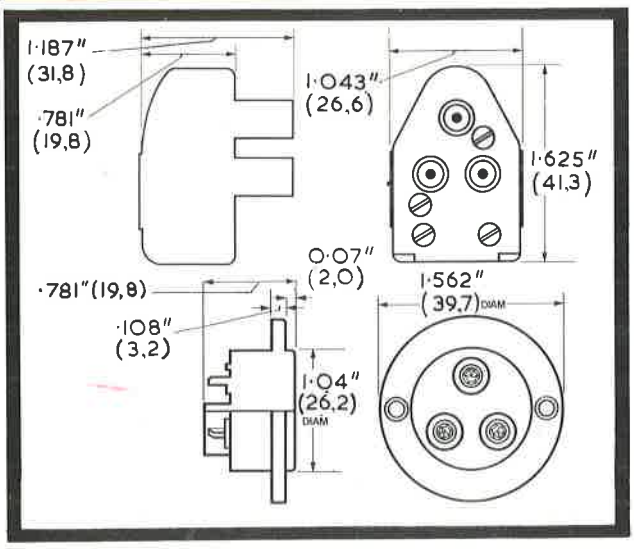
3-Pole Connectors

L1722/P &/S

This connector is a larger version of the L1436. The plug cover retaining screws fit into threaded metal inserts and the shallow depth socket can be mounted on the front or rear of an equipment panel. All poles are fully shrouded, so accidental touching of the contacts is eliminated. All metal parts are nickel-plated and the mouldings are constructed of high insulation resistance nylon (plug) and phenolic resin (socket).

Current rating:	7A d.c., 9A a.c. for 10°C temp rise to B.S. 546
Current breaking:	Satisfactory to B.S. 546 at 7A
Breakdown (d.c.):	> 9 kV
Insulation resistance:	> 10^5 megohms
Contact resistance:	3 milliohm max.
Temperature range:	—25° to + 55°C
Insertion/withdrawal force: Max.	< 10 lb (4,5 kg)
Cable size max. overall:	0.375" (9,5 mm)
Weight (average):	Plug 20,5 g (0.723 oz) Socket 11,8 g (0.416 oz)
Fixing torque:	15 lb–in

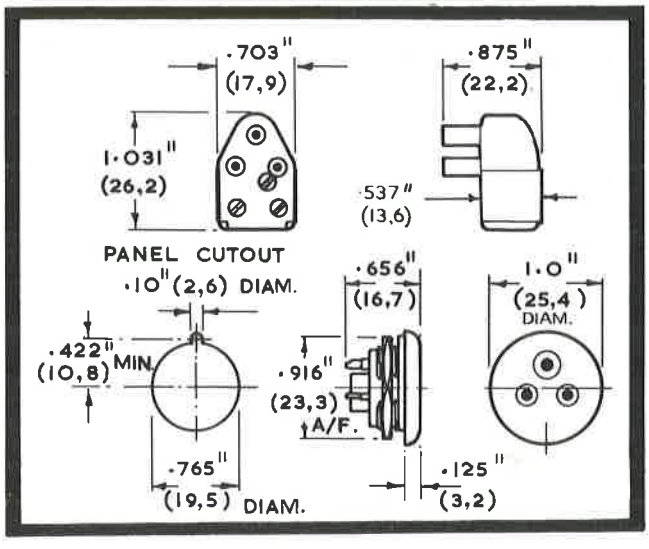


L 1436/P &/S

This miniature 3-pole mains connector combines modern styling and compact design with safety.

Only a single fixing hole is required to mount the socket, because this is secured with one nut; there is a spigot to prevent rotation.

Current rating:	2A d.c, 2.6A a.c for >10°C temp rise
Current breaking:	Satisfactory to BS. 546 at 2·6A
Breakdown (d.c.):	At sea-level > 7kV. At 18 000m (60,000 ft) > 1kV
Insulation resistance:	> 10^5 megohms
Contact resistance:	3 milliohms max.
Temperature range:	55°C. max. —25° to + 55°C
Insertion/withdrawal force:	max 4lb (1,8 kg) 0·91 kg (2 lb)
Cable size Max. overall:	0·24in (6,1mm) (plug)
Fixing torque:	3600–14400 g—cm (50–200 oz in)
Materials:	Plug pins-silver-plated, brass Sockets, silver-plated, beryllium-copper. Insulant, nylon (plug), phenolic resin (socket)
Weight (average)	Plug 5,21g (0·184 oz) Socket 6,1g (0·21,6 oz)



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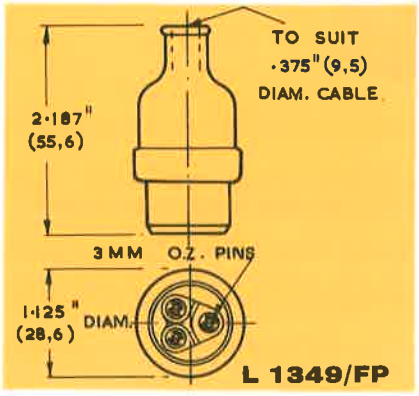
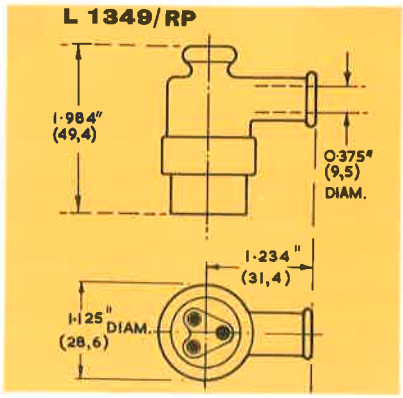
Sealed 3-Pole oz Connectors

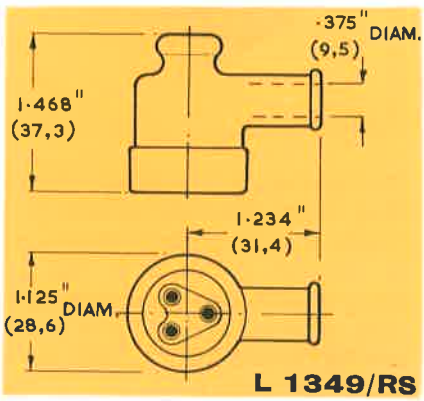
L1349/FP
Free Plug, straight entry

L1349/RP
Free Plug, right-angle entry

L1349/RS
Free Socket, right-angle entry



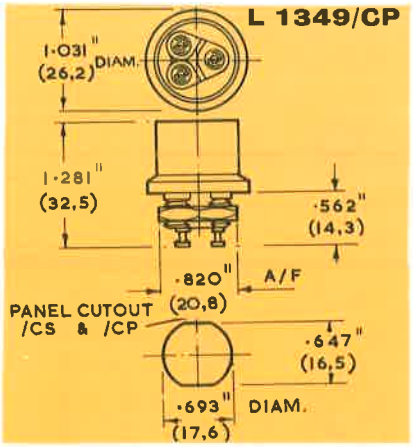


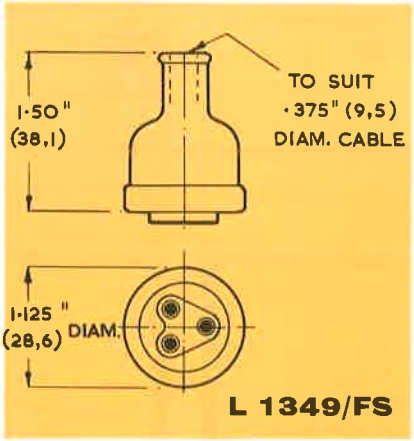


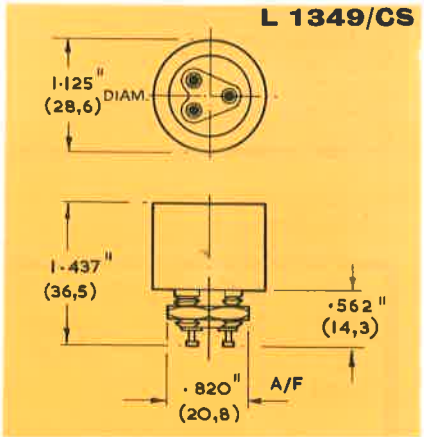
L 1349/CP
Fixed Plug

L 1349/FS
Free Socket, straight entry

L 1349/CS
Fixed Socket







The Waterproof, vulcanised polychloroprene rubber shrouds are resistant to sunlight, mineral oils and greases, (B.S 415)

Breakdown (D.C.):	> 5kV	**Insertn/withdwl force:**	3-15 lb (1,36-6,8 kg)
Current rating:	7A for Temp. rise <10°C	**Panel thickness:**	3,2mm (0·125 in) max.
Insulation resistance:	> 5 x 10^3 megohms	**Fixing torque:**	L1349/CS 8000–14000gm cm (112–200 oz-in) L1349/CP 8600–14100gm cm (120-206 oz-in)
Contact resistance:	3 milliohms max.	**Finish:**	Contacts silver-plated
Temperature range:	-40°C to +55°C	**Average Weight:**	L1349/FP 23,7g (0·84 oz) L1349/CP 18,2g (0·65 oz) L1349/FS 13,7g (0·49 oz) L1349/CS 26,1g (0·92 oz) L1349/R 18,9g (0·67 oz)
Humidity:	H6 (DEF-5011)		
Sealing:	Dry after 1 hr in 5ft water. Leakage does not exceed 1cc/hr at 15 lb/in²		

3-Pole Connectors

L 1326/FP Free Plug, 3-pole

L 764/C/A Protective Dust Cover not illustrated

L 1326/CS Fixed Socket, 3-pole

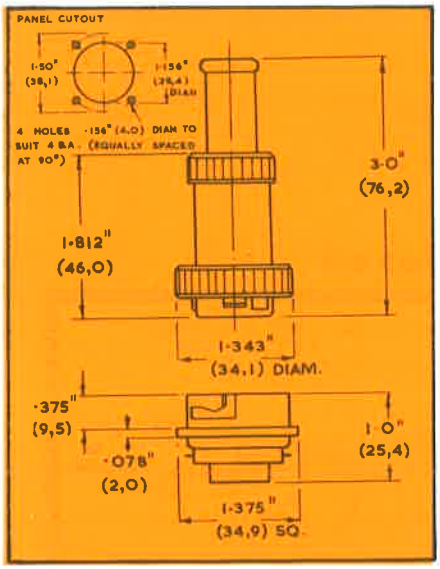
L303/P

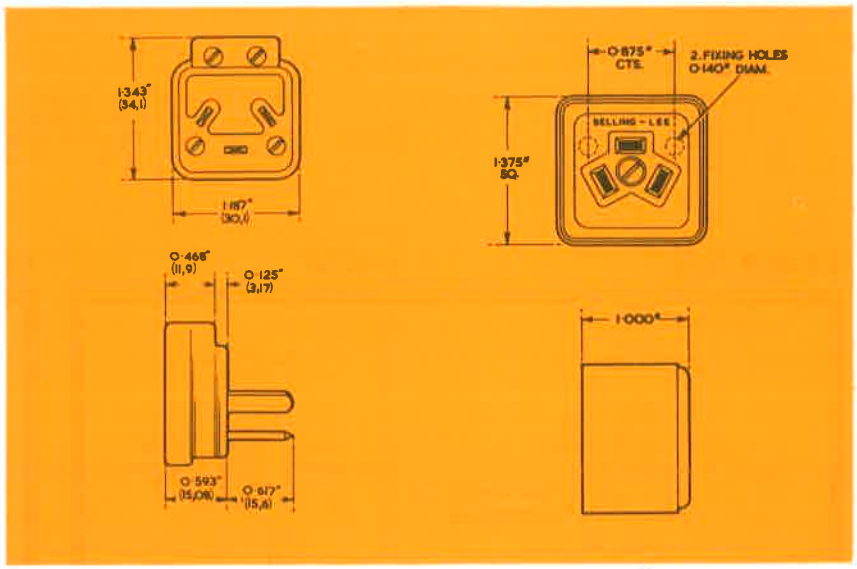
L303/S

L 303/P Free Plug, with cord grip

L 303/S Fixed Socket, surface mounting

Non-interchangeable with standard mains connectors.





DIMENSIONS: Cut-outs minima, normal tolerance +0·005
Overall sizes and fixing centres nominal
Figures in brackets are approx. mm equivalents.

L.1326/FP L.1326/CS L.764/C/A

Current rating:	15A temp rise ⊧ 30°C
Breakdown voltage (d.c.):	> 3kV
Max. recommended working volts:	250V D.C.
Insulation resistance:	> 10^3 megohms
Contact resistance:	4 milliohms max.
Cable conductor size:	8mm (0·315 in) max. dia.
Finish:	Alloy housing, anodised Contacts electro-tinned
Chassis cut-out	as above
Average weight:	FP 38,6g (1·36 oz) CS 23,5g (0·83 oz) Cover 13,5g (0·48 oz)

L 374 Free Plug L 303/P Free Plug
L 303/F Fixed Socket L 303/S Fixed Socket

Specification:	BS. 666
Current rating:	5A (temp rise < 10°C)
Breakdown voltage (d.c.):	> 4kV
Insulation resistance:	> 10^4 megohms
Contact resistance:	7 milliohms max.
Insertion/withdrawal force:	3,2—4,1kg (7—9lb)
Materials:	Plug pins, brass Socket contacts, phosphor-bronze. Insulant, phenolic resin. Finish, nickel-plated
Average weight:	L 374 18gm (0·6 oz) L 303/S 28,4g (1·0 oz) L 303/P 14,2g (0·5 oz)

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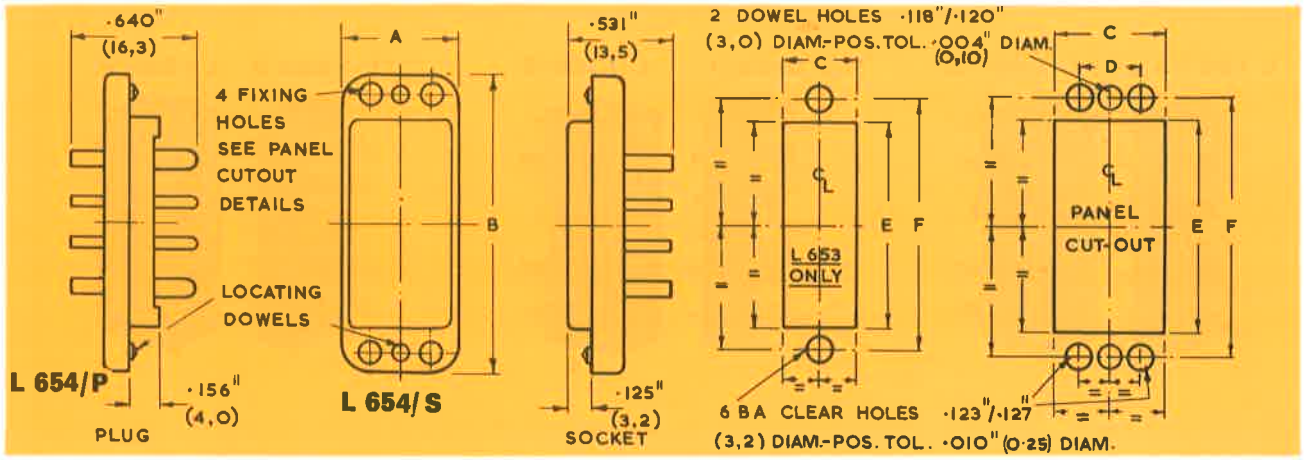
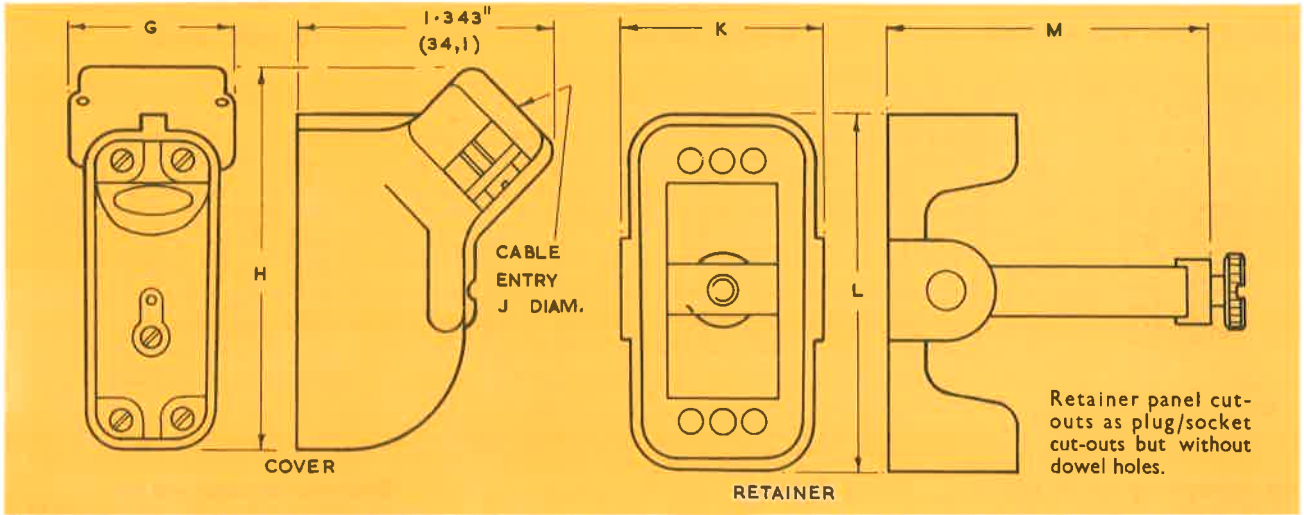
Standard Unitors

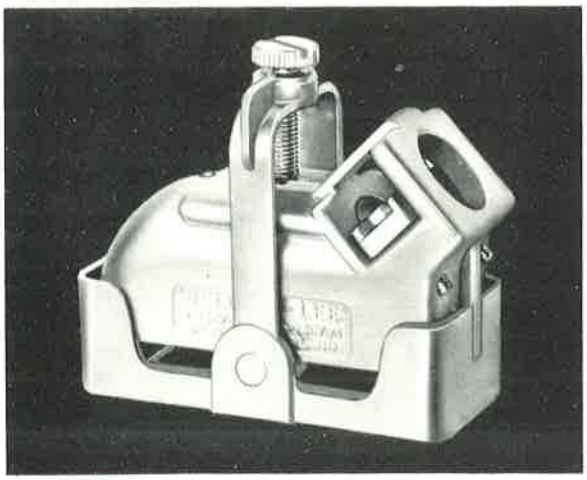
DIMENSIONS Cut-outs minima: normal tolerance +0·010"
Overall sizes and fixing centres nominal
Figures in brackets are approx. mm equivalents.





All plug and socket contacts are numbered on the face and reverse side of moulding. Plug assembly fixing flange 3·2 mm. (0·125") thick. Socket assembly fixing flange 4·0 mm. (0·156") thick.

Cover and Retainer



	4-POLE 2 large 2 small		8-POLE 2 large 6 small		12-POLE 2 large 10 small		18-POLE 2 large 16 small		25-POLE 2 or 4 large	
	in	mm	in	mm	in	mm	in	mm	in	mm
A	0·406	10,3	0·578	14,7	0·843	21,4	0·843	21,4	1·187	30,2
B	1·437	36,5	1·484	37,7	1·50	38,1	2·0	50,8	1·750	44,5
C	0·365	9,3	0·537	13,7	0·740	18,8	0·740	18,8	1·077	27,4
D	—	—	0·312	7,9	0·50	12,7	0·50	12,7	0·875	22,2
E	1·015	25,8	1·061	27,0	1·061	27,0	1·515	38,5	1·265	32,2
F	1·250	31,8	1·296	32,9	1·296	32,9	1·750	44,5	1·50	38,1
G	0·812	20,6	0·906	23,0	0·968	24,6	0·968	24,6	1·312	33,3
H	1·906	48,4	1·906	48,4	1·906	48,4	2·312	58,7	2·046	52,0
J	0·312	7,9	0·437	11,1	0·437	11,1	0·515	13,1	0·578	14,7
K	0·875	22,2	1·031	26,2	1·281	32,5	1·281	32,5	1·640	41,7
L	1·750	44,5	1·812	46,0	1·812	46,0	2·281	57,9	2·062	52,4
M	1·718	43,7	1·718	43,7	1·812	46,0	1·812	46,0	1·812	46,0

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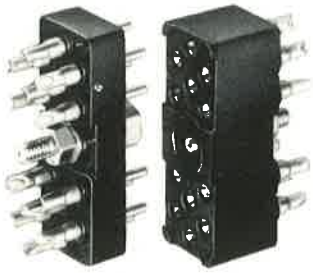
Miniature Unitors

L 1387/P L 1387/S

L 1388/P L 1388/S

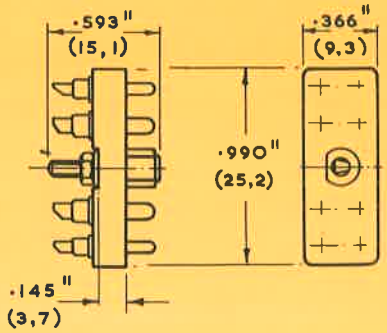
L 1389/P L 1389/S

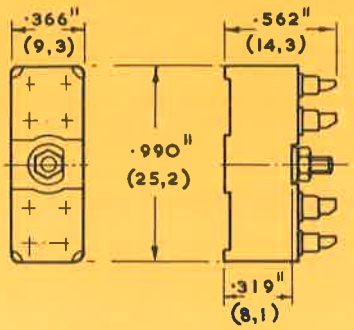


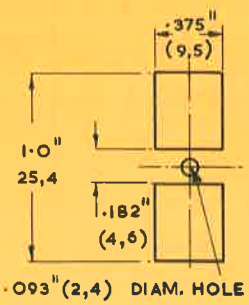
L 1387/P/Ag Plug
L 1387/S/Ag Socket
8-pole, 4 large and 4 small

L 1388/P/Ag Plug
L 1388/S/Ag Socket
8-pole, small

L 1389/P/Ag Plug
L 1389/S/Ag Socket
12-pole, small





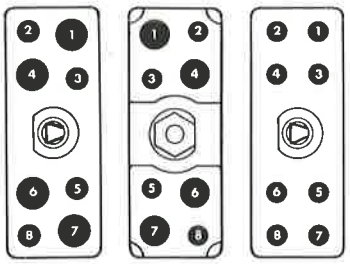


Plugs accept up to (0·125") 3·2 mm thick panel

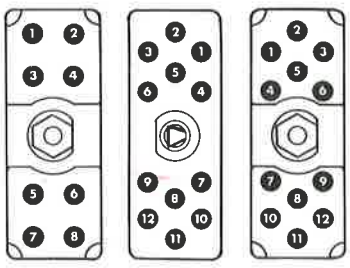
Sockets accept up to (0·064") 1·6 mm thick panel

Smaller, lighter, but equal in performance to standard Unitors, this range includes r. f. and high voltage connectors, and all units are physically interchangeable.

POLE IDENTIFICATION



L1387/P L1387/S L1388/P



L1388/S L1389/P L1389/S

Current rating:	L 1387 Small poles, 9A	L 1388 Large poles, 10A	L 1389
Breakdown (d.c.):	Mounted in shrouds L1470-1-2		
Between pins:			
(a) at sea-level	>2·5kV	>2·5kV	> 2kV
(b) at 20000m (68,000 ft)	1kV	1kV	700V
Pins to earth:			
(a) at sea-level	2·5kV	2·5kV	2kV
(b) at 20000m (68,000 ft)	900V	900V	600V
Contact resistance:	2 milliohms max. (small poles) 1m.ohm (large poles)		
Insulation resistance:	$>10^5$ megohms		
Temperature range:	−40°C to +100°C (Temperature rise < 10°c)		
Humidity:	Class H_5 (DEF 5011)		
Withdrawal force (av.):	1·8—2·7 kg (4—6 lb) per pole 8oz (23og) per pole		
Cable size:	Small poles-0·040 in. (1,0mm), 11/·0076 or 19 s.w.g. Large poles-0·078 in. (2,0mm), 40/·0076 or 15 s.w.g.		
Panel thickness:	Plugs 0·10 in (2,5mm), sockets 0·125 in (3,0mm) No limits in shrouds		
Fixing torque:	1800g —cm (25 oz-in)		
Materials:	Body—phenolic resin moulding Pins—brass Sockets—beryllium / copper } silver-plated		
Weight (average):	10gm (0·35 oz) mated pair L1387 8,4g (0·30 oz) L1388 7,1g (0·25 oz) L1389 8,7g (0·31 oz)		

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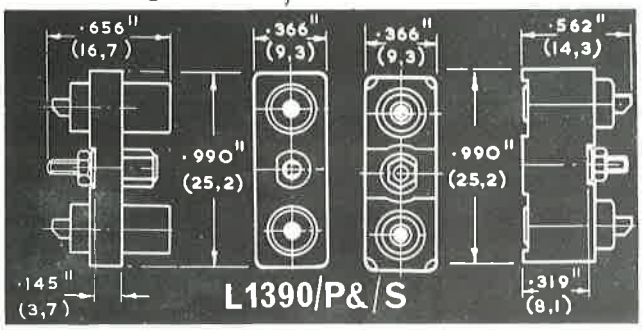
Miniature Unitors

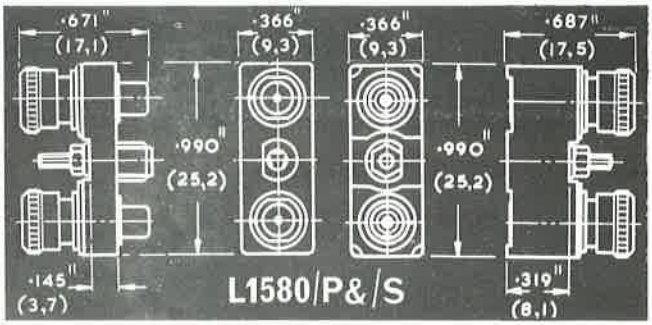
L1390/S **L1390/P**

L1580/S **L1580/P**

L 1390/P/Ag Plug
L 1390/S/Ag Socket } high voltage, 2-pole

L 1580/P/Ag Plug
L 1580/S/Ag Socket } co-axial, twin





Smaller, lighter, but equal in performance to standard Unitors, this range includes r. f. and high voltage connectors, and all units are physically interchangeable.

L 1390/P &/S

Specification:	(Temperature rise < 10°C)	
Current rating:	10A	
Breakdown voltage (d.c.):	At sea-level	At 18000m (60,000 ft)
pole/pole—	>10kV	>2kV
pole/chassis—	> 6kV	>1kV
Insulation resistance:	$>10^4$ megohms	
Contact resistance:	1 milliohm max. (Locating key >5m)	
Temperature range:	−40°C to +100°C	
Withdrawal force:	0,8—1,4kg (1·75—3lb)	
Cable size:	1,9mm (40/·0076in) or 15 s.w.g.	
Panel thickness:	0·10 in (2,5mm). No limit in shrouds.	
Fixing torque:	1800g – cm (25 oz-in)	
Materials:	Body—epoxy resin. Plug pins—silver-plated brass. Sockets—silver-plated beryllium-copper.	
Weight (average):	Plug or socket 4,1g (0·14 oz)	

L 1580/P&/S

Impedance:	50 ohms (nominal)
Breakdown voltage (d.c.):	At sea-level >4kV. At 18000m (60,000 ft) >1kV
Insulation resistance:	$>10^4$ megohms
Contact resistance:	5 milliohms max.
Screen continuity:	3 milliohms max.
Cable size:	Inner, 1,0 mm(0.041in)Outer, 4,5mm (0·18 in.)
Fixing torque:	1800g – cm (25 oz-in)
Materials:	Conductors—silver-plated brass. Dielectric—polyethylene. Moulding—phenolic resin.
Weight (average):	Plug or Socket, 7,6g (0·27 oz)

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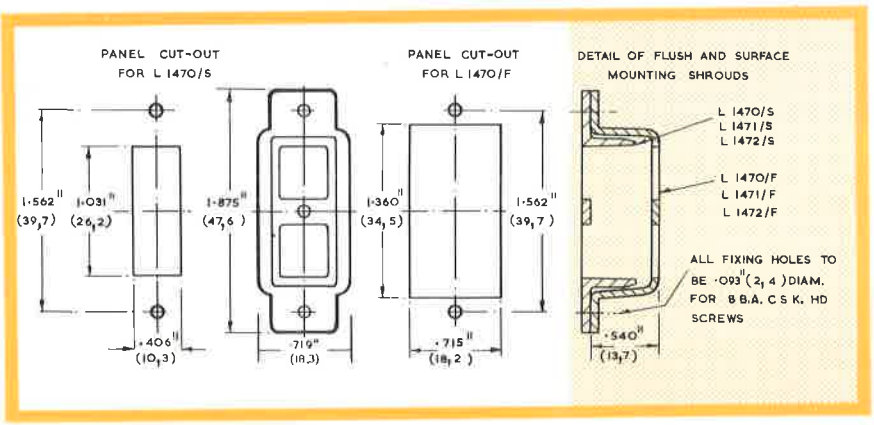
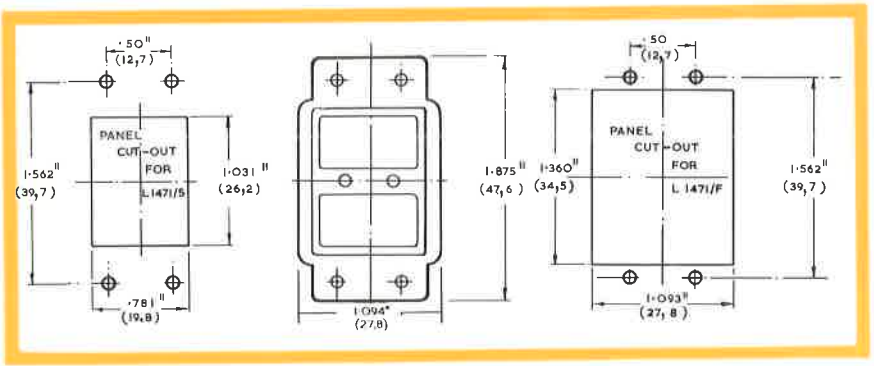
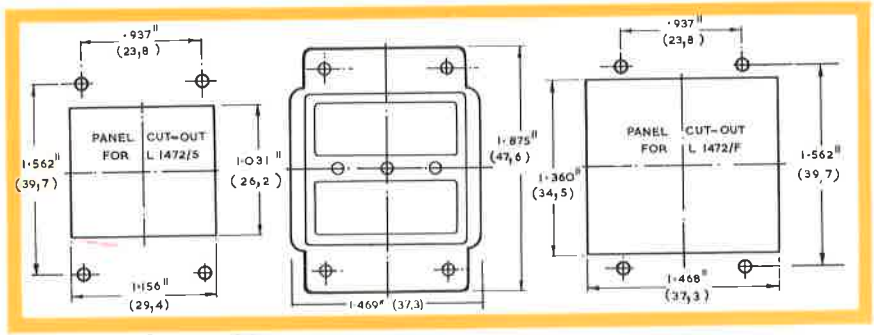
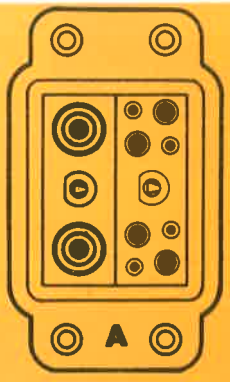
Miniature Unitors Accessories



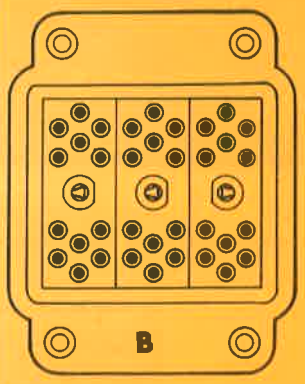




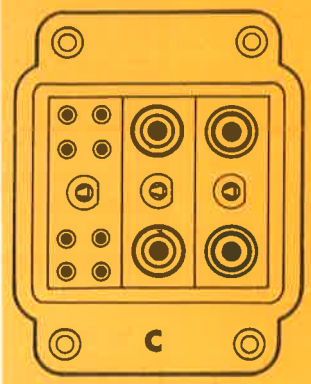
DIMENSIONS: Cut-outs minima, normal tolerance +0·005
Overall sizes and fixing centres nominal
Figures in brackets are approx. mm equivalents.



Example A shows an L 1390 and L 1387 side-by-side in a double-way shroud.



Example B shows three L 1389 Miniature Unitors giving 36 poles in an area of only 1·32 sq. inches.



Example C shows an L 1388, L 1390, and L 1580 side-by-side, in which supply voltages and r. f. or pulse signals can be grouped together in one unit.

The miniature Unitor Shrouds can be used for mounting one, two or three units of the Miniature Unitors on a plug-in unit and on the equipment rack. Many thousands of variations are possible, including the making up of non-interchangeable multiple connectors.

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Single Pole Connectors

L513
3mm Plug,10A

L514
4mm Plug,10A

L515
5mm Plug,15A,
with solder spill

L623/P & S
High Tension
Plug & Socket

This illustration shows plug, L1716, fitting into position in Stacking plug, L1708.

L1716
4mm Plug

L1708
Single stacking plug

L1706
Twin
stacking plug

4mm
collet
plug
L1649

L1718 4mm
insulated
Socket

L1717

L623/P & S

Breakdown (d.c.):	At sea-level. > 10kV At 18000m. (60,000 ft. > 1·5 kV)
Insulation resistance:	10^4 megohms
Contact resistance:	6—13 milliohms
Max. panel thickness:	(0·312 in.) 7, 9mm.
Fixing torque:	6900-13800gm.cm. (90-200 oz. in.)
Cable size:	(0·35 in.) 8,9 mm. max. dia.
Materials:	Body—phenolic resin moulding. Contacts—silver-plated.
Weight (average):	Plug 15,57g (0·55 oz) Socket 23,84g (0·84oz)

L1706, L1708, L1716, L1717, L1718, L1649,

Insulation resistance:	10^6 megohms
Max. panel thickness:	0·275 (7mm)

L1706, L1708, L1716, L1717, L1718, L1649,

Current rating:	10A (Temperature rise < 10°C)
Contact resistance:	< 2m milliohms
Temperature range:	—55° to + 85°C
Materials:	Contact body—brass silver-plated Contact leaf (plugs)— phosphor-bronze, silver-plated Insulant—L1716, PVC, remainder, polypropylene
Colours:	available in six colours
Conductor sizes:	L1649 23-110/-0076" (23-110/0193mm) L1706, L1708 110/ 0076" (110/0,193mm) max. L1716 70/ 0076" (70/0,193) max.
Weight (average):	L1649 5,15g (0·18 oz) L1706 19,21g (0 68 oz) L1708 9,28g (0 33 oz) L1716 2,13g (0·075 oz) L1717 2,71g (0 096 oz) L1718 2,84g (1·0 oz)

The 'O-Z' Multiple Contact Plugs & Sockets

These connectors are the first items in a new range of wander plugs and sockets combining improved performance and versatility with modern styling and maximum economy. The plug members employ the OZ multiple contact spring leaf, a well-known Belling-Lee feature which ensures low contact resistance and a high current rating over a wide range of tolerance on the mating socket diameter, and obviates any tendency for the plug to eject itself from the socket under vibration.

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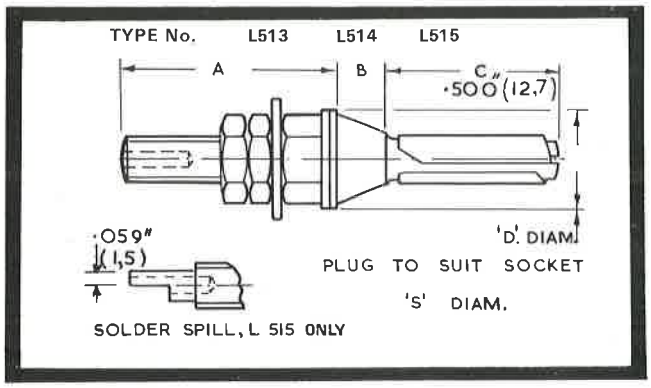
Single Pole Connectors

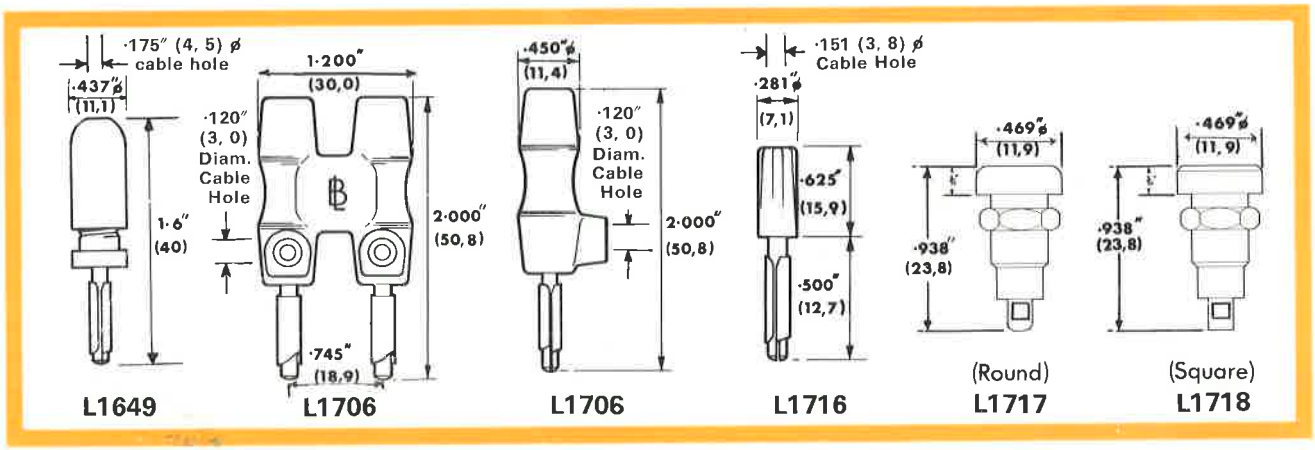
The Stacking Plugs are a useful innovation, and permit additional apparatus to be rapidly connected to a circuit without disturbing the existing connections. Any number can be plugged together, and they will mate with all standard 4 mm solid and resilient sockets and also with all Belling-Lee terminals that incorporate a socket in the head. Cable connection via the side port is secured by means of a grub screw located in the bottom of the socket; the end of this screw is specially shaped so as not to cut the wire.

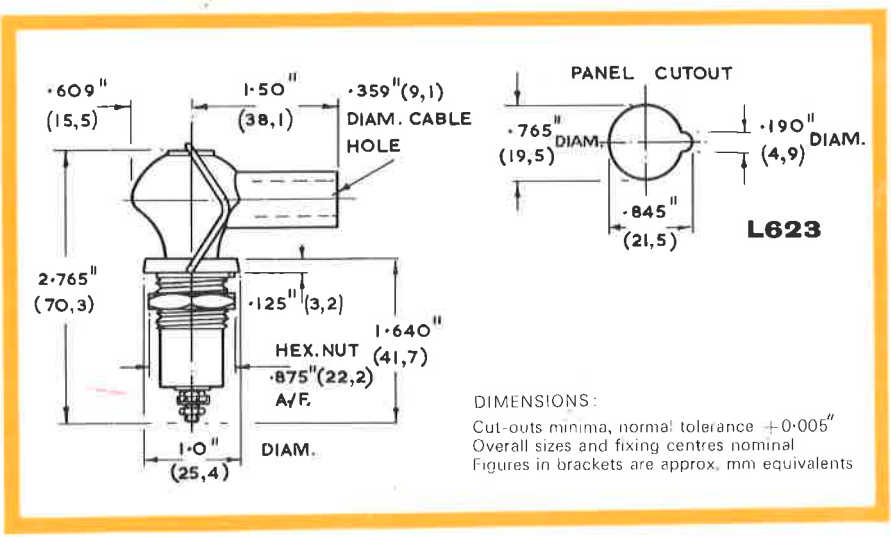
The plug, type L1716, is an extremely versatile component of low cost. It is quickly loaded by crimping or soldering the cable to the plug-pin, and the elastic cover then snaps into position. Its small size is of great convenience in modern miniaturised equipment and, when plugged into the recessed head of the miniature "Continental" terminal, the plug-pin is fully shrouded and is not jacked out by unscrewing the head.

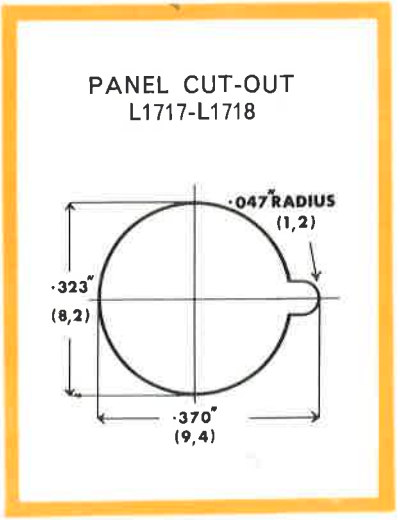
The alternative but larger type, L1649, is attached to the cable by means of an internal collet, which is integral with the plug-pin; its 4 jaws are closed by screwing on the cap. It is thus assembled without tools, accommodates a wide range of cable sizes having from 23 to 110/·0076 in. (0,193 mm) conductors, and can be easily re-wired.



TYPE No.		L513	L514	L515
STEM		6BA	4BA	4BA
A	MM	14,3	15,9	16,7
	IN	·562	·625	·656
B	MM	3,2	5,6	6,4
	IN	·125	·218	·250
C	MM	12,7	12,7	12,7
	IN	·500	·500	·500
D	MM	6,0	7,1	7,1
	IN	·234	·281	·281
E	MM	—	—	1,5
	IN	—	—	·059
S	MM	3	4	5
	IN	·125	·156	·204







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