.104	1	2	2	567
6	D1	Horizontal rails, rear, centre		3684.582	1	–	1	568
10		Assembly screws M4 x 12		3684.881	1	8	10	–



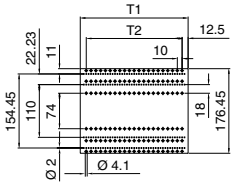
HE = U
T = Depth

Ripac Vario, Ripac Vario EMC Page 551 – 554

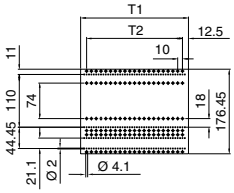
3 U



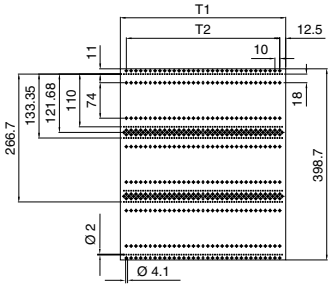
4 U (3 + 2 x 1/2)



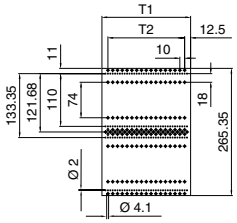
4 U (3 + 1)



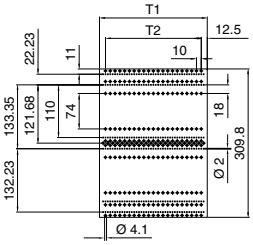
9 U



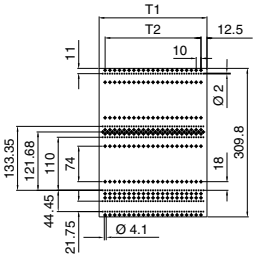
6 U



7 U (6 + 2 x 1/2)



7 U (6 + 1)



T = Depth

3.5 Subracks

Ripac Vario, Ripac Vario EMC 3 U, 4 U, 6 U, 7 U, 9 U – supply includes Page 551 – 554

Height units U		T1 mm	T2 mm	Packs of	3	6	9	4 (3 + 1)	4 (3 + 2 x 1/2)	7 (6 + 1)	7 (6 + 2 x 1/2)	Page
2	Side panels	185	160	1	3684.511	3684.529	–	–	–	–	–	560
		225	200	1	3684.512	3684.530	3685.797	3685.793	3685.890	3685.896	3685.893	
		245	220	1	3684.513	3684.531	–	3685.850	3685.891	3685.897	3685.894	
		285	260	1	3684.514	3684.532	–	3684.523	3684.526	3685.743	3685.895	
		305	280	1	3684.515	3684.533	3685.798	3685.794	–	–	–	
		345	320	1	3684.516	3684.534	3684.547	3684.524	3684.527	3685.744	3685.745	
		365	340	1	3684.517	3684.535	3685.799	3685.795	–	–	–	
		405	380	1	3684.518	3684.536	3684.548	3684.525	3684.528	3684.541	3684.543	
		425	400	1	3684.519	3684.537	–	–	–	–	–	
		465	440	1	3684.520	3684.538	3684.549	3685.796	3685.892	3684.542	3684.544	
		525	500	1	3684.521	3684.539	3684.550	–	–	3685.898	3685.959	
		585	560	1	3684.522	3684.540	3684.551	–	–	–	–	

Subrack Ripac Vario

	PT		Model No.	P. of	BP	C	BP	C	BP	C	BP	C	BP	C	BP	BP	Page
1		Flanges	–	1	3684.615		3684.617		3684.619		3684.616				3684.618		561
					2	2	2	2	2	2	2	2	2	2	2	2	
2		Side panels	see above	1	2	2	2	2	2	2	2	2	2	2	2	2	560
4	A	Horizontal rails, front	3684.562	1	2	2	2	2	2	2	2	2	2	2	2	2	563
	I	Threaded inserts	3684.610	1	2	2	2	2	2	2	2	2	2	2	2	2	570
5	C1	Horizontal rails, rear	3684.572	1	2	–	2	–	2	–	2	–	2	–	2	2	565
6	D1	Horizontal rails, rear, centre	3684.582	1	–	–	1	–	2	–	–	–	–	–	1	1	568
	G	Insulating strips 21 HP	3684.611	1	8	–	16	–	24	–	8	–	8	–	16	16	571
	C3	Horizontal rails, rear, with Z rails	3686.159	1	–	2	–	2	–	2	–	2	–	2	–	–	567
	D2	Horizontal rails, rear, centre, with integral Z rails	3687.602	1	–	–	–	1	–	2	–	–	–	–	–	–	569
10		Assembly screws M4 x 12	3684.881	1	8	8	10	10	12	12	8	8	8	8	10	10	–

Subrack Ripac Vario EMC

	PT		Model No.	P. of	BP	BP[1)]	BP	BP[1)]	BP	BP[1)]	BP	BP[1)]	BP	BP[1)]	BP	BP[1)]	BP	BP[1)]	Page
1		Flanges	–	1	3684.615		3684.617		3684.619		3684.616				3684.618				561
					2	2	2	2	2	2	2	2	2	2	2	2	2	2	
3		Trim sections, rear	–	1	3684.634		3684.636		3684.638		3684.635				3684.637				562
					2	2	2	2	2	2	2	2	2	2	2	2	2	2	
2		Side panels	see above	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	560
		EMC gaskets, vertical	–	1	3686.975		3686.977		3686.979		3686.976				3686.978				572
					4	4	4	4	4	4	4	4	3	3	4	4	3	3	
7		Covers, vented	see below	1	2	2	2	2	2	2	2	2	–	–	2	2	–	–	581
		Covers, L-shaped, 1/2 U, top solid/bottom vented at front	see below	1	–	–	–	–	–	–	–	–	1/1	1/1	–	–	1/1	1/1	583
9		Mounting blocks	3684.234	10	Depending on depth														573
	K	EMC gaskets for covers	3684.245	10	4	4	4	4	4	4	4	4	2	2	4	4	2	2	573
4	A	Horizontal rails, front	3684.562	1	4	3	4	2	4	2	6	5	4	3	6	4	4	2	563
	I	Threaded inserts	3684.610	1	4	4	4	4	4	4	6	6	4	4	6	6	4	4	570
8	B	Front horizontal rails with 10 mm extension	3684.567	1	–	1	–	2	–	2	–	1	–	1	–	2	–	2	564
5	C1	Horizontal rails, rear	3684.572	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	565
6	D1	Horizontal rails, rear, centre	3684.582	1	–	–	1	1	2	2	–	–	–	–	1	1	1	1	568
	G	Insulating strips 21 HP	3684.611	1	8	8	16	16	24	24	8	8	8	8	16	16	16	16	571
10		Assembly screws M4 x 12	3684.881	1	12	12	14	14	16	16	16	16	12	12	18	18	14	14	–

Covers for Ripac Vario EMC

Height units U		T1 mm	Packs of	3	6	9	4 (3 + 1)	4 (3 + 2 x 1/2)	7 (6 + 1)	7 (6 + 2 x 1/2)	Page
7	Covers	245	1		3684.695		–	–	–	–	581 – 583
		285	1		3684.696		3684.696	3684.732/ 3684.726[2)]	3684.696	3684.732/ 3684.726[2)]	
		305	1		3685.852		–	–	–	–	
		345	1		3684.698		3684.698	3684.733/ 3684.727[2)]	3684.698	3684.733/ 3684.727[2)]	
		405	1		3684.700		3684.700	3684.734/ 3684.728[2)]	3684.700	3684.734/ 3684.728[2)]	
		465	1		3684.701		–	–	3684.701	3684.735/ 3684.729[2)]	
		525	1		3684.702		–	–	–	–	
		585	1		3684.703		–	–	–	–	

BP = for backplane C = for DIN connector PT = rail type
[1)] Front horizontal rails with 10 mm cover for injector/extractor handles (B) [2)] vented/not vented

3.5 Subracks

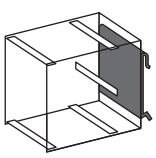
Ripac Compact, 3 U, 6 U – supply includes Page 555

										EMC version						Page
Height units U					**3**	**3**	**3**	**3**	**6**	**3**	**3**	**3**	**3**	**6**	
Horizontal pitch HP					**21**	**21**	**42**	**42**	**42**	**21**	**21**	**42**	**42**	**42**	
			T1 mm	T2 mm	Packs of	HS	MP	HS	MP	MP	HS	MP	HS	MP	MP	
2	Side panels		225	200	x	3684.512				3684.530	3684.512				3684.530	560
			285	260	x	3684.514				3684.532	3684.514				3684.532	
	PT	Attachment			P. of	For backplane										
2		Side panels		see above	x	2	2	2	2	2	1	1	1	1	1	560
		Side panels for cable entry			x	–	–	–	–	–	1	1	1	1	1	–
		EMC PG cable gland			x	–	–	–	–	–	1	1	1	1	1	–
3		Trim sections, rear			x	4	2	4	2	2	4	2	4	2	2	562
1		Flanges with keyhole			x	–	2	–	2	2	–	2	–	2	2	–
		EMC front/rear panels			x	–	–	–	–	–	–	1	–	1	1	–
		EMC rear panel for rail adaptor			x	–	–	–	–	–	1	–	1	–	–	–
		Rear panel for rail adaptor			x	1	–	1	–	–	–	–	–	–	–	–
		Rail adaptor			x	1	–	1	–	–	1	–	1	–	–	–
		EMC gaskets, vertical			x	–	–	–	–	–	2	1	2	1	1	572
7		Covers, vented		see below	x	–	–	–	–	–	2	2	2	2	2	583
4	A	Horizontal rails, front			x	4	2	4	2	2	4	4	4	4	4	563
5	C1	Horizontal rails, rear			x	2	2	2	2	2	2	2	2	2	2	565
	I	Threaded inserts			x	4	2	4	2	2	4	4	4	4	4	570
	G	Insulating strips 21 HP			x	2	2	4	4	8	2	2	4	4	8	571
6	D1	Horizontal rails, rear, centre			x	–	–	–	–	1	–	–	–	–	1	568

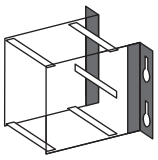
Covers for Ripac Compact

			LP mm	Packs of	**3**	**3**	**3**	**3**	**6**	**3**	**3**	**3**	**3**	**6**	Page
7		Covers, vented	160	1	3687.624		3687.625			3687.624[1)]		3687.625[1)]			583
		Covers, vented	220	1	3687.692		3687.677			3687.692[1)]		3687.677[1)]			583
	F	Z rails IEC 60 603-2 (DIN 41 612)		1	3684.599		3684.600			3684.599		3684.600			570

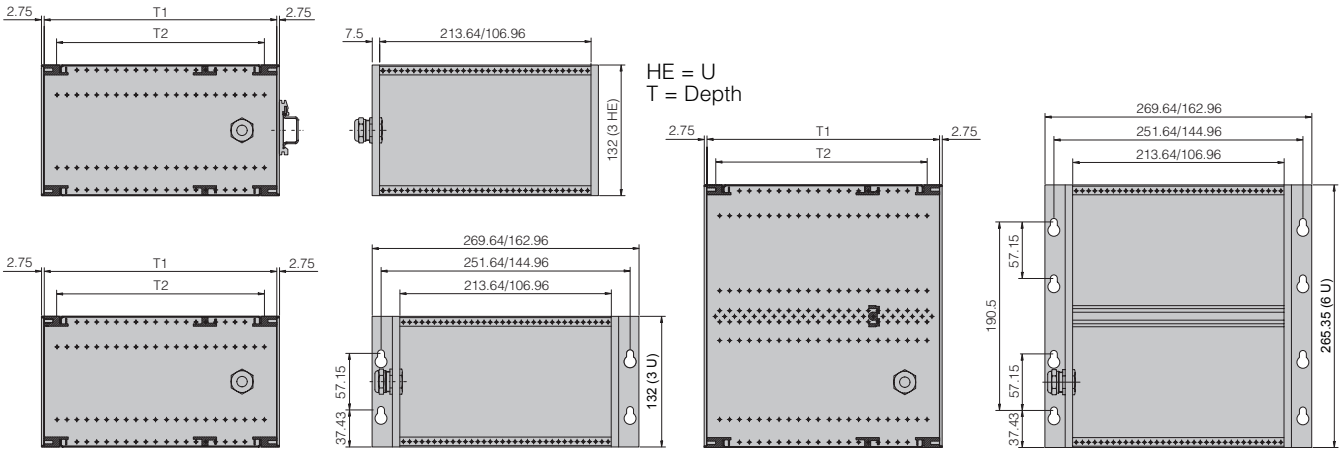
HS = top hat rail MP = mounting plate PT = rail type LP = PCB depth
[1)] included with the supply



For top hat rail



For mounting plate



3.5 Subracks

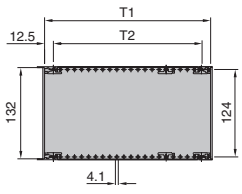
Ripac Vario Mobil 3 U, 6 U – supply includes Page 556

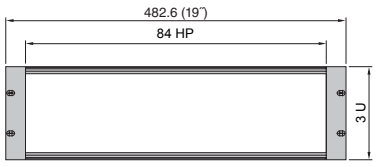
							EMC			EMC	Page
Height units U					**3**	**3**	**3**	**6**	**6**	**6**	
			T1 mm	T2 mm	Packs of	BP	C	BP	BP	C	BP	
2	Side panels		245	220	1	3684.513			3684.531			560
	PT			Model No.	Packs of							
1		Flanges		–	1	2	3684.615 2	2	2	3684.617 2	2	561
3		Trim sections, rear		–	1	–	–	2 3684.634	–	–	2 3684.636	562
2		Side panels		see above	1	2	2	2	2	2	2	560
		EMC gaskets, vertical		–	1	–	–	2 3686.975	–	–	2 3686.977	572
7		Covers, vented		3684.695	1	–	–	2	–	–	2	581
9		Mounting blocks		3684.234	10	–	–	20	–	–	20	573
	K	EMC gaskets for covers		3684.245	10	–	–	4	–	–	4	573
4	A	Horizontal rails, front		3684.562	1	4	4	4	4	4	4	563
	I	Threaded inserts		3684.610	1	4	4	4	4	4	4	570
5	C1	Horizontal rails, rear		3684.572	1	2	–	2	2	–	2	565
6	D1	Horizontal rails, rear, centre		3684.582	1	–	–		1	–	1	568
	G	Insulating strips 21 HP		3684.611	1	8	–	8	16	–	16	571
	C3	Horizontal rails, rear, with integral Z rails		3686.159	1	–	2	–	–	2	–	567
	D2	Horizontal rails, rear, centre, with integral Z rails		3687.602	1	–	–	–		1	–	569
		Assembly screws M4 x 12		3684.881	1	12	12	12	14	14	14	–
		Assembly screws M3 x 6		3684.883	1	–	–	60	–	–	60	–

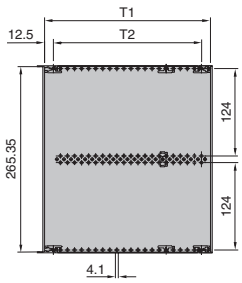
BP = for backplane C = for DIN connector PT = rail type

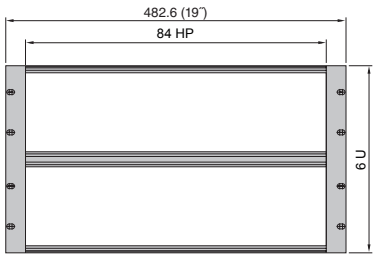
Ripac Solid 3 U, 6 U – supply includes Page 557

Height units U					**3**	**3**	**6**	**6**	Page
			T1 mm	T2 mm	Packs of	9908.517	9908.518	9908.521	9908.520	
2	Side panels		245	220	1	3684.513	3684.513	3684.531	3684.531	560
1		Flanges 3 U		3684.615	1	2	2	–	–	561
		Flanges 6 U		3684.617	1	–	–	2	2	
2		Side panels		see above	1	2	2	2	2	560
4	A1	Horizontal rails, front		9908.721	1	2	–	2	–	563
	B2	Front horizontal rails with 10 mm extension		9908.722	1	–	2	–	2	564
	I	Threaded inserts		3684.610	1	2	2	2	2	570
	I	Threaded inserts		3604.830	2	2	2	2	2	570
5	C6	Horizontal rails, rear		9908.723	1	2	2	2	2	566
6	D1	Horizontal rails, rear, centre		3684.582	1	–	–	1	1	568
10		Assembly screws M4 x 12		3684.881	1	8	8	10	10	–







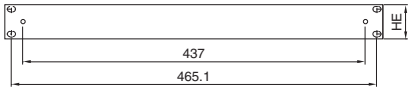


T = Depth

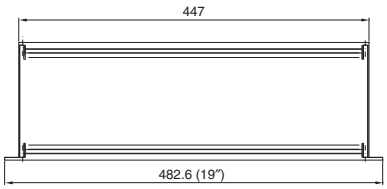
3.6 Instrument cases/system enclosures

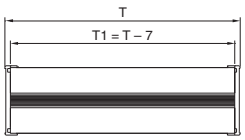
RiBox system enclosures 1 U Page 613

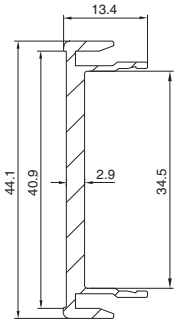
482.6 mm (19″) rack mount



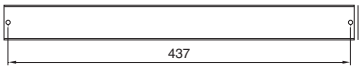
HE = U

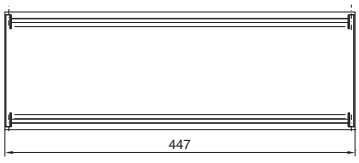


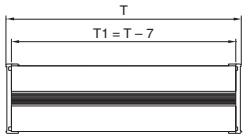




Instrument cases







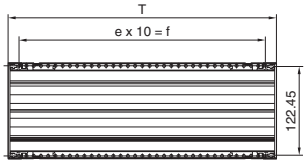
Model No. RP			Depth (T) mm
Instrument cases	19″ rack mount	19″ rack mount[1)]	
3687.819	**3687.814**	**–**	150
3687.820	**3687.815**	**–**	200
3687.821	**3687.816**	**3684.072**	250
3687.822	**3687.817**	**–**	300
3687.823	**3687.818**	**3684.073**	350

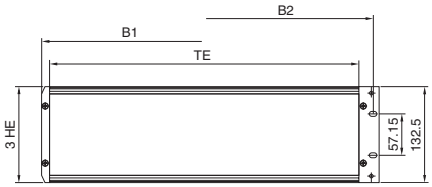
[1)] Including assembly kit for double Euroboards.

3.6 Instrument cases/system enclosures

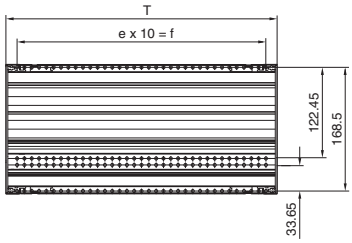
Ripac Vario-Module Page 614 – 617

3 U



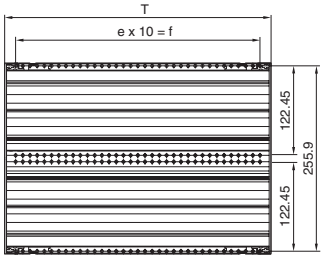


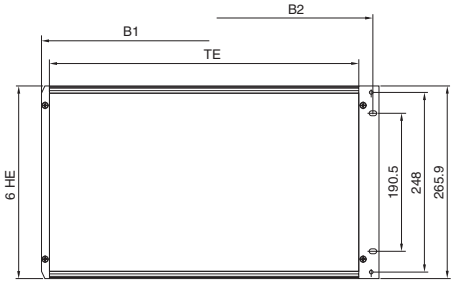
4 U



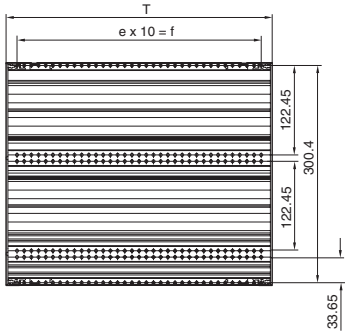


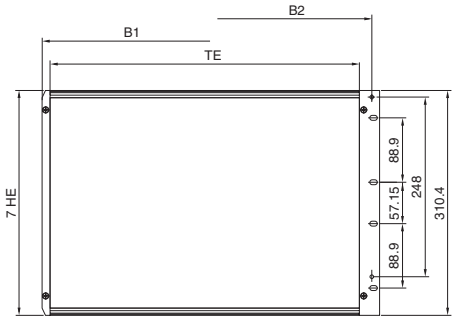
6 U





7 U





Model No. VM	U (HE)	HP (TE)	Depth (T) mm	e	B1 mm	B2 mm
3982.040	3	42	250.4	22	235.6	251.6
3982.070	3	42	310.4	28	235.6	251.6
3982.050	3	63	250.4	22	342.3	358.3
3982.080	3	63	310.4	28	342.3	358.3
3982.060	3	84	250.4	22	449.0	465.1
3982.090	3	84	310.4	28	449.0	465.1
3982.100	3	84	370.4	34	449.0	465.1
3982.110	4	84	250.4	22	449.0	465.1
3982.120	4	84	310.4	28	449.0	465.1
3982.130	4	84	370.4	34	449.0	465.1
3982.140	6	84	310.4	28	449.0	465.1
3982.150	6	84	370.4	34	449.0	465.1
3982.160	6	84	430.4	40	449.0	465.1
3982.170	7	84	310.4	28	449.0	465.1
3982.190	7	84	430.4	40	449.0	465.1

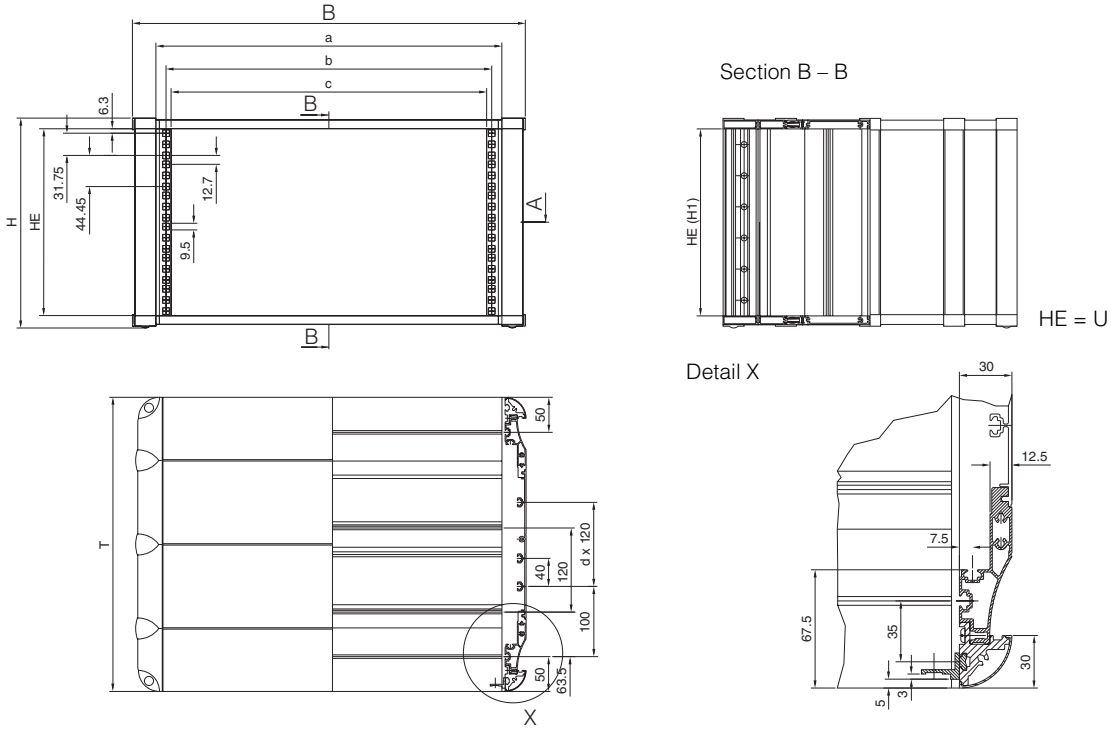
Model No. VM (EMC)	U (HE)	HP (TE)	Depth (T) mm	e	B1 mm	B2 mm
3983.040	3	42	250.4	22	235.6	251.6
3983.070	3	42	310.4	28	235.6	251.6
3983.050	3	63	250.4	22	342.3	358.3
3983.080	3	63	310.4	28	342.3	358.3
3983.060	3	84	250.4	22	449.0	465.1
3983.090	3	84	310.4	28	449.0	465.1
3983.100	3	84	370.4	34	449.0	465.1
3983.110	4	84	250.4	22	449.0	465.1
3983.120	4	84	310.4	28	449.0	465.1
3983.130	4	84	370.4	34	449.0	465.1
3983.140	6	84	310.4	28	449.0	465.1
3983.150	6	84	370.4	34	449.0	465.1
3983.160	6	84	430.4	40	449.0	465.1
3983.170	7	84	310.4	28	449.0	465.1
3983.190	7	84	430.4	40	449.0	465.1

B = Width

3.6 Instrument cases/system enclosures

Rittal RiCase 269.2 mm (1/2 19″) Page 621

Rittal RiCase 482.6 mm (19″) Page 622



Rittal RiCase 269.2 mm (1/2 19″)

Not vented									
Model No. RC, RAL 5018	**3750.100**	**–**	**3750.200**	**–**	**3750.210**	**3750.300**	**–**	**3750.400**	**–**
Model No. RC, RAL 5012	**3750.102**	**–**	**3750.202**	**–**	**3750.212**	**3750.302**	**–**	**3750.402**	**–**
Model No. RC, RAL 7030	**3750.104**	**–**	**3750.204**	**–**	**3750.214**	**3750.304**	**–**	**3750.404**	**–**
Vented									
Model No. RC, RAL 5018	**–**	**3750.110**	**–**	**3750.220**	**–**	**3750.350**	**3750.360**	**–**	**3750.450**
Model No. RC, RAL 5012	**–**	**3750.112**	**–**	**3750.222**	**–**	**3750.352**	**3750.362**	**–**	**3750.452**
Model No. RC, RAL 7030	**–**	**3750.114**	**–**	**3750.224**	**–**	**3750.354**	**3750.364**	**–**	**3750.454**
U	1		2		3			4	
Width (B) mm	348.6	348.6	348.6	348.6	348.6	348.6	348.6	348.6	348.6
Height (H) mm	77.5	77.5	121.9	121.9	166.4	166.4	166.4	210.8	210.8
H1 (U) mm	45.0	45.0	89.4	89.4	133.8	133.8	133.8	178.3	178.3
Depth (T) mm	300.0	420.0	300.0	540.0	300.0	420.0	540.0	420.0	540.0
a	280.6	280.6	280.6	280.6	280.6	280.6	280.6	280.6	280.6
b	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6
c	237.2	237.2	237.2	237.2	237.2	237.2	237.2	237.2	237.2
d	–	1	–	2	–	1	2	1	2

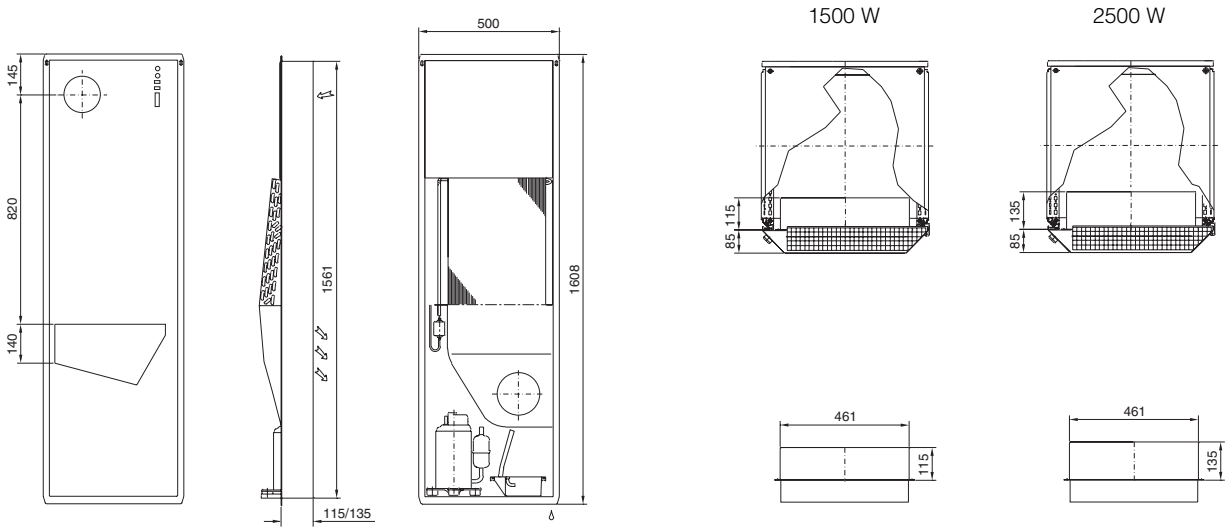
Rittal RiCase 482.6 mm (19″)

Not vented												
Model No. RC, RAL 5018	**3750.310**	**3750.320**	**3750.410**	**3750.420**	**3750.600**	**3750.610**	**3750.620**	**3750.700**	**3750.710**	**3750.900**	**3750.910**	**3750.000**
Model No. RC, RAL 5012	**3750.312**	**3750.322**	**3750.412**	**3750.422**	**3750.602**	**3750.612**	**3750.622**	**3750.702**	**3750.712**	**3750.902**	**3750.912**	**3750.002**
Model No. RC, RAL 7030	**3750.314**	**3750.324**	**3750.414**	**3750.424**	**3750.604**	**3750.614**	**3750.624**	**3750.704**	**3750.714**	**3750.904**	**3750.914**	**3750.004**
Vented												
Model No. RC, RAL 5018	**3750.330**	**3750.340**	**3750.430**	**3750.440**	**3750.630**	**3750.640**	**3750.650**	**3750.720**	**3750.730**	**3750.920**	**3750.930**	**3750.030**
Model No. RC, RAL 5012	**3750.332**	**3750.342**	**3750.432**	**3750.442**	**3750.632**	**3750.642**	**3750.652**	**3750.722**	**3750.732**	**3750.922**	**3750.932**	**3750.032**
Model No. RC, RAL 7030	**3750.334**	**3750.344**	**3750.434**	**3750.444**	**3750.634**	**3750.644**	**3750.654**	**3750.724**	**3750.734**	**3750.924**	**3750.934**	**3750.034**
U	3		4		6			7		9		12
Width (B) mm	562.0	562.0	562.0	562.0	562.0	562.0	562.0	562.0	562.0	562.0	562.0	562.0
Height (H) mm	166.4	166.4	210.8	210.8	299.7	299.7	299.7	344.2	344.2	433.1	433.1	566.5
H1 (U) mm	133.8	133.8	178.3	178.3	267.2	267.2	267.2	311.7	311.7	400.6	400.6	534.0
Depth (T) mm	300.0	420.0	300.0	420.0	300.0	420.0	540.0	420.0	540.0	420.0	540.0	540.0
a	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0
b	465.0	465.0	465.0	465.0	465.0	465.0	465.0	465.0	465.0	465.0	465.0	465.0
c	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6
d	–	1	–	1	–	1	2	1	2	1	2	2

Modular climate control concept

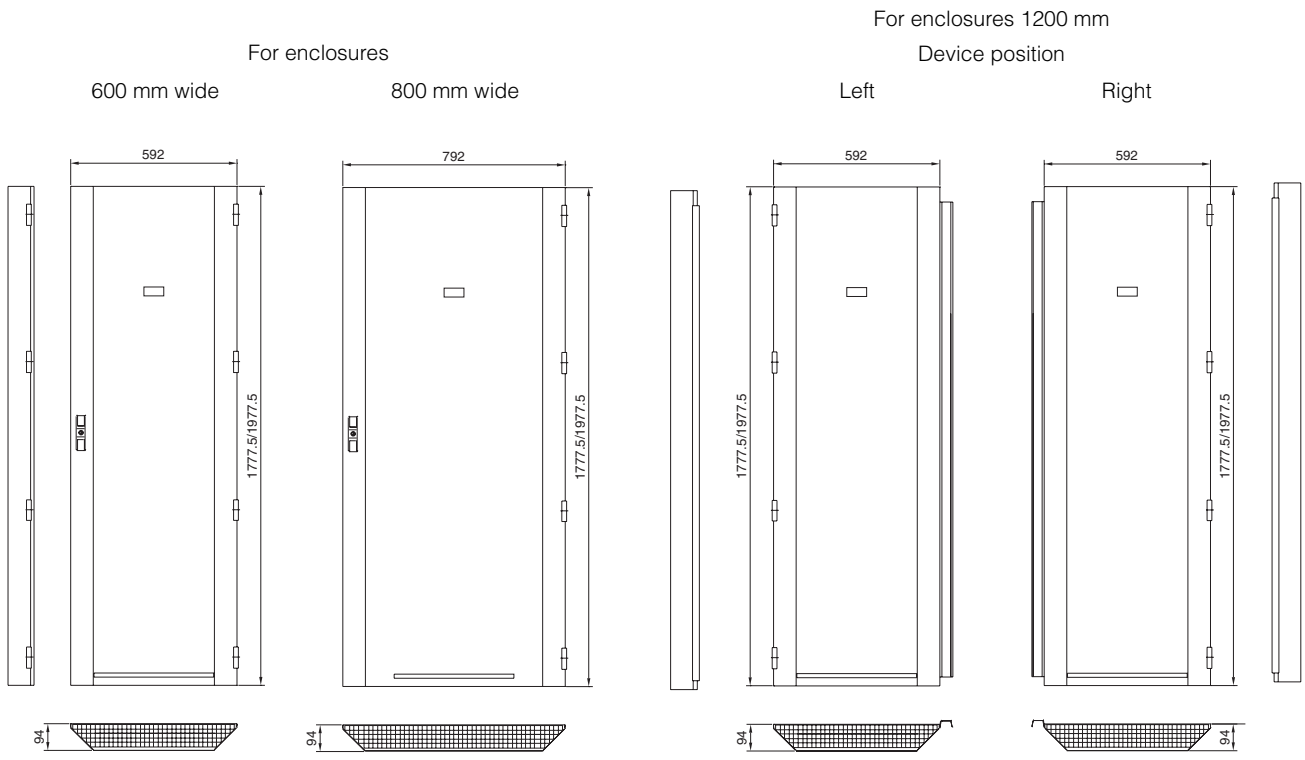
4.1 Cooling modules

Useful cooling output 1500/2500 W Page 633



4.1 Section doors

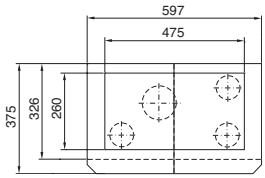
Page 634

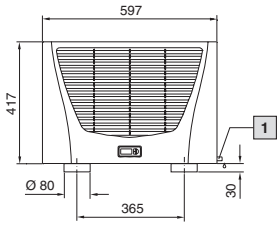


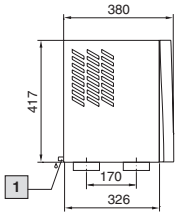
4.1 Roof-mounted cooling units

Useful cooling output 500/750 W Page 636

Mounting cut-out







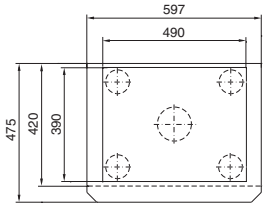
1 Condensate discharge 1/2″, flexible

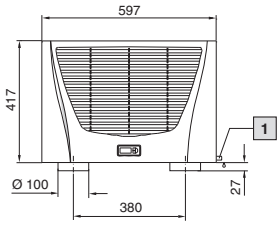
Useful cooling output 1000 W Page 637

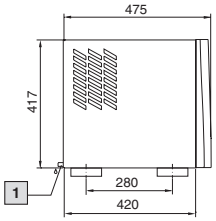
Useful cooling output 1100 W Page 638

Useful cooling output 1500/2000 W Page 639

Mounting cut-out



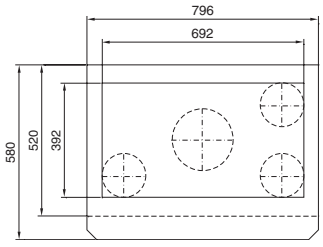


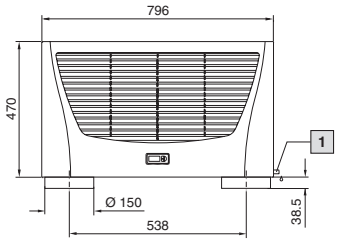


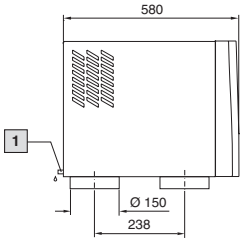
1 Condensate discharge 1/2″, flexible

Useful cooling output 3000/4000 W Page 640

Mounting cut-out





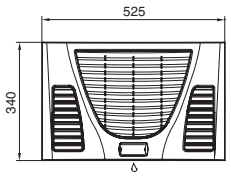


1 Condensate discharge 1/2″, flexible

4.1 Wall-mounted cooling units

Mini in horizontal format, useful cooling output 300 W Page 642

External mounting

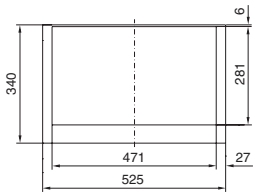




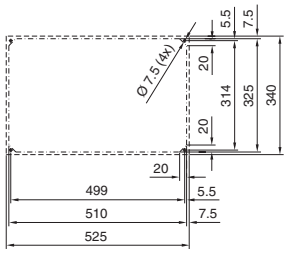
Internal mounting



Mounting cut-out External mounting

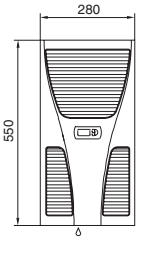


Mounting cut-out Internal mounting



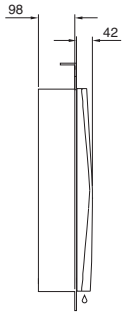
Useful cooling output 300 W Page 643

External mounting

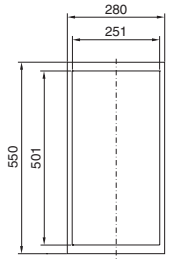




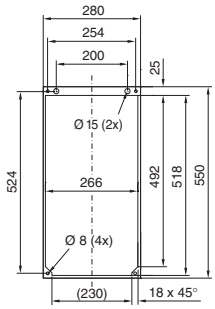
Internal mounting



Mounting cut-out External mounting



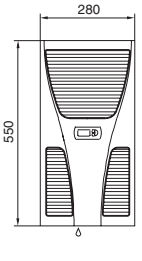
Mounting cut-out Internal mounting

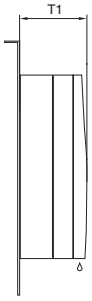


Useful cooling output 500 W Page 644

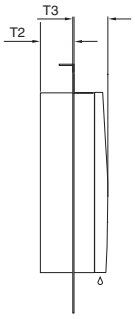
Useful cooling output 750 W Page 644

External mounting

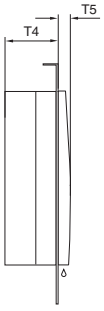




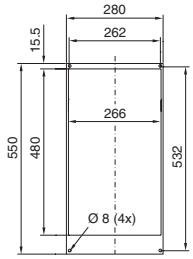
Partial internal mounting



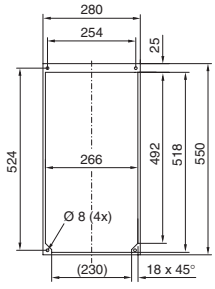
Internal mounting



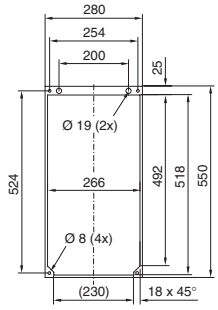
Mounting cut-out External mounting



Mounting cut-out Partial internal mounting



Mounting cut-out Internal mounting



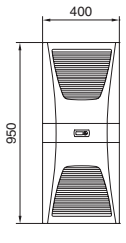
	T1	T2	T3	T4	T5
500 W	210	100	110	164	42
750 W	280	125	155	235	45

T = Depth

4.1 Wall-mounted cooling units

Useful cooling output 1000/1500 W Page 645

External mounting

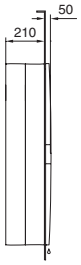




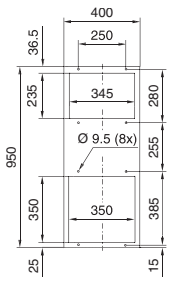
Partial internal mounting



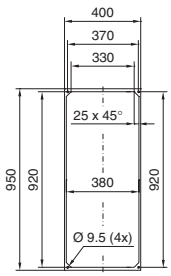
Inernal mounting



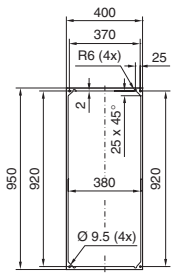
Mounting cut-out External mounting



Mounting cut-out Partial internal mounting

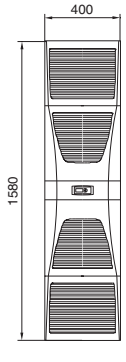


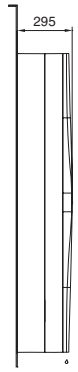
Mounting cut-out Internal mounting



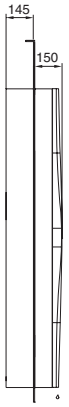
Useful cooling output 2000/2500 W Page 647

External mounting





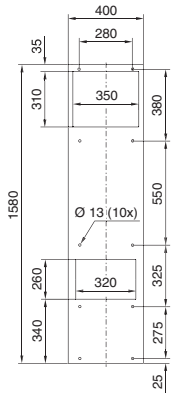
Partial internal mounting



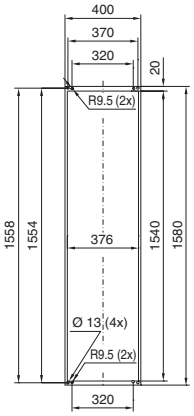
Internal mounting[1)]



Mounting cut-out External mounting



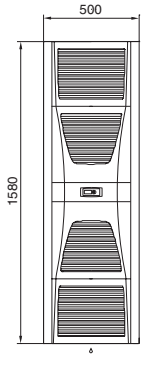
Mounting cut-out Partial internal mounting, internal mounting

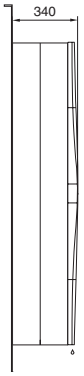


[1)] For installation in 600 mm wide doors, move the mounting cut-out from the centre of the door to the hinged side by at least 10 mm.

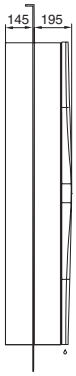
Useful cooling output 4000 W Page 648

External mounting

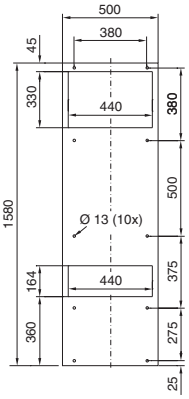




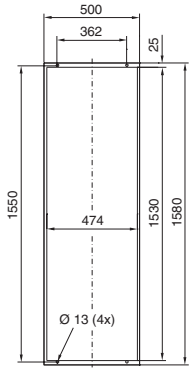
Partial internal mounting



Mounting cut-out External mounting

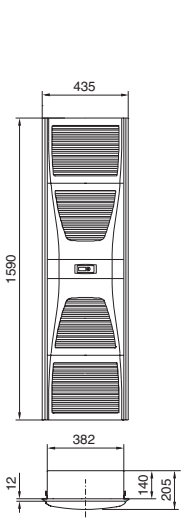


Mounting cut-out Partial internal mounting



4.1 Wall-mounted cooling units

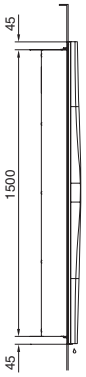
Useful cooling output 1500 W Page 646
(SK 3366.XXX and SK 3377.XXX)



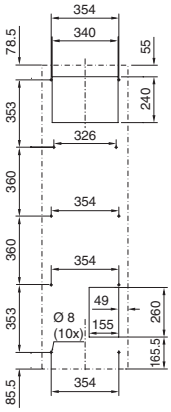
External mounting



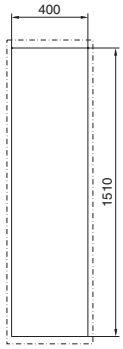
Internal mounting



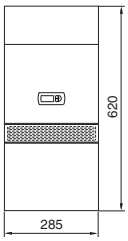
Mounting cut-out
External mounting



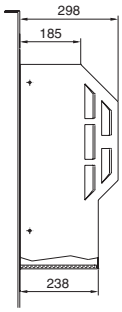
Mounting cut-out
Internal mounting



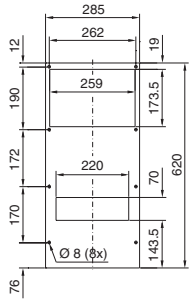
Design NEMA 4x, useful cooling output 500 W Page 649



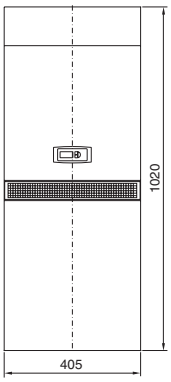
External mounting



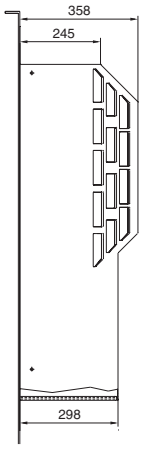
Mounting cut-out
External mounting



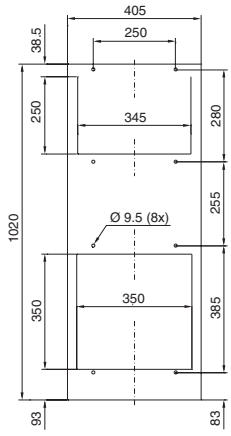
Design NEMA 4x, useful cooling output 1000/1500 W Page 649



External mounting



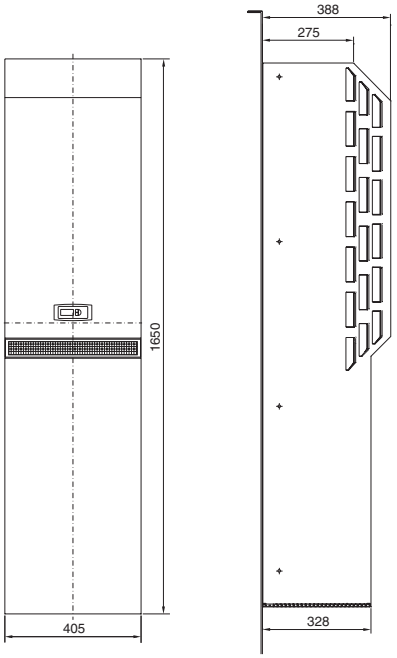
Mounting cut-out
External mounting



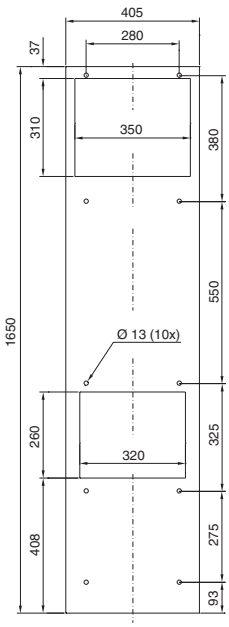
4.1 Wall-mounted cooling units

Design NEMA 4x, useful cooling output 2000/2500 W Page 650

External mounting



Mounting cut-out
External mounting



4.2 Options for recooling systems

	Pressure-sealed system	Open system with tank	Designed as a once-through cooler without tank	Hot gas bypass control in the cooling circuit	More powerful pump(s)	Heater in the tank (1000 W)	Water level switch	Flow monitor	Water filter/oil filter	Water-cooled condenser	Upstream pipework, free from non-ferrous metals	Automatic tank filling	Fault signal with individual messages	Ambient temperature control	Automatic bypass	Manual bypass	Harting connector	Outdoor siting	Special spray finish	Special voltages	Metal filter mat	Castors	Refrigerant R134a	Double pump unit	Filter mat monitoring	Base tray	Tank (stainless steel 1.4301)	Additional medium connections
Recooling systems Mini and Mini for wall																												
SK 3318.600	■	–	■	–	□	–	–	■	–	□	□	–	–	□	–	□	□	□	□	□	□	□	■	–	■	–	–	–
SK 3318.610	–	■	–	–	□	–	–	■	–	□	□	–	–	□	–	□	□	□	□	□	□	□	■	–	■	–	–	–
SK 3319.600	■	–	■	–	□	–	–	■	–	□	□	–	–	□	–	□	□	□	□	□	□	□	■	–	■	–	–	–
SK 3319.610	–	■	–	–	□	–	–	■	–	□	□	–	–	□	–	□	□	□	□	□	□	□	■	–	■	–	–	–
SK 3320.600	–	■	–	□	□	–	–	■	–	□	□	–	–	□	□	□	□	□	□	□	□	□	■	–	■	–	■	–
SK 3334.600	–	■	–	□	□	–	–	■	–	□	□	–	–	□	□	□	□	□	□	□	□	□	■	–	■	–	■	–
SK 3334.660	–	■	–	□	□	–	–	■	–	□	□	–	–	□	□	□	□	□	□	□	□	□	■	–	■	–	■	–
SK 3360.100	–	■	–	□	□	–	□	■	–	□	□	–	–	□	–	□	□	–	□	□	□	–	■	–	■	–	–	–
SK 3360.250	–	■	–	□	□	–	□	■	–	□	□	–	–	□	–	□	□	–	□	□	□	–	■	–	■	–	–	–
SK 3360.470	–	■	–	□	□	–	□	■	–	□	□	–	–	□	–	□	□	–	□	□	□	–	■	–	■	–	–	–
Recooling systems in floor-standing enclosure and industrial enclosure																												
SK 3336.100	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	–	–	–	■	□
SK 3336.200	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	–	–	–	■	□
SK 3336.300	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	–	–	–	■	□
SK 3336.500	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	–	–	–	■	□
SK 3336.600	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	–	–	–	■	□
SK 3336.650	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	–	□	□	■	–	–	–	■	□
SK 3336.700	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3336.710	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3336.720	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3336.730	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3336.740	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3336.750	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3339.100	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3339.200	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3339.250	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3339.280	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3339.300	■	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	–	□
SK 3339.400	■	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	–	□
SK 3339.450	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3339.500	■	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	–	□
Recooling systems in a floor standing enclosure for oil																												
SK 3337.200	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.300	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.500	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.600	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.650	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	–	□	□	–	–	–	–	□	□
SK 3337.700	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.710	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.720	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.730	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.740	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.750	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
Recooling systems in the TS 8 Top enclosure system																												
SK 3335.060	–	■	–	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–
SK 3335.075	–	■	–	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–
SK 3335.100	–	■	–	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–
SK 3335.120	–	■	–	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–
SK 3335.150	–	■	–	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–
SK 3335.200	–	■	–	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–
SK 3335.250	–	■	–	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–

■ Standard □ Optional

4.2 Options for recooling systems

	Water-cooled condenser	Radial fan	Hot gas bypass control in the cooling circuit	Harting connector	Special spray finish	Special voltages	Ambient temperature control	Control voltage 24 V DC	Liquid injection valve	Fault signal "Filter mat dirty"	Immersion depth 650 mm	Immersion depth 750 mm	Immersion depth 850 mm	Immersion depth 1000 mm
Immersible recooling systems														
SK 3338.020	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.040	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.060	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.080	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.100	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.120	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.140	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.160	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.180	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.200	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.220	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.220	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.240	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.260	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.280	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.300	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.320	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.340	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.360	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.500	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.520	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.540	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.560	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.580	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.600	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.620	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.640	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.660	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.680	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.700	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.720	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.740	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.760	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.780	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.800	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.800	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.820	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.840	□	□	□	□	□	□	□	□	□	□	□	□	□	□

□ Optional

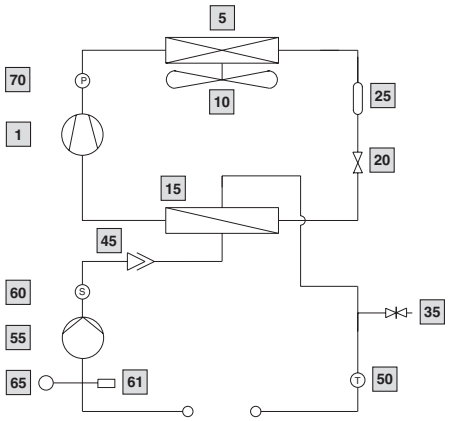
4.2 Recooling systems

Mini, cooling output 960/1490 W Page 656

Key to the adjacent drawing:

- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 15 Evaporator coil
- 20 Expansion valve
- 25 Filter dryer
- 35 Filling
- 45 Vent valve
- 50 Temperature sensor
- 55 Pump
- 60 Flow monitor
- 61 Overpressure valve
- 65 Pressure relief valve/ alternatively tank
- 70 High-pressure switch

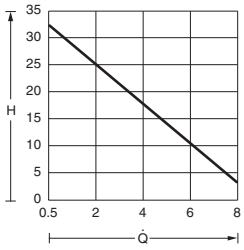
Layout diagram



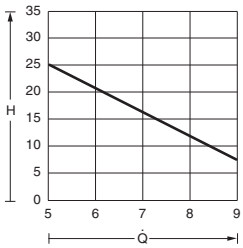
Note:
With an externally lockable cooling cycle, a bypass (overpressure valve) should be provided in the external water pipes.

Characteristic curves of pump
Model No. SK
3318.600/3318.610/
3319.600/3319.610

50 Hz



60 Hz



H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

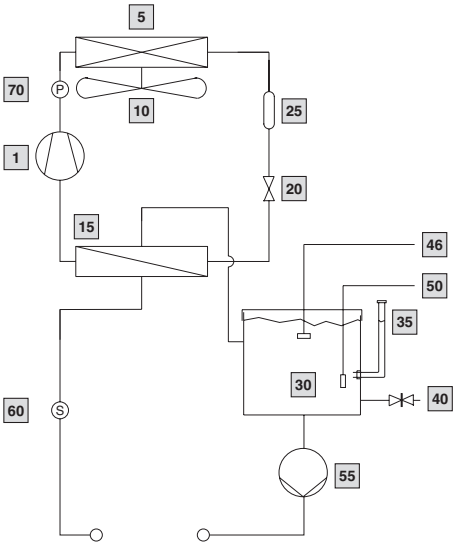
Mini, cooling output 3000/4500 W Page 657

Mini, cooling output 6000 W Page 658

Key to the adjacent drawing:

- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 15 Evaporator coil
- 20 Expansion valve
- 25 Filter dryer
- 30 Tank
- 35 Filling
- 40 Tank drain
- 46 Water level switch, optional
- 50 Temperature sensor
- 55 Pump
- 60 Flow monitor
- 70 High-pressure switch

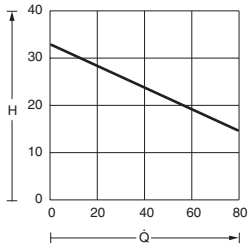
Layout diagram



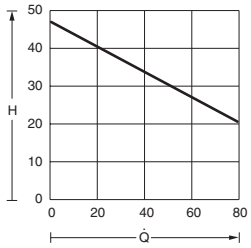
Note:
With an externally lockable cooling cycle, a bypass (overpressure valve) should be provided in the external water pipes.

Characteristic curves of pump
Model No. SK
3320.600/3334.600/3334.660

50 Hz



60 Hz



H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

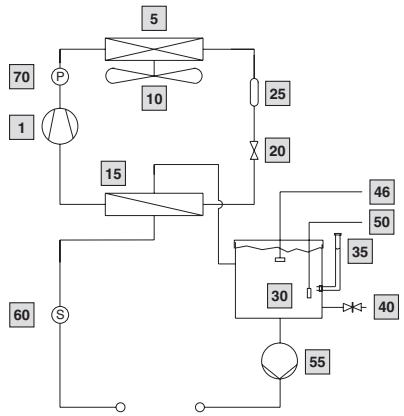
4.2 Recooling systems

Mini, for wall mounting, cooling output 1000/2500/4000 W Page 659

Key to the adjacent drawing:

1 Compressor
5 Condenser
10 Condenser fan
15 Evaporator coil
20 Expansion valve
25 Filter dryer
30 Tank
35 Filling
40 Tank drain
46 Water level switch, optional
50 Temperature sensor
55 Pump
60 Flow monitor
70 High-pressure switch

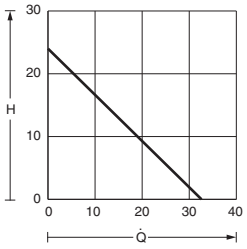
Layout diagram



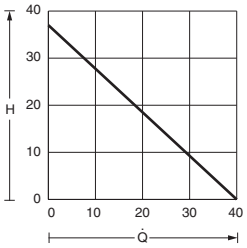
Note:
With an externally lockable cooling cycle, a bypass (overpressure valve) should be provided in the external water pipes.

Characteristic curves of pump
Model No. SK
3360.100/3360.250/3360.470

50 Hz



60 Hz



H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

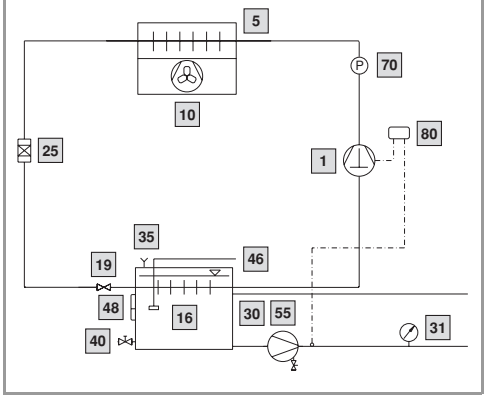
In floor-standing enclosure, cooling output 2100 to 7700 W Page 660

Key to the adjacent drawing:

1 Compressor
5 Condenser
10 Condenser fan
16 Multi-coil vaporiser
19 Capillary tube/expansion valve[1)]
25 Filter dryer
30 Tank
31 Manometer
35 Filling
40 Tank drain
46 Level monitor/float-actuated switch
48 Level indicator
55 Pump
70 High-pressure switch[1)]
80 Thermostat

[1)] from SK 3336.500

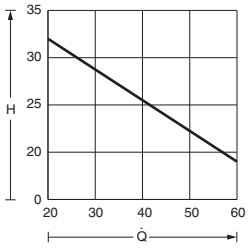
Layout diagram



Note:
With an externally lockable cooling cycle, a bypass (overpressure valve) should be provided in the external water pipes.

Characteristic curve of pump
Model No. SK
3336.100/3336.200/3336.300/
3336.500/3336.600/3336.650

50 Hz



H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

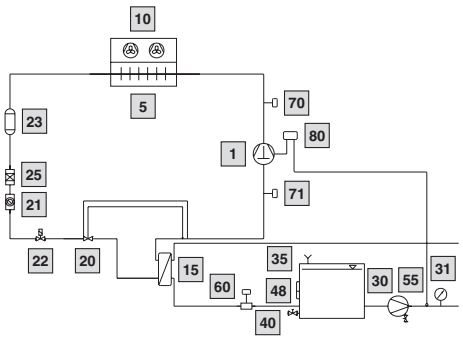
4.2 Recooling systems

In floor-standing enclosure, cooling output 10000 to 25200 W Page 661

Key to the adjacent drawing:

1 Compressor
5 Condenser
10 Condenser fan
15 Evaporator coil
20 Expansion valve
21 Inspection glass
22 Magnetic valve
23 Liquid collector
25 Filter dryer
30 Tank
31 Manometer
35 Filling
40 Tank drain
48 Level indicator
55 Pump
60 Flow monitor
70 High-pressure switch
71 Low-pressure switch
80 Thermostat

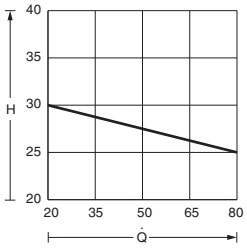
Layout diagram



Note:
With an externally lockable cooling cycle, a bypass (overpressure valve) should be provided in the external water pipes.

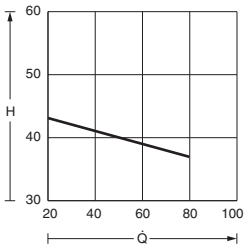
Characteristic curves of pump
Model No. SK
3336.700/3336.710/3336.720

50 Hz



Model No. SK
3336.730/3336.740/3336.750

50 Hz



H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

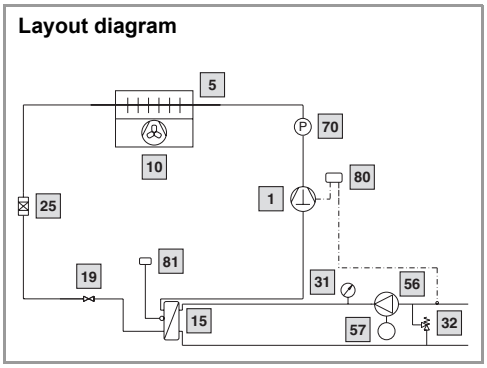
In floor-standing enclosure for oil, cooling output 2550 to 7900 W Page 662

Key to the adjacent drawing:

1 Compressor
5 Condenser
10 Condenser fan
15 Evaporator coil
19 Capillary tube/expansion valve[1)]
25 Filter dryer
31 Manometer
32 Automatic bypass valve
56 Oil pump
57 Motor for oil pump
70 High-pressure switch[1)]
80 Thermostat
81 Anti-frost thermostat

[1)] from SK 3337.500

Layout diagram



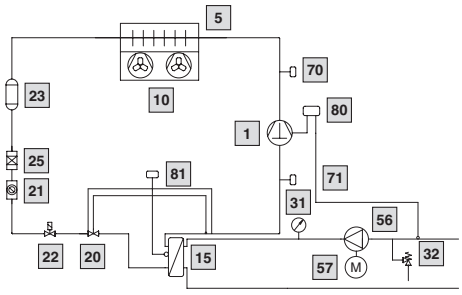
4.2 Recooling systems

In floor-standing enclosure for oil, cooling output 10600 to 26100 W Page 663

Key to the adjacent drawing:

1 Compressor
5 Condenser
10 Condenser fan
15 Evaporator coil
20 Expansion valve
21 Inspection glass
22 Magnetic valve
23 Liquid collector
25 Filter dryer
31 Manometer
32 Automatic bypass valve
56 Oil pump
57 Motor for oil pump
70 High-pressure switch
71 Low-pressure switch
80 Thermostat
81 Anti-frost thermostat

Layout diagram

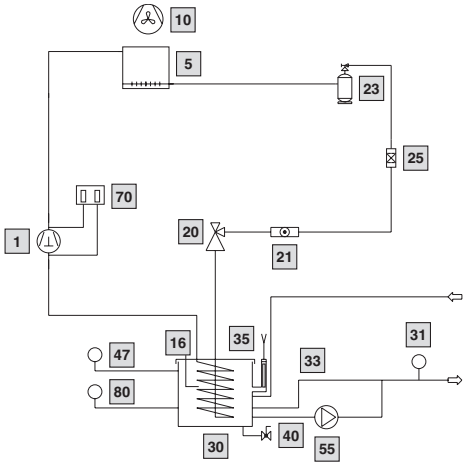


In TS 8 Top enclosure system, cooling output 6000/7500 W Page 664

Key to the adjacent drawing:

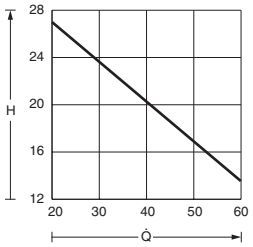
1 Compressor
5 Condenser
10 Condenser fan
16 Multi-coil vaporiser
20 Expansion valve
21 Inspection glass
23 Liquid collector
25 Filter dryer
30 Tank
31 Manometer
33 Fixed pump bypass
35 Filling
40 Tank drain
47 Level switch
55 Pump
70 High-pressure switch
80 Thermostat

Layout diagram



Characteristic curve of pump
Model No. SK
3335.060/3335.075

50 Hz



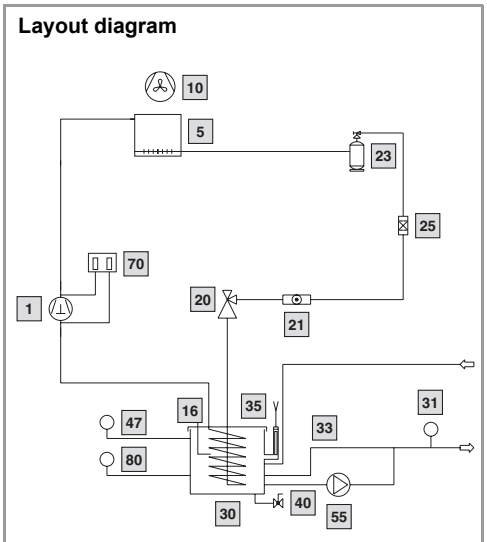
H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

In TS 8 Top enclosure system, cooling output 10000 to 25000 W Page 665

Key to the adjacent drawing:

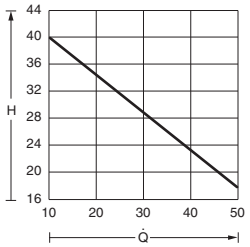
1 Compressor
5 Condenser
10 Condenser fan
16 Multi-coil vaporiser
20 Expansion valve
21 Inspection glass
23 Liquid collector
25 Filter dryer
30 Tank
31 Manometer
33 Fixed pump bypass
35 Filling
40 Tank drain
47 Level switch
55 Pump
70 High-pressure switch
80 Thermostat

Layout diagram

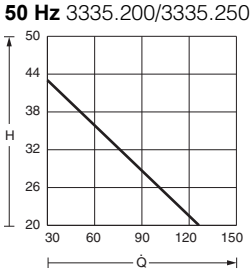


Characteristic curves of pump
Model No. SK

50 Hz 3335.100/3335.120/
3335.150



50 Hz 3335.200/3335.250



H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

4.2 Recooling systems

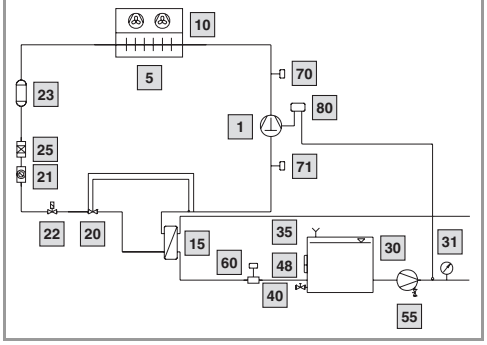
In industrial enclosure, cooling output 32 kW to 172 kW Page 666

Key to the adjacent drawing:

- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 15 Evaporator coil
- 20 Expansion valve
- 21 Inspection glass
- 22 Magnetic valve
- 23 Liquid collector
- 25 Filter dryer
- 30 Tank
- 31 Manometer
- 35 Filling
- 40 Tank drain
- 48 Level indicator
- 55 Pump
- 60 Flow monitor
- 70 High-pressure switch
- 71 Low-pressure switch
- 80 Thermostat

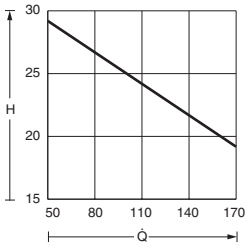
[1] Layout diagram SK 3339.300 – .500 available on request.

Layout diagram SK 3339.100/.200[1]/.250/.280[1]

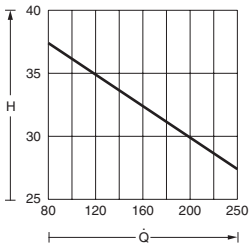


Characteristic curves of pump
Model No. SK

50 Hz 3339.100/3339.200

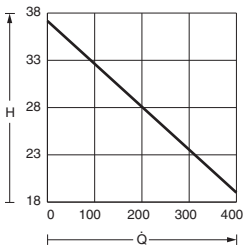


50 Hz 3339.250, 3339.280

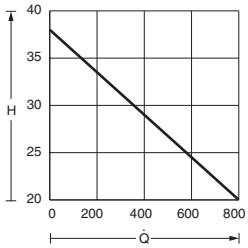


H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

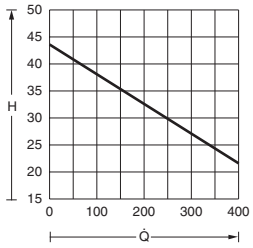
50 Hz 3339.300/3339.400



50 Hz 3339.500



50 Hz 3339.450

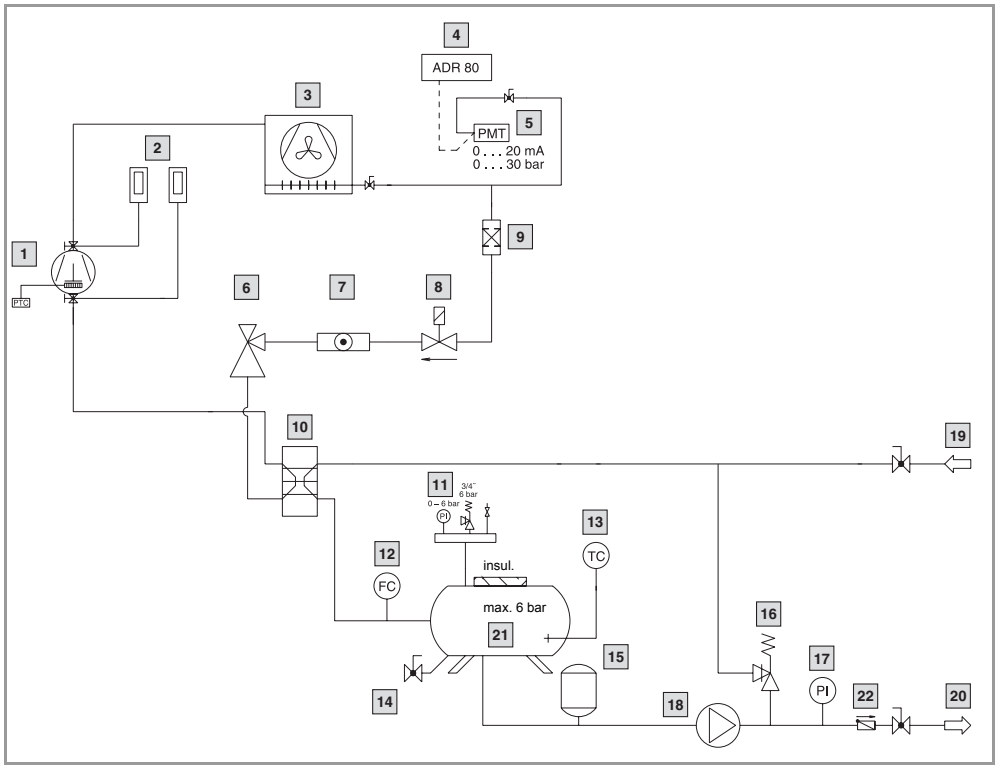


4.2 Recooling systems

for IT cooling, cooling output 4000 to 150000 W Page 667/668

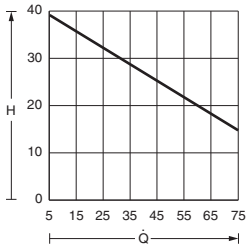
Key to the adjacent drawing:

1 Compressor with oil sump heater
2 Duo pressure monitor LP/HP
3 Condenser with fan
4 Speed control
5 Pressure sensor
6 Expansion valve
7 Inspection glass
8 Magnetic valve
9 Dryer
10 Evaporator coil
11 Safety assembly
12 Flow monitor
13 Thermostat
14 Draining/filling
15 Pressure relief valve
16 Bypass valve
17 Manometer
18 Pump
19 Return IN
20 Inlet OUT
21 Tank
22 Non-return valve

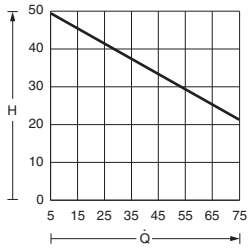


Characteristic curves of pump
Model No. SK

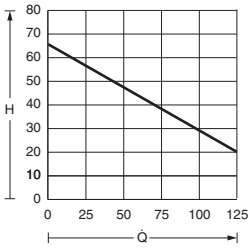
50 Hz 3300.900



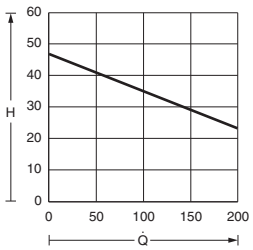
50 Hz 3300.901/.902



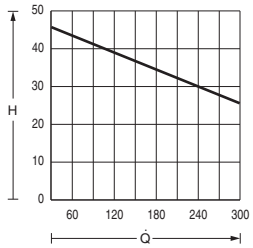
50 Hz 3300.905



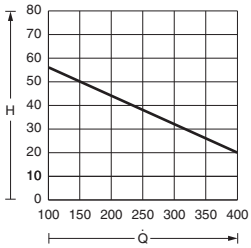
50 Hz 3300.910



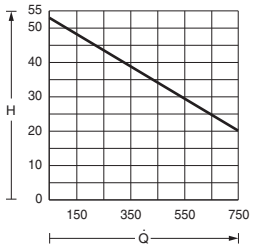
50 Hz 3300.912 – .915



50 Hz 3300.920



50 Hz 3300.925 – .930



H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

Immersible recooling systems / Water/water – Air/water heat exchangers

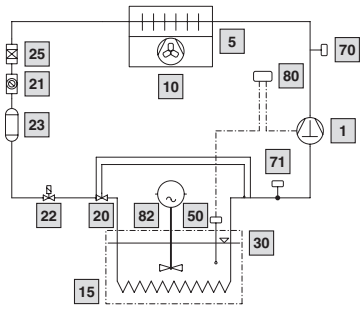
4.2 Immersible recooling systems

Useful cooling output 2400 to 77900 W Page 669 – 674

Key to the adjacent drawing:

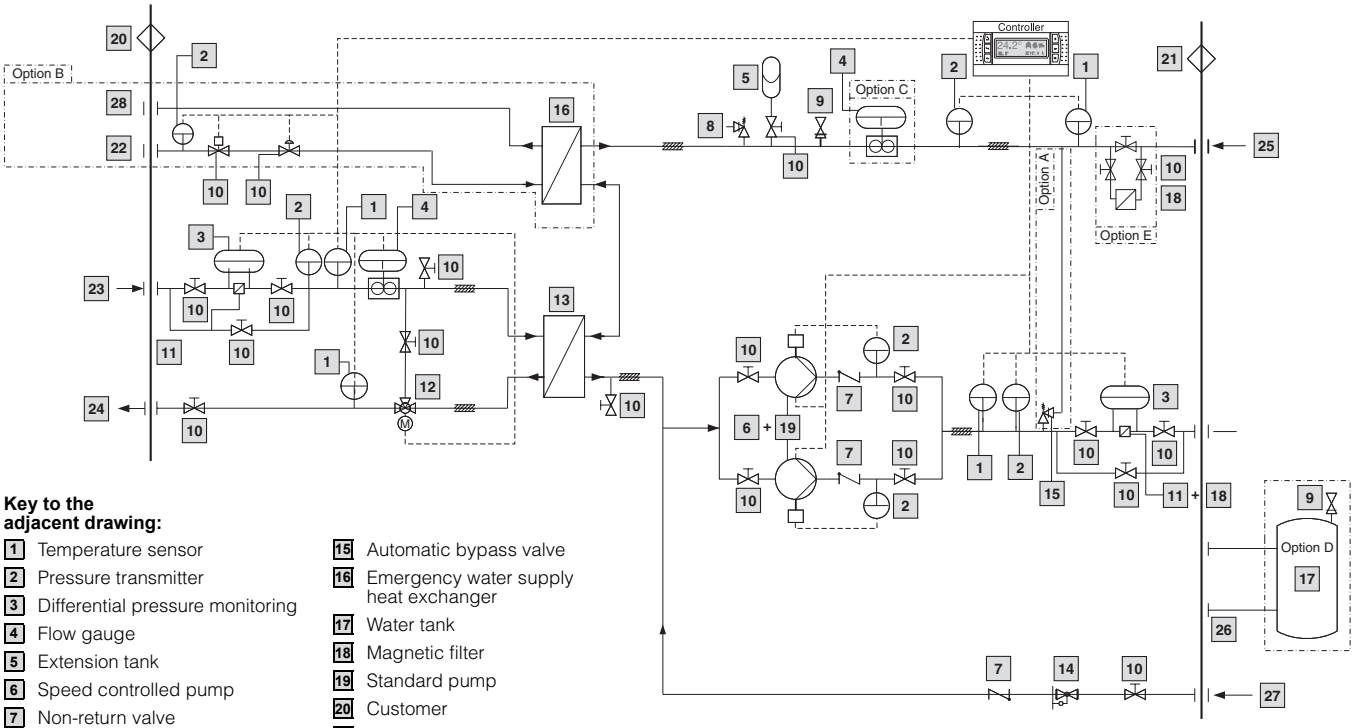
1 Compressor
5 Condenser
10 Condenser fan
15 Evaporator coil
20 Expansion valve
21 Inspection glass
22 Magnetic valve
23 Liquid collector
25 Filter dryer
30 Tank, to be supplied by the customer
50 Temperature sensor
70 High-pressure switch
71 Low-pressure switch
80 Thermostat
82 Stirrer

Layout diagram



4.3 Water/water heat exchangers

Page 685



Key to the adjacent drawing:

1 Temperature sensor
2 Pressure transmitter
3 Differential pressure monitoring
4 Flow gauge
5 Extension tank
6 Speed controlled pump
7 Non-return valve
8 Safety valve
9 Automatic bleed system
10 Shut-off valve
11 Water filter
12 3-way valve
13 Plate-type heat exchanger
14 Pressure reduction valve
15 Automatic bypass valve
16 Emergency water supply heat exchanger
17 Water tank
18 Magnetic filter
19 Standard pump
20 Customer
21 Rittal
22 Emergency water supply on
23 Primary on (onsite)
24 Primary off
25 Secondary on (LCP)
26 Secondary off
27 Filling
28 Emergency water supply off

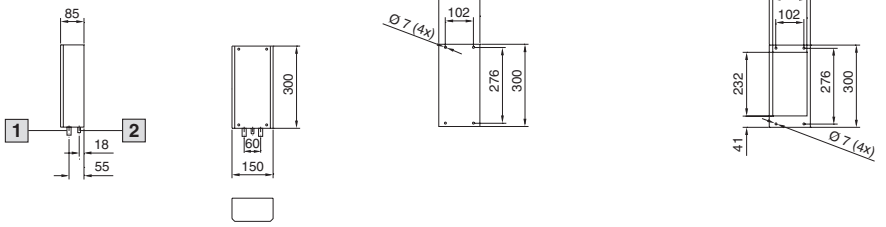
4.3 Air/water heat exchangers

Micro, wall-mounted, useful cooling output 300 W Page 676

Mounting holes for internal mounting

Mounting cut-out for external mounting

1 Cooling water connection
2 Condensate discharge



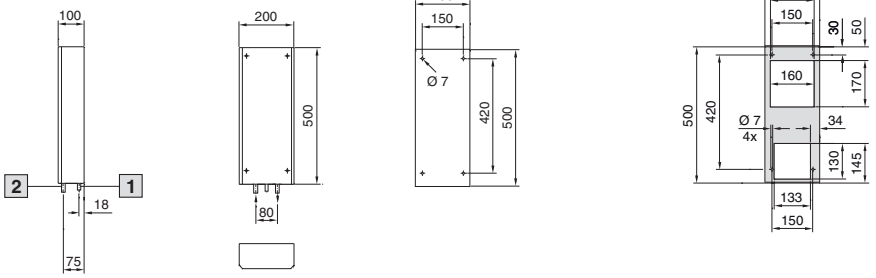
4.3 Air/water heat exchangers

Wall-mounted, useful cooling output 600 W Page 677

Mounting holes
for internal mounting

Mounting cut-out
for external mounting

1 Condensate discharge 1/2″
2 Cooling water connection 1/2″

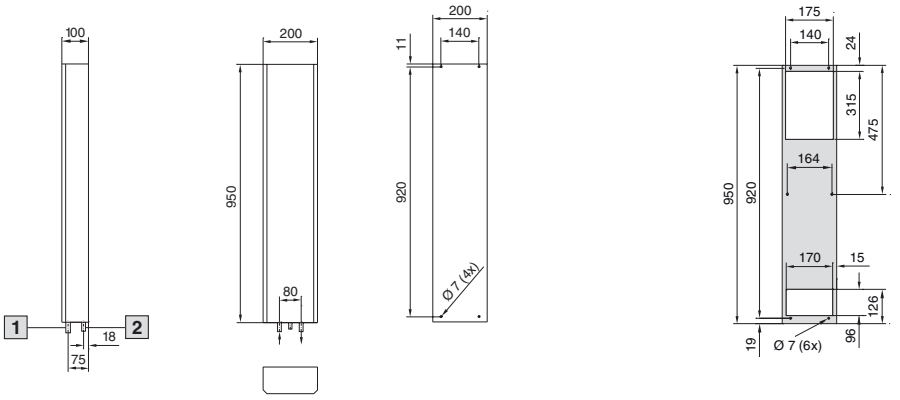


Wall-mounted, useful cooling output 1250 W Page 677

Mounting holes
for internal mounting

Mounting cut-out
for external mounting

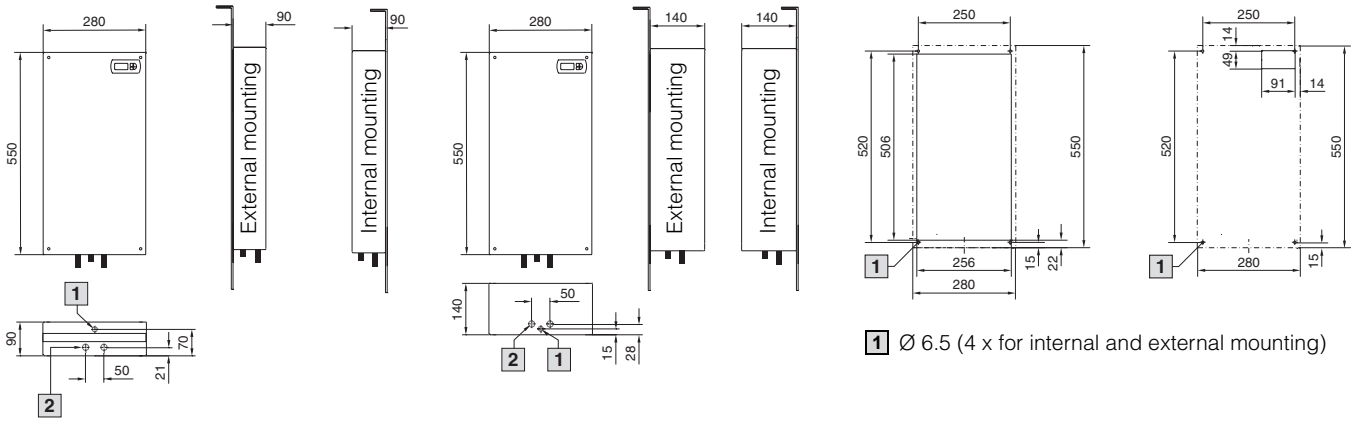
1 Condensate discharge 1/2″
2 Cooling water connection 1/2″



Wall-mounted, useful cooling output 500 W/1000 W Page 678

Mounting cut-out
for external mounting

Mounting cut-out
for internal mounting

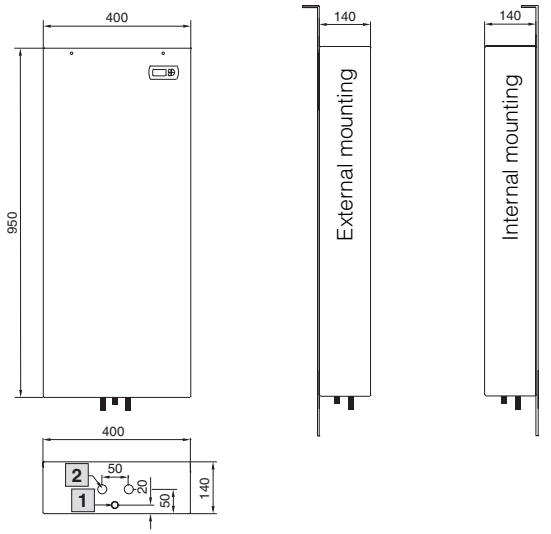


1 Ø 6.5 (4 x for internal and external mounting)

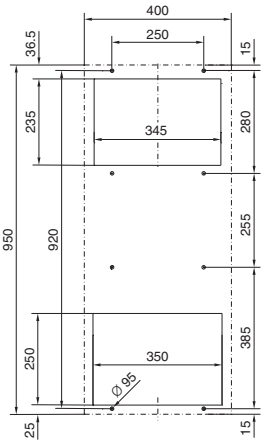
1 Condensate discharge 1/2″
2 Water connections 1/2″

4.3 Air/water heat exchangers

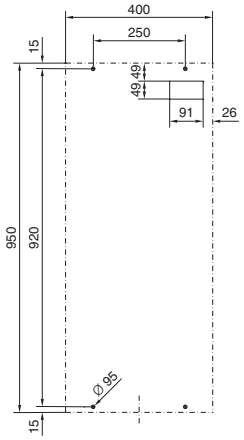
Wall mounting, useful cooling output 2000 W/3000 W Page 679



Mounting cut-out
for external mounting



Mounting cut-out
for internal mounting

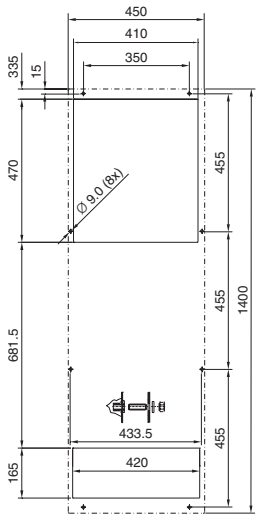


1 Condensate discharge 1/2″

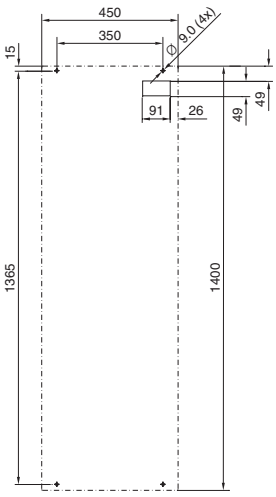
2 Water connections 1/2″

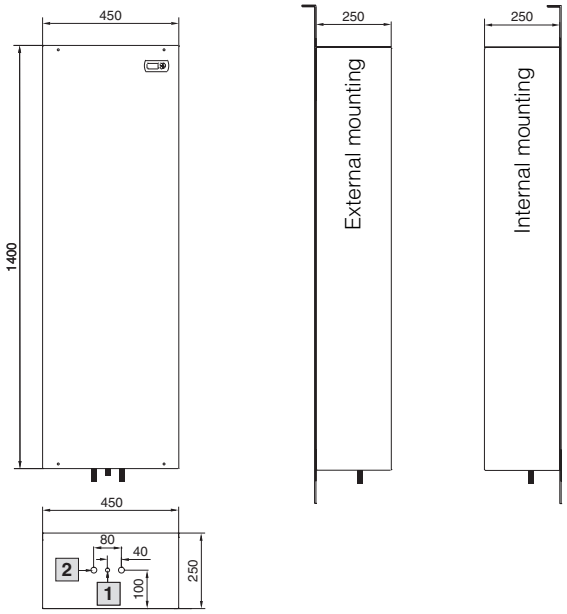
Wall mounting, useful cooling output 5000 W Page 680

Mounting cut-out
for external mounting



Mounting cut-out
for internal mounting



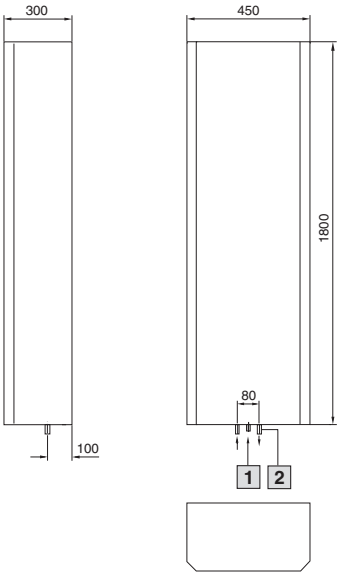


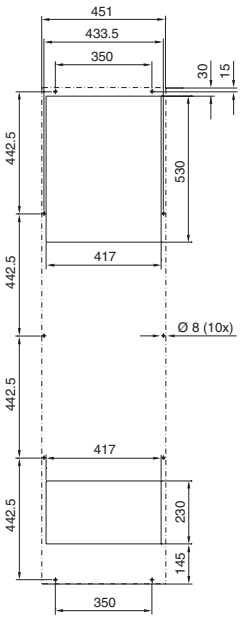
1 Condensate discharge 1/2″

2 Water connections 1/2″

4.3 Air/water heat exchangers

Wall-mounted, useful cooling output 7000 W Page 681



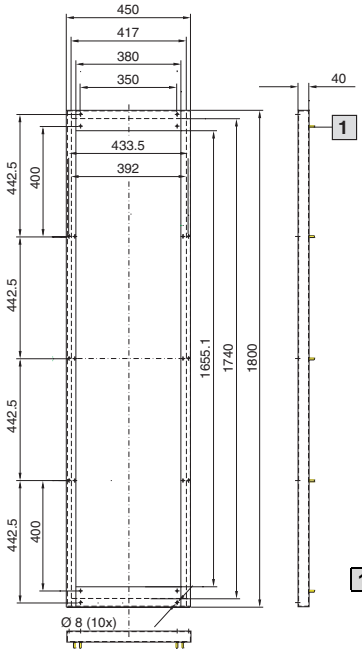


1 Condensate discharge 1/2″

2 Cooling water connection 1/2″

Adaptor frame

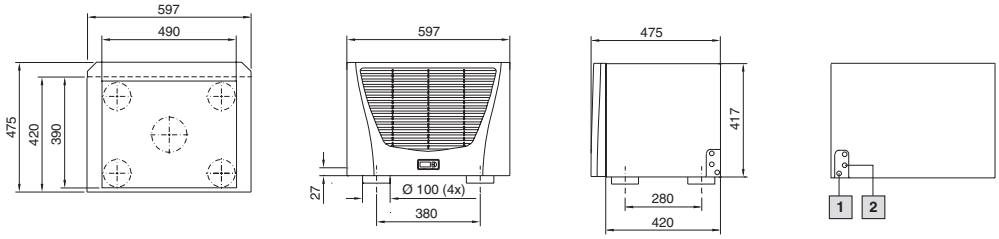
Page 681



1 Bolts M6 x 20

Roof-mounted, useful cooling output 2500 W Page 682

Roof-mounted, useful cooling output 4000 W Page 683



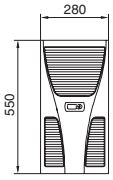
1 Condensate discharge 1/2″

2 Cooling water connection 1/2″

4.3 TopTherm air/air heat exchangers

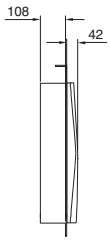
Wall-mounted, specific thermal output 17.5 W/K Page 688

External mounting

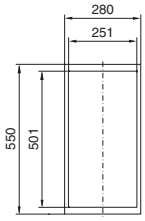




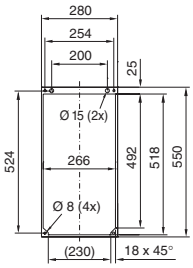
Internal mounting



Mounting cut-out for external mounting

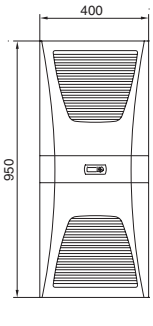


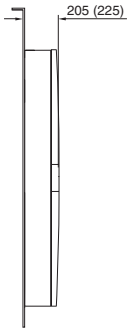
Mounting cut-out for internal mounting



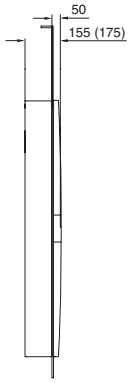
Wall-mounted, specific thermal output 30 – 60 W/K Page 688

External mounting

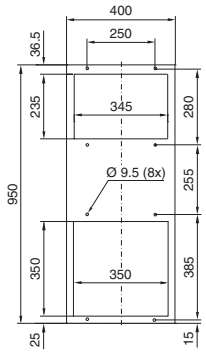




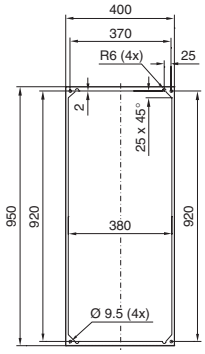
Internal mounting



Mounting cut-out for external mounting



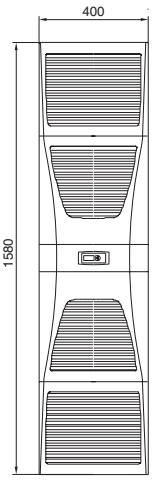
Mounting cut-out for internal mounting



Dimensions in brackets for 45 W/K and 60 W/K

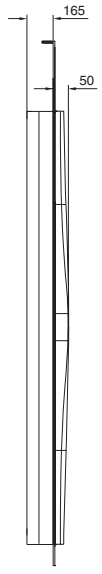
Wall-mounted, specific thermal output 90 W/K Page 688

External mounting

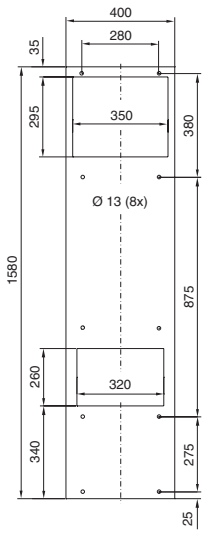




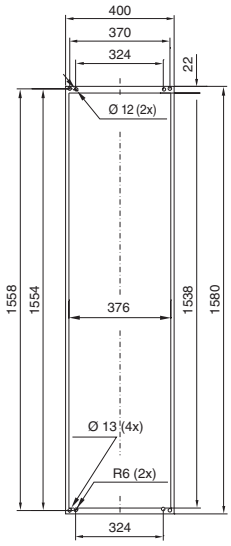
Internal mounting



Mounting cut-out for external mounting



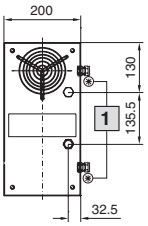
Mounting cut-out for internal mounting



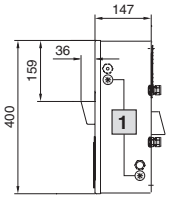
4.3 Air/air heat exchangers

Wall-mounted Page 687

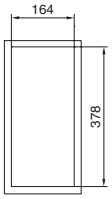
Rear



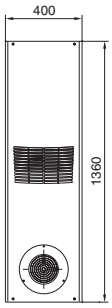
Side view



Mounting cut-out for external and internal mounting



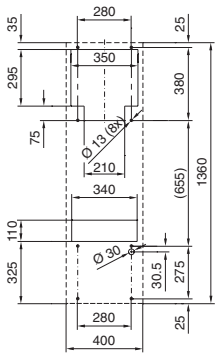
SK 3129.800



External mounting



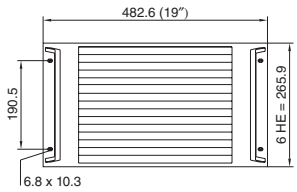
Mounting cut-out for external mounting



1 Optional cable gland

4.5 Rack-mounted cooling units

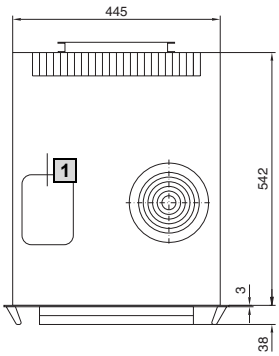
for 482.6 mm (19″), useful cooling output 1000 W Page 698



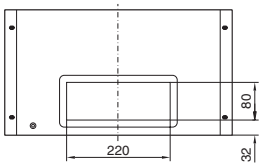
HE = U



Air duct, extendible to any length



View of the rear of the unit

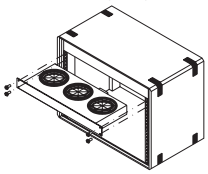


1 Service flap (thermostat)

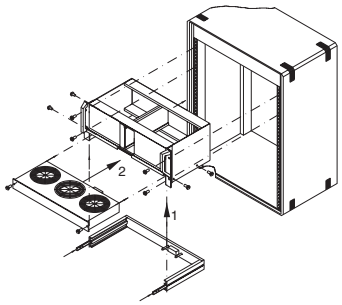
4.5 Rack-mounted fans

for 482.6 mm (19″), air throughput 320/480 m³/h Page 699

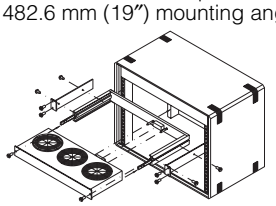
Rack-mounted fan mounted between a pair of 482.6 mm (19″) mounting angles



Vario rack-mounted fan mounted in subracks 84 HP

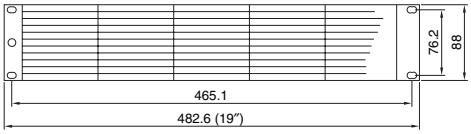


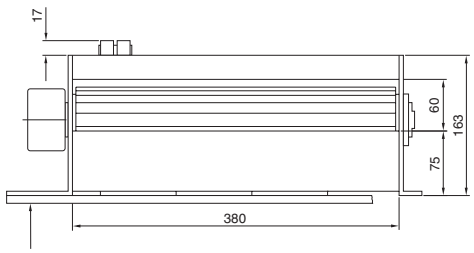
Vario rack-mounted fan mounted between a pair of 482.6 mm (19″) mounting angles



4.5 Centrifugal fan

Air throughput 320 m³/h Page 700





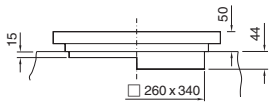
Front grille

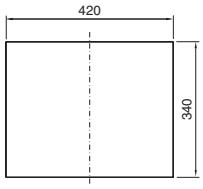
Roof-mounted fans/Fan roof/Heaters

4.5 Roof-mounted fan

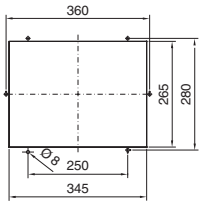
Air throughput 360 m³/h Page 701

Without fan With fan



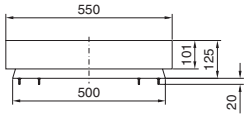


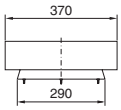
Mounting cut-out



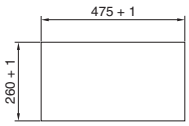
4.5 Roof-mounted fan and vent attachment

Air throughput (unimpeded air flow) 400/800 m³/h Page 701



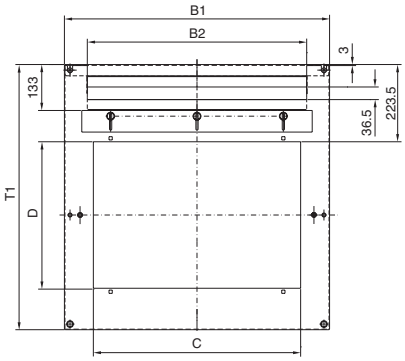


Mounting cut-out



4.5 Fan roof, modular, two-piece for TS/FR(i)

Air throughput per fan (unimpeded air flow) 160/180 mm³/h at 50/60 Hz Page 705

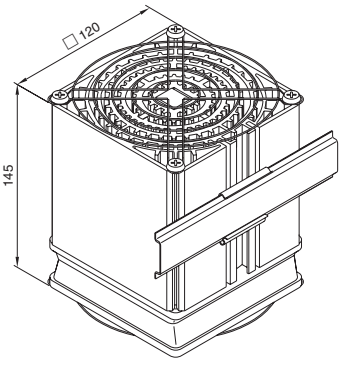


For enclosures		Cover plate		Roof dimensions			C	D	Model No. TS
W (B) mm	D (T) mm	Solid	Vented	W (B1)	W (B2)	D (T1)			
600	600	2102.180	2102.400	567.5	435	567.5	400	224	**7826.366**
600	800	2102.190	2102.410	567.5	435	767.5	400	424	**7826.368**
600	900	2102.190	2102.410	567.5	435	867.5	400	424	**7826.369**
600	1000	2102.190	2102.410	567.5	435	967.5	400	424	**7826.360**
800	600	7885.100	7885.200	767.5	635	567.5	600	224	**7826.486**
800	800	7886.100	7886.200	767.5	635	767.5	600	424	**7826.488**
800	900	7886.100	7886.200	767.5	635	867.5	600	424	**7826.489**
800	1000	7886.100	7886.200	767.5	635	967.5	600	424	**7826.480**

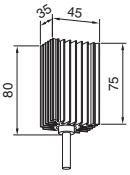
4.6 Enclosure heaters

Continuous thermal output 10 – 300 W Page 709

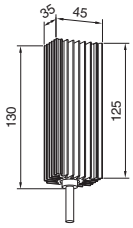
SK 3102.000/SK 3102.115 including fan



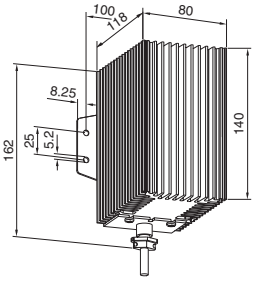
SK 3105.000



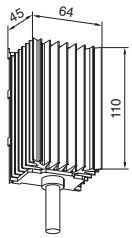
SK 3106.000



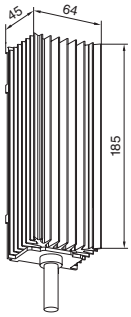
SK 3107.000



SK 3115.000

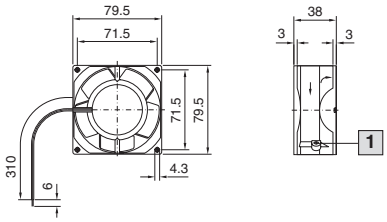


SK 3116.000



4.6 Axial fan

for heater SK 3107.000 Page 709

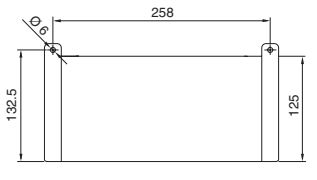


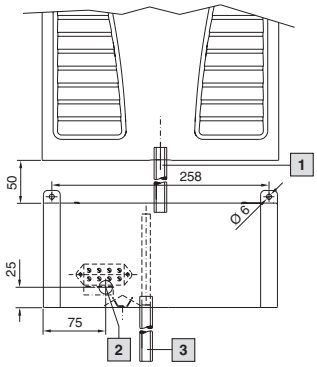
1 Earthing lug for M4
or 8 – 32 UNC

4.7 Electronic condensate evaporator

Page 720

SK 3301.560/.580



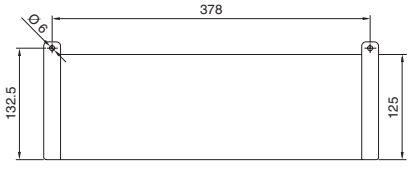


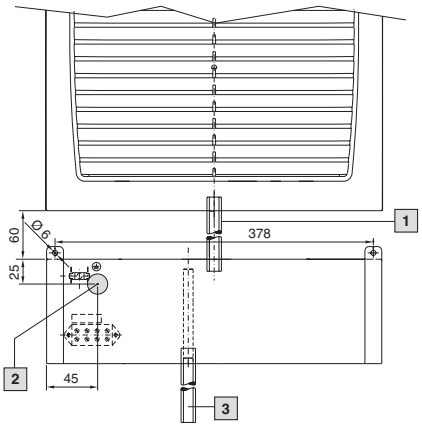
1 Condensate hose
SK 3301.608 for SK 3302.XXX
SK 3301.610 for SK 3303.XXX

2 Suggestion for position of cable entry

3 Hose
Length as required

SK 3301.570/.590





1 Condensate hose SK 3301.612

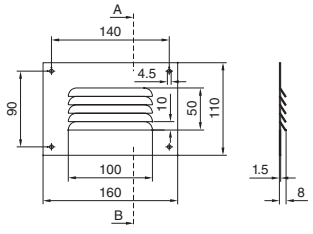
2 Suggestion for position of cable entry

3 Hose
Length as required

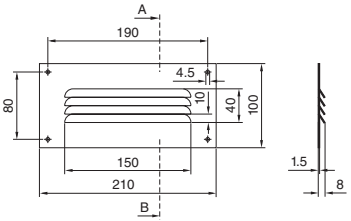
4.7 Integrated louvres

Page 720

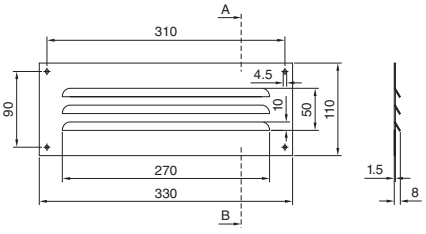
SK 2541.235



SK 2542.235

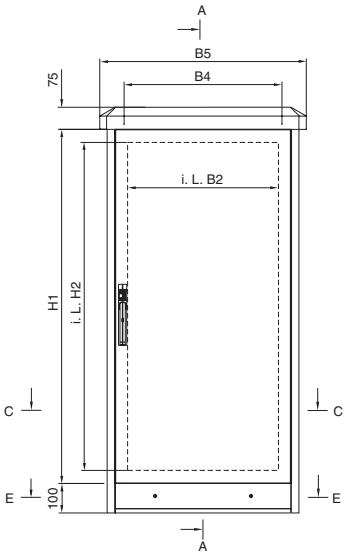


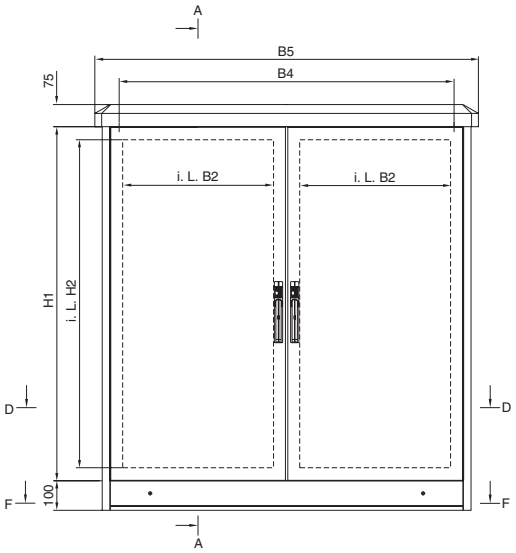
SK 2543.235



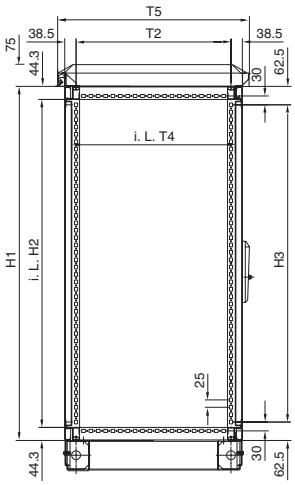
6.1 CS modular enclosures

Page 874 – 876

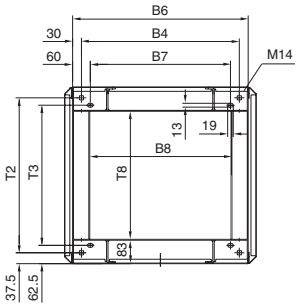




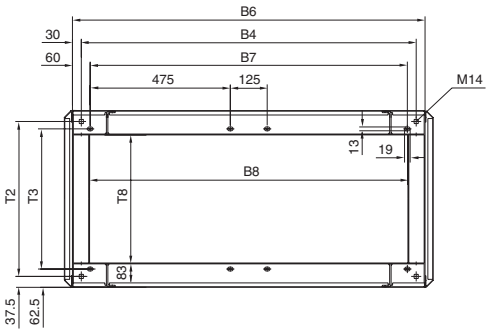
Section A – A



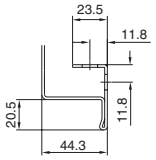
Section E – E



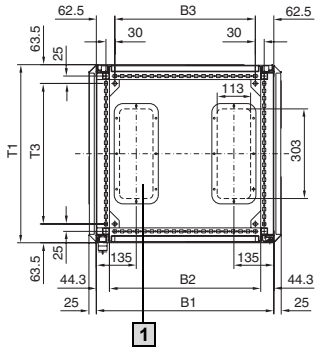
Section F – F



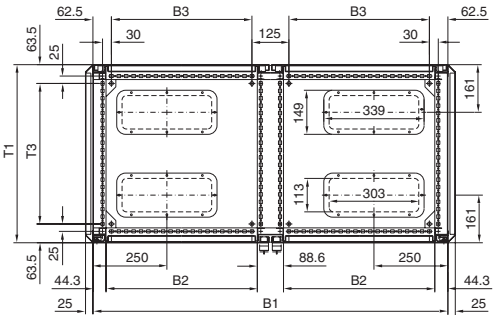
Cross-section



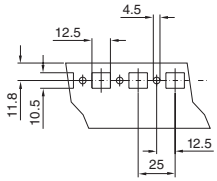
Section C – C



Section D – D



Pitch pattern of holes



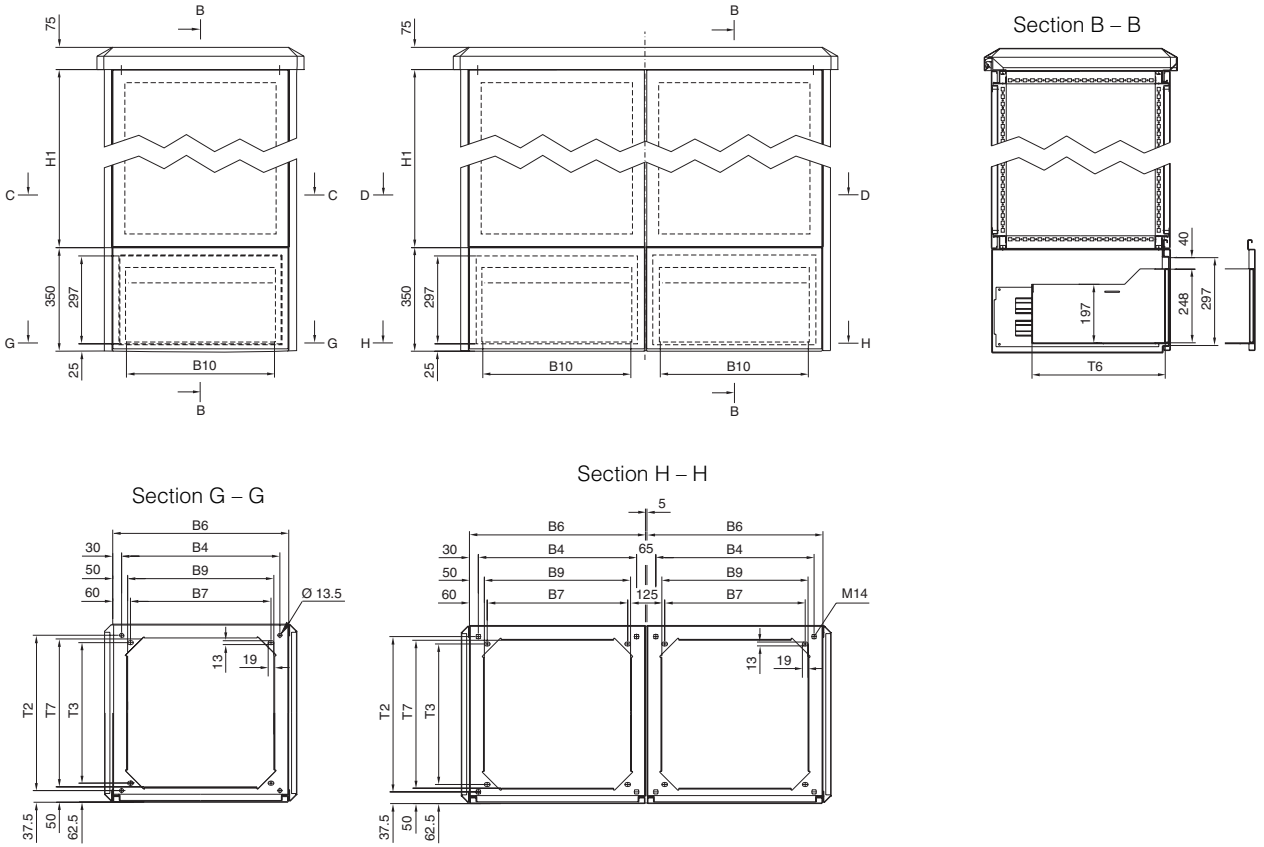
1 From an enclosure width of 800 mm 4 gland plates

i.L. = Clearance width

Enclosure	Width dimensions mm										Height dimensions mm			Depth dimensions mm							
Model No. CS	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	H1	H2	H3	T1	T2	T3	T4	T5	T6	T7	T8
9751.015	600	512	475	535	700	595	475	479	494	500	800	712	675	600	525	475	554	650	445	500	434
9751.075	600	512	475	535	700	595	475	479	494	500	1000	912	875	500	425	375	454	550	345	400	334
9751.025/.125	600	512	475	535	700	595	475	479	494	500	1200	1112	1075	600	525	475	554	650	445	500	434
9751.035	600	512	475	535	700	595	475	479	494	500	1600	1512	1475	600	525	475	554	650	445	500	434
9751.085	800	712	675	735	900	795	675	679	694	700	1000	912	875	500	425	375	454	550	345	400	334
9751.045/.145	800	712	675	735	900	795	675	679	694	700	1200	1112	1075	500	425	375	454	550	345	400	334
9751.055	800	712	675	735	900	795	675	679	694	700	1200	1112	1075	600	525	475	554	650	445	500	434
9751.065/.165	800	712	675	735	900	795	675	679	694	700	1600	1512	1475	600	525	475	554	650	445	500	434
9752.015	1200	512	475	1135	1300	595	1075	1079	1094	500	1200	1112	1075	500	425	375	454	550	345	400	334
9752.025/.125	1200	512	475	1135	1300	595	1075	1079	1094	500	1200	1112	1075	600	525	475	554	650	445	500	434

6.1 CS modular enclosures

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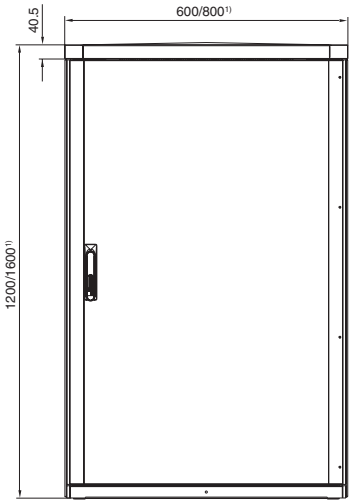
B1 = Width of basic enclosure
B2 = Clearance between enclosure frame sections
B3 = Section length of system punchings
B4 = Centre-to-centre distance between eyebolts
Hole distance base/plinth – base mount
B5 = Width of roof (overall width)
B6 = Width of standard and battery base/plinth
B7 = Hole distance base/plinth – base mount
B8 = Clearance of standard base/plinth opening
B9 = Clearance of battery base/plinth opening
B10 = Clearance width of battery drawer

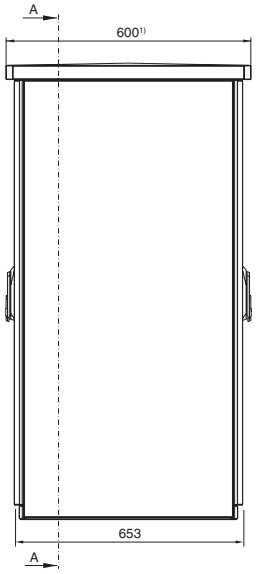
H1 = Height of basic enclosure
H2 = Clearance between enclosure frame sections
H3 = Section length of system punchings

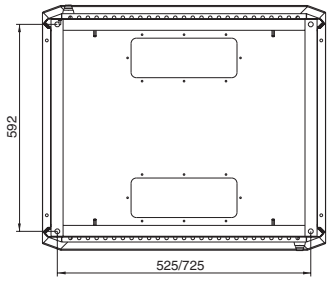
T1 = Depth of basic enclosure
T2 = Centre-to-centre distance between eyebolts
Hole distance base/plinth – base mount
T3 = Section length of system punchings
Hole distance base/plinth – base mount
T4 = Possible mounting depth
T5 = Roof depth (overall depth)
T6 = Clearance depth of battery drawer
T7 = Clearance of battery base/plinth opening
T8 = Clearance of standard base/plinth opening

6.1 Toptec CR

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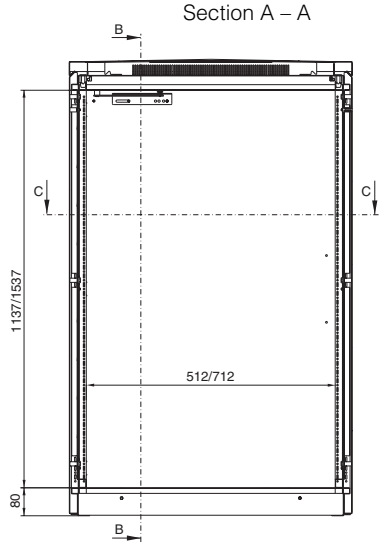




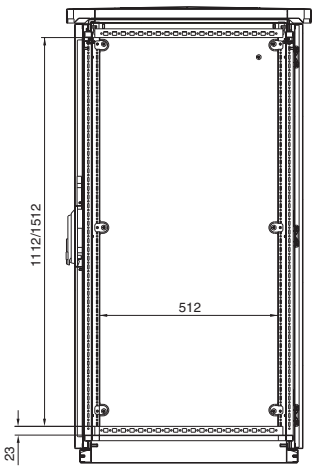


¹⁾ Corresponds to the nominal dimensions of a TS frame for the selection of accessories.

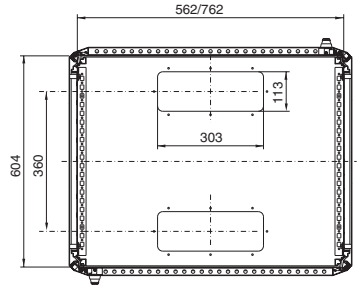
Section A – A



Section B – B

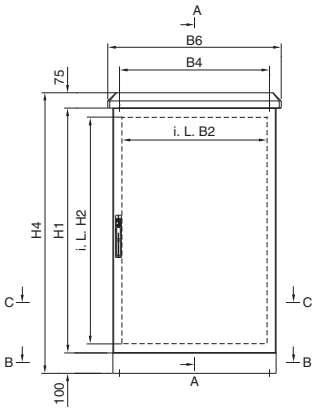


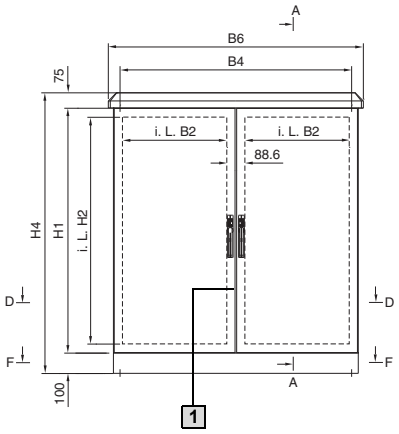
Section C – C



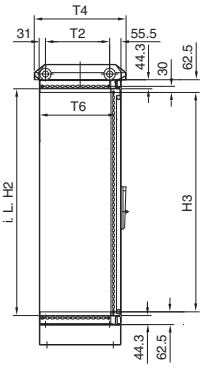
6.1 CS Basic enclosures

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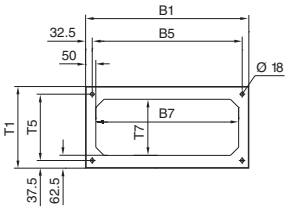
Section A – A



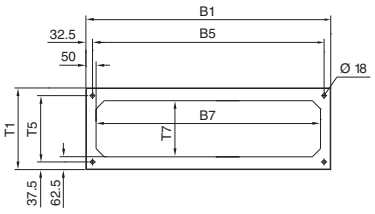
1 Centre bar may be dismantled

i.L. = Clearance width

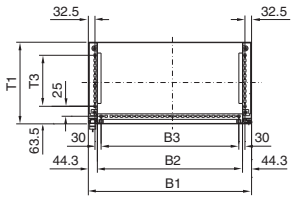
Section B – B



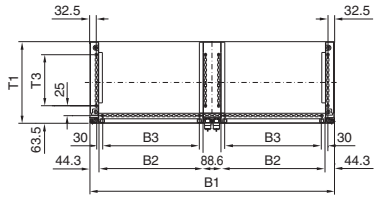
Section F – F



Section C – C



Section D – D



B1 = Width of basic enclosure/standard base/plinth
B2 = Clearance between enclosure frame sections
B3 = Section length of system punchings
B4 = Centre-to-centre distance between eyebolts
B5 = Hole distance base/plinth – base mount
B6 = Width of roof (overall width)
B7 = Clearance of standard base/plinth opening

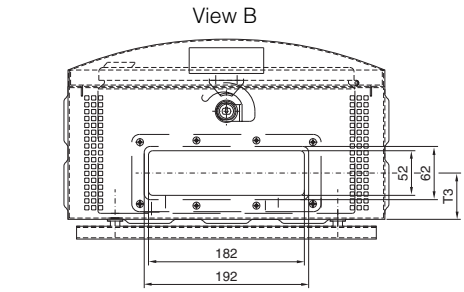
H1 = Height of basic enclosure
H2 = Clearance between enclosure frame sections
H3 = Section length of system punchings
H4 = Overall height

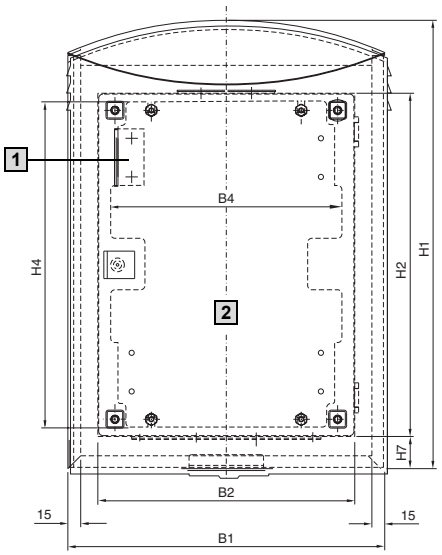
T1 = Depth of basic enclosure/standard base/plinth
T2 = Centre-to-centre distance between eyebolts
T3 = Section length of system punchings
T4 = Roof depth (overall depth)
T5 = Hole distance base/plinth – base mount
T6 = Maximum mounting depth
T7 = Clearance of standard base/plinth opening

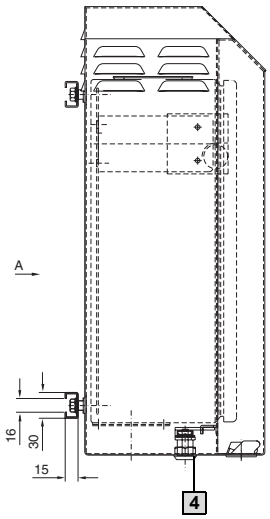
Enclosure Model No. CS		Width dimensions mm							Height dimensions mm				Depth dimensions mm						
without centre bar	**with centre bar**	B1	B2	B3	B4	B5	B6	B7	H1	H2	H3	H4	T1	T2	T3	T4	T5	T6	T7
9783.040	**–**	600	512	475	540	535	650	500	800	712	675	975	400	315	300	450	325	349	275
9783.050	**–**	600	512	475	540	535	650	500	1200	1112	1075	1375	400	315	300	450	325	349	275
9783.060	**–**	600	512	475	540	535	650	500	1400	1312	1275	1575	400	315	300	450	325	349	275
9783.030	**–**	600	512	475	540	535	650	500	1200	1112	1075	1375	500	415	400	550	425	449	375
9783.010	**–**	800	712	675	740	735	850	700	800	712	675	975	400	315	300	450	325	349	275
9783.020	**–**	800	712	675	740	735	850	700	1200	1112	1075	1375	400	315	300	450	325	349	275
9783.120	**–**	800	712	675	740	735	850	700	1400	1312	1275	1575	400	315	300	450	325	349	275
9783.110	**–**	800	712	675	740	735	850	700	1200	1112	1075	1375	500	415	400	550	425	449	375
9784.110	**9784.010**	1200	512	475	1140	1135	1250	1100	800	712	675	975	400	315	300	450	325	349	275
9784.120	**9784.020**	1200	512	475	1140	1135	1250	1100	1200	1112	1075	1375	400	315	300	450	325	349	275
9784.140	**9784.040**	1200	512	475	1140	1135	1250	1100	1200	1112	1075	1375	500	415	400	550	425	449	375
9784.130	**9784.030**	1200	512	475	1140	1135	1250	1100	1400	1312	1275	1575	400	315	300	450	325	349	275

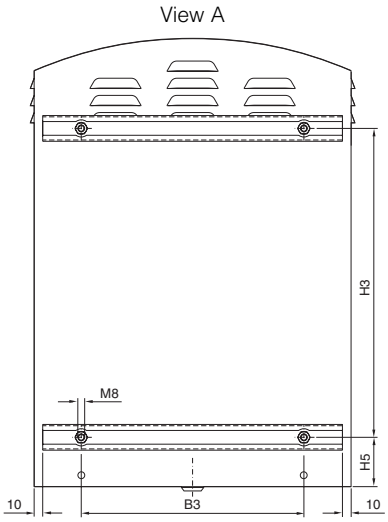
6.1 CS wall-mounted enclosures

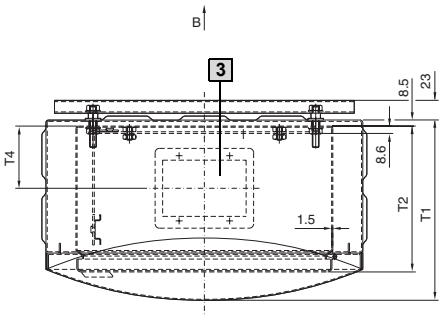
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B1 = Width of outer enclosure
B2 = Width of inner enclosure
B3 = Centre-to-centre spacing attachment C rail/interior enclosure
Centre-to-centre spacing for accommodation of the wall mounting bracket
B4 = Width of mounting plate

H1 = Height of outer enclosure
H2 = Height of inner enclosure
H3 = Centre-to-centre spacing attachment C rail/interior enclosure
Centre-to-centre spacing for accommodation of the wall mounting bracket
H4 = Height of mounting plate
H5 = Distance from outer enclosure to C rail attachment /internal enclosure
H7 = Distance from outer enclosure to inner enclosure

T1 = Depth of outer enclosure
T2 = Depth of inner enclosure
T3 = Distance from outer enclosure to centre of bottom gland plate
T4 = Distance from outer enclosure to centre of top gland plate

1 Supply includes: Mounting bracket for thermostat SK 3110.000

2 Supports mounting of the mounting plate in the inner enclosure and inner door

3 Roof cut-out, interior enclosure with gland plate
CS 9791.015/.025/.035
W 97.5 x D 65.5
CS 9791.045 W 302.0 x D 122.0

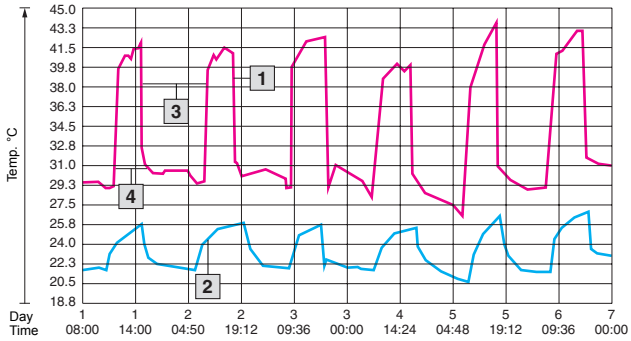
4 Lock SZ 2749.000 with lock insert (from B1 = 630 mm, 2 locks)

Enclosure	Width dimensions mm				Height dimensions mm						Depth dimensions mm			
Model No. CS	B1	B2	B3	B4	H1	H2	H3	H4	H5	H7	T1	T2	T3	T4
9791.015	370	300	260	270	522.5	400	360	380	57.5	37.5	210	170	55.5	72.5
9791.025	420	350	310	320	560	440	400	410	58	38	210	170	55.5	72.5
9791.035	530	460	420	430	700	565	525	535	63	43	265	220	82	72.5
9791.045	630	580	540	550	780	580	540	550	55	35	380	333	82	155

6.2 Terravent

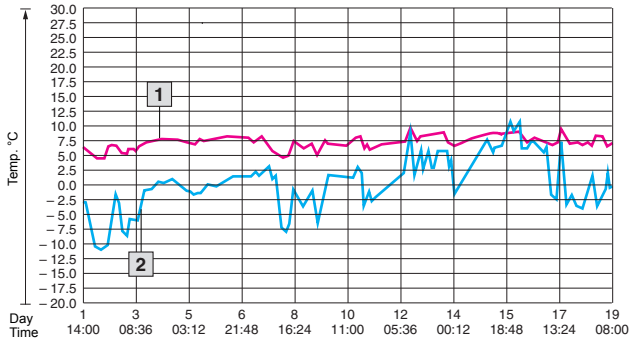
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These temperature charts are examples of installations in Central Europe.



1 Internal temperature = Terravent inlet temperature
2 Terravent outlet temperature
3 Night-time operation
4 Day-time operation

Operating status – cooling:
1300 W heat loss from 8 am – 4 pm
800 W heat loss from 4 pm – 8 am
CS Outdoor modular enclosure, thermally insulated
Enclosure size: W x H x D = 800 x 1200 x 500 mm

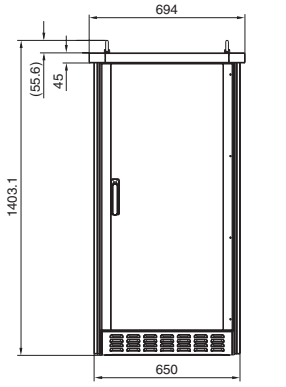


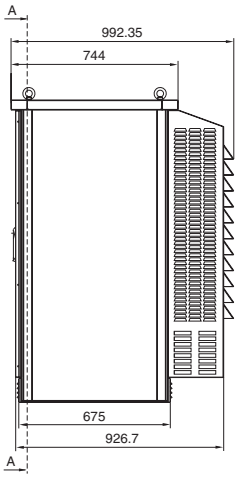
1 Internal temperature = Enclosure internal temperature
2 External temperature

Operating status – heating:
No heat loss installed in the enclosure
External temperature below –10°C
CS Outdoor modular enclosure, not thermally insulated
Enclosure size: W x H x D = 800 x 1200 x 500 mm

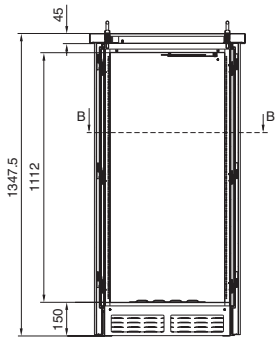
6.3 CS fuel cell

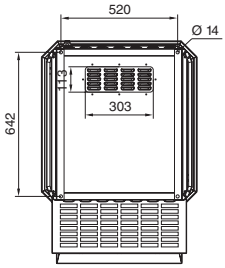
Page 889



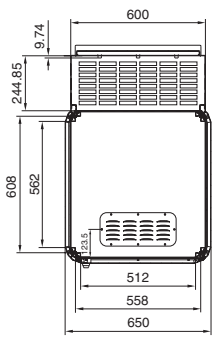


Section A – A





Section B – B

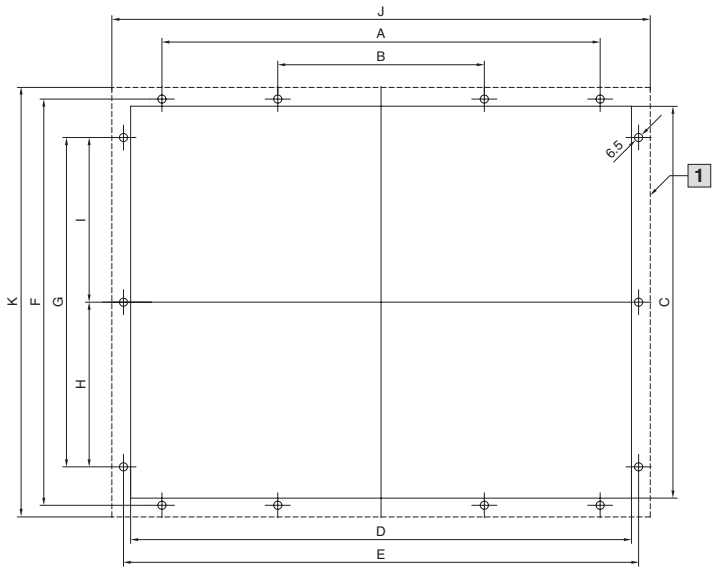


Human/machine interface

7.10 TFT monitor

Page 1133

	Size		
	15″	17″	19″
Model No. SM	**6450.010 6450.030 6450.070 6450.120 6450.150**	**6450.020 6450.040 6450.080 6450.130 6450.160**	**6450.090 6450.140 6450.170**
A	35.0	403	403
B	165	165	165
C	313	324	367
D	400	452	452
E	411.4	464	464
F	324.4	336.2	380.6
G	263	279.4	323.8
H	131.5	101.6	161.9
I	131.5	177.8	161.9
J	430	482.6	482.6
K	343	354.8	399.3

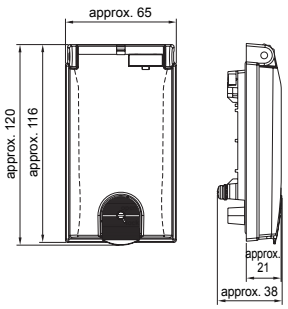


1 Support area of the monitor for installation in surfaces

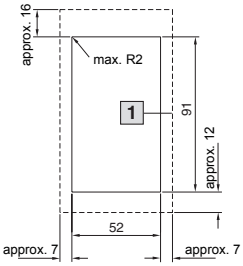
7.10 Interface flaps

Page 1151

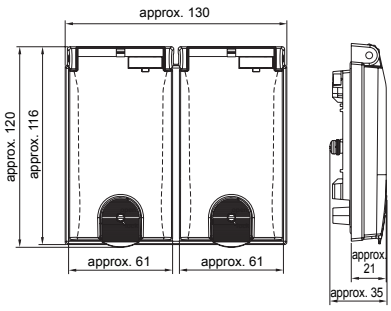
Interface flap, single



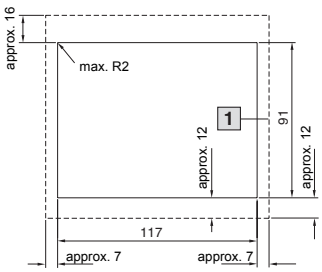
Mounting cut-out



Interface flap, double



Mounting cut-out



Permissible material thickness: 1 – 5 mm

1 Contact surface

1001.500 to 1584.520

Model No.	Page
1000	
1001.500	308
1001.520	308
1001.600	308
1001.620	308
1002.500	308
1002.520	308
1002.600	308
1002.620	308
1003.500	308
1003.520	308
1003.600	308
1003.620	308
1004.500	308
1004.520	308
1004.600	308
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1007.500	309
1007.520	309
1007.600	309
1007.620	309
1008.500	309
1008.520	309
1008.600	309
1008.620	309
1009.500	308
1009.520	308
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1009.620	308
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RAL colours

	Colour RAL	Description
	3001	signal red
	5002	ultramarine blue
	5005	signal blue
	5018	turquoise blue
	7015	slate grey
	7022	umbra grey
	7024	graphite grey
	7030	stone grey
	7032	pebble grey
	7033	cement grey
	7035	pale grey
	7044	silky grey
	8019	grey brown
	9005	jet black
	9006	white aluminium
	9011	graphite black
	9017	traffic black

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