

General recommendations for the selection of Trident contacts are listed below.

Platings: Tin is recommended for most applications (with 50 or fewer mating cycles). It is cost effective and matches well to most wires. Gold is preferred for special situations. Gold resists oxidation, has high surface conductivity, and has a low coefficient of friction. These features make gold the preferred plating for low level signals (a rule of thumb is <100 mA), corrosive environments (for unsealed connectors), and for increased mating cycles. The electrical performance of the contact is determined at the surface of the contact. For this reason, flash gold platings are suitable for applications with 50 or fewer mating cycles. Thicker gold platings are recommended for more than 50 mating cycles. All Trident Contacts are RoHS Compliant.



Stamped versus Machined: The two part stamped contacts are manufactured to precise tolerances and are field proven.



They can be supplied on reels which lowers assembly costs for volume production. Machined contacts offer improved precision and durability. They are recommended for applications with more than 200 mating cycles.

Crimp versus Solder: Crimp contacts offer improved electrical performance, strain relief and quality control compared to solder cup

contacts are recommended for low volume and prototype applications where the added cost of crimp tools is not justified.

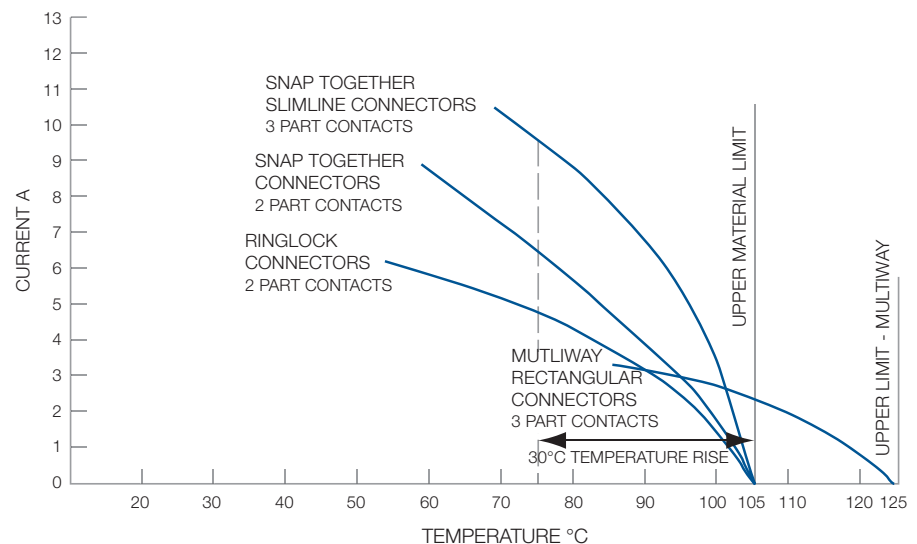
High Conductivity: These contacts use a different base material than the standard contacts. They are recommended for high current applications. These contacts will also reduce the derating of connectors with several high current lines.

Temperature/Current Rating

Derating curves define the max. current that can be applied to a connector at a given ambient temperature so that the additional temperature rise caused by the current does not exceed the material limit of the connector.

The following curves show the max. currents based on the assumption attached: As factors like current load per contact, wire size etc. may be different in your application. This chart is an indication only.

- Derived in accordance with IEC 512-3, Test 5b.
- Figures are for maximum wire sizes. Smaller wires will reduce rating.
- All contacts equally loaded.
- PCB mounted connectors will be limited by PCB performance.
- Bunched cables will further reduce values.
- Cable insulation type will affect temperature and loading.
- Figures are for maximum connector sizes in each range. Smaller connectors will increase rating.

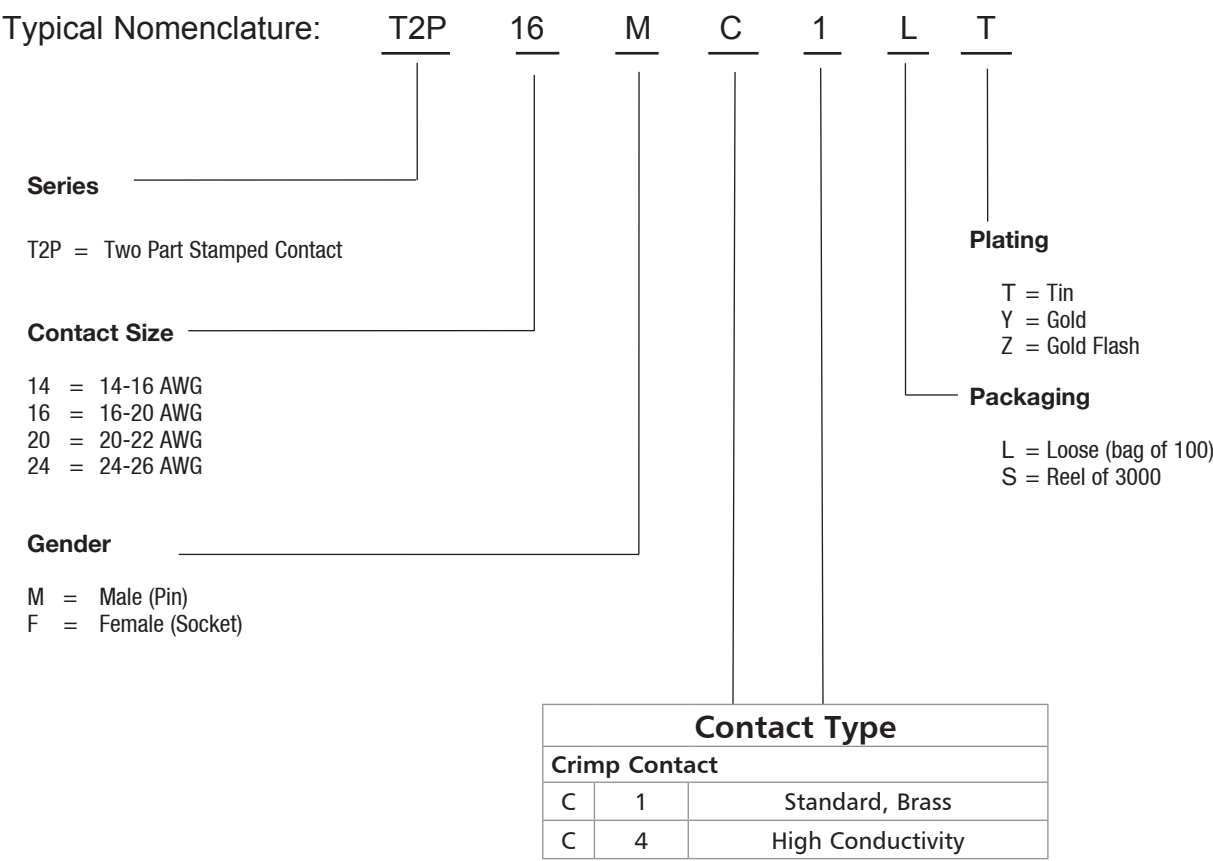


	T2P • Two piece formed (stamped) contact • For up to 200 mating cycles • Full support tooling available		T3P • Three piece machined contact • For up to 500 mating cycles • Full support tooling available		
	Standard Crimp 	High Conductivity Crimp 	Machined Crimp 	Solder Cup 	Flow Solder (PCB) 
Technical and Performance Data					
Supported wire sizes	AWG 14 to 26	AWG 14 to 26	AWG 16 to 26	AWG 14 to 26	-
Current rating	13 A	16 A	13 A	13 A	Up to 30 A
Contact Resistance (initial)	5 mΩ	5 mΩ	5 mΩ	5 mΩ	5 mΩ
Mechanical endurance	Up to 200 insertions	Up to 200 insertions	Up to 500 insertions	Up to 500 insertions	Up to 500 insertions
Body material	Brass	Copper Alloy	Brass	Brass	Brass
Retention spring material	Stainless Steel	Stainless Steel	Beryllium Copper	Beryllium Copper	Beryllium Copper
Contact retention force (minimum)	67 N	67 N	67 N	67 N	67 N
Plating Availability					
Tin	Yes	Yes	Yes	Yes	Yes
Gold Flash (0,1 μm)	Yes	Yes	Yes	Yes	Yes
Gold	0,75 μm	0,75 μm	0,4 μm (pin) 0,75 μm (socket)	0,4 μm (pin) 0,75 μm (socket)	0,4 μm (pin) 0,75 μm (socket)
Connector/Contact Capability					
Snap Together Rectangular, Slimline (TST) and Flame Retardant (TFR)	Yes	Yes	Yes	Yes	Yes, pre-installed in connectors
Ringlock (TR)	Yes	Yes	Yes	Yes	Yes
Neptune (TN)	Yes	Yes	Yes	Yes	Yes
Neptune Metal (TNM)	Yes	Yes	Yes	Yes	-
High Voltage (THV)	—	—	—	—	—
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	High Power • For mixed Neptune and TNM layouts • Full support tooling available	
	APK25 	D Sub 
Technical and Performance Data		
Supported wire sizes	AWG 12 to 20	AWG 8 to 14
Current rating	30 A	Up to 40 A
Contact Resistance (initial)	2,5 mΩ	*
Mechanical endurance	Up to 200 insertions	Up to 500 insertions
Body material	Copper Alloy	Copper Alloy
Retention spring material	Stainless Steel	*
Contact retention force (minimum)	100 N	*
Plating Availability		
Tin	Yes	-
Gold Flash (0,1 μm)	-	-
Gold	-	0,76 μm
Connector/Contact Capability		
Snap Together Rectangular, Slimline (TST) and Flame Retardant (TFR)	-	-
Ringlock (TR)	-	-
Neptune (TN)	Yes	-
Neptune Metal (TNM)	-	Yes
High Voltage (THV)	Yes	—
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* For details please consult the factory

Overview - T2P Contacts



Note: This overview shows available options for formed (stamped) T2P contacts. The T2P nomenclature above appears as our description on ITT paperwork, etc, and this is for reference only. To order use the order codes on the following page.

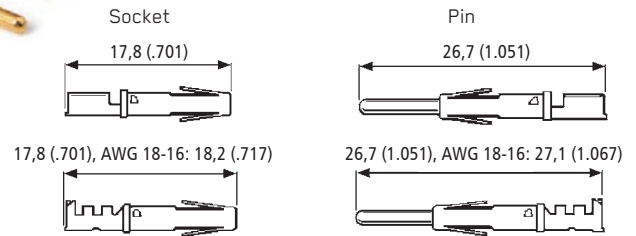
Formed (Stamped) Crimp Contacts – Standard Brass Material

- 13 A current rating.
- Three plating styles available.
- Separate retention spring.
- Up to 200 mating cycles.
- Wide range of wire sizes.
- Full support tooling available, see pages 69-70.
- Two part design.



Size 14 to 16 AWG,
No Insulation Grip

Size 16 to 26 AWG,
Insulation Grip



Wire Range mm ²	Wire Size	Contact	Part Number Pack (100)			Part Number Reeled (3000)			Insulation Diameter	Strip Length
			Tin Plating	Gold Flash	0,8 μm (32 μ in.) Gold Plating	Tin Plating	Gold Flash	0,8 μm (32 μ in.) Gold Plating		
0,14 - 0,25	26-24 AWG	Pin	192990-0020	192990-0080	192900-0448	192990-2510	192990-2650	192900-0406	0,89 (.035) - 1,58 (.062)	3,95 (.155)±0,25(.009)
0,14 - 0,25	26-24 AWG	Socket	192990-0030	192990-0090	192900-0452	192990-2550	192990-2690	192900-0410	0,89 (.035) - 1,58 (.062)	3,95 (.155)±0,25(.009)
0,32 - 0,50	22-20 AWG	Pin	192990-0040	192922-1460	192900-0447	192990-2500	192990-2640	192900-0405	1,17 (.046) - 2,08 (.081)	3,95 (.155)±0,25(.009)
0,32 - 0,50	22-20 AWG	Socket	192990-0050	192922-1470	192900-0451	192990-2540	192990-2680	192900-0409	1,17 (.046) - 2,08 (.081)	3,95 (.155)±0,25(.009)
0,75 - 1,50	18-16 AWG	Pin	192990-0060	192990-0100	192900-0446	192990-2490	192990-2630	192900-0404	2,00 (.078) - 2,70 (.106)	3,95 (.155)±0,25(.009)
0,75 - 1,50	18-16 AWG	Socket	192990-0070	192990-0110	192900-0450	192990-2530	192990-2670	192900-0408	2,00 (.078) - 2,70 (.106)	3,95 (.155)±0,25(.009)
1,50 - 2,50	16-14 AWG	Pin	192990-1240	192990-1220	192900-0445	192990-2480	192990-2620	192900-0403	Without insulation support	5,60 (.220)±0,25(.009)
1,50 - 2,50	16-14 AWG	Socket	192990-1250	192990-1230	192900-0449	192990-2520	192990-2660	192900-0407	Without insulation support	5,60 (.220)±0,25(.009)

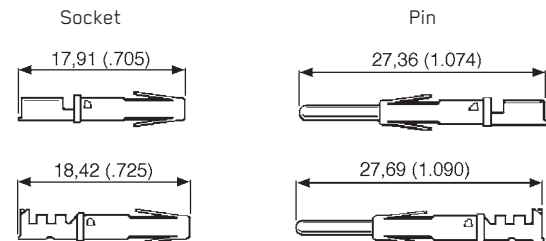
Formed (Stamped) Crimp Contacts – High Conductivity Material

- 16 A current rating.
- Recommended for elevated temperatures.
- High conductivity copper alloy with tin plating.
- For use with standard crimp tooling, see pages 69-70.
- Two part design.
- Up to 200 mating cycles.



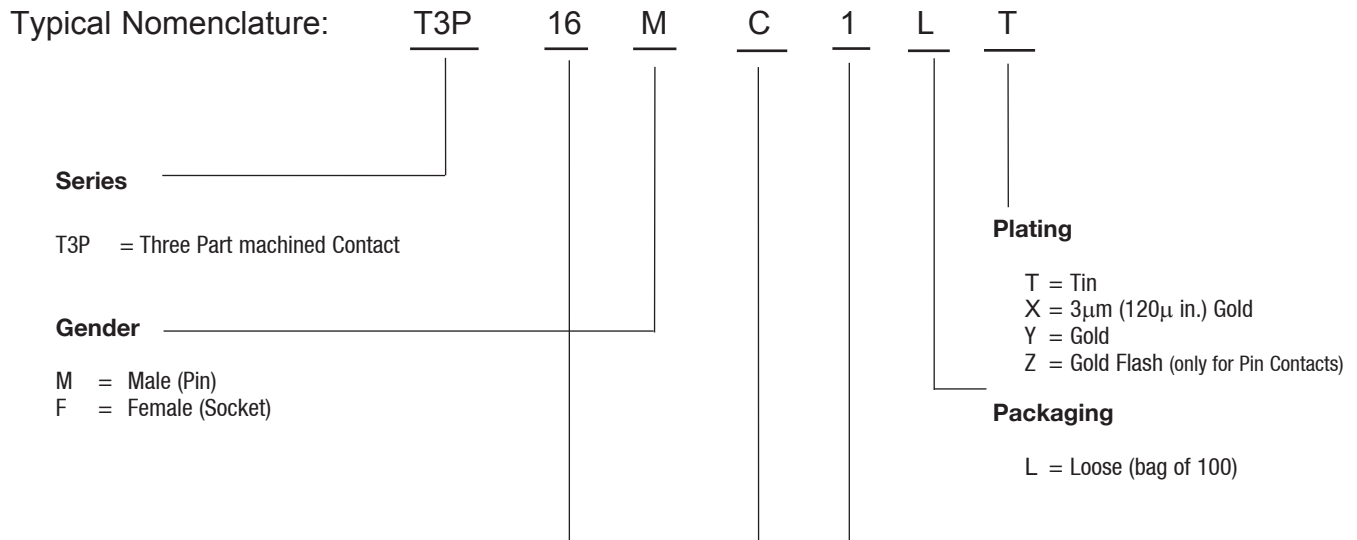
Size 14 to 16 AWG,
No Insulation Grip

Size 16 to 26 AWG,
Insulation Grip



Wire Range mm ²	Wire Size	Contact	Part Number		Insulation Diameter	Strip Length
			Pack (100)	Reeled (3000)		
0,14 - 0,25	26-24 AWG	Pin	192900-0122	192900-0120	0,89 (.035) - 1,58 (.062)	3,95 (.155)±0,25 (.009)
0,14 - 0,25	26-24 AWG	Socket	192900-0123	192900-0121	0,89 (.035) - 1,58 (.062)	3,95 (.155)±0,25 (.009)
0,32 - 0,50	22-20 AWG	Pin	192900-0126	192900-0124	1,17 (.046) - 2,08 (.081)	3,95 (.155)±0,25 (.009)
0,32 - 0,50	22-20 AWG	Socket	192900-0127	192900-0125	1,17 (.046) - 2,08 (.081)	3,95 (.155)±0,25 (.009)
0,75 - 1,50	18-16 AWG	Pin	192900-0002	192900-0000	2,00 (.078) - 2,70 (.106)	3,95 (.155)±0,25 (.009)
0,75 - 1,50	18-16 AWG	Socket	192900-0003	192900-0001	2,00 (.078) - 2,70 (.106)	3,95 (.155)±0,25 (.009)
1,50 - 2,50	16-14 AWG	Pin	192900-0005	192900-0004	Without insulation support	5,60 (.220)±0,25 (.009)
1,50 - 2,50	16-14 AWG	Socket	192900-0007	192900-0006	Without insulation support	5,60 (.220)±0,25 (.009)

Overview - T3P Contacts



Type and Configuration Variant				
AWG Size	Gender	Crimp Contacts		
16		C	1	No insulation support, Black colorband
20		C	1	Insulation dia Ø1,6 (.062)-2,1 (.082), Green colorband
22		C	1	Insulation dia Ø1,6 (.062)-2,15 (.084), Red colorband
24		C	1	Insulation dia Ø1,05 (.041)-1,6 (.062), Blue colorband
26		C	1	Insulation dia Ø0,9 (.035)-1,4 (.055), Black colorband
		Earth Contact		
16		E	1	Black colorband
20		E	1	Green colorband
		Solder Cup Contact		
16		S	1	
		Flow Solder Contact		
20		F	1	Ø0,72 (.028) short (female only)
20		F	3	Ø0,72 (.028) long (female only)
20		F	5	Ø0,73 (.029)
25		F	5	Ø1,52 (.060) (TN)

Note: This overview shows available options for formed (stamped) T3P contacts. The T3P nomenclature above appears as our description on ITT paperwork, etc, and this is for reference only. To order use the order codes on the following page.

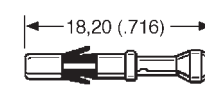
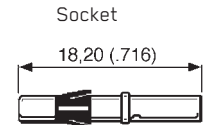
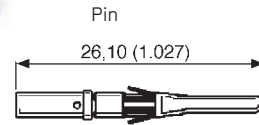
Machined Crimp Contacts

- 13 A current rating.
- Separate contact and retention spring.
- Up to 500 mating cycles.
- Variety of plating options.
- Full support tooling available, see pages 69-70.



Size 16 AWG,
No Insulation Grip

Size 20 to 26 AWG,
Insulation Grip



Wire Range mm ²	Wire Size	Contact	Part Number (Pack of 100)			Insulation Diameter	Strip Length	Color Band
			Gold Plating(X)	Gold Plating(Y)	Tin Plating			
0,08 - 0,23	26 AWG	Pin	192991-0101	192991-0100	192991-0102	0,90 (.035) - 1,40 (.055)	5,08 (.200)±0,25 (.009)	Black
0,08 - 0,23	26 AWG	Socket	192991-0054	192991-0042	192991-0048	0,90 (.035) - 1,40 (.055)	5,08 (.200)±0,25 (.009)	Black
0,20 - 0,24	24 AWG	Pin	192991-0093	192991-0092	192991-0094	1,05 (.041) - 1,60 (.062)	5,08 (.200)±0,25 (.009)	Blue
0,20 - 0,24	24 AWG	Socket	192991-0055	192991-0043	192991-0049	1,05 (.041) - 1,60 (.062)	5,08 (.200)±0,25 (.009)	Blue
0,25 - 0,50	22 AWG	Pin	192991-0097	192991-0096	192991-0098	1,60 (.062) - 2,15 (.084)	5,08 (.200)±0,25 (.009)	Red
0,25 - 0,50	22 AWG	Socket	192991-0056	192991-0044	192991-0050	1,60 (.062) - 2,15 (.084)	5,08 (.200)±0,25 (.009)	Red
0,44 - 0,64	20 AWG	Pin	192991-0089	192991-0088	192991-0090	1,60 (.062) - 2,10 (.082)	5,08 (.200)±0,25 (.009)	Green
0,44 - 0,64	20 AWG	Socket	192991-0058	192991-0046	192991-0052	1,60 (.062) - 2,10 (.082)	5,08 (.200)±0,25 (.009)	Green
0,60 - 1,51	16 AWG	Pin	192991-0085	192991-0084	192991-0086	Without insulation support	7,11 (.279)±0,25 (.009)	Black
0,60 - 1,51	16 AWG	Socket	192991-0059	192991-0047	192991-0053	Without insulation support	7,11 (.279)±0,25 (.009)	Black
1,50 - 2,50	14 AWG	Pin	121587-0028	on request	on request	Without insulation support	7,11 (.279)±0,25 (.009)	White
1,50 - 2,50	14 AWG	Socket	121587-0039	on request	on request	Without insulation support	7,11 (.279)±0,25 (.009)	White

(Y) Gold plating Pin: 0,4 µm (16 µ in.). Gold plating Socket: 0,75 µm (30 µ in.).

(X) Gold plating Pin & Socket: 3 µm (120 µ in.).

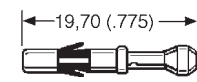
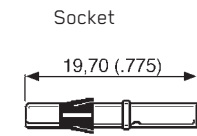
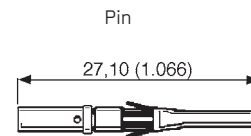
Machined Earth (First Mate/Last Break) Contacts

- 13 A current rating.
- Separate contact and retention spring.
- Up to 500 mating cycles.
- Variety of plating options.
- Full support tooling available, see pages 69-70.



Size 16 AWG,
No Insulation Grip

Size 20 AWG,
Insulation Grip



Wire Range mm ²	Wire Size	Contact	Part Number (Pack of 100)		Insulation Diameter	Strip Length	Color Band
			Gold Plating(Y)	Description			
0,44 - 0,64	20 AWG	Pin	192991-0164	T3P20ME1LY	1,60 (.062) - 2,10 (.082)	5,08 (.200)±0,25 (.009)	Green
0,44 - 0,64	20 AWG	Socket	192991-0207	T3P20FE1LY	1,60 (.062) - 2,10 (.082)	5,08 (.200)±0,25 (.009)	Green
0,60 - 1,51	16 AWG	Pin	192991-0160	T3P16ME1LY	Without insulation support	7,11 (.279)±0,25 (.009)	Black
0,60 - 1,51	16 AWG	Socket	192991-0208	T3P16FE1LY	Without insulation support	7,11 (.279)±0,25 (.009)	Black

(Y) Gold plating Pin: 0,4 µm (16 µ in.). Gold plating Socket: 0,75 µm (30 µ in.).
For Gold Flash Plating, please consult the factory.

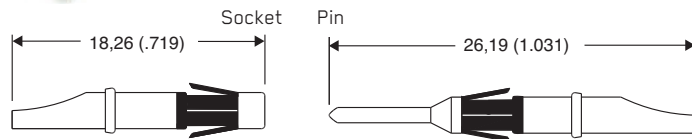
Solder Cup Contacts

- 13 A current rating.
- Ideal for prototypes and small volume applications.
- Fits into all Trident connectors.
- Simple solder, then insert.



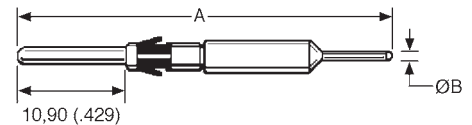
Description	Part Number	
	Tin Plating	Gold Plating (Y)
Socket	192900-0634	192900-0635
Pin	192900-0632	192900-0633

(Y) Gold plating 0,4 μ m (16 μ in.)



Flow Solder (PCB) Contacts

- 13 A current rating.
- Available in different lengths depending on connector.
- 30 A power version available.



Connector Series	Type	Part Number (Pack of 100)			
		Tin Plating	Gold Flash Plating	A $\pm$ 1,00 (.039)	ØB $\pm$ 0,06 (.002)
Ringlock Standard Receptacle	Socket	***	192991-0524	33,6 (1.323)	0,72 (.028)
Ringlock Standard Receptacle	Socket	***	192991-0066	26,5 (1.043)	0,72 (.028)
Neptune	Pin	192900-0465	192900-0356	40,6 (1.598)	0,73 (.029)
Neptune Power**	Pin	192991-0617	192991-0618	40,6 (1.598)	1,52 (.060)

** Note: Appearance differs slightly from the picture.

*** For details please consult the factory

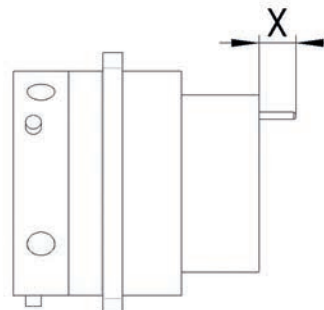
Nominal lengths (x) of Flow Solder Contacts out of the connector*

Ringlock Standard Receptacle

Shell Size	192991-0066	192991-0524
10	4,5 (.177)	11,6 (.456)
12	2,7 (.106)	9,8 (.386)
14	4,5 (.177)	11,6 (.456)
16	2,7 (.106)	9,8 (.386)
18	2,7 (.106)	9,8 (.386)
20	3,0 (.118)	10,1 (.398)
22	2,0 (.079)	9,1 (.358)
24	1,2 (.047)	8,3 (.327)

Ringlock Reversed Receptacle

Shell Size	192991-0119 192991-0122
10	4,7 (.177)
12	4,7 (.177)
14	4,7 (.177)
16	4,7 (.177)
18	4,7 (.177)
20	4,6 (.181)
22	4,6 (.181)
24	4,6 (.181)



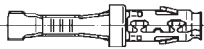
* For other connector series please consult the factory

APK
Power Contacts

- 30 A current rating.



Socket



Pin

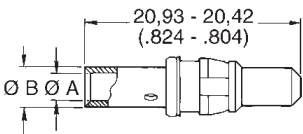


Wire Range mm ²	Wire Size	Contact	Description*	Part Number		Insulation Diameter	Strip Length
				Loose (100) Tin Plated	Reeled (3000) Tin Plated		
0,50 - 1,00	20-18 AWG	Pin	APK-PB25A10	031-8717-020	121668-0000	1,40 (.055) - 2,00 (.078)	5,00 (.196)±0,25 (.009)
0,50 - 1,00	20-18 AWG	Socket	APK-SB25A10	031-8717-120	121668-0100	1,40 (.055) - 2,00 (.078)	5,00 (.196)±0,25 (.009)
1,50 - 2,50	16-14 AWG	Pin	APK-PB25A25	031-8717-021	121668-0001	2,00 (.078) - 2,90 (.114)	5,00 (.196)±0,25 (.009)
1,50 - 2,50	16-14 AWG	Socket	APK-SB25A25	031-8717-121	121668-0101	2,00 (.078) - 2,90 (.114)	5,00 (.196)±0,25 (.009)
2,50 - 4,00	14-12 AWG	Pin	APK-PB25A40	031-8717-022	121668-0002	2,90 (.114) - 3,60 (.141)	5,00 (.196)±0,25 (.009)
2,50 - 4,00	14-12 AWG	Socket	APK-SB25A40	031-8717-122	121668-0102	2,90 (.114) - 3,60 (.141)	5,00 (.196)±0,25 (.009)

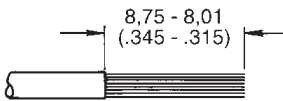
* Referring to reeled contacts

D Subminiature Loose Contacts, Size 8- High Power-Crimp

Plug

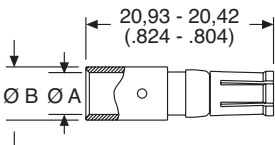


Recommended Wire Trim Length

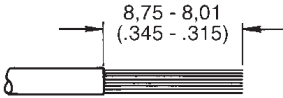


Part Number (30 µin) 0,76µm Gold over Copper	A	B	Current Rating	Wire Size AWG
			A	
DM130338	4,60 (.181)	5,84 (.230)	40 A	8 AWG
DM130339	2,54 (.100)	5,54 (.218)	20 A	12 AWG

Receptacle



Recommended Wire Trim Length



Part Number (30 µin) 0,76µm Gold over Copper	A	B	Current Rating	Wire Size AWG
			A	
DM130341	4,60 (.181)	5,84 (.230)	40 A	8 AWG
DM130342	2,54 (.100)	5,54 (.218)	20 A	12 AWG

Accessories



Discriminating (Keying)
Pins and Caps

Discriminating (Keying) Pins are used to prevent cross-mating of similar connectors. These pins are used in place of a pin contact. The corresponding socket cavity must be left open. If a socket contact is present, the discriminating pin will prevent mating. There are two types of discriminating pins. Board Mount PCB connectors have caps and pegs. All other connectors have signal or power pins.

Description	Part Number	Pack Size
Discriminating (Keying) Pin, Signal Contacts	192990-0000	Bulk Pack (25)
Discriminating (Keying) Pin, Power Contacts	192900-0189	Bulk Pack (25)
Discriminating (Keying) Cap, Pin Contacts	192990-0010	Bulk Pack (100)
Discriminating (Keying) Peg, Socket Contacts	192990-7650	Bulk Pack (100)