CONNECTED LIVING SOLUTIONS

AMP SOFT SHELL PIN AND SOCKET CONNECTORS



Restriction on the use of Hazardous Substances (RoHS)

At Tyco Electronics, we're ready to support your RoHS requirements. We've assessed more than 1.5 million end items/components for RoHS compliance, and issued new part numbers where any change was required to eliminate the restricted materials.

Part numbers in this catalog are RoHS Compliant, unless marked otherwise. These products comply with European Union Directive 2002/95/EC, as amended 1 January 2006, that restricts the use of lead, mercury, cadmium, hexavalent chromium, PBB, and PBDE in certain electrical and electronic products sold into the EU as of 1 July 2006.

Note: For purposes of this Catalog, included within the definition of RoHS Compliant are products that are clearly "Out of Scope" of the RoHS Directive such as hand tools and other non-electrical accessories. Information regarding RoHS compliance is provided based on reasonable inquiry of our suppliers and represents our current actual knowledge based on the information provided by our suppliers. This information is subject to change. For latest compliance status, refer to our website referenced at right.

Getting the Information You Need

Our comprehensive on-line RoHS Customer Support Center provides a forum to answer your questions and support your RoHS needs. A RoHS FAQ (Frequently Asked Questions) is available with links to more detailed information. You can also submit RoHS questions and receive a response within 24 hours during a normal work week. The Support Center also provides:

- Cross-Reference from Non-compliant to Compliant Products
- Ability to browse RoHS Compliant Products in our on-line catalog
- Downloadable Technical Data
- Customer Information Presentation
- More detailed information regarding the definitions used above

So whatever your questions when it comes to RoHS, we have the answers at **www.tycoelectronics.com/leadfree**

RoHS Customer Support Center

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Introduction

AMP Soft Shell Pin and Socket Connectors provide a highly reliable and economic means of grouping multiple-lead connections in today's computer, computer/peripheral equipment, business machines, entertainment centers, appliances and other sophisticated commercial equipment. The electrical connector is an integral component in these applications. They also offer worldwide application approval because of their reliability and economy. Electrical functions have increased in complexity and new designs continually call for the maximum use of space. The Soft Shell Pin and Socket family of connectors offers the design and features to answer these modern industry requirements.

This catalog is organized by contact centerline spacing (High Density and Standard Density) to provide you with the basic information necessary to select the Soft Shell connector system best suited for your specific application. It contains general information to acquaint you with the complete family of connectors and application tooling.

Since your specific application will determine the degree of automatic, semiautomatic or manual application tooling required, complete specifications are covered on pages 207-204.

Summary Chart

Page No.	Product Name	No. of Positions	Centerline (in) mm	Wire Size (AWG)	Wire Insulation Dia. Max. (in) mm	Current Rating Max (A)*	Voltage Rating Max.	Operating Temp. Range (C)	UL94 Flammability Rating	Sealed Version Available	Approvals
High Density											
9	2.5 mm Signal Double Lock (SDL)	2-13	(.098) 2.50	26-20	(.071) 1.80	3	50 VAC or VDC	-30° to +105°	V-0	No	UL, CSA, VDE
17	Micro MATE-N-LOK 3 mm	2-24	(.118) 3.00	30-20	(.060) 1.52	5	250 VAC	-40° to +105°	V-0	No	UL, CSA, VDE
49	Grace Inertia Connectors (GIC) 3.5	2-6	(.137) 3.50	26-18	(.106) 2.70	7	300 VAC	-30° to +105°	V-0	No	UL, CSA
53	.062 Commercial Pin & Socket	1-9	(.145) 3.68	30-18	(.110) 2.79	7	250 VAC or VDC	-55° to +105°	V-2	No	UL, CSA
59	Power Double Lock (PDL)	1-12 3-12 2 2	(.156) 3.96 (.256) 6.50 (.312) 7.92 (.512) 13.00	26-16	(.122) 3.10	14	300 VAC (3.96 WTW, 6.5 WTB and 7.92 WTB) 50 VAC (3.96 WTB)	-30° to +105°	V-0	No	UL, CSA, VDE
83	Mini-Universal MATE-N-LOK	1-24	(.163) 4.14	30-16	(.126) 3.20	9.5	600 VAC or VDC	-55° to +105°	V-0 & V-2	Yes	UL, CSA, VDE (250 V Max.)
99	Mini-Universal MATE-N-LOK 2	2-24	(.163) 4.14	30-16	(.126) 3.20	10.5	600 VAC or VDC	-55° to +105°	V-0 & V-2	No	UL, CSA, VDE
109	MR (Miniature Rectangular)	2-36	(.165) 4.20	26-18	(.115) 2.92	9	250 VAC	-55° to +85°	V-0	No	UL, CSA
119	VAL-U-LOK Connector System	2-24	(.165) 4.20	26-18	(.094) 2.39	9	600 VAC	-40° to +105°	V-0 & V-2	No	UL, CSA
125	AMP-DUAC	2-24	(.165) 4.20	26-18	(.130) 3.30	9	600 VAC	-55° to +105°	V-2	No	UL, CSA
Standard Density											
135	5.0 mm Power Key Connectors (PKC)	2-6	(.197) 5.00	24-16	(.122) 3.10	10	300 VAC	-30° to +105°	V-0	No	UL, CSA
143	.093 Commercial Pin & Socket	1-15	(.198) 5.03	14-24	(.180) 4.57	13	250 VAC or VDC	-55° to +105°	V-2	No	UL, CSA
151	Commercial MATE-N-LOK	1-16	(.200) 5.08	30-14	(.130) 3.30	19	250 VAC	-55° to +105°	V-2	No	UL, CSA
165	.140 MATE-N-LOK	2-9	(.240) 6.10	20-10	(.180) 4.57	28	600 VAC or VDC	-55° to +105°	V-2	No	UL, CSA
169	Universal MATE-N-LOK	1-15	(.250) 6.35	30-10	(.200) 5.08	19	600 VAC or VDC	-55° to +105°**	V-0 & V-2	Yes	UL, CSA; designed and tested to meet VDE 380 V requirements, except 6 Position Circular
189	Universal MATE-N-LOK II	2-15	(.250) 6.35	30-10	(.200) 5.08	19	600 VAC or VDC	-55° to +105°	V-0	No	UL, CSA, VDE
203	.156 MATE-N-LOK	3-4	(.390) 9.91	20-10	(.185) 4.70	32.5	600 VAC	-55° to +105°	V-2	No	UL

*Current Rating is application dependent
** 125°C Available

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High Density

Need more information?

Call Technical Support at a local number listed on the inside back cover.

Technical Support is staffed with specialists well versed in Tyco Electronics products.



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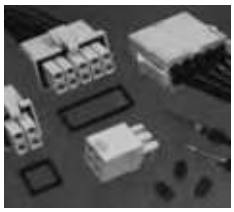
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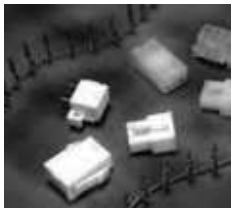
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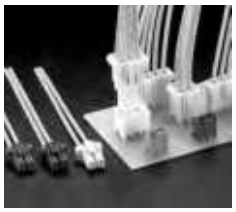
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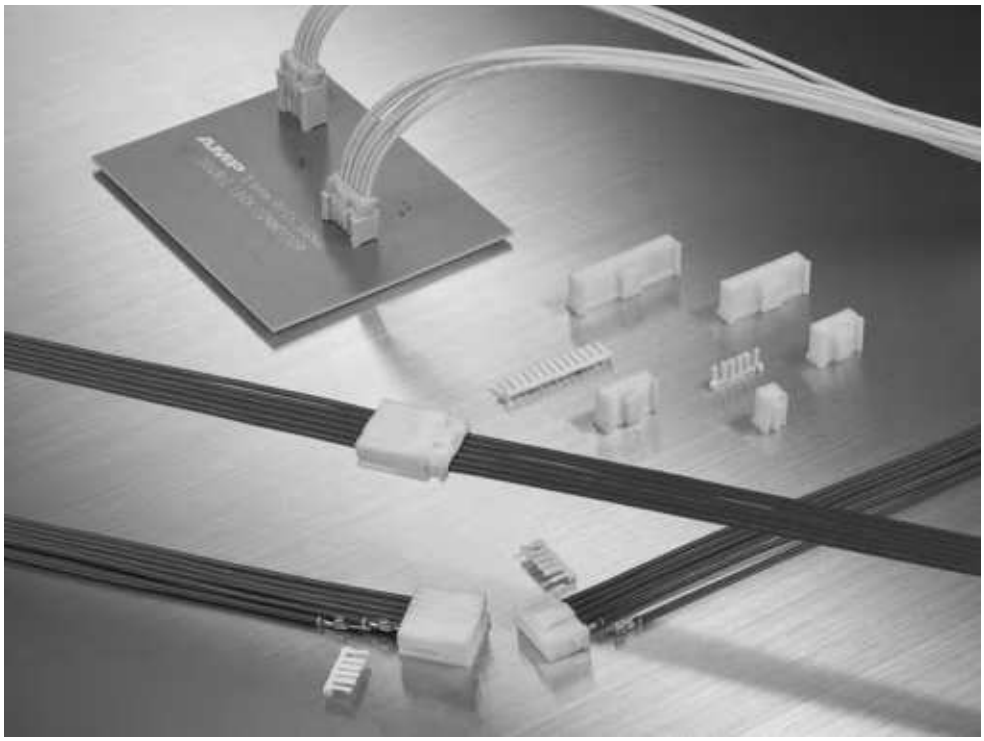
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2.5 mm Signal Double Lock (2.5 SDL) Connectors (Wire-to-Board and Wire-to-Wire)

Product Facts

- Connector for signal circuits with one row of contacts on 2.5 mm centerline
- Wire-to-board and wire-to-wire connectors, consisting of plug and cap housings for wire termination and PC board-mount post headers
- Mounted to plug and cap housings for wire application, double lock plate provides for positive loading of contacts in the housing. It also helps contacts mate completely
- Double lock plate is contained within the plug and cap housing completely, which provides neat overall appearance
- Accepts 26-20 AWG wire (e.g. UL 1007, 1061, 1571, etc.) with insulation diameters of up to 1.8 mm
- PC board-mount post header is available in two styles: standard profile and high profile
- High-profile post header has locking feature at location fit to resin coating, which is applied onto the board for waterproof protection as in home appliances. It does not hamper mating and locking of post header with plug housing
- Locking structure is inner-lock type and has a clean surface
- Solder tail section of post header is provided with kinks to retain the header firmly on PC board during soldering
- Radial tape-mounted version of post header is also available that is applicable to radial mounting machines
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR7189
- VDE Approved, File No. B 04 11 39175013



2.5 mm Signal Double Lock Connectors (2.5 SDL) are 2.5 mm centerline, compact, one-row connectors for signal circuits.

With contacts on 2.5 mm centerline, both wire-to-wire and wire-to-board connectors are available.

The connectors consist of plug and cap housings for wire termination, double lock plates for plug and cap housings, crimp snap-in contacts, and a PC board-mount post header. A double lock plate is available for both plug and wire-to-wire cap housing to provide for positive loading. It helps prevent contacts from coming off or mating halfway. The plate is contained within the plug and cap housing completely. The plug and cap housing can be used without a double lock plate.

The connector accepts 26-20 AWG wire (e.g. UL 1007, 1061, 1571, etc.) with insulation diameters of up to 1.8 mm.

The PC board-mount post header is available in two styles: standard profile and high profile.

The high-profile type connectors can be used for home appliances, which require waterproof protection. It does not hamper mating and locking of the post header with the plug housing, even if the board has resin coating on it.

The locking structure is inner-lock type and has a clean surface.

The solder tail of the loose-piece post header has kinks to secure the connector on the PC board until it is soldered.

Radial tape-mounted version of post header is also available and this is applicable to radial mounting machines.

Performance Characteristics

Voltage Rating—50 VAC/DC

Current Rating—3 A

Overall Resistance—
10 mΩ max. (initial)
20 mΩ max. (final)

Insulation Resistance—
500 Ω (500 VDC)

Dielectric Withstanding Voltage—
1,100 VAC, one minute

Contact Resistance—20 mΩ max.

Operating Temperature—
-30°~ + 105°C
(The upper limit includes temperature rise from power carrying)

Applicable Wire—26-20 AWG (UL 1007, 1061, 1571)

Wire Insulation Range—
0.93~ 1.8 mm

PC Board Thickness—1.6 mm

Technical Documents

Product Specification

108-5459

Application Specification

114-5203

Note: **Dimensions shown are metric.**

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2.5 mm Signal Double Lock (2.5 SDL) Connectors (Wire-to-Board and Wire-to-Wire) (Continued)

Quick Reference Chart for Mating Part Numbers

No. of Pos.	Plug Connector Part No. (Wire Side)		Mating Connectors (PC Board Mount & Wire Side)			
			Post Header Part No.		Cap Connector Part No.	
	Housing	Double Lock Plate	Standard-Profile Type*	High-Profile Type	Cap Housing	Double Lock Plate
2	917686-1	917698-1	917780-1	917722-1	316086-1	917698-1
3	917687-1	917699-1	917781-1	917723-1	316087-1	917699-1
4	917688-1	917700-1	917782-1	917724-1	316088-1	917700-1
5	917689-1	917701-1	917783-1	917725-1	316089-1	917701-1
6	917690-1	917702-1	917784-1	917726-1	316090-1	917702-1
7	917691-1	917703-1	917785-1	917727-1	316091-1	917703-1
8	917692-1	917704-1	917786-1	917728-1	316092-1	917704-1
9	917693-1	917705-1	917787-1	917729-1	——	917705-1
10	917694-1	917706-1	917788-1	917730-1	316094-1	917706-1
11	917695-1	917707-1	917789-1	917731-1	——	917707-1
12	917696-1	917708-1	917790-1	917732-1	——	917708-1
13	917697-1	917709-1	917791-1	917733-1	——	917709-1

*Included in Standard-Profile Post Header line are Radial Tape-Mounted version (2 to 8 positions). Refer to appropriate description in the catalog.

Note: **All part numbers are RoHS Compliant.**

Product Family List (Including Production Plans)

Description			Number of Positions										
			2	3	4	5	6	7	8	9	10	11	12	13
Plug Housing			●	●	●	●	●	●	●	●	●	●	●	●
Vertical Board Mount Post Header	Standard-Profile Type	Loose Piece	●	●	●	●	●	●	●	●	●	●	●	●
		Radial Tape-Mounted	●	●	●	●	●	●	●	–	–	–	–	–
	High-Profile Type	Loose Piece	●	●	●	●	●	●	●	●	●	●	●	●
		Radial Tape-Mounted	●	●	●	●	●	●	●	–	–	–	–	–
Cap Housing			●	●	●	●	●	●	●	○	●	○	○	○
Double Lock Plate			●	●	●	●	●	●	●	●	●	●	●	●
Horizontal Board Mount Post Header			○	○	○	○	○	○	○	○	○	○	○	○
Horizontal Mount Post Header (Radial Tape-Mounted)			○	○	○	○	○	○	○	–	–	–	–	–

Note: ● indicates products currently available; ○ indicates products planned for production.

Note: **Dimensions shown are metric.**

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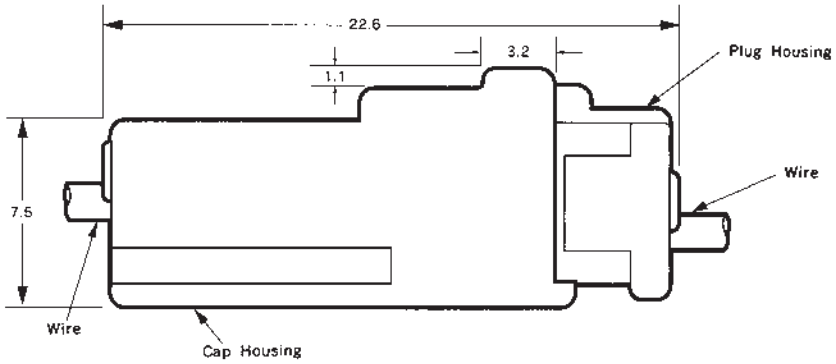
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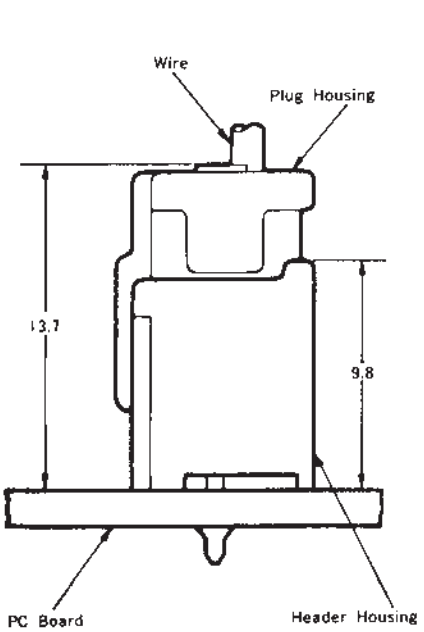
2.5 mm Signal Double Lock (2.5 SDL) Connectors (Wire-to-Board and Wire-to-Wire) (Continued)

Mating Configurations

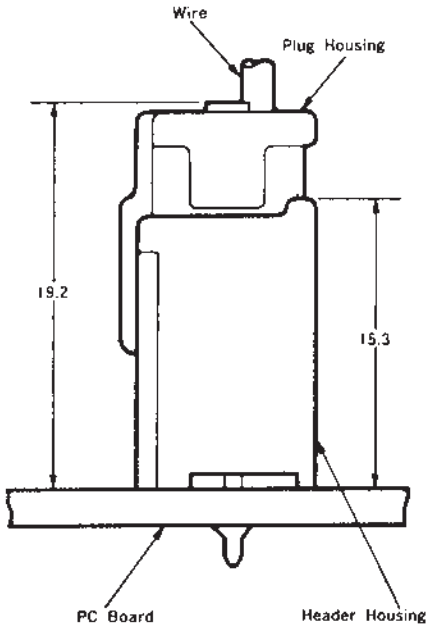
Wire-to-Wire Connections



Wire-to-PC Board Connections



Standard-Profile Type



High-Profile Type

Note: Dimensions shown are metric.

Catalog 82181
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Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

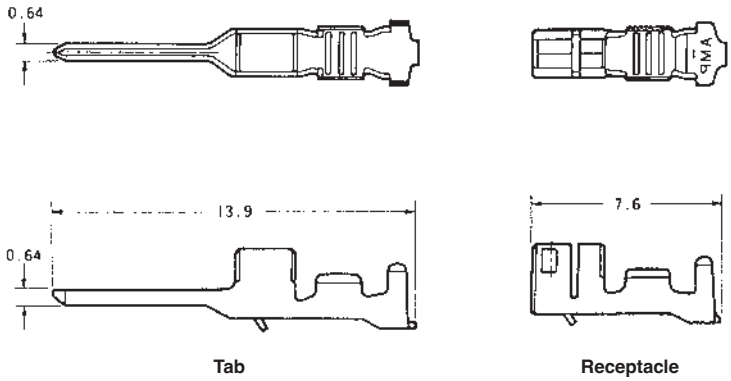
2.5 mm Signal Double Lock (2.5 SDL) Connectors (Wire-to-Board and Wire-to-Wire) (Continued)

Contacts

Material and Finish

Pre-tinned phosphor bronze (0.2 mm thick)

Receptacle for Plug Housing,
Tab for Cap Housing



Tab Receptacle

Wire Range		Wire Ins. Dia.	Contact Part Number				Applicator Part Number
			Tab		Receptacle		
AWG	mm²		Strip Form	Loose Piece	Strip Form	Loose Piece	
26-22	0.12~0.35	0.93~1.50	917765-1	316399-1	917684-1	316401-1	*
22-20	0.30~0.53	1.40~1.80	917764-1	316398-1	917683-1	316400-1	*

Hand Tool Part No.: for 26-22 AWG = 234604-1 (Instruction Sheet 411-5736)
22-20 AWG = 234603-1 (Instruction Sheet 411-5735)

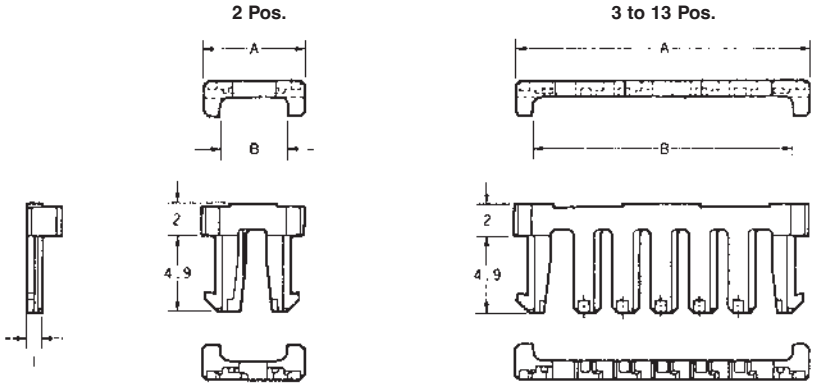
Extraction Tool Part No.: 234605-1 (Instruction Sheet 411-5737)

* Contact the Tooling Assistance Center (TAC) at 1-800-722-1111 for Applicator Part Number.

Double Lock Plates

Material

UL94V-0, 6/6 Nylon, glass filled, natural color



No. of Pos.	Dimensions of Double Lock Plate		Double Lock Plate Part Number	Applicable Housing Part Number	
	A	B		Plug	Cap
2	06.5	04.3	917698-1	917686-1	316086-1
3	09.0	06.8	917699-1	917687-1	316087-1
4	11.5	09.3	917700-1	917688-1	316088-1
5	14.0	11.8	917701-1	917689-1	316089-1
6	16.5	14.3	917702-1	917690-1	316090-1
7	19.0	16.8	917703-1	917691-1	316091-1
8	21.5	19.3	917704-1	917692-1	316092-1
9	24.0	21.8	917705-1	917693-1	——
10	26.5	24.3	917706-1	917694-1	316094-1
11	29.0	26.8	917707-1	917695-1	——
12	31.5	29.3	917708-1	917696-1	——
13	34.0	31.8	917709-1	917697-1	——

Extraction Tool Part No. for Double Lock Plate: 234605-1 (Instruction Sheet 411-5737)

Note: All part numbers are RoHS Compliant.

Note: Dimensions shown are metric.

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2.5 mm Signal Double Lock (2.5 SDL) Connectors (Wire-to-Board and Wire-to-Wire) (Continued)

Plug Housings (For Receptacle Contacts)

2 to 13 Positions

Material

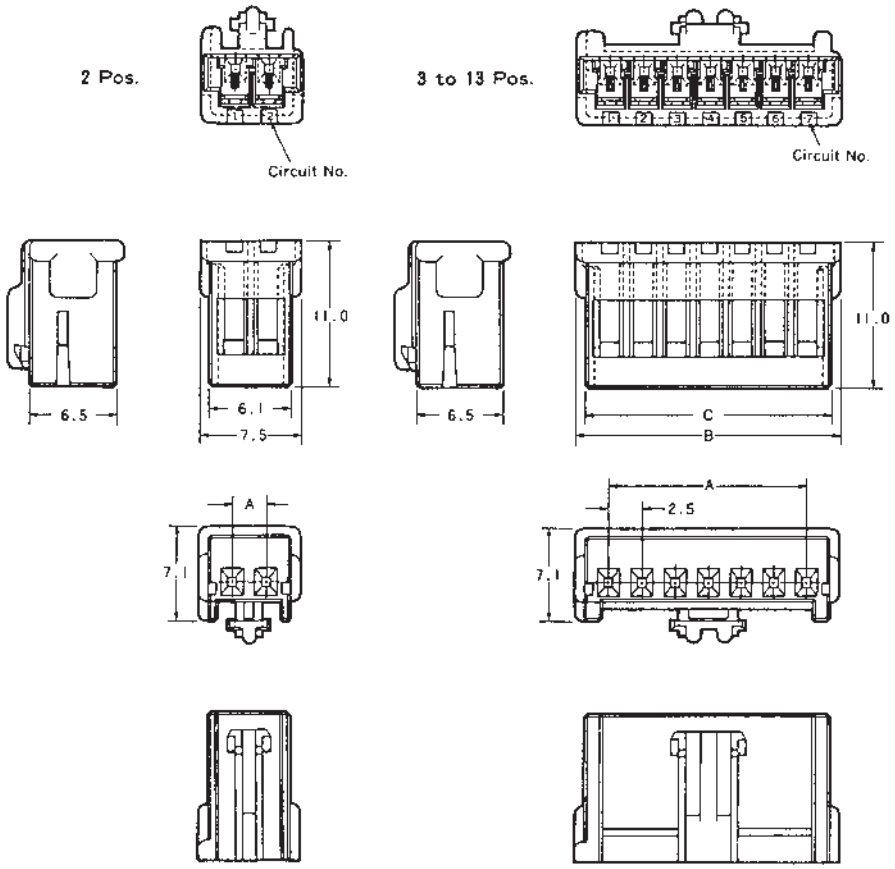
UL94V-0, 6/6 Nylon, color (see chart)

Related Product Data

Receptacle Contact Part No.

917684-1 (26-22 AWG)
917683-1 (22-20 AWG)

Double Lock Plate—page 12
Mating Cap Housings—page 14
Mating Post Headers—pages 15-16



No. of Pos.	Dimensions			Plug Housing Part Number					
	A	B	C	Natural	Red	Yellow	Green	Blue	Black
2	02.5	07.5	06.1	917686-1	917686-2	917686-4	917686-5	917686-6	917686-9
3	05.0	10.0	08.6	917687-1	917687-2	917687-4	——	917687-6	917687-9
4	07.5	12.5	11.1	917688-1	917688-2	917688-4	——	——	917688-9
5	10.0	15.0	13.6	917689-1	917689-2	——	——	917689-6	——
6	12.5	17.5	16.1	917690-1	917690-2	917690-4	——	917690-6	917690-9
7	15.0	20.0	18.6	917691-1	917691-2	917691-4	——	——	917691-9
8	17.5	22.5	21.1	917692-1	——	——	——	917692-6	——
9	20.0	25.0	23.6	917693-1	917693-2	917693-4	——	——	——
10	22.5	27.5	26.1	917694-1	——	917694-4	——	——	——
11	25.0	30.0	28.6	917695-1	——	——	——	——	——
12	27.5	32.5	31.1	917696-1	917696-2	——	——	——	——
13	30.0	35.0	33.6	917697-1	917697-2	——	——	——	——

Note: **All part numbers are RoHS Compliant.**

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2.5 mm Signal Double Lock (2.5 SDL) Connectors (Wire-to-Wire)

Cap Housings (For Tab Contacts)

2 to 10 Positions

Material

UL94V-0, 6/6 Nylon, color (see chart)

Related Product Data

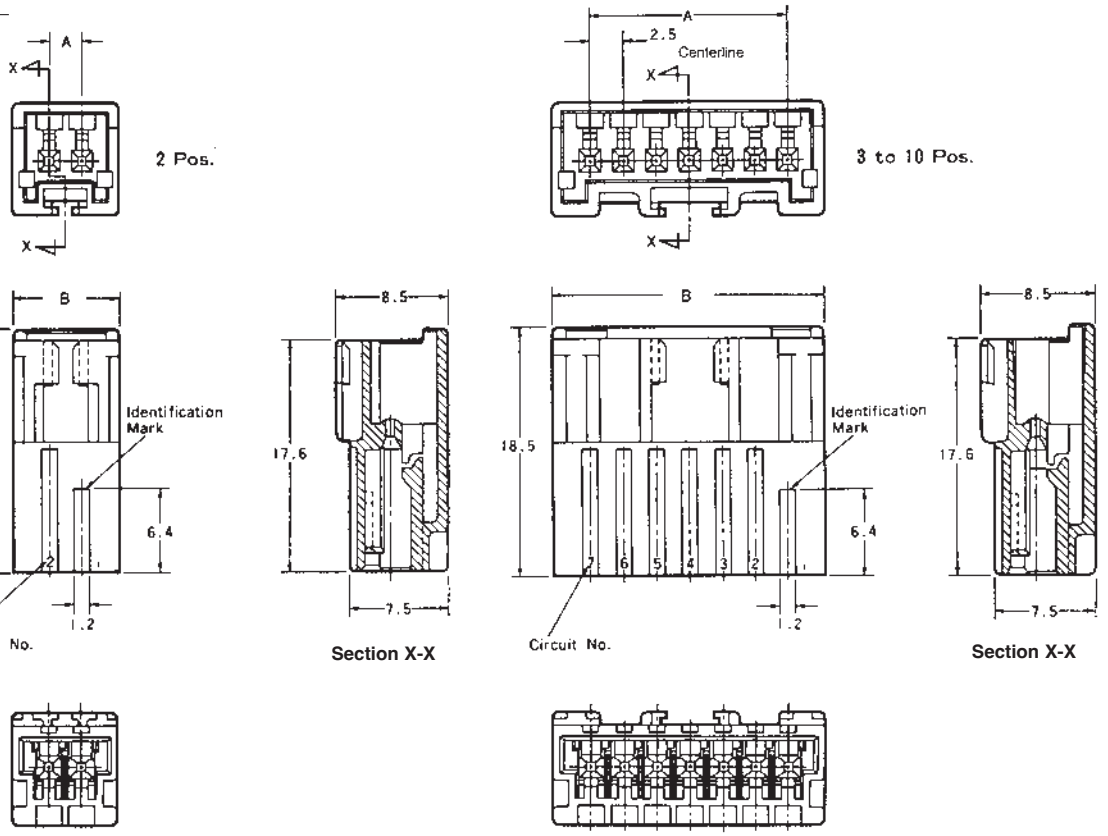
Tab Contact Part No.

917765-1 (26-22 AWG)

917764-1 (22-20 AWG)

Double Lock Plate—page 12

Mating Plug Housings—page 13



No. of Pos.	Dimensions		Cap Housing Part Number				
	A	B	Natural	Red	Yellow	Blue	Black
2	02.5	08.1	316086-1	316086-2	316086-4	316086-6	316086-9
3	05.0	10.6	316087-1	——	316087-4	——	316087-9
4	07.5	13.1	316088-1	316088-2	306088-4	——	316088-9
5	10.0	15.6	316089-1	316089-2	——	——	——
6	12.5	18.1	316090-1	——	——	——	——
7	15.0	20.6	316091-1	——	——	——	316091-9
8	17.5	23.1	316092-1	——	——	——	——
10	22.5	28.1	316094-1	——	316094-4	——	——

Note: **All part numbers are RoHS Compliant.**

Note: **Dimensions shown are metric.**

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2.5 mm Signal Double Lock (2.5 SDL) Connectors (Wire-to-Wire) (Continued)

Vertical Post Headers (For PC Board Mount)

Standard-Profile Type

Material and Finish

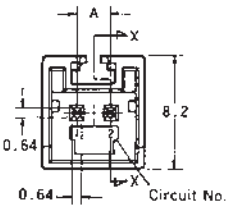
Header Housings
UL94V-0, 6/6 Nylon, glass filled, color (see chart)

Post Contact
Pre-tinned copper alloy

Related Product Data

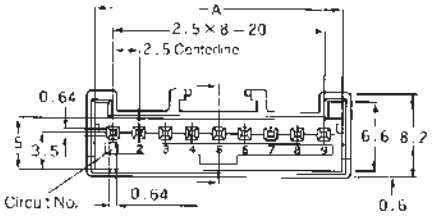
Mating Plug Housings— page 13

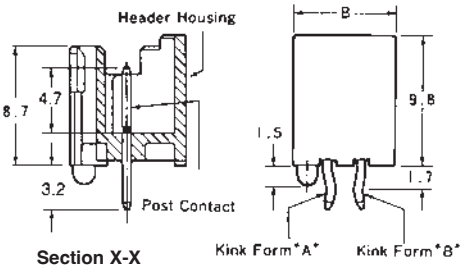
2 Pos.

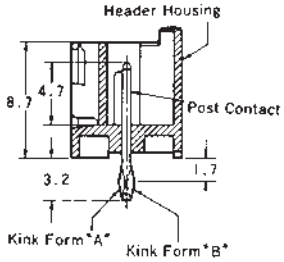


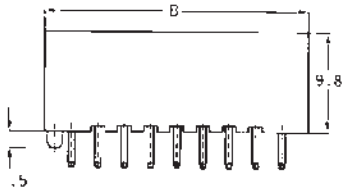
3 to 13 Pos.

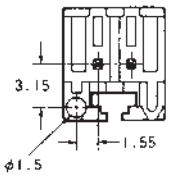
Designs of 5 pos. to 8 pos. header housings are slightly different, please request the drawings.



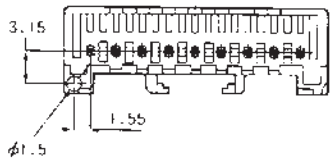


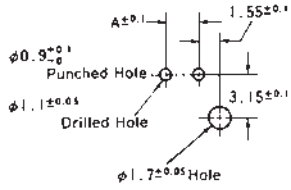


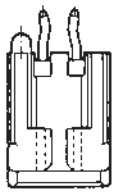


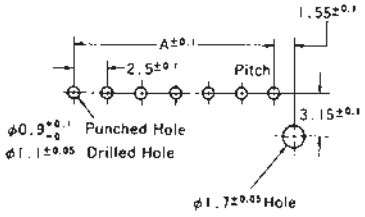


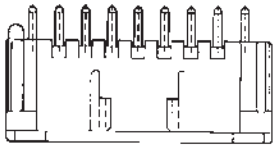
Section X-X











No. of Pos.	Dimensions		Post Header Part Number								(Qty.)
			Loose Piece					Radial Tape-Mounted			
	A	B	Natural	Red	Yellow	Blue	Black	Natural	Red	Yellow	
2	02.5	07.5	□-917780-1*1	□-917780-2*1	——	——	□-917780-9*1	□-917894-1*3	——	——	(900)
3	05.0	10.0	□-917781-1*1	□-917781-2*1	——	——	□-917781-9*1	□-917895-1*4	□-917895-2	——	(900)
4	07.5	12.5	□-917782-1*1	□-917782-2*1	□-917782-4*1	——	□-917782-9*1	□-917896-1	——	——	(450)
5	10.0	15.0	□-917783-1*1	□-917783-2*1	——	□-917783-6	——	□-917897-1	□-917897-2	——	(450)
6	12.5	17.5	□-917784-1*1	□-917784-2*1	——	——	□-917784-9*1	□-917898-1	——	——	(450)
7	15.0	20.0	□-917785-1*1	□-917785-2	□-917785-4*1	——	——	□-917899-1*5	3-917899-2*6	□-917899-4	(450)
8	17.5	22.5	□-917786-1*1	——	——	□-917786-6*	——	□-917900-1	——	——	(450)
9	20.0	25.0	□-917787-1*1	□-917787-2	——	——	——	——	——	——	
10	22.5	27.5	□-917788-1*1	——	——	——	——	——	——	——	
11	25.0	30.0	□-917789-1*1	——	——	——	——	——	——	——	
12	27.5	32.5	□-917790-1*1	□-917790-2	——	——	——	——	——	——	
13	30.0	35.0	□-917791-1*1	□-917791-2	——	——	——	——	——	——	

*1 Leave the □ blank, meaning it is with the boss.
Enter 2 meaning it is without the boss.
*2 Leave the □ blank, meaning it is with the boss and the kink.
Enter 1 meaning it is without the boss and the kink.
Enter 2 meaning it is with the boss and with the kink.
Note: All part numbers are RoHS Compliant.

*3 The blue housing 917894-6 is also available.
*4 The blue housing 917895-6 and the black housing 917895-9 are also available.
*5 Leave the □ blank, meaning it is without the boss. Enter 3 meaning it is with the boss.
*6 It is without the boss.

Note: Dimensions shown are metric.

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2.5 mm Signal Double Lock (2.5 SDL) Connectors (Wire-to-Wire) (Continued)

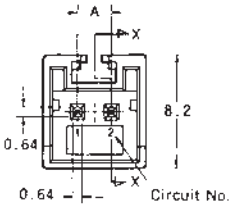
Vertical Post Headers (For PC Board Mount)

High-Profile Type

Material and Finish

Header Housing—UL94V-0, 6/6 Nylon, glass filled, color (see chart)

Post Contact—Pre-tinned copper alloy

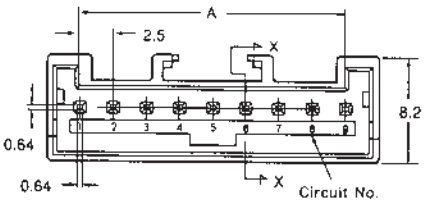


Related Product Data

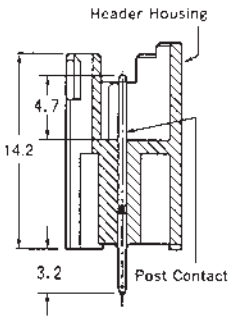
Mating Plug Housings—page 13

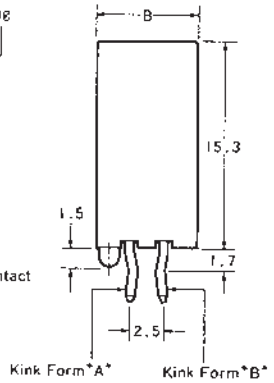
3 to 13 Pos.

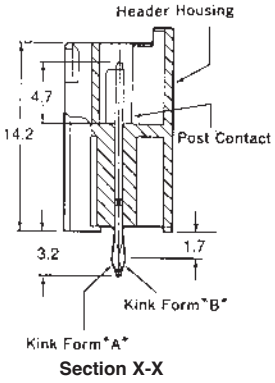
Designs of 5 pos. to 8 pos. header housings are slightly different, please request the drawings.

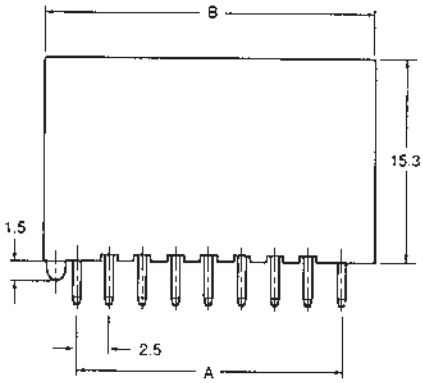


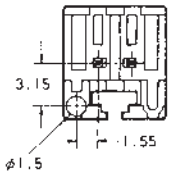
2 Pos.

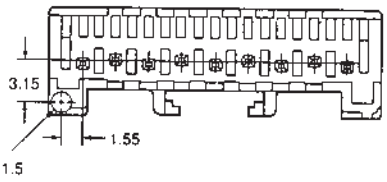


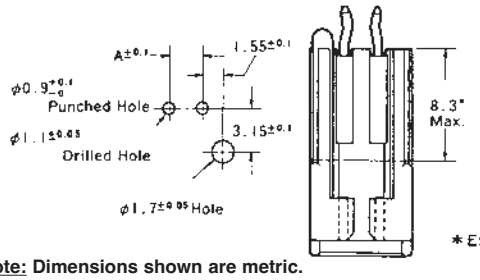


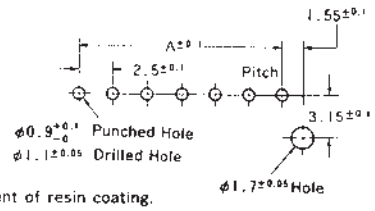


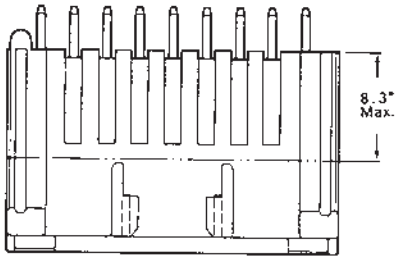












Note: Dimensions shown are metric.

No. of Pos.	Dimensions		Post Header Part Number							(Qty.)
			Loose Piece						Radial Tape-Mounted	
	A	B	Natural	Red	Yellow	Green	Blue	Black	Natural	
2	02.5	07.5	□-917722-1*1	□-917722-2*1	□-917722-4*1	□-917722-5*1	□-917722-6*1	□-917722-9*1	316221-1	(900)*2
3	05.0	10.0	□-917723-1*1	——	——	——	——	——	316222-1	(900)
4	07.5	12.5	□-917724-1*1	——	——	——	——	——	316223-1	(450)
5	10.0	15.0	□-917725-1*1	——	——	——	——	——	316224-1	(450)
6	12.5	17.5	□-917726-1*1	——	□-917726-4*1	——	□-917726-6*1	——	316225-1	(450)
7	15.0	20.0	□-917727-1*1	——	——	——	——	——	316226-1	(450)
8	17.5	22.5	□-917728-1*1	——	——	——	——	——	316227-1	(450)
9	20.0	25.0	□-917729-1*1	——	——	——	——	——	——	
10	22.5	27.5	□-917730-1*1	——	——	——	——	——	——	
11	25.0	30.0	□-917731-1*1	——	——	——	——	——	——	
12	27.5	32.5	□-917732-1*1	——	——	——	——	——	——	
13	30.0	35.0	□-917733-1*1	——	——	——	——	——	——	

*1 Leave the □ blank, meaning it is with the boss. Enter 2 meaning it is without the boss.

*2 The red housing 316221-2 and the yellow housing 316221-4 and the green housing 316221-5 and the blue housing 316221-6 and the black housing 316221-9 are also available.

Note: All part numbers are RoHS Compliant.

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South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Micro MATE-N-LOK 3 mm Connector System

Product Facts

- Wire-to-wire and wire-to-board pin and receptacle connector system
- Contacts are on 3 mm [.118] centerline spacing
- 2-12 contact positions – single row
- 2-24 contact positions – dual row
- Panel mount or free-hanging wire-to-wire configurations
- Dual beam contact design for reliable interconnection
- Contacts accept 24-20 [0.2-0.6] and 30-26 [0.05-0.15] AWG wire with insulation diameter of .060 [1.52] maximum
- Contacts available in strip form or loose piece
- Pcb mount pin header assemblies in both vertical and right-angle styles
- Surface mount or through-hole pcb pin header attachment
- Pcb headers are IR reflow process compatible
- Recognized under the Component Program of Underwriters Laboratories Inc. c UL us to US and Canadian Standards, File No. E28476
- Passed Tests for VDE under Registration Number 40005280/Continuous Surveillance

Performance Characteristics

Voltage Rating—250 vac

Current Rating—5 amp max. on 20 AWG wire

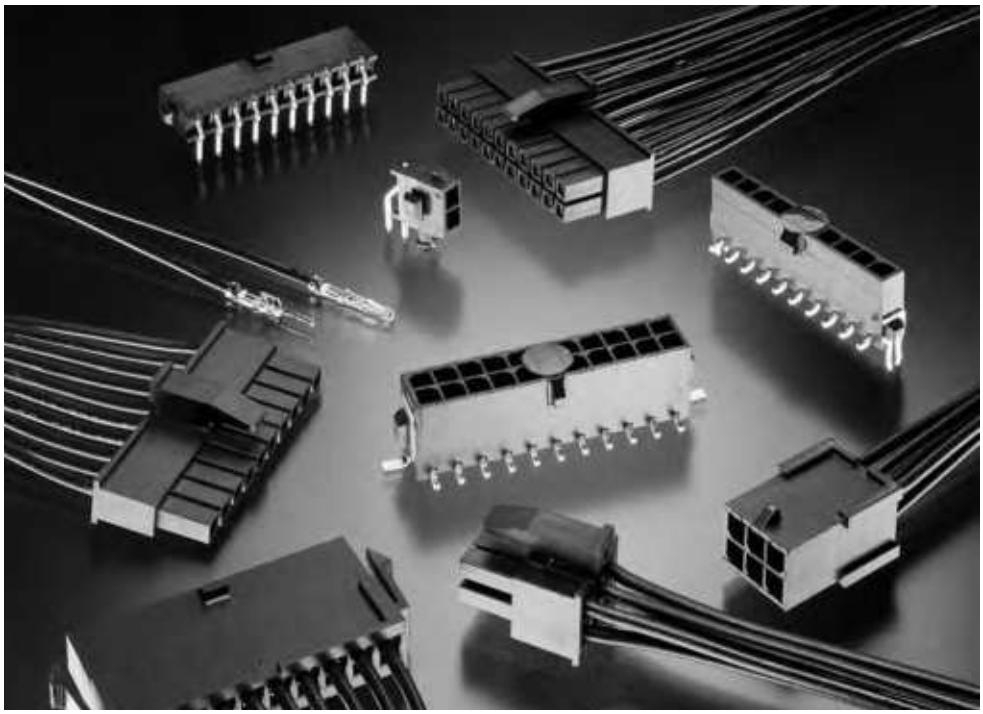
Contact Resistance—20 milliohms max. final

Dielectric Withstanding Voltage—1500 VAC

Insulation Resistance—1000 megohms min.

Operating Temperature— -40°C to +105°C

Mating Force—1.5lb [6.67N] max per contact



The Micro MATE-N-LOK 3 mm Connector System is a wire-to-wire and wire-to-board connector system with contacts on a 3 mm [.118] centerline. Both single-row and dual-row configurations are available. Crimp, snap-in pin and receptacle contacts are used to terminate 24-20 [0.2-0.6] and 30-26 [0.05-0.15] AWG wire. Plug and receptacle housings allow wire-to-wire and wire-to-panel configurations.

Header assemblies for wire-to-board interconnections include vertical and right-angle components. These IR reflow process compatible headers are available in through-hole and surface mount configurations.

Typical uses of the Micro MATE-N-LOK 3 mm Connector System include the appliance, instrumentation, industrial machinery, home equipment, and security system industries.

Technical Documents

Application Specification

114-13000 Micro MATE-N-LOK Connectors

Product Specification

108-1836 3 mm Micro MATE-N-LOK Connector

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Micro MATE-N-LOK 3 mm Connector System (Continued)

Connector Application 19-21
Crimp, Snap-In Contacts 22

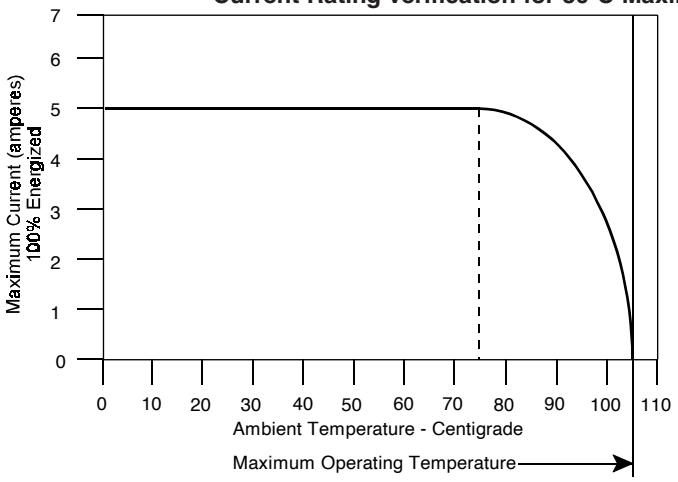
Receptacle Housings
Single Row 23
Dual Row 24

Plug Housings
Single Row, Free-Hanging 25
Single Row, Panel Mount 26
Dual Row, Free-Hanging 27
Dual Row, Panel Mount 28

Vertical Header Assemblies
Low Profile Receptacle Housings,
Right Angle Surface Mount Housings 29
Single Row, Through-Hole, with Retention Feature
on Soldertail and Polarization Feature to PCB 30
Single Row, Through-Hole, with Metal Through-Hole Hold-down 31
Single Row, Surface Mount, with Metal Through-Hole Hold-down 32
Single Row, Surface Mount, with Surface Mount Hold-down 33
Dual Row, Through-Hole, with Retention Feature on Soldertail 34
Dual Row, Through-Hole, with Retention Feature
on Soldertail and Metal Through-Hole Hold-down 35
Dual Row, Surface Mount, with Metal Through-Hole Hold-down 36
Dual Row, Surface Mount, with Surface Mount Hold-down 37

Right-Angle Header Assemblies
Single Row, Through-Hole, with Metal Through-Hole Hold-down 38
Single Row, Through-Hole, with Plastic Boardlock 39
Single Row, Surface Mount, with Metal Through-Hole Hold-down 40
Single Row, Surface Mount, with Surface Mount Hold-down 41
Single Row, Surface Mount, with Plastic Boardlock 42
Dual Row, Through-Hole, with Metal Through-Hole Hold-down 43
Dual Row, Through-Hole, with Plastic Boardlock 44
Dual Row, Surface Mount, with Metal Through-Hole Hold-down 45
Dual Row, Surface Mount, with Plastic Boardlock 46
Dual Row, Surface Mount, with Surface Mount Hold-down 47

Current Rating Verification for 30˚C Maximum Temperature Rise 100% Energized



Number of Circuit Positions	Multiplication Factor Wire Size (AWG)	
	28	20
2 to 6	0.40	1
8 to 20	0.40	0.85
22 to 24	0.36	0.85

To determine acceptable current carrying capacity for connector size and wire gage indicated, use the Multiplication Factor from the chart above and multiply it times the Base rated Current at the maximum ambient operating temperature shown in the current rating figure.

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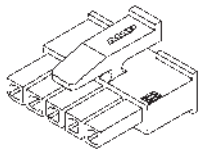
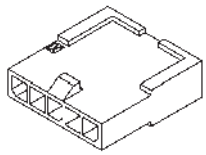
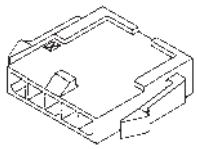
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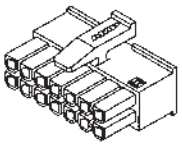
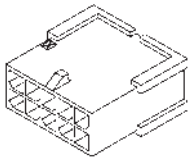
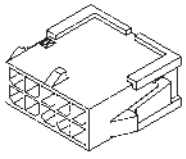
Micro MATE-N-LOK 3 mm Connector System (Continued)

Connector Application — Wire-to-Wire and Wire-to-Panel

Single Row

Receptacle		Plug	
Contact	Housing	Contact	Housing
			 Free-Hanging □-1445049-□ Page 25
□-794606-□, □-794607-□, □-794610-□, □-794611-□ Page 22	□-1445022-□ Page 23	□-794608-□, □-794609-□, □-794612-□, □-794613-□ Page 22	 Panel Mount □-1445048-□ Page 26

Dual Row

Receptacle		Plug	
Contact	Housing	Contact	Housing
			 Free-Hanging □-794616-□ Page 27
□-794606-□, □-794607-□, □-794610-□, □-794611-□ Page 22	□-794617-□ Page 24	□-794608-□, □-794609-□, □-794612-□, □-794613-□ Page 22	 Panel Mount □-794615-□ Page 28

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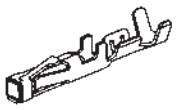
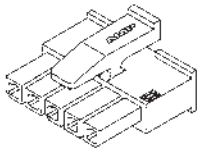
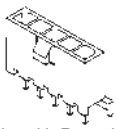
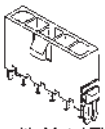
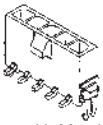
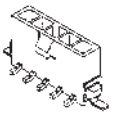
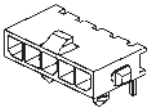
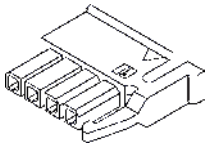
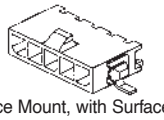
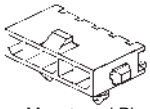
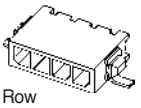
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Micro MATE-N-LOK 3 mm Connector System (Continued)

Connector Application — Wire-to-PCB

	Receptacle		Header
	Contact	Housing	
Single Row			 Vertical Through-Hole, with Retention Feature on Soldertail and Polarization Feature to PCB ☐-1445050-☐, ☐-1445084-☐, ☐-1445093-☐ (Page 30)  Vertical Through-Hole, with Metal Through-Hole Hold-down ☐-1445051-☐, ☐-1445085-☐, ☐-1445094-☐ (Page 31)  Vertical Surface Mount, with Metal Through-Hole Hold-down ☐-1445052-☐, ☐-1445086-☐, ☐-1445095-☐ (Page 32)  Vertical Surface Mount, with Surface Mount Hold-down ☐-1445053-☐, ☐-1445087-☐, ☐-1445096-☐ (Page 33)  Right-angle, Through-Hole, with Metal Through-Hole Hold-down ☐-1445054-☐, ☐-1445088-☐, ☐-1445097-☐ (Page 38)  Right-angle, Through-Hole, with Plastic Boardlock ☐-1445055-☐, ☐-1445089-☐, ☐-1445098-☐ (Page 39)
	☐-794606-☐, ☐-794607-☐, ☐-794610-☐, ☐-794611-☐ (Page 22)	☐-1445022-☐ (Page 23)	
Low Profile, Single Row			 Right-angle, Surface Mount, with Metal Through-Hole Hold-down ☐-1445056-☐, ☐-1445090-☐, ☐-1445099-☐ (Page 40)  Right-angle, Surface Mount, with Surface Mount Hold-down ☐-1445057-☐, ☐-1445091-☐, ☐-1445100-☐ (Page 41)  Right-angle, Surface Mount, and Plastic Boardlock ☐-1445058-☐, ☐-1445092-☐, ☐-1445101-☐ (Page 42)  Low Profile, Single Row ☐-2029030-☐, ☐-2029102-☐ (Page 29)
	☐-794606-☐, ☐-794607-☐, ☐-794610-☐, ☐-794611-☐ (Page 29)	☐-2029047-☐, ☐-2029102-☐, ☐-2029030-☐, ☐-2029104-☐, (Page 29)	

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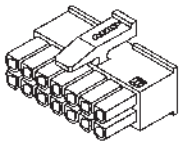
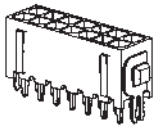
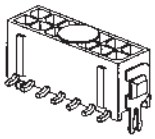
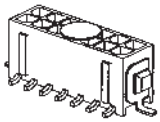
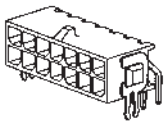
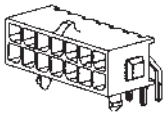
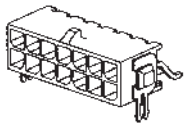
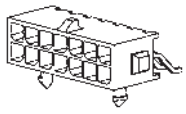
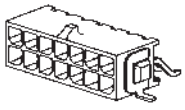
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Micro MATE-N-LOK 3 mm Connector System (Continued)

Connector Application — Wire-to-PCB

Dual Row

Receptacle		Header
Contact	Housing	
		 Vertical Through-Hole, with Retention Feature on Soldertail and Optional Metal Through-Hole Hold-down ☐-794630-☐, ☐-794631-☐, ☐-794632-☐, (Page 34) ☐-794680-☐, ☐-794681-☐, ☐-794682-☐ (Page 35)
		 Vertical Surface Mount, with Metal Through-Hole Hold-down ☐-794633-☐, ☐-794634-☐, ☐-794635-☐ (Page 36)
		 Vertical Surface Mount, with Surface Mount Hold-down ☐-794636-☐, ☐-794637-☐, ☐-794638-☐ (Page 37)
☐-794606-☐, ☐-794607-☐, ☐-794610-☐, ☐-794611-☐ (Page 22}	☐-794617-☐ (Page 24)	 Right-angle, Through-Hole, with Metal Through-Hole Hold-down ☐-794677-☐, ☐-794678-☐, ☐-794679-☐ (Page 43)
		 Right-angle, Through-Hole, with Plastic Boardlock ☐-794618-☐, ☐-794619-☐, ☐-794620-☐ (Page 44)
		 Right-angle, Surface Mount, with Metal Through-Hole Hold-down ☐-794624-☐, ☐-794625-☐, ☐-794626-☐ (Page 45)
		 Right-angle, Surface Mount, with Plastic Boardlock ☐-794621-☐, ☐-794622-☐, ☐-794623-☐ (Page 46)
		 Right-angle, Surface Mount, with Surface Mount Hold-down ☐-794627-☐, ☐-794628-☐, ☐-794629-☐ (Page 47)

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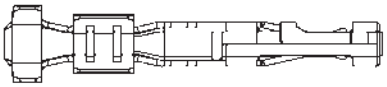
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Micro MATE-N-LOK 3 mm Connector System (Continued)

Crimp, Snap-In Contacts



Material and Finish

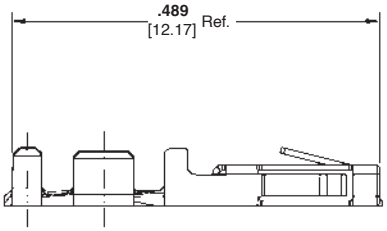
Receptacle — Phosphor Bronze

Plug — Brass

Plating A — .000100 (.000254) minimum bright tin entire stock over .000050 (.000127) minimum nickel entire stock

Plating B — .000015 (.000038) minimum gold in localized gold plate area. .000100 (.000254) minimum bright tin in localized tin plate area, both over .000050 (.000127) minimum nickel on entire stock

Plating C — .000030 (.000076) minimum gold in localized gold plate area. .000100 (.000254) minimum bright tin in localized tin plate area, both over .000050 (.000127) minimum nickel on entire stock



Related Product Data

Connectors used with:

Receptacle Contacts used with Receptacle Housings — pages 23-24

Plug Contacts used with Plug Housings — pages 25-28

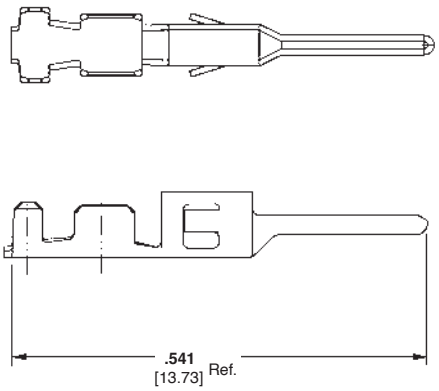
Application Tooling— pages 207-210

Receptacle Contacts

Wire Size Range AWG [mm²]	Ins. Dia. Range	Finish	Contact Part Numbers		Tooling Part Numbers	
			Strip Form	Loose Piece	Applicator	Hand Tool
20-24 0.50 - 0.20	.035 - .060 0.89-1.52	Plating A	794606-1	794610-1	680893-☐*	91501-1
		Plating B	1-794606-1	1-794610-1		
		Plating C	1-794606-2	1-794610-2		
26-30 0.12 - 0.05	.035 - .060 0.89-1.52	Plating A	794607-1	794611-1	680894-☐*	91502-1
		Plating B	1-794607-1	1-794611-1		
		Plating C	1-794607-2	1-794611-2		

*1=AMPOMATOR CLS Machine, 2=AMP-O-LECTRIC Model K Terminator, 3=AMP-O-LECTRIC Model G Terminator

Note: All part numbers are RoHS Compliant.



Plug Contacts

Wire Size Range AWG [mm²]	Ins. Dia. Range	Finish	Contact Part Numbers		Tooling Part Numbers	
			Strip Form	Loose Piece	Applicator	Hand Tool
20-24 0.50 - 0.20	.035 - .060 0.89-1.52	Plating A	1-794608-0	1-794612-0	1385194-☐*	91501-1
		Plating B	1-794608-1	1-794612-1		
		Plating C	1-794608-2	1-794612-2		
26-30 0.12 -0.05	.035 - .060 0.89-1.52	Plating A	1-794609-0	1-794613-0	1385377-☐*	91502-1
		Plating B	1-794609-1	1-794613-1		
		Plating C	1-794609-2	1-794613-2		

*1=AMPOMATOR CLS Machine, 2=AMP-O-LECTRIC Model K Terminator, 3=AMP-O-LECTRIC Model G Terminator

Note: All part numbers are RoHS Compliant.

Contact Extraction Tools

Part Number 843996-6 for Receptacle Contacts Part Number 1586344-1 for Plug Contacts

Catalog 82181
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South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Micro MATE-N-LOK 3 mm Connector System (Continued)

Receptacle Housings

Single Row

Material

Nylon, Black
Flammability Rating—UL 94V-0

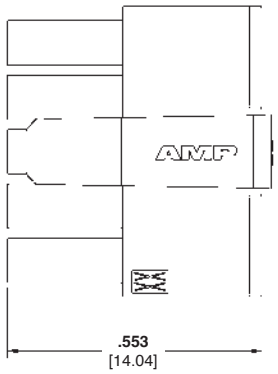
Related Product Data

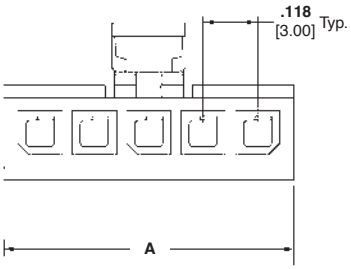
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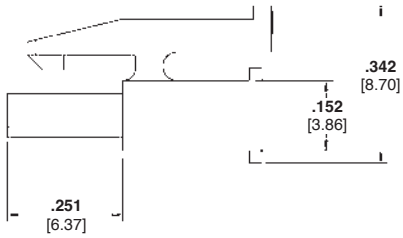
Receptacle Contacts—page 22

Mateable Housings and Headers:

Single Row Plug Housings—pages 25-26
Single Row Vertical Pin Header Assemblies—pages 30-37
Single Row Right-Angle Pin Header Assemblies—pages 38-47







Number of Circuits	Dimension A	Part Numbers
2	**.276** 7.00	1445022-2
3	**.394** 10.00	1445022-3
4	**.512** 13.00	1445022-4
5	**.630** 16.00	1445022-5
6	**.748** 19.00	1445022-6
7	**.866** 22.00	1445022-7
8	**.984** 25.00	1445022-8
9	**1.102** 28.00	1445022-9
10	**1.220** 31.00	1-1445022-0
11	**1.339** 34.00	1-1445022-1
12	**1.457** 37.00	1-1445022-2

Note: **All part numbers are RoHS Compliant.**

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UK: 44-8706-080-208

Micro MATE-N-LOK 3 mm Connector System (Continued)

Receptacle Housings
(Continued)

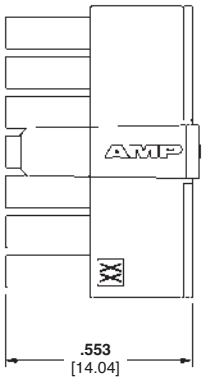
Dual Row

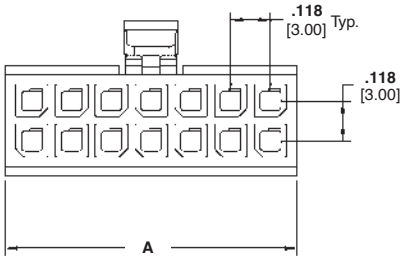
Material
Nylon, Black
Flammability Rating—UL 94V-0

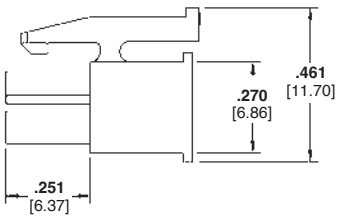
Related Product Data

Contacts:
Receptacle Contacts—page 22

Mateable Housings and Headers:
Dual Row Plug Housings—pages 27-28
Dual Row Vertical Pin Header Assemblies—pages 34-37
Dual Row Right-Angle Pin Header Assemblies—pages 43-47







Number of Circuits	Dimension A	Part Numbers
2	**.157** 4.00	794617-2
4	**.276** 7.00	794617-4
6	**.394** 10.00	794617-6
8	**.512** 13.00	794617-8
10	**.630** 16.00	1-794617-0
12	**.748** 19.00	1-794617-2
14	**.866** 22.00	1-794617-4
16	**.984** 25.00	1-794617-6
18	**1.102** 28.00	1-794617-8
20	**1.220** 31.00	2-794617-0
22	**1.339** 34.00	2-794617-2
24	**1.457** 37.00	2-794617-4

Note: All part numbers are RoHS Compliant.

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Micro MATE-N-LOK 3 mm Connector System (Continued)

Plug Housings

Single Row, Free-Hanging

Material

Nylon, Black
Flammability Rating—UL 94V-0

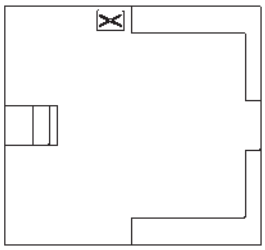
Related Product Data

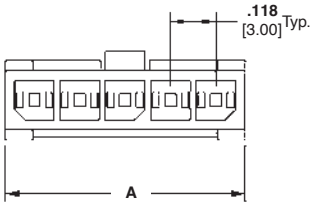
Contacts:

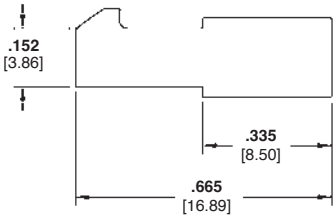
Plug Contacts—page 22

Mateable Housings:

Single Row Receptacle Housings—page 23







Number of Circuits	Dimension A	Part Numbers
2	**.270** 6.85	1445049-2
3	**.388** 9.85	1445049-3
4	**.506** 12.85	1445049-4
5	**.624** 15.85	1445049-5
6	**.742** 18.85	1445049-6
7	**.860** 21.85	1445049-7
8	**.978** 24.85	1445049-8
9	**1.096** 27.85	1445049-9
10	**1.215** 30.85	1-1445049-0
11	**1.333** 33.85	1-1445049-1
12	**1.451** 36.85	1-1445049-2

Note: **All part numbers are RoHS Compliant.**

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Japan: 81-44-844-8013
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Micro MATE-N-LOK 3 mm Connector System (Continued)

Plug Housings (Continued)

Single Row, Panel Mount

Material

Nylon, Black
Flammability Rating—UL 94V-0

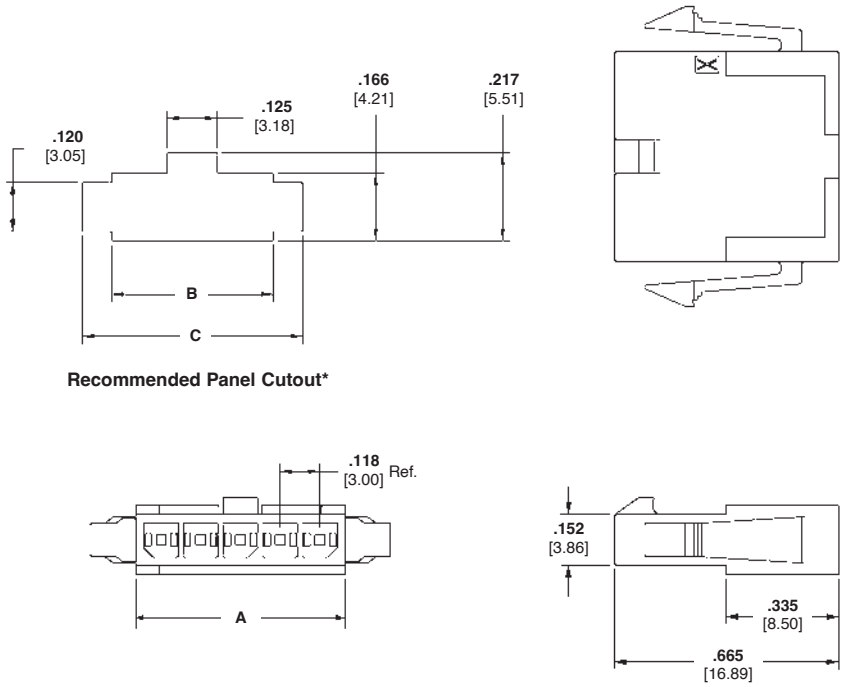
Related Product Data

Contacts:

Plug Contacts—page 22

Mateable Housings:

Single Row Receptacle Housings—page 23



Recommended Panel Cutout*

Number of Circuits	Dimensions A	B	C	Part Numbers
2	**.270** 6.85	**.283** 7.20	**.428** 10.88	1445048-2
3	**.388** 9.85	**.402** 10.20	**.546** 13.88	1445048-3
4	**.506** 12.85	**.520** 13.20	**.665** 16.88	1445048-4
5	**.624** 15.85	**.638** 16.20	**.783** 19.88	1445048-5
6	**.742** 18.85	**.756** 19.20	**.901** 22.88	1445048-6
7	**.860** 21.85	**.874** 22.20	**1.019** 25.88	1445048-7
8	**.978** 24.85	**.992** 25.20	**1.137** 28.88	1445048-8
9	**1.096** 27.85	**1.110** 28.20	**1.255** 31.88	1445048-9
10	**1.215** 30.85	**1.228** 31.20	**1.373** 34.88	1-1445048-0
11	**1.333** 33.85	**1.346** 34.20	**1.491** 37.88	1-1445048-1
12	**1.451** 36.85	**1.465** 37.20	**1.609** 40.88	1-1445048-2

*Recommended panel thickness .062-.091 [1.57-2.30]. Always consult customer drawing for panel cutout dimensions.

Note: All part numbers are RoHS Compliant.

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Micro MATE-N-LOK 3 mm Connector System (Continued)

Plug Housings (Continued)

Dual Row, Free-Hanging

Material

Nylon, Black
Flammability Rating—UL 94V-0

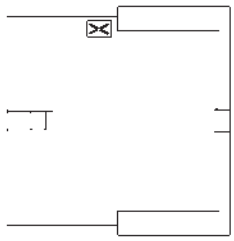
Related Product Data

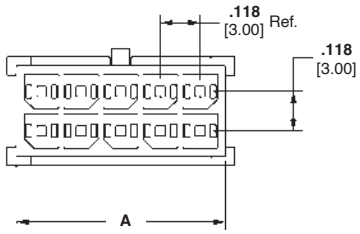
Contacts:

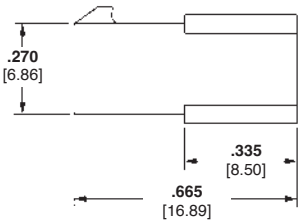
Plug Contacts—page 22

Mateable Housings:

Dual Row Receptacle Housings—page 24







Number of Circuits	Dimension A	Part Numbers
2	**.157** 3.85	794616-2
4	**.276** 6.85	794616-4
6	**.394** 9.85	794616-6
8	**.512** 12.85	794616-8
10	**.630** 15.85	1-794616-0
12	**.748** 18.85	1-794616-2
14	**.866** 21.85	1-794616-4
16	**.984** 24.85	1-794616-6
18	**1.102** 27.85	1-794616-8
20	**1.220** 30.85	2-794616-0
22	**1.339** 33.85	2-794616-2
24	**1.457** 36.85	2-794616-4

Note: All part numbers are RoHS Compliant.

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UK: 44-8706-080-208

Micro MATE-N-LOK 3 mm Connector System (Continued)

Plug Housings (Continued)

Dual Row, Panel Mount

Material

Nylon, Black
Flammability Rating—UL 94V-0

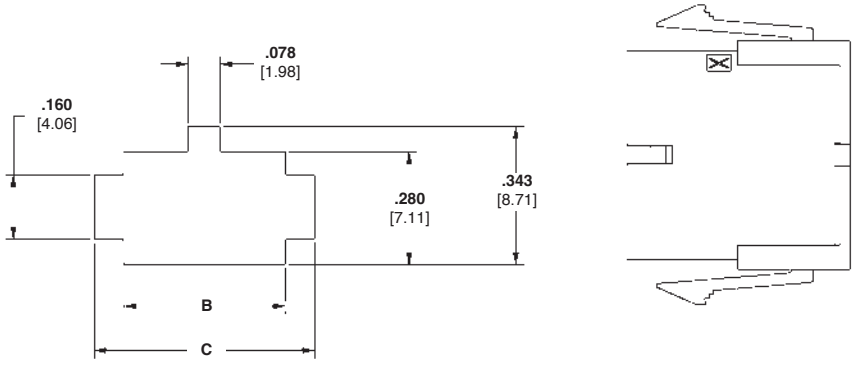
Related Product Data

Contacts:

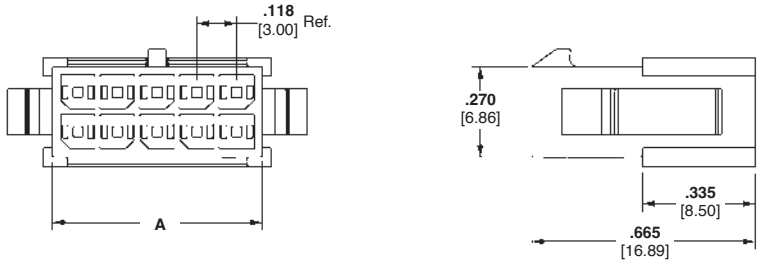
Plug Contacts—page 22

Mateable Housings:

Dual Row Receptacle Housings—page 24



Recommended Panel Cutout*



Number of Circuits	Dimensions A	B	C	Part Numbers
2	**.157** 3.85	**.165** 4.20	**.310** 7.88	794615-2
4	**.276** 6.85	**.285** 7.20	**.428** 10.88	794615-4
6	**.394** 9.85	**.402** 10.20	**.546** 13.88	794615-6
8	**.512** 12.85	**.520** 13.20	**.665** 16.88	794615-8
10	**.630** 15.85	**.638** 16.20	**.783** 19.88	1-794615-0
12	**.748** 18.85	**.756** 19.20	**.901** 22.88	1-794615-2
14	**.866** 21.85	**.874** 22.20	**1.019** 25.88	1-794615-4
16	**.984** 24.85	**.992** 25.20	**1.137** 28.88	1-794615-6
18	**1.102** 27.85	**1.110** 28.20	**1.255** 31.88	1-794615-8
20	**1.220** 30.85	**1.228** 31.20	**1.373** 34.88	2-794615-0
22	**1.339** 33.85	**1.346** 34.20	**1.491** 37.88	2-794615-2
24	**1.457** 36.85	**1.469** 37.20	**1.609** 40.88	2-794615-4

*Recommended panel thickness .062-.091 [1.57-2.30]. Always consult customer drawing for panel cutout dimensions.

Note: All part numbers are RoHS Compliant.

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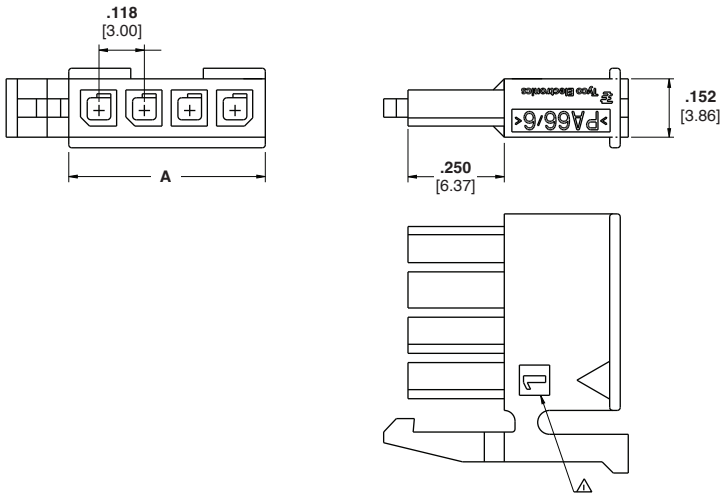
Micro MATE-N-LOK 3 mm Connector System (Continued)

New: Low Profile

Low Profile Receptacle Housings

Material

Nylon, Black
Flammability Rating—V0



Positions	Color	Dimension A	Part Numbers
2	Black	**.276** 7	2029047-2
3	Black	**.394** 10	2029047-3
4	Black	**.512** 13	2029047-4
2	Natural	**.276** 7	2029102-2
3	Natural	**.394** 10	2029102-3
4	Natural	**.512** 13	2029102-4

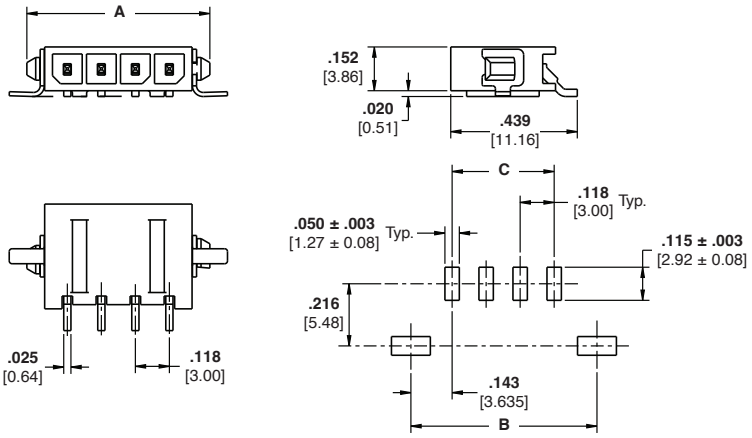
Low Profile Right Angle Surface Mount Housings

Material

Hight Temp Nylon, Black
Flammability Rating—V0

Contacts:

Brass
Plating A — .0001100 (.00254) minimum tin over .000050 [0.00127] minimum nickel



Positions	Color	Dimensions A	Dimensions B	Dimensions C	Part Numbers
2	Black	**.394** 10	**.410** 10.4	**.118** 3	2029030-2
3	Black	**.512** 13	**.528** 13.4	**.263** 6	2029030-3
4	Black	**.630** 16	**.646** 16.4	**.354** 9	2029030-4
2	Natural	**.394** 10	**.410** 10.4	**.118** 3	2029104-2
3	Natural	**.512** 13	**.52** 13.4	**.263** 6	2029104-3
4	Natural	**.630** 16	**.646** 16.4	**.354** 9	2029104-4

Note: Less than 4.7mm in vertical board surface height required!

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Revised 4-08

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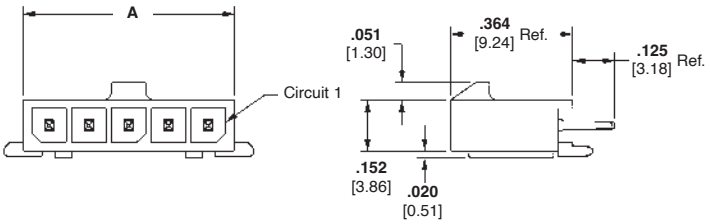
USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

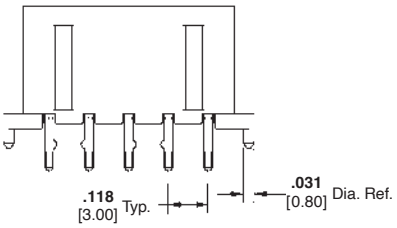
South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

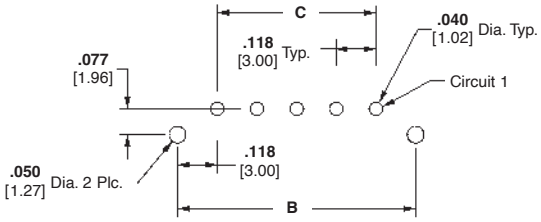
Micro MATE-N-LOK 3 mm Connector System (Continued)

Vertical Header Assemblies

Single Row, Through-Hole, with Retention Feature on Soldertail and Polarization Feature to PCB







Recommended PC Board Layout*

Material and Finish

Housing — High Temperature Nylon, Black

Flammability Rating — UL 94V-0

Contacts — Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Related Product Data

Mateable Housings:

Single Row Receptacle Housings—page 23

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.276** 7.00	**.360** 9.14	**.118** 3.00	2-1445050-2	2-1445084-2	2-1445093-2	1445022-2
3	**.394** 10.00	**.478** 12.14	**.236** 6.00	2-1445050-3	2-1445084-3	2-1445093-3	1445022-3
4	**.512** 13.00	**.596** 15.14	**.354** 9.00	2-1445050-4	2-1445084-4	2-1445093-4	1445022-4
5	**.630** 16.00	**.714** 18.14	**.472** 12.00	2-1445050-5	2-1445084-5	2-1445093-5	1445022-5
6	**.748** 19.00	**.832** 21.14	**.591** 15.00	2-1445050-6	2-1445084-6	2-1445093-6	1445022-6
7	**.866** 22.00	**.950** 24.14	**.709** 18.00	2-1445050-7	2-1445084-7	2-1445093-7	1445022-7
8	**.984** 25.00	**1.069** 27.14	**.827** 21.00	2-1445050-8	2-1445084-8	2-1445093-8	1445022-8
9	**1.102** 28.00	**1.187** 30.14	**.945** 24.00	2-1445050-9	2-1445084-9	3-1445093-9	1445022-9
10	**1.220** 31.00	**1.304** 33.14	**1.063** 27.00	3-1445050-0	3-1445084-0	3-1445093-0	1-1445022-0
11	**1.339** 34.00	**1.423** 36.14	**1.181** 30.00	3-1445050-1	3-1445084-1	3-1445093-1	1-1445022-1
12	**1.457** 37.00	**1.541** 39.14	**1.299** 33.00	3-1445050-2	3-1445084-2	3-1445093-2	1-1445022-2

*Recommended PC Board thickness .062 [1.57]. Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

Catalog 82181
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Micro MATE-N-LOK 3 mm Connector System (Continued)

Vertical Header Assemblies

(Continued)

Single Row, Through-Hole, with Metal Through-Hole Hold-down

Material and Finish

Housing — High Temperature Nylon, Black

Flammability Rating — UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

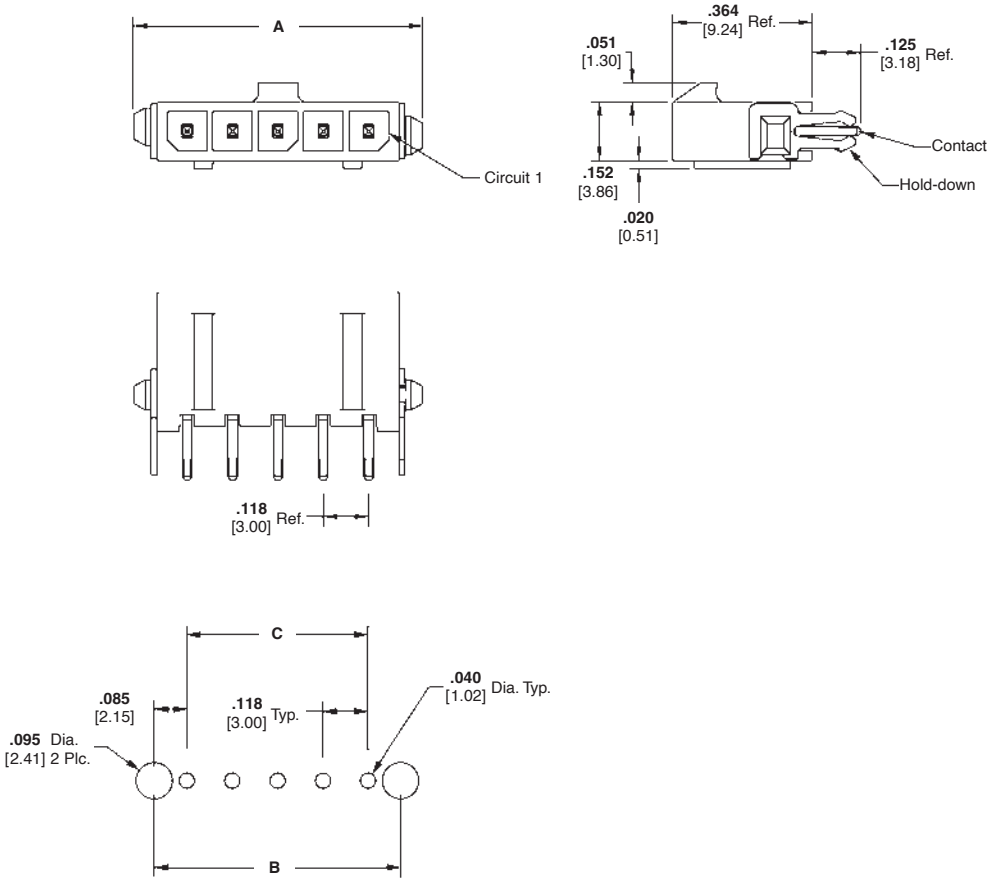
Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Hold-downs—Phosphor Bronze, .000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Related Product Data

Mateable Housings:

Single Row Receptacle Housing—page 23



Recommended PC Board Layout*

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.399** 10.14	**.293** 7.43	**.118** 3.00	2-1445051-2	2-1445085-2	2-1445094-2	1445022-2
3	**.517** 13.14	**.411** 10.43	**.236** 6.00	2-1445051-3	2-1445085-3	2-1445094-3	1445022-3
4	**.635** 16.14	**.529** 13.43	**.354** 9.00	2-1445051-4	2-1445085-4	2-1445094-4	1445022-4
5	**.754** 19.14	**.647** 16.43	**.472** 12.00	2-1445051-5	2-1445085-5	2-1445094-5	1445022-5
6	**.871** 22.14	**.765** 19.43	**.591** 15.00	2-1445051-6	2-1445085-6	2-1445094-6	1445022-6
7	**.990** 25.14	**.883** 22.43	**.709** 18.00	2-1445051-7	2-1445085-7	2-1445094-7	1445022-7
8	**1.108** 28.14	**1.001** 25.43	**.827** 21.00	2-1445051-8	2-1445085-8	2-1445094-8	1445022-8
9	**1.226** 31.14	**1.119** 28.43	**.945** 24.00	2-1445051-9	2-1445085-9	2-1445094-9	1445022-9
10	**1.344** 34.14	**1.237** 31.43	**1.063** 27.00	3-1445051-0	3-1445085-0	3-1445094-0	1-1445022-0
11	**1.462** 37.14	**1.356** 34.43	**1.181** 30.00	3-1445051-1	3-1445085-1	3-1445094-1	1-1445022-1
12	**1.580** 40.14	**1.474** 37.43	**1.299** 33.00	3-1445051-2	3-1445085-2	3-1445094-2	1-1445022-2

*Recommended PC Board thickness .062 [1.57]. Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

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Micro MATE-N-LOK 3 mm Connector System (Continued)

Vertical Header Assemblies
(Continued)

Single Row, Surface Mount, with Metal Through-Hole Hold-down

Material and Finish

Housing — High Temperature Nylon, Black

Flammability Rating — UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

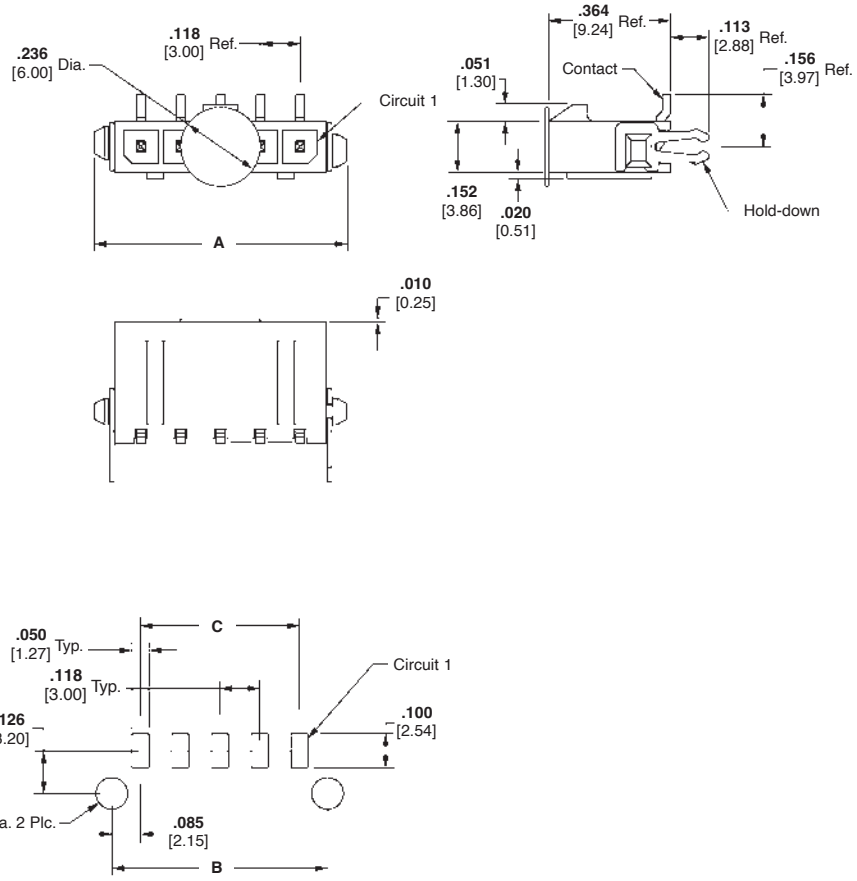
Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Hold-downs—Phosphor Bronze, .000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Related Product Data

Mateable Housings:

Single Row Receptacle Housing—page 23



Recommended PC Board Layout*

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.394** 10.00	**.293** 7.43	**.118** 3.00	2-1445052-2	2-1445086-2	2-1445095-2	1445022-2
3	**.512** 13.00	**.411** 10.43	**.236** 6.00	2-1445052-3	2-1445086-3	2-1445095-3	1445022-3
4	**.630** 16.00	**.529** 13.43	**.354** 9.00	2-1445052-4	2-1445086-4	2-1445095-4	1445022-4
5	**.748** 19.00	**.647** 16.43	**.472** 12.00	2-1445052-5	2-1445086-5	2-1445095-5	1445022-5
6	**.866** 22.00	**.765** 19.43	**.591** 15.00	2-1445052-6	2-1445086-6	2-1445095-6	1445022-6
7	**.984** 25.00	**.883** 22.43	**.709** 18.00	2-1445052-7	2-1445086-7	2-1445095-7	1445022-7
8	**1.102** 28.00	**1.001** 25.43	**.827** 21.00	2-1445052-8	2-1445086-8	2-1445095-8	1445022-8
9	**1.220** 31.00	**1.119** 28.43	**.945** 24.00	2-1445052-9	2-1445086-9	2-1445095-9	1445022-9
10	**1.339** 34.00	**1.237** 31.43	**1.063** 27.00	3-1445052-0	3-1445086-0	3-1445095-0	1-1445022-0
11	**1.457** 37.00	**1.356** 34.43	**1.181** 30.00	3-1445052-1	3-1445086-1	3-1445095-1	1-1445022-1
12	**1.575** 40.00	**1.474** 37.43	**1.299** 33.00	3-1445052-2	3-1445086-2	3-1445095-2	1-1445022-2

*Recommended PC Board thickness .062 [1.57]. Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

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UK: 44-8706-080-208

Micro MATE-N-LOK 3 mm Connector System (Continued)

Vertical Header Assemblies

(Continued)

Single Row, Surface Mount, with Surface Mount Hold-down

Material and Finish

Housing — High Temperature Nylon, Black

Flammability Rating — UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

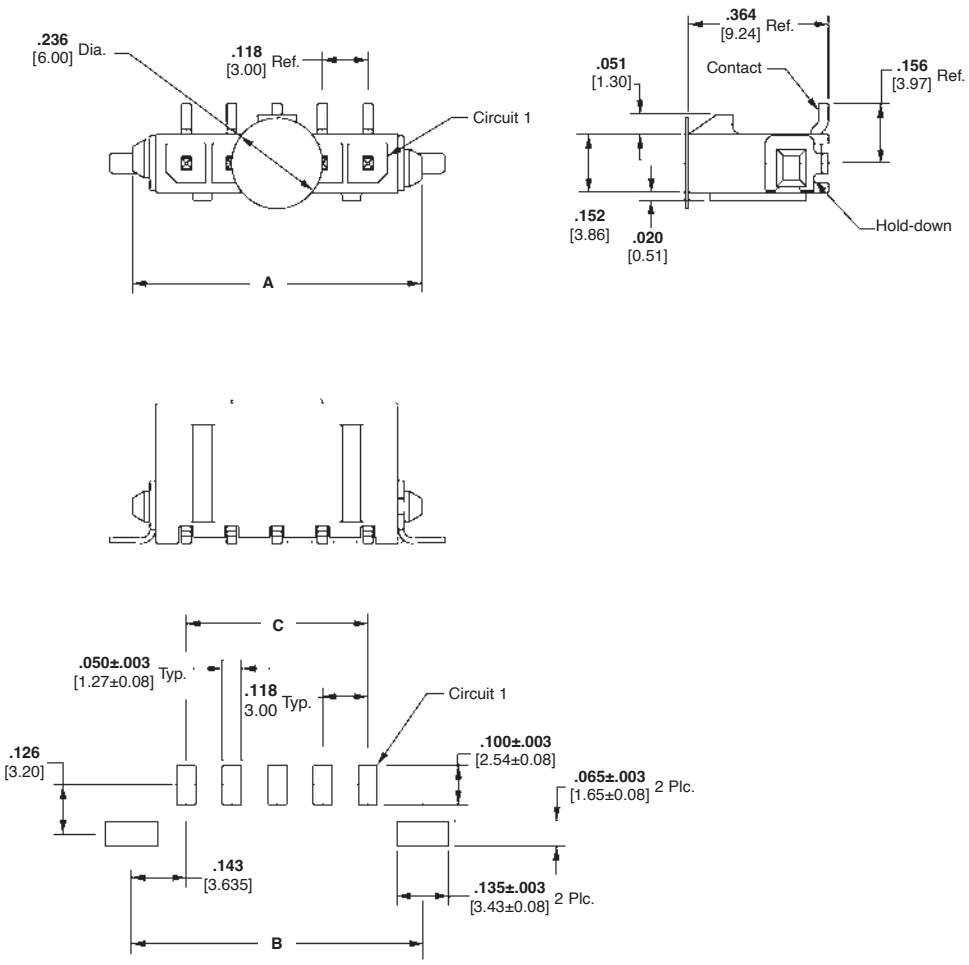
Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Hold-downs—Phosphor Bronze, .000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Related Product Data

Mateable Housings:

Single Row Receptacle Housing—page 23



Recommended PC Board Layout*

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.394** 10.00	**.410** 10.41	**.118** 3.00	2-1445053-2	2-1445087-2	2-1445096-2	1445022-2
3	**.512** 13.00	**.528** 13.41	**.236** 6.00	2-1445053-3	2-1445087-3	2-1445096-3	1445022-3
4	**.630** 16.00	**.646** 16.41	**.354** 9.00	2-1445053-4	2-1445087-4	2-1445096-4	1445022-4
5	**.748** 19.00	**.765** 19.41	**.472** 12.00	2-1445053-5	2-1445087-5	2-1445096-5	1445022-5
6	**.866** 22.00	**.882** 22.41	**.591** 15.00	2-1445053-6	2-1445087-6	2-1445096-6	1445022-6
7	**.984** 25.00	**1.001** 25.41	**.709** 18.00	2-1445053-7	2-1445087-7	2-1445096-7	1445022-7
8	**1.102** 28.00	**1.119** 28.41	**.827** 21.00	2-1445053-8	2-1445087-8	2-1445096-8	1445022-8
9	**1.220** 31.00	**1.237** 31.41	**.945** 24.00	2-1445053-9	2-1445087-9	2-1445096-9	1445022-9
10	**1.339** 34.00	**1.355** 34.41	**1.063** 27.00	3-1445053-0	3-1445087-0	3-1445096-0	1-1445022-0
11	**1.457** 37.00	**1.473** 37.41	**1.181** 30.00	3-1445053-1	3-1445087-1	3-1445096-1	1-1445022-1
12	**1.575** 40.00	**1.591** 40.41	**1.299** 33.00	3-1445053-2	3-1445087-2	3-1445096-2	1-1445022-2

*Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

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UK: 44-8706-080-208

Micro MATE-N-LOK 3 mm Connector System (Continued)

Vertical Header Assemblies

(Continued)

Dual Row, Through-Hole, with Retention Feature on Soldertail

Material and Finish

Housing — High Temperature Nylon, Black

Flammability Rating — UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

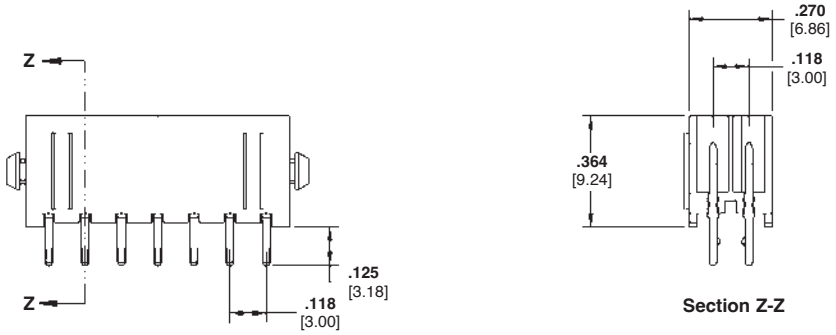
Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

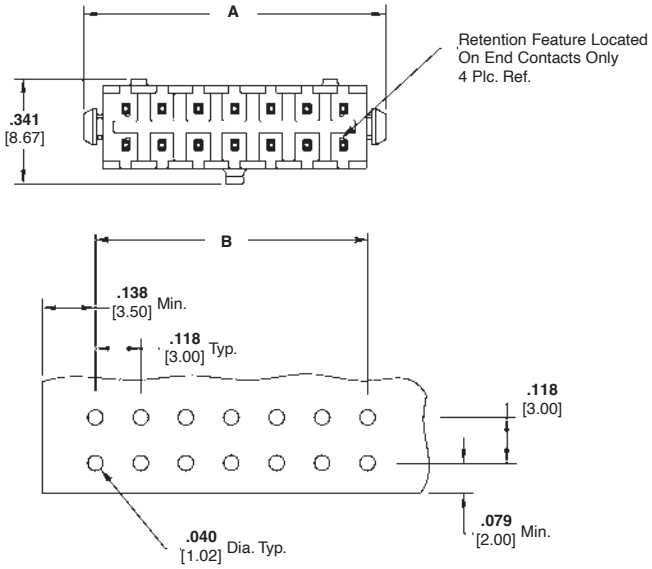
Hold-downs—Phosphor Bronze, .000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Related Product Data

Mateable Housings:

Dual Row Receptacle Housing—page 24





Recommended PC Board Layout*

Number of Circuits	Dimensions		Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	Plating A	Plating B	Plating C	
2	**.276** 7.00	—	3-794630-2	3-794631-2	3-794632-2	794617-2
4	**.394** 10.00	**.118** 3.00	3-794630-4	3-794631-4	3-794632-4	794617-4
6	**.512** 13.00	**.236** 6.00	3-794630-6	3-794631-6	3-794632-6	794617-6
8	**.630** 16.00	**.354** 9.00	3-794630-8	3-794631-8	3-794632-8	794617-8
10	**.748** 19.00	**.472** 12.00	4-794630-0	4-794631-0	4-794632-0	1-794617-0
12	**.866** 22.00	**.591** 15.00	4-794630-2	4-794631-2	4-794632-2	1-794617-2
14	**.984** 25.00	**.709** 18.00	4-794630-4	4-794631-4	4-794632-4	1-794617-4
16	**1.102** 28.00	**.827** 21.00	4-794630-6	4-794631-6	4-794632-6	1-794617-6
18	**1.220** 31.00	**.945** 24.00	4-794630-8	4-794631-8	4-794632-8	1-794617-8
20	**1.339** 34.00	**1.063** 27.00	5-794630-0	5-794631-0	5-794632-0	2-794617-0
22	**1.457** 37.00	**1.181** 30.00	5-794630-2	5-794631-2	5-794632-2	2-794617-2
24	**1.575** 40.00	**1.299** 33.00	5-794630-4	5-794631-4	5-794632-4	2-794617-4

*Recommended PC Board thickness .062 [1.57]. Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

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Micro MATE-N-LOK 3 mm Connector System (Continued)

Vertical Header Assemblies

(Continued)

Dual Row, Through-Hole, with Retention Feature on Soldertail and Metal Through-Hole Hold-down

Material and Finish

Housing—High Temperature Nylon, Black

Flammability Rating—UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

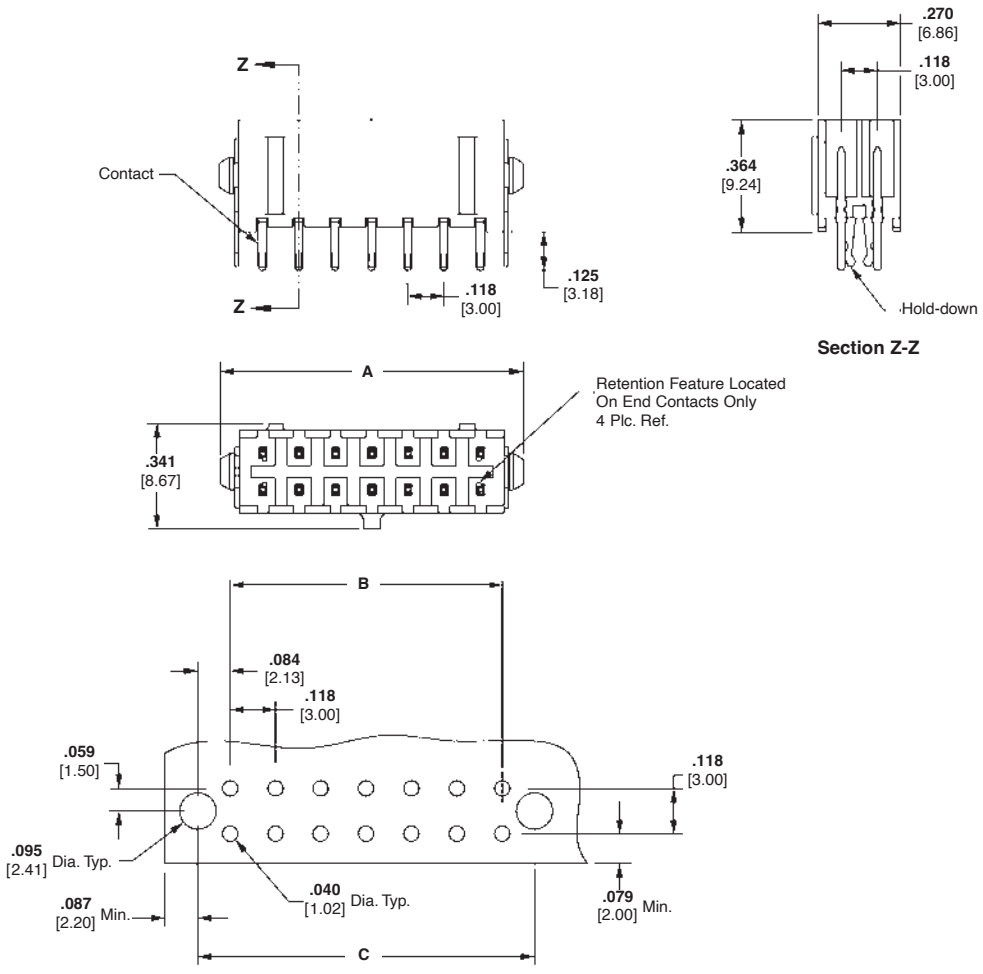
Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Hold-downs—Phosphor Bronze, .000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Related Product Data

Mateable Housings:

Dual Row Receptacle Housing—page 24



Section Z-Z

Recommended PC Board Layout*

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.276** 7.00	—	**.169** 4.30	3-794680-2	3-794681-2	3-794682-2	794617-2
4	**.394** 10.00	**.118** 3.00	**.287** 7.30	3-794680-4	3-794681-4	3-794682-4	794617-4
6	**.512** 13.00	**.236** 6.00	**.406** 10.30	3-794680-6	3-794681-6	3-794682-6	794617-6
8	**.630** 16.00	**.354** 9.00	**.524** 13.30	3-794680-8	3-794681-8	3-794682-8	794617-8
10	**.748** 19.00	**.472** 12.00	**.642** 16.30	4-794680-0	4-794681-0	4-794682-0	1-794617-0
12	**.866** 22.00	**.591** 15.00	**.760** 19.30	4-794680-2	4-794681-2	4-794682-2	1-794617-2
14	**.984** 25.00	**.709** 18.00	**.878** 22.30	4-794680-4	4-794681-4	4-794682-4	1-794617-4
16	**1.102** 28.00	**.827** 21.00	**.996** 25.30	4-794680-6	4-794681-6	4-794682-6	1-794617-6
18	**1.220** 31.00	**.945** 24.00	**1.114** 28.30	4-794680-8	4-794681-8	4-794682-8	1-794617-8
20	**1.339** 34.00	**1.063** 27.00	**1.232** 31.30	5-794680-0	5-794681-0	5-794682-0	2-794617-0
22	**1.457** 37.00	**1.181** 30.00	**1.350** 34.30	5-794680-2	5-794681-2	5-794682-2	2-794617-2
24	**1.575** 40.00	**1.299** 33.00	**1.469** 37.30	5-794680-4	5-794681-4	5-794682-4	2-794617-4

*Recommended PC Board thickness .062 [1.57]. Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

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Micro MATE-N-LOK 3 mm Connector System (Continued)

Vertical Header Assemblies
(Continued)

Dual Row, Surface Mount, with Metal Through-Hole Hold-down

Material and Finish

Housing—High Temperature Nylon, Black

Flammability Rating—UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

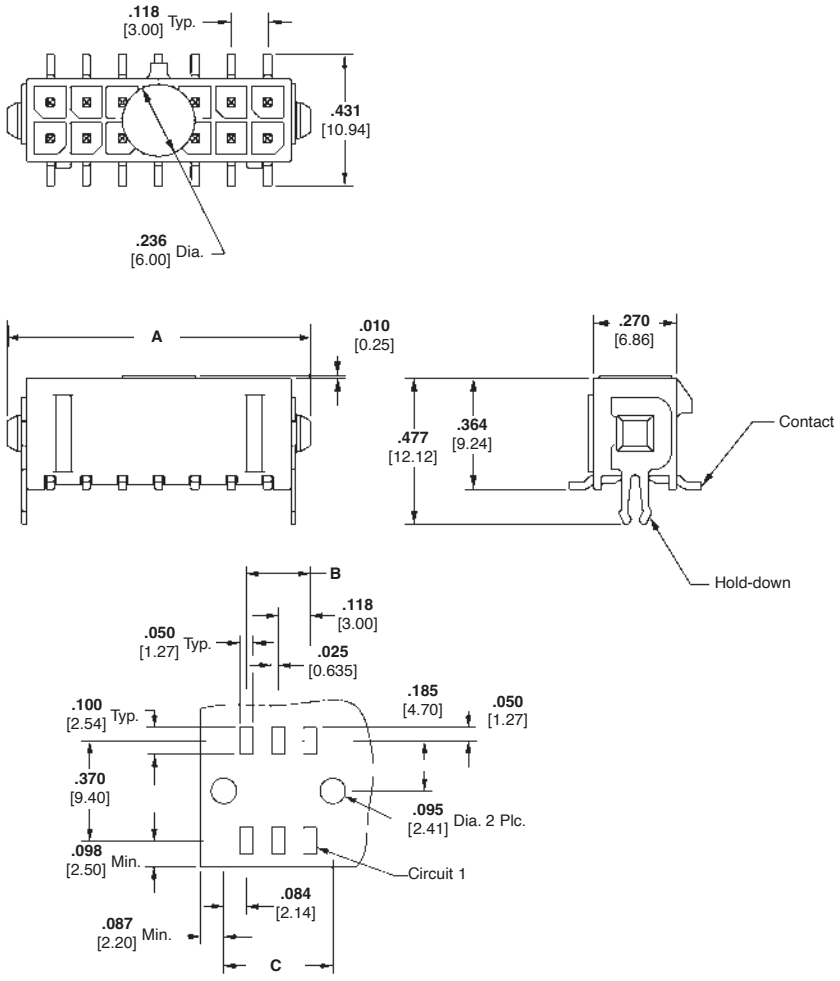
Hold-downs—Phosphor Bronze, .000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Pick-up Button—Kapton

Related Product Data

Mateable Housings:

Dual Row Receptacle Housing—page 24



Recommended PC Board Layout*

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.276** 7.00	—	**.169** 4.30	3-794633-2	3-794634-2	3-794635-2	794617-2
4	**.394** 10.00	**.118** 3.00	**.287** 7.30	3-794633-4	3-794634-4	3-794635-4	794617-4
6	**.512** 13.00	**.236** 6.00	**.406** 10.30	3-794633-6	3-794634-6	3-794635-6	794617-6
8	**.630** 16.00	**.354** 9.00	**.524** 13.30	3-794633-8	3-794634-8	3-794635-8	794617-8
10	**.748** 19.00	**.472** 12.00	**.642** 16.30	4-794633-0	4-794634-0	4-794635-0	1-794617-0
12	**.866** 22.00	**.591** 15.00	**.760** 19.30	4-794633-2	4-794634-2	4-794635-2	1-794617-2
14	**.984** 25.00	**.709** 18.00	**.878** 22.30	4-794633-4	4-794634-4	4-794635-4	1-794617-4
16	**1.10** 28.00	**2.827** 21.00	**.996** 25.30	4-794633-6	4-794634-6	4-794635-6	1-794617-6
18	**1.220** 31.00	**0.945** 24.00	**1.114** 28.30	4-794633-8	4-794634-8	4-794635-8	1-794617-8
20	**1.339** 34.00	**1.063** 27.00	**1.232** 31.30	5-794633-0	5-794634-0	5-794635-0	2-794617-0
22	**1.457** 37.00	**1.181** 30.00	**1.350** 34.30	5-794633-2	5-794634-2	5-794635-2	2-794617-2
24	**1.575** 40.00	**1.299** 33.00	**1.469** 37.30	5-794633-4	5-794634-4	5-794635-4	2-794617-4

*Recommended PC Board thickness .062 [1.57]. Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

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Micro MATE-N-LOK 3 mm Connector System (Continued)

Vertical Header Assemblies

(Continued)

Dual Row, Surface Mount, with Surface Mount Hold-down

Material and Finish

Housing — High Temperature Nylon, Black

Flammability Rating — UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

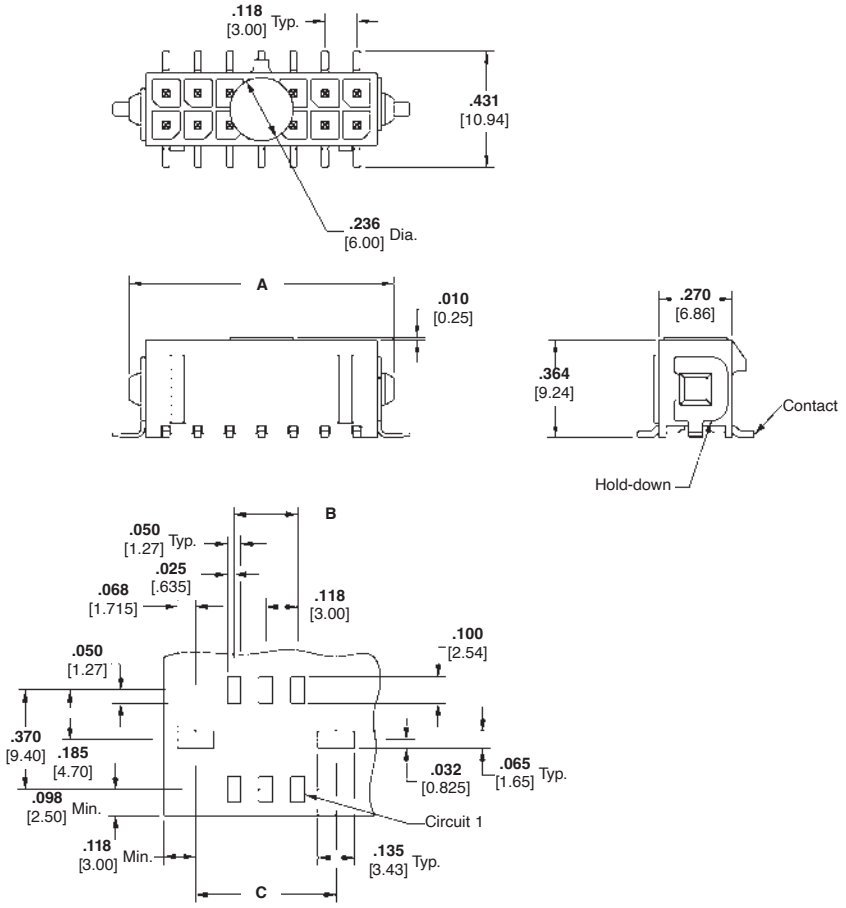
Hold-downs—Phosphor Bronze, .000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Pick-up Button — Kapton

Related Product Data

Mateable Housings:

Dual Row Receptacle Housing—page 24



Recommended PC Board Layout*

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.276** 7.00	—	**.286** 7.27	3-794636-2	3-794637-2	3-794638-2	794617-2
4	**.394** 10.00	**.118** 3.00	**.404** 10.27	3-794636-4	3-794637-4	3-794638-4	794617-4
6	**.512** 13.00	**.236** 6.00	**.522** 13.27	3-794636-6	3-794637-6	3-794638-6	794617-6
8	**.630** 16.00	**.354** 9.00	**.640** 16.27	3-794636-8	3-794637-8	3-794638-8	794617-8
10	**.748** 19.00	**.472** 12.00	**.758** 19.27	4-794636-0	4-794637-0	4-794638-0	1-794617-0
12	**.866** 22.00	**.591** 15.00	**.876** 22.27	4-794636-2	4-794637-2	4-794638-2	1-794617-2
14	**.984** 25.00	**.709** 18.00	**.994** 25.27	4-794636-4	4-794637-4	4-794638-4	1-794617-4
16	**1.102** 28.00	**.827** 21.00	**1.112** 28.27	4-794636-6	4-794637-6	4-794638-6	1-794617-6
18	**1.220** 31.00	**.945** 24.00	**1.230** 31.27	4-794636-8	4-794637-8	4-794638-8	1-794617-8
20	**1.339** 34.00	**1.063** 27.00	**1.349** 34.27	5-794636-0	5-794637-0	5-794638-0	2-794617-0
22	**1.457** 37.00	**1.181** 30.00	**1.467** 37.27	5-794636-2	5-794637-2	5-794638-2	2-794617-2
24	**1.575** 40.00	**1.299** 33.00	**1.585** 40.27	5-794636-4	5-794637-4	5-794638-4	2-794617-4

*Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

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Micro MATE-N-LOK 3 mm Connector System (Continued)

Right-Angle Header Assemblies

Single Row, Through-Hole, with Metal Through-Hole Hold-down

Material and Finish

Housing—High Temperature Nylon, Black

Flammability Rating—UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

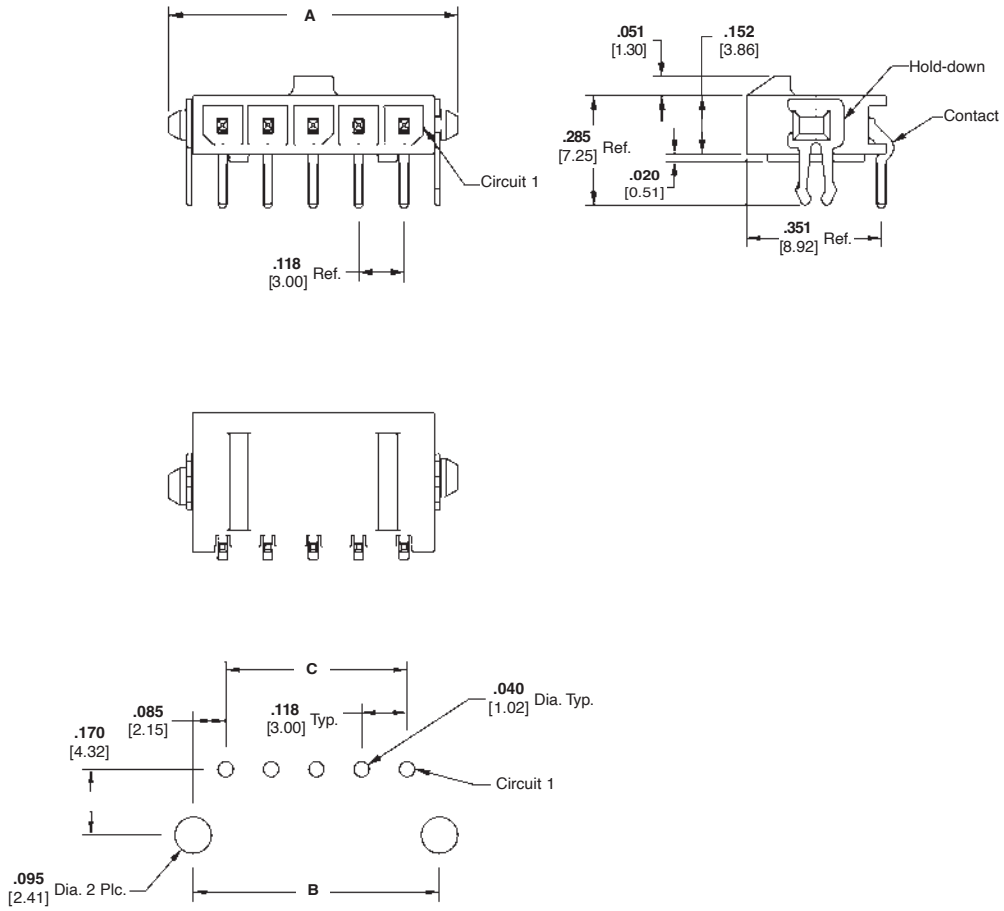
Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Hold-downs—Phosphor Bronze, .000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Related Product Data

Mateable Housings:

Single Row Receptacle Housing—page 23



Recommended PC Board Layout*

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.399** 10.14	**.293** 7.43	**.118** 3.00	2-1445054-2	2-1445088-2	2-1445097-2	1445022-2
3	**.517** 13.14	**.411** 10.43	**.236** 6.00	2-1445054-3	2-1445088-3	2-1445097-3	1445022-3
4	**.635** 16.14	**.529** 13.43	**.354** 9.00	2-1445054-4	2-1445088-4	2-1445097-4	1445022-4
5	**.754** 19.14	**.647** 16.43	**.472** 12.00	2-1445054-5	2-1445088-5	2-1445097-5	1445022-5
6	**.871** 22.14	**.765** 19.43	**.591** 15.00	2-1445054-6	2-1445088-6	2-1445097-6	1445022-6
7	**.990** 25.14	**.883** 22.43	**.709** 18.00	2-1445054-7	2-1445088-7	2-1445097-7	1445022-7
8	**1.108** 28.14	**1.001** 25.43	**.827** 21.00	2-1445054-8	2-1445088-8	2-1445097-8	1445022-8
9	**1.226** 31.14	**1.119** 28.43	**.945** 24.00	2-1445054-9	2-1445088-9	2-1445097-9	1445022-9
10	**1.344** 34.14	**1.237** 31.43	**1.063** 27.00	3-1445054-0	3-1445088-0	3-1445097-0	1-1445022-0
11	**1.462** 37.14	**1.356** 34.43	**1.181** 30.00	3-1445054-1	3-1445088-1	3-1445097-1	1-1445022-1
12	**1.580** 40.14	**1.474** 37.43	**1.299** 33.00	3-1445054-2	3-1445088-2	3-1445097-2	1-1445022-2

*Recommended PC Board thickness .062 [1.57]. Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

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Micro MATE-N-LOK 3 mm Connector System (Continued)

Right-Angle Header Assemblies (Continued)

Single Row, Through-Hole, with Plastic Boardlock

Material and Finish

Housing — High Temperature Nylon, Black

Flammability Rating — UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

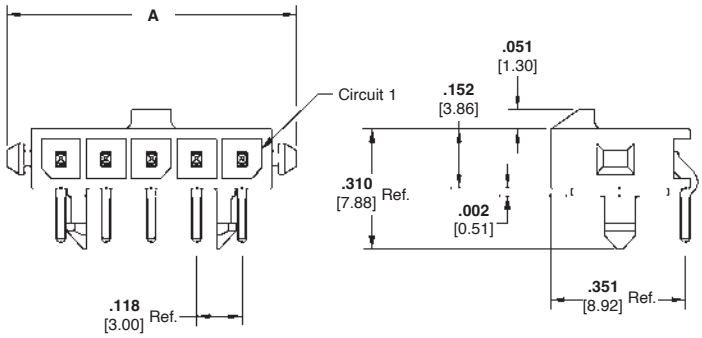
Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

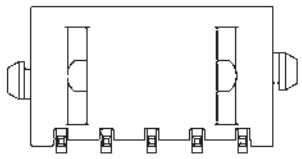
Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

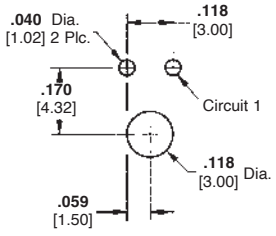
Related Product Data

Mateable Housings:

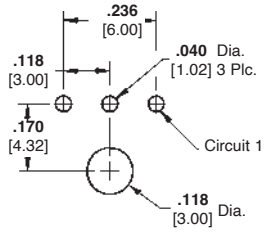
Single Row Receptacle Housing—page 23



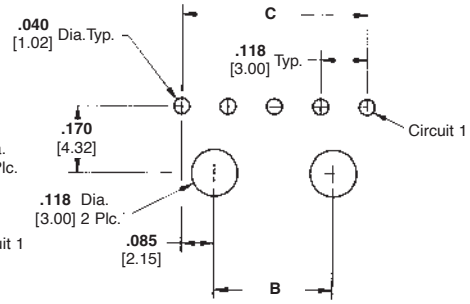




Recommended PC Board Layout
2 Position*



Recommended
PC Board Layout
3 Position*



Recommended PC Board Layout
4-12 Position*

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.399** 10.14	—	—	2-1445055-2	2-1445089-2	2-1445098-2	1445022-2
3	**.517** 13.14	—	—	2-1445055-3	2-1445089-3	2-1445098-3	1445022-3
4	**.635** 16.14	**.185** 4.70	**.354** 9.00	2-1445055-4	2-1445089-4	2-1445098-4	1445022-4
5	**.754** 19.14	**.303** 7.70	**.472** 12.00	2-1445055-5	2-1445089-5	2-1445098-5	1445022-5
6	**.871** 22.14	**.421** 10.70	**.591** 15.00	2-1445055-6	2-1445089-6	2-1445098-6	1445022-6
7	**.990** 25.14	**.539** 13.70	**.709** 18.00	2-1445055-7	2-1445089-7	2-1445098-7	1445022-7
8	**1.108** 28.14	**.657** 16.70	**.827** 21.00	2-1445055-8	2-1445089-8	2-1445098-8	1445022-8
9	**1.226** 31.14	**.775** 19.70	**.945** 24.00	2-1445055-9	2-1445089-9	2-1445098-9	1445022-9
10	**1.344** 34.14	**.894** 22.70	**1.063** 27.00	3-1445055-0	3-1445089-0	3-1445098-0	1-1445022-0
11	**1.462** 37.14	**1.012** 25.70	**1.181** 30.00	3-1445055-1	3-1445089-1	3-1445098-1	1-1445022-1
12	**1.580** 40.14	**1.300** 28.70	**1.299** 33.00	3-1445055-2	3-1445089-2	3-1445098-2	1-1445022-2

*Recommended PC Board thickness .062 [1.57]. Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

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Micro MATE-N-LOK 3 mm Connector System (Continued)

Right-Angle Header Assemblies (Continued)

Single Row, Surface Mount, with Metal Through-Hole Hold-down

Material and Finish

Housing — High Temperature Nylon, Black

Flammability Rating — UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

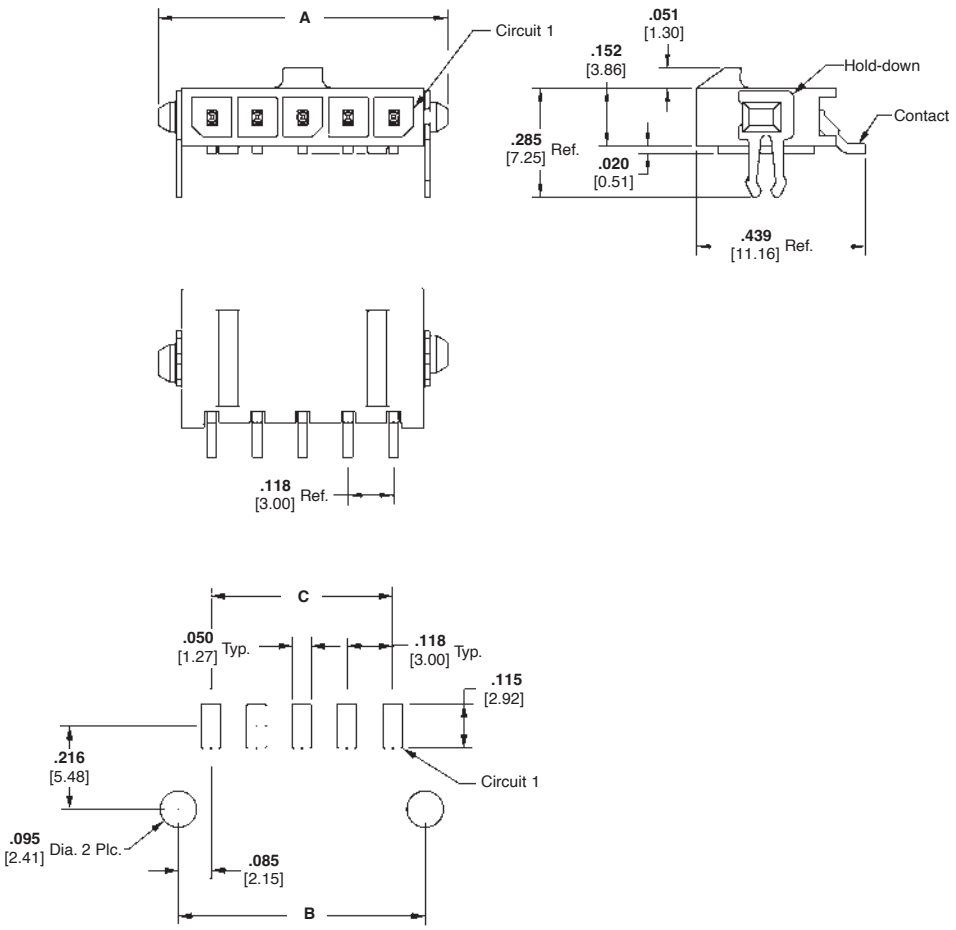
Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Hold-downs—Phosphor Bronze, .000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Related Product Data

Mateable Housings:

Single Row Receptacle Housing—page 23



Recommended PC Board Layout*

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.394** 10.00	**.293** 7.43	**.118** 3.00	2-1445056-2	2-1445090-2	2-1445099-2	1445022-2
3	**.512** 13.00	**.411** 10.43	**.236** 6.00	2-1445056-3	2-1445090-3	2-1445099-3	1445022-3
4	**.630** 16.00	**.529** 13.43	**.354** 9.00	2-1445056-4	2-1445090-4	2-1445099-4	1445022-4
5	**.748** 19.00	**.647** 16.43	**.472** 12.00	2-1445056-5	2-1445090-5	2-1445099-5	1445022-5
6	**.866** 22.00	**.765** 19.43	**.591** 15.00	2-1445056-6	2-1445090-6	2-1445099-6	1445022-6
7	**.984** 25.00	**.883** 22.43	**.709** 18.00	2-1445056-7	2-1445090-7	2-1445099-7	1445022-7
8	**1.102** 28.00	**1.001** 25.43	**.827** 21.00	2-1445056-8	2-1445090-8	2-1445099-8	1445022-8
9	**1.220** 31.00	**1.119** 28.43	**0.945** 24.00	2-1445056-9	2-1445090-9	2-1445099-9	1445022-9
10	**1.339** 34.00	**1.237** 31.43	**1.063** 27.00	3-1445056-0	3-1445090-0	3-1445099-0	1-1445022-0
11	**1.457** 37.00	**1.356** 34.43	**1.181** 30.00	3-1445056-1	3-1445090-1	3-1445099-1	1-1445022-1
12	**1.575** 40.00	**1.474** 37.43	**1.299** 33.00	3-1445056-2	3-1445090-2	3-1445099-2	1-1445022-2

*Recommended PC Board thickness .062 [1.57]. Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

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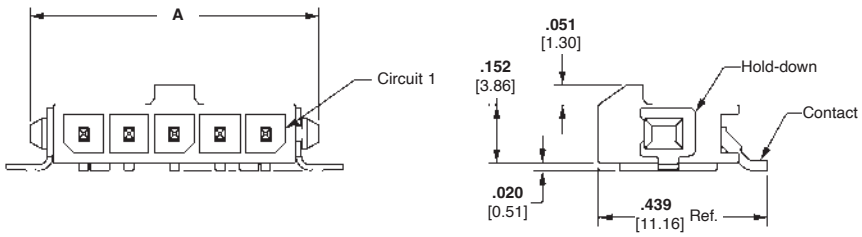
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Micro MATE-N-LOK 3 mm Connector System (Continued)

Right-Angle Header Assemblies (Continued)

Single Row, Surface Mount, with Surface Mount Hold-down



Material and Finish

Housing — High Temperature Nylon, Black

Flammability Rating — UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

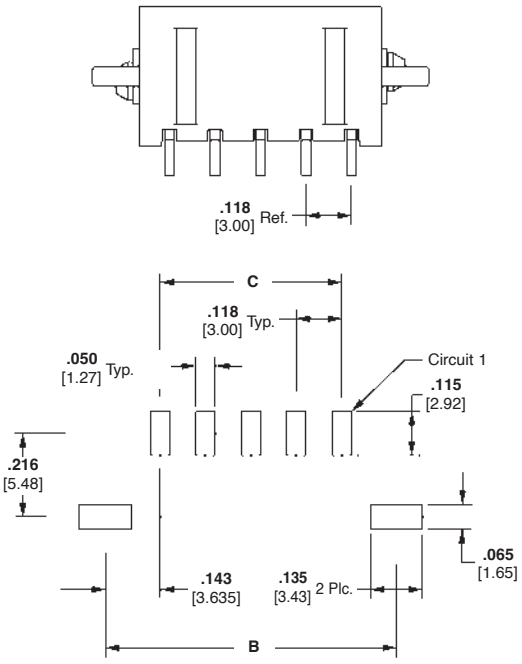
Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Hold-downs—Phosphor Bronze, .000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Related Product Data

Mateable Housings:

Single Row Receptacle Housing—
page 23



Recommended PC Board Layout*

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.394** 10.00	**.410** 10.41	**.118** 3.00	2-1445057-2	2-1445091-2	2-1445100-2	1445022-2
3	**.512** 13.00	**.528** 13.41	**.236** 6.00	2-1445057-3	2-1445091-3	2-1445100-3	1445022-3
4	**.630** 16.00	**.646** 16.41	**.354** 9.00	2-1445057-4	2-1445091-4	2-1445100-4	1445022-4
5	**.748** 19.00	**.764** 19.41	**.472** 12.00	2-1445057-5	2-1445091-5	2-1445100-5	1445022-5
6	**.866** 22.00	**.882** 22.41	**.591** 15.00	2-1445057-6	2-1445091-6	2-1445100-6	1445022-6
7	**.984** 25.00	**1.000** 25.41	**.709** 18.00	2-1445057-7	2-1445091-7	2-1445100-7	1445022-7
8	**1.102** 28.00	**1.119** 28.41	**.827** 21.00	2-1445057-8	2-1445091-8	2-1445100-8	1445022-8
9	**1.220** 31.00	**1.237** 31.41	**.945** 24.00	2-1445057-9	2-1445091-9	2-1445100-9	1445022-9
10	**1.339** 34.00	**1.355** 34.41	**1.063** 27.00	3-1445057-0	3-1445091-0	3-1445100-0	1-1445022-0
11	**1.457** 37.00	**1.472** 37.41	**1.181** 30.00	3-1445057-1	3-1445091-1	3-1445100-1	1-1445022-1
12	**1.575** 40.00	**1.591** 40.41	**1.299** 33.00	3-1445057-2	3-1445091-2	3-1445100-2	1-1445022-2

*Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

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Micro MATE-N-LOK 3 mm Connector System (Continued)

Right-Angle Header Assemblies (Continued)

Single Row, Surface Mount, with Plastic Boardlock

Material and Finish

Housing — High Temperature Nylon, Black

Flammability Rating — UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

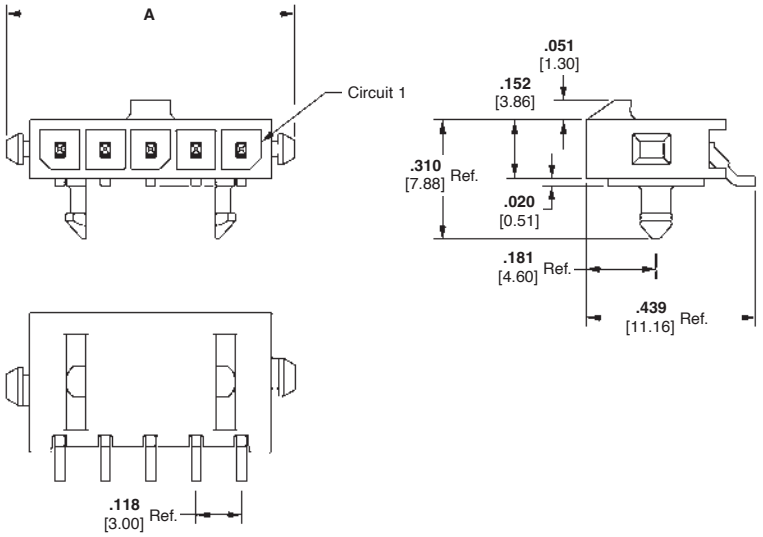
Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

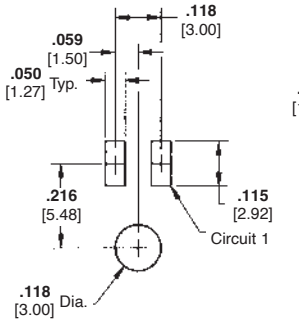
Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Related Product Data

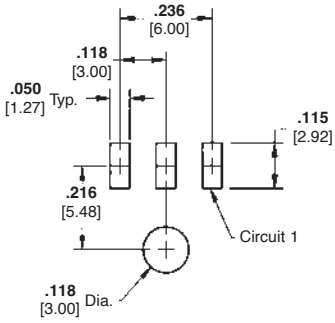
Mateable Housings:

Single Row Receptacle Housing—page 23

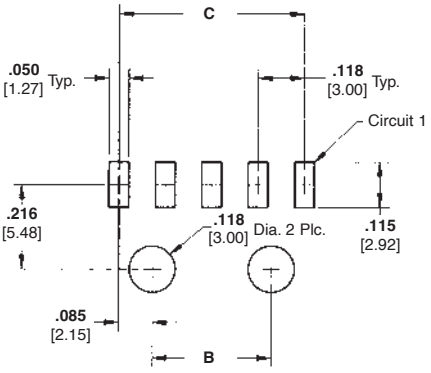




Recommended PC Board Layout * 2 Position



Recommended PC Board Layout * 3 Position



Recommended PC Board Layout* 4-12 Positions

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.394** 10.00	—	—	2-1445058-2	2-1445092-2	2-1445101-2	1445022-2
3	**.512** 13.00	—	—	2-1445058-3	2-1445092-3	2-1445101-3	1445022-3
4	**.630** 16.00	**.185** 4.70	**.354** 9.00	2-1445058-4	2-1445092-4	2-1445101-4	1445022-4
5	**.748** 19.00	**.303** 7.70	**.472** 12.00	2-1445058-5	2-1445092-5	2-1445101-5	1445022-5
6	**.866** 22.00	**.421** 10.70	**.591** 15.00	2-1445058-6	2-1445092-6	2-1445101-6	1445022-6
7	**.984** 25.00	**.539** 13.70	**.709** 18.00	2-1445058-7	2-1445092-7	2-1445101-7	1445022-7
8	**1.102** 28.00	**.657** 16.70	**.827** 21.00	2-1445058-8	2-1445092-8	2-1445101-8	1445022-8
9	**1.220** 31.00	**.776** 19.70	**.945** 24.00	2-1445058-9	2-1445092-9	2-1445101-9	1445022-9
10	**1.339** 34.00	**.894** 22.70	**1.063** 27.00	3-1445058-0	3-1445092-0	3-1445101-0	1-1445022-0
11	**1.457** 37.00	**1.012** 25.70	**1.181** 30.00	3-1445058-1	3-1445092-1	3-1445101-1	1-1445022-1
12	**1.575** 40.00	**1.130** 28.70	**1.299** 33.00	3-1445058-2	3-1445092-2	3-1445101-2	1-1445022-2

*Recommended PC Board thickness .062 [1.57]. Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

Catalog 82181
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Micro MATE-N-LOK 3 mm Connector System (Continued)

Right-Angle Header Assemblies (Continued)

Dual Row, Through-Hole, with Metal Through-Hole Hold-down

Material and Finish

Housing — High Temperature Nylon, Black

Flammability Rating — UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

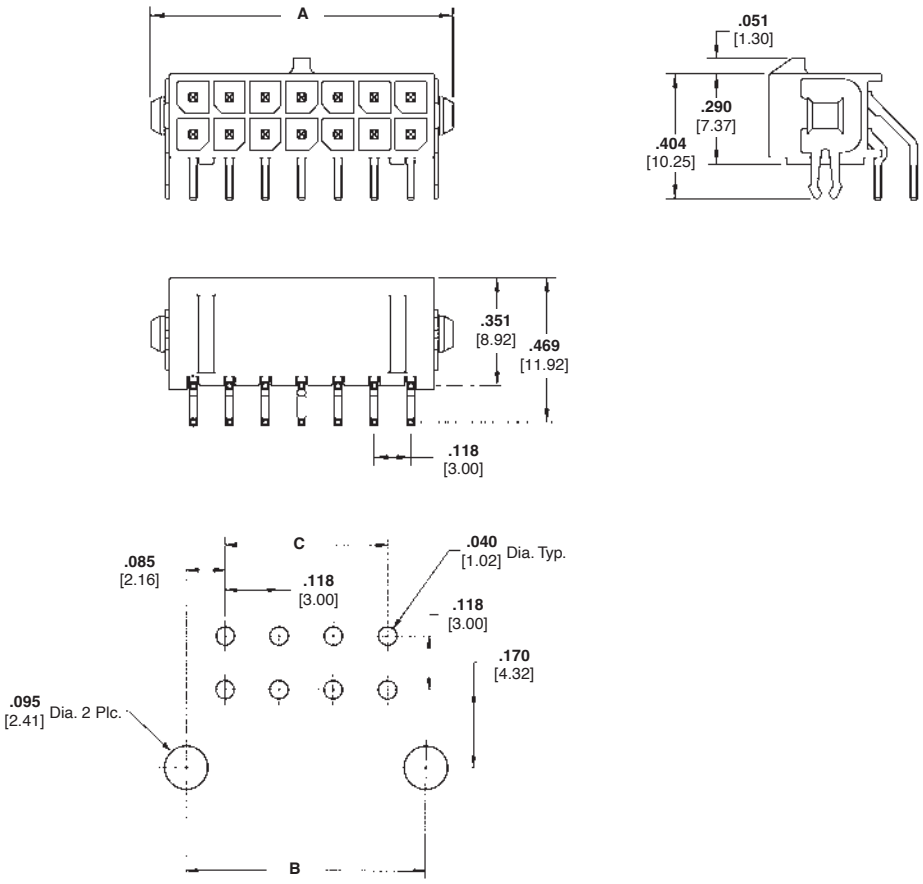
Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Hold-downs—Phosphor Bronze, .000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Related Product Data

Mateable Housings:

Dual Row Receptacle Housing—page 24



Recommended PC Board Layout*

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.276** 7.00	**.169** 4.30	—	3-794677-2	3-794678-2	3-794679-2	794617-2
4	**.394** 10.00	**.287** 7.30	**.118** 3.00	3-794677-4	3-794678-4	3-794679-4	794617-4
6	**.512** 13.00	**.406** 10.30	**.236** 6.00	3-794677-6	3-794678-6	3-794679-6	794617-6
8	**.630** 16.00	**.524** 13.30	**.354** 9.00	3-794677-8	3-794678-8	3-794679-8	794617-8
10	**.748** 19.00	**.642** 16.30	**.472** 12.00	4-794677-0	4-794678-0	4-794679-0	1-794617-0
12	**.866** 22.00	**.760** 19.30	**.591** 15.00	4-794677-2	4-794678-2	4-794679-2	1-794617-2
14	**.984** 25.00	**.878** 22.30	**.709** 18.00	4-794677-4	4-794678-4	4-794679-4	1-794617-4
16	**1.102** 28.00	**.996** 25.30	**.827** 21.00	4-794677-6	4-794678-6	4-794679-6	1-794617-6
18	**1.220** 31.00	**1.114** 28.30	**.945** 24.00	4-794677-8	4-794678-8	4-794679-8	1-794617-8
20	**1.339** 34.00	**1.232** 31.30	**1.063** 27.00	5-794677-0	5-794678-0	5-794679-0	2-794617-0
22	**1.457** 37.00	**1.350** 34.30	**1.181** 30.00	5-794677-2	5-794678-2	5-794679-2	2-794617-2
24	**1.575** 40.00	**1.469** 37.30	**1.299** 33.00	5-794677-4	5-794678-4	5-794679-4	2-794617-4

*Recommended PC Board thickness .062 [1.57]. Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

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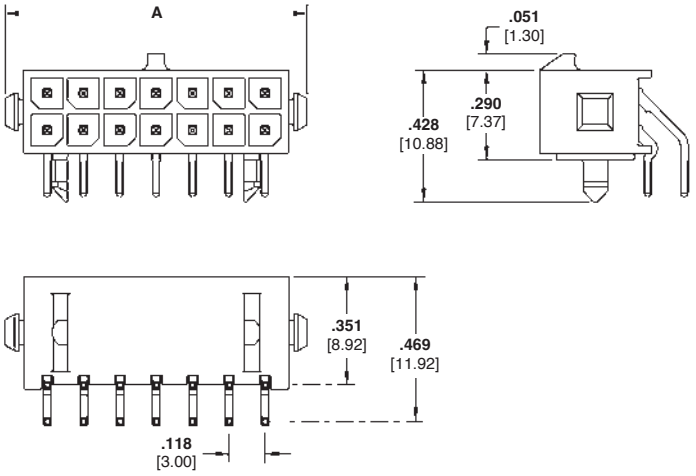
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Micro MATE-N-LOK 3 mm Connector System (Continued)

Right-Angle Header Assemblies (Continued)

Dual Row, Through-Hole, with Plastic Boardlock



Material and Finish

Housing — High Temperature Nylon, Black

Flammability Rating — UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

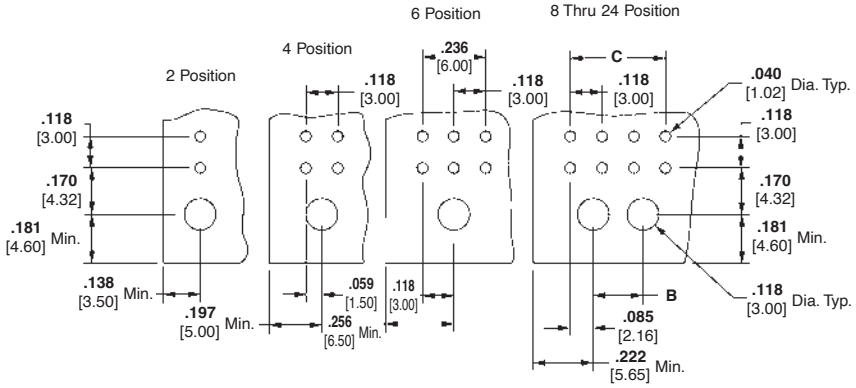
Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Related Product Data

Mateable Housings:

Dual Row Receptacle Housing—page 24



Recommended PC Board Layout*

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.276** 7.00	—	—	3-794618-2	3-794619-2	3-794620-2	794617-2
4	**.394** 10.00	—	**.118** 3.00	3-794618-4	3-794619-4	3-794620-4	794617-4
6	**.512** 13.00	—	**.236** 6.00	3-794618-6	3-794619-6	3-794620-6	794617-6
8	**.630** 16.00	**.185** 4.70	**.354** 9.00	3-794618-8	3-794619-8	3-794620-8	794617-8
10	**.748** 19.00	**.303** 7.70	**.472** 12.00	4-794618-0	4-794619-0	4-794620-0	1-794617-0
12	**.866** 22.00	**.421** 10.70	**.591** 15.00	4-794618-2	4-794619-2	4-794620-2	1-794617-2
14	**.984** 25.00	**.539** 13.70	**.709** 18.00	4-794618-4	4-794619-4	4-794620-4	1-794617-4
16	**1.102** 28.00	**.657** 16.70	**.827** 21.00	4-794618-6	4-794619-6	4-794620-6	1-794617-6
18	**1.220** 31.00	**.776** 19.70	**.945** 24.00	4-794618-8	4-794619-8	4-794620-8	1-794617-8
20	**1.339** 34.00	**.894** 22.70	**1.063** 27.00	5-794618-0	5-794619-0	5-794620-0	2-794617-0
22	**1.457** 37.00	**1.012** 25.70	**1.181** 30.00	5-794618-2	5-794619-2	5-794620-2	2-794617-2
24	**1.575** 40.00	**1.130** 28.70	**1.299** 33.00	5-794618-4	5-794619-4	5-794620-4	2-794617-4

*Recommended PC Board thickness .062 [1.57]. Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

Catalog 82181
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Micro MATE-N-LOK 3 mm Connector System (Continued)

Right-Angle Header Assemblies (Continued)

Dual Row, Surface Mount, with Metal Through-Hole Hold-down

Material and Finish

Housing — High Temperature Nylon, Black

Flammability Rating — UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Plating B—.000015 [0.00038] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

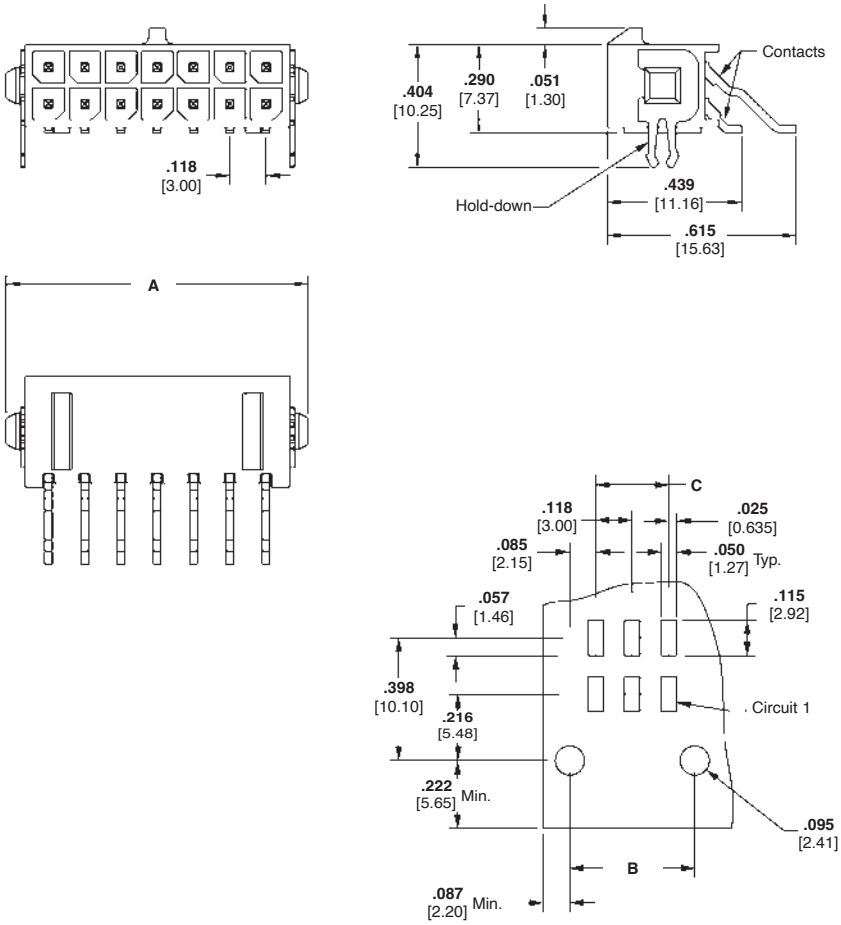
Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Hold-downs—Phosphor Bronze, .000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

Related Product Data

Mateable Housings:

Dual Row Receptacle Housing—page 24



Recommended PC Board Layout*

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.276** 7.00	**.169** 4.30	—	3-794624-2	3-794625-2	3-794626-2	794617-2
4	**.394** 10.00	**.287** 7.30	**.118** 3.00	3-794624-4	3-794625-4	3-794626-4	794617-4
6	**.512** 13.00	**.406** 10.30	**.236** 6.00	3-794624-6	3-794625-6	3-794626-6	794617-6
8	**.630** 16.00	**.524** 13.30	**.354** 9.00	3-794624-8	3-794625-8	3-794626-8	794617-8
10	**.748** 19.00	**.642** 16.30	**.472** 12.00	4-794624-0	4-794625-0	4-794626-0	1-794617-0
12	**.866** 22.00	**.760** 19.30	**.591** 15.00	4-794624-2	4-794625-2	4-794626-2	1-794617-2
14	**.984** 25.00	**.878** 22.30	**.709** 18.00	4-794624-4	4-794625-4	4-794626-4	1-794617-4
16	**1.102** 28.00	**.996** 25.30	**.827** 21.00	4-794624-6	4-794625-6	4-794626-6	1-794617-6
18	**1.220** 31.00	**1.114** 28.30	**.945** 24.00	4-794624-8	4-794625-8	4-794626-8	1-794617-8
20	**1.339** 34.00	**1.232** 31.30	**1.063** 27.00	5-794624-0	5-794625-0	5-794626-0	2-794617-0
22	**1.457** 37.00	**1.350** 34.30	**1.181** 30.00	5-794624-2	5-794625-2	5-794626-2	2-794617-2
24	**1.575** 40.00	**1.469** 37.30	**1.299** 33.00	5-794624-4	5-794625-4	5-794626-4	2-794617-4

*Recommended PC Board thickness .062 [1.57]. Always consult customer drawing for PC Board layout dimensions.

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Micro MATE-N-LOK 3 mm Connector System (Continued)

Right-Angle Header Assemblies (Continued)

Dual Row, Surface Mount, with Plastic Boardlock

Material and Finish

Housing — High Temperature Nylon, Black

Flammability Rating — UL 94V-0

Contacts—Brass

Plating A—.000100 [0.00254] min. tin over .000050 [0.00127] min. nickel

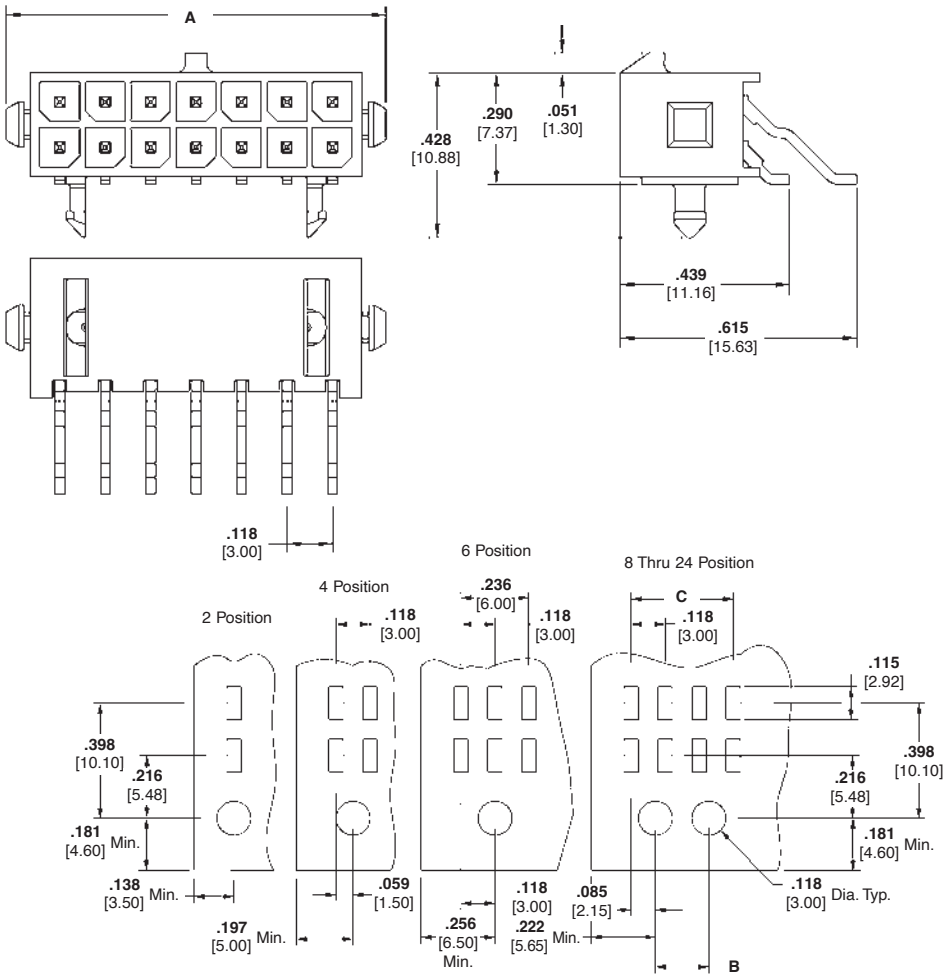
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Plating C—.000030 [0.00076] gold in mating area, .000100 [0.00254] min. tin in solder area, with entire contact underplated .000050 [0.00127] min. nickel

Related Product Data

Mateable Housings:

Dual Row Receptacle Housing—page 24



Recommended PC Board Layout*

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.276** 7.00	—	—	3-794621-2	3-794622-2	3-794623-2	794617-2
4	**.394** 10.00	—	**.118** 3.00	3-794621-4	3-794622-4	3-794623-4	794617-4
6	**.512** 13.00	—	**.236** 6.00	3-794621-6	3-794622-6	3-794623-6	794617-6
8	**.630** 16.00	**.185** 4.70	**.354** 9.00	3-794621-8	3-794622-8	3-794623-8	794617-8
10	**.748** 19.00	**.303** 7.70	**.472** 12.00	4-794621-0	4-794622-0	4-794623-0	1-794617-0
12	**.866** 22.00	**.421** 10.70	**.591** 15.00	4-794621-2	4-794622-2	4-794623-2	1-794617-2
14	**.984** 25.00	**.539** 13.70	**.709** 18.00	4-794621-4	4-794622-4	4-794623-4	1-794617-4
16	**1.102** 28.00	**.657** 16.70	**.827** 21.00	4-794621-6	4-794622-6	4-794623-6	1-794617-6
18	**1.220** 31.00	**.776** 19.70	**.945** 24.00	4-794621-8	4-794622-8	4-794623-8	1-794617-8
20	**1.339** 34.00	**.894** 22.70	**1.063** 27.00	5-794621-0	5-794622-0	5-794623-0	2-794617-0
22	**1.457** 37.00	**1.012** 25.70	**1.181** 30.00	5-794621-2	5-794622-2	5-794623-2	2-794617-2
24	**1.575** 40.00	**1.130** 28.70	**1.299** 33.00	5-794621-4	5-794622-4	5-794623-4	2-794617-4

*Recommended PC Board thickness .062 [1.57]. Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

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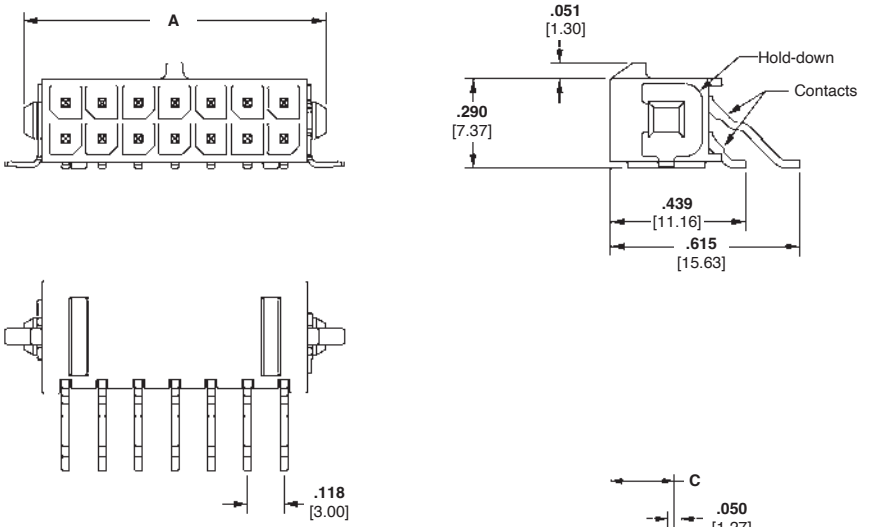
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Micro MATE-N-LOK 3 mm Connector System (Continued)

Right-Angle Header Assemblies (Continued)

Dual Row, Surface Mount, with Surface Mount Hold-down



Material and Finish

Housing — High Temperature Nylon, Black

Flammability Rating — UL 94V-0

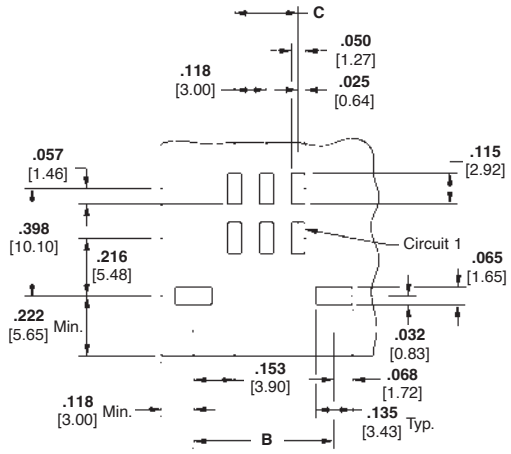
Contacts—Brass

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Hold-downs—Phosphor Bronze, .000100 [0.00254] min. tin over .000050 [0.00127] min. nickel



Recommended PC Board Layout*

Related Product Data

Mateable Housings:

Dual Row Receptacle Housing—page 24

Number of Circuits	Dimensions			Header Part Numbers			Mates with Receptacle Housing Part Number
	A	B	C	Plating A	Plating B	Plating C	
2	**.276** 7.00	**.276** 7.27	—	3-794627-2	3-794628-2	3-794629-2	794617-2
4	**.394** 10.00	**.394** 10.27	**.118** 3.00	3-794627-4	3-794628-4	3-794629-4	794617-4
6	**.512** 13.00	**.512** 13.27	**.236** 6.00	3-794627-6	3-794628-6	3-794629-6	794617-6
8	**.630** 16.00	**.630** 16.27	**.354** 9.00	3-794627-8	3-794628-8	3-794629-8	794617-8
10	**.748** 19.00	**.748** 19.27	**.472** 12.00	4-794627-0	4-794628-0	4-794629-0	1-794617-0
12	**.866** 22.00	**.866** 22.27	**.591** 15.00	4-794627-2	4-794628-2	4-794629-2	1-794617-2
14	**.984** 25.00	**.984** 25.27	**.709** 18.00	4-794627-4	4-794628-4	4-794629-4	1-794617-4
16	**1.102** 28.00	**1.102** 28.27	**.827** 21.00	4-794627-6	4-794628-6	4-794629-6	1-794617-6
18	**1.220** 31.00	**1.220** 31.27	**.945** 24.00	4-794627-8	4-794628-8	4-794629-8	1-794617-8
20	**1.339** 34.00	**1.339** 34.27	**1.063** 27.00	5-794627-0	5-794628-0	5-794629-0	2-794617-0
22	**1.457** 37.00	**1.457** 37.27	**1.181** 30.00	5-794627-2	5-794628-2	5-794629-2	2-794617-2
24	**1.575** 40.00	**1.575** 40.27	**1.299** 33.00	5-794627-4	5-794628-4	5-794629-4	2-794617-4

*Always consult customer drawing for PC Board layout dimensions.

Note: All part numbers are RoHS Compliant.

Catalog 82181
Revised 4-08

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Dimensions are shown for reference purposes only. Specifications subject to change.

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South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Engineering Notes

Catalog 82181
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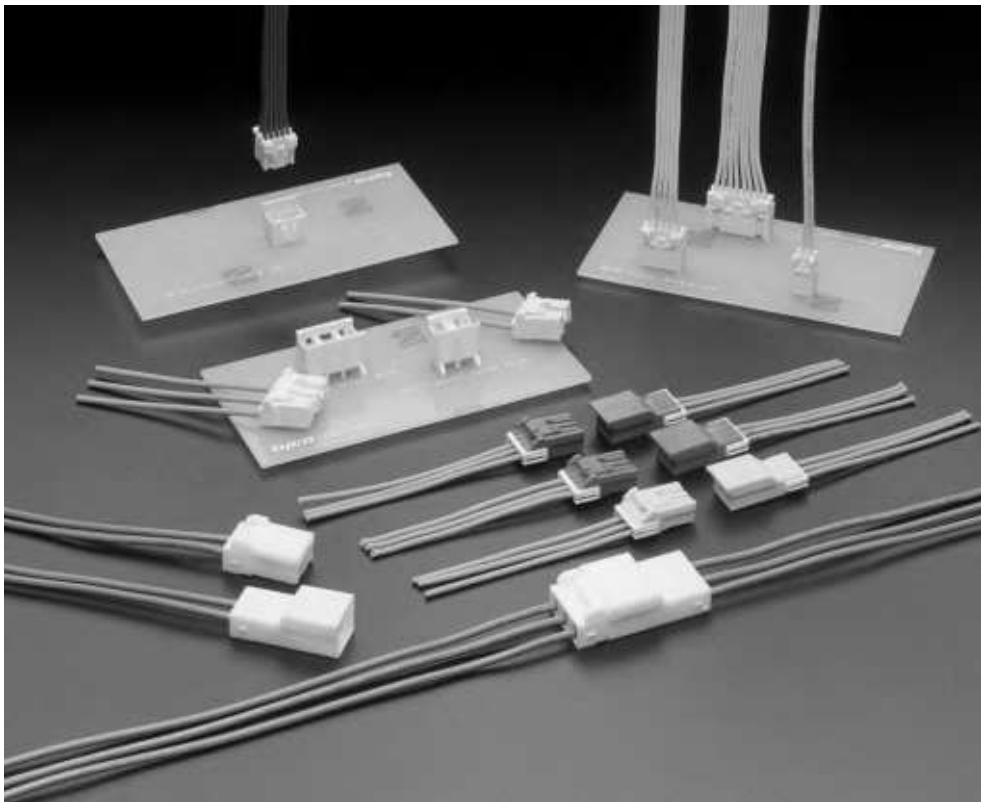
USA: 1-800-522-6752
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UK: 44-8706-080-208

Grace Inertia Connectors (GIC), 3.5 mm Centerline (Wire-to-Wire Connectors)

Product Facts

- **Small wire-to-wire connectors (3.5 mm centerline) can handle 18 AWG wire**
- **Locking mechanism helps prevent connectors from being disconnected during movement or transportation**
- **Four kinds of keying per color-coded housing**
- **Improved housing shape offers easier mating**
- **Complies with lead free requirements**
- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476**
- **Certified by Canadian Standards Association, File No. E28476**



This connector employs the inertia locking mechanism, which simultaneously locks when mated to help prevent mismating. It is widely used for large-sized household electric appliances, such as refrigerators, washing machines, or dispensers. Depending on the working environment, a locking sound is difficult to confirm during mating of a connector. However, this connector supports secure mating operation even in such a working environment.

Performance Characteristics

Voltage Rating—300 VAC
Current Rating—7 A (max.)
Centerline—3.5 mm
Applicable Wire—26 to 18 AWG
Temperature Rating—-30˚C to 105˚C

Material and Finish

Housing—6/6 Nylon UL94V-0 (CTI 600 V or more)
Terminal—Pre-tin Copper alloy

Technical Documents

Product Specification
108-5810
Application Specification
114-5306

Note: All dimensions shown are metric.

Catalog 82181
Revised 4-08

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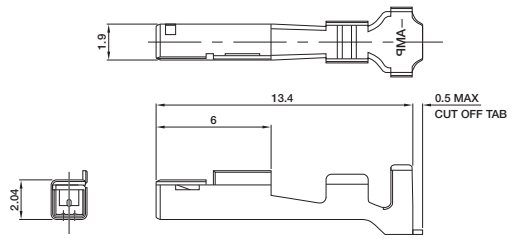
Grace Inertia Connectors (GIC), 3.5 mm Centerline (Wire-to-Wire Connectors) (Continued)

Contacts

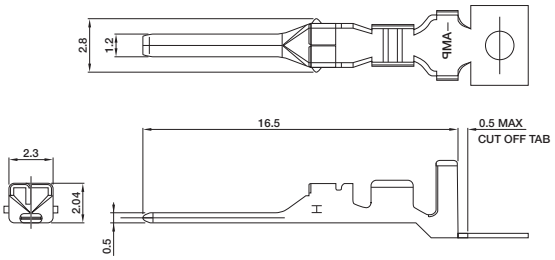
Material and Finish

Pre-tinned Copper Alloy

Receptacle Contact (For Plug Housing)



Tab Contact (For Cap Housing)



Wire Range		Insulation Dia. mm	Contact Part Number		Tool Part Number	
AWG	mm²		Receptacle	Tab	Terminator/Applicator	CERTI-CRIMP Hand Tool
26-22	0.13-0.34	1.3-2.0	1612334-1	1612335-1	**	— —
22-18	0.3-0.9	1.5-2.7	1565079-1	1565080-1	**	1596277-1

*Cut the contact carrier strip when using a hand tool.

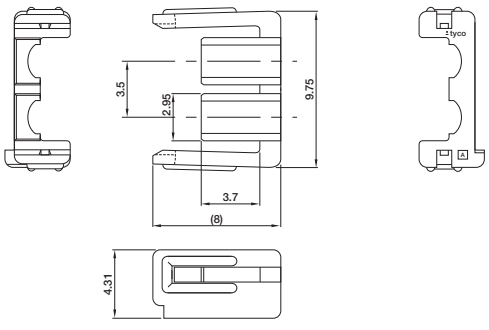
** Contact the Tooling Assistance Center (TAC) at 1-800-722-1111 for Terminator or Applicator Part Numbers.

Double Lock Plates

Material

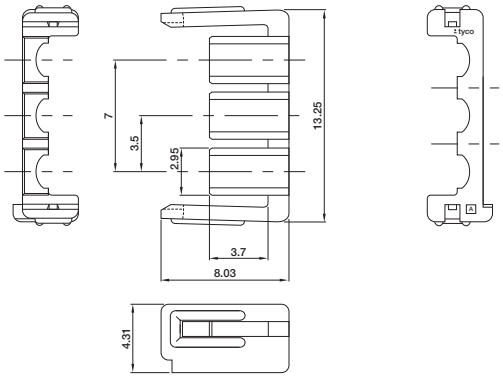
6/6 Nylon glass filled (UL94V-0)

2 Position



P/N 1565089-1
*Two four-positions are used.

3 Position



P/N 1565090-1
*Two six-positions are used.

Note: All dimensions shown are metric.

Note: All part numbers are RoHS Compliant.

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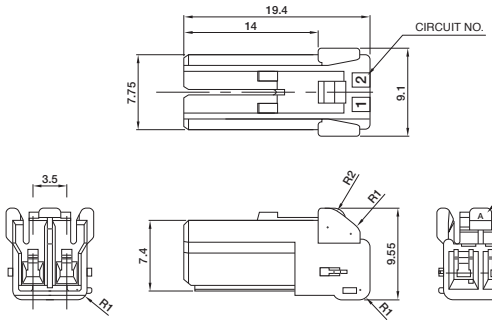
Grace Inertia Connectors (GIC), 3.5 mm Centerline (Wire-to-Wire Connectors) (Continued)

2 Position

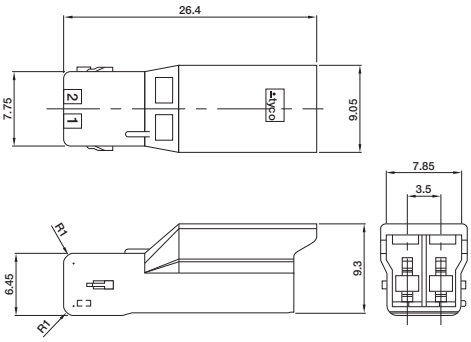
Material

6/6 Nylon, UL94V-0 (CTI 600 V or more)

Plug Housing (For Receptacles)



Cap Housing (For Tabs)



Related Product Data

Receptacle and Tab Contacts—page 50
Double Lock Plate—page 50

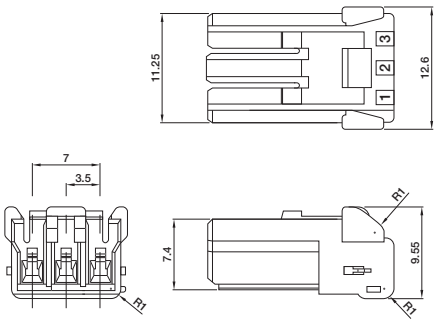
Color	Keying	Part Number	
		Plug Housing	Cap Housing
Natural	A	1565081-1	1565085-1
Red	B	1-1565081-2	1-1565085-2
Blue	C	2-1565081-3	2-1565085-3
Yellow	D	3-1565081-4	3-1565085-4

3 Position

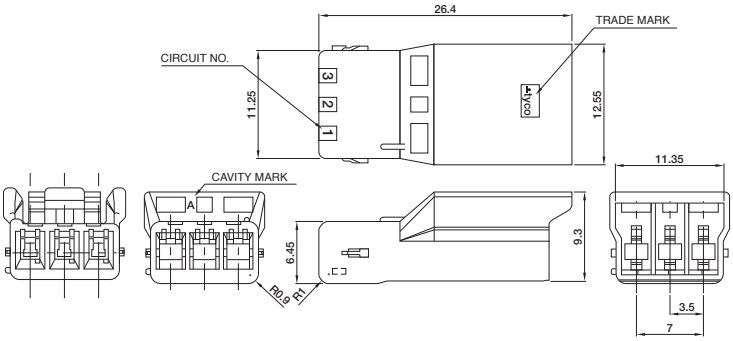
Material

6/6 Nylon, UL94V-0 (CTI 600 V or more)

Plug Housing (For Receptacles)



Cap Housing (For Tabs)



Color	Keying	Part Number	
		Plug Housing	Cap Housing
Natural	A	1565082-1	1565086-1
Red	B	1-1565082-2	1-1565086-2
Blue	C	2-1565082-3	2-1565086-3
Yellow	D	3-1565082-4	3-1565086-4

Note: All dimensions shown are metric.

Note: All part numbers are RoHS Compliant.

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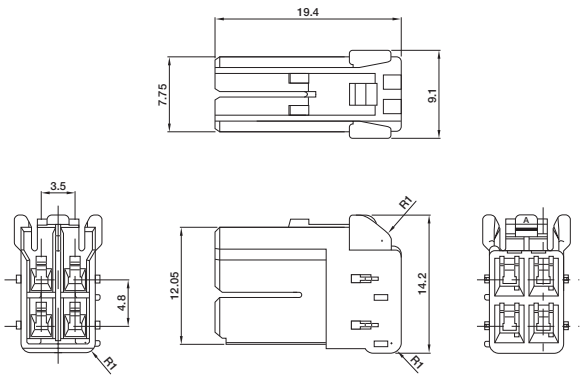
USA: 1-800-522-6752
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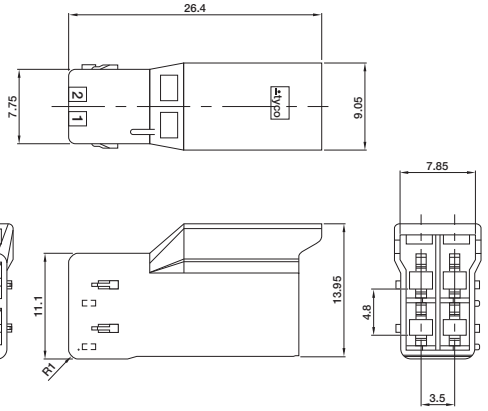
Grace Inertia Connectors (GIC), 3.5 mm Centerline (Wire-to-Wire Connectors) (Continued)

4 Position

Plug Housing (For Receptacles)



Cap Housing (For Tabs)



Material

6/6 Nylon, UL94V-0 (CTI 600 V or more)

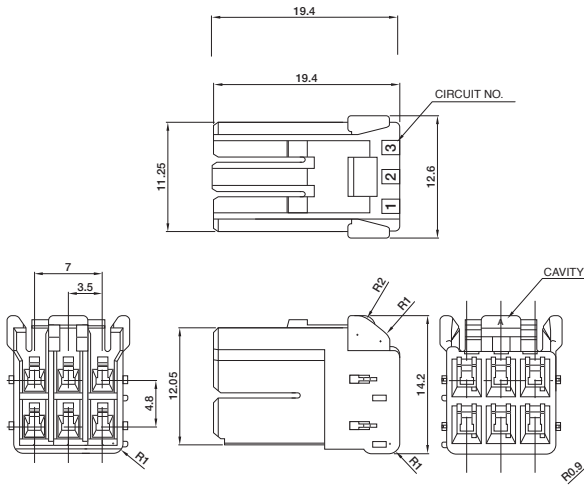
Related Product Data

Receptacle and Tab Contacts—page 50
Double Lock Plate—page 50

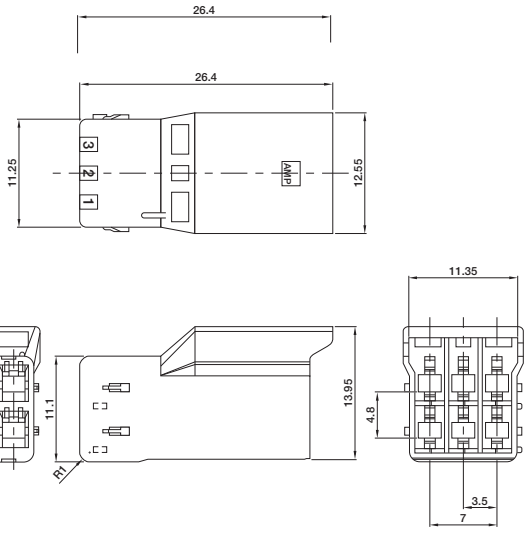
Color	Keying	Part Number	
		Plug Housing	Cap Housing
Natural	A	1565083-1	1565087-1
Red	B	1-1565083-2	1-1565087-2
Blue	C	2-1565083-3	2-1565087-3
Yellow	D	3-1565083-4	3-1565087-4

6 Position

Plug Housing (For Receptacles)



Cap Housing (For Tabs)



Material

6/6 Nylon, UL94V-0 (CTI 600 V or more)

Color	Keying	Part Number	
		Plug Housing	Cap Housing
Natural	A	1565084-1	1565088-1
Red	B	1-1565084-2	1-1565088-2
Blue	C	2-1565084-3	2-1565088-3
Yellow	D	3-1565084-4	3-1565088-4

Note: All dimensions shown are metric.

Note: All part numbers are RoHS Compliant.

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.062 [1.57] Commercial Pin and Socket Connectors

Product Facts

- Polarized
- Cavity identification
- Low contact-mating force
- Dual locking lances
- Detent and positive locking
- Contacts available in brass and phosphor bronze with tin and gold plating
- Panel mount and free-hanging styles
- "F" crimp contacts
- Applicator and hand tool available
- Economical commercial-grade connectors
- Compatible with high-speed application machinery and most other manufacturers' soft shells
- Wire range 30 to 18 AWG [0.05 to 0.9 mm²]
- Accepts wires with insulation diameters as large as .110 [2.79]
- Housings available in 1 to 9 positions
- .062 plug and receptacle housings accept pin or socket contacts. The preferred convention is to use socket contacts with receptacle housings
- Not for interrupting current
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 7189



Performance Characteristics

The .062 Commercial Pin and Socket Connectors performance characteristics found on pages 53-54 are based on free-hanging and panel mount connectors, loaded with contacts crimped on stranded wire.

Durability—10 mating cycles

Dielectric Withstanding Voltage—1.0 kVAC

Insulation Resistance—1000 megohms min. initial

Voltage Rating—250 V AC or DC

Connector Mating—2.5 lb. [11.1 N] max. per contact

Connector Unmating—0.3 lb. [1.3 N] min. per contact

Contact Insertion Force—4.0 lb. [17.8 N] max. per contact

Contact Retention—7 lb. [31.1 N] min.

15 lb. [66.6 N] min. for contacts 770983-1 and 794380-1

Technical Documents

Product Specification
108-1037 .062 Commercial Pin and Socket Connectors

Application Specification
114-1013 .062 Commercial Pin and Socket Connectors

Catalog 82181
Revised 4-08

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.062 [1.57] Commercial Pin and Socket Connectors (Continued)

Performance Characteristics (Continued)

Maximum Current—Maximum current rating of .062 Commercial Pin and Socket connectors is limited by the maximum operating temperature of the housings which is 105°C including the temperature rise of the contacts which is a maximum of 30°C. There are several variables which have a direct effect on this maximum current-carrying capability for a given connector and must be considered for each application. These variables are:

Wire Size—Larger wire will carry more current since it has less internal resistance to current flow and thus generates less heat. Longer wire lengths also enhance current-carrying capabilities since the wire conducts heat away from the connector.

Connector Size—In general, the more circuits in a connector, the less current can be carried.

Ambient Temperature—The higher the ambient temperature, the less current can be carried in any given connector.

Related Product Data

Product Specification—
108-1037

Application Specification—
114-1013

Current Rating Verification for 30°C Maximum Temperature Rise 100% Energized

Wire-to-Wire
.062 Commercial Pin and Socket Connectors Calculated Current Table

Number of Circuits	Wire Gauge			
	18	20	22	24
2	7.00	6.00	5.00	4.00
3	7.00	6.00	5.00	4.00
4	6.00	6.00	5.00	4.00
4	6.00	5.00	4.00	3.00
6	6.00	5.00	4.00	3.00
9	5.00	4.00	4.00	3.00

Values are based on initial Temperature Rise versus Current Testing and are intended to be a guide in the selection of a connector family. All applications should be tested by the end user. The values listed are per circuit for fully loaded housings being 100% energized. **Note:** All combinations were not tested, and this chart contains interpolated and extrapolated values.

Minimum Wire Lengths for T-Rise vs. Current Testing

AWG	Min. Length (in.)	AWG	Min. Length (in.)
30	2.6	18	9.4
28	3.2	16	11.3
26	4.1	14	13.7
24	5.1	12	16.4
20	7.8	10	19.3

Note: If wire lengths used are less than those listed above, the current-carrying ability of the system will be reduced due to less heat being conducted away from the connector. The customer should fully test all applications.

Termination Resistance/Contact Crimp Tensile Force

Wire Size		Termination Resistance		Contact Crimp Tensile Force	
AWG	mm²	Test Current (Amps)	Resistance Milliohms (Max. Init.)	Force (Min.) lbs.	Force (Min.) N
24	0.2	1.5	3.50	10	44.5
22	0.3–0.4	3.0	3.50	10	44.5
20	0.5–0.6	4.5	3.00	13	57.8
18	0.8–0.9	6.0	3.00	14	62.3

Note: This is the total resistance between wire crimps of a mated pin and socket.

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.062 [1.57] Commercial Pin and Socket Connectors (Continued)

Contacts

Pin Diameter .062 [1.57]

Material

.008 [0.20] Stock Thickness

Pin and socket contacts can be used in either plug or receptacle housings. It is preferred to use socket contacts in receptacle housings.

Related Product Data

Performance Characteristics—pages 53-54

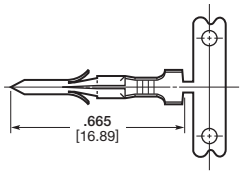
Housings—pages 56-57

Panel Cutouts—page 57

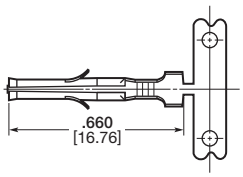
Technical Documents—pages 53 and 205-206

Application Tooling—pages 207-210

Product Specification—108-1037-1



Pin



Socket

Wire Size AWG	Wire Size mm²	Ins. Dia.	Material & Finish	Contact Part Numbers Pin Strip Form	Pin Loose Pieces	Socket Strip Form	Socket Loose Pieces	HDM Applicator Part No.	Hand Tool Part No.
30-24	0.05-0.2	**.060** 1.52 Max.	Brass Pre-tin	640391-1	794018-1	640392-1	794019-1	466686-1[3] 466686-2[3] 466686-3[3]	90870-1
				—	—	794046-1[2]	—		
			Brass, Select Gold[1]	640391-5[1]	—	640392-5[1]	—		
			Phos. Brz., Pre-tin	—	—	640392-2	—		
24-18	0.2-0.9	**.050-.110** 1.27-2.79	Brass Pre-tin	350629-1	794017-1	350628-1	794016-1	687996-1[3] 687996-2[3] 687996-3[3]	90869-1
				770983-1[4]	—	794380-1[4] 794103-1[2]	—		
			Phos. Brz., Pre-tin	350629-8	—	350628-2	—		
			Brass, Select Gold[1]	350629-5[1]	—	350628-5[1]	—		
			Phos. Brz., Select Gold[1]	—	—	350628-6[1]	—		

[1]Select Gold—.000030 [.000762] min. in mating area over .000050 [.00127] nickel.
[2]Lanceless Socket for Overmolding.
[3]HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -3 is used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.
[4]Contact Retention 15 lbs. [66.6 N] min.

Note: Phosphor bronze contacts should be used in high-temperature/humidity cycling applications.

Note: All part numbers are RoHS Compliant.



Contact Insertion Tool (for Pins and Sockets) Part No. 91002-1 IS 408-7347



Contact Extraction Tool Part No. 318831-1 IS 408-4370

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.062 [1.57] Commercial Pin and Socket Connectors (Continued)

Housings

Free-Hanging or Panel Mount

.145 [3.68] Centerline spacing

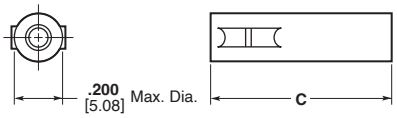
Material

Housing—Nylon, natural color
Flammability Rating—UL94V-2

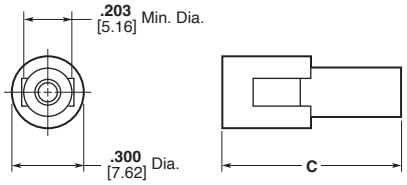
Related Product Data

Contacts—page 55
Product Specification—108-1037

1 Circuit

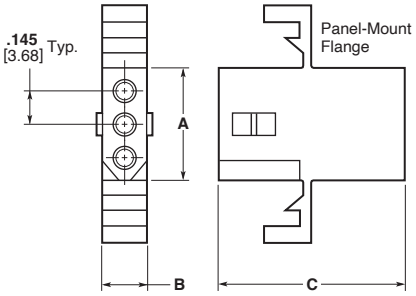


Receptacle

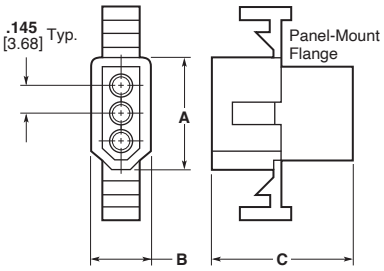


Plug

2, 3, and 4 Circuit, In-Line



Receptacle



Plug

No. of Circuits	Dimensions						Receptacle Part Numbers		Plug Part Numbers	
	Receptacle			Plug			Panel Mount	Free-Hanging	Panel Mount	Free-Hanging
	A	B	C	A	B	C				
1	—	—	.785 19.94	—	—	.750 19.05	—	770277-1	—	770278-1
2	.340 8.64	.199 5.05	.820 20.83	.440 11.18	.300 7.62	.780 19.81	770343-1	770342-1 770419-1[1]	770341-1	770340-1
3	.490 12.45	.199 5.05	.785 19.94	.590 14.99	.300 7.62	.750 19.05	770326-1	770333-1	770332-1	770331-1
4 (In-Line)	.635 16.13	.199 5.05	.785 19.94	.733 18.62	.300 7.62	.750 19.05	770335-1	770274-1	770334-1	770275-1
4 (Matrix)	.345 8.76	.345 8.76	.878 22.30	.445 11.30	.445 11.30	.868 22.04	770441-1	770442-1	770443-1	770433-1
6	.345 8.76	.495 12.57	.785 19.94	.445 11.30	.600 15.24	.750 19.05	770354-1	770356-1	770353-1	770355-1
9	.490 12.45	.495 12.57	.790 20.07	.590 14.99	.600 15.24	.750 19.05	770427-1	770429-1	770426-1	770428-1

[1]Positive Lock

Note: **All part numbers are RoHS Compliant.**

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Japan: 81-44-844-8013
UK: 44-8706-080-208

.062 [1.57] Commercial Pin and Socket Connectors (Continued)

Housings

Free-Hanging or Panel Mount

.145 [3.68] Centerline spacing

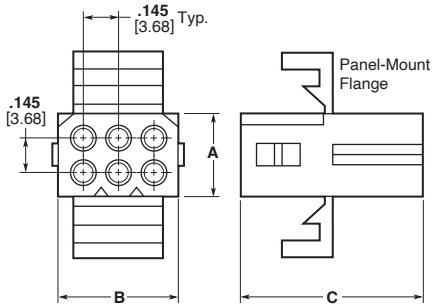
Material

Housing — Nylon, natural color
Flammability Rating — UL94V-2

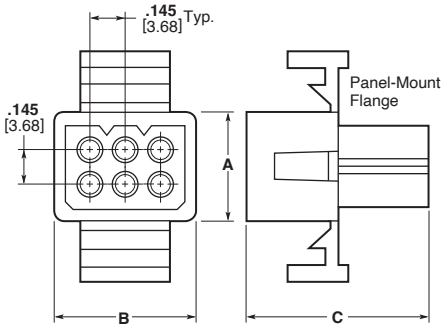
Related Product Data

Contacts — page 55

4, 6, and 9 Circuit, Matrix



Receptacle



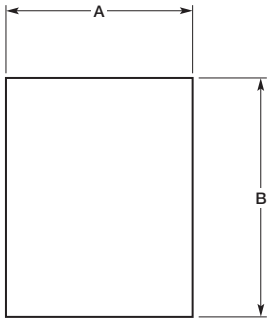
Plug

Recommended Panel Cutouts

Maximum panel thickness is .060 [1.52].

Related Product Data

Product Specification — 108-1037



No. of Circuits	Panel Cutout Dimensions			
	Receptacle		Plug	
	A	B	A	B
2	**.265** 6.73	**.505** 12.83	**.318** 8.08	**.609** 15.47
3	**.265** 6.73	**.650** 16.51	**.318** 8.08	**.754** 19.15
4 (In-Line)	**.260** 6.60	**.785** 19.94	**.312** 7.92	**.865** 21.97
4 (Matrix)	**.400** 10.16	**.506** 12.85	**.465** 11.81	**.615** 15.62
6	**.505** 12.83	**.552** 14.02	**.607** 15.42	**.615** 15.62
9	**.552** 14.02	**.650** 16.51	**.615** 15.62	**.752** 19.10

Note: The panel should be punched so that the housing enters in the same direction as the punch.

Note: All part numbers are RoHS Compliant.

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Japan: 81-44-844-8013
UK: 44-8706-080-208

Engineering Notes

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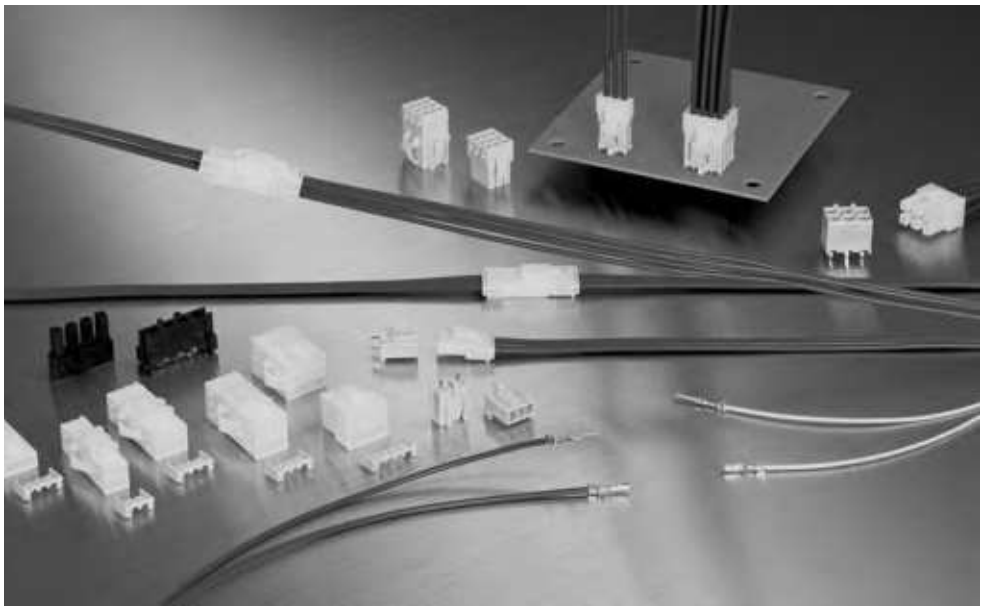
USA: 1-800-522-6752
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UK: 44-8706-080-208

Power Double Lock (PDL) Connectors (Wire-to-Board and Wire-to-Wire)

Product Facts

- Power circuit connectors of compact design
- Uses double lock plate on the wire side that helps prevent partial mating of contacts
- Double lock plate compatible with high-count positions of more than 3 rows
- Tab and receptacle contacts resist scooping of contacts at mating / unmating
- Locking of plug to cap housings and plug to board-mounted headers made by the semi-inner locking system that helps preclude the possibility of disengagement by external pressure
- Both wire-to-wire and wire-to-board applications available from the same Series lineup
- Board-mounted header compatible with resin coating, causing no hindrance with the plug locking function
- Design complies with a range of safety standards
- The housing lance design provides no lance on contacts and helps prevent entanglement of contacts with one another
- Fully polarized
- The following contact centerline by row centerline arrangements available:
  - For wire-to-wire application:
    3.96 mm x 4.6 mm
    6.5 mm x 6.5 mm
  - For wire-to-board application:
    3.96 mm x 4.6 mm
    7.92 mm x 4.6 mm
    6.5 mm x 6.5 mm
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR7189
- VDE Approved, File No. B 04 11 39175010



Power Double Lock Connectors are compact connectors designed for use in power circuit applications and are ideally suited for wiring in refrigerators, air conditioners, washing machines, gas equipment, copying machines and automatic vending machines. These connectors can be used alone by inserting wire-terminated crimp snap-in contacts into the housing. However, to achieve more positive contact mounting, plug and cap housings can be equipped with a double lock plate that helps to completely insert contacts. There are three contact centerline spacings available: 3.96 mm, 6.5 mm and 7.92 mm. Of these, the 7.92 mm centerline contact arrangement is for 2-position board-mounted headers. The mating wire-mounted plug connector uses the second circuit of the 3-position 3.96 mm centerline housing with no contact loaded. Available with the 3.96 mm centerline contact arrangement are wire-mounted plug housings and the mating wire-mounted cap housings (for free-hanging and panel mounted applications) and board-mounted tab headers.

The 6.5 mm centerline contact arrangement is used in wire-mounted plug housings and the mating board-mounted tab headers. The plug housings are loaded with receptacle contacts and the cap housings with tab contacts. The tab headers for board mounting are preloaded with solder-dipping tab contacts with tail.

Contacts accept two wire size ranges: 28-22 AWG (with insulation outer diameter of 1.3 to 2.0 mm) and 20-18 AWG (with insulation outer diameter of 2.0 to 3.1 mm).

The tab header for board mounting has a locking mechanism where it is compatible with resin coating that is applied to the board for waterproof.

It is designed to work with the plug locking function.

The solder tail section of tab contact has kink feature.

Interacting with the mounting boss with kink feature, the solder tab secures the header on the board firmly during soldering.

The double lock plate is compatible with high-count positions of more than 3 rows. Also, the housing lance design of this connector, featuring no lance on contacts, makes handling of the connector very easy, as there is minimal entanglement of contacts with one another.

Performance Characteristics

Voltage Rating—300 VAC (for 3.96 mm wire-to-wire, 6.5 mm wire-to-board and 7.92 mm wire-to-board applications)
50 VAC (for 3.96 mm wire-to-board application)

Current Rating—14A max. (Based on initial t-rise vs. current testing using 16 AWG wire in a 2-position connector

Fine Rating—1 mV, 1∝A min.

Operating Temperature—
-30° ~ +105°C

Technical Documents

Product Specifications
108-5410
108-5439 (SMT)

Application Specification
114-5175

Instruction Sheet
411-5638

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Power Double Lock (PDL) Connectors (Wire-to-Board and Wire-to-Wire) (Continued)

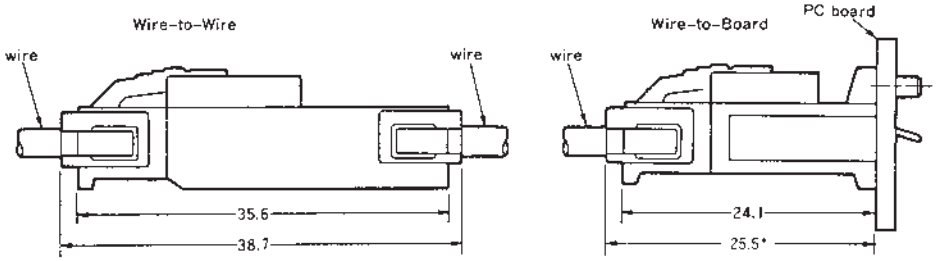
Quick Reference Chart for Mating Part Numbers

Quick Reference Chart

Plug Connector (Wire Side)			Mating Connectors (Wire and PC Board Mount Side)		
Housing		Part No. of Applicable Double Lock Plate	No. of Pos.	Part No. of Cap Housing and Tab Header	Part No. of Applicable Double Lock Plate
No. of Pos.	Part No.				
■ 3.96 mm and 7.92 mm Centerline					
1	316768-☐	316770-1x1	1	316769-☐ (Free-Hanging)	316770-1x1
2	177898-☐	177918-1x1	2	179463-☐ (Free-Hanging)	177918-1x1
				177906-☐ (Panel Mount)	
				179838-☐ (PC Board Mount)	—
3	177899-☐	177919-1x1	3	179464-☐ (Free-Hanging)	177919-1x1
				177907-☐ (Panel Mount)	
				179839-☐ (PC Board Mount)	—
			2	179844-☐ (PC Board Mount 7.92 mm Centerline)	
4 (1 Row)	316501-☐	177920-1x1	4	316502-☐ (Panel Mount)	177920-1x1
4 (2 Rows)	177900-☐	177918-1x2	4	179465-☐ (Free-Hanging)	177918-1x2
				177908-☐ (Panel Mount)	
				179840-☐ (PC Board Mount)	—
6	177901-☐	177919-1x2	6	179466-☐ (Free-Hanging)	177919-1x2
				177909-☐ (Panel Mount)	
				179841-☐ (PC Board Mount)	—
8	177902-☐	177920-1x2	8	179467-☐ (Free-Hanging)	177920-1x2
				917845-☐ (PC Board Mount)	
9	177903-☐	177919-1x3	9	177911-☐ (Panel Mount)	177919-1x3
10	177904-☐	177921-1x2	10	177912-☐ (Panel Mount)	177921-1x2
12	177905-☐	177920-1x3	12	177913-☐ (Panel Mount)	177920-1x3
				179843-☐ (PC Board Mount)	—
				1903720-1 (Free-Hanging)	177920-1x3
■ 6.5 mm and 13.0 mm Centerline					
2	1939344-1	316061-1x1	2	1939343-1 (Panel Mount)	—
3	179938-☐	316062-1x1	3	179846-☐ (PC Board Mount)	—
				179944-☐ (PC Board Mount/SMT)	
—	—	—	2	917745-☐ (PC Board Mount 13 mm Centerline)	—
				9139343-1-☐ (Panel Mount)	
4 (1 Row)	179939-☐	316063-1x1	4	179847-☐ (PC Board Mount)	—
				179945-☐ (PC Board Mount/SMT)	
4 (2 Rows)	179861-☐	316061-1x2		179848-☐ (PC Board Mount)	
				1903486-1 (Panel Mount)	
6	179862-☐	316062-1x2	6	179849-☐ (PC Board Mount)	—
				1903487-1 (Panel Mount)	
12	917354-☐	353891-1x2	12	917353-☐ (PC Board Mount)	—

*For details on 6.5 mm and 13.0 mm Centerline products, contact Technical Support

Note: **All part numbers are RoHS Compliant.**



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Power Double Lock (PDL) Connectors (Wire-to-Board and Wire-to-Wire) (Continued)

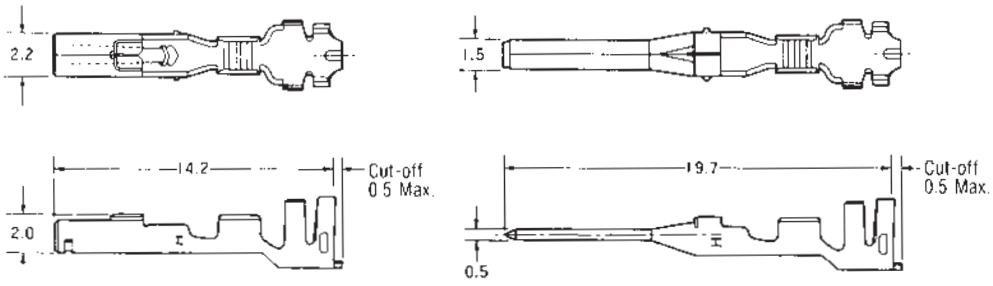
Contacts and Product Composition

Contacts

Material and Finish

Pre-tinned copper alloy

Receptacle for Plug Housing,
Tab for Cap Housing



Receptacle Tab

Wire Range		Ins. Dia. (Note)	Contact Part No.				Applicator Part No.	CERTI-CRIMP II Hand Tool Part No.
			Receptacle		Tab			
AWG	mm²		Strip Form	Loose Piece	Strip Form	Loose Piece		
26-22	0.14~0.34	1.30~2.00	177914-1	179592-1	177916-1	179594-1	680283-X	91567-1
			177914-2*	179592-2*				
20-16	0.51~1.38	2.00~3.10	177915-1	179593-1	177917-1	179595-1	680286-X	91569-1
			177915-2*	179593-2*				

Note: Maximum diameter is 2.8 mm when Double Lock Plate is used.

*Part Number suffix -2 represents high contact pressure type.

Extraction Tool P/N : 234912-1 (For receptacle contact)
234914-1 (For tab contact)

Note: Contact the Tooling Assistance Center (TAC) at 1-800-722-1111 for Applicator Part Number.

Positive mounting achieved with Double Lock mechanism.



① **Contact is partially-mounted.**

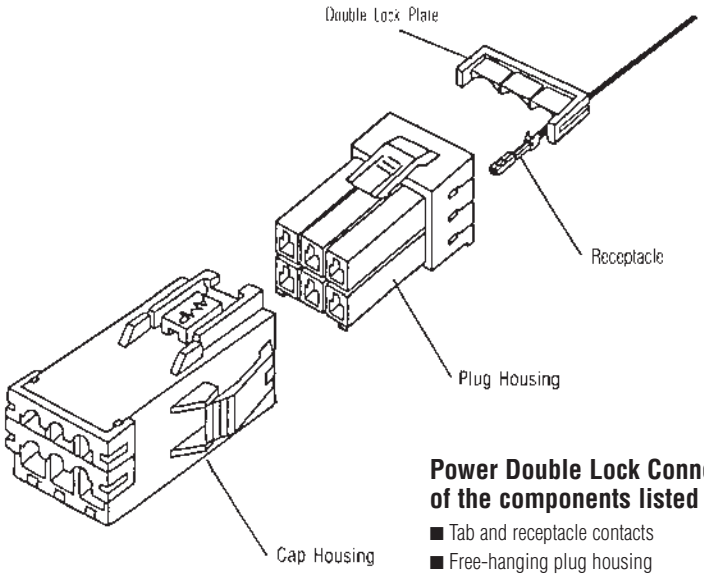


② **Double Lock Plate is set.**



③ **Contact is fully pushed in as Double Lock Plate is pressed.**

Product Composition



Power Double Lock Connector is composed of the components listed below:

- Tab and receptacle contacts
- Free-hanging plug housing
- Free-hanging cap housing
- Panel mount cap housing
- PC Board-mount tab header
- Double Lock Plate

Note: All dimensions shown are metric.

Note: All part numbers are RoHS Compliant.

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Power Double Lock (PDL) Connectors (Wire-to-Board and Wire-to-Wire) (Continued)

3.96 mm Centerline Free-Hanging Plug Housing

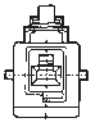
1 Circuit

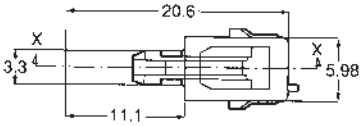
Wire-to-Wire

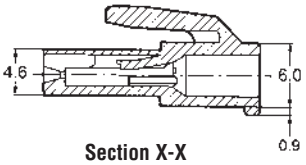
Material—UL94V-0, 6/6 Nylon

Part Number
316768-1 (Natural)
316768-2 (Red)
316768-4 (Yellow)
316768-6 (Blue)
316768-9 (Black)

Related Product Data
Receptacle Contacts—page 61
Mating Cap Housings
(Free-Hanging)—pages 65-66
Double Lock Plate—page 71







Section X-X

2 Circuits

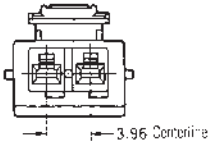
Wire-to-Board and Wire-to-Wire

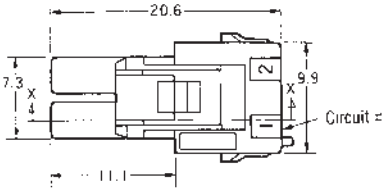
Material—UL94V-0, 6/6 Nylon

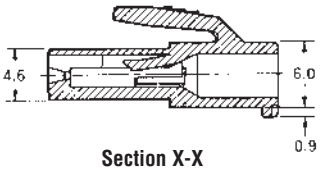
Part Number
177898-1 (Natural)
177898-2 (Red)
177898-4 (Yellow)
177898-6 (Blue)
177898-9 (Black)

Lock Type II—3-177898-1 (Natural)

Related Product Data
Receptacle Contacts—page 61
Mating Cap Housings
(Free-Hanging)—pages 65-66
(Panel Mount)—pages 67-70
Double Lock Plate—page 71
Mating Tab Headers—
pages 72-74







Section X-X

3 Circuits

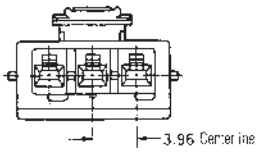
Wire-to-Board and Wire-to-Wire

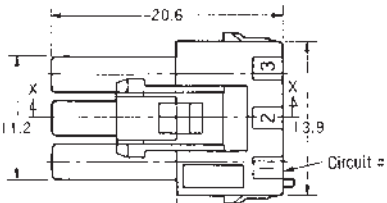
Material—UL94V-0, 6/6 Nylon

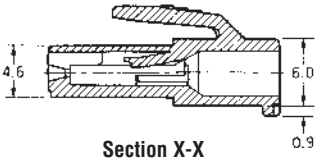
Part Number
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177899-2 (Red)
177899-4 (Yellow)
177899-6 (Blue)
177899-9 (Black)

Lock Type II—3-177899-1 (Natural)

Related Product Data
Receptacle Contacts—page 61
Mating Cap Housings
(Free-Hanging)—pages 65-66
(Panel Mount)—pages 67-70
Double Lock Plate—page 71
Mating Tab Headers—
pages 72-74 and
(2 circuit, 7.92 mm
centerline)—page 74







Section X-X

4 Circuits (1 Row)

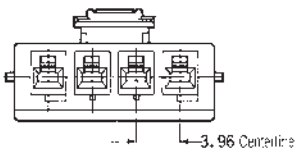
Wire-to-Wire

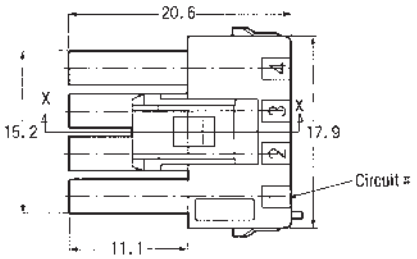
Material—UL94V-0, 6/6 Nylon

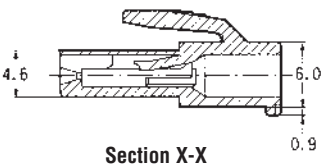
Part Number
316501-1 (Natural)
316501-4 (Yellow)
316501-6 (Blue)

Lock Type II—3-316501-1 (Natural)

Related Product Data
Receptacle Contacts—page 61
Mating Cap Housings
(Panel Mount)—pages 67-70
Double Lock Plate—page 71







Section X-X

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Note: All part numbers are RoHS Compliant.

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Power Double Lock (PDL) Connectors (Wire-to-Board and Wire-to-Wire) (Continued)

3.96 mm Centerline Free-Hanging Plug Housing

4 Circuits (2 Rows)

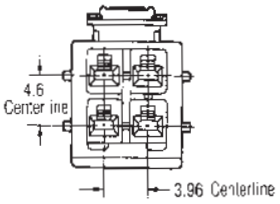
Wire-to-Board and Wire-to-Wire

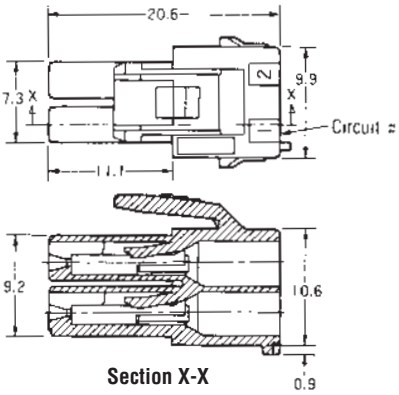
Material
UL94V-0, 6/6 Nylon

Part Number
177900-1 (Natural)
177900-4 (Yellow)
177900-6 (Blue)

Lock Type II
3-177900-1 (Natural)

Related Product Data
Receptacle Contacts—page 61
Mating Cap Housings
(Free-Hanging)—pages 65-66
(Panel Mount)—pages 67-70
Double Lock Plate—page 71
Mating Tab Headers—pages 72-74





6 Circuits

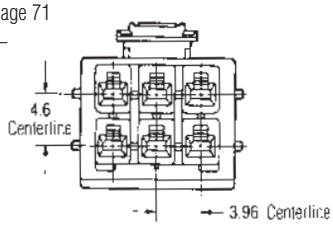
Wire-to-Board and Wire-to-Wire

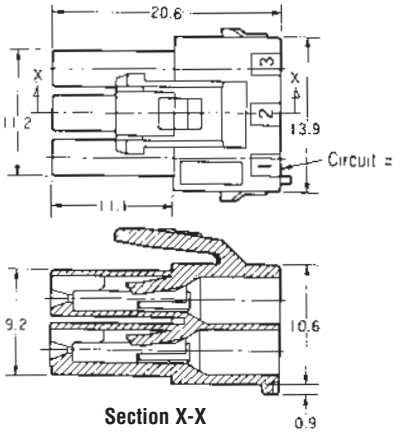
Material
UL94V-0, 6/6 Nylon

Part Number
177901-1 (Natural)
177901-4 (Yellow)
177901-6 (Blue)

Lock Type II
3-177901-1 (Natural)

Related Product Data
Receptacle Contacts—page 61
Mating Cap Housings
(Free-Hanging)—pages 65-66
(Panel Mount)—pages 67-70
Double Lock Plate—page 71
Mating Tab Headers—pages 72-74





8 Circuits

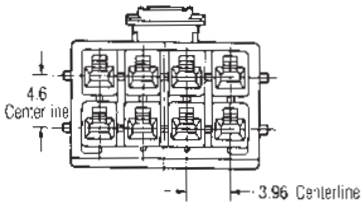
Wire-to-Board and Wire-to-Wire

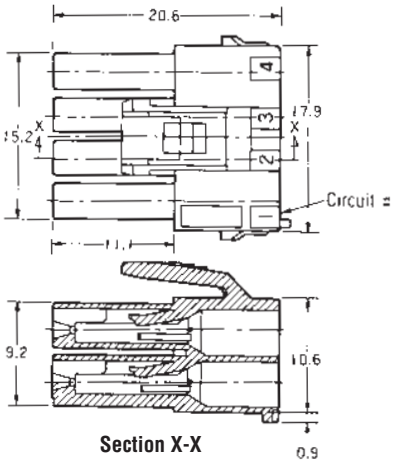
Material
UL94V-0, 6/6 Nylon

Part Number
177902-1 (Natural)
177902-4 (Yellow)
177902-6 (Blue)

Lock Type II
3-177902-1 (Natural)

Related Product Data
Receptacle Contacts—page 61
Mating Cap Housings
(Free-Hanging)—pages 65-66
Double Lock Plate—page 71
Mating Tab Headers—pages 72-74





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UK: 44-8706-080-208

Power Double Lock (PDL) Connectors (Wire-to-Board and Wire-to-Wire) (Continued)

3.96 mm Centerline Free-Hanging Plug Housing

9 Circuits

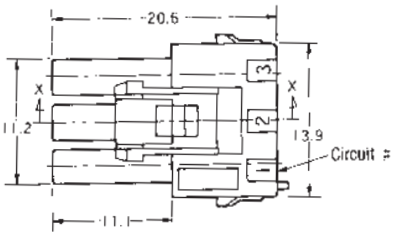
Wire-to-Wire

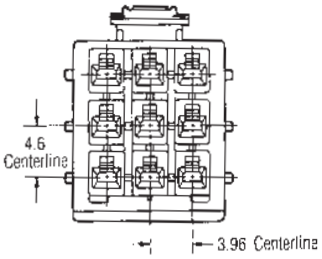
Material
UL94V-0, 6/6 Nylon

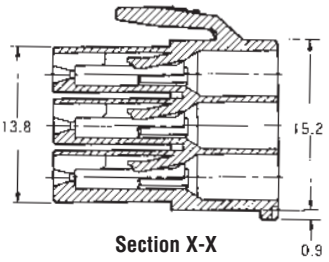
Part Number
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177903-4 (Yellow)
177903-6 (Blue)

Lock Type II
3-177903-1 (Natural)

Related Product Data
Receptacle Contacts—page 61
Mating Cap Housings
(Panel Mount)—pages 67-70
Double Lock Plate—page 71







Section X-X

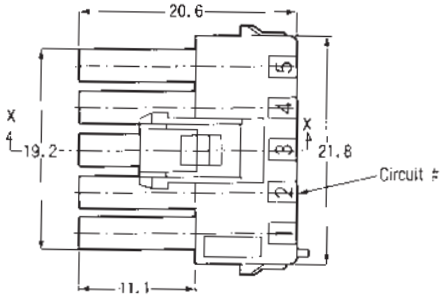
10 Circuits

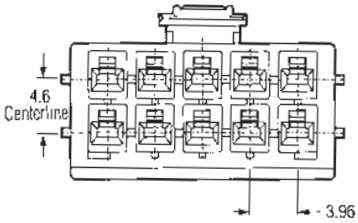
Wire-to-Wire

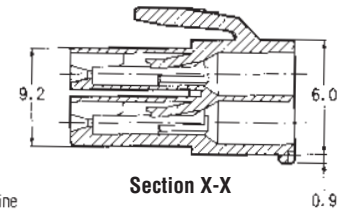
Material
UL94V-0, 6/6 Nylon

Part Number
177904-1 (Natural)
177904-4 (Yellow)
177904-6 (Blue)

Related Product Data
Receptacle Contacts—page 61
Mating Cap Housings
(Panel Mount)—pages 67-70
Double Lock Plate—page 71







Section X-X

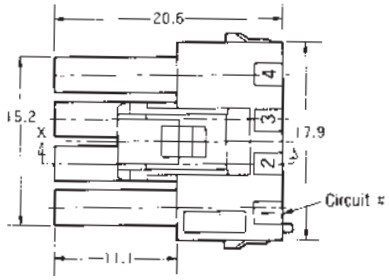
12 Circuits

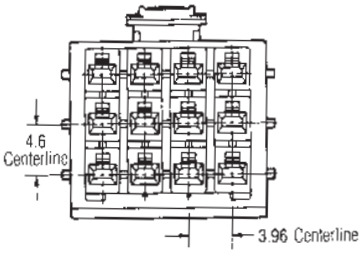
Wire-to-Board and Wire-to-Wire

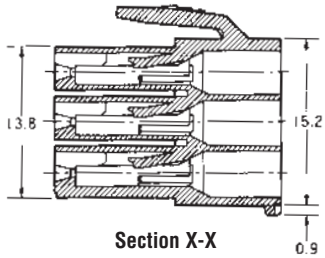
Material
UL94V-0, 6/6 Nylon

Part Number
177905-1 (Natural)
177905-4 (Yellow)
177905-6 (Blue)

Related Product Data
Receptacle Contacts—page 61
Mating Cap Housings
(Panel Mount)—pages 67-70
Double Lock Plate—page 71
Mating Tab Headers—pages 72-74







Section X-X

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Japan: 81-44-844-8013
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Power Double Lock (PDL) Connectors (Wire-to-Wire)

3.96 mm Centerline Free-Hanging Cap Housing

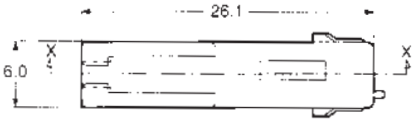
1 Circuit

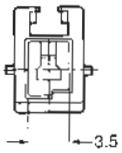
Wire-to-Wire

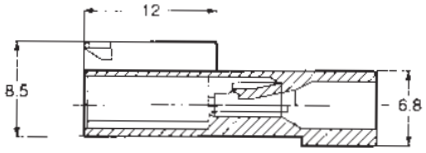
Material
UL94V-0, 6/6 Nylon

Part Number
316769-1 (Natural)
316769-2 (Red)
316769-4 (Yellow)
316769-6 (Blue)
316769-9 (Black)

Related Product Data
Tab Contacts—page 61
Mating Plug Housings
(Free-Hanging)—pages 62-64
Double Lock Plate—page 71







Section X-X

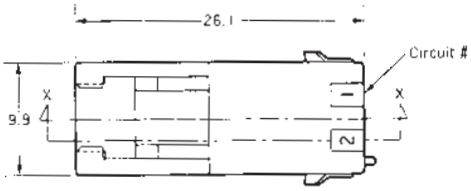
2 Circuits

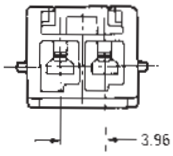
Wire-to-Wire

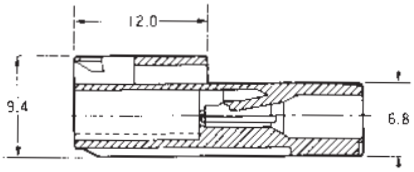
Material
UL94V-0, 6/6 Nylon

Part Number
179463-1 (Natural)
179463-2 (Red)
179463-4 (Yellow)
179463-6 (Blue)
179463-9 (Black)

Related Product Data
Tab Contacts—page 61
Mating Plug Housings
(Free-Hanging)—pages 62-64
Double Lock Plate—page 71







Section X-X

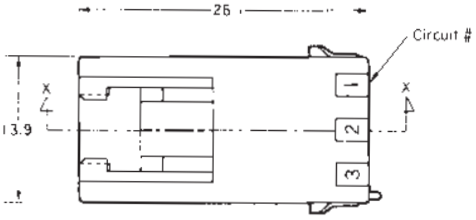
3 Circuits

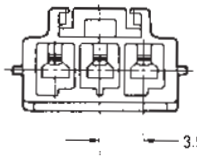
Wire-to-Wire

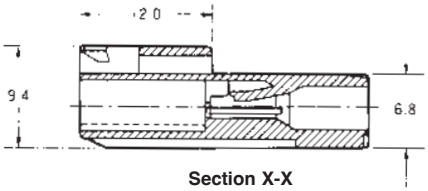
Material
UL94V-0, 6/6 Nylon

Part Number
179464-1 (Natural)
179464-2 (Red)
179464-4 (Yellow)
179464-6 (Blue)
179464-9 (Black)

Related Product Data
Tab Contacts—page 61
Mating Plug Housings
(Free-Hanging)—pages 62-64
Double Lock Plate—page 71







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UK: 44-8706-080-208

Power Double Lock (PDL) Connectors (Wire-to-Wire) (Continued)

3.96 mm Centerline Free-Hanging Cap Housing

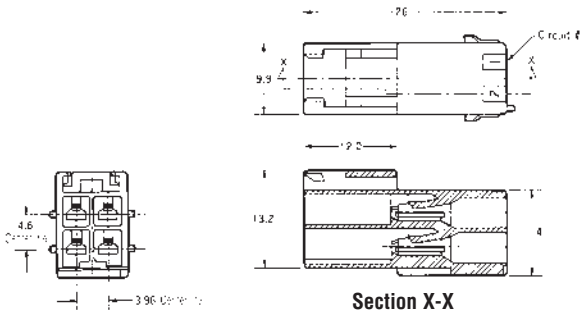
4 Circuits (2 Rows)

Wire-to-Wire

Material
UL94V-0, 6/6 Nylon

Part Number
179465-1 (Natural)
179465-4 (Yellow)
179465-6 (Blue)

Related Product Data
Tab Contacts—page 61
Mating Plug Housings
(Free-Hanging)—pages 62-64
Double Lock Plate—page 71



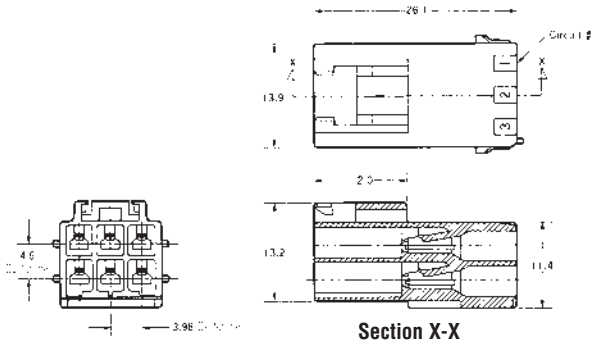
6 Circuits

Wire-to-Wire

Material
UL94V-0, 6/6 Nylon

Part Number
179466-1 (Natural)
179466-4 (Yellow)
179466-6 (Blue)

Related Product Data
Tab Contacts—page 61
Mating Plug Housings
(Free-Hanging)—pages 62-64
Double Lock Plate—page 71



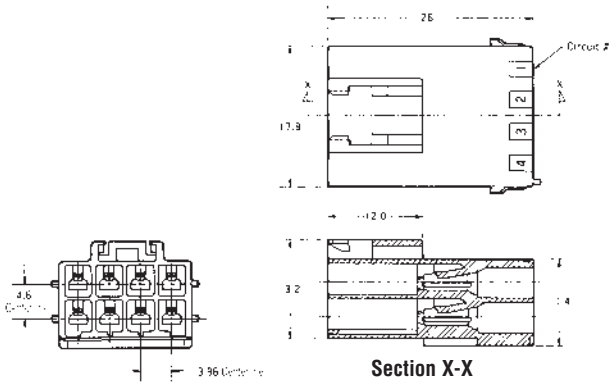
8 Circuits

Wire-to-Wire

Material
UL94V-0, 6/6 Nylon

Part Number
179467-1 (Natural)
179467-4 (Yellow)
179467-6 (Blue)

Related Product Data
Tab Contacts—page 61
Mating Plug Housings
(Free-Hanging)—pages 62-64
Double Lock Plate—page 71



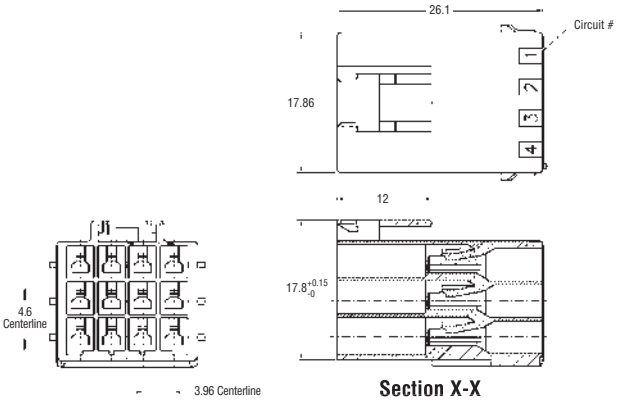
12 Circuits

Wire-to-Board

Material
UL94V-0, 6/6 Nylon

Part Number
1903720-1 (Natural)

Related Product Data
Tab Contacts—page 61
Mating Plug Housings
(Free-Hanging)—pages 62-64
Double Lock Plate—page 71



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Power Double Lock (PDL) Connectors (Wire-to-Wire) (Continued)

3.96 mm Centerline Panel Mount Cap Housing

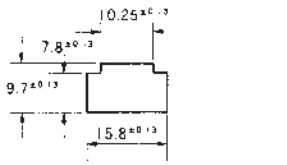
2 Circuits

Wire-to-Wire

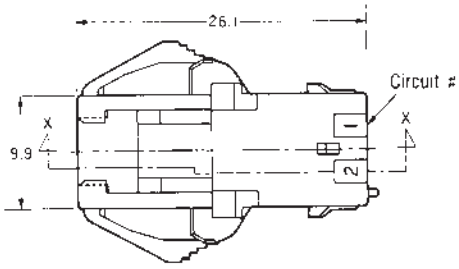
Material—UL94V-0, 6/6 Nylon

Part Number
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177906-2 (Red)
177906-4 (Yellow)
177906-6 (Blue)
177906-9 (Black)

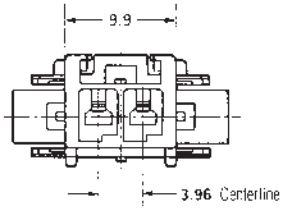
Related Product Data
Tab Contacts—page 61
Mating Plug Housings
(Free-Hanging)—pages 62-64
Double Lock Plate—page 71

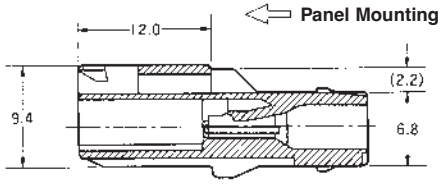


Panel Cutout
(Applicable Board Thickness: 0.8~2.0 mm)



Panel Mounting Direction





Section X-X

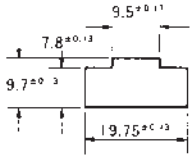
3 Circuits

Wire-to-Wire

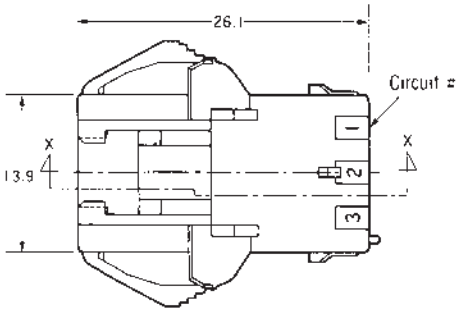
Material—UL94V-0, 6/6 Nylon

Part Number
177907-1 (Natural)
177907-2 (Red)
177907-4 (Yellow)
177907-6 (Blue)
177907-9 (Black)

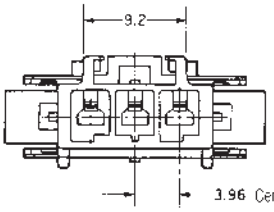
Related Product Data
Tab Contacts—page 61
Mating Plug Housings
(Free-Hanging)—pages 62-64
Double Lock Plate—page 71

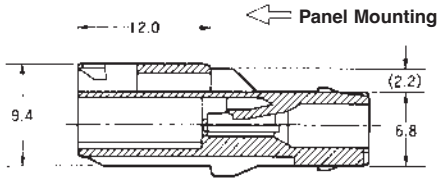


Panel Cutout
(Applicable Board Thickness: 0.8~2.0 mm)



Panel Mounting Direction





Section X-X

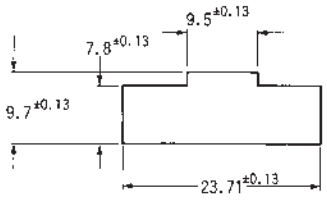
4 Circuits (1 Row)

Wire-to-Wire

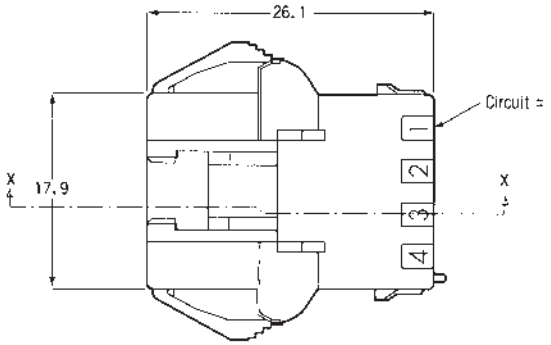
Material—UL94V-0, 6/6 Nylon

Part Number
316502-1 (Natural)
316502-4 (Yellow)
316502-6 (Blue)

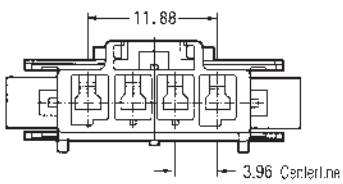
Related Product Data
Tab Contacts—page 61
Mating Plug Housings
(Free-Hanging)—pages 62-64
Double Lock Plate—page 71

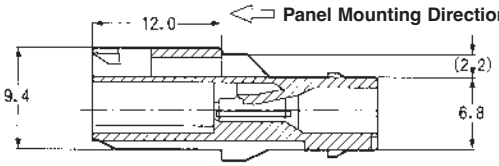


Panel Cutout
(Applicable Board Thickness: 0.8~2.0 mm)



Panel Mounting Direction





Section X-X

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UK: 44-8706-080-208

Power Double Lock (PDL) Connectors (Wire-to-Wire) (Continued)

3.96 mm Centerline Panel Mount Cap Housing

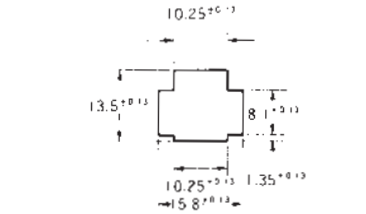
4 Circuits (2 Rows)

Wire-to-Wire

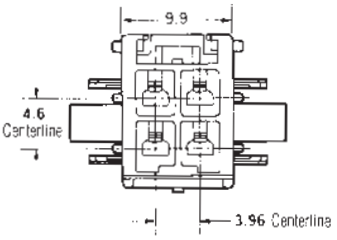
Material
UL94V-0, 6/6 Nylon

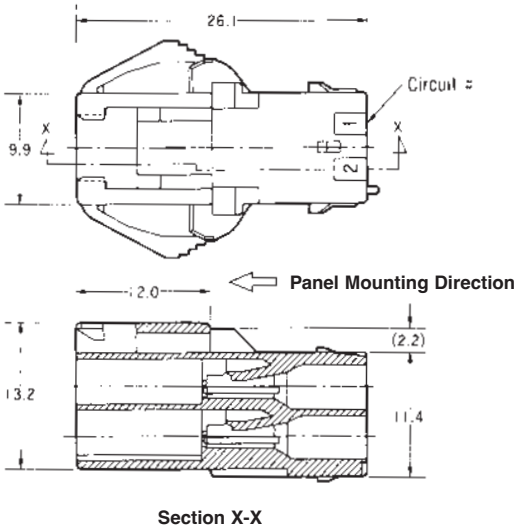
Part Number
177908-1 (Natural)
177908-4 (Yellow)
177908-6 (Blue)

Related Product Data
Tab Contacts—page 61
Mating Plug Housings
(Free-Hanging)—pages 62-64
Double Lock Plate—page 71



Panel Cutout
(Applicable Board Thickness: 0.8~2.0 mm)





Section X-X

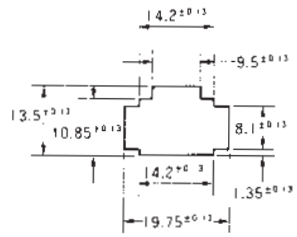
6 Circuits

Wire-to-Wire

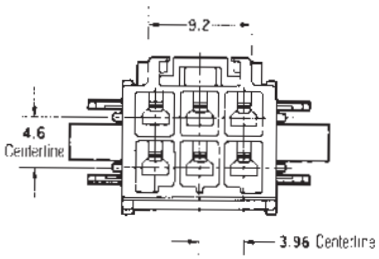
Material
UL94V-0, 6/6 Nylon

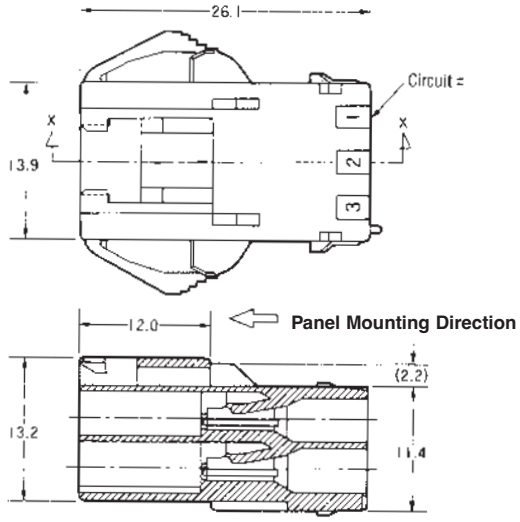
Part Number
177909-1 (Natural)
177909-4 (Yellow)
177909-6 (Blue)

Related Product Data
Tab Contacts—page 61
Mating Plug Housings
(Free-Hanging)—pages 62-64
Double Lock Plate—page 71



Panel Cutout
(Applicable Board Thickness: 0.8~2.0 mm)





Section X-X

Note: All dimensions shown are metric.
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UK: 44-8706-080-208

Power Double Lock (PDL) Connectors (Wire-to-Wire) (Continued)

3.96 mm Centerline Panel Mount Cap Housing

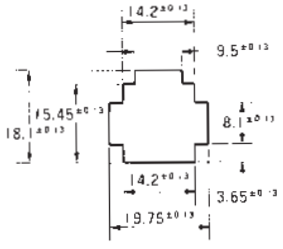
9 Circuits

Wire-to-Wire

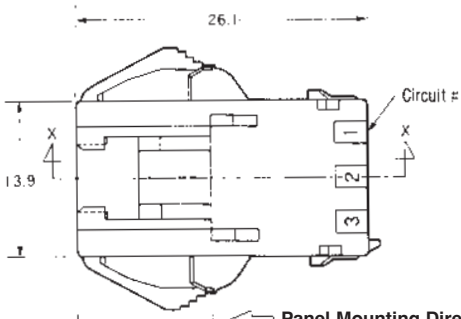
Material
UL94V-0, 6/6 Nylon

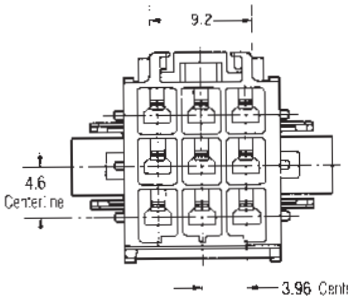
Part Number
177911-1 (Natural)
177911-4 (Yellow)
177911-6 (Blue)

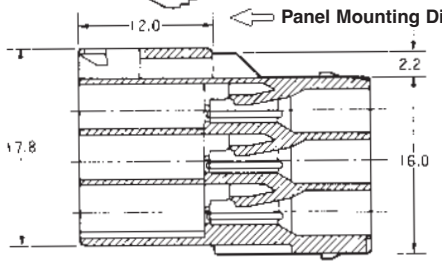
Related Product Data
Tab Contacts—page 61
Mating Plug Housings
(Free-Hanging)—pages 62-64
Double Lock Plate—page 71



Panel Cutout
(Applicable Board Thickness: 0.8~2.0 mm)







Section X-X

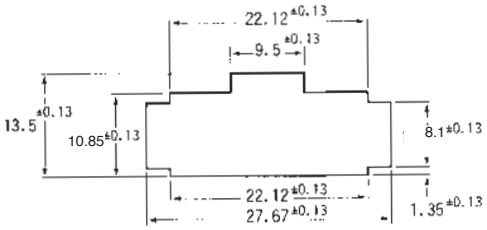
For 10 Circuits

Wire-to-Wire

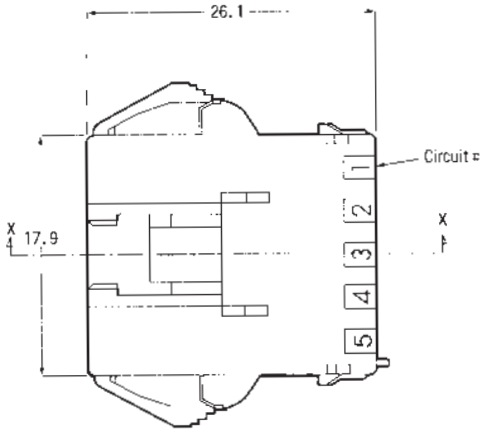
Material
UL94V-0, 6/6 Nylon

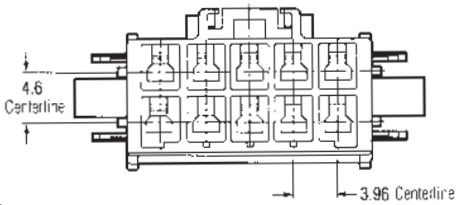
Part Number
177912-1 (Natural)
177912-4 (Yellow)
177912-6 (Blue)

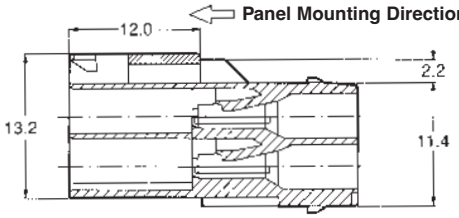
Related Product Data
Tab Contacts—page 61
Mating Plug Housings
(Free-Hanging)—pages 62-64
Double Lock Plate—page 71



Panel Cutout
(Applicable Board Thickness: 0.8~2.0 mm)







Section X-X

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UK: 44-8706-080-208

3.96 mm Centerline Panel Mount Cap Housing

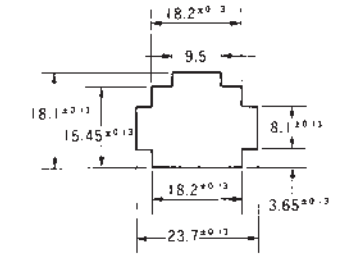
12 Circuits

Wire-to-Wire

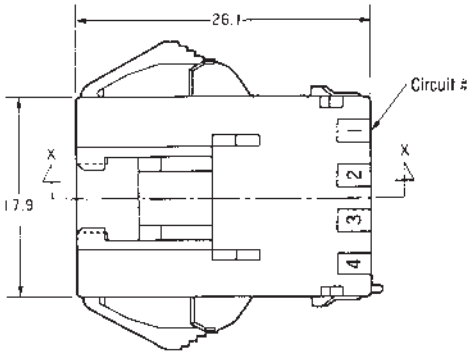
Material
UL94V-0, 6/6 Nylon

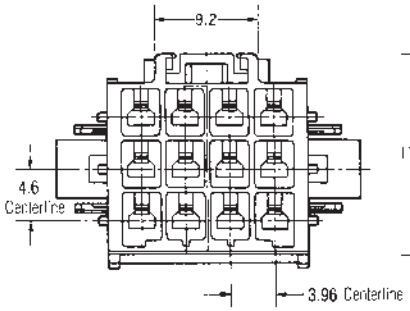
Part Number
177913-1 (Natural)
177913-4 (Yellow)
177913-6 (Blue)

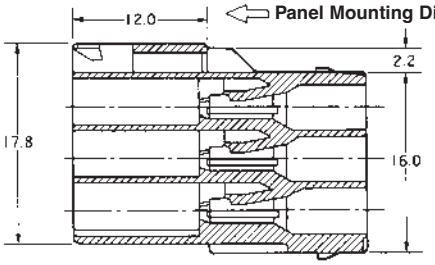
Related Product Data
Tab Contacts—page 61
Mating Plug Housings
(Free-Hanging)—pages 62-64
Double Lock Plate—page 71



Panel Cutout
(Applicable Board Thickness: 0.8~2.0 mm)







Section X-X

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Power Double Lock (PDL) Connectors (Wire-to-Board and Wire-to-Wire)

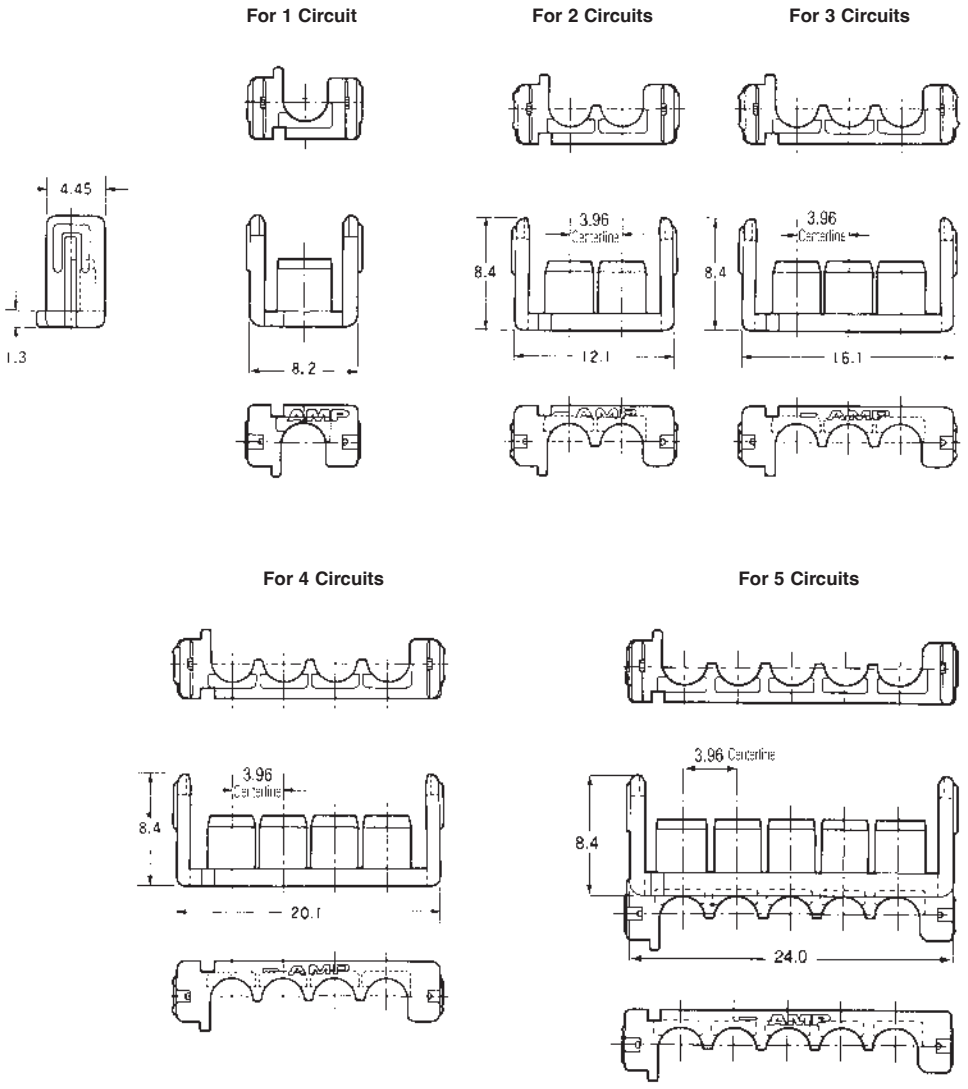
3.96 mm Centerline Double-Lock Plates

Double Lock Plates

Material
UL94V-0, glass filled 6/6 Nylon, natural color

Part Number
316770-1 (1 Pos.)
177918-1 (2 Pos.)
177919-1 (3 Pos.)
177920-1 (4 Pos.)
177921-1 (5 Pos.)

Related Product Data
Plug Housings—pages 62-64
Cap Housings —pages 65-70



No. of Pos.	Applicable Housing Part No.			Double Lock Plate	
	Plug Housing	Cap Housing		Part Number	Required Qty.
		Free-Hanging	Panel Mount		
1	316768-☐	316769-☐	——	316770-1 (1 Pos.)	1
2	177898-☐	179463-☐	177906-☐	177918-1 (2 Pos.)	1
3	177899-☐	179464-☐	177907-☐	177919-1 (3 Pos.)	1
4 (1 Row)	316501-☐	——	316502-☐	177920-1 (4 Pos.)	1
4 (2 Rows)	177900-☐	179465-☐	177908-☐	177918-1 (2 Pos.)	2
6	177901-☐	179466-☐	177909-☐	177919-1 (3 Pos.)	2
8	177902-☐	179467-☐	——	177920-1 (4 Pos.)	2
9	177903-☐	——	177911-☐	177919-1 (3 Pos.)	3
10	177904-☐	——	177912-☐	177921-1 (5 Pos.)	2
12	177905-☐	——	177913-☐	177920-1 (4 Pos.)	3

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Power Double Lock (PDL) Connectors (Wire-to-Board)

3.96 mm Centerline for PC Board Mount Tab Header, Vertical

2 Circuits

Wire-to-Board

Material and Finish

Housing—UL 94V-0, glass filled 6/6 Nylon

Contact—Copper alloy, Tin plated

Part Number

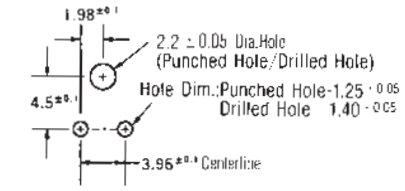
179838-1 (Natural)
179838-2 (Red)
179838-4 (Yellow)
179838-6 (Blue)
179838-9 (Black)

Tube (53 ea.)—316299-□

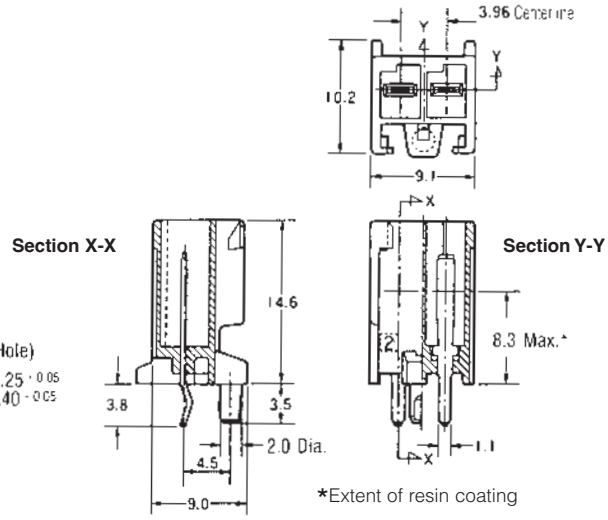
Related Product Data

Mating Plug Housing

(Free-Hanging)—pages 62-64



PC Board Layout
(Applicable Board Thickness: 1.6 mm)



3 Circuits

Wire-to-Board

Material and Finish

Housing—UL 94V-0, glass filled 6/6 Nylon

Contact—Copper alloy, Tin plated

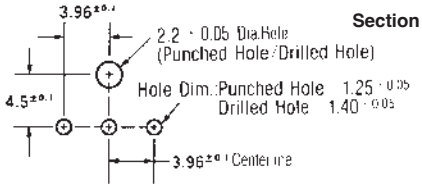
Part Number

179839-1 (Natural)
179839-2 (Red)
179839-4 (Yellow)
179839-6 (Blue)
179839-9 (Black)

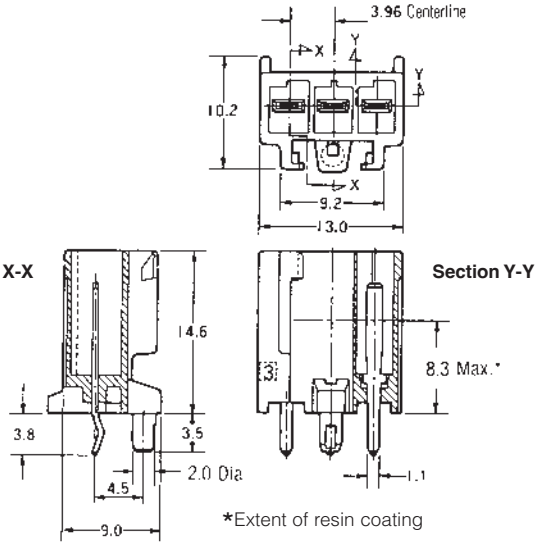
Related Product Data

Mating Plug Housing

(Free-Hanging)—pages 62-64



PC Board Layout
(Applicable Board Thickness: 1.6 mm)



Note: All dimensions shown are metric.

Note: All part numbers are RoHS Compliant.

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Power Double Lock (PDL) Connectors (Wire-to-Board) (Continued)

3.96 mm Centerline for PC Board Mount Tab Header, Vertical (Continued)

4 Circuits (2 Rows)

Wire-to-Board

Material and Finish

Housing—UL 94V-0, glass filled 6/6 Nylon.

Contact—Copper alloy, Tin plated

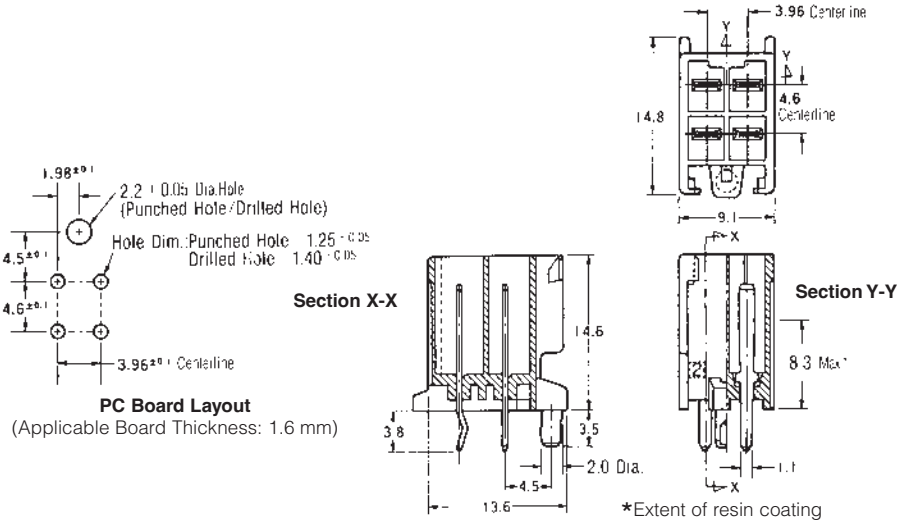
Part Number

179840-1 (Natural)
179840-4 (Yellow)
179840-6 (Blue)

Related Product Data

Mating Plug Housings

(Free-Hanging)—pages 62-64



PC Board Layout
(Applicable Board Thickness: 1.6 mm)

6 Circuits

Wire-to-Board

Material and Finish

Housing—UL 94V-0, glass filled 6/6 Nylon.

Contact—Copper alloy, Tin plated

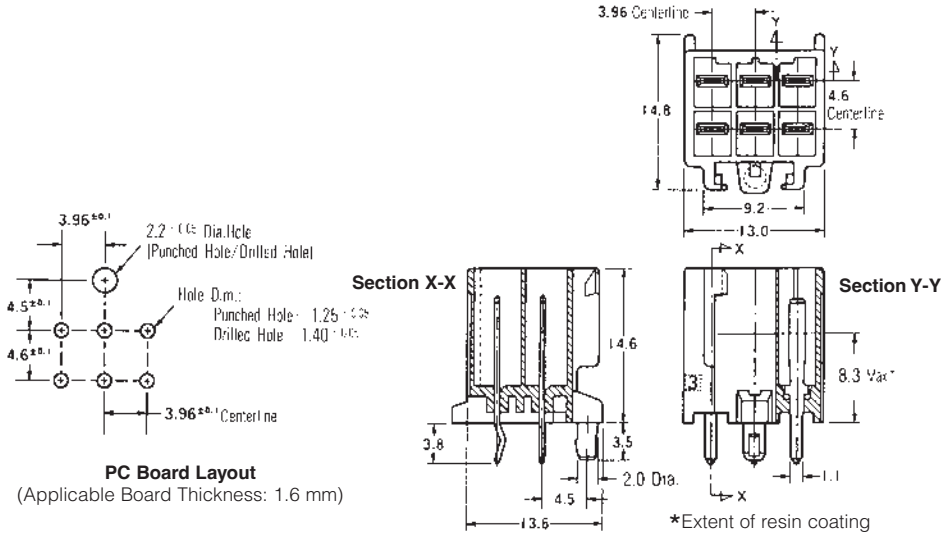
Part Number

179841-1 (Natural)
179841-4 (Yellow)
179841-6 (Blue)

Related Product Data

Mating Plug Housings

(Free-Hanging)—pages 62-64



PC Board Layout
(Applicable Board Thickness: 1.6 mm)

8 Circuits

Wire-to-Board

Material and Finish

Housing—UL 94V-0, glass filled 6/6 Nylon.

Contact—Copper alloy, Tin plated

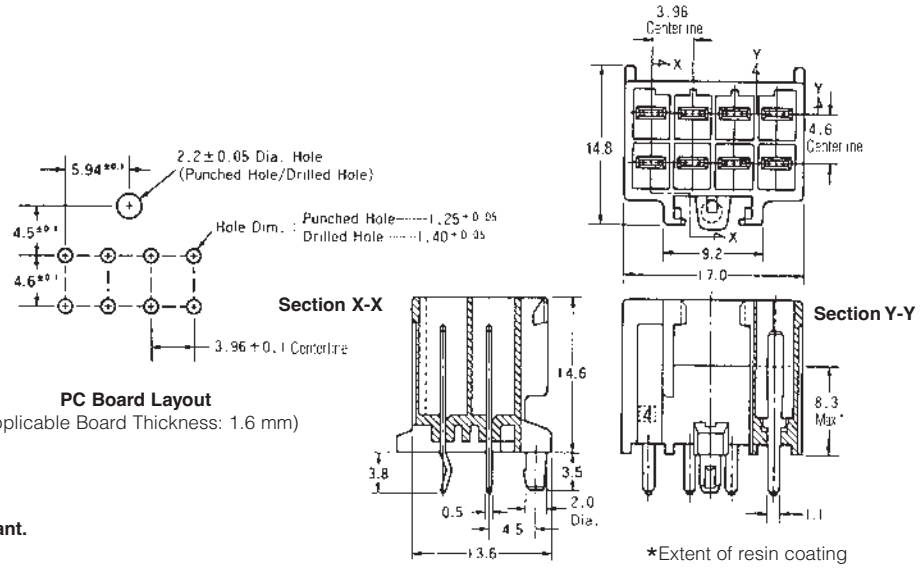
Part Number

917845-1 (Natural)
917845-4 (Yellow)
917845-6 (Blue)

Related Product Data

Mating Plug Housings

(Free-Hanging)—pages 62-64



PC Board Layout
(Applicable Board Thickness: 1.6 mm)

Note: All dimensions shown are metric.

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Power Double Lock (PDL) Connectors (Wire-to-Board) (Continued)

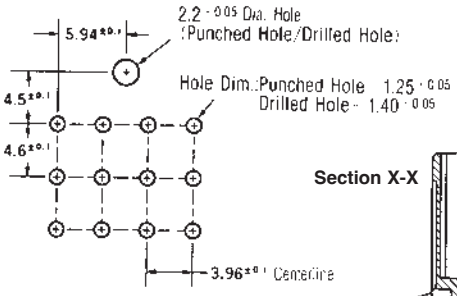
3.96 mm Centerline for PC Board Mount Tab Header, Vertical

12 Circuits
Wire-to-Board

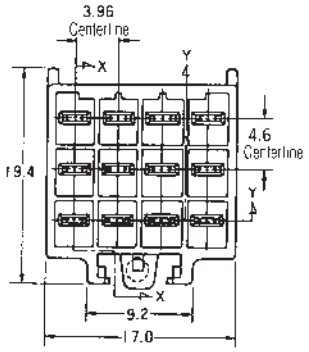
Material and Finish
Housing—UL 94V-0, glass filled 6/6 Nylon
Contact—Copper alloy, Tin plated

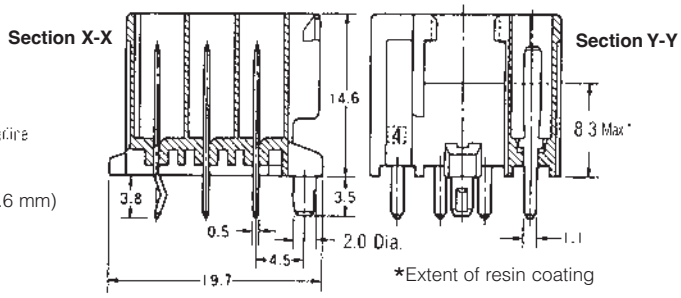
Part Number
179843-1 (Natural)
179843-4 (Yellow)
179843-6 (Blue)

Related Product Data
Mating Plug Housings
(Free-Hanging)—pages 62-64



PC Board Layout
(Applicable Board Thickness: 1.6 mm)





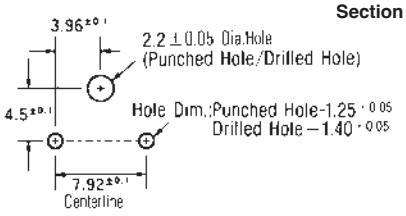
3.96 mm Centerline (2 Pos. = 7.92 mm Centerline) for PC Board Mount Tab Header, Vertical

2 Circuits
Wire-to-Board

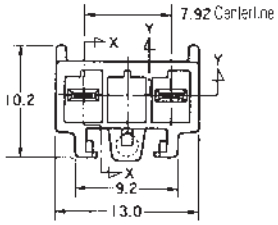
Material and Finish
Housing—UL 94V-0, glass filled 6/6 Nylon
Contact—Copper alloy, Tin plated

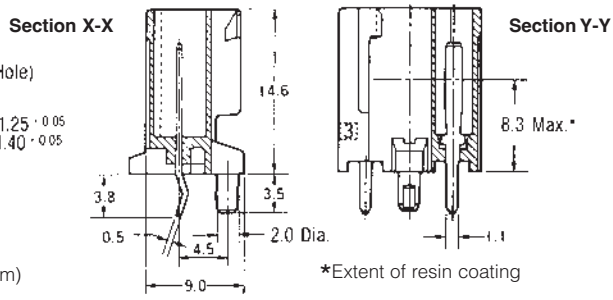
Part Number
With kink
179844-1 (Natural)
179844-2 (Red)
179844-4 (Yellow)
179844-6 (Blue)
179844-9 (Black)
Without kink
9-179844-1 (Natural)
9-179844-6 (Blue)

Related Product Data
Mating 3-Circuit Plug Housings
(Free-Hanging)—page 62



PC Board Layout
(Applicable Board Thickness: 1.6 mm)





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Power Double Lock (PDL) Connectors (Wire-to-Board and Wire-to-Wire) (Continued)

6.5 mm Centerline Free-Hanging Plug Housing

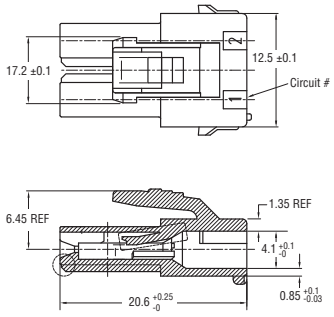
2 Circuits

Wire-to-Board

Material
UL 94V-0, 6/6 Nylon

Part Number
1939344-1 (Natural)

Related Product Data
Receptacle Contacts—page 61
Double Lock Plate—page 77
Mating Tab Headers—pages 79-81



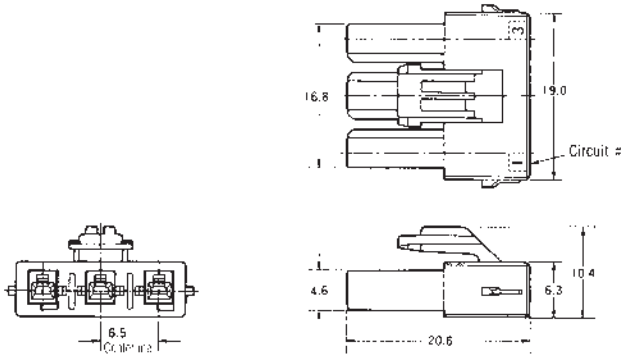
3 Circuits

Wire-to-Board

Material
UL 94V-0, 6/6 Nylon

Part Number
179938-1 (Natural)
179938-2 (Red)
179938-4 (Yellow)
179938-6 (Blue)
179938-9 (Black)

Related Product Data
Receptacle Contacts—page 61
Double Lock Plate—page 77
Mating Tab Headers—pages 79-81



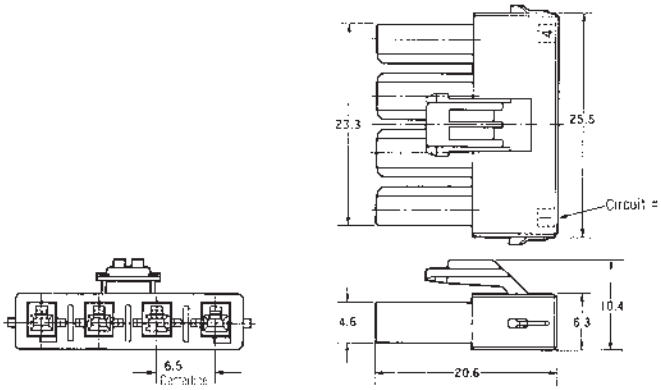
4 Circuits (1 Row)

Wire-to-Board

Material
UL 94V-0, 6/6 Nylon

Part Number
179939-1 (Natural)
179939-4 (Yellow)
179939-6 (Blue)
179939-9 (Black)

Related Product Data
Receptacle Contacts—page 61
Double Lock Plate—page 77
Mating Tab Headers—pages 79-81



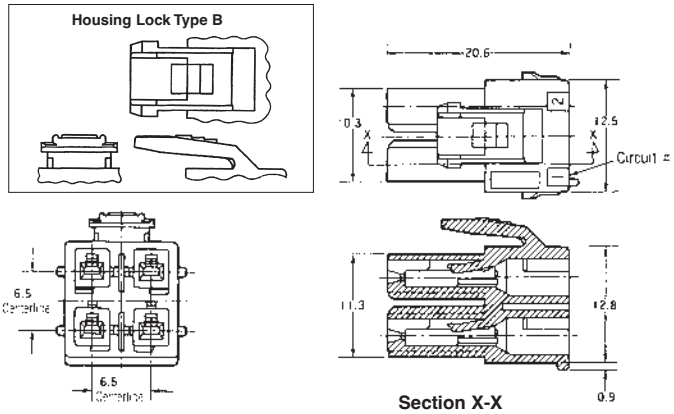
4 Circuits (2 Rows)

Wire-to-Board

Material
UL 94V-0, 6/6 Nylon

Part Number
Housing Lock Type A
179861-1 (Natural)
179861-4 (Yellow)
179861-6 (Blue)
Housing Lock Type B
2-179861-1 (Natural)
2-179861-4 (Yellow)
2-179861-6 (Blue)

Related Product Data
Receptacle Contacts—page 61
Double Lock Plate—page 77
Mating Tab Headers—pages 79-81



Note: All dimensions shown are metric.
Note: All part numbers are RoHS Compliant.

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Japan: 81-44-844-8013
UK: 44-8706-080-208

Power Double Lock (PDL) Connectors (Wire-to-Board and Wire-to-Wire) (Continued)

6.5 mm Centerline Free-Hanging Plug Housing

6 Circuits

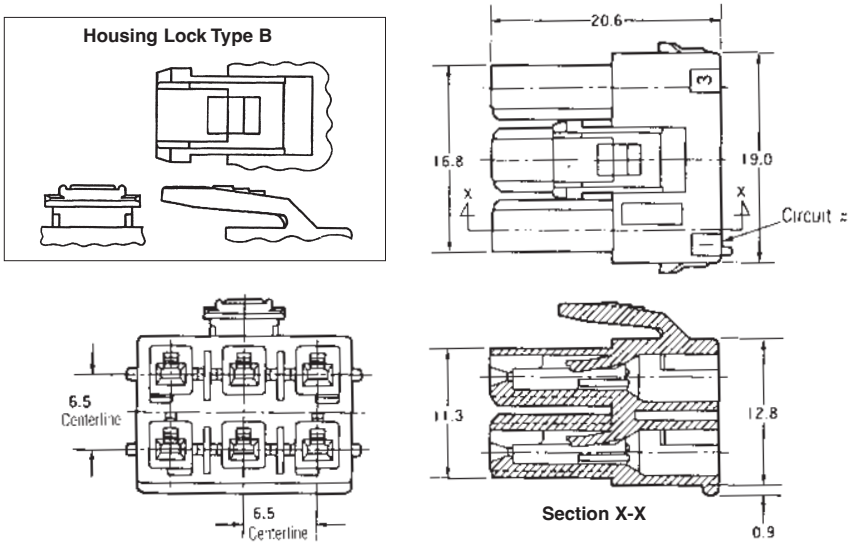
Wire-to-Board

Material
UL 94V-0, 6/6 Nylon

Part Number
Housing Lock Type A
179862-1 (Natural)
179862-4 (Yellow)
179862-6 (Blue)

Housing Lock Type B
2-179862-1 (Natural)
2-179862-4 (Yellow)
2-179862-6 (Blue)

Related Product Data
Receptacle Contacts—page 61
Double Lock Plate—page 77
Mating Tab Headers—pages 79-81



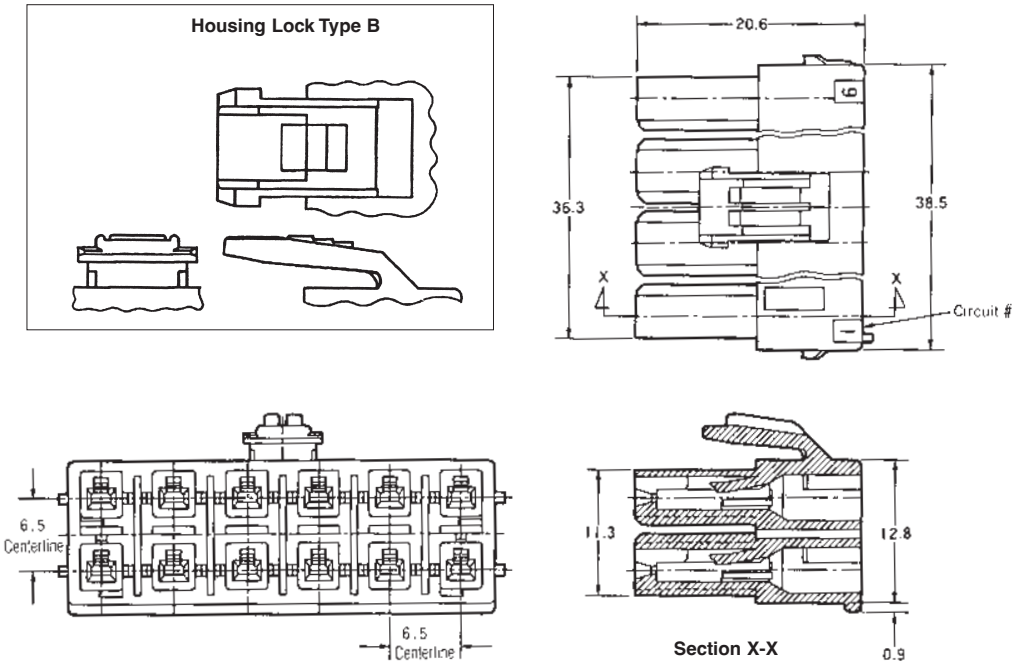
12 Circuits

Wire-to-Board

Material
UL 94V-0, 6/6 Nylon.

Part Number
Housing Lock Type A
917354-1 (Natural)
Housing Lock Type B
2-917354-1 (Natural)

Related Product Data
Receptacle Contacts—page 61
Double Lock Plate—page 77
Mating Tab Headers—pages 79-81



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Power Double Lock (PDL) Connectors (Wire-to-Board and Wire-to-Wire) (Continued)

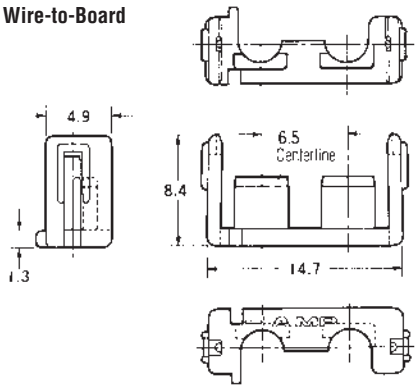
6.5 mm Centerline Double-Lock Plates

Material
UL94V-0, glass filled
6/6 Nylon, natural color

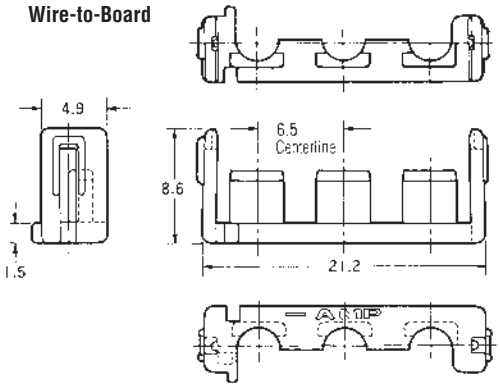
Part Number
316061-1 (2-Circuits)
316062-1 (3-Circuits)
316063-1 (4-Circuits)
353891-1 (6-Circuits)

Related Product Data
Plug Housings
(Free-Hanging)—pages 75-76

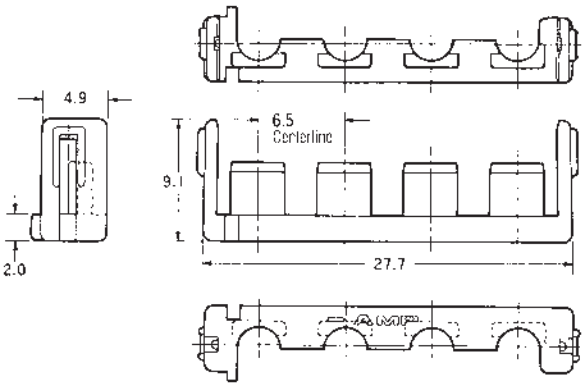
For 2 Circuits
Wire-to-Board



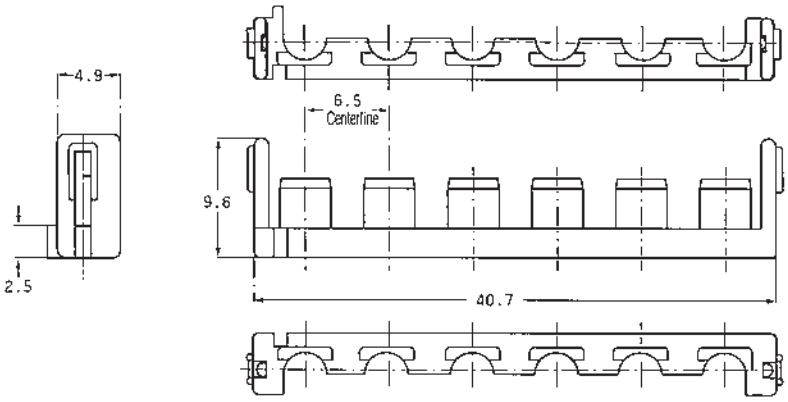
For 3 Circuits
Wire-to-Board



For 4 Circuits
Wire-to-Board



For 6 Circuits
Wire-to-Board



No. of Pos.	Applicable Plug Housing Part No.	Double Lock Plate	
		Part Number	Required Qty.
3	179938-☐	316062-1	1
4 (1 Row)	179939-☐	316063-1	1
4 (2 Rows)	179861-☐	316061-1	2
6	179862-☐	316062-1	2
12	917354-☐	353891-1	2

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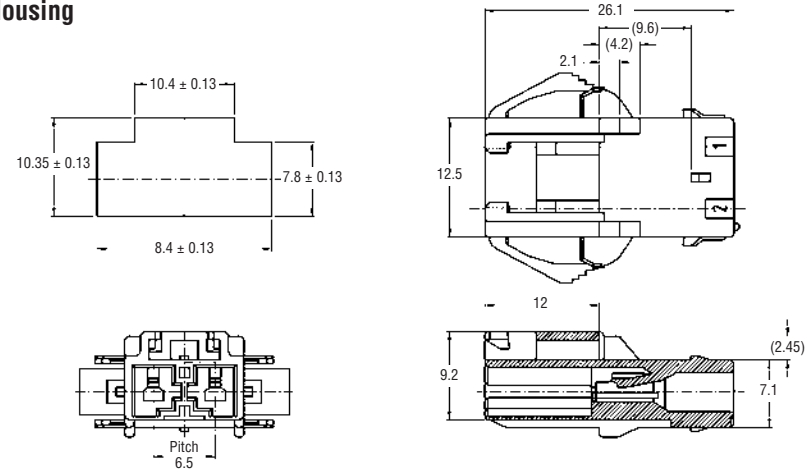
Power Double Lock (PDL) Connectors (Wire-to-Board) (Continued)

6.5 mm Centerline Panel Mount Cap Housing

2 Circuits
Wire-to-Wire

Material and Finish
Housing—UL 94V-0, glass filled 6/6 Nylon
Contact—Copper alloy, Tin plated

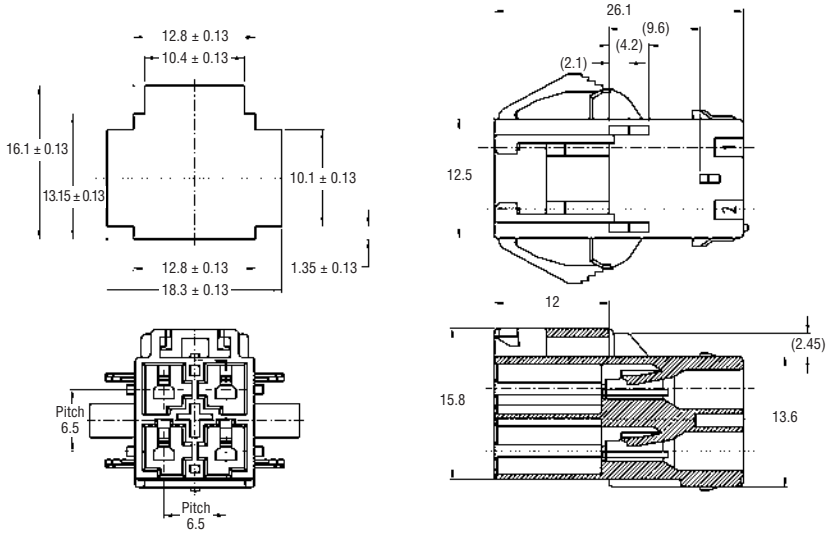
Part Number
1939343-1 (Natural)



4 Circuits
Wire-to-Wire

Material and Finish
Housing—UL 94V-0, glass filled 6/6 Nylon
Contact—Copper alloy, Tin plated

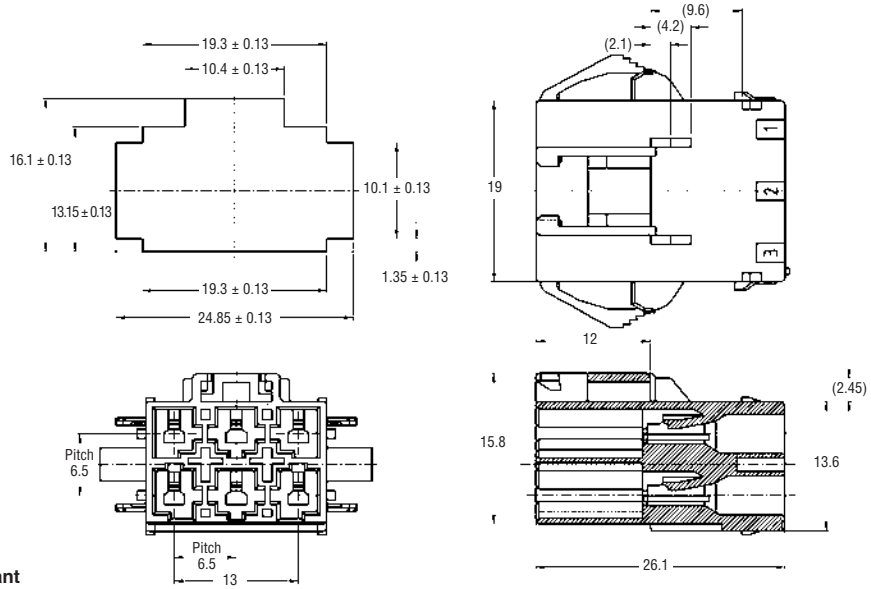
Part Number
1903486-1 (Natural)



6 Circuits
Wire-to-Wire

Material and Finish
Housing—UL 94V-0, glass filled 6/6 Nylon
Contact—Copper alloy, Tin plated

Part Number
1903487-1 (Natural)



Note: All dimensions shown are metric.
Note: All part numbers are RoHS Compliant

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Japan: 81-44-844-8013
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Power Double Lock (PDL) Connectors (Wire-to-Board) (Continued)

6.5 mm Centerline (2 Pos.=13 mm Centerline) PC Board Mount Tab Header, Vertical

3 Circuits

Wire-to-Board

Material and Finish

Housing—UL 94V-0, glass filled 6/6 Nylon

Contact—Copper alloy, Tin plated

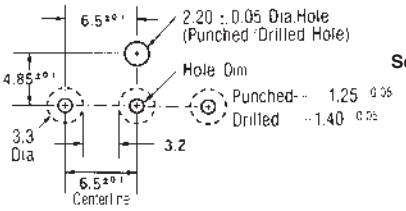
Part Number

179846-1 (Natural)
179846-4 (Yellow)
179846-6 (Blue)

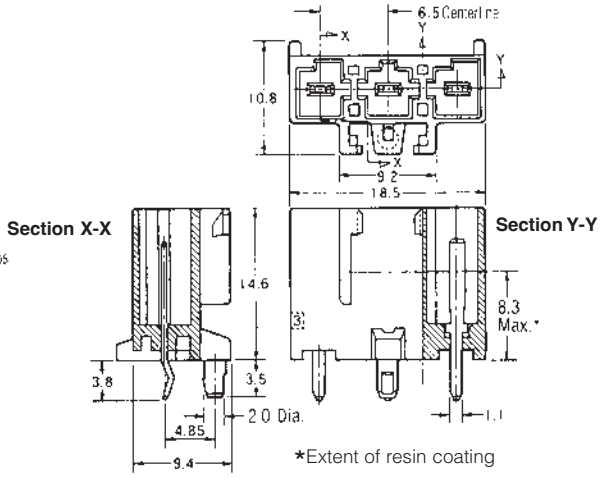
Related Product Data

Mating Plug Housings

(Free-Hanging)—pages 75-76



PC Board Layout
(Applicable Board Thickness: 1.6 mm)



2 Circuits
(13 mm Centerline)

Wire-to-Board

Material and Finish

Housing—UL 94V-0, glass filled 6/6 Nylon

Contact—Copper alloy, Tin plated

Part Number

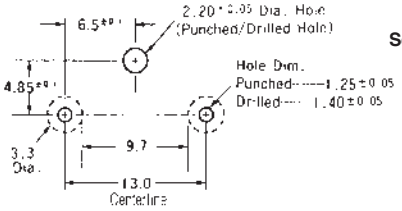
917745-1 (Natural)
917745-4 (Yellow)
917745-6 (Blue)

Tube (26 ea.)—917746-☐

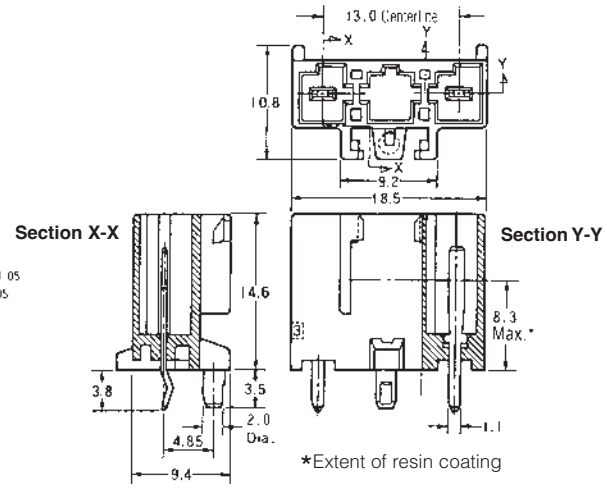
Related Product Data

Mating 3-Circuit Plug Housings

(Free-Hanging)—page 75



PC Board Layout
(Applicable Board Thickness: 1.6 mm)



4 Circuits (1 Row)

Wire-to-Board

Material and Finish

Housing—UL 94V-0, glass filled 6/6 Nylon

Contact—Copper alloy, Tin plated

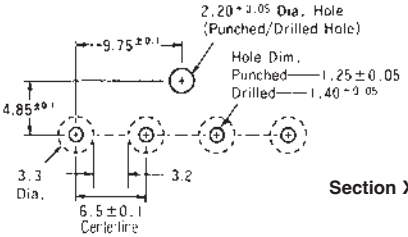
Part Number

179847-1 (Natural)
179847-4 (Yellow)
179847-6 (Blue)

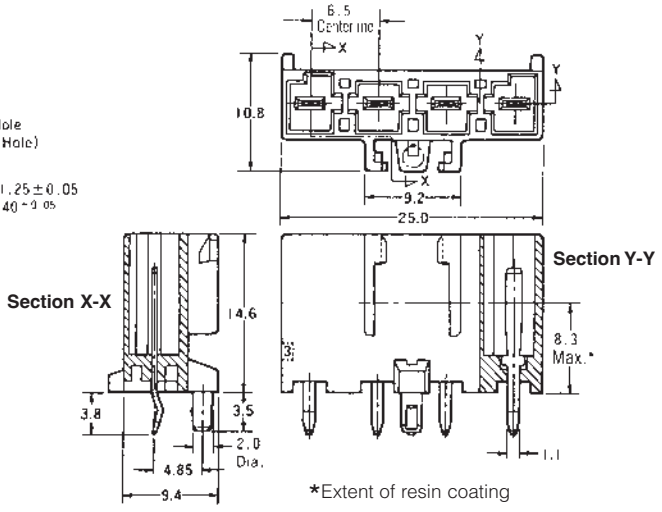
Related Product Data

Mating Plug Housings

(Free-Hanging)—pages 75-76



PC Board Layout
(Applicable Board Thickness: 1.6 mm)



Note: All dimensions shown are metric.

Note: All part numbers are RoHS Compliant.

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Power Double Lock (PDL) Connectors (Wire-to-Board) (Continued)

6.5 mm Centerline PC Board Mount Tab Header, Vertical

4 Circuits (2 Rows)

Wire-to-Board

Material and Finish

Housing—UL 94V-0, glass filled 6/6 Nylon

Contact—Copper alloy, Tin plated

Part Number

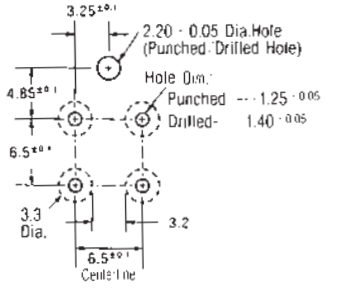
179848-1 (Natural)
179848-4 (Yellow)
179848-6 (Blue)

Tube (40 ea.)—917747-□

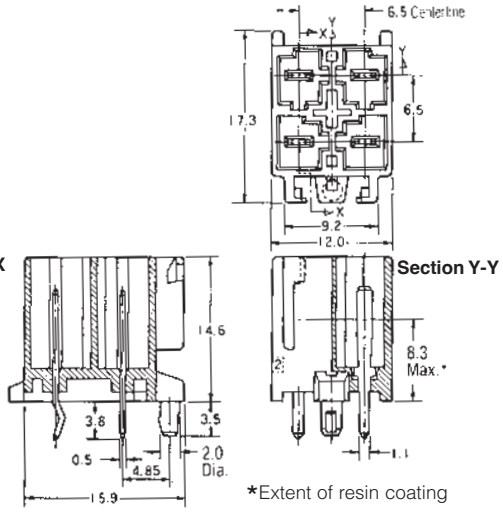
Related Product Data

Mating Plug Housings

(Free-Hanging)—pages 75-76



PC Board Layout
(Applicable Board Thickness: 1.6 mm)



*Extent of resin coating

6 Circuits

Wire-to-Board

Material and Finish

Housing—UL 94V-0, glass filled 6/6 Nylon

Contact—Copper alloy, Tin plated

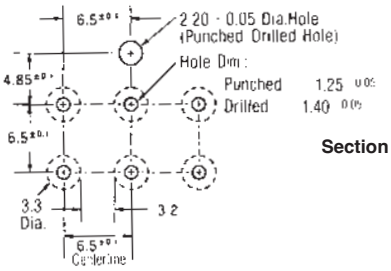
Part Number

179849-1 (Natural)
179849-4 (Yellow)
179849-6 (Blue)

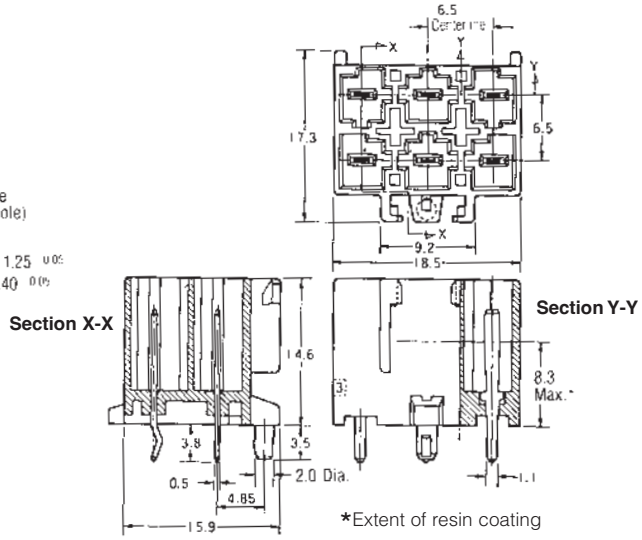
Related Product Data

Mating Plug Housings

(Free-Hanging)—pages 75-76



PC Board Layout
(Applicable Board Thickness: 1.6 mm)



*Extent of resin coating

Note: All dimensions shown are metric.

Note: All part numbers are RoHS Compliant.

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Power Double Lock (PDL) Connectors (Wire-to-Board) (Continued)

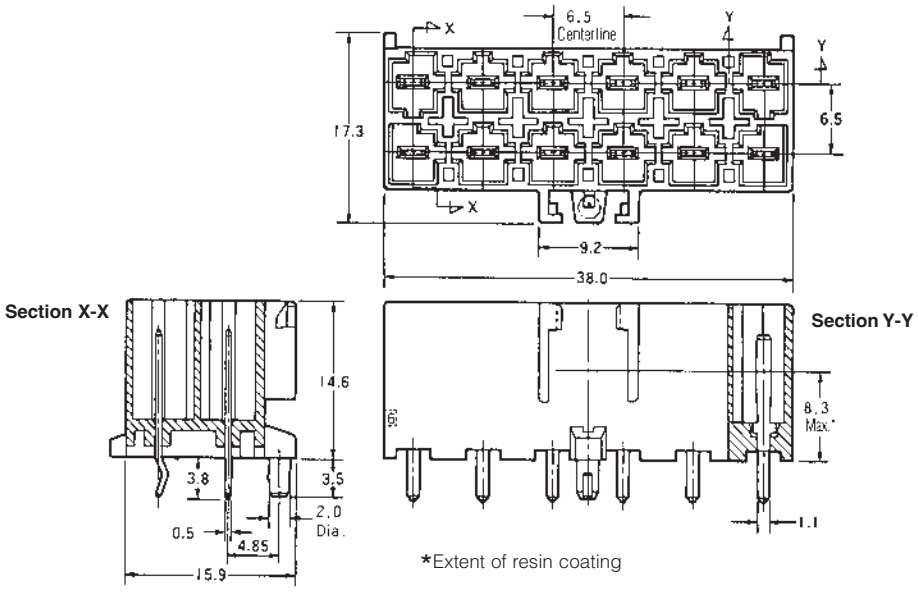
6.5 mm Centerline PC Board Mount Tab Header, Vertical

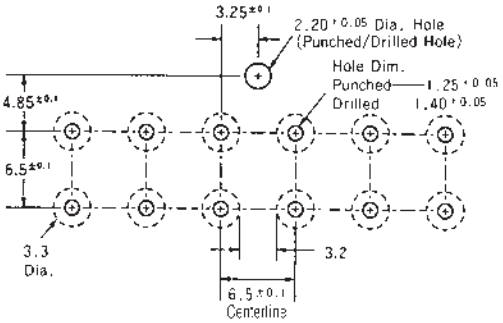
12 Circuits
Wire-to-Board

Material and Finish
Housing—UL 94V-0, glass filled 6/6 Nylon
Contact—Copper alloy, Tin plated

Part Number
With Boss, With kink
917353-1 (Natural)
Without Boss, Without kink
3-917353-1 (Natural)

Related Product Data
Mating Plug Housings
(Free-Hanging)—pages 75-76





PC Board Layout
(Applicable Board Thickness: 1.6 mm)

Note: All dimensions shown are metric.
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Engineering Notes

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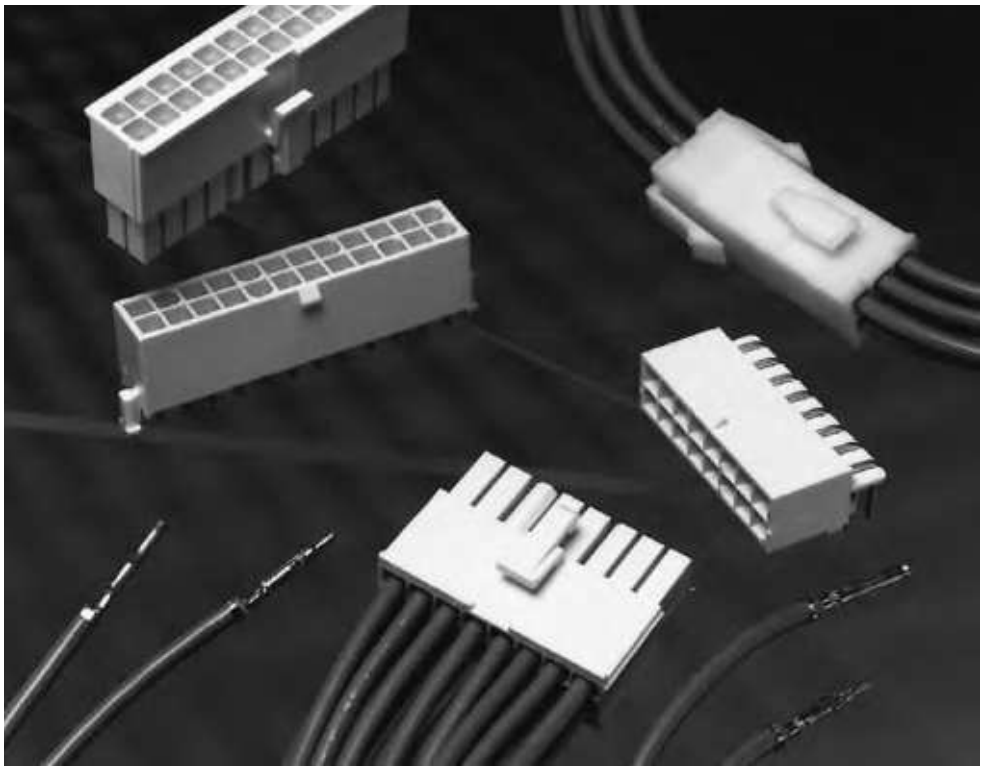
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Mini-Universal MATE-N-LOK Connectors

Product Facts

- Compact, durable housings
- Pins and sockets can be accommodated in the same housings
- Contacts fully protected in the housings. Both pins and sockets can be used on the power supply wiring
- Fully polarized to provide proper plug-to-cap mating incorporating a positive locking mechanism to help prevent accidental disengagement of mated connectors. Also facilitates panel mounting
- Free-hanging or panel mount
- Housings available in 1, 2, 3, 4, 6, 9, 12 and 15 circuit configuration for wire-to-wire connection
- Connectors can be mounted to .031-.079 [0.79-2.00] thick panels
- Printed circuit board pin headers are available in 2 thru 24 circuit vertical and right-angle configurations
- Hermaphroditic housings available in 2, 3 and 4 circuits for free-hanging applications
- Low insertion/extraction forces
- Contacts accept wire size range 30-16 AWG [.05-1.2 mm²]
- Test probe contacts available
- .163 [4.14] centerline spacing
- Not for interrupting current
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 7189



Performance Characteristics

The Mini-Universal MATE-N-LOK Connector performance characteristics found on pages 83-84 are based on free-hanging and panel mount connectors, loaded with contacts crimped on stranded wire.

Low Level Termination Resistance
20 milliohms max. total resistance between wire crimps of a mated pin and socket

Dielectric Withstanding Voltage—1.5 KVAC between adjacent circuits

Insulation Resistance—1000 megohms minimum between adjacent circuits

Voltage Rating—600 V AC or DC

Contact Retention—8 lb. min. per contact

Durability—20 cycles, mating and unmating

Technical Documents

Product Specifications

108-1542 Mini-Universal MATE-N-LOK Connectors
108-1543 Mini-Universal MATE-N-LOK Headers
108-5151 Mini-Universal MATE-N-LOK Connectors (UL94V-2)
108-5138 Mini-Universal MATE-N-LOK Connectors (UL94V-0)

Application Specification

114-16017 Mini-Universal MATE-N-LOK Connectors

Instruction Sheets

408-3234 Mini-Universal MATE-N-LOK Connectors
411-5105 Mini-Universal MATE-N-LOK Connectors

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Mini-Universal MATE-N-LOK Connectors (Continued)

Performance Characteristics (Continued)

Maximum Current—Maximum current rating of Mini-Universal MATE-N-LOK connectors is limited by the maximum operating temperature of the housings which is 105°C including the temperature rise of the contacts which is a maximum of 30°C. There are several variables which have a direct effect on this maximum current-carrying capability for a given connector and must be considered for each application. These variables are:

Wire Size—Larger diameter wire will carry more current since it has less internal resistance to current flow and thus generates less heat. Longer wire lengths also enhance current-carrying capabilities since the wire conducts heat away from the connector.

Connector Size—In general, the more circuits in a connector, the less current can be carried.

Ambient Temperature—The higher the ambient temperature, the less current can be carried in any given connector.

Printed Wiring Board Conductor Size—The finished trace conductor width and thickness should be maximized to allow for the greatest current-carrying capacity and heat dissipation.

Mini-Universal MATE-N-LOK connectors also will withstand the following tests:

Housing Panel Retention—26 lb. min.

Housing Lock Strength—9 lb. min.

Thermal Shock— –55°C to +105°C

Temperature-Humidity Cycling—25°C to 65°C at 95 RH

Vibration—10-55-10 cycles per minute at .06 inch total excursion

Physical Shock—18 drops, 50 G half-sine at 11 milliseconds

Current Rating Verification for 30°C Maximum Temperature Rise 100% Energized

Wire-to-Wire
Mini-Universal MATE-N-LOK Connectors — Calculated Current Table

Number of Circuits	Wire AWG						
	16	18	20	22	24	26	30
2	9.50	9.00	7.50	6.00	5.00	4.00	3.00
3	8.50	8.00	7.00	5.50	4.50	4.00	3.00
4	8.00	7.00	6.00	5.00	4.50	3.50	2.50
6	7.00	6.50	5.50	4.50	4.00	3.00	2.50
9	6.00	5.50	4.50	4.00	3.50	3.00	2.00
12	6.00	5.50	4.50	3.50	3.00	2.50	2.00
15	5.50	5.00	4.00	3.50	3.00	2.50	2.00

Values are based on initial Temperature Rise versus Current Testing and are intended to be a guide in the selection of a connector family. All applications should be tested by the end user. The values listed are per circuit, for fully loaded housings being 100% energized. **Note:** All combinations above were not tested and this chart contains interpolated and extrapolated values.

Minimum Wire Lengths for T-Rise vs. Current Testing

AWG	Min. Length (in.)	AWG	Min. Length (in.)
30	2.6	18	9.4
28	3.2	16	11.3
26	4.1	14	13.7
24	5.1	12	16.4
20	7.8	10	19.3

Note: If wire lengths used are less than those listed above, the current-carrying ability of the system will be reduced due to less heat being conducted away from the connector. The customer should fully test all applications.

Wire-to-Board

Due to the vast differences in trace geometry and printed circuit board configurations, we are unable to provide a separate current carrying chart for our printed circuit board header products. However, the above Wire-to-Wire charts may be used as a guideline for headers if the trace width and thickness is equal to the listed wire gauge. For vertical headers, only 95% of the Wire-to-Wire value should be used. For right-angle headers, only 75% of the Wire-to-Wire value should be used. The chart values are only a tool for connector selection and will require the customer to fully test their application.

Termination Resistance/Contact Crimp Tensile Force

Wire Size		Termination Resistance		Contact Crimp Tensile Force	
AWG	mm^2	Test Current (Amps)	Resistance Milliohms (Max. Init.)	Force (Min.) lbs.	Force (Min.) N
30	.05	—	—	—	—
28	.08	—	—	—	—
26	.12	—	—	4	18
24	.2	—	—	7	31
22	.3	—	—	11	49
20	.5	—	—	13	58
18	.8	—	—	15	67
16	1.2	—	—	18	80

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Mini-Universal MATE-N-LOK Connectors (Continued)

Mini-Universal MATE-N-LOK Connector Mating Combinations

Connector Part Number				Mating Connector Part Number					
					PC Board Pin Headers				
						Vertical			Right-Angle
Number of Circuits	Flammability Rating	Style	Plug[1] Housing Part No.	Cap[1] Housing Part No.	Plating	With Drain Holes	Without Drain Holes	Blindmate	With Board Lock
1	UL94V-2	In-Line	172335-1	172327-1[4]	—	—	—	—	—
	UL94V-0	In-Line	172164-1	172156-1[4]	Tin[6]	—	—	—	1-794374-0
					Duplex[5]	—	—	—	1-794374-1
2	UL94V-2	In-Line	172336-1	172328-1[2]	—	—	—	—	—
				172343-1[4]	—	—	—	—	—
			172807-1[3]	172807-1[3]	—	—	—	—	—
	UL94V-0	In-Line	173956-1[3]	173956-1[3]	—	—	—	—	—
			172165-1	172157-1[2]	Tin[6]	1-770166-0	1-770872-0	—	1-770966-0
				172233-1[4]	Duplex[5]	1-770166-1	1-770872-1	—	1-770966-1
			794894-1[7]	794896-1[2,7]	Tin/Duplex	1-770166-1	1-770872-1	—	1-770966-1
3	UL94V-2	In-Line	172808-1[3]	172808-1[3]	—	—	—	—	—
			172337-1	172329-1[2]	Tin	—	—	—	—
				172344-1[4]	Duplex[5]	—	—	—	—
	UL94V-0	In-Line	173957-1[3]	173957-1[3]	—	—	—	—	—
			172166-1	172158-1[2]	Tin	1-770170-0	1-770873-0	—	1-770967-0
				172234-1[4]	Duplex[5]	1-770170-1	1-770873-1	—	1-770967-1
4	UL94V-2	Dual Row	172809-1[3]	172809-1[3]	—	—	—	—	—
			172338-1	172330-1[2]	—	—	—	—	—
	UL94V-0	Dual Row	173958-1[3]	173958-1[3]	—	—	—	—	—
			172167-1	172159-1[2]	Tin	1-770174-0	1-770874-0	1-794325-0	1-770968-0
					Duplex[5]	1-770174-1	1-770874-1	1-794325-1	1-770968-1
			794805-1[7]	794939-1[2,7]	Tin/Duplex	1-770174-1	1-770874-1	—	1-770968-1
6	UL94V-2	Dual Row	172339-1	172331-1[2]	—	—	—	—	—
	UL94V-0	Dual Row	172168-1	172160-1[2]	Tin	1-770178-0	1-770875-0	1-794326-0	1-770969-0
					Duplex[5]	1-770178-1	1-770875-1	1-794326-1	1-770969-1
			794895-1[7]	794940-1[2,7]	Tin/Duplex	1-770178-1	1-770875-1	—	1-770969-1
8	UL94V-0	Dual Row	770579-1	—	Tin	1-794065-0	1-794073-0	1-794327-0	1-770970-0
					Duplex[5]	1-794065-1	1-794073-1	1-794327-1	1-770970-1
			794821-1[7]	794941-1[2,7]	Tin/Duplex	1-794065-1	1-794073-1	—	1-770970-1
9	UL94V-2	Matrix	172340-1	172332-1[2]	—	—	—	—	—
	UL94V-0	Matrix	172169-1	172161-1[2]	Tin	1-770182-0	1-770876-0	1-794432-0	—
					Duplex[5]	1-770182-1	1-770876-1	1-794432-1	—
10	UL94V-0	Dual Row	770580-1	—	Tin	1-770743-0	1-770858-0	1-794328-0	1-770971-0
					Duplex[5]	1-770743-1	1-770858-1	1-794328-1	1-770971-1
			794781-1[7]	794942-1[2,7]	Tin/Duplex	1-770743-1	1-770858-1	—	1-770971-1
12	UL94V-2	Matrix	172341-1	172333-1[2]	—	—	—	—	—
	UL94V-0	Matrix	172170-1	172162-1[2]	Tin	1-770186-0	1-794040-0	1-794329-0	—
					Duplex[5]	1-770186-1	1-794040-1	1-794329-1	—
		Dual Row	770581-1	—	Tin	1-794066-0	1-770621-0	—	1-770972-0
					Duplex[5]	1-794066-1	1-770621-1	—	1-770972-1
14	UL94V-0	Dual Row	770582-1	—	Tin	1-794067-0	1-794074-0	—	1-770973-0
					Duplex[5]	1-794067-1	1-794074-1	—	1-770973-1
15	UL94V-2	Matrix	172342-1	172334-1[2]	—	—	—	—	—
	UL94V-0	Matrix	172171-1	172163-1[2]	Tin	1-770190-0	1-770859-0	1-794330-0	—
					Duplex[5]	1-770190-1	1-770859-1	1-794330-1	—
16	UL94V-0	Dual Row	770583-1	—	Tin	1-794068-0	1-794075-0	—	1-770974-0
					Duplex[5]	1-794068-1	1-794075-1	—	1-770974-1
18	UL94V-0	Dual Row	770584-1	—	Tin	1-794069-0	1-794076-0	—	1-794105-0
					Duplex[5]	1-794069-1	1-794076-1	—	1-794105-1
20	UL94V-0	Dual Row	770585-1	—	Tin	1-794070-0	1-794077-0	—	1-794106-0
					Duplex[5]	1-794070-1	1-794077-1	—	1-794106-1
22	UL94V-0	Dual Row	770586-1	—	Tin	1-794071-0	1-794078-0	—	1-794107-0
					Duplex[5]	1-794071-1	1-794078-1	—	1-794107-1
24	UL94V-0	Dual Row	770587-1	—	Tin	1-794072-0	1-794079-0	—	1-794108-0
					Duplex[5]	1-794072-1	1-794079-1	—	1-794108-1

[1]Mini-Universal MATE-N-LOK plug and cap housings accept pin or socket contacts. Use the appropriate contacts in the plug housing as required by the mating connector. All **Plugs** are **free-hanging** and **Caps** are **free-hanging** or **panel mount,** unless otherwise noted.
[2]Panel mount only.
[3]Hermaphroditic: Mates to itself.
[4]Free-hanging only.
[5]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area and matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.
[6]Tin Finish — Plated with .000150 [.00381] min. tin over .000050 [.00127] min. nickel underplate on entire contact.
[7]For Splash-Proof Sealing.
Note: All part numbers are RoHS Compliant.

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Mini-Universal MATE-N-LOK Connectors (Continued)

Contacts

Pin diameter .039 [0.99]

Material

Brass or Phosphor bronze

Stock Thickness .008 [0.20]

These contacts are to be used in Mini-Universal MATE-N-LOK Plug or Cap housings only.

Related Product Data

Product Specifications

108-1542 Mini-Universal MATE-N-LOK Connectors

108-1543 Mini-Universal MATE-N-LOK Headers

Application Specification

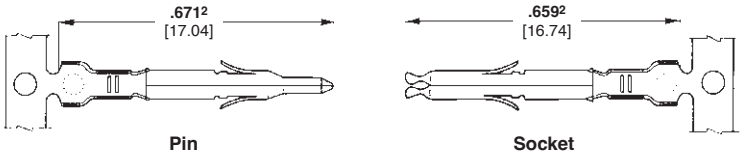
114-16017 Mini-Universal MATE-N-LOK Connectors

Performance Characteristics— pages 83-84

Housings — pages 87-89

Technical Documents— pages 83 and 205-206

Application Tooling— pages 207-210



Pin Socket

Wire Size Range AWG [mm²]	Ins. Dia. Range	Material and Finish	Contact Part Numbers				HDM Applicator Part No.	Hand Tool Part No.
			Pin		Socket			
			Strip Form	Loose Pieces	Strip Form	Loose Pieces		
30-26 [.05-.12]	.035-.050 .889-1.27	Brass, Pre-tin	770835-1	794059-1	770834-1	794058-1	567418-1[3]	90717-2
		Phos. Brz., Pre-tin	—	—	770834-4	—	567418-2[3]	
		Brass, Duplex[1]	1-770835-0	1-794059-0	1-770834-0	1-794058-0	567418-3[3]	
		Phos. Brz., Duplex[1]	—	—	1-770834-1	—		
26-22 [.12-.3]	.047-.069 1.19-1.75	Brass, Pre-tin	770901-1	770985-1	770902-1	770986-1	567066-3[4]	91529-1
		Phos. Brz., Pre-tin	—	—	770902-4	—	567066-4[4]	
		Brass, Duplex[1]	1-770901-0	1-770985-0	1-770902-0	1-770986-0	567066-5[4]	
		Phos. Brz., Duplex[1]	—	—	1-770902-1	—		
22-18 [.3-.8] or 22 x (2) [.3]	.059-.094 1.50-2.39 or .067 x (2) 3.38	Brass, Pre-tin	770903-1	770987-1	770904-1	770988-1	567067-1[3]	91522-1
		Phos. Brz., Pre-tin	—	—	770904-4	—	567067-2[3]	
		Brass, Duplex[1]	1-770903-0	1-770987-0	1-770904-0	1-770988-0	567067-3[3]	
		Phos. Brz., Duplex[1]	—	—	1-770904-1	—		
20-16 [.5-1.2] or 20 x (2) [.5]	.079-.126 2.01-3.20 or .075 x (2) 1.91	Brass, Pre-tin	794406-1[2]	171638-1[2]	794407-1[2]	171639-1[2]		
		Phos. Brz., Pre-tin	—	—	794407-4[2]	—	680582-2[3]	
		Brass, Duplex[1]	1-794406-0[2]	—	1-794407-0[2]	—	680582-3[3]	91536-1
		Phos. Brz., Duplex[1]	—	—	1-794407-1[2]	—		

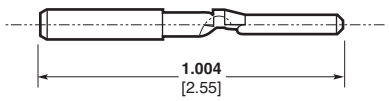
[1] Duplex Finish — Plated with .000030 [.000762] min. gold in mating area and .000100 [.00254] min. tin in crimping area over .000050 [.00127] min. nickel underplate on entire contact.
[2] .671 [17.04] and .659 [16.74] dimensions are .689 [17.50] for indicated part numbers.
[3] HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -3 is used on AMP-O-ELECTRIC Model G Machine. See pages 207-210 for further information.
[4] HDM Applicator part number ending in -3 is used on AMPOMATOR CLS Machine with T or G Terminators, -4 is used on AMP-O-LECTRIC Model K Machine, -5 is used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.

Note: All part numbers are RoHS Compliant.

Keying Plug

Material

UL94V-0 Nylon, white color

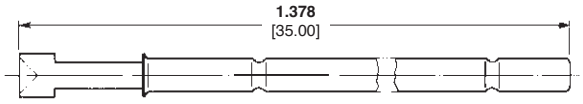


Part Number 174670-1

Test Probe Contact

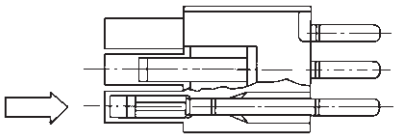
Material and Finish

Phosphor bronze, nickel plated



Part Number 172971-1

Notes:
1. The test probe is inserted into the housing in the same direction as indicated by the **arrow** shown to the right.
2. The test probe can be used in the Cap or Plug Housing.
3. Test probes are supplied unassembled.





Contact Extraction Tool No. 189727-1 IS 408-4118



Contact Insertion Tool (For inserting contacts applied to small diameter wire) No. 91002-1 IS 408-7347

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Mini-Universal MATE-N-LOK Connectors (Continued)

Housings

Free-Hanging or Panel Mount

.163 [4.14] Centerline spacing

Related Product Data

Product Specifications

108-1542 Mini-Universal MATE-N-LOK Connectors

108-1543 Mini-Universal MATE-N-LOK Headers

108-5151 Mini-Universal MATE-N-LOK Connectors (UL94V-2)

108-5138 Mini-Universal MATE-N-LOK Connectors (UL94V-0)

Performance Characteristics— pages 83-84

Contacts — page 86

Keying Plug — page 86

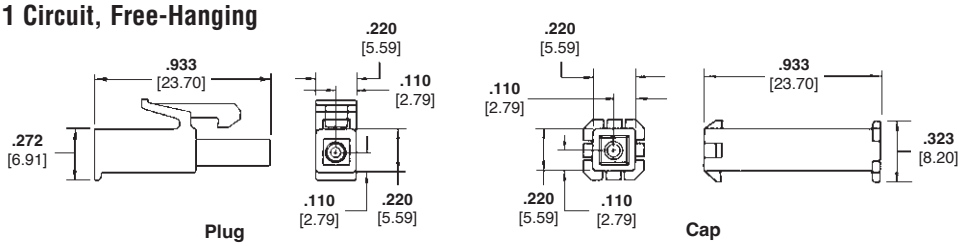
Test Probe Contact — page 86

Panel Cutout Recommendations— page 89

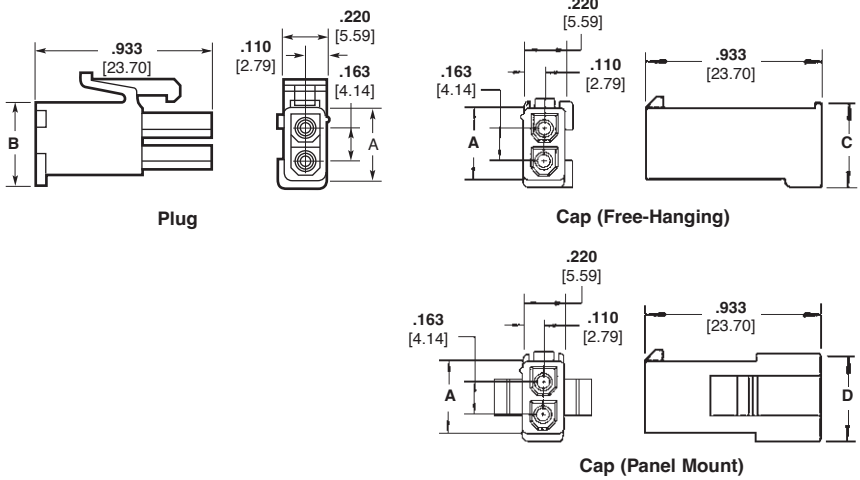
Technical Documents— pages 83 and 205-206

Mating Headers — pages 90-92

1 Circuit, Free-Hanging



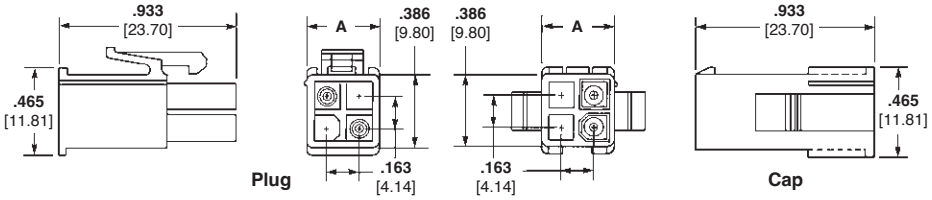
2 and 3 Circuit, In-Line



Number of Circuits	Dimensions				Housing Part Numbers[1]					
					UL94V-0 Nylon, White Color			UL94V-2 Nylon, Natural Color		
					Plug	Cap		Plug	Cap	
	A	B	C	D		Panel Mount	Free-Hanging		Panel Mount	Free-Hanging
1	—	—	—	—	172164-1	—	172156-1	172335-1	—	172327-1
2	.386 9.80	.425 10.79	.488 12.39	.464 11.78	172165-1	172157-1	172233-1	172336-1	172328-1	172343-1
3	.551 14.00	.591 15.01	.654 16.61	.630 16.00	172166-1	172158-1	172234-1	172337-1	172329-1	172344-1

Note: All part numbers are RoHS Compliant.

4 and 6 Circuit, Dual Row



Number of Circuits	A Dim.	Housing Part Numbers[1]			
		UL94V-0 Nylon, White Color		UL94V-2 Nylon, Natural Color	
		Plug	Cap	Plug	Cap
4	.386 9.80	172167-1	172159-1	172338-1	172330-1
6	.551 14.00	172168-1	172160-1	172339-1	172331-1

1Housing part numbers shown in both charts (above) are also available in other colors: Red, Green, Blue, Black. To order connectors in these colors use the appropriate dash numbers as follows: Red 1-XXXXXX-2, Green 1-XXXXXX-5, Blue 1-XXXXXX-6, Black 1-XXXXXX-9

Note: All part numbers are RoHS Compliant.

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UK: 44-8706-080-208

Mini-Universal MATE-N-LOK Connectors (Continued)

Housings

.163 [4.14] Centerline spacing

Related Product Data

Product Specifications

108-1542 Mini-Universal MATE-N-LOK Connectors

108-1543 Mini-Universal MATE-N-LOK Headers

108-5151 Mini-Universal MATE-N-LOK Connectors (UL94V-2)

108-5138 Mini-Universal MATE-N-LOK Connectors (UL94V-0)

Performance Characteristics— pages 83-84

Contacts — page 86

Keying Plug — page 86

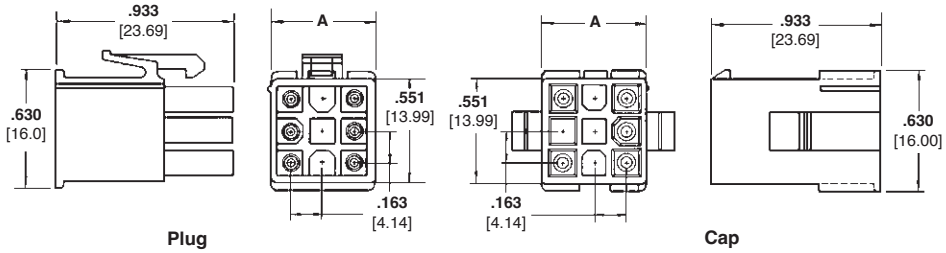
Test Probe Contact — page 86

Panel Cutout Recommendations— page 89

Technical Documents— pages 83 and 205-206

Mating Headers — pages 90-92

9, 12 and 15 Circuit, Free-Hanging or Panel Mount, Matrix



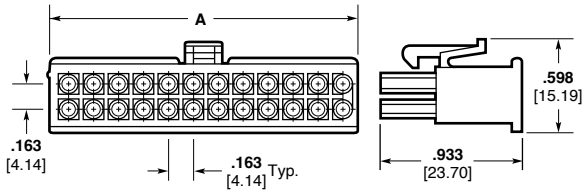
Plug Cap

Number of Circuits	A Dim.	Housing Part Numbers[1]			
		UL94V-0 Nylon, White Color		UL94V-2 Nylon, Natural Color	
		Plug	Cap	Plug	Cap
9	**.551** 13.99	172169-1	172161-1	172340-1	172332-1
12	**.716** 18.19	172170-1	172162-1	172341-1	172333-1
15	**.882** 22.40	172171-1	172163-1	172342-1	172334-1

[1]Housing part numbers shown in chart are also available in other colors: Red, Green, Blue, Black. To order connectors in these colors use the appropriate dash numbers as follows: Red 1-XXXXXX-2, Green 1-XXXXXX-5, Blue 1-XXXXXX-6, Black 1-XXXXXX-9

Note: All part numbers are RoHS Compliant.

8 thru 24 Circuit, Free-Hanging, Dual Row



Plug

Number of Circuits	A Dim.	Part Number UL94V-0 Nylon, White Color Plug
8	**.714** 18.14	770579-1
10	**.877** 22.28	770580-1
12	**1.040** 26.42	770581-1
14	**1.203** 30.56	770582-1
16	**1.366** 34.70	770583-1
18	**1.529** 38.84	770584-1
20	**1.692** 42.98	770585-1
22	**1.855** 47.12	770586-1
24	**2.018** 51.26	770587-1

Note: All part numbers are RoHS Compliant.

Mini-Universal MATE-N-LOK Connectors (Continued)

Housings
Hermaphroditic
Free-Hanging

Related Product Data

Product Specifications

108-1542 Mini-Universal MATE-N-LOK Connectors

108-1543 Mini-Universal MATE-N-LOK Headers

108-5151 Mini-Universal MATE-N-LOK Connectors (UL94V-2)

108-5138 Mini-Universal MATE-N-LOK Connectors (UL94V-0)

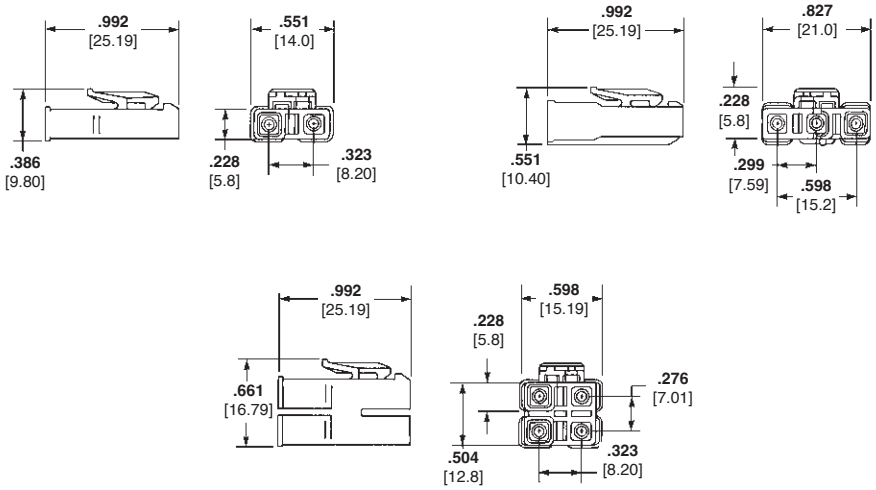
Performance Characteristics— pages 83-84

Contacts — page 86

Cap Housings — pages 87-89

Technical Documents— pages 83 and 205-206

2, 3 and 4 Circuit



Number of Circuits	Part Numbers	
	UL94V-2 Nylon, Natural Color	UL94V-0 Nylon, White Color
2	172807-1	173956-1
3	172808-1	173957-1
4	172809-1	173958-1

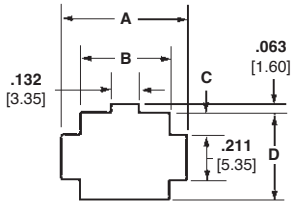
Note: Housing mates to itself; 2 required per wire-to-wire connection.

Note: All part numbers are RoHS Compliant.

Recommended Cap Housing Panel Cutouts

View is from cap entry side

Recommended Panel Thickness .031—.079 [.79 – 2.01]



Number of Circuits	Dimensions			
	A	B	C	D
2	**.421** 10.69	**.242** 6.15	**.098** 2.49	**.407** 10.3
3	**.421** 10.69	**.242** 6.15	**.181** 4.60	**.573** 14.55
4	**.587** 14.91	**.407** 10.34	**.098** 2.49	**.407** 10.3
6	**.752** 19.10	**.573** 14.55	**.098** 2.49	**.407** 10.3
9	**.752** 19.10	**.573** 14.55	**.181** 4.60	**.573** 14.55
12	**.917** 23.29	**.738** 18.75	**.181** 4.60	**.573** 14.55
15	**1.080** 27.43	**.904** 22.96	**.181** 4.60	**.573** 14.55

Catalog 82181
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Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Mini-Universal MATE-N-LOK Connectors (Continued)

Vertical PC Board Pin Headers

.163 [4.14] Centerline spacing

Material

Housing — Nylon, white

Flammability Rating — UL94V-0

Contacts — Brass
Solder tail diameter .039 [1.00]

Related Product Data

Product Specifications

108-1542 Mini-Universal MATE-N-LOK Connectors

108-1543 Mini-Universal MATE-N-LOK Headers

108-5151 Mini-Universal MATE-N-LOK Connectors (UL94V-2)

108-5138 Mini-Universal MATE-N-LOK Connectors (UL94V-0)

Performance Characteristics — pages 83-84

Recommended PC Board Hole Layouts — page 93

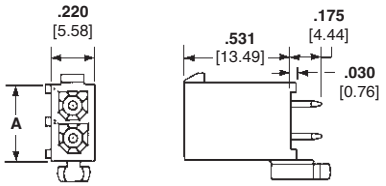
Technical Documents — pages 83 and 205-206

Mating Connectors

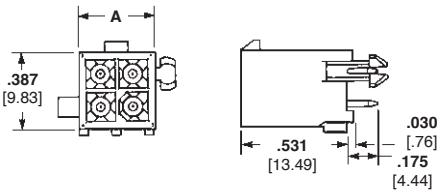
Mini-Universal MATE-N-LOK
Plug Housings — pages 87-89

Mini-Universal MATE-N-LOK 2
Plug Housings — pages 101-102

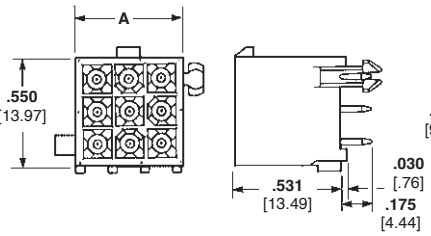
2 and 3 Circuit, In-Line



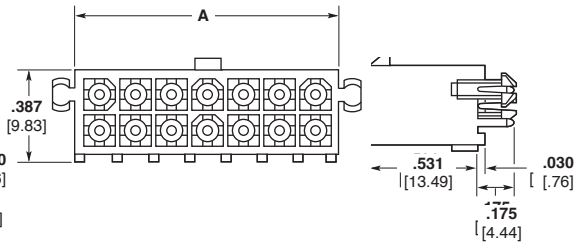
4, 6, 8, 10 and 12 Circuit, Dual Row



9, 12 and 15 Circuit, Matrix



14, 16, 18, 20, 22 and 24 Circuit, Dual Row



Number of Circuits	Style	A Dim.	Pin Finish	Vertical Pin Header Part Numbers With Drain Holes	Vertical Pin Header Part Numbers Without Drain Holes	Mates with Plug Housing Part Number (Using Socket Contact) Mini-Universal MATE-N-LOK	Mates with Plug Housing Part Number (Using Socket Contact) Mini-Universal MATE-N-LOK 2
2	In-Line	**.387** 9.83	Tin[1]	1-770166-0	1-770872-0	172165-1	794184-1
			Duplex[2]	1-770166-1	1-770872-1		
3	In-Line	**.550** 13.97	Tin[1]	1-770170-0	1-770873-0	172166-1	794186-1
			Duplex[2]	1-770170-1	1-770873-1		
4	Dual Row	**.387** 9.83	Tin[1]	1-770174-0	1-770874-0	172167-1	794188-1
			Duplex[2]	1-770174-1	1-770874-1		
6	Dual Row	**.550** 13.97	Tin[1]	1-770178-0	1-770875-0	172168-1	794190-1
			Duplex[2]	1-770178-1	1-770875-1		
8	Dual Row	**.713** 18.11	Tin[1]	1-794065-0	1-794073-0	770579-1	794192-1
			Duplex[2]	1-794065-1	1-794073-1		
9	Matrix	**.551** 14.00	Tin[1]	1-770182-0	1-770876-0	172169-1	794194-1
			Duplex[2]	1-770182-1	1-770876-1		
10	Dual Row	**.877** 22.28	Tin[1]	1-770743-0	1-770858-0	770580-1	794196-1
			Duplex[2]	1-770743-1	1-770858-1		
12	Dual Row	**1.039** 26.39	Tin[1]	1-794066-0	1-770621-0	770581-1	794198-1
			Duplex[2]	1-794066-1	1-770621-1		
	Matrix	**.713** 18.11	Tin[1]	1-770186-0	1-794040-0	172170-1	794200-1
			Duplex[2]	1-770186-1	1-794040-1		
14	Dual Row	**1.202** 30.53	Tin[1]	1-794067-0	1-794074-0	770582-1	794202-1
			Duplex[2]	1-794067-1	1-794074-1		
15	Matrix	**.877** 22.28	Tin[1]	1-770190-0	1-770859-0	172171-1	794204-1
			Duplex[2]	1-770190-1	1-770859-1		
16	Dual Row	**1.365** 34.67	Tin[1]	1-794068-0	1-794075-0	770583-1	794206-1
			Duplex[2]	1-794068-1	1-794075-1		
18	Dual Row	**1.528** 38.81	Tin[1]	1-794069-0	1-794076-0	770584-1	794208-1
			Duplex[2]	1-794069-1	1-794076-1		
20	Dual Row	**1.691** 42.95	Tin[1]	1-794070-0	1-794077-0	770585-1	794210-1
			Duplex[2]	1-794070-1	1-794077-1		
22	Dual Row	**1.854** 47.09	Tin[1]	1-794071-0	1-794078-0	770586-1	794212-1
			Duplex[2]	1-794071-1	1-794078-1		
24	Dual Row	**2.017** 51.23	Tin[1]	1-794072-0	1-794079-0	770587-1	794214-1
			Duplex[2]	1-794072-1	1-794079-1		

[1] Tin Finish—Plated with .000150 [.00381] min. tin over .000050 [.00127] min. nickel underplate on entire contact.
[2] Duplex Finish—Plated with .000030 [.000762] min. gold in mating area and matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.

Note: All part numbers are RoHS Compliant.

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Japan: 81-44-844-8013
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Mini-Universal MATE-N-LOK Connectors (Continued)

Vertical PC Board Blindmate Pin Headers

.163 [4.14] Centerline spacing

Material

Housing — Nylon, white

Flammability Rating — UL94V-0

Contacts — Brass
Solder tail diameter .039 [1.00]

Related Product Data

Product Specifications

108-1693 Mini-Universal MATE-N-LOK 2 Connectors

108-1694 Mini-Universal MATE-N-LOK 2 Headers

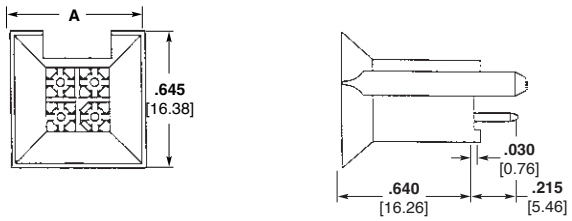
Performance Characteristics — pages 83-84
Recommended PC Board Hole Layouts — page 93
Technical Documents — pages 83 and 205-206

Mating Connectors

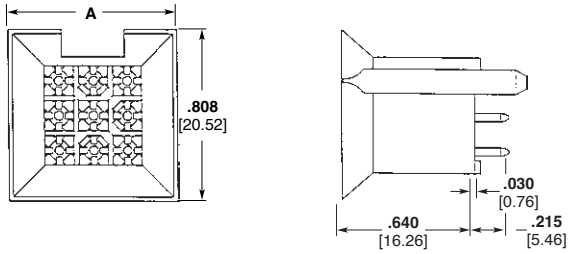
Mini-Universal MATE-N-LOK
Plug Housings — pages 87-89

Mini-Universal MATE-N-LOK 2
Plug Housings — pages 101-102

4, 6, 8 and 10 Circuit, Dual Row



9, 12 and 15 Circuit, Matrix



Number of Circuits	Style	A Dim.	Pin Finish	Pin Header Part Numbers With Drain Holes	Mates with Plug Housing Part Number (Using Socket Contacts)	
					Mini-Universal MATE-N-LOK	Mini-Universal MATE-N-LOK 2
4	Dual Row	**.645** 16.38	Tin[1]	1-794325-0	172167-1	794188-1
			Duplex[2]	1-794325-1		
6	Dual Row	**.808** 20.52	Tin[1]	1-794326-0	172168-1	794190-1
			Duplex[2]	1-794326-1		
8	Dual Row	**.971** 24.66	Tin[1]	1-794327-0	770579-1	794192-1
			Duplex[2]	1-794327-1		
9	Matrix	**.808** 20.52	Tin[1]	1-794432-0	172169-1	794194-1
			Duplex[2]	1-794432-1		
10	Dual Row	**1.134** 28.80	Tin[1]	1-794328-0	770580-1	794196-1
			Duplex[2]	1-794328-1		
12	Matrix	**.971** 24.66	Tin[1]	1-794329-0	172170-1	794200-1
			Duplex[2]	1-794329-1		
15	Matrix	**1.134** 28.80	Tin[1]	1-794330-0	172171-1	794204-1
			Duplex[2]	1-794330-1		

[1] Tin Finish — Plated with .000150 [.00381] min. tin over .000050 [.00127] min. nickel underplate on entire contact.

[2] Duplex Finish — Plated with .000030 [.000762] min. gold in mating area and matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.

Note: All part numbers are RoHS Compliant.

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UK: 44-8706-080-208

Mini-Universal MATE-N-LOK Connectors (Continued)

Right-Angle PC Board Pin Headers

.163 [4.14] Centerline spacing

Material

Housing — Nylon, white color

Flammability Rating — UL94V-0

Contacts — Brass

Solder tail diameter .039 [1.00]

Related Product Data

Product Specification

108-1694 Mini-Universal MATE-N-LOK 2 Headers

Performance Characteristics— pages 83-84
Recommended PC Board Hole Layouts— page 93
Technical Documents— pages 83 and 205-206

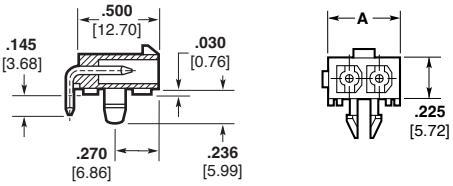
Mating Connectors

Mini-Universal MATE-N-LOK
Plug Housings — pages 87-89

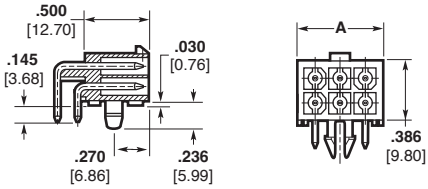
Mini-Universal MATE-N-LOK 2
Plug Housings — pages 101-102

With Board Lock Feature

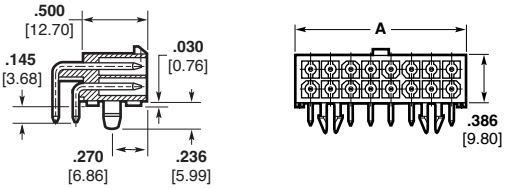
1, 2 and 3 Circuit, In-Line



4, 6, 8, 10 and 12 Circuit, Dual Row



14, 16, 18, 20, 22 and 24 Circuit, Dual Row



Number of Circuits	Style	A Dim.	Pin Finish	Pin Header Part Number With Board Lock	Mates with Plug Housing Part Number (Using Socket Contacts)	
					Mini-Universal MATE-N-LOK	Mini-Universal MATE-N-LOK 2
1	—	**.225** 5.72	Tin[1]	1-794374-0	172164-1	—
			Duplex[2]	1-794374-1		
2	In-Line	**.388** 9.86	Tin[1]	1-770966-0	172165-1	794184-1
			Duplex[2]	1-770966-1		
3	In-Line	**.551** 14.00	Tin[1]	1-770967-0	172166-1	794186-1
			Duplex[2]	1-770967-1		
4	Dual Row	**.388** 9.86	Tin[1]	1-770968-0	172167-1	794188-1
			Duplex[2]	1-770968-1		
6	Dual Row	**.551** 14.00	Tin[1]	1-770969-0	172168-1	794190-1
			Duplex[2]	1-770969-1		
8	Dual Row	**.714** 18.14	Tin[1]	1-770970-0	770579-1	794192-1
			Duplex[2]	1-770970-1		
10	Dual Row	**.877** 22.28	Tin[1]	1-770971-0	770580-1	794196-1
			Duplex[2]	1-770971-1		
12	Dual Row	**1.040** 26.42	Tin[1]	1-770972-0	770581-1	794198-1
			Duplex[2]	1-770972-1		
14	Dual Row	**1.203** 30.56	Tin[1]	1-770973-0	770582-1	794202-1
			Duplex[2]	1-770973-1		
16	Dual Row	**1.366** 34.70	Tin[1]	1-770974-0	770583-1	794206-1
			Duplex[2]	1-770974-1		
18	Dual Row	**1.529** 38.84	Tin[1]	1-794105-0	770584-1	794208-1
			Duplex[2]	1-794105-1		
20	Dual Row	**1.692** 42.98	Tin[1]	1-794106-0	770585-1	794210-1
			Duplex[2]	1-794106-1		
22	Dual Row	**1.855** 47.12	Tin[1]	1-794107-0	770586-1	794212-1
			Duplex[2]	1-794107-1		
24	Dual Row	**2.018** 51.26	Tin[1]	1-794108-0	770587-1	794214-1
			Duplex[2]	1-794108-1		

[1]Tin Finish — Plated with .000150 [.00381] min. tin over .000050 [.00127] min. nickel underplate on entire contact.
[2]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area and matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.

Note: All part numbers are RoHS Compliant.

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Mini-Universal MATE-N-LOK Connectors (Continued)

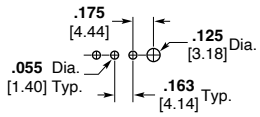
Recommended PC Board Hole Layouts for Vertical and Blindmate Headers

.062 [1.57] thick board, tolerances non-accumulative

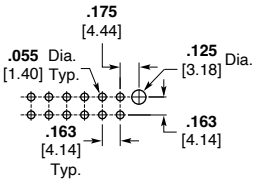
Related Product Data

Vertical Headers— pages 90-91

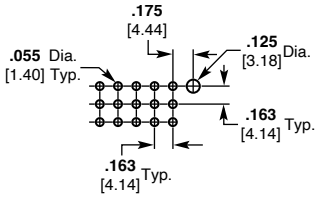
2 and 3 Circuit, In-Line



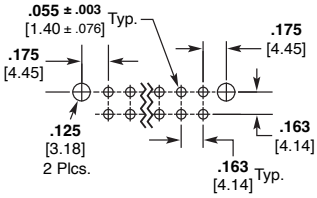
4, 6, 8, 10 and 12 Circuit, Dual Row



9, 12 and 15 Circuit, Matrix



14, 16, 18, 20, 22 and 24 Circuit, Dual Row



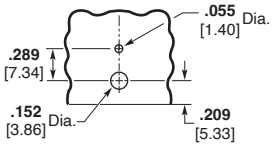
Recommended PC Board Hole Layouts for Right-Angle Headers

.062 [1.57] thick board, tolerances non-accumulative

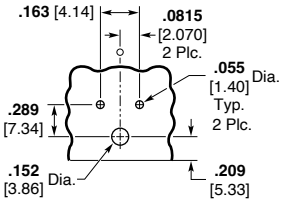
Related Product Data

Right-Angle Headers— page 92

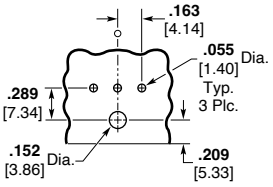
1 Circuit



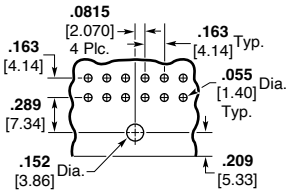
2 Circuit, In-Line



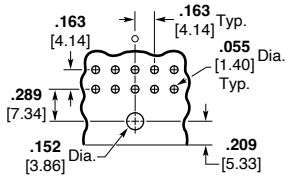
3 Circuit, In-Line



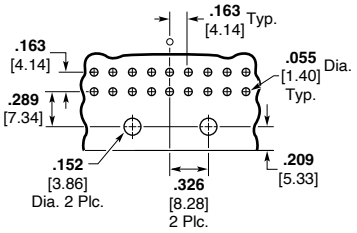
4, 8 and 12 Circuit, Dual Row



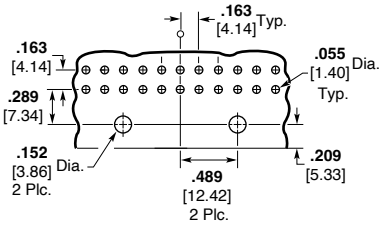
6 and 10 Circuit, Dual Row



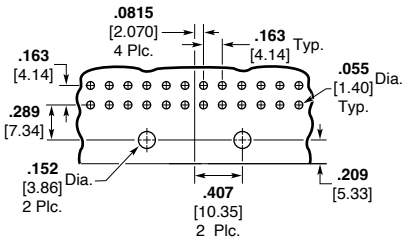
14 and 18 Circuit, Dual Row



22 Circuit, Dual Row



16, 20 and 24 Circuit, Dual Row



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Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Mini-Universal MATE-N-LOK Connectors (Continued)

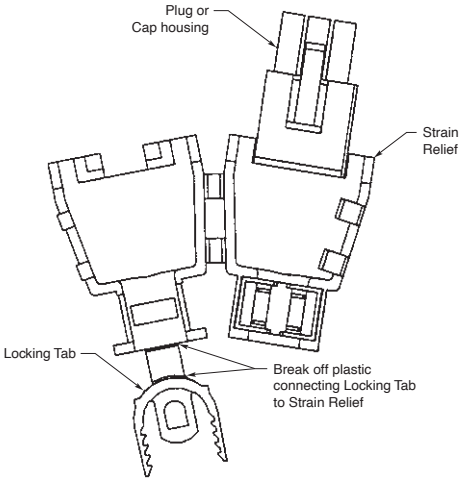
Strain Reliefs for Plug or Cap Housings

Related Product Data

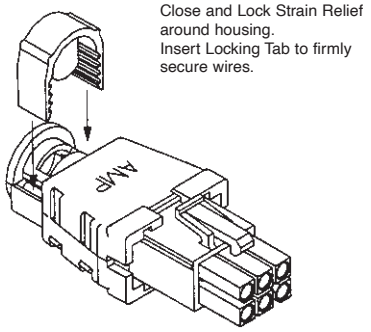
Housings— pages 87-89
Technical Documents— pages 83 and 205-206

These Strain Reliefs may also be used with AMP-DUAC Receptacle housings on page 126.

6 and 8 Circuit



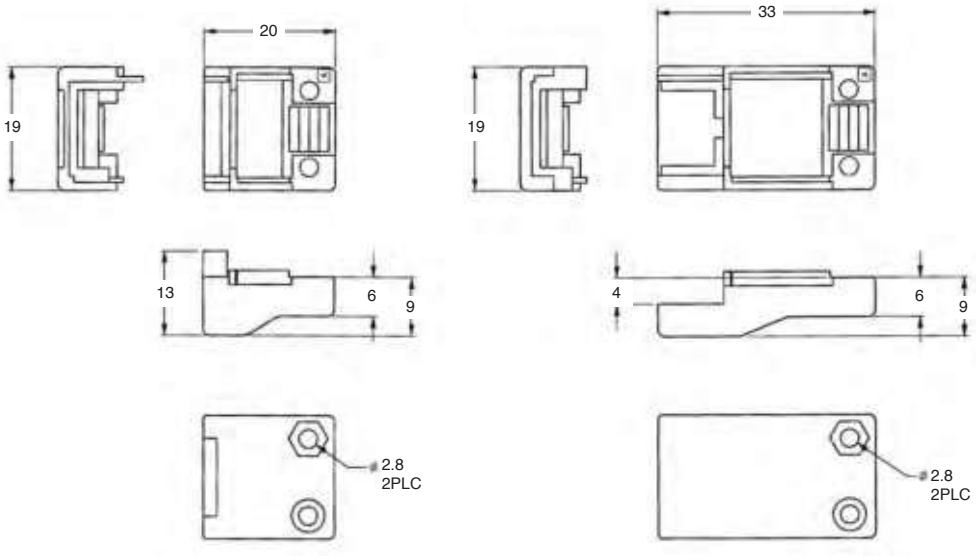
Step 1



Step 2

Style	Number of Circuits	A Dim.	Wire Bundle Dia. Range	Part Numbers	
				UL94V-0 Nylon, White Color	Use With
Dual Row	6	**.920** 23.36	**.165-.220** 4.19-5.59	794423-1	172168-1 172160-1 172339-1 172331-1
	8	**.920** 23.36	**.180-.245** 4.57-6.22	794370-1	770979-1

9 Circuit



Style	Number of Circuits	Part Numbers		
			Part Number	Use With
Matrix	9	**Plug**	316454-1	172169-1 172340-1
		Cap	316455-1	172161-1 172332-1

Note: **All part numbers are RoHS Compliant.**

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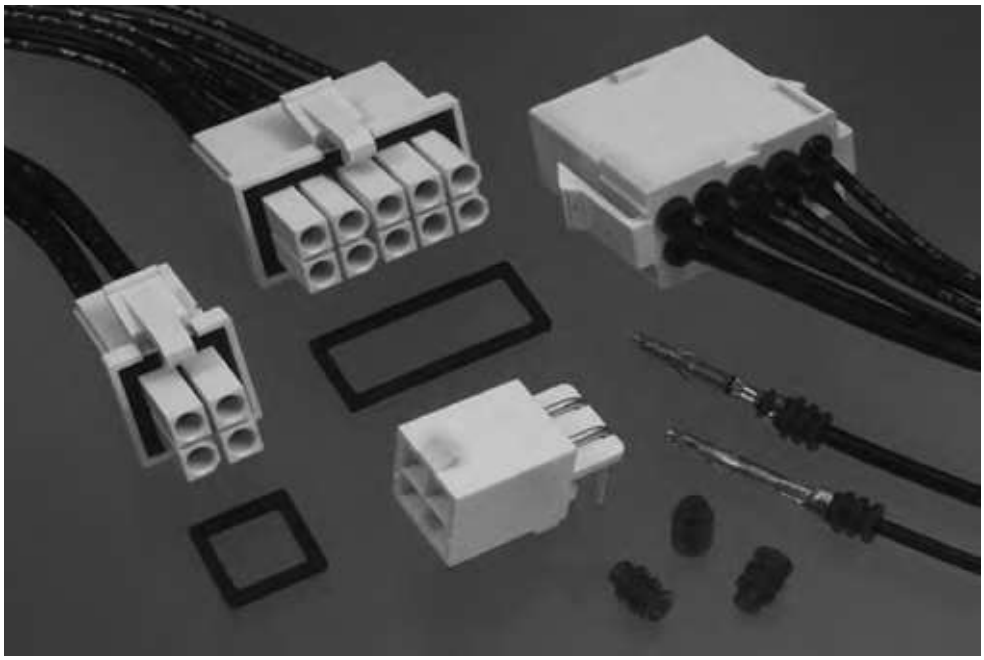
USA: 1-800-522-6752
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South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Mini-Universal MATE-N-LOK Sealed Connector System

Product Facts — Sealed Connector System

- Splash-proof design allows use in areas where high humidity, intermittent liquid splashing or foam-in applications require a sealed connector for improved electrical performance
- Wire-to-wire and wire-to-board
- Dual row, 2 to 10 positions (even only) and 16 positions
- Mates with all standard Mini-Universal MATE-N-LOK connector housings and pin headers (except Blindmate)
- Positive, polarized keyed and latched orientation to ease application
- Utilizes proven Mini-Universal MATE-N-LOK contacts with existing application tooling
- Tested to Sealing Level of IP56 per IEC 60529
- Primarily used in Appliance, Vending and HVAC applications
- Compact, durable housings
- Pins and sockets can be accommodated in the same housings
- Contacts fully protected in the housings. Both pins and sockets can be used on the power supply wiring
- Fully polarized to provide proper plug-to-cap mating incorporating a positive locking mechanism to help prevent accidental disengagement of mated connectors. Also facilitates panel mounting
- Free-hanging or panel mount
- Connectors can be mounted to .031-.079 [0.79-2.00] thick panels
- With seals, contacts accept wire size range 26-18 AWG [.12-.8 mm²] with insulation diameter of .040-.083 [1.02-2.11]
- .163 [4.14] centerline spacing
- Not for interrupting current



Performance Characteristics

The Mini-Universal MATE-N-LOK Connector performance characteristics found on pages 95-96 are based on free-hanging and panel mount connectors, loaded with contacts crimped on stranded wire.

Low Level Termination Resistance 20 milliohms max. total resistance between wire crimps of a mated pin and socket

Dielectric Withstanding Voltage—1.5 KVAC between adjacent circuits

Insulation Resistance—1000 megohms minimum between adjacent circuits

Voltage Rating—600 V AC or DC

Contact Retention—8 lb. min. per contact

Durability—20 cycles, mating and unmating

Technical Documents

Product Specifications

108-1542-2 Mini-Universal MATE-N-LOK Splash-Proof Seals

108-1542 Mini-Universal MATE-N-LOK Connectors

108-1543 Mini-Universal MATE-N-LOK Headers

Application Specification

114-13089 Mini-Universal MATE-N-LOK Sealed Connector

Instruction Sheets

408-3234 Mini-Universal MATE-N-LOK Connectors

411-5105 Mini-Universal MATE-N-LOK Connectors

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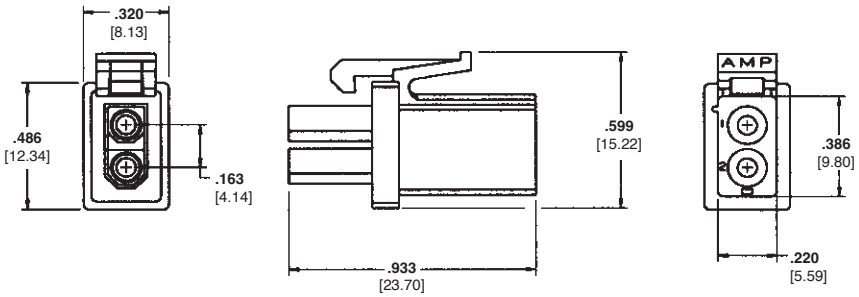
USA: 1-800-522-6752
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UK: 44-8706-080-208

Mini-Universal MATE-N-LOK Sealed Connector System (Continued)

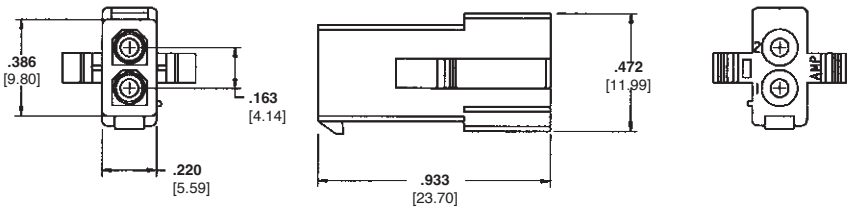
Plug

Part Number 794894-1
(2 position shown)



Cap

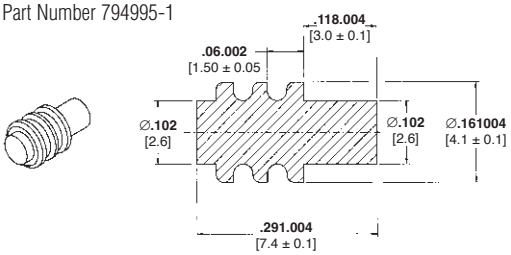
Part Number 794896-1
(2 position shown)



Individual Wire Seals

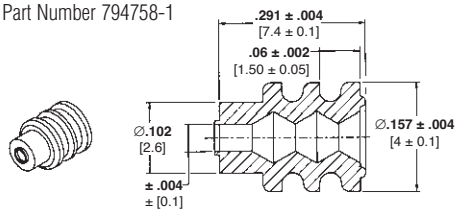
Single Housing Cavity Plug Seal

Part Number 794995-1

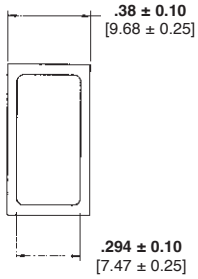


Single Wire Seal

Part Number 794758-1



Interface Seals



Number of Positions	Interface Seals	Plug for Sealing	Cap for Sealing	Vertical Headers for Sealing	Right Angle Headers for Sealing
2	794772-2	794894-1	794896-1	1-770872-X	1-770966-X
4	794772-4	794805-1	794939-1	1-770874-X	1-770968-X
6	794772-6	794895-1	794940-1	1-770875-X	10770969-X
8	794772-8	794821-1	794941-1	1-794073-X	1-770970-X
10	1-794772-0	794781-1	794942-1	1-770858-X	1-770971-X
16	1-1586362-6	794824-1	—	1-794075-X	1-770974-X

-0 for tin finish, -1 for duplex. See Mini-Universal MATE-N-LOK section for details

Individual Wire Seal Contacts

Wire Size Range AWG [mm²]	Ins. Dia. Range	Material and Finish	Contact Part Numbers (for use with Single Wire Seals) Pin Strip Form	Pin Loose Piece	Socket Strip Form	Socket Loose Piece	HDM Applicator Part No.	Hand Tool Part No.
26-22 [.12-.3]	.040-.060 1.02-1.52	Brass, Pre-tin	770901-1	770985-1	770902-1	770986-1	567066-3[3]	91529-1
		Brass, Duplex[1]	1-770901-0	1-770985-0	1-770902-0	1-770986-0	567066-4[3]	
							567066-5[3]	
22-18 [.3-.8]	.050-.083 1.27-2.11	Brass, Pre-tin	770903-1	770987-1	770904-1	770988-1	567067-1[2]	91522-1
		Brass, Duplex[1]	1-770903-0	1-770987-0	1-770904-0	1-770988-0	567067-2[2]	
							567067-3[2]	

[1] Duplex Finish — Plated with .000030 [.000762] min. gold in mating area and .000100 [.00254] min. tin in crimping area over .000050 [.00127] min. nickel underplate on entire contact.
[2] HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -3 is used on AMP-O-ELECTRIC Model G Machine. See pages 207-210 for further information.
[3] HDM Applicator part number ending in -3 is used on AMPOMATOR CLS Machine with T or G Terminators, -4 is used on AMP-O-LECTRIC Model K Machine, -5 is used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.

Note: Ganged Wire Seals are available; contact Technical Support.

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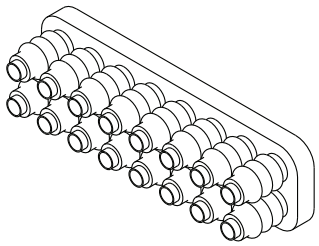
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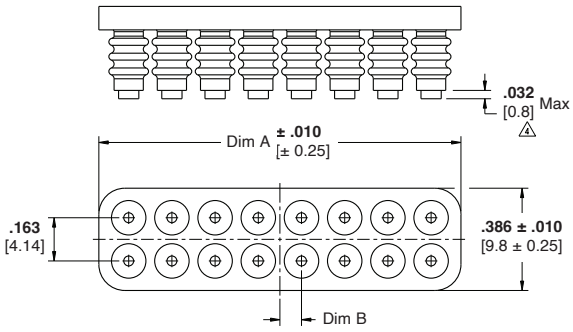
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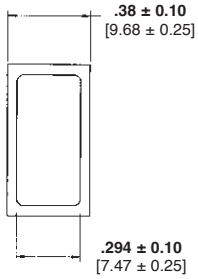
Mini-Universal MATE-N-LOK Connectors (Continued)

New: Mini Universal Gang Seals No Seal Crimping Required!





Interface Seals



Number of Positions	Interface Seals	Gang Wire Seal	Plug for Sealing	Cap for Sealing	Vertical Headers for Sealing*	Right Angle Headers for Sealing*
2	794772-2	1586359-2	794894-1	794896-1	1-770872-X	1-770966-X
4	794772-4	1586359-4	794805-1	794939-1	1-770874-X	1-770968-X
6	794772-6	1586359-6	794895-1	794940-1	1-770875-X	1-770969-X
8	794772-8	1586359-8	794821-1	794941-1	1-794073-X	1-770970-X
10	1-794772-0	1-1586359-0	794781-1	794942-1	1-770858-X	1-770971-X
16	1-1586362-6	1-1586359-6	794824-1	—	1-794075-X	1-770974-X

*-0 for tin finish, -1 for duplex. See Mini-Universal MATE-N-LOK section for details

Gang Wire Seal Contacts

Wire Size Range	Insulation Range	Material Finish	Pin		Socket	
			Strip Form	Loose Piece	Strip Form	Loose Piece
16 AWG	.050 - .083	Brass, Pre-tin	1586537-1	—	1586538-1	—
		Brass, Duplex[1]	1586537-3	—	1586538-3	—
18 - 22 AWG	.050 - .083	Brass, Pre-tin	794440-1	—	794831-1	—
		Brass, Duplex	794440-3	—	794831-3	—
22 - 26 AWG	.050 - .069	Brass, Pre-tin	770901-1	770985-1	770902-1	770986-1
		Brass, Duplex[1]	1-770901-0	1-770985-0	1-770902-0	1-770986-0

[1] Duplex Finish — Plated with .000030 [.000762] min. gold in mating area and .000100 [.00254] min. tin in crimping area over .000050 [.00127] min. nickel underplate on entire contact.

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South America: 55-11-2103-6000
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Engineering Notes

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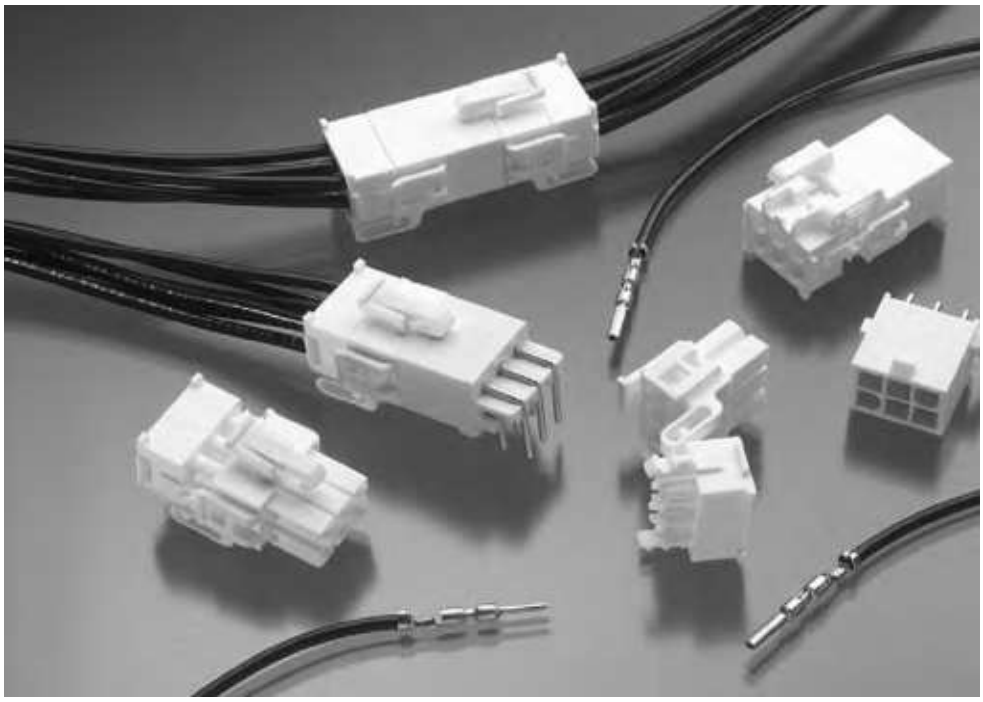
USA: 1-800-522-6752
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Mini-Universal MATE-N-LOK 2 Connectors

Product Facts

- One molded piece, secondary locking plug and cap housing assemblies
- Three-point stabilization to provide better terminal position
- Fully polarized to provide proper plug-to-cap mating
- Lanceless contacts for tangle-free handling
- Toolless contact removal
- Tin or duplex gold plated contacts
- Available in 2 through 24 circuit sizes wire-to-wire and wire-to-board
- Mates with standard Mini-Universal MATE-N-LOK headers and connectors
- Contacts available in strip and loose piece
- Polarized housings available in UL 94V-0 or UL 94V-2 flammability rated material
- Mini-Universal MATE-N-LOK 2 pins and sockets can be intermixed in Mini-Universal MATE-N-LOK 2 housings
- Mini-Universal MATE-N-LOK 2 pins and sockets can not be used in standard Mini-Universal MATE-N-LOK housings
- Contacts accept wire size range 30-16 AWG [.05-1.2 mm²]
- .163 [4.14] centerline spacing
- Not for interrupting current
- Recognized under the Component Program of Underwriters Laboratories Inc. to US and Canadian Standards, File No. E28476



Performance Characteristics

The Mini-Universal MATE-N-LOK 2 Connector performance characteristics found on pages 99-100 are based on free-hanging connectors, loaded with contacts crimped on stranded wire.

Low Level Termination Resistance 20 milliohms max. total resistance between wire crimps of a mated pin and socket

Dielectric Withstanding Voltage 1500 V AC or DC between adjacent circuits at sea level

Insulation Resistance— 100 megohms minimum between adjacent circuits

Voltage Rating—600 V AC or DC

Contact Retention—15 lb. min. per contact

Durability—25 cycles, mating and unmating

Current Rating—up to 10.5 amps per circuit; 2 position

Mating Force—2.5 lb. max. per circuit

Unmating Force—0.25 lb. minimum per circuit

Wire Size		Termination Resistance		Contact Crimp Tensile Force	
AWG	mm²	Test Current (Amps)	Resistance Milliohms (Max. Init.)	Force (Min.) lbs.	Force (Min.) N
30	.05	—	—	—	—
28	.08	—	—	—	—
26	.12	—	—	4	18
24	.2	—	—	—	—
22	.3	—	—	11	49
20	.5	—	—	13	58
18	.8	—	—	15	67
16	1.2	—	—	18	80

Technical Documents

Product Specifications

108-1693 Mini-Universal MATE-N-LOK 2 Connectors

108-1694 Mini-Universal MATE-N-LOK 2 Headers

Application Specification

114-1111 Mini-Universal MATE-N-LOK 2 Connectors

Instruction Sheet

408-3393 Mini-Universal MATE-N-LOK 2 Connectors

Mini-Universal MATE-N-LOK 2 connectors also will withstand the following tests:

Housing Lock Strength—6 lb. min.

Thermal Shock— -55°C to +105°C

Temperature-Humidity Cycling—25°C to 65°C at 95 RH

Vibration—10-55-10 cycles per minute at .06 inch total excursion

Physical Shock—18 drops, 50 G half-sine at 11 milliseconds

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Mini-Universal MATE-N-LOK 2 Connectors (Continued)

Performance Characteristics (Continued)

Maximum Current—Maximum current rating of Mini-Universal MATE-N-LOK 2 connectors is limited by the maximum operating temperature of the housings which is 105°C (gold) or 85°C (tin) including the temperature rise of the contacts which is a maximum of 30°C. There are several variables which have a direct effect on this maximum current-carrying capability for a given connector and must be considered for each application. These variables are:

Wire Size—Larger diameter wire will carry more current since it has less internal resistance to current flow and thus generates less heat. Longer wire lengths also enhance current-carrying capabilities since the wire conducts heat away from the connector.

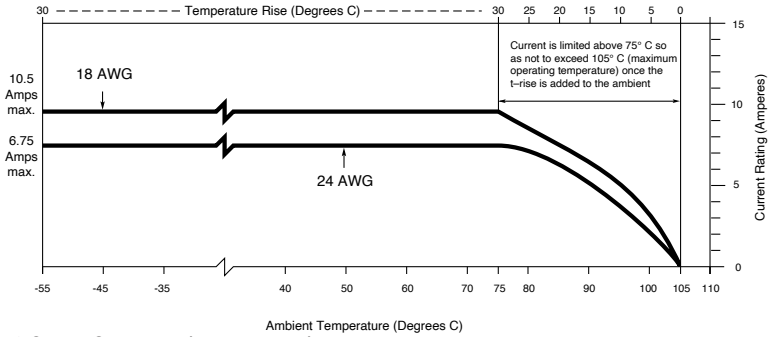
Connector Size—In general, the more circuits in a connector, the less current can be carried.

Ambient Temperature—The higher the ambient temperature, the less current can be carried in any given connector.

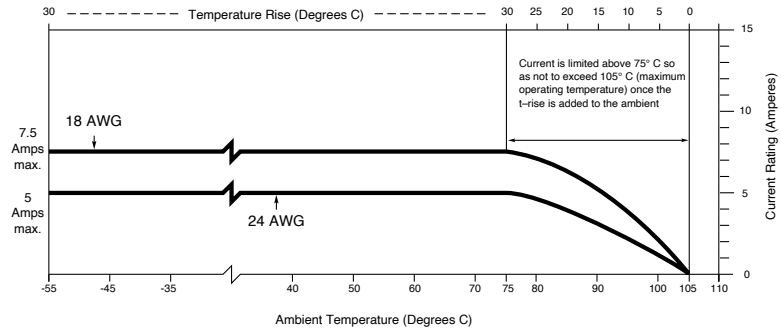
Printed Wiring Board Conductor Size—The finished trace conductor width and thickness should be maximized to allow for the greatest current-carrying capacity and heat dissipation.

Current Rating Verification for 30°C Maximum Temperature Rise 100% Energized

2 Circuit Connector (Wire-to-Wire)



6 Circuit Connector (Wire-to-Wire)



Contacts

Pin diameter .039 [0.99]

Material

Brass

Stock Thickness .010 [0.25]

These contacts can be used in either Mini-Universal MATE-N-LOK 2 Plug or Cap housings **only**.

Related Product Data

Product Specifications

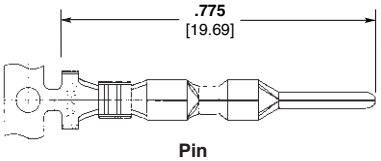
108-1693 Mini-Universal MATE-N-LOK 2 Connectors

108-1694 Mini-Universal MATE-N-LOK 2 Headers

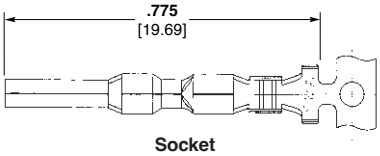
Application Specification

114-1111 Mini-Universal MATE-N-LOK 2 Connectors

Performance Characteristics— pages 99-100
Housings — pages 101-102
Technical Documents— pages 99 and 205-206



Pin



Socket

Not to be used with Mini-Universal MATE-N-LOK Connectors

Wire Size Range AWG [mm²]	Ins. Dia. Range	Finish	Contact Part Numbers				HDM Applicator Part No.	Hand Tool Part No.
			Pin		Socket			
			Strip Form	Loose Piece	Strip Form	Loose Piece		
30-26 [.05-.12]	**.035-.050** .889-1.27	Pre-tin	794216-1	794224-1	794217-1	794225-1	567418-1[2] 567418-2[2] 567418-3[2]	90717-2
		Duplex[1]	1-794216-0	1-794224-0	1-794217-0	1-794225-0		
26-22 [.12-.3]	**.047-.069** 1.19-1.75	Pre-tin	794218-1	794226-1	794219-1	794227-1	567066-3[3] 567066-4[3] 567066-5[3]	91529-1
		Duplex[1]	1-794218-0	1-794226-0	1-794219-0	1-794227-0		
22-18 [.3-.8]	**.059-.094** 1.50-2.39	Pre-tin	794220-1	794228-1	794221-1	794229-1	680854-1[2] 680854-2[2] 680854-3[2]	91522-1
		Duplex[1]	1-794220-0	1-794228-0	1-794221-0	1-794229-0		
20-16 [.5-1.2]	**.079-.126** 2.01-3.20	Pre-tin	794222-1	794230-1	794223-1	794231-1	680582-2[2] 680582-3[2]	91594-1
		Duplex[1]	1-794222-0	1-794230-0	1-794223-0	1-794231-0		

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area and .000100 [.00254] min. tin in crimping area over .000050 [.00127] min. nickel underplate on entire contact.
[2]HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -3 is used on AMP-O-ELECTRIC Model G Machine.
[3]HDM Applicator part number ending in -3 is used on AMPOMATOR CLS Machine with T or G Terminators, -4 is used on AMP-O-LECTRIC Model K Machine, -5 is used on AMP-O-LECTRIC Model G Machine.
See pages 207-210 for further information.
Note: All part numbers are RoHS Compliant.

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Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Mini-Universal MATE-N-LOK 2 Connectors (Continued)

Housings

Free-Hanging

.163 [4.14] Centerline spacing

Related Product Data

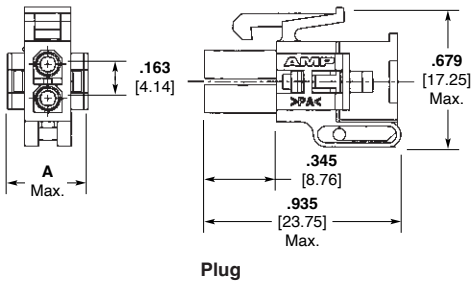
Product Specifications

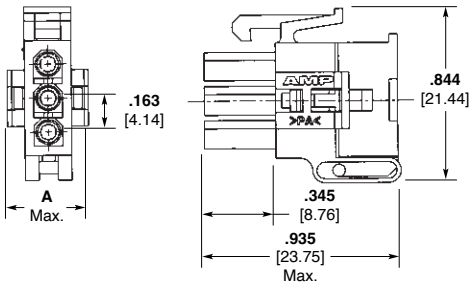
108-1693 Mini-Universal MATE-N-LOK 2 Connectors

108-1694 Mini-Universal MATE-N-LOK 2 Headers

Performance Characteristics—pages 99-100
Contacts — page 100
Technical Documents—pages 99 and 205-206
Mating Headers—pages 103-105

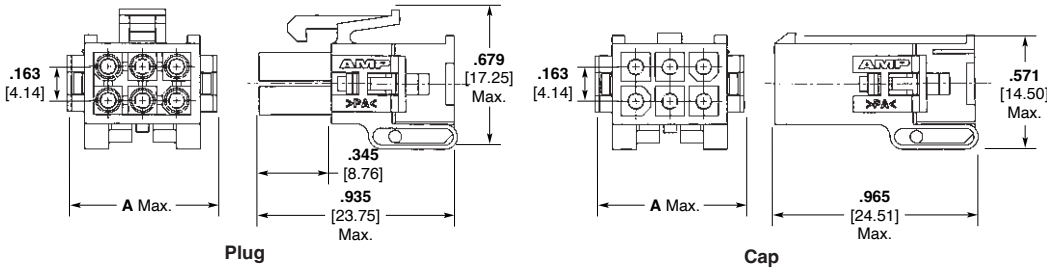
2 and 3 Circuit, In-Line





Number of Circuits	A Dimension	Housing Part Numbers			
		UL94V-0 Nylon, White Color		UL94V-2 Nylon, Natural Color	
		Plug	Cap	Plug	Cap
2	.405 10.29	794184-1	794185-1	794237-1	794238-1
3	.405 10.29	794186-1	794187-1	794239-1	794240-1

4 and 6 Circuit, Dual Row

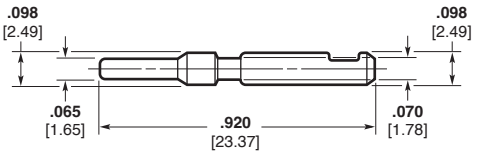


Number of Circuits	A Dimension	Housing Part Numbers			
		UL94V-0 Nylon, White Color		UL94V-2 Nylon, Natural Color	
		Plug	Cap	Plug	Cap
4	.571 14.50	794188-1	794189-1	794241-1	794242-1
6	.736 18.70	794190-1	794191-1	794243-1	794244-1

Keying Plug

Material

UL94V-0 Nylon, white color



Part Number 794369-1

Note: **All part numbers are RoHS Compliant.**

Catalog 82181
Revised 4-08

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Japan: 81-44-844-8013
UK: 44-8706-080-208

Mini-Universal MATE-N-LOK 2 Connectors (Continued)

Housings

Free-Hanging

.163 [4.14] Centerline spacing

Related Product Data

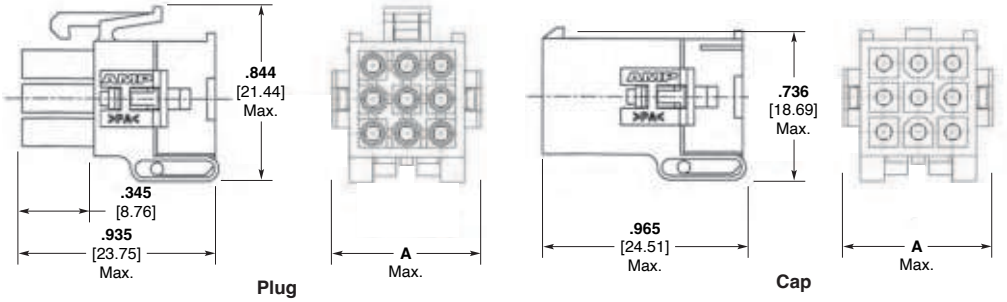
Product Specifications

108-1693 Mini-Universal MATE-N-LOK 2 Connectors

108-1694 Mini-Universal MATE-N-LOK 2 Headers

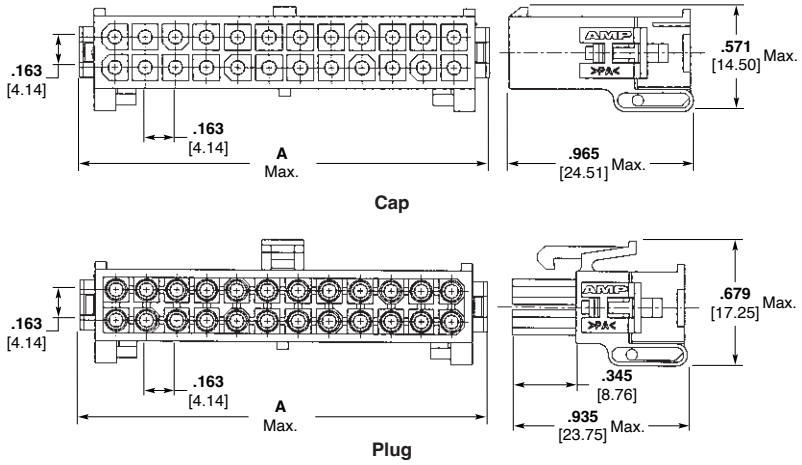
Performance Characteristics—pages 99-100
Contacts—page 100
Keying Plug—page 101
Technical Documents—pages 99 and 205-206
Mating Headers—pages 103-105

9, 12 and 15 Circuit, Matrix



Number of Circuits	A Dimension	Housing Part Numbers			
		UL94V-0 Nylon, White Color		UL94V-2 Nylon, Natural Color	
		Plug	Cap	Plug	Cap
9	**.736** 18.69	794194-1	794195-1	794247-1	794248-1
12	**.901** 22.89	794200-1	794201-1	794253-1	794254-1
15	**1.067** 27.10	794204-1	794205-1	794257-1	794258-1

8 through 24 Circuit, Dual Row



Number of Circuits	A Dimension	Housing Part Numbers			
		UL94V-0 Nylon, White Color		UL94V-2 Nylon, Natural Color	
		Plug	Cap	Plug	Cap
8	**.899** 22.84	794192-1	794193-1	794245-1	794246-1
10	**1.062** 26.98	794196-1	794197-1	794249-1	794250-1
12	**1.225** 31.12	794198-1	794199-1	794251-1	794252-1
14	**1.388** 35.26	794202-1	794203-1	794255-1	794256-1
16	**1.551** 39.40	794206-1	794207-1	794259-1	794260-1
18	**1.714** 43.54	794208-1	794209-1	794261-1	794262-1
20	**1.877** 47.68	794210-1	794211-1	794263-1	794264-1
22	**2.040** 51.82	794212-1	794213-1	794265-1	794266-1
24	**2.203** 55.96	794214-1	794215-1	794267-1	794268-1

Note: All part numbers are RoHS Compliant.

Catalog 82181
Revised 4-08

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Japan: 81-44-844-8013
UK: 44-8706-080-208

Mini-Universal MATE-N-LOK 2 Connectors (Continued)

Vertical PC Board Pin Headers

.163 [4.14] Centerline spacing

Material

Housing — Nylon, white

Flammability Rating — UL94V-0

Contacts — Brass
Solder tail diameter .039 [1.00]

Related Product Data

Product Specifications

108-1693 Mini-Universal MATE-N-LOK 2 Connectors

108-1694 Mini-Universal MATE-N-LOK 2 Headers

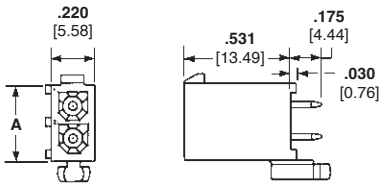
Performance Characteristics— pages 99-100
Recommended PC Board Hole Layout—page 106
Technical Documents— pages 99 and 205-206

Mating Connectors

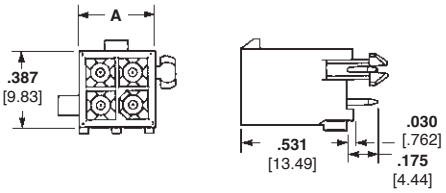
Mini-Universal MATE-N-LOK 2
Plug Housings— pages 101-102

Mini-Universal MATE-N-LOK
Plug Housings— pages 87-89

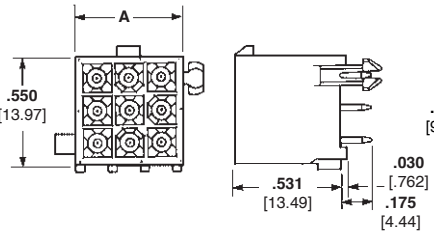
2 and 3 Circuit, In-Line



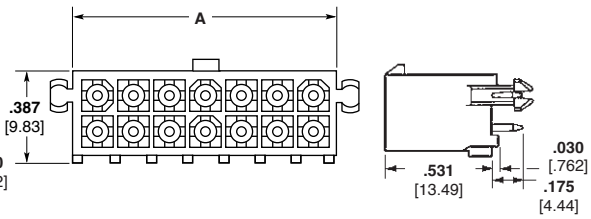
4, 6, 8, 10 and 12 Circuit, Dual Row



9, 12 and 15 Circuit, Matrix



14, 16, 18, 20, 22 and 24 Circuit, Dual Row



Number of Circuits	Style	A Dim.	Pin Finish	Vertical Pin Header Part Numbers With Drain Holes	Vertical Pin Header Part Numbers Without Drain Holes	Mates with Plug Housing Part Number (Using Socket Contacts) Mini-Universal MATE-N-LOK	Mates with Plug Housing Part Number (Using Socket Contacts) Mini-Universal MATE-N-LOK 2
2	In-Line	**.387** 9.83	Tin[1]	1-770166-0	1-770872-0	172165-1	794184-1
			Duplex[2]	1-770166-1	1-770872-1		
3	In-Line	**.550** 13.97	Tin[1]	1-770170-0	1-770873-0	172166-1	794186-1
			Duplex[2]	1-770170-1	1-770873-1		
4	Dual Row	**.387** 9.83	Tin[1]	1-770174-0	1-770874-0	172167-1	794188-1
			Duplex[2]	1-770174-1	1-770874-1		
6	Dual Row	**.550** 13.97	Tin[1]	1-770178-0	1-770875-0	172168-1	794190-1
			Duplex[2]	1-770178-1	1-770875-1		
8	Dual Row	**.713** 18.11	Tin[1]	1-794065-0	1-794073-0	770579-1	794192-1
			Duplex[2]	1-794065-1	1-794073-1		
9	Matrix	**.551** 14.00	Tin[1]	1-770182-0	1-770876-0	172169-1	794194-1
			Duplex[2]	1-770182-1	1-770876-1		
10	Dual Row	**.877** 22.28	Tin[1]	1-770743-0	1-770858-0	770580-1	794196-1
			Duplex[2]	1-770743-1	1-770858-1		
12	Dual Row	**1.039** 26.39	Tin[1]	1-794066-0	1-770621-0	770581-1	794198-1
			Duplex[2]	1-794066-1	1-770621-1		
	Matrix	**.713** 18.11	Tin[1]	1-770186-0	1-794040-0	172170-1	794200-1
			Duplex[2]	1-770186-1	1-794040-1		
14	Dual Row	**1.202** 30.53	Tin[1]	1-794067-0	1-794074-0	770582-1	794202-1
			Duplex[2]	1-794067-1	1-794074-1		
15	Matrix	**.877** 22.28	Tin[1]	1-770190-0	1-770859-0	172171-1	794204-1
			Duplex[2]	1-770190-1	1-770859-1		
16	Dual Row	**1.365** 34.67	Tin[1]	1-794068-0	1-794075-0	770583-1	794206-1
			Duplex[2]	1-794068-1	1-794075-1		
18	Dual Row	**1.528** 38.81	Tin[1]	1-794069-0	1-794076-0	770584-1	794208-1
			Duplex[2]	1-794069-1	1-794076-1		
20	Dual Row	**1.691** 42.95	Tin[1]	1-794070-0	1-794077-0	770585-1	794210-1
			Duplex[2]	1-794070-1	1-794077-1		
22	Dual Row	**1.854** 47.09	Tin[1]	1-794071-0	1-794078-0	770586-1	794212-1
			Duplex[2]	1-794071-1	1-794078-1		
24	Dual Row	**2.017** 51.23	Tin[1]	1-794072-0	1-794079-0	770587-1	794214-1
			Duplex[2]	1-794072-1	1-794079-1		

[1]Tin Finish — Plated with .000150 [.00381] min. tin over .000050 [.00127] min. nickel underplate on entire contact.
[2]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area and matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.

Note: **All part numbers are RoHS Compliant.**

Catalog 82181
Revised 4-08

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Mini-Universal MATE-N-LOK 2 Connectors (Continued)

Vertical PC Board Blindmate Pin Headers

.163 [4.14] Centerline spacing

Material

Housing — Nylon, white

Flammability Rating — UL94V-0

Contacts — Brass
Solder tail diameter .039 [1.00]

Related Product Data

Product Specifications

108-1693 Mini-Universal MATE-N-LOK 2 Connectors

108-1694 Mini-Universal MATE-N-LOK 2 Headers

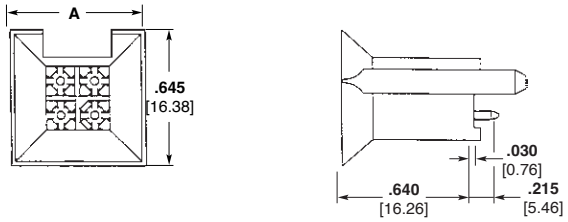
Performance Characteristics—pages 99-100
Recommended PC Board Hole Layout—page 106
Technical Documents—pages 99 and 205-206

Mating Connectors

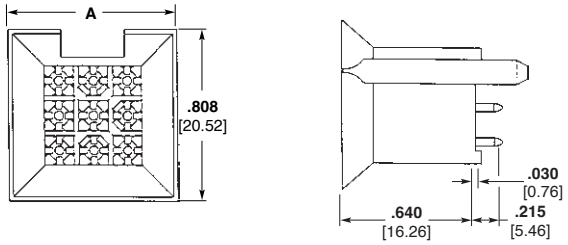
Mini-Universal MATE-N-LOK 2
Plug Housings—pages 101-102

Mini-Universal MATE-N-LOK
Plug Housings—pages 87-89

4, 6, 8 and 10 Circuit, Dual Row



9, 12 and 15 Circuit, Matrix



Number of Circuits	Style	A Dim.	Pin Finish	Pin Header Part Numbers with Drain Holes	Mates with Plug Housing Part Number (Using Socket Contacts) Mini-Universal MATE-N-LOK	Mates with Plug Housing Part Number (Using Socket Contacts) Mini-Universal MATE-N-LOK 2
4	Dual Row	**.645** 16.38	Tin[1]	1-794325-0	172167-1	794188-1
			Duplex[2]	1-794325-1		
6	Dual Row	**.808** 20.52	Tin[1]	1-794326-0	172168-1	794190-1
			Duplex[2]	1-794326-1		
8	Dual Row	**.971** 24.66	Tin[1]	1-794327-0	770579-1	794192-1
			Duplex[2]	1-794327-1		
9	Matrix	**.808** 20.52	Tin[1]	1-794432-0	172169-1	794194-1
			Duplex[2]	1-794432-1		
10	Dual Row	**1.134** 28.80	Tin[1]	1-794328-0	770580-1	794196-1
			Duplex[2]	1-794328-1		
12	Matrix	**.971** 24.66	Tin[1]	1-794329-0	172170-1	794200-1
			Duplex[2]	1-794329-1		
15	Matrix	**1.134** 28.80	Tin[1]	1-794330-0	172171-1	794204-1
			Duplex[2]	1-794330-1		

[1]Tin Finish — Plated with .000150 [.00381] min. tin over .000050 [.00127] min. nickel underplate on entire contact.
[2]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area and matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.

Note: All part numbers are RoHS Compliant.

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UK: 44-8706-080-208

Mini-Universal MATE-N-LOK 2 Connectors (Continued)

Right-Angle PC Board Pin Headers

.163 [4.14] Centerline spacing

Material

Housing — Nylon, white color

Flammability Rating — UL94V-0

Contacts — Brass

Solder tail diameter .039 [1.00]

Related Product Data

Product Specification

108-1694 Mini-Universal MATE-N-LOK 2 Headers

Performance Characteristics— pages 99-100

Recommended PC Board Hole Layout— page 106

Technical Documents— pages 99 and 205-206

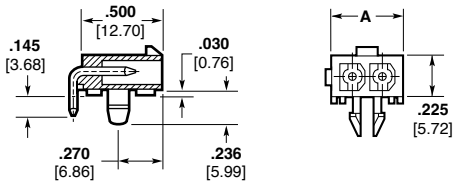
Mating Connectors

Mini-Universal MATE-N-LOK 2
Plug Housings— pages 101-102

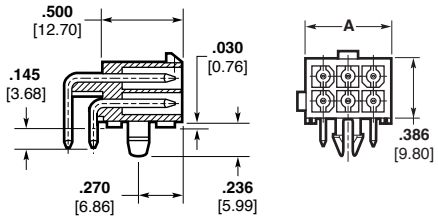
Mini-Universal MATE-N-LOK
Plug Housings— pages 87-89

With Board Lock Feature

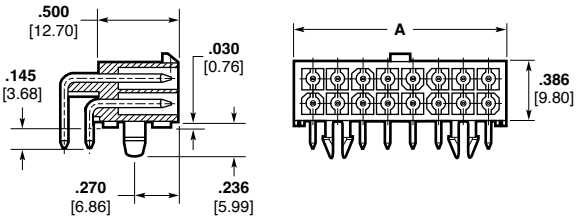
2 and 3 Circuit, In-Line



4, 6, 8, 10 and 12 Circuit, Dual Row



14, 16, 18, 20, 22 and 24 Circuit, Dual Row



Number of Circuits	Style	A Dim.	Pin Finish	Pin Header Part Number with Board Lock	Mates with Plug Housing Part Number (Using Socket Contacts)	
					Mini-Universal MATE-N-LOK	Mini-Universal MATE-N-LOK 2
2	In-line	**.388** 9.86	Tin[1]	1-770966-0	172165-1	794184-1
			Duplex[2]	1-770966-1		
3	In-line	**.551** 14.00	Tin[1]	1-770967-0	172166-1	794186-1
			Duplex[2]	1-770967-1		
4	Dual Row	**.388** 9.86	Tin[1]	1-770968-0	172167-1	794188-1
			Duplex[2]	1-770968-1		
6	Dual Row	**.551** 14.00	Tin[1]	1-770969-0	172168-1	794190-1
			Duplex[2]	1-770969-1		
8	Dual Row	**.714** 18.14	Tin[1]	1-770970-0	770579-1	794192-1
			Duplex[2]	1-770970-1		
10	Dual Row	**.877** 22.28	Tin[1]	1-770971-0	770580-1	794196-1
			Duplex[2]	1-770971-1		
12	Dual Row	**1.040** 26.42	Tin[1]	1-770972-0	770581-1	794198-1
			Duplex[2]	1-770972-1		
14	Dual Row	**1.203** 30.56	Tin[1]	1-770973-0	770582-1	794202-1
			Duplex[2]	1-770973-1		
16	Dual Row	**1.366** 34.70	Tin[1]	1-770974-0	770583-1	794206-1
			Duplex[2]	1-770974-1		
18	Dual Row	**1.529** 38.84	Tin[1]	1-794105-0	770584-1	794208-1
			Duplex[2]	1-794105-1		
20	Dual Row	**1.692** 42.98	Tin[1]	1-794106-0	770585-1	794210-1
			Duplex[2]	1-794106-1		
22	Dual Row	**1.855** 47.12	Tin[1]	1-794107-0	770586-1	794212-1
			Duplex[2]	1-794107-1		
24	Dual Row	**2.018** 51.26	Tin[1]	1-794108-0	770587-1	794214-1
			Duplex[2]	1-794108-1		

[1]Tin Finish — Plated with .000150 [.00381] min. tin over .000050 [.00127] min. nickel underplate on entire contact.
[2]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area and matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.

Note: **All part numbers are RoHS Compliant.**

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Mini-Universal MATE-N-LOK 2 Connectors (Continued)

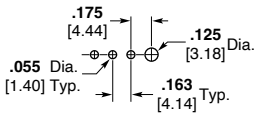
Recommended PC Board Hole Layouts for Vertical and Blindmate Headers

.062 [1.57] thick board, tolerances non-accumulative

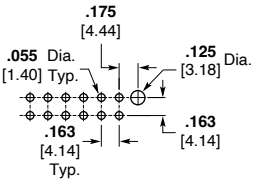
Related Product Data

Vertical Headers— pages 103-104

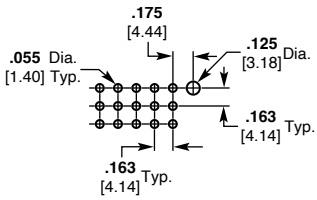
2 and 3 Circuit, In-Line



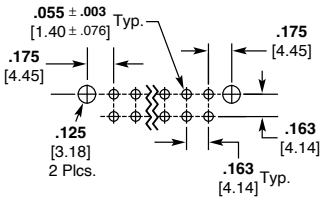
4, 6, 8, 10 and 12 Circuit, Dual Row



9, 12 and 15 Circuit, Matrix



14, 16, 18, 20, 22 and 24 Circuit, Dual Row



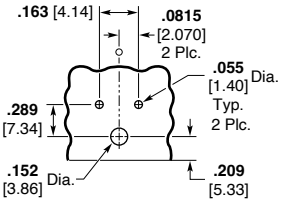
Recommended PC Board Hole Layouts for Right-Angle Headers

.062 [1.57] thick board, tolerances non-accumulative

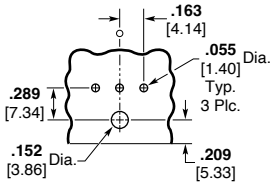
Related Product Data

Right-Angle Headers— page 105

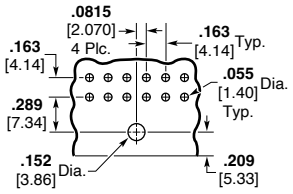
2 Circuit



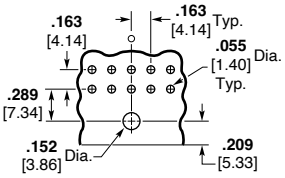
3 Circuit



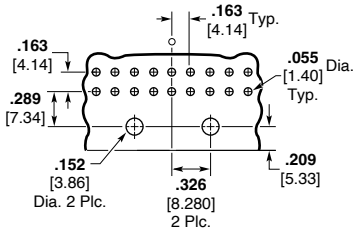
4, 8 and 12 Circuit



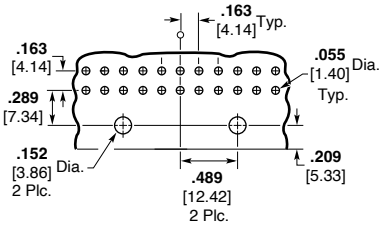
6 and 10 Circuit



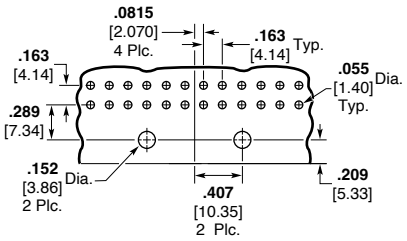
14 and 18 Circuit



22 Circuit



16, 20 and 24 Circuit



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Mini-Universal MATE-N-LOK 2 Connectors (Continued)

Mini-Universal MATE-N-LOK 2 Connector Mating Combinations

Connector Part Number					Mating Connector Part Number				
					PC Board Pin Headers[4]				
						Vertical			Right-Angle
Number of Circuits	Flammability Rating	Style	Plug[1] Housing Part No.	Cap[1] Housing Part No.	Plating	With Drain Holes	Without Drain Holes	Blindmate	Board Lock
2	UL94V-2	In-Line	794237-1	794238-1	—	—	—	—	—
	UL94V-0	In-Line	794184-1	794185-1	Tin[3]	1-770166-0	1-770872-0	—	1-770966-0
					Duplex[2]	1-770166-1	1-770872-1	—	1-770966-1
3	UL94V-2	In-Line	794239-1	794240-1	—	—	—	—	—
	UL94V-0	In-Line	794186-1	794187-1	Tin[3]	1-770170-0	1-770873-0	—	1-770967-0
					Duplex[2]	1-770170-1	1-770873-1	—	1-770967-1
4	UL94V-2	Dual Row	794241-1	794242-1	—	—	—	—	—
	UL94V-0	Dual Row	794188-1	794189-1	Tin[3]	1-770174-0	1-770874-0	1-794325-0	1-770968-0
					Duplex[2]	1-770174-1	1-770874-1	1-794325-1	1-770968-1
6	UL94V-2	Dual Row	794243-1	794244-1	—	—	—	—	—
	UL94V-0	Dual Row	794190-1	794191-1	Tin[3]	1-770178-0	1-770875-0	1-794326-0	1-770969-0
					Duplex[2]	1-770178-1	1-770875-1	1-794326-1	1-770969-1
8	UL94V-2	Dual Row	794245-1	794246-1	—	—	—	—	—
	UL94V-0	Dual Row	794192-1	794193-1	Tin[3]	1-794065-0	1-794073-0	1-794327-0	1-770970-0
					Duplex[2]	1-794065-1	1-794073-1	1-794327-1	1-770970-1
9	UL94V-2	Matrix	794247-1	794248-1	—	—	—	—	—
	UL94V-0	Matrix	794194-1	794195-1	Tin[3]	1-770182-0	1-770876-0	1-794432-0	—
					Duplex[2]	1-770182-1	1-770876-1	1-794432-1	—
10	UL94V-2	Dual Row	794249-1	794250-1	—	—	—	—	—
	UL94V-0	Dual Row	794196-1	794197-1	Tin[3]	1-770743-0	1-770858-0	1-794328-0	1-770971-0
					Duplex[2]	1-770743-1	1-770858-1	1-794328-1	1-770971-1
12	UL94V-2	Matrix	794253-1	794254-1	—	—	—	—	—
		Dual Row	794251-1	794252-1	—	—	—	—	—
	UL94V-0	Matrix	794200-1	794201-1	Tin[3]	1-770186-0	1-794040-0	1-794329-0	—
					Duplex[2]	1-770186-1	1-794040-1	1-794329-1	—
		Dual Row	794198-1	794199-1	Tin[3]	1-794066-0	1-770621-0	—	1-770972-0
					Duplex[2]	1-794066-1	1-770621-1	—	1-770972-1
14	UL94V-2	Dual Row	794255-1	794256-1	—	—	—	—	—
	UL94V-0	Dual Row	794202-1	794203-1	Tin[3]	1-794067-0	1-794074-0	—	1-770973-0
					Duplex[2]	1-794067-1	1-794074-1	—	1-770973-1
15	UL94V-2	Matrix	794257-1	794258-1	—	—	—	—	—
	UL94V-0	Matrix	794204-1	794205-1	Tin[3]	1-770190-0	1-770859-0	1-794330-0	—
					Duplex[2]	1-770190-1	1-770859-1	1-794330-1	—
16	UL94V-2	Dual Row	794259-1	794260-1	—	—	—	—	—
	UL94V-0	Dual Row	794206-1	794207-1	Tin[3]	1-794068-0	1-794075-0	—	1-770974-0
					Duplex[2]	1-794068-1	1-794075-1	—	1-770974-1
18	UL94V-2	Dual Row	794261-1	794262-1	—	—	—	—	—
	UL94V-0	Dual Row	794208-1	794209-1	Tin[3]	1-794069-0	1-794076-0	—	1-794105-0
					Duplex[2]	1-794069-1	1-794076-1	—	1-794105-1
20	UL94V-2	Dual Row	794263-1	794264-1	—	—	—	—	—
	UL94V-0	Dual Row	794210-1	794211-1	Tin[3]	1-794070-0	1-794077-0	—	1-794106-0
					Duplex[2]	1-794070-1	1-794077-1	—	1-794106-1
22	UL94V-2	Dual Row	794265-1	794266-1	—	—	—	—	—
	UL94V-0	Dual Row	794212-1	794213-1	Tin[3]	1-794071-0	1-794078-0	—	1-794107-0
					Duplex[2]	1-794071-1	1-794078-1	—	1-794107-1
24	UL94V-2	Dual Row	794267-1	794268-1	—	—	—	—	—
	UL94V-0	Dual Row	794214-1	794215-1	Tin[3]	1-794072-0	1-794079-0	—	1-794108-0
					Duplex[2]	1-794072-1	1-794079-1	—	1-794108-1

[1]Mini-Universal MATE-N-LOK 2 plug and cap housings accept pin or socket contacts. Use the appropriate contacts in the plug housing as required by the mating connector. All **Plugs** and **Caps** are **free-hanging**.
[2]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area and matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.
[3]Tin Finish — Plated with .000150 [.00381] min. tin over .000050 [.00127] min nickel underplate on entire contact.
[4]All PC Board pin headers have 94V-0 flammability rating and can mate to V-0 or V-2 plug housings.

Note: All part numbers are RoHS Compliant.

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Engineering Notes

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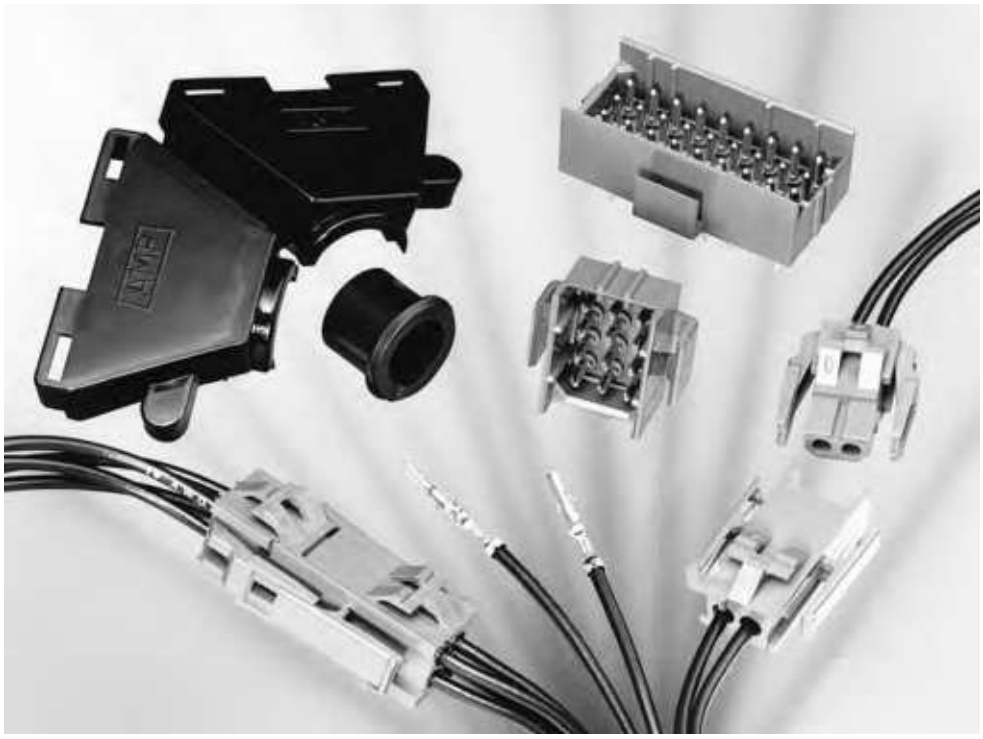
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(MR) Miniature Rectangular Connectors

Product Facts

- Housings positively lock to help prevent accidental disengagement
- Either cap or plug housing can be mounted in same rectangular panel cutout without additional hardware
- UL94V-0 housings
- Plug and cap design includes molded-in polarizing feature for proper mating
- Numbered cavities for easy circuit identification
- Egg crate design of plug half fully encloses socket contacts, reducing shock hazard
- Molded skirt extension on cap protects pin contacts
- Strain reliefs for 6 through 36 positions are available
- Choice of tin or gold plated contacts
- Not for interrupting current
- Socket solder tail contacts available for hot side PC Board mounting
- High density achieved through .165 [4.19] contact centerline spacing
- Extraction tool removes both pins and sockets
- Contacts accept 26-18 AWG [.12-.8 mm²] wire sizes and insulation diameters of .025-.115 [.635-2.92]
- Same applicator crimps pins and sockets
- Vertical PC Board pin headers are available
- Pin header standoffs on housings at board interface facilitates gas venting and cooling during soldering
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 7189



Performance Characteristics

The Miniature Rectangular Connector performance characteristics found on pages 109-110 are based on free-hanging and panel mount connectors, loaded with contacts crimped on stranded wire.

Dielectric Withstanding Voltage
2.5 KVAC between adjacent circuits

Insulation Resistance—
1500 megohms minimum initial between adjacent circuits

Voltage Rating—250 V AC

Connector Mating—
Split Pin—1.0 lb. max. per circuit

Connector Unmating—
Split Pin—.25 lb. min. per circuit

Contact Insertion Force—
1.75 lb. max. per contact

Contact Retention—10 lb. min. per contact

Durability—25 cycles, mating and unmating

Technical Documents

Product Specifications

108-1022 (MR) Miniature Rectangular Connectors

108-1078 (MR) Miniature Rectangular Headers

Application Specification

114-1014 (MR) Miniature Rectangular Contacts

Instruction Sheet

408-3231 Pin, Socket, Housing, Contacts, and Accessories

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(MR) Miniature Rectangular Connectors (Continued)

Performance Characteristics
(Continued)

Maximum Current—Maximum current rating of Miniature Rectangular connectors is limited by the maximum operating temperature of the housings which is 105°C including the temperature rise of the contacts which is a maximum of 30°C. There are several variables which have a direct effect on this maximum current-carrying capability for a given connector and must be considered for each application. These variables are:

Wire Size—Larger diameter wire will carry more current since it has less internal resistance to current flow and thus generates less heat. Longer wire lengths also enhance current-carrying capabilities since the wire conducts heat away from the connector.

Connector Size—In general, the more circuits in a connector, the less current can be carried.

Ambient Temperature—The higher the ambient temperature, the less current can be carried in any given connector.

Printed Wiring Board Conductor Size—The finished trace conductor width and thickness should be maximized to allow for the greatest current-carrying capacity and heat dissipation.

Miniature Rectangular connectors also will withstand the following tests:

Vibration—10-55-10 cycles per minute at .06 inch total excursion

Physical Shock—18 drops, 50 G sawtooth at 10 milliseconds

Housing Panel Retention—50 lb. min.

Housing Lock Strength—20 lb. min.

Thermal Shock— -55°C to +85°C

Temperature-Humidity Cycling—25°C to 65°C at 95 RH

Corrosion—48 hr. at 5% salt concentration

Related Product Data

Product Specifications

108-1022 (MR) Miniature Rectangular Connectors

108-1078 (MR) Miniature Rectangular Headers

Current Rating Verification for 30°C Maximum Temperature Rise 100% Energized

Wire-to-Wire
MR Calculated Current Table

Number of Circuits	Wire Gauge				
	18	20	22	24	26
2	9.00	8.00	6.50	5.50	5.00
3	8.50	7.00	6.00	5.00	4.50
4	7.00	6.50	5.50	5.00	4.00
6	6.00	6.00	5.00	4.00	4.00
9	5.00	5.00	4.00	4.00	3.50
12	4.50	4.50	4.00	3.50	3.00
15	4.50	4.00	3.50	3.00	2.50
20	4.00	4.00	3.50	3.00	2.50
24	4.00	3.50	3.00	2.50	2.00
36	3.50	3.00	2.50	2.00	2.00

Values are based on initial Temperature Rise versus Current Testing and are intended to be a guide in the selection of a connector family. All applications should be tested by the end user. The values listed are per circuit for fully loaded housings being 100% energized. **Note:** All combinations were not tested and this chart contains interpolated and extrapolated values.

Minimum Wire Lengths for T-Rise vs. Current Testing

AWG	Min. Length (in.)	AWG	Min. Length (in.)
30	2.6	18	9.4
28	3.2	16	11.3
26	4.1	14	13.7
24	5.1	12	16.4
20	7.8	10	19.3

Note: If wire lengths used are less than those listed above, the current-carrying ability of the system will be reduced due to less heat being conducted away from the connector. The customer should fully test all applications.

Wire-to-Board

Due to the vast differences in trace geometry and printed circuit board configurations, we are unable to provide a separate current carrying chart for our printed circuit board header products. However, the above Wire-to-Wire charts may be used as a guideline for headers if the trace width and thickness is equal to the listed wire gauge. For vertical headers, only 95% of the Wire-to-Wire value should be used. For right-angle headers, only 75% of the Wire-to-Wire value should be used. The charted values are only a tool for connector selection and will require the customer to fully test their application.

Termination Resistance/Contact Crimp Tensile Force

Wire Size		Termination Resistance		Contact Crimp Tensile Force	
AWG	mm²	Test Current (Amps)	Resistance Milliohms (Max. Init.)	Force (Min.) lbs.	Force (Min.) N
26	.12	1	5.00	5	22
24	.2	1.5	5.00	8	36
22	.3	3	4.50	14	62
20	.5	4.5	4.00	14	62
18	.8	6	4.00	30	133

Note: This is the total resistance between wire crimps of a mated pin and socket.

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(MR) Miniature Rectangular Connectors (Continued)

(MR) Miniature Rectangular Connector Mating Combinations

Connector Part Number				Mating Connector Part Number			
Number of Circuits	Flammability Rating	Style	Pin Housing (Cap) Part No.	Socket Housing (Plug) Part No.	PC Board Vertical Pin Headers		
					Plating	.062 Board	.120 Board
2	UL94V-0	In-Line	1-640507-0	1-640517-0	Tin	640497-1	640497-3
					Duplex[1]	2-640497-2	2-640497-4
3	UL94V-0	In-Line	1-640508-0	1-640518-0	Tin	640498-1	640498-3
					Duplex[1]	2-640498-2	2-640498-4
4	UL94V-0	Matrix	1-640509-0	1-640519-0	Tin	640499-1	640499-3
					Duplex[1]	2-640499-2	2-640499-4
6	UL94V-0	Matrix	1-640510-0	1-640520-0	Tin	640500-1	640500-3
					Duplex[1]	2-640500-2	2-640500-4
9	UL94V-0	Matrix	1-640511-0	1-640521-0	Tin	640501-1	640501-3
					Duplex[1]	2-640501-2	2-640501-4
12	UL94V-0	Matrix	1-640512-0	1-640522-0	Tin	640502-1	640502-3
					Duplex[1]	2-640502-2	2-640502-4
15	UL94V-0	Matrix	1-640513-0	1-640523-0	Tin	640503-1	640503-3
					Duplex[1]	2-640503-2	2-640503-4
20	UL94V-0	Matrix	1-640514-0	1-640524-0	Tin	640504-1	640504-3
					Duplex[1]	2-640504-2	2-640504-4
24	UL94V-0	Matrix	1-640515-0	1-640525-0	Tin	640505-1	640505-3
					Duplex[1]	2-640505-2	2-640505-4
36	UL94V-0	Matrix	1-640516-0	1-640526-0	Tin	640506-1	640506-3
					Duplex[1]	2-640506-2	2-640506-4

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.

Note: All part numbers are RoHS Compliant.

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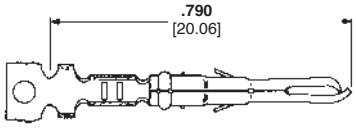
(MR) Miniature Rectangular Connectors (Continued)

Contacts

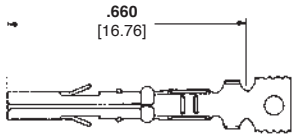
Pin diameter .068 [1.73]

Material

Phosphor bronze
Stock thickness .008 [.203]



Live Split Pin



Standard Socket

Wire Size Range AWG [mm²]	Ins. Dia. Range	Finish	Contact Part Numbers				HDM Applicator Part No.	Hand Tool Part No.
			Live Split Pin		Standard Socket			
			Strip Form	Loose Piece	Strip Form	Loose Piece		
26-24 [.12-.2]	**.025-.050** .635-1.27	Pre-tin	350968-1	640579-1	794000-1	794001-1	466352-1[3] 466352-2[3] 466352-3[3]	91534-1
		Select Gold[1]	350968-2	640579-2	794000-2	794001-2		
26-18[2] [.12-.8]	**.050-.115** 1.27-2.92	Pre-tin	350967-1	640545-1	641294-1	641300-1	466351-1[3] 466351-2[3] 466351-4[3]	91526-1
		Select Gold[1]	350967-2	640545-2	641294-2	641300-2		

[1]Select Gold Finish — Plated with .000030 min. [.000762] gold in mating area over .000050 [.00127] min. nickel underplate on entire contact.
[2]1650 CMA maximum.
[3]HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -3 or -4 is used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.

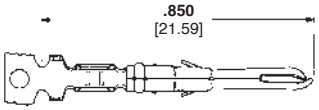
Grounding Pins

(Mate first, break last, not for interrupting current)

Pin diameter .068 [1.73]
Stock thickness .008 [.203]

Material

Phosphor bronze



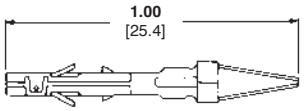
Wire Size Range AWG [mm²]	Ins. Dia. Range	Finish	Grounding Pin Part Numbers		HDM Applicator Part No.	Hand Tool Part No.
			Strip Form	Loose Piece		
26-18[2] [.12-.8]	**.050-.115** 1.27-2.92	Pre-tin	350969-1	640580-1	466351-1[3] 466351-2[3] 466351-4[3]	91526-1
		Select Gold[1]	350969-2	640580-2		

[1]Select Gold Finish—Plated with .000030 [.000762] min. gold in mating area over .000050 [.00127] min. nickel underplate on entire contact.
[2]1650 CMA maximum.
[3]HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -3 or -4 is used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.

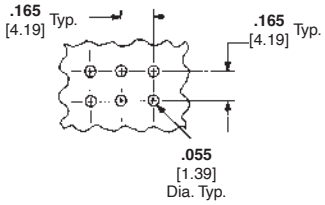
Solder Tail Socket

Material and Finish

Phosphor bronze, pre-tin
Stock thickness .008 [.203]



Part Number 350838-1
Note: Recommended for use with MR Socket Housings



Recommended PC Board Hole Layout
.062 [1.57] or .093 [2.36] thick board

Keying Plug

IS 408-3231



Part Number 350591-1
UL94V-0 Nylon material
Note: Use in socket housings only.

Related Product Data

Product Specification
108-1022 (MR) Miniature Rectangular Connectors

Application Specification
114-1014 (MR) Miniature Rectangular Contacts

Performance Characteristics—pages 109-110
Housings—pages 113-114
Technical Documents—pages 109 and 205-206
Application Tooling—pages 207-210



Contact Extraction Tool
Part No. 455822-2
IS 408-9570



Contact Insertion Tool
(For inserting contacts applied to small diameter wire)
Part No. 455830-1
IS 408-7984

Note: All part numbers are RoHS Compliant.

Catalog 82181
Revised 4-08

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Japan: 81-44-844-8013
UK: 44-8706-080-208

(MR) Miniature Rectangular Connectors (Continued)

Housings

Free-Hanging or Panel Mount

.165 [4.19] Centerline spacing

Material

Nylon, Natural (Color—Brick Red)

Flammability Rating—UL94V-0

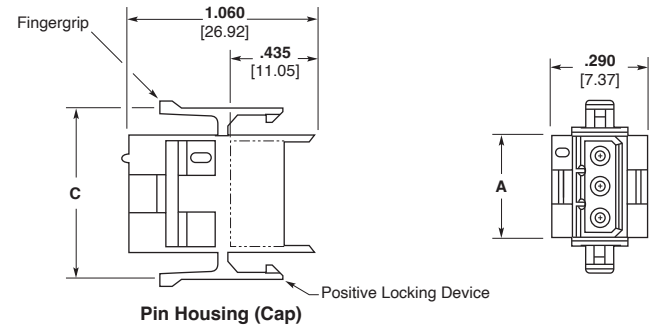
Related Product Data

Product Specification

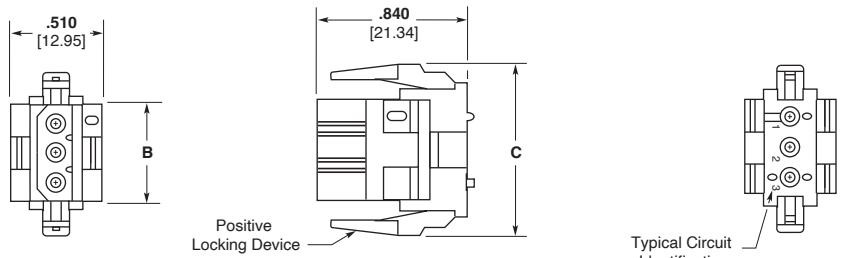
108-1022 (MR) Miniature Rectangular Connectors

Performance Characteristics—pages 109-110
Panel Cutout Recommendations—page 115
Contacts—page 112
Keying Plug—page 112
Strain Reliefs—page 116
Commoning Bars—page 116
Technical Documents—pages 109 and 205-206
Mating Headers—pages 117-118

2 and 3 Circuit, In-Line



Pin Housing (Cap)

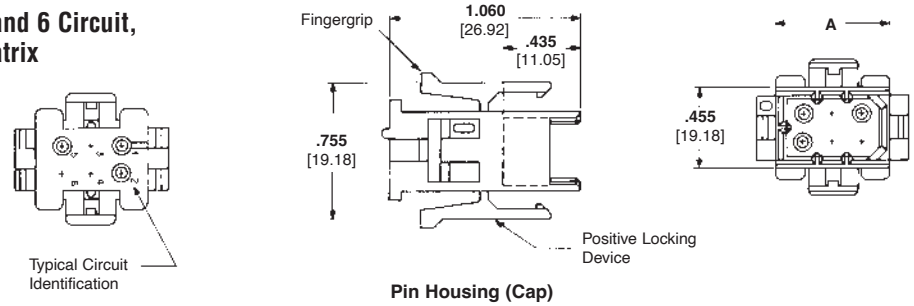


Socket Housing (Plug)

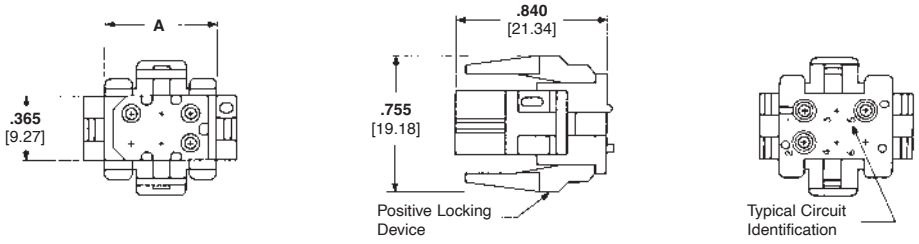
Number of Circuits	Dimensions			Part Numbers	
	A	B	C	Pin Housing (Cap)	Socket Housing (Plug)
2	.455 11.56	.365 9.27	.755 19.18	1-640507-0	1-640517-0
3	.620 15.75	.530 13.46	.920 23.37	1-640508-0	1-640518-0

Note: **All part numbers are RoHS Compliant.**

4 and 6 Circuit, Matrix



Pin Housing (Cap)



Socket Housing (Plug)

Number of Circuits	A Dim.	Part Numbers	
		Pin Housing (Cap)	Socket Housing (Plug)
4	.455 11.56	1-640509-0	1-640519-0
6	.620 15.75	1-640510-0	1-640520-0

Note: **All part numbers are RoHS Compliant.**

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(MR) Miniature Rectangular Connectors (Continued)

Housings

Free-Hanging or Panel Mount

.165 [4.19] Centerline spacing

Material

Nylon, Natural (Color—Brick Red)

Flammability Rating—UL94V-0

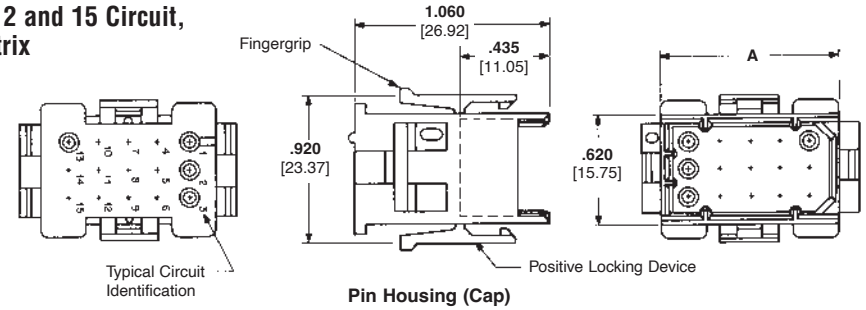
Related Product Data

Product Specification

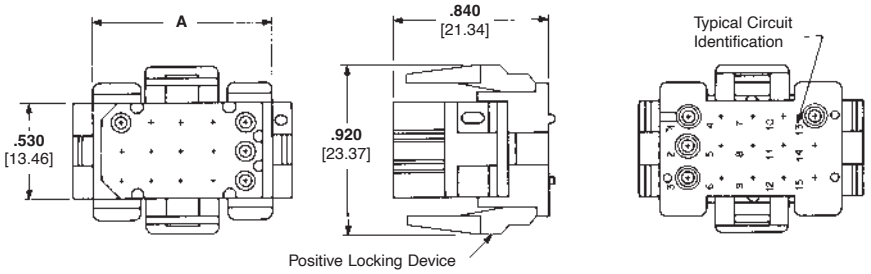
108-1022 (MR) Miniature Rectangular Connectors

Performance Characteristics—pages 109-110
Panel Cutout Recommendations—page 115
Contacts—page 112
Keying Plug—page 112
Strain Reliefs—page 116
Commoning Bars—page 116
Technical Documents—pages 109 and 205-206
Mating Headers—pages 117-118

9, 12 and 15 Circuit, Matrix

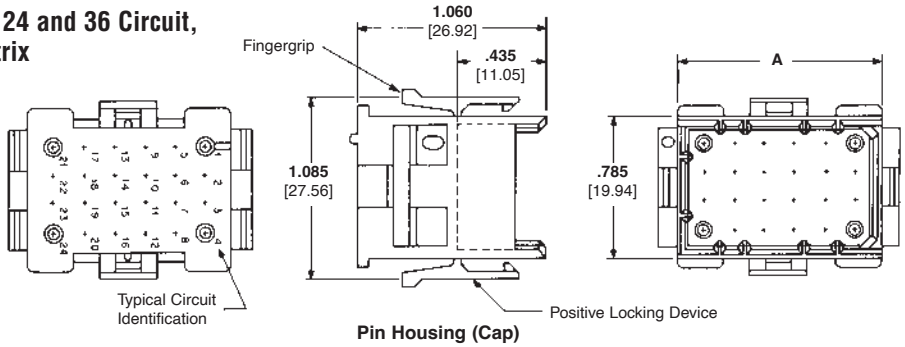


Pin Housing (Cap)

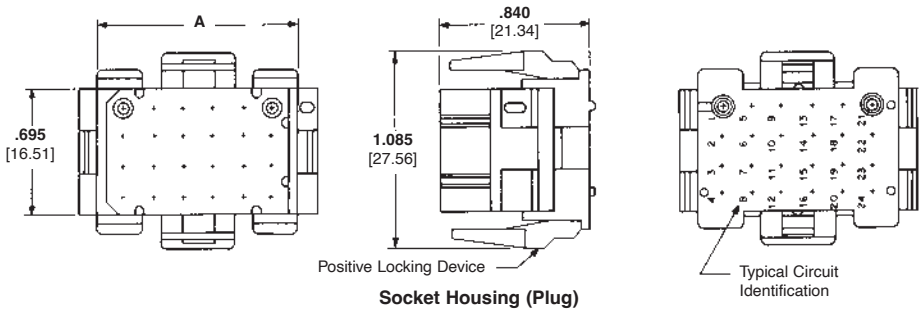


Socket Housing (Plug)

20, 24 and 36 Circuit, Matrix



Pin Housing (Cap)



Socket Housing (Plug)

Number of Circuits	A Dim.	Part Numbers	
		Pin Housing (Cap)	Socket Housing (Plug)
9	**.620** [15.75]	1-640511-0	1-640521-0
12	**.785** [19.94]	1-640512-0	1-640522-0
15	**.950** [24.13]	1-640513-0	1-640523-0
20	**.950** [24.13]	1-640514-0	1-640524-0
24	**1.115** [28.32]	1-640515-0	1-640525-0
36	**1.610** [40.89]	1-640516-0	1-640526-0

Note: **All part numbers are RoHS Compliant.**

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(MR) Miniature Rectangular Connectors (Continued)

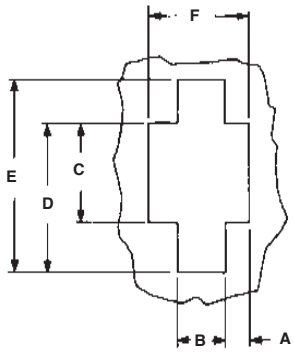
Recommended Panel Cutouts for Pin and Socket Housings

Related Product Data

Product Specification

108-1022 (MR) Miniature Rectangular Connectors

Housings—pages 113-114
Technical Documents—pages 109 and 205-206



View is from housing entry side

Panel Thickness .068 [1.75] Max.

Number of Circuits	Panel Cutout Dimensions					
	A	B	C	D	E	F
2	**.105** 2.67	**.220** 5.59	**.475** 12.07	**.630** 16.00	**.785** 19.94	**.430** 10.92
3	**.105** 2.67	**.220** 5.59	**.640** 16.26	**.795** 20.19	**.950** 24.13	**.430** 10.92
4	**.157** 3.99	**.280** 5.28	**.475** 12.07	**.630** 16.00	**.785** 19.94	**.595** 15.11
6	**.208** 5.28	**.345** 8.76	**.475** 12.07	**.630** 16.00	**.785** 19.94	**.760** 19.30
9	**.208** 5.28	**.345** 8.76	**.640** 16.26	**.795** 20.19	**.950** 24.13	**.760** 19.30
12	**.225** 5.72	**.475** 12.07	**.640** 16.26	**.795** 20.19	**.950** 24.13	**.925** 23.50
15	**.308** 7.82	**.475** 12.07	**.640** 16.26	**.795** 20.19	**.950** 24.13	**1.090** 27.69
20	**.308** 7.82	**.475** 12.07	**.805** 20.45	**.960** 24.38	**1.115** 28.32	**1.090** 27.69
24	**.390** 9.91	**.475** 12.07	**.805** 20.45	**.960** 24.38	**1.115** 28.32	**1.255** 31.88
36	**.625** 15.86	**.500** 12.70	**.800** 20.32	**.950** 24.13	**1.100** 27.94	**1.750** 44.45

Notes:
1. When mounted in a .060 [1.52] thick panel, the cap's mating end extends .800 [20.32] beyond the panel front; wire end extends .220 [55.88] from the panel rear. Plug mating end extends .580 [14.73] beyond the panel front; wire end extends .220 [55.88] from the panel rear.
2. The panel should be punched so that the housing enters the panel in the same direction as the punch for ease of assembly.

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(MR) Miniature Rectangular Connectors (Continued)

Strain Reliefs
One Piece — Clam Shell

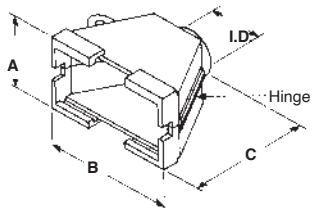
(Illustrated in closed position)

IS 408-3231

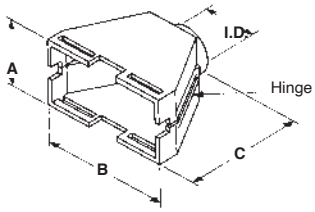
Material

Nylon, Natural (Color—Brick Red)

Flammability Rating — UL94V-0



6, 9, 12, 15 and 20 Circuit



24 and 36 Circuit

Number of Circuits	Dimensions				Part Numbers
	I.D.	A	B	C	
6	**.374** 9.50	**.634** 16.10	**.760** 19.30	**1.000** 25.4	350373-1
9	**.420** 10.67	**.800** 20.32	**.760** 19.30	**1.000** 25.4	350522-1
12	**.420** 10.67	**.790** 20.07	**.925** 23.50	**1.000** 25.4	350374-1
15	**.420** 10.67	**.790** 20.07	**1.090** 27.69	**1.000** 25.4	350523-1
20	**.560** 14.22	**.960** 24.38	**1.090** 27.69	**1.280** 23.51	480634-1
24	**.560** 14.22	**.900** 22.86	**1.255** 31.88	**1.280** 23.51	350524-1
36	**.560** 14.22	**.900** 22.86	**1.750** 44.45	**1.280** 23.51	480594-1

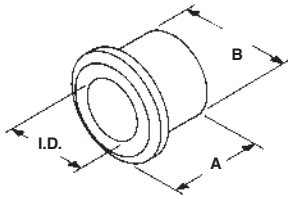
Notes:
1. These strain reliefs can be used with either pin or socket housings.
2. **Customer supplied:** One No. 6 Panhead Type B self-taping screw, 3/8 long. Plating is optional to conform to customer requirements.
3. Strain reliefs are also available in UL94V-2 nylon, black in color. To order strain reliefs in this material use the appropriate dash numbers: 1-XXXXXX-9.

Strain Relief
Adapting Grommets

IS 408-3231

Material

Flexible PVC (55/75 Durometer) black color



Number of Circuits	Dimensions			Part Numbers
	I.D.	A	B	
6	**.156** 3.96	**.375** 9.53	**.375** 9.53	2-350377-0
	.218 5.54	**.375** 9.53	**.375** 9.53	2-350376-0
	.296 7.52	**.375** 9.53	**.375** 9.53	2-350375-0
9, 12 & 15	**.218** 5.54	**.375** 9.53	**.420** 10.67	2-350378-1
	.250 6.35	**.375** 9.53	**.420** 10.67	2-350379-1
	.281 7.14	**.375** 9.53	**.420** 10.67	2-350380-1
20, 24 & 36	**.437** 11.10	**.500** 12.70	**.562** 14.27	2-380935-0
	.375 9.53	**.500** 12.70	**.562** 14.27	2-380936-0
	.312 7.92	**.500** 12.70	**.562** 14.27	2-380937-0

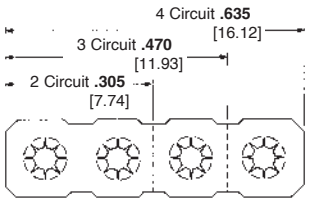
Commoning Bars

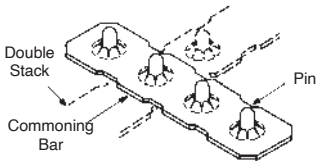
IS 408-3231

Material

Brass

Stock thickness .008 [.203]





Finish	Part Numbers		
	2 Circuit	3 Circuit	4 Circuit
Pre-tin	350020-1	350021-1	350022-1
Gold[1]	350020-2	350021-2	350022-2

[1]Gold Finish—Plated with .000030 [.000762] min. gold over .000050 [.00127] min. nickel underplate on entire contact.

Related Product Data

Housings—pages 113-114

Notes:
1. Commoning bars can be used to common adjacent pin contacts in any column or row. Maximum stack per pin is two.
2. The above illustrates the proper insertion of the Commoning Bar.
3. Use the mating socket housing to assemble the Commoning Bar onto the pins.



Commoning Bar Extraction Tool
Part No. 457306-1
IS 408-3231

Note: **All part numbers are RoHS Compliant.**

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(MR) Miniature Rectangular Connectors (Continued)

PC Board Vertical Pin Headers

.165 [4.19] Centerline spacing

Material

Housing — Nylon, Natural (Color—Brick Red)

Flammability Rating — UL94V-0

Contacts — Phosphor bronze

Solder tail diameter .040 [1.02]

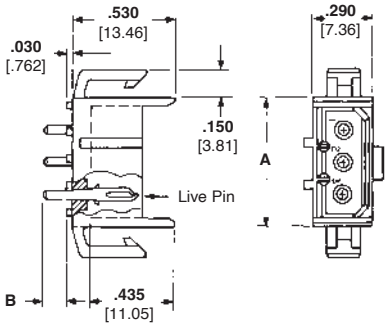
Related Product Data

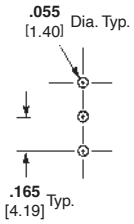
Product Specification

108-1078 (MR) Miniature Rectangular Headers

Dimensions A and B — page 118
Performance Characteristics— pages 109-110
Technical Documents— pages 109 and 205-206
Mating Socket Housings— pages 113-114

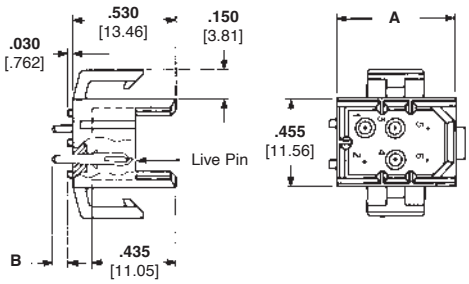
2 and 3 Circuit, In-Line

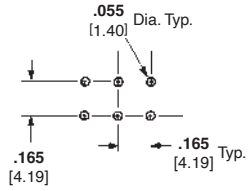




Recommended PC Board Hole Layout

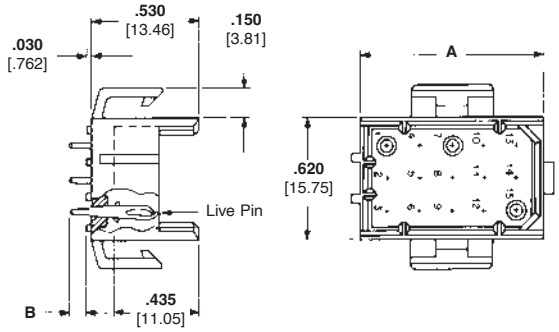
4 and 6 Circuit, Matrix

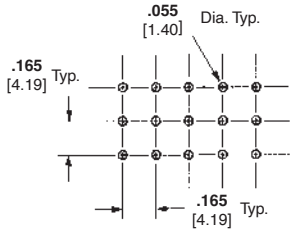




Recommended PC Board Hole Layout

9, 12 and 15 Circuit, Matrix





Recommended PC Board Hole Layout

Catalog 82181
Revised 4-08

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Japan: 81-44-844-8013
UK: 44-8706-080-208

(MR) Miniature Rectangular Connectors (Continued)

PC Board Vertical Pin Headers

.165 [4.19] Centerline spacing

Material

Housing — Nylon, Natural (Color–Brick Red)

Flammability Rating — UL94V-0

Contacts — Phosphor bronze

Solder tail diameter .040 [1.02]

Related Product Data

Product Specification

108-1078 (MR) Miniature Rectangular Headers

Dimensions (2 and 3 Circuit, In-Line; 4, 6, 9, 12 and 15 Circuit, Matrix) — page 118

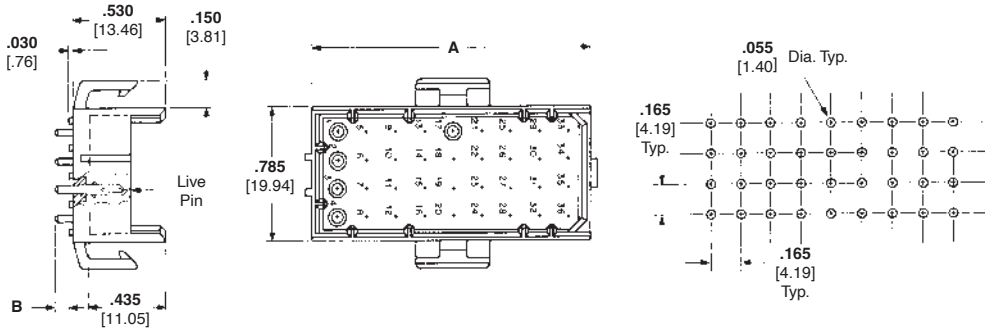
Performance Characteristics— pages 109-110

Vertical Pin Headers and Recommended PC Board Hole Layouts—pages 117-118

Technical Documents— pages 109 and 205-206

Mating Socket Housings— pages 113-114

20, 24 and 36 Circuit, Matrix



Recommended PC Board Hole Layout

Number of Circuits	Board Thickness	Dimensions A	Dimensions B	Header Part Numbers Tin Finish	Header Part Numbers Duplex Finish[1]	Mates with Socket Housing Part No.
2 In-Line	**.062** 1.57	**.455** 11.56	**.120** 3.05	640497-1	2-640497-2	1-640517-0
	.120 3.05	**.455** 11.56	**.180** 4.57	640497-3	2-640497-4	
3 In-Line	**.062** 1.57	**.620** 15.75	**.120** 3.05	640498-1	2-640498-2	1-640518-0
	.120 3.05	**.620** 15.75	**.180** 4.57	640498-3	2-640498-4	
4	**.062** 1.57	**.455** 11.56	**.120** 3.05	640499-1	2-640499-2	1-640519-0
	.120 3.05	**.455** 11.55	**.180** 4.57	640499-3	2-640499-4	
6	**.062** 1.57	**.620** 15.75	**.120** 3.05	640500-1	2-640500-2	1-640520-0
	.120 3.05	**.620** 15.75	**.180** 4.57	640500-3	2-640500-4	
9	**.062** 1.57	**.620** 15.75	**.120** 3.05	640501-1	2-640501-2	1-640521-0
	.120 3.05	**.620** 15.75	**.180** 4.57	640501-3	2-640501-4	
12	**.062** 1.57	**.785** 19.94	**.120** 3.05	640502-1	2-640502-2	1-640522-0
	.120 3.05	**.785** 19.94	**.180** 4.57	640502-3	2-640502-4	
15	**.062** 1.57	**.950** 24.13	**.120** 3.05	640503-1	2-640503-2	1-640523-0
	.120 3.05	**.950** 24.13	**.180** 4.57	640503-3	2-640503-4	
20	**.062** 1.57	**.950** 24.13	**.120** 3.05	640504-1	2-640504-2	1-640524-0
	.120 3.05	**.950** 24.13	**.180** 4.57	640504-3	2-640504-4	
24	**.062** 1.57	**1.115** 28.32	**.120** 3.05	640505-1	2-640505-2	1-640525-0
	.120 3.05	**1.115** 28.32	**.180** 4.57	640505-3	2-640505-4	
36	**.062** 1.57	**1.610** 40.89	**.120** 3.05	640506-1	2-640506-2	1-640526-0
	.120 3.05	**1.610** 40.89	**.180** 4.57	640506-3	2-640506-4	

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.

Note: All part numbers are RoHS Compliant.

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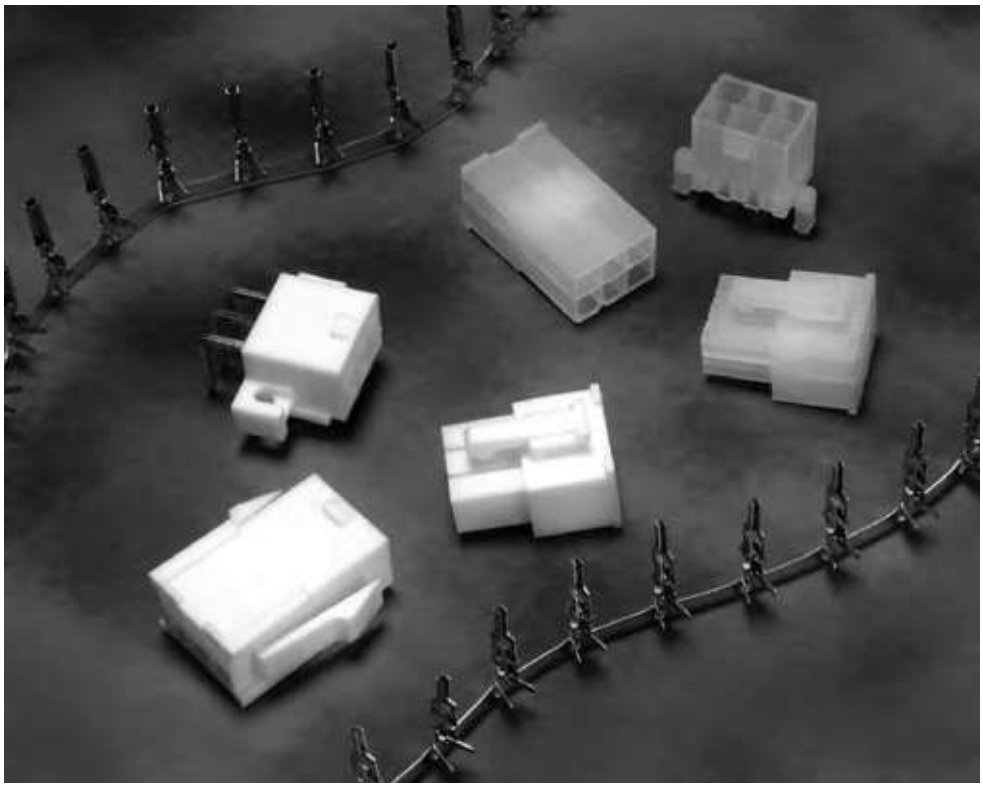
USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

VAL-U-LOK Connector System (Wire-to-Wire, Wire-to-Board and Wire-to-Panel)

Product Facts

- Low cost, wire-to-wire, wire-to-board and wire-to-panel connectors with 4.2 mm centerline
- Easy mate and unmate with positive latch design
- Single row, 3-5 positions: receptacles, panel mount or free-hanging plugs
- Double row, 2-24 positions (even only): receptacles, panel mount or free-hanging plugs, and vertical or right-angle pin headers
- Available in UL 94V-2 or UL 94V-0 flammability rated nylon
- Products are lead free to help promote a cleaner environment
- Intermateable and interchangeable with Molex Mini-Fit, Jr. and intermateable AMP-DUAC connectors
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. 208567
- Tyco Electronics Design For Environment (DFE) Standard 230-5



Performance Characteristics

Electrical

Voltage—600 VAC

Current—9 amps max. in 2-position applications

Dielectric Withstanding Voltage—1500 VAC min.

Insulation Resistance—1000 megohms min.

Operating Temperature—–40°C to +105°C [–40°F to +221°F]

Mechanical

Connector Mating—1.55 lb. [6.90 N] max. per circuit

Connector Unmating—.11 lb. [.49 N] min. per circuit

Contact Retention—4.88 lb. [21.71 N] min. per contact

Durability—30 cycles, mating and unmating

Material and Finish

Housings—Nylon, UL 94V-2 and UL 94V-0

Contacts—Brass or Phos. Bronze with tin plating (Lead-Free) or gold plating

Technical Documents

Design Objective
108-2112

Application Specification
114-13172

Engineering Test Report
502-1204

Applications

- Computer motherboards/power supplies
- Harness assemblies used in the Vending, Gaming and Appliance industries
- Car alarm systems
- Heating systems

Molex and Mini-Fit are trademarks of Molex Incorporated.

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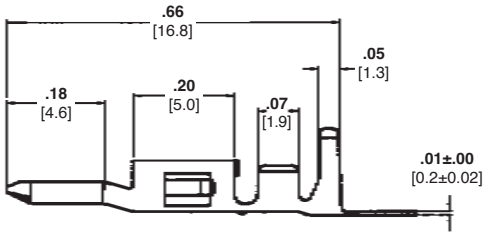
VAL-U-LOK Connector System (Wire-to-Wire, Wire-to-Board and Wire-to-Panel) (Continued)

Contacts

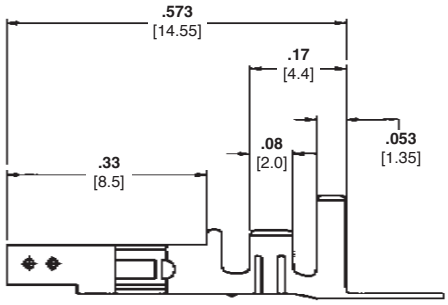
Wire Range (AWG)	Insulation Range	Material & Finish	Pin		Socket		Applicator Part Number[1]	PRO-CRIMPER III Hand Tool Part Number
			Strip Form	Loose Piece	Strip Form	Loose Piece		
26-22	.047 - .069 [1.2 - 1.75]	Brass, Pre-Tin	794957-1	1586316-1	794958-1	1586317-1	1385448-X	91387-1
		Phos. Brz., Pre-Tin	794957-3	1586316-3	794958-3	1586317-3		
		Brass, Gold	794957-2	1586316-2	794958-2	1586317-2		
		Phos. Brz., Gold	794957-4	1586316-4	794958-4	1586317-4		
22-18	.060 - .122 [1.50 - 3.10]	Brass, Pre-Tin	794955-1	1586314-1	794956-1	1586315-1	1852668-X	91388-1
		Phos. Brz., Pre-Tin	794955-3	1586314-3	794956-3	1586315-3		
		Brass, Gold	794955-2	1586314-2	794956-2	1586315-2		
		Phos. Brz., Gold	794955-4	1586314-4	794956-4	1586315-4		
16	.071 - .122 [1.8 - 3.10]	Brass, Pre-Tin	1586054-1	1586840-1	1586055-1	1586841-1	1852294-X	1976444-1
		Phos. Brz., Pre-Tin	1586054-3	1586840-3	1586055-3	1586841-2		
		Brass, Gold	1586054-2	1586840-2	1586055-2	1586841-3		
		Phos. Brz., Gold	1586054-4	1586840-4	1586055-4	1586841-4		

Extraction Tool Part Number 1586343-1
[1] For applicator and machine part numbers, contact Technical Support.

Pin — (used in Plug Housing)



Socket — (used in Receptacle Housing)



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VAL-U-LOK Connector System (Wire-to-Wire, Wire-to-Board and Wire-to-Panel) (Continued)

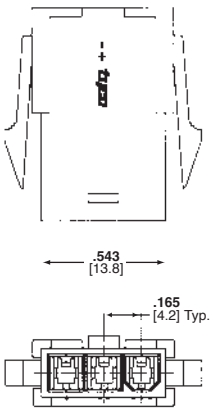
Housings — Single Row

No. of Positions	UL 94V-2 Housings			UL 94V-0 Housings		
	Panel Mount Plug	Free-Hanging Plug	Receptacle Housing	Panel Mount Plug	Free-Hanging Plug	Receptacle Housing
3*	1586101-3	1586103-3	1586105-3	1586102-3	1586104-3	1586106-3
4	1586022-4	1586024-4	1586026-4	1586023-4	1586025-4	1586027-4
5	1586022-5	1586024-5	1586026-5	1586023-5	1586025-5	1586027-5

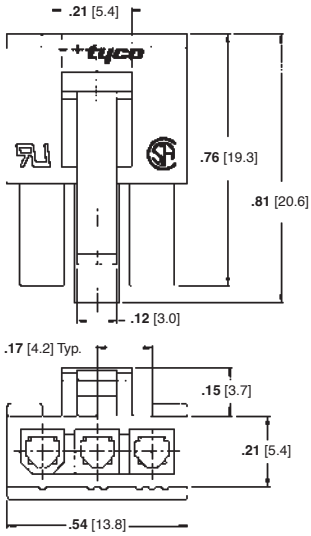
*Note: 3 position housings are First Mate/Last Break.

Note: All part numbers are RoHS Compliant.

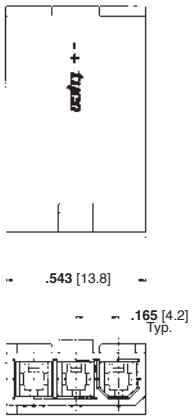
Panel Mount Plug Housing



Receptacle Housing



Free-Hanging Plug Housing

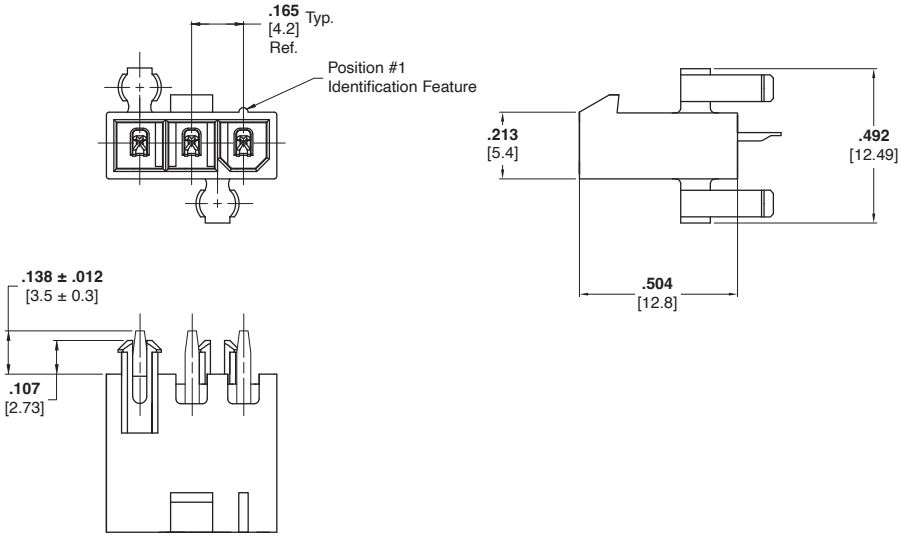


Headers — Single Row, Vertical

No. of	UL 94V-2 Housings		UL 94V-0 Housings
	With Drain Holes	Without Drain Holes	With Drain Holes
3*	2029054-3	2029058-3	2029056-3
4	2029054-4	2029058-4	2029056-4
5	2029054-5	2029058-5	2029056-5

*Note: 3 position housings are First Mate/Last Break.

Note: All part numbers are RoHS Compliant.



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VAL-U-LOK Connector System (Wire-to-Wire, Wire-to-Board and Wire-to-Panel) (Continued)

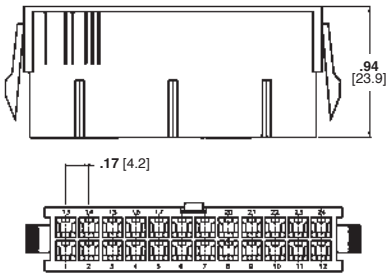
Housings — Double Row

No. of Positions	UL 94V-2 Housings			UL 94V-0 Housings		
	Panel Mount Plug	Free-Hanging Plug	Receptacle Housing	Panel Mount Plug	Free-Hanging Plug	Receptacle Housing
2	794953-2	1586000-2	794954-2	1586018-2	1586017-2	1586019-2
4	794953-4	1586000-4	794954-4	1586018-4	1586017-4	1586019-4
6	794953-6	1586000-6	794954-6	1586018-6	1586017-6	1586019-6
8	794953-8	1586000-8	794954-8	1586018-8	1586017-8	1586019-8
10	1-794953-0	1-1586000-0	1-794954-0	1-1586018-0	1-1586017-0	1-1586019-0
12	1-794953-2	1-1586000-2	1-794954-2	1-1586018-2	1-1586017-2	1-1586019-2
14	1-794953-4	1-1586000-4	1-794954-4	1-1586018-4	1-1586017-4	1-1586019-4
16	1-794953-6	1-1586000-6	1-794954-6	1-1586018-6	1-1586017-6	1-1586019-6
18	1-794953-8	1-1586000-8	1-794954-8	1-1586018-8	1-1586017-8	1-1586019-8
20	2-794953-0	2-1586000-0	2-794954-0	2-1586018-0	2-1586017-0	2-1586019-0
22	2-794953-2	2-1586000-2	2-794954-2	2-1586018-2	2-1586017-2	2-1586019-2
24	2-794953-4	2-1586000-4	2-794954-4	2-1586018-4	2-1586017-4	2-1586019-4

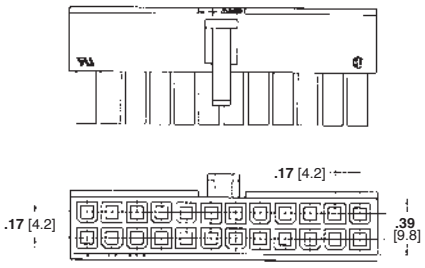
Note: Plug housings accept pin contacts and receptacle housings accept socket contacts on page 114.

Note: All part numbers are RoHS Compliant.

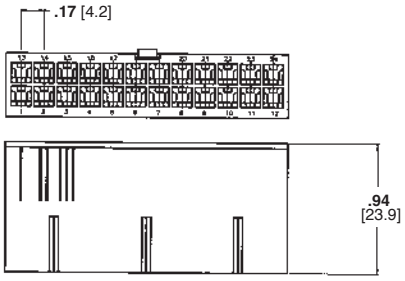
Panel Mount Plug Housing



Receptacle Housing



Free-Hanging Plug Housing



Housings — Colored

Color	No. of Positions	UL 94V-2 Housings			UL 94V-0 Housings		
		Panel Mount Plug	Free-Hanging Plug	Receptacle Housing	Panel Mount Plug	Free-Hanging Plug	Receptacle Housing
Black	2-24	X-2029088-X	X-2029027-X	X-1586075-X	X-2029035-X	X-2029028-X	X-2029029-X
Red	4-24	X-2029089-X	X-2029090-X	X-2029091-X	X-2029092-X	X-2029093-X	X-2029094-X
Blue	6-24	X-2029095-X	X-2029096-X	X-2029097-X	X-2029098-X	X-2029099-X	X-2029100-X

Note: Plug housings accept pin contacts and receptacle housings accept socket contacts on page 114.

Note: All part numbers are RoHS Compliant.

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VAL-U-LOK Connector System (Wire-to-Wire, Wire-to-Board and Wire-to-Panel) (Continued)

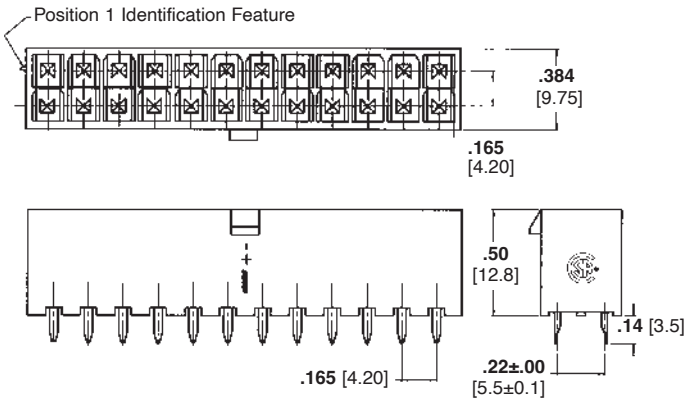
Pin Headers

No. of Positions	UL 94V-2 Pin Headers				UL 94V-0 Pin Headers			
	Vertical		Right-Angle		Vertical		Right-Angle	
	w/o Pegs	w/Pegs	w/o Pegs	Screw Mount	w/o Pegs	w/Pegs	w/o Pegs	Screw Mount
2	1586037-2	1586039-2	1586041-2	1586043-2	1586038-2	1586040-2	1586042-2	1586044-2
4	1586037-4	1586039-4	1586041-4	1586043-4	1586038-4	1586040-4	1586042-4	1586044-4
6	1586037-6	1586039-6	1586041-6	1586043-6	1586038-6	1586040-6	1586042-6	1586044-6
8	1586037-8	1586039-8	1586041-8	1586043-8	1586038-8	1586040-8	1586042-8	1586044-8
10	1-1586037-0	1-1586039-0	1-1586041-0	1-1586043-0	1-1586038-0	1-1586040-0	1-1586042-0	1-1586044-0
12	1-1586037-2	1-1586039-2	1-1586041-2	1-1586043-2	1-1586038-2	1-1586040-2	1-1586042-2	1-1586044-2
14	1-1586037-4	1-1586039-4	1-1586041-4	1-1586043-4	1-1586038-4	1-1586040-4	1-1586042-4	1-1586044-4
16	1-1586037-6	1-1586039-6	1-1586041-6	1-1586043-6	1-1586038-6	1-1586040-6	1-1586042-6	1-1586044-6
18	1-1586037-8	1-1586039-8	1-1586041-8	1-1586043-8	1-1586038-8	1-1586040-8	1-1586042-8	1-1586044-8
20	2-1586037-0	2-1586039-0	2-1586041-0	2-1586043-0	2-1586038-0	2-1586040-0	2-1586042-0	2-1586044-0
22	2-1586037-2	2-1586039-2	2-1586041-2	2-1586043-2	2-1586038-2	2-1586040-2	2-1586042-2	2-1586044-2
24	2-1586037-4	2-1586039-4	2-1586041-4	2-1586043-4	2-1586038-4	2-1586040-4	2-1586042-4	2-1586044-4

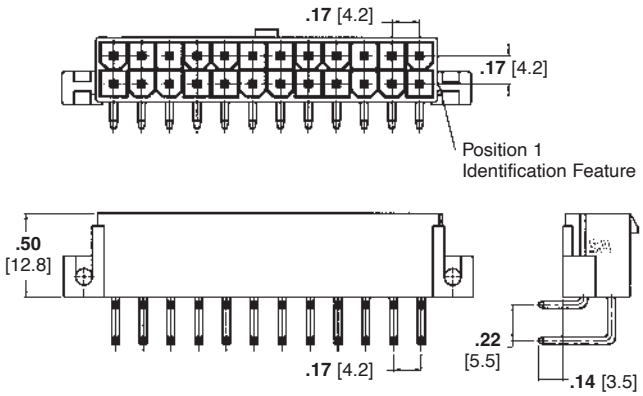
Note: All Headers have Brass, Tin-Plated contacts.

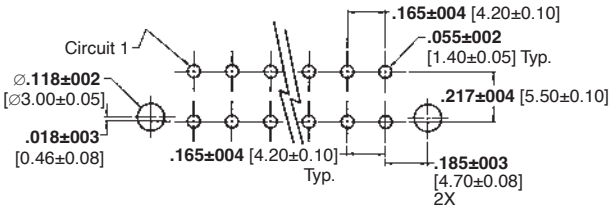
Note: All part numbers are RoHS Compliant.

Vertical Pin Headers (Part No. 1586037 shown w/o pegs)

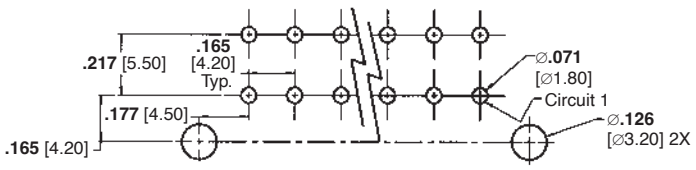


Right-Angle Pin Headers (Part No. 1586043 Screw Mount)





PCB Layout: Component Side (shown with pegs)
Recommended Board Thickness .070 [1.78]



PCB Layout: Component Side (screw mount shown)
Recommended Board Thickness .063 [1.60]

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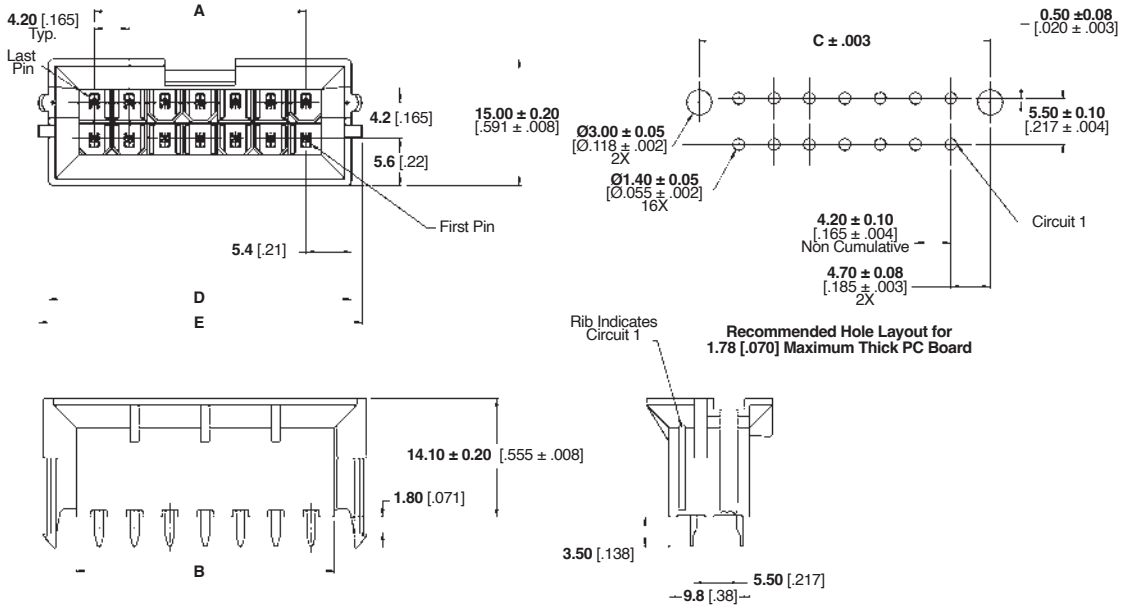
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VAL-U-LOK Connector System (Wire-to-Wire, Wire-to-Board and Wire-to-Panel) (Continued)

Blindmate Headers

No. of Pos.	Dimensions					UL 94V-2 Housings		UL 94V-0 Housings	
	A	B	C	D	E	With Drain Holes	Without Drain Holes	With Drain Holes	Without Drain Holes
2	—	**5.4** [0.21]	**9.4** [0.37]	**10.8** [0.43]	**13.2** [0.52]	1586585-2	1586586-2	1586587-2	1586588-2
4	**4.2** [0.17]	**9.6** [0.38]	**13.6** [0.54]	**15.0** [0.59]	**17.4** [0.69]	1586585-4	1586586-4	1586587-4	1586588-4
6	**8.4** [0.33]	**13.8** [0.54]	**17.8** [0.70]	**19.2** [0.76]	**21.6** [0.85]	1586585-6	1586586-6	1586587-6	1586588-6
8	**12.6** [0.50]	**18.0** [0.71]	**22.0** [0.87]	**23.4** [0.92]	**25.8** [1.02]	1586585-8	1586586-8	1586587-8	1586588-8
10	**16.8** [0.66]	**22.2** [0.87]	**26.2** [1.03]	**27.6** [1.09]	**30.0** [1.18]	1-1586585-0	1-1586586-0	1-1586587-0	1-1586588-0
12	**21.0** [0.83]	**26.4** [1.04]	**30.4** [1.20]	**31.8** [1.25]	**34.2** [1.35]	1-1586585-2	1-1586586-2	1-1586587-2	1-1586588-2
14	**25.2** [0.99]	**30.6** [1.20]	**34.6** [1.36]	**36.0** [1.42]	**38.4** [1.51]	1-1586585-4	1-1586586-4	1-1586587-4	1-1586588-4
16	**29.4** [1.58]	**34.8** [1.37]	**38.8** [1.53]	**40.2** [1.58]	**42.6** [1.69]	1-1586585-6	1-1586586-6	1-1586587-6	1-1586588-6
18	**33.6** [1.32]	**39.0** [1.54]	**43.0** [1.69]	**44.4** [1.75]	**46.8** [1.84]	1-1586585-8	1-1586586-8	1-1586587-8	1-1586588-8
20	**37.8** [1.49]	**43.2** [1.70]	**47.2** [1.86]	**48.6** [1.91]	**51.0** [2.01]	2-1586585-0	2-1586586-0	2-1586587-0	2-1586588-0
22	**42.0** [1.65]	**47.4** [1.87]	**51.4** [2.02]	**52.0** [2.08]	**55.2** [2.17]	2-1586585-2	2-1586586-2	2-1586587-2	2-1586588-2
24	**46.2** [1.82]	**51.6** [2.03]	**55.6** [2.19]	**57.0** [2.24]	**59.4** [2.32]	2-1586585-4	2-1586586-4	2-1586587-4	2-1586588-4

Note: All part numbers are RoHS Compliant.



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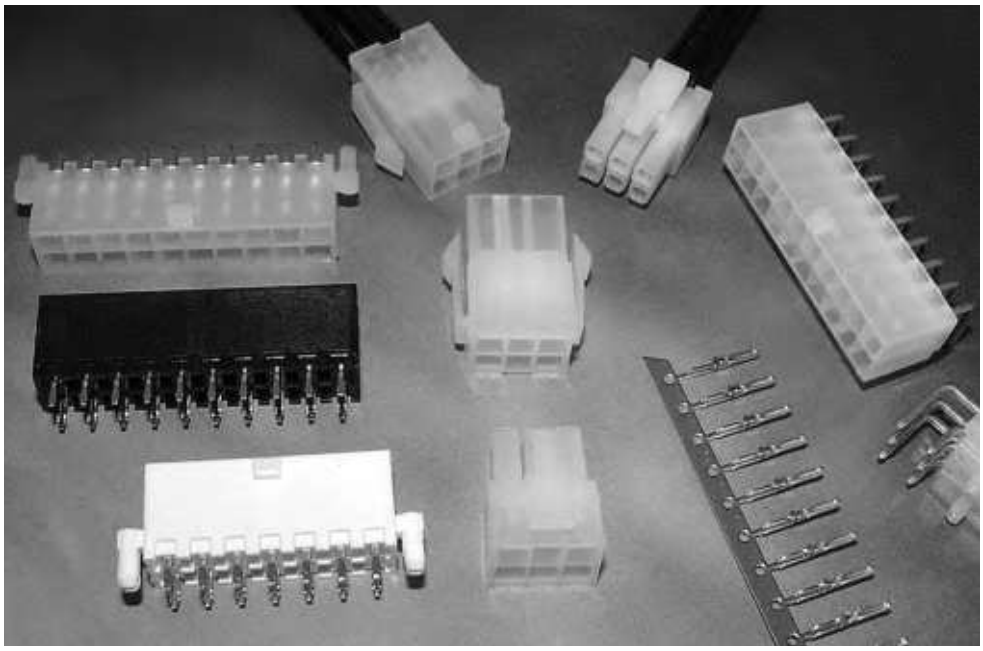
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UK: 44-8706-080-208

AMP-DUAC Connectors

Product Facts

- Wire-to-board and wire-to-wire connector system
- Free-hanging or panel mount plug housings
- Vertical header with or without mounting pegs and with or without drain holes
- Selective loading available on vertical headers
- 4.2 mm x 4.2 mm centerline
- Male and female contacts designed for 26-22 AWG and 22-18 AWG wire
- Receptacle housings accept female contacts with less orientation than competitive product
- Right-angle headers
- Designed for power applications
- Positive latch feature helps prevent disconnection
- AMP-DUAC (dual action) receptacle contacts
- Anti-stubbing contact design
- Polarized housings
- Intermateable with Molex Mini-Fit Jr. connectors
- Recognized under Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR7189



AMP-DUAC Connectors, for power or signal applications, belong to the broad family of Tyco Electronics Soft Shell connectors.

The dual action design of the female receptacle contact provides for low insertion force, yet maintains high-performance current capacity. To help meet your production requirements, semiautomatic bench machines and hand tools are available for strip and loose piece contacts, respectively.

High density, 4.2 mm x 4.2 mm [.165 x .165] centerline, dual-row receptacle housings mate with plug housings (free-hanging or panel mount) or pc board headers (vertical or right-angle). Selective contact loading is available for vertical headers.

All housings are polarized for easier mating and locking latches help maintain reliable connections.

AMP-DUAC wire-to-board, wire-to-panel, and wire-to-wire connectors are intermateable with Molex Mini-Fit Jr. series connectors.

Technical Documents

Product Specifications
108-1699—Headers
108-19099—Receptacles

Application Specification
114-19048—Use of Receptacles

Qualification Test Report
501-434
501-576

Performance Data

Voltage Rating—600 VAC

Current Rating—9 amps maximum in 2 position applications

Low Level Resistance—10 megohms max.

Dielectric Withstanding Voltage—1500 VAC/min.

Insulation Resistance—1000 megohms minimum

Operating Temperature—–55°C to +105°C [–67°F to +221°F]

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AMP-DUAC Connectors (Continued)

Receptacle Housings

2-24 Position Housings

Accept female contacts.

Material

Housings—Nylon
UL 94V-2, Natural color
UL 94V-0, White color

Related Product Data

Mate with—Vertical headers (pages 128-133), right-angle headers (page 128) and plug housings (page 127).

Contacts—See below.

Strain Relief—See below and page 127.

Technical Documents—pages 125 and 205-206

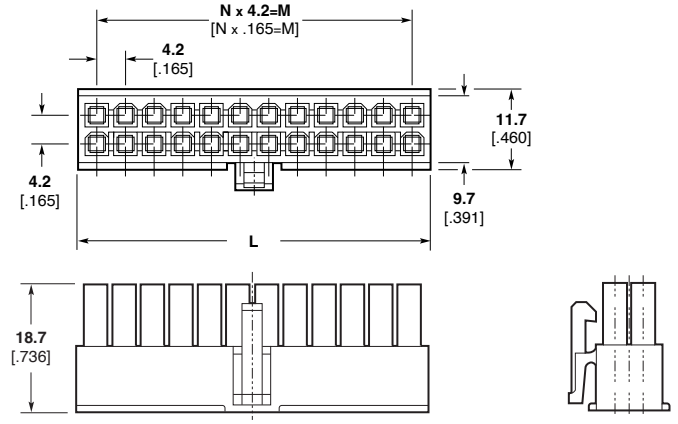


Strain Relief, 6 Position Part Number 1375618-1

Used with plug or receptacle housings.

Wire Bundle Range—4.19-5.59 [.165-.220]

Material—Nylon, UL 94V-2, Natural color



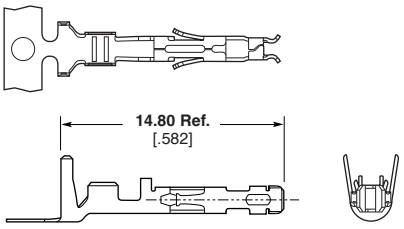
Number of Positions	Dimensions			Part Number	
	L	M	N	UL 94V-2 Natural	UL 94V-0 White
2	**5.5** .216	—	**1**	106527-2	794657-2
4	**9.7** .381	**4.2** .165	**1**	106527-4	794657-4
6	**13.9** .547	**8.4** .330	**2**	106527-6	794657-6
8	**18.1** .712	**12.6** .496	**3**	106527-8	794657-8
10	**22.3** .877	**16.8** .661	**4**	1-106527-0	1-794657-0
12	**26.5** 1.043	**21.0** .826	**5**	1-106527-2	1-794657-2
14	**30.7** 1.208	**25.2** .992	**6**	1-106527-4	1-794657-4
16	**34.9** 1.374	**29.4** 1.157	**7**	1-106527-6	1-794657-6
18	**39.1** 1.539	**33.6** 1.322	**8**	1-106527-8	1-794657-8
20	**43.3** 1.704	**37.8** 1.488	**9**	2-106527-0	2-794657-0
22	**47.5** 1.870	**42.0** 1.653	**10**	2-106527-2	2-794657-2
24	**51.7** 2.035	**46.2** 1.818	**11**	2-106527-4	2-794657-4

Female Contacts

Used in receptacle housings.

Material—Phos. Bronze

Application Tooling—See chart and pages 207-210



Wire Size Range AWG [mm²]	Ins. Dia. Range	Plating	Part Number		Applicator Part Number		
			Strip Form	Loose Piece	for AMP-O-LECTRIC Bench Machine	for AMP-O-MATIC Stripper/Crimper Machine	CERTI-CRIMP Hand Tool Part Number
22-18 [.3-.8]	**1.5-2.4** .059-.094	Tin	106529-2	1-106529-2	680308-☐*	567959-1	734202-2
		Gold	1-794138-3	1-794141-3			
26-22 [.12-.3]	**1.3-1.75** .047-.069	Tin	106528-2	1-106528-2	680307-☐*	567960-1	—
		Gold	1-794139-3	1-794142-3			
2@18 or 16 [.8-.9] [1.29]	**3.3** Total Max. .130	Tin	794418-1	794421-1	680350-☐*	—	90714-1
		Gold	1-794140-3	1-794143-3			

Extraction Tool Part Number 188688-1

*Part Number suffix "-2" indicates Applicator for Model K Machine and "-3" for Model G Machine.

Note: All part numbers are RoHS Compliant.

Technical Documents

Product Specifications
108-1699 AMP-DUAC Header
108-19099 AMP-DUAC Receptacle

Application Specification
114-19048 AMP-DUAC Receptacle Contact

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UK: 44-8706-080-208

AMP-DUAC Connectors (Continued)

Plug Housings

2-24 Position Housings

Accept male contacts.

Material

Housings—Nylon
UL 94V-2, Natural color
UL 94V-0, White color

Related Product Data

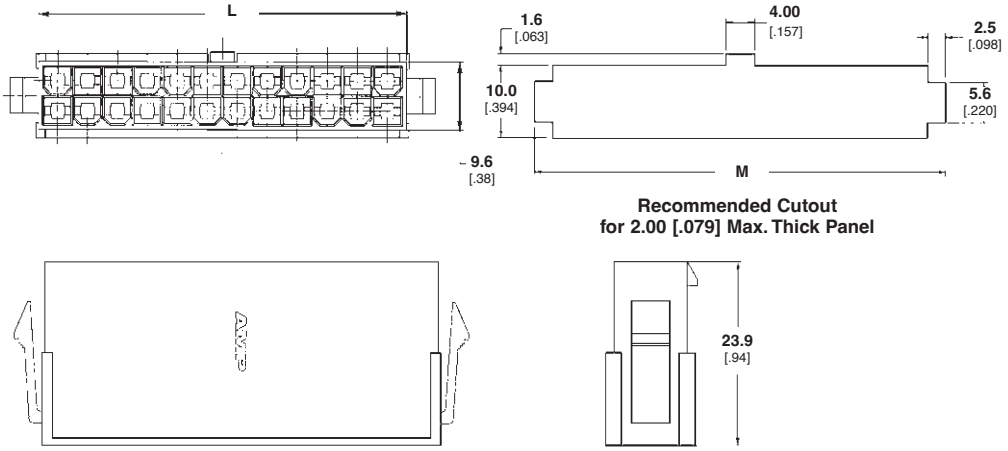
Mate with—Receptacle housings (page 126)
Contacts—See below.
Strain Relief—See below.
Technical Documents—pages 125 and 205-206



Strain Relief, 6 Position Part Number 1375618-1

Used with plug or receptacle housings.

Wire Bundle Range—4.19-5.59 [.165-.220]
Material—Nylon, UL 94V-2, Natural color



Number of Positions	Dimensions		Part Number			
			UL 94V-2, Natural		UL 94V-0, White	
	L	M	Free-Hanging	Panel Mount	Free-Hanging	Panel Mount
2	**5.4** .213	**10.8** .425	794542-2	794550-2	*794594-2	*794598-2
4	**9.6** .378	**15.0** .591	794542-4	794550-4	*794594-4	*794598-4
6	**13.8** .543	**19.2** .756	794542-6	794550-6	*794594-6	*794598-6
8	**18.0** .709	**23.4** .921	794542-8	794550-8	*794594-8	*794598-8
10	**22.2** .874	**27.6** 1.087	1-794542-0	1-794550-0	*1-794594-0	*1-794598-0
12	**26.4** 1.039	**31.8** 1.252	1-794542-2	1-794550-2	*1-794594-2	*1-794598-2
14	**30.6** .205	**36.0** 1.417	1-794542-4	1-794550-4	*1-794594-4	*1-794598-4
16	**34.8** 1.370	**40.2** 1.583	1-794542-6	1-794550-6	*1-794594-6	*1-794598-6
18	**39.0** 1.535	**44.4** 1.748	1-794542-8	1-794550-8	*1-794594-8	*1-794598-8
20	**43.2** 1.701	**48.6** 1.913	2-794542-0	2-794550-0	*2-794594-0	*2-794598-0
22	**47.4** 1.866	**52.8** 2.079	2-794542-2	2-794550-2	*2-794594-2	*2-794598-2
24	**51.6** 2.032	**57.0** 2.244	2-794542-4	2-794550-4	*2-794594-4	*2-794598-4

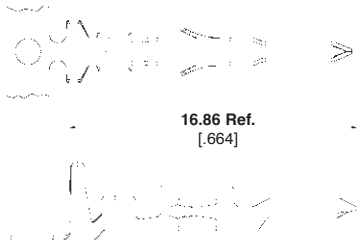
*Call for availability.

Male Contacts

Used in plug housings.

Material—Phos. Bronze

Application Tooling—See chart and pages 207-210



Wire Size Range AWG [mm²]	Ins. Dia. Range	Plating	Part Number		Applicator Part Number		
			Strip Form	Loose Piece	for AMP-O-LECTRIC Bench Machine	for AMP-O-MATIC Stripper/Crimper Machine	CERTI-CRIMP Hand Tool Part Number
22-18 [.3-.8]	**1.5-2.4** .059-.094	Tin	794576-1	794577-1	680308-□*	567959-1	734202-2
		Gold	794576-4	——			
26-22 [.12-.3]	**1.3-1.75** .047-.069	Tin	794578-1	794579-1	680307-□*	567960-1	—
		Gold	794578-4	——			

*Part Number suffix "-2" indicates Applicator for Model K Machine and "-3" for Model G Machine.

Note: All part numbers are RoHS Compliant.

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AMP-DUAC Connectors (Continued)

Vertical Header Assemblies

2, 4 and 6 Position, with and without Pegs and with and without Drain Holes

Material and Finish

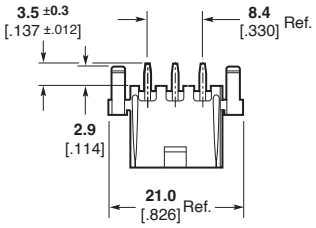
Housing—Nylon
UL 94V-2, Natural color
UL 94V-0, White color

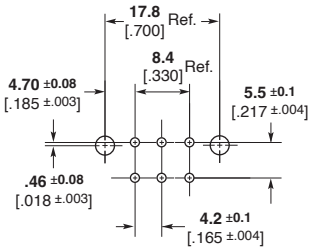
Contacts—0.25 [.010] thick copper alloy

Related Product Data

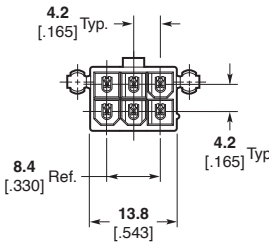
Mate with—Receptacle housings (page 126).

Technical Documents—pages 125 and 205-206





Recommended PC Board Layout



Number of Positions	PCB Pegs	Drain Holes	Plating	Part Number	
				UL 94V-2, Natural	UL 94V-0, White
2	N	N	Tin	1586491-2	1586495-2
	N	N	30 Gold	1586492-2	1586496-2
	Y	N	Tin	1586489-2	1586493-2
	Y	N	30 Gold	1586490-2	1586494-2
	N	Y	Tin	1-794349-1	1-794543-1
	N	Y	30 Gold	1-794349-2	1-794543-2
	Y	Y	Tin	1-794302-1	1-794540-1
	Y	Y	30 Gold	1-794302-2	1-794540-2
4	Y	N	Tin	1586489-4	1586493-4
	Y	N	30 Gold	1586490-4	1586494-4
	N	N	Tin	1586491-4	1586495-4
	N	N	30 Gold	1586492-4	1586496-4
	Y	Y	Tin	1-794303-1	1-794466-1
	Y	Y	30 Gold	1-794303-2	1-794466-2
	N	Y	Tin	1-794350-1	1-794484-1
	N	Y	30 Gold	1-794350-2	1-794484-2
6	Y	Y	Tin	1-794304-1	1-794467-1
	Y	Y	30 Gold	1-794304-2	1-794467-2
	N	Y	Tin	1-794351-1	1-794485-1
	N	Y	30 Gold	1-794351-2	1-794485-2
	Y	N	Tin	1586489-6	1586493-6
	Y	N	30 Gold	1586490-6	1586494-6
	N	N	Tin	1586491-6	1586495-6
	N	N	30 Gold	1586492-6	1586496-6

Note: **All part numbers are RoHS Compliant.**

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AMP-DUAC Connectors (Continued)

Vertical Header Assemblies (Continued)

8 and 10 Position, with and without Pegs and with and without Drain Holes

Material and Finish

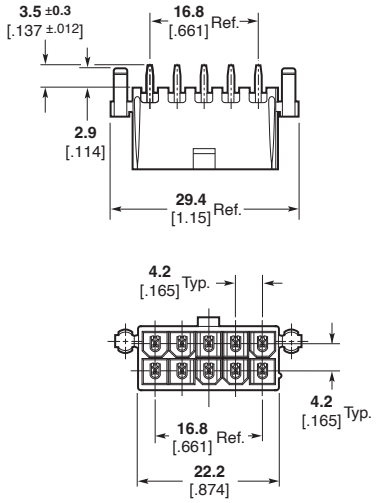
Housing—Nylon
UL 94V-2, Natural color
UL 94V-0, White color

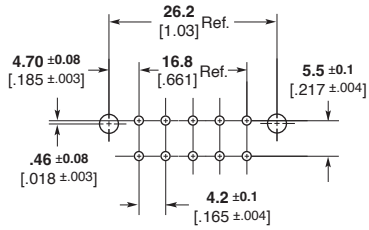
Contacts—0.25 [.010] thick copper alloy

Related Product Data

Mate with—Receptacle housings (page 126).

Technical Documents—pages 125 and 205-206





Recommended PC Board Layout

Number of Positions	PCB Pegs	Drain Holes	Plating	Part Number	
				UL 94V-2, Natural	UL 94V-0, White
8	Y	N	Tin	1586489-8	1586493-8
	Y	N	30 Gold	1586490-8	1586494-8
	N	N	Tin	1586491-8	1586495-8
	N	N	30 Gold	1586492-8	1586496-8
	Y	Y	Tin	1-794305-1	1-794468-1
	Y	Y	30 Gold	1-794305-2	1-794468-2
	N	Y	Tin	1-794352-1	1-794486-1
	N	Y	30 Gold	1-794352-2	1-794486-2
10	Y	N	Tin	1-1586489-0	1-1586493-0
	Y	N	30 Gold	1-1586490-0	1-1586494-0
	N	N	Tin	1-1586491-0	1-1586495-0
	N	N	30 Gold	1-1586492-0	1-1586496-0
	Y	Y	Tin	1-794306-1	1-794469-1
	Y	Y	30 Gold	1-794306-2	1-794469-2
	N	Y	Tin	1-794353-1	1-794487-1
	N	Y	30 Gold	1-794353-2	1-794487-2

Note: **All part numbers are RoHS Compliant.**

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AMP-DUAC Connectors (Continued)

Vertical Header Assemblies (Continued)

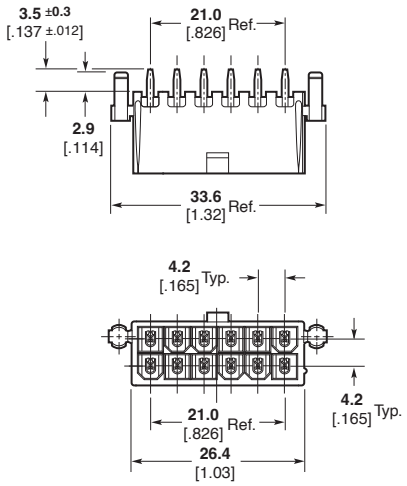
12 Position, with and without Pegs and with and without Drain Holes

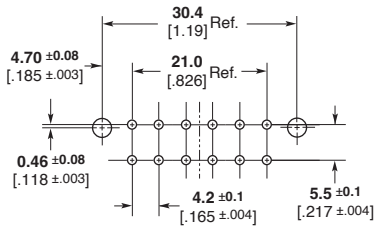
Material and Finish

Housing—Nylon
UL 94V-2, Natural color
UL 94V-0, White color
Contacts—0.25 [.010] thick copper alloy

Related Product Data

Mate with—Receptacle housings (page 126).
Technical Documents—pages 125 and 205-206





Recommended PC Board Layout

Number of Positions	PCB Pegs	Drain Holes	Plating	Part Number	
				UL 94V-2, Natural	UL 94V-0, White
12	Y	N	Tin	1-1586489-2	1-1586493-2
	Y	N	30 Gold	1-1586490-2	1-1586494-2
	N	N	Tin	1-1586491-2	1-1586495-2
	N	N	30 Gold	1-1586492-2	1-1586496-2
	Y	Y	Tin	1-794307-1	1-794470-1
	Y	Y	30 Gold	1-794307-2	1-794470-2
	N	Y	Tin	1-794354-1	1-794488-1
	N	Y	30 Gold	1-794354-2	1-794488-2

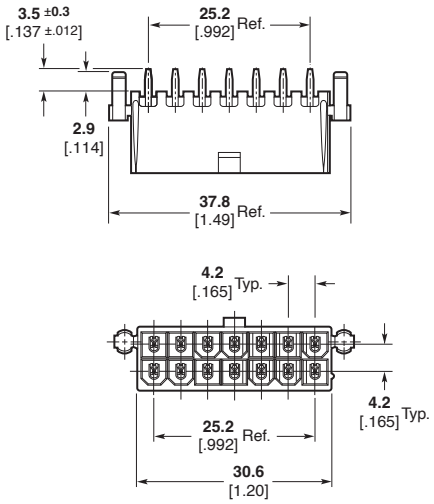
14 Position, with and without Pegs and with and without Drain Holes

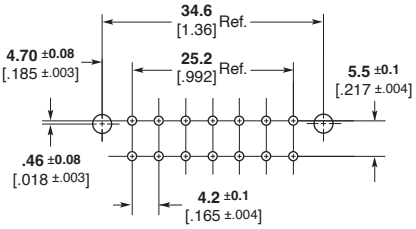
Material and Finish

Housing—Nylon
UL 94V-2, Natural color
UL 94V-0, White color
Contacts—0.25 [.010] thick copper alloy

Related Product Data

Mate with—Receptacle housings (page 126).
Technical Documents—pages 125 and 205-206





Recommended PC Board Layout

Number of Positions	PCB Pegs	Drain Holes	Plating	Part Number	
				UL 94V-2, Natural	UL 94V-0, White
14	Y	N	Tin	1-1586489-4	1-1586493-4
	Y	N	30 Gold	1-1586490-4	1-1586494-4
	N	N	Tin	1-1586491-4	1-1586495-4
	N	N	30 Gold	1-1586492-4	1-1586496-4
	Y	Y	Tin	1-794308-1	1-794453-1
	Y	Y	30 Gold	1-794308-2	1-794453-2
	N	Y	Tin	1-794355-1	1-794489-1
	N	Y	30 Gold	1-794355-2	1-794489-2

Note: **All part numbers are RoHS Compliant.**

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Japan: 81-44-844-8013
UK: 44-8706-080-208

AMP-DUAC Connectors (Continued)

Vertical Header Assemblies (Continued)

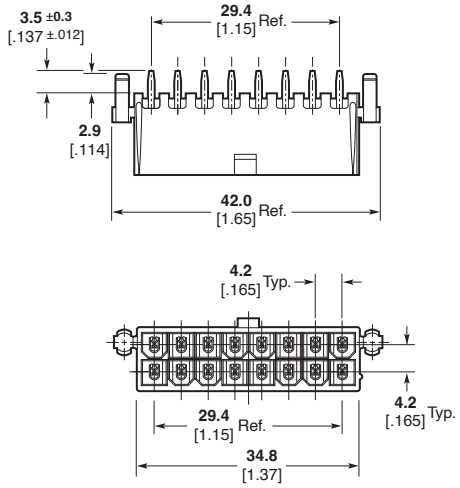
16 Position, with and without Pegs and with and without Drain Holes

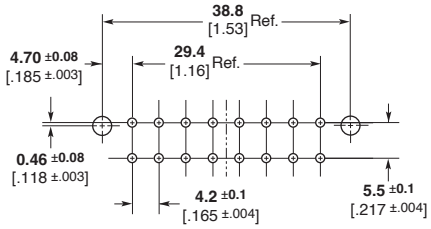
Material and Finish

Housing—Nylon
UL 94V-2, Natural color
UL 94V-0, White color
Contacts—0.25 [.010] thick copper alloy

Related Product Data

Mate with—Receptacle housings (page 126).
Technical Documents—pages 125 and 205-206





Recommended PC Board Layout

Number of Positions	PCB Pegs	Drain Holes	Plating	Part Number	
				UL 94V-2, Natural	UL 94V-0, White
16	Y	N	Tin	1-1586489-6	1-1586493-6
	Y	N	30 Gold	1-1586490-6	1-1586494-6
	N	N	Tin	1-1586491-6	1-1586495-6
	N	N	30 Gold	1-1586492-6	1-1586496-6
	Y	Y	Tin	1-794309-1	1-794429-1
	Y	Y	30 Gold	1-794309-2	1-794429-2
	N	Y	Tin	1-794356-1	1-794490-1
	N	Y	30 Gold	1-794356-2	1-794490-2

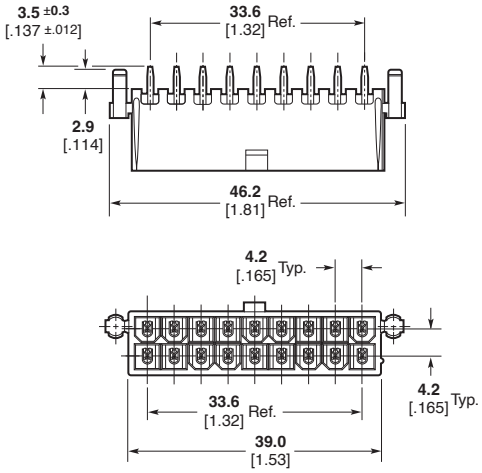
18 Position, with and without Pegs and with and without Drain Holes

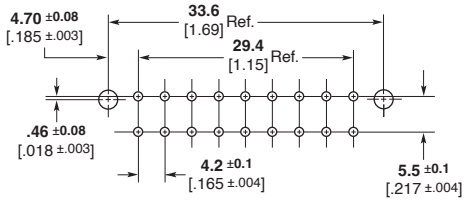
Material and Finish

Housing—Nylon
UL 94V-2, Natural color
UL 94V-0, White color
Contacts—0.25 [.010] thick copper alloy

Related Product Data

Mate with—Receptacle housings (page 126).
Technical Documents—pages 125 and 205-206





Recommended PC Board Layout

Number of Positions	PCB Pegs	Drain Holes	Plating	Part Number	
				UL 94V-2, Natural	UL 94V-0, White
18	Y	N	Tin	1-1586489-8	1-1586493-8
	Y	N	30 Gold	1-1586490-8	1-1586494-8
	N	N	Tin	1-1586491-8	1-1586495-8
	N	N	30 Gold	1-1586492-8	1-1586496-8
	Y	Y	Tin	1-794310-1	1-794454-1
	Y	Y	30 Gold	1-794310-2	1-794454-2
	N	Y	Tin	1-794357-1	1-794491-1
	N	Y	30 Gold	1-794357-2	1-794491-2

Note: **All part numbers are RoHS Compliant.**

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UK: 44-8706-080-208

AMP-DUAC Connectors (Continued)

Vertical Header Assemblies (Continued)

20 Position, with and without Pegs and with and without Drain Holes

Material and Finish

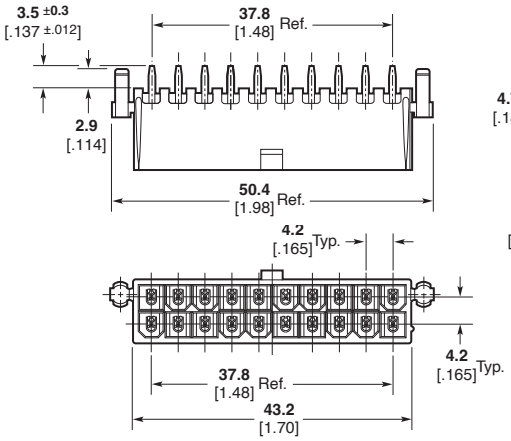
Housing—Nylon
UL 94V-2, Natural color
UL 94V-0, White color

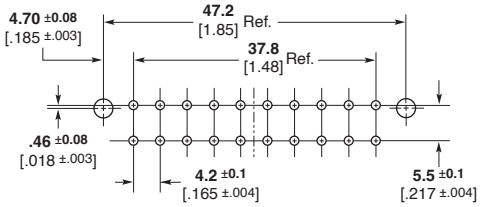
Contacts—0.25 [.010] thick copper alloy

Related Product Data

Mate with—Receptacle housings (page 126).

Technical Documents—pages 125 and 205-206





Recommended PC Board Layout

Number of Positions	PCB Pegs	Drain Holes	Plating	Part Number	
				UL 94V-2, Natural	UL 94V-0, White
20	Y	N	Tin	2-1586489-0	2-1586493-0
	Y	N	30 Gold	2-1586490-0	2-1586494-0
	N	N	Tin	2-1586491-0	2-1586495-0
	N	N	30 Gold	2-1586492-0	2-1586496-0
	Y	Y	Tin	1-794311-1	1-794455-1
	Y	Y	30 Gold	1-794311-2	1-794455-2
	N	Y	Tin	1-794358-1	1-794492-1
	N	Y	30 Gold	1-794358-2	1-794492-2

High Temperature Headers

IR Reflow compatible, UL 94V-0, Black color

Number of Positions	PCB Pegs	Drain Holes	Plating	Part Number
				UL 94V-0, Black
20	N	N	Tin	1-794415-1
	N	N	30 Gold	1-794415-2

22 Position, with and without Pegs and with and without Drain Holes

Material and Finish

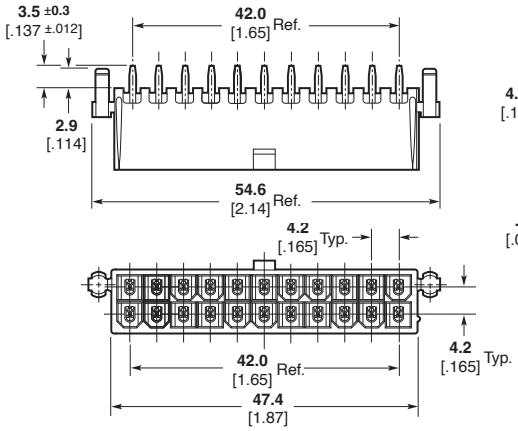
Housing—Nylon
UL 94V-2, Natural color
UL 94V-0, White color

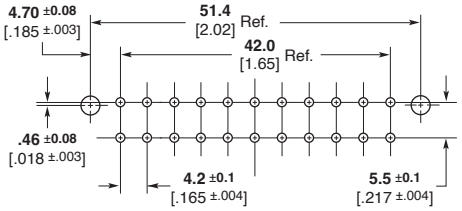
Contacts—0.25 [.010] thick copper alloy

Related Product Data

Mate with—Receptacle housings (page 126).

Technical Documents—pages 125 and 205-206





Recommended PC Board Layout

Number of Positions	PCB Pegs	Drain Holes	Plating	Part Number	
				UL 94V-2, Natural	UL 94V-0, White
22	Y	N	Tin	2-1586489-2	2-1586493-2
	Y	N	30 Gold	2-1586490-2	2-1586494-2
	N	N	Tin	2-1586491-2	2-1586495-2
	N	N	30 Gold	2-1586492-2	2-1586496-2
	Y	Y	Tin	1-794312-1	1-794471-1
	Y	Y	30 Gold	1-794312-2	1-794471-2
	N	Y	Tin	1-794359-1	1-794493-1
	N	Y	30 Gold	1-794359-2	1-794493-2

Note: **All part numbers are RoHS Compliant.**

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AMP-DUAC Connectors (Continued)

Vertical Header Assemblies (Continued)

24 Position, with and without Pegs and with and without Drain Holes

Material and Finish

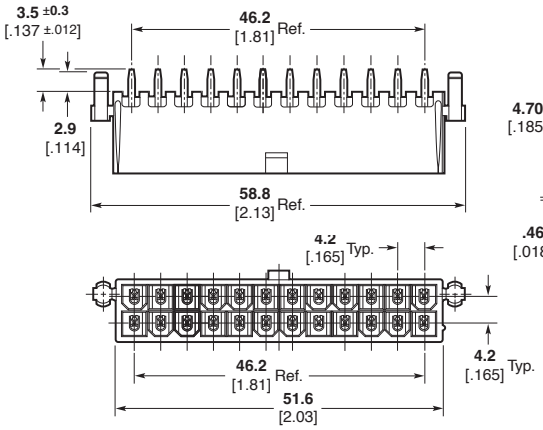
Housing—Nylon
UL 94V-2, Natural color
UL 94V-0, White color

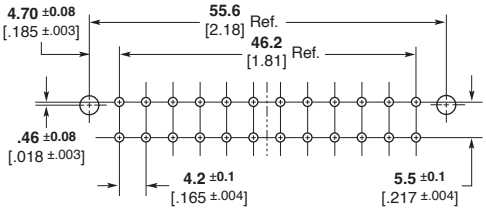
Contacts—0.25 [.010] thick copper alloy

Related Product Data

Mate with—Receptacle housings (page 126).

Technical Documents—pages 125 and 205-206





Recommended PC Board Layout

Number of Positions	PCB Pegs	Drain Holes	Plating	Part Number	
				UL 94V-2, Natural	UL 94V-0, White
24	Y	N	Tin	2-1586489-4	2-1586493-4
	Y	N	30 Gold	2-1586490-4	2-1586494-4
	N	N	Tin	2-1586491-4	2-1586495-4
	N	N	30 Gold	2-1586492-4	2-1586496-4
	Y	Y	Tin	794313-3	1-794472-1
	Y	Y	30 Gold	794313-4	1-794472-2
	N	Y	Tin	1-794360-1	1-794494-1
	N	Y	30 Gold	1-794360-2	1-794494-2

Right-Angle Header Assemblies

2-24 Position, with Pegs and without Drain Holes

Material and Finish

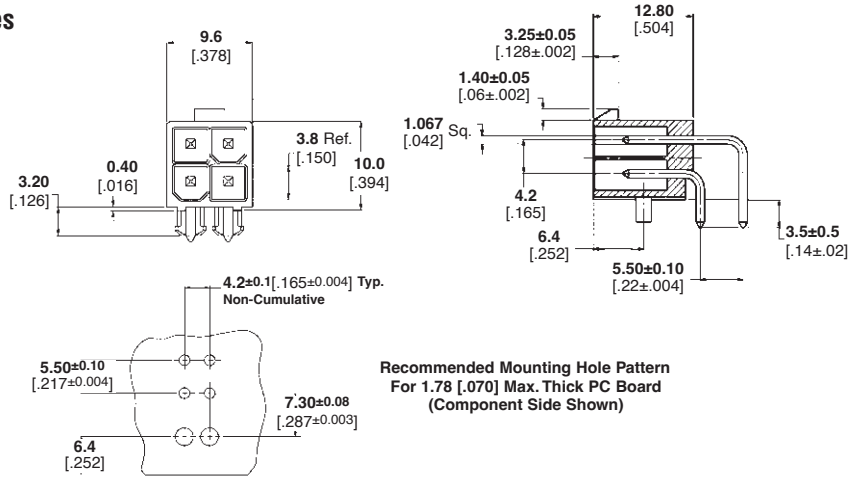
Housing—Nylon
UL 94V-2, Natural color
UL 94V-0, White color

Contacts—Copper alloy

Related Product Data

Mate with—Receptacle housings (page 126).

Technical Documents—pages 125 and 205-206



Recommended Mounting Hole Pattern For 1.78 [.070] Max. Thick PC Board (Component Side Shown)

Number of Positions	PCB Pegs	Drain Holes	Plating	Part Number	
				UL 94V-2, Natural	UL 94V-0, White
2	Y	N	Tin	1-794507-1	1-794526-1
4	Y	N	Tin	1-794508-1	1-794527-1
6	Y	N	Tin	1-794448-1	1-794528-1
8	Y	N	Tin	1-794509-1	1-794529-1
10	Y	N	Tin	1-794510-1	1-794530-1
12	Y	N	Tin	1-794511-1	1-794531-1
14	Y	N	Tin	1-794512-1	1-794532-1
16	Y	N	Tin	1-794513-1	1-794533-1
18	Y	N	Tin	1-794514-1	1-794588-1
20	Y	N	Tin	1-794449-1	1-794534-1
22	Y	N	Tin	1-794515-1	1-794589-1
24	Y	N	Tin	1-794516-1	1-794590-1

Note: **All part numbers are RoHS Compliant.**

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Engineering Notes

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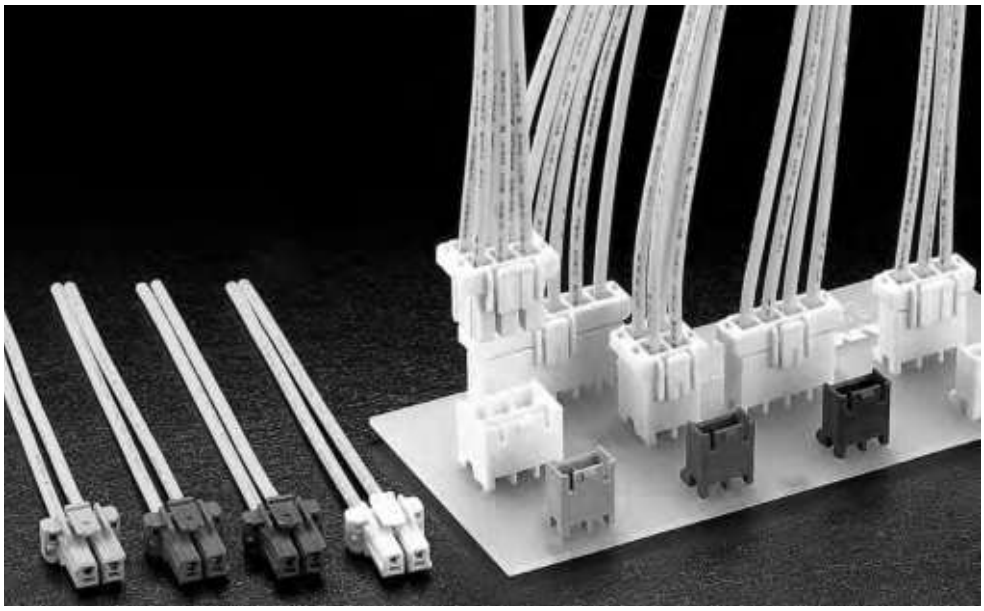
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UK: 44-8706-080-208

5.0 mm Power Key Connectors (5.0 PKC) (Wire-to-Board)

Product Facts

- **Compact design with 19.4 mm mated height**
- **Power circuit connector with 5.0 mm contact centerline**
- **Wire-to-board connectors consisting of plug housings for wires and PCB header assemblies**
- **With a clear clicking sound, contact insertions can be made easier. The double lock plate provides for complete loading of contacts**
- **Locking levers are surrounded by walls, which protect levers and prevent tangling with wires**
- **Connector is designed to release bubbles created by the process of potting (PC board coating)**
- **Housing lances also help prevent tangling of wired contacts**
- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476**
- **Certified by Canadian Standards Association, File No. LR7189**



5.0 mm Power Key Connectors are for power circuits of home appliances, especially targeting gas appliances. The connector features four kinds of keying per housing.

Only color-coding of housings limited the efficiency of blind mating where you could not see connectors. However, the new keying mechanism not only improves assembly efficiency but also helps prevent mismating.

Part numbers involved can be reduced so that purchasing and stock level control can be made simpler.

Performance Characteristics

Voltage Rating—300 VAC[1]

Current Rating—10A max.[2]

Operating Temperature—-30°C ~ +105°C

Applicable Wire—24-16 AWG

Applicable PC Board Thickness—1.6 mm

1 Excludes header tyne round space. Usable for 150 VAC applications when the round dimensions are 3 mm or less.

2 Specified values vary according to the number of contacts and the wire used. The 10 A maximum value applies to 16 AWG wire used with 2 contacts.

Technical Documents

Product Specification
108-5699

Application Specification
114-5292

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5.0 mm Power Key Connectors (5.0 PKC) (Wire-to-Board) (Continued)

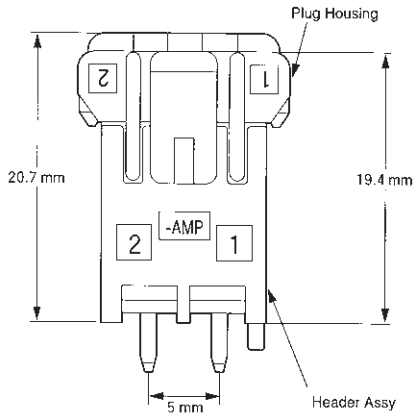
Quick Reference Chart for Mating Part Numbers

No. of Pos.	Plug Housing		Applicable Double Lock Plate Part Number	Mating Header Assy. Part Number
	Type of Keying/Color	Part Number		
2	Type A/Natural	1376388-1	1376394-1	1376382-1
	Type B/Red	1-1376388-2	1376394-1	1-1376382-2
	Type C/Blue	2-1376388-3	1376294-1	2-1376382-3
	Type D/Yellow	3-1376388-4	1376394-1	3-1376382-4
3	Type A/Natural	1376389-1	1376395-1	1376383-1 1376421-1
	Type B/Red	1-1376389-2	1376395-1	1-1376383-2 1-1376421-2
	Type C/Blue	2-1376389-3	1376395-1	2-1376383-3 2-1376421-3
	Type D/Yellow	3-1376389-4	1376395-1	3-1376383-4 3-1376421-4
4	Type A/Natural	1376390-1	1376396-1	1376384-1
	Type B/Red	1-1376390-2	1376396-1	1-1376384-2
	Type C/Blue	2-1376390-3	1376396-1	2-1376384-3
	Type D/Yellow	3-1376390-4	1376396-1	3-1376384-4
6	Type A/Natural	1376391-1	1376397-1	1376385-1
	Type B/Red	1-1376391-2	1376397-1	1-1376385-2
	Type C/Blue	2-1376391-3	1376397-1	2-1376385-3
	Type D/Yellow	3-1376391-4	1376397-1	3-1376385-4
2 Row				
4	Type A/Natural	1376392-1	1376394-1	1376386-1
	Type B/Red	1-1376392-2	1376394-1	1-1376386-2
	Type C/Blue	2-1376392-3	1376394-1	2-1376386-3
	Type D/Yellow	3-1376392-4	1376394-1	3-1376386-4
6	Type A/Natural	1376393-1	1376395-1	1376387-1
	Type B/Red	1-1376393-2	1376395-1	1-1376387-2
	Type C/Blue	2-1376393-3	1376395-1	2-1376387-3
	Type D/Yellow	3-1376393-4	1376395-1	3-1376387-4

*Included in Header Assy. line are Tube Stick version. Refer to the appropriate description in the catalog.

Note: **All part numbers are RoHS Compliant.**

Mating Configurations



Note: Dimensions shown are metric.

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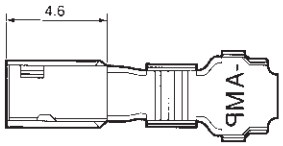
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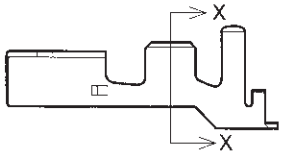
South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

5.0 mm Power Key Connectors (5.0 PKC) (Wire-to-Board) (Continued)

Receptacle Contacts

Material and Finish
Pre-tinned Copper Alloy







Section X-X

Wire Range		Wire Ins. Dia.	Receptacle Contact Part No.	Applicator Part No.
AWG	mm²			
24~20	0.22~0.53	1.89~2.7	1376348-1 (Strip Form)	*
20~16	0.5~1.25	2.0~3.1	1376347-1 (Strip Form)	*

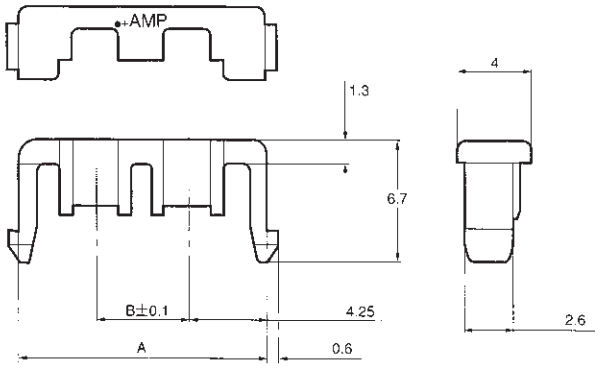
* Contact the Tooling Assistance Center (TAC) at 1-800-722-1111 for Applicator Part Number.

Note: Dimensions shown are metric.

Note: All part numbers are RoHS Compliant.

Double Lock Plates

Material and Finish
UL94V-0, 6/6 Nylon, glass filled, Black



No. of Pos.	Dimensions (Double Lock Plate)		Double Lock Plate Part No.	Applicable Plug Part No.
	A	B		
2	13.5	5	1376394-1	□-1376388-□ □-1376392-□
3	18.5	10	1376395-1	□-1376389-□ □-1376393-□
4	23.5	15	1376396-1	□-1376390-□
6	33.5	25	1376397-1	□-1376391-□

* Contact the Tooling Assistance Center (TAC) for Applicator Part Number.

Note: Dimensions shown are metric.

Note: All part numbers are RoHS Compliant.

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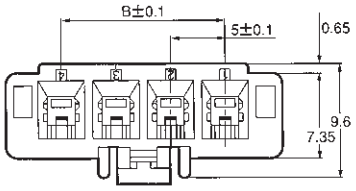
South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
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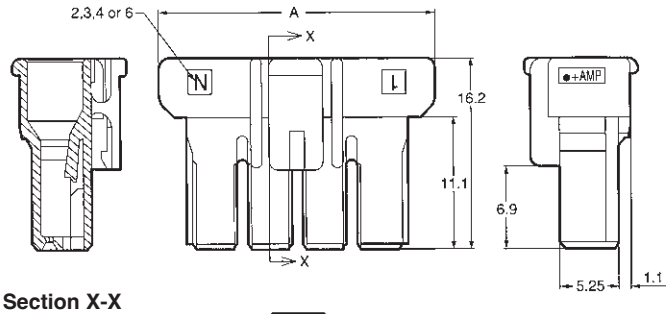
5.0 mm Power Key Connectors (5.0 PKC) (Wire-to-Board) (Continued)

Plug Housings (For Receptacle Contacts)

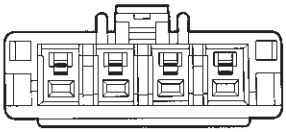
Material and Finish
Housing—6/6 Nylon, glass filled

Related Product Data
Receptacle Contacts—page 137
Double Lock Plates—page 137
Mating Headers—page 140

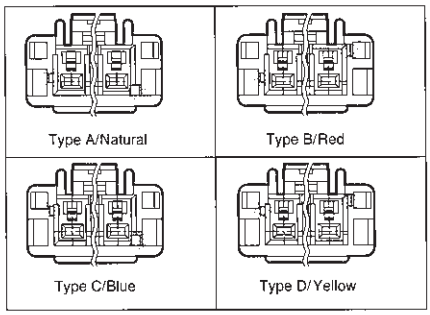




Section X-X



Type of Keying/Color



No. of Pos.	Dimensions		Plug Housing Part No. Type of Keying/Color				Applicable Double Lock Plate Part Number	Mating Header Assy. Part Number
	A	B	Type A Natural	Type B Red	Type C Blue	Type D Yellow		
2	15	—	1376388-1	1-1376388-2	2-1376388-3	3-1376388-4	1376394-1	□-1376382-□
3	20	10	1376389-1	1-1376389-2	2-1376389-3	3-1376389-4	1376395-1	□-1376383-□ □-1376421-□
4	25	15	1376390-1	1-1376390-2	2-1376390-3	3-1376390-4	1376396-1	□-1376384-□
6	35	25	1376391-1	1-1376391-2	2-1376391-3	3-1376391-4	1376397-1	□-1376385-□

Note: Dimensions shown are metric.

Note: All part numbers are RoHS Compliant.

Catalog 82181
Revised 4-08

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USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

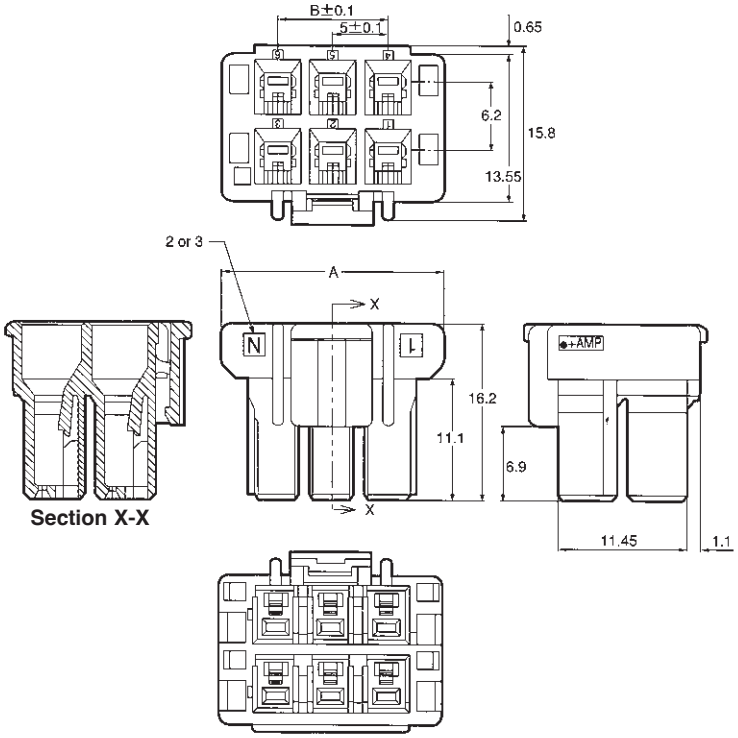
South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

5.0 mm Power Key Connectors (5.0 PKC) (Wire-to-Board) (Continued)

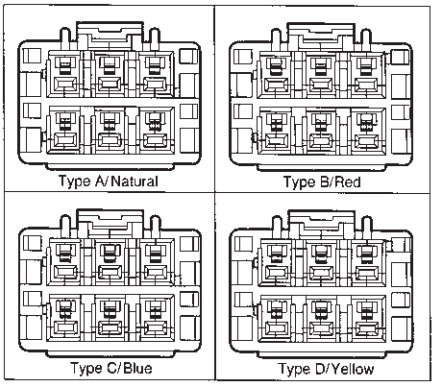
Plug Housing (2 Rows) (For Receptacle Contacts)

Material and Finish
Housing—6/6 Nylon, glass filled

Related Product Data
Receptacle Contacts—page 137
Double Lock Plates—page 137
Mating Headers—page 141



Type of Keying/Color



No. of Pos.	Dimensions		Plug Housing Part No. Type of Keying/Color				Applicable Double Lock Plate Part Number	Mating Header Assy. Part Number
	A	B	Type A Natural	Type B Red	Type C Blue	Type D Yellow		
4	15	—	1376392-1	1-1376392-2	2-1376392-3	3-1376392-4	1376394-1	□-1376386-□
6	20	10	1376393-1	1-1376393-2	2-1376393-3	3-1376393-4	1376395-1	□-1376387-□

Note: Dimensions shown are metric.

Note: All part numbers are RoHS Compliant.

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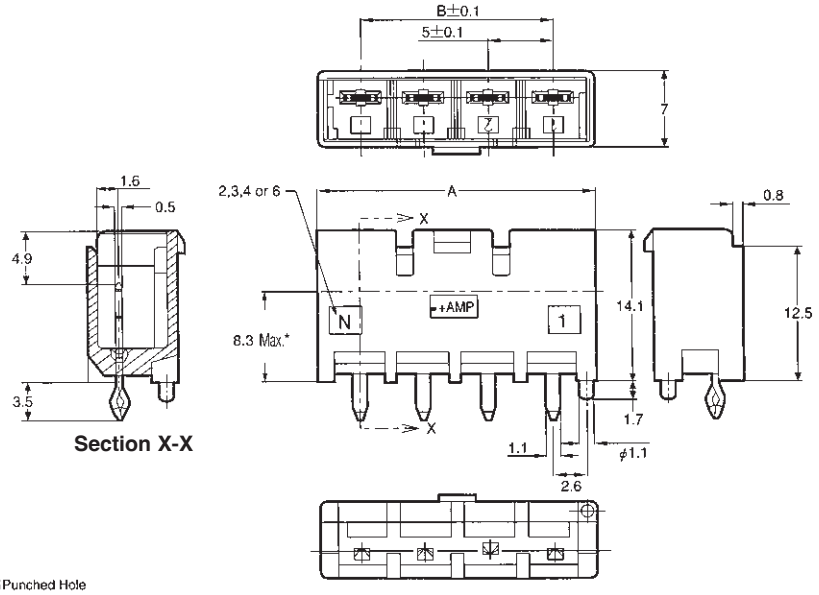
South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

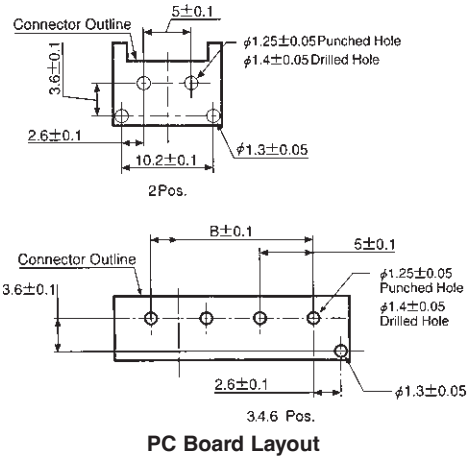
5.0 mm Power Key Connectors (5.0 PKC) (Wire-to-Board) (Continued)

Vertical Header Assembly

Material and Finish
Housing—6/6 Nylon, glass filled
Tab Contacts -Copper Alloy, Tin plated

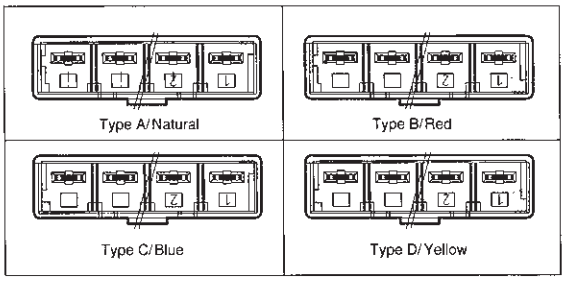
Related Product Data
Mating Plug Housings—page 138





PC Board Layout

Type of Keying/Color



No. of Pos.	Dimensions A	Dimensions B	Loose Piece Tube (Qty.)	Vertical Header Assy. Part No. Type of Keying/Color: Type A Natural	Type B Red	Type C Blue	Type D Yellow	Mating Plug Housing Part Number
2	11.6	—	L.P	1376382-1	1-1376382-2	2-1376382-3	3-1376382-4	□-1376388-□
			Tube	1376437-1 (40)	1-1376437-2 (40)	2-1376437-3 (40)	3-1376437-4 (40)	
3	16.6	10	L.P	1376383-1	1-1376383-2	2-1376383-3	3-1376383-4	□-1376389-□
			Tube	1376439-1 (25)	1-1376439-2 (25)	2-1376439-3 (25)	3-1376439-4 (25)	
4	21.6	15	L.P	1376384-1	1-1376384-2	2-1376384-3	3-1376384-4	□-1376390-□
			Tube	1376440-1 (20)	1-1376440-2 (20)	2-1376440-3 (20)	3-1376440-4 (20)	
6	31.6	25	L.P	1376385-1	1-1376385-2	2-1376385-3	3-1376385-4	□-1376391-□
			Tube	1376441-1 (15)	1-1376441-2 (15)	2-1376441-3 (15)	3-1376441-4 (15)	
2*	16.6	10	L.P	1376421-1	1-1376421-2	2-1376421-3	3-1376421-4	□-1376389-□
			Tube	1376444-1 (25)	1-1376444-2 (25)	2-1376444-3 (25)	3-1376444-4 (25)	

*10 mm centerline

Note: Dimensions shown are metric.

Note: All part numbers are RoHS Compliant.

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UK: 44-8706-080-208

5.0 mm Power Key Connectors (5.0 PKC) (Wire-to-Board) (Continued)

Vertical Header Assembly (2 Rows)

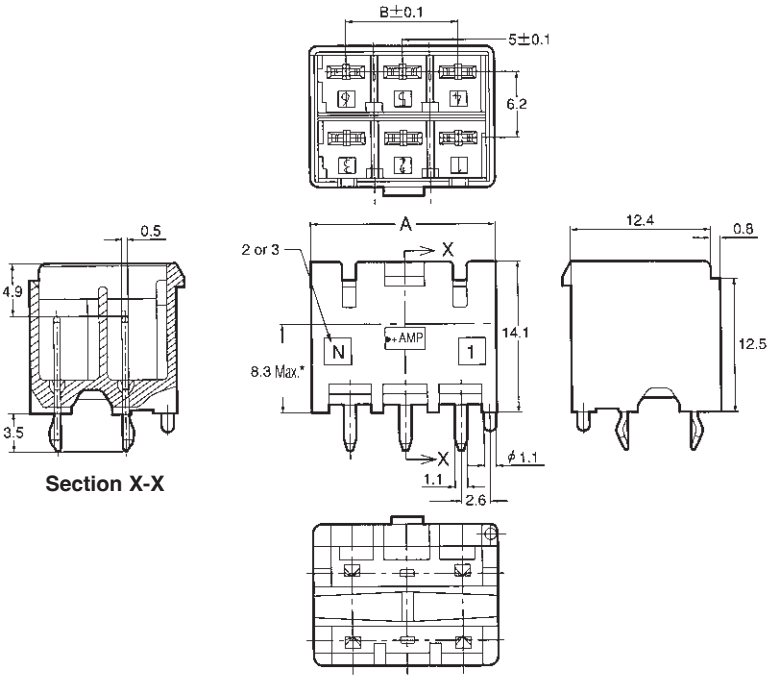
Material and Finish

Housing—6/6 Nylon, glass filled

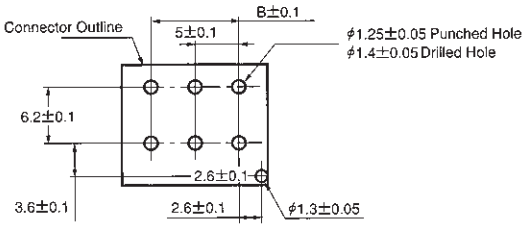
Tab Contacts—Copper Alloy, Tin plated

Related Product Data

Mating Plug Housings—page 139

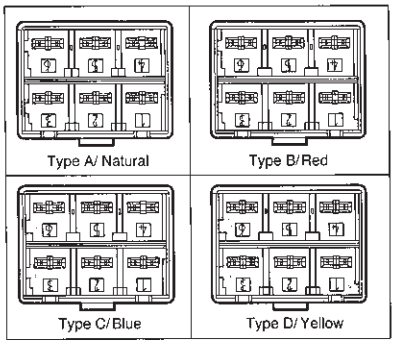


Section X-X



PC Board Layout

Type of Keying/Color



No. of Pos.	Dimensions A	Dimensions B	Loose Piece Tube (Qty.)	Vertical Header Assy. Part No. Type of Keying/Color: Type A Natural	Type B Red	Type C Blue	Type D Yellow	Mating Plug Housing Part Number
4	11.6	—	L.P	1376386-1	1-1376386-2	2-1376386-3	3-1376386-4	□-1376392-□
			Tube	1376442-1 (40)	1-1376442-2 (40)	2-1376442-3 (40)	3-1376442-4 (40)	
6	16.6	10	L.P	1376387-1	1-1376387-2	2-1376387-3	3-1376387-4	□-1376393-□
			Tube	1376443-1 (25)	1-1376443-2 (25)	2-1376443-3 (25)	3-1376443-4 (25)	

Note: Dimensions shown are metric.

Note: All part numbers are RoHS Compliant.

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Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Engineering Notes

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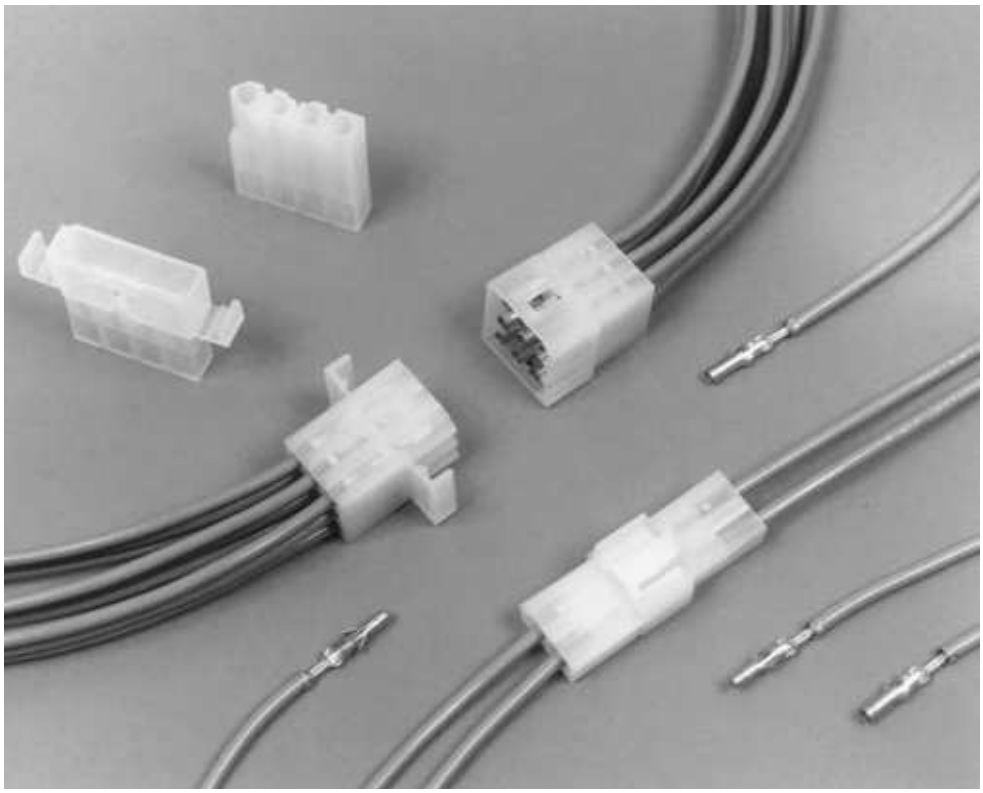
USA: 1-800-522-6752
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Japan: 81-44-844-8013
UK: 44-8706-080-208

.093 [2.36] Commercial Pin and Socket Connectors

Product Facts

- Polarized
- Cavity identification
- Low contact-mating force
- Dual locking lances
- Detent and positive locking
- Contacts available in brass and phosphor bronze with tin and gold plating
- Panel mounting and free-hanging styles
- "F" crimp contacts
- Applicator and hand tool available
- Economical commercial-grade connectors
- Compatible with high-speed application machinery and competitive soft shells
- Wire range 24 to 14 AWG [0.2 to 2 mm²]
- Accepts wires with insulation diameters as large as .180 [4.57]
- Housings available in 1 to 15 positions
- .093 plug and receptacle housings accept pin or socket contacts. The preferred convention is to use socket contacts with receptacle housings
- Not for interrupting current
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 7189



Performance Characteristics

The .093 Commercial Pin and Socket Connectors performance characteristics found on pages 143-144 are based on free-hanging and panel mount connectors, loaded with contacts crimped on stranded wire.

Thermal Shock— -55°C to +105°C

Temperature-Humidity Cycling—+25°C to +65°C at 90–95% RH

Corrosion—48 hr. at 5% salt concentration

Vibration—10-55-10 cycles per minute at .06 [1.52] total excursion

Physical Shock—18 shocks, 50 Gs sawtooth in 11 milliseconds

Durability—50 mating cycles

Dielectric Withstanding Voltage—1.0 kVAC

Insulation Resistance—1000 megohms min. initial

Voltage Rating—250 V AC or DC

Connector Mating—2.5 lb. [11.1 N] max. per contact

Connector Unmating—1.5 lb. [6.7 N] min. per contact

Contact Retention—10 lb. [44.5 N] min.

Technical Documents

Application Specification
114-49000 .093 Commercial Pin and Socket Connectors

Product Specification
108-1038 .093 Commercial Pin and Socket Connectors

Catalog 82181
Revised 4-08

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UK: 44-8706-080-208

.093 [2.36] Commercial Pin and Socket Connectors (Continued)

Performance Characteristics (continued)

Maximum Current—Maximum current rating of .093 Commercial Pin and Socket Connectors is limited by the maximum operating temperature of the housings which is 105°C including the temperature rise of the contacts which is a maximum of 30°C. There are several variables which have a direct effect on this maximum current-carrying capability for a given connector and must be considered for each application. These variables are:

Wire Size—Larger diameter wire will carry more current since it has less internal resistance to current flow and thus generates less heat. Longer wire lengths also enhance current-carrying capabilities since the wire conducts heat away from the connector.

Connector Size—In general, the more circuits in a connector, the less current can be carried.

Ambient Temperature—The higher the ambient temperature, the less current can be carried in any given connector.

Related Product Data

Product Specification—108-1038

Current Rating Verification for 30°C Maximum Temperature Rise 100% Energized

Wire-to-Wire

.093 Commercial Pin and Socket Connectors — Calculated Current Table

Number of Circuits	Wire AWG					
	14	16	18	20	22	24
2	13.00	12.00	11.00	8.00	6.00	6.00
3	13.00	11.00	10.00	8.00	6.00	5.00
4 In-Line	11.00	10.00	9.00	7.00	5.00	4.00
4 Matrix	11.00	10.00	9.00	7.00	5.00	4.00
5	10.00	9.00	8.00	6.00	5.00	4.00
6	10.00	9.00	8.00	6.00	4.00	4.00
9	9.00	7.00	6.00	5.00	4.00	3.00
12	8.00	7.00	6.00	4.00	3.00	3.00
15	7.00	6.00	5.00	4.00	3.00	3.00

Values are based on initial Temperature Rise versus Current Testing and are intended to be a guide in the selection of a connector family. All applications should be tested by the end user. The values listed are per circuit for fully loaded housings being 100% energized. **Note:** All combinations were not tested and this chart contains interpolated and extrapolated values.

Minimum Wire Lengths for T-Rise vs. Current Testing

AWG	Min. Length (in.)	AWG	Min. Length (in.)
30	2.6	18	9.4
28	3.2	16	11.3
26	4.1	14	13.7
24	5.1	12	16.4
20	7.8	10	19.3

Note: If wire lengths used are less than those listed above, the current-carrying ability of the system will be reduced due to less heat being conducted away from the connector. The customer should fully test all applications.

Termination Resistance/Contact Crimp Tensile Force

Wire Size		Termination Resistance		Contact Crimp Tensile Force	
AWG	mm^2	Test Current (Amps)	Resistance Milliohms (Max. Init.)	Force (Min.) lbs.	Force (Min.) N
24	0.2	2.0	4.0	8	35.6
22	0.3–0.4	3.0	4.0	10	44.5
20	0.5–0.6	4.5	4.0	15	66.7
18	0.8–0.9	6.0	3.5	25	111.2
16	1.25–1.4	8.0	3.5	25	111.2
14	2	10.0	3.0	30	133.4

Note: This is the total resistance between wire crimps of a mated pin and socket.

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.093 [2.36] Commercial Pin and Socket Connectors (Continued)

Contacts

Pin Diameter .093 [2.36]

Material

.010 [0.25] Stock Thickness

Pin and socket contacts can be used in either plug or receptacle housings.

Related Product Data

Product Specification—108-1038

Application Specification
114-49000

Performance Characteristics—pages 143-144

Housings

.198 [5.03] Centerline—pages 146-147

.250 [6.35] Centerline—pages 148-149

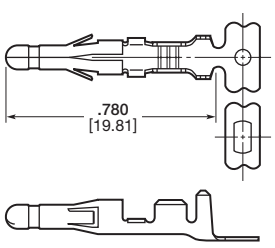
Panel Cutouts

.198 [5.03] Centerline Housings—page 147

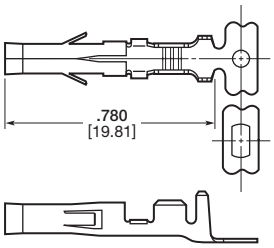
.250 [6.35] Centerline Housings—page 148

Technical Documents—pages 143 and 205-206

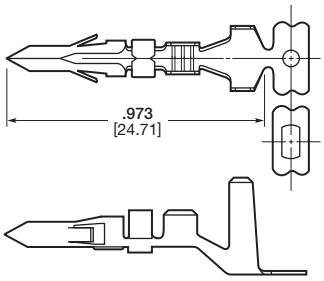
Application Tooling—pages 207-210



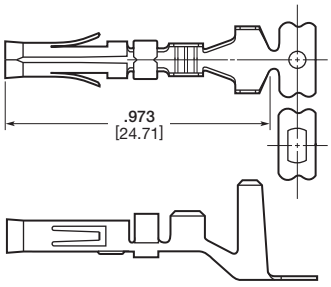
Pin



Socket



Pin
Part No. 770385-1



Socket
Part No. 770383-1

Wire Size AWG	Wire Size mm²	Ins. Dia.	Material & Finish	Contact Part Numbers Pin Strip Form	Pin Loose Piece	Socket Strip Form	Socket Loose Piece	HDM Applicator Part No.	Hand Tool Part No.
24–18	0.2–0.9	**.110** 2.79	Brass, Pre-tin	350418-1	770147-1	350417-1	770146-1	466656-1[5] 466656-2[5] 466656-3[5]	90872-1
			Brass, Gold[2]	—	—	350417-3[2]	770146-3[2]		
			Brass Select Gold[1]	350418-5[1]	770147-5[1]	350417-5[1]	770146-5[1]		
20–14	0.6–2	**.140** 3.56	Brass, Pre-tin	350416-1	770145-1	350415-1	770144-1	466878-1[5] 466878-2[5] 466878-3[5]	90871-1
			Brass, Select Gold[1]	350416-5[1]	770145-5[1]	350415-5[1]	770144-5[1]		
			Phos. Brz., Pre-tin	—	—	350415-6	770144-6		
		.180 4.57	Brass, Pre-tin	770530-1[4]	—	770529-1[4]	—	567337-3[6] 567337-4[6] 567337-6[6]	—
18–14 or 2 (18)	0.8–2 or 2 (0.8–0.9)	**.180** 4.57 (per wire)	Brass, Pre-tin	770385-1[3]	—	—	—	567273-2[7] 567273-3[7] 567273-4[7]	—
			Phos. Brz., Pre-tin	—	—	770383-1[3]	—		

[1]Select Gold — .000030 [.000762] min gold in mating area over .000050 [.00127] min nickel.
[2]Gold — .000030 [.000762] min gold in mating area, overall gold flash over .000050 [.00127] min nickel.
[3]These contacts have a .0125 [.318] stock thickness and accept two wires, each with maximum .180 [4.57] insulation diameters. They can be used only with the following housing part numbers: 770364-1, 770365-1, 770450-1, 770451-1, 770452-1, and 770453-1 (see page 143).
[4]Contact length is .875 [22. 23]
[5]HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -3 is used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.
[6]HDM Applicator part number ending in -3 is used on AMPOMATOR CLS Machine with T or G Terminators, -4 is used on AMP-O-LECTRIC Model K Machine, -6 is used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.
[7]HDM Applicator part number ending in -3 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -4 is used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.

Note: Phosphor bronze contacts should be used in high-temperature/humidity cycling applications.

Note: All part numbers are RoHS Compliant.



Contact Insertion Tool
(For Pins and Sockets)
Part No. 91002-1
IS 408-7347



Contact Extraction Tool
Part No. 318837-1
IS 408-4375

Catalog 82181
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.093 [2.36] Commercial Pin and Socket Connectors (Continued)

Housings

Free-Hanging or Panel Mount

.198 [5.03] Centerline spacing

Material

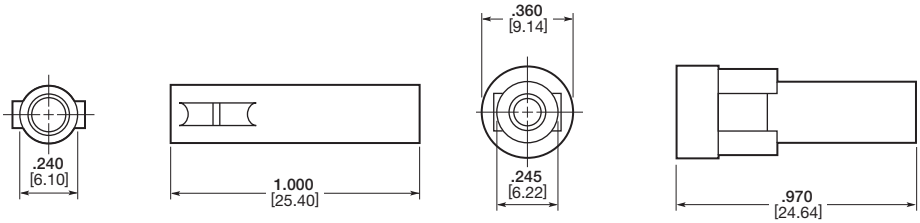
Housing—Nylon, natural color
Flammability Rating—UL94-V-2

Related Product Data

Contacts—page 145

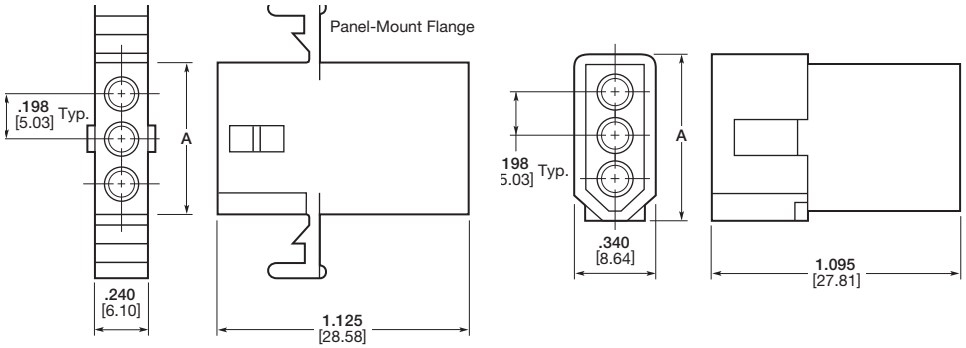
Product Specification—108-1038

1 Circuit



Receptacle Plug

2, 3, and 4 Circuit, In-Line



Receptacle Plug

No. of Circuits	A Dimension		Receptacle Part Numbers				Plug Part Numbers	
			Panel Mount		Free-Hanging			
	Receptacle	Plug	Without Detents	With Detents	Without Detents	With Detents	Panel Mount	Free-Hanging
1	—	—	—	—	—	770063-1	—	770064-1
2	**.540** 13.72	**.640** 16.26	—	770066-1[1,5]	—	770065-1[1,5] 770266[1,3,5]	770068-1[1]	770069-1[1]
3	**.670** 17.02	**.770** 19.56	—	770071-1	—	770070-1 770264-1[3]	770073-1	770074-1
4 (In-Line)	**.870** 22.10	**.970** 24.64	—	770076-1	—	770075-1	770077-1	770078-1
4 (Matrix)	**.443** 11.25	**.540** 13.71	—	—	—	770843-1	—	770842-1
5	**1.070** 27.18	**1.170** 29.72	—	—	—	770083-1 794015-1[3]	—	770084-1
6 (In-Line)	**1.268** 32.21	**1.378** 35.00	—	—	—	770782-1[4]	—	770892-1[4]
6 (Matrix)	**.435** 11.05	**.535** 13.59	770085-1	770087-1	770088-1	770086-1	770089-1	770090-1
9	**.670** 17.02	**.770** 19.56	770091-1	770093-1	770094-1	770092-1	770095-1[2] 770108-1	770096-1
12	**.870** 22.10	**.970** 24.64	770097-1	770099-1	770100-1	770098-1	770101-1	770102-1
15	**1.070** 27.18	**1.170** 29.72	770103-1	—	770105-1	—	770106-1	770107-1

[1].248 [6.30] centerline.
[2]Mounting ears at wire end.
[3]Tool removable.
[4]Positive lock.
[5]600 V AC or DC

Note: All part numbers are RoHS Compliant.

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.093 [2.36] Commercial Pin and Socket Connectors (Continued)

Housings

Free-Hanging or Panel Mount

.198 [5.03] Centerline spacing

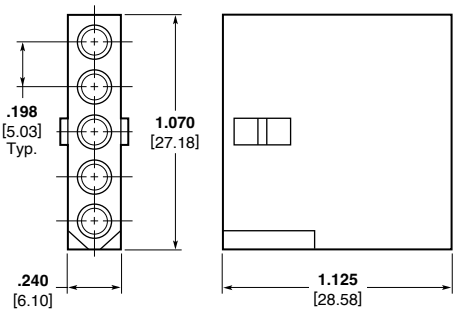
Material

Housing—Nylon, natural color
Flammability Rating—UL94V-2

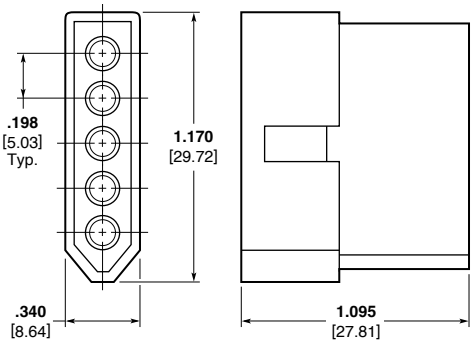
Related Product Data

Contacts—page 145
Product Specification—108-1038

5 Circuit, In-Line

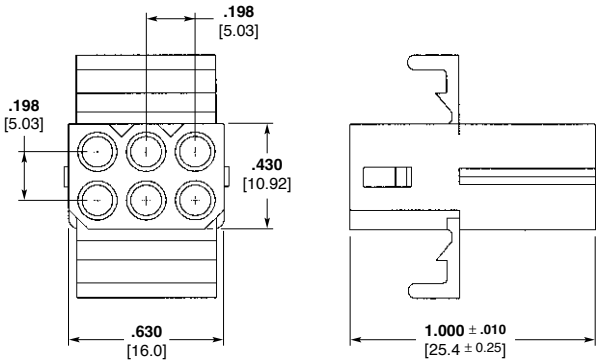


Receptacle (Free-Hanging)

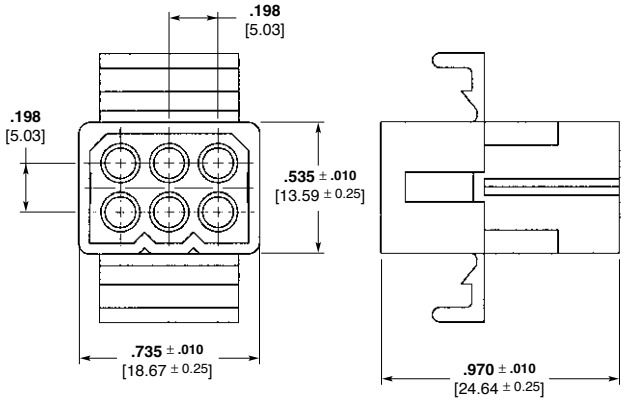


Plug (Free-Hanging)

4, 6, 9, 12, and 15 Circuit, Matrix



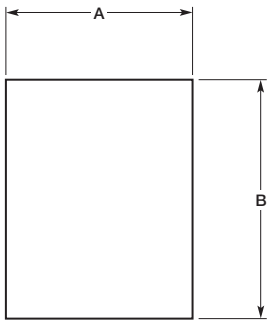
Receptacle



Plug

Recommended Panel Cutouts

Maximum panel thickness is .090 [2.29].



No. of Circuits	Panel Cutout Dimensions			
	Receptacle		Plug	
	A	B	A	B
2	**.312** 7.92	**.725** 18.42	**.375** 9.53	**.800** 20.32
3	**.312** 7.92	**.840** 21.34	**.375** 9.53	**.933** 23.70
4 (In-Line)	**.312** 7.92	**1.038** 26.37	**.375** 9.53	**1.131** 28.73
6	**.600** 15.24	**.718** 18.24	**.695** 17.65	**.750** 19.05
9	**.725** 18.42	**.828** 21.03	**.660** 16.76	**.937** 23.80
12	**.725** 18.42	**1.050** 26.67	**.760** 19.30	**1.155** 29.34
15	**.655** 16.64	**1.240** 31.50	**.760** 19.30	**1.343** 34.11

Note: The panel should be punched so that the housing enters in the same direction as the punch.

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.093 [2.36] Commercial Pin and Socket Connectors (Continued)

Housings

Free-Hanging or Panel Mount

.250 [6.35] Centerline spacing

Material

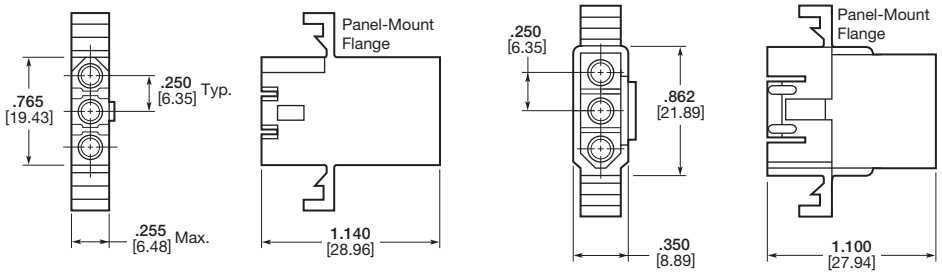
Housing—Nylon, natural color
Flammability Rating—UL94V-2
Voltage Rating—600 V AC or DC

Related Product Data

Contacts—page 145

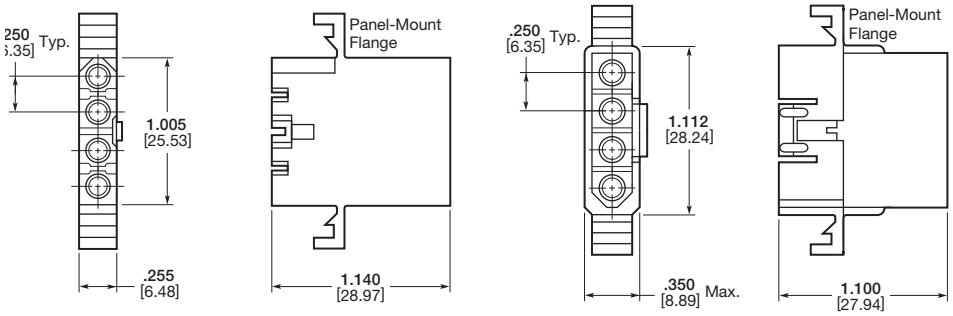
Product Specification—108-1038

3 Circuit, In-Line



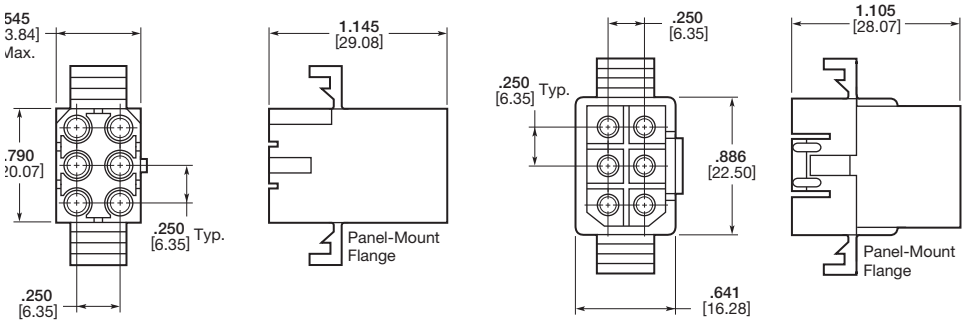
Receptacle **Plug**

4 Circuit, In-Line



Receptacle **Plug**

6 Circuit, Matrix

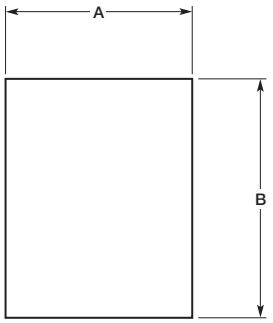


Receptacle **Plug**

Recommended Panel Cutouts

Maximum panel thickness is .062 [1.57].

Note: The panel should be punched so that the housing enters in the same direction as the punch.



No. of Circuits	Receptacle Part Numbers		Plug Part Numbers	
	Panel Mount	Free-Hanging	Panel Mount	Free-Hanging
3	770269-1 770771-1[1]	770339-1	770338-1	770276-1
4	770329-1	770337-1	770330-1	770336-1
6	770372-1	770360-1	770373-1	770361-1

[1]Pre-bent mounting ears.

No. of Circuits	Panel Cutout Dimensions			
	Receptacle		Plug	
	A	B	A	B
3	**.310** 7.87	**.920** 23.37	**.365** 9.27	**1.022** 25.96
4	**.310** 7.87	**1.168** 29.67	**.365** 9.27	**1.270** 32.26
6	**.608** 15.44	**.946** 24.03	**.658** 16.71	**1.048** 26.62

Note: All part numbers are RoHS Compliant.

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.093 [2.36] Commercial Pin and Socket Connectors (Continued)

Housings

Free-Hanging or Panel Mount

.250 [6.35] Centerline spacing

Material

Housing—Nylon, natural color
Flammability Rating—UL94V-2
Voltage Rating—600 V AC or DC

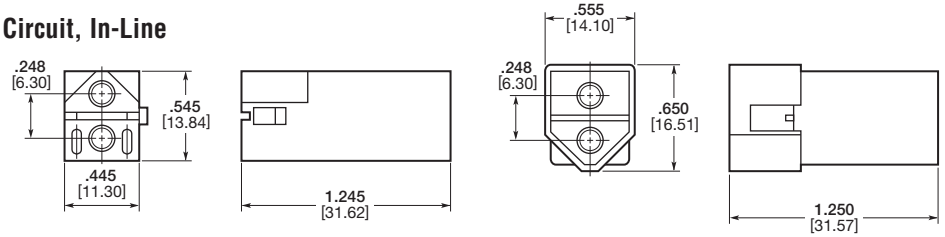
Related Product Data

Contacts—page 145

Product Specification—108-1038

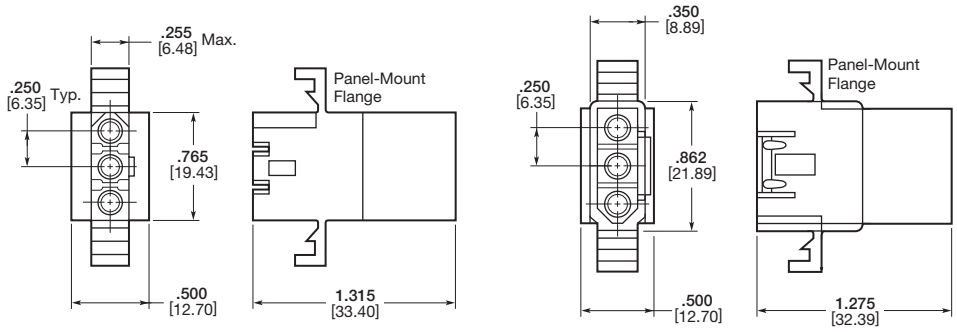
Dual Wire

2 Circuit, In-Line



Receptacle **Plug**

3 Circuit, In-Line



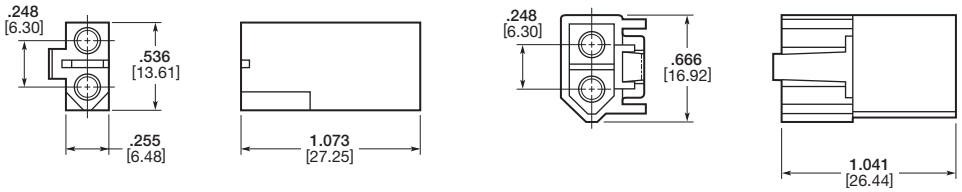
Receptacle **Plug**

No. of Circuits	Receptacle Part Numbers		Plug Part Numbers	
	Panel Mount	Free-Hanging	Panel Mount	Free-Hanging
2	—	770364-1[1]	—	770365-1[1]
3	770453-1[2]	770451-1	770452-1[2]	770450-1

[1].248 [6.30] centerline.
[2]See panel cutout dimensions on page 58.

Positive Lock

2, 3 and 4 Circuit, In-Line



Receptacle **Plug**

No. of Circuits	Receptacle Part Numbers	Plug Part Numbers
	Free-Hanging	Free-Hanging
2	770424-1[1]	770425-1[1]
3	770785-1	770783-1
4	770784-1	770810-1

[1].248 [6.30] centerline.

Note: **All part numbers are RoHS Compliant.**

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Engineering Notes

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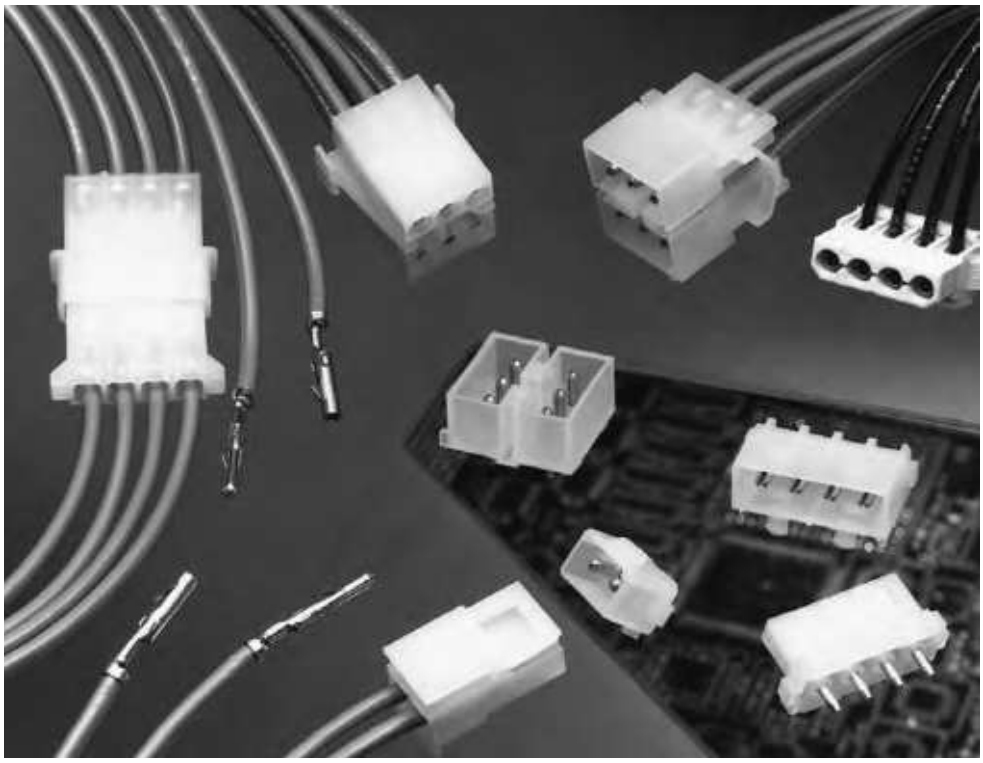
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Commercial MATE-N-LOK Connectors

Product Facts

- Fully polarized nylon housings
- Easy cavity identification
- Locking devices are integral part of design. Connector halves will hold together under severe conditions of vibration and shock
- Built-in contact stabilization and self-aligning features
- Hot side egg-crate design for safety
- Precision molded to exacting tolerances
- Contacts accept a wire size range of 30-14 AWG [.05-2.0 mm²]
- Keying plug available
- "Clean" design contact—no sharp projections to impede insertion or damage housings
- Low insertion/extraction forces
- Contacts available in pre-tin or gold over nickel plated to fit the application requirements
- Wire-to-PC Board capability using pin or socket headers
- Solderability—Headers meet MIL-STD 202 method 208
- Four circuit PC Board-to-PC Board capability available by mating vertical socket header with either vertical, right-angle or surface mount pin header
- Four circuit insulation displacement connector (IDC) available
- Ultraviolet (UV) stable housings available in 1, 2 and 3 circuit
- Not for interrupting current
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 7189A



Performance Characteristics

The Commercial MATE-N-LOK Connector performance characteristics found on pages 151-152 are based on free-hanging and panel mount connectors, loaded with contacts crimped on stranded wire.

Dielectric Withstanding Voltage—1.5 KVAC between adjacent circuits

Insulation Resistance—500 megohms minimum initial between adjacent circuits

Voltage Rating—250 V AC or DC

Connector Mating—4 lb. max. per circuit

Connector Unmating—0.7 lb. min. per circuit

Contact Retention—15 lb. min. per contact

Durability—50 cycles, mating and unmating

Technical Documents

Product Specifications

108-1000 Commercial MATE-N-LOK Connectors

108-1077 Commercial MATE-N-LOK PC Board Headers

108-49000 IDC Connectors

Application Specifications

114-1012 Commercial MATE-N-LOK Contacts

114-49001 IDC Connectors

Instruction Sheets

408-7209, 408-7166, 408-7200, 408-7201, 408-7215, 408-3186, 408-7300

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Commercial MATE-N-LOK Connectors (Continued)

Performance Characteristics (Continued)

Maximum Current—Maximum current rating of Commercial MATE-N-LOK connectors is limited by the maximum operating temperature of the housings which is 105°C including the temperature rise of the contacts which is a maximum of 30°C. There are several variables which have a direct effect on this maximum current-carrying capability for a given connector and must be considered for each application. These variables are:

Wire Size—Larger diameter wire will carry more current since it has less internal resistance to current flow and thus generates less heat. Longer wire lengths also enhance current-carrying capabilities since the wire conducts heat away from the connector.

Connector Size—In general, the more circuits in a connector, the less current can be carried.

Ambient Temperature—The higher the ambient temperature, the less current can be carried in any given connector.

Printed Wiring Board Conductor Size—The finished trace conductor width and thickness should be maximized to allow for the greatest current-carrying capacity and heat dissipation.

Commercial MATE-N-LOK connectors also will withstand the following tests:

Vibration—10-55-10 cycles per minute at .06 inch total excursion

Physical Shock—18 drops, 50 G sawtooth at 11 milliseconds

Housing Panel Mount Retention—
40 lb. min. 3 and 4 circuit
65 lb. min. 6, 9, 12, and 15 circuit

Housing Lock Strength with Positive Locking Devices Engaged—
25 lb. min.

Thermal Shock— -55°C to +85°C

Temperature-Humidity Cycling—
25°C to 65°C at 95 RH

Corrosion—48 hr. at 5% salt concentration

Related Product Data

Product Specifications

108-1000 Commercial MATE-N-LOK Connectors

108-1077 Commercial MATE-N-LOK PC Board Headers

Current Rating Verification for 30°C Maximum Temperature Rise 100% Energized

Wire-to-Wire

Motor Mount Calculated Current Table

Number of Circuits	Wire Gauge						
	14	16	18	20	22	24	30
6	13.00	10.50	9.50	7.50	6.00	5.00	2.50
8	12.00	9.50	8.50	7.00	5.50	4.50	2.50
10	11.00	9.00	8.00	6.50	5.00	4.50	2.00
12	10.50	8.50	7.50	6.00	5.00	4.00	2.00
16	9.50	8.00	7.00	5.50	4.50	3.50	2.00

Values are based on initial Temperature Rise versus Current Testing and are intended to be a guide in the selection of a connector family. All applications should be tested by the end user. The values listed are per circuit for fully loaded housings being 100% energized. **Note:** All combinations were not tested, and this chart contains interpolated and extrapolated values.

Calculated Current Table

Number of Circuits	Wire Gauge						
	14	16	18	20	22	24	30
1	19.00	15.50	14.00	11.00	9.00	7.50	4.00
2	18.00	14.50	13.00	10.50	8.50	7.00	4.00
3	16.00	13.00	12.00	9.50	7.50	6.50	3.50
4	15.00	12.50	11.00	9.00	7.00	6.00	3.00
6 Matrix	13.00	10.50	9.50	7.50	6.00	5.00	3.00
8	12.50	10.50	9.00	7.50	6.00	5.00	2.50
9	11.00	9.00	8.00	6.50	5.50	4.50	2.50
10	12.00	9.50	8.50	7.00	5.50	4.50	2.50
12	10.50	8.50	7.50	6.00	5.00	4.00	2.00
15	9.50	8.00	7.00	5.50	4.50	4.00	2.00

Values are based on initial Temperature Rise versus Current Testing and are intended to be a guide in the selection of a connector family. All applications should be tested by the end user. The values listed are per circuit for fully loaded housings being 100% energized. **Note:** All combinations were not tested, and this chart contains interpolated and extrapolated values.

Wire-to-Board

Due to the vast differences in trace geometry and printed circuit board configurations, we are unable to provide a separate current carrying chart for our printed circuit board header products. However, the above Wire-to-Wire charts may be used as a guideline for headers if the trace width and thickness is equal to the listed wire gauge. For vertical headers, only 95% of the Wire-to-Wire value should be used. For right-angle headers, only 75% of the Wire-to-Wire value should be used. The chart values are only a tool for connector selection and will require the customer to fully test their application.

Minimum Wire Lengths for T-Rise vs. Current Testing

AWG	Min. Length (in.)	AWG	Min. Length (in.)
30	2.6	18	9.4
28	3.2	16	11.3
26	4.1	14	13.7
24	5.1	12	16.4
20	7.8	10	19.3

Note: If wire lengths used are less than those listed above, the current carrying ability of the system will be reduced due to less heat being conducted away from the connector. The customer should fully test all applications.

Termination Resistance/Contact Crimp Tensile Force

Wire Size		Termination Resistance		Contact Crimp Tensile Force	
AWG	mm²	Test Current (Amps)	Resistance Milliohms (Max. Init.)	Force (Min.) lbs.	Force (Min.) N
30	.05	.50	4.00	2	9
28	.08	.75	3.50	3	13
26	.12	1.00	3.50	7	31
24	.2	1.5	3.50	10	44
22	.3	3	3.50	15	67
20	.5	4.5	3.00	20	89
18	.8	6	3.00	30	133
16	1.2	8	2.75	30	133
14	2.0	10	2.75	35	156

Note: This is the total resistance between wire crimps of a mated pin and socket.

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Commercial MATE-N-LOK Connectors (Continued)

Commercial MATE-N-LOK Connector Mating Combinations

Connector Part Number					Mating Connector Part Number							
							PC Board Headers					
								Vertical Pin			Vertical Socket	
Number of Circuits	Flammability Rating	Style	Housing Type	Connector Part No.	Housing Part No.	Housing Type	Plating	Standard Tail	Long Tail	Right-Angle Pin	Standard Tail	Long Tail
1	UL94V-2	In-Line	Socket: FH	1-480349-0	1-480350-0	Pin: FH	—	—	—	—	—	—
					1-480351-0	Pin: FH Positive Lock	—	—	—	—	—	—
			Socket: FH UV Stable	1-480400-0	1-480401-1	Pin: FH UV Stable	—	—	—	—	—	—
2	UL94V-2	In-Line	Socket: FH	1-480318-0	1-480319-0	Pin: FH	Pre-tin	350209-1	350422-1	794120-1	—	—
							Duplex[1]	1586512-2	—	—	—	—
			Socket: FH UV Stable	1-480393-1	1-480498-1	Pin: FH UV Stable	—	—	—	—	—	—
			Socket: FH Positive Lock	1-480720-0	794012-1	Pin: FH Positive Lock	Pre-tin	350539-1	350540-1	—	—	—
							Duplex[1]	1586530-2	—	—	—	—
3	UL94V-2	In-Line	Socket: FH	1-480303-0	1-480305-0	Pin: FH	Pre-tin	350210-1	350423-1	643488-1	—	—
							Duplex[1]	1586514-2	—	—	—	—
			Socket: PM	1-480304-0			—	—	—	—	—	—
			Socket: FH Positive Lock	1-480721-0	—	—	Pre-tin	350541-1	350542-1	—	—	—
							Duplex[1]	1586532-2	—	—	—	—
			Socket: FH UV Stable	1-480388-0	1-480387-0	Pin: FH UV Stable	—	—	—	—	—	—
4	**See next page for 4 position mating combinations**											
6	UL94V-2	Matrix	Socket: FH Positive Lock	1-480270-0	1-480340-0	Pin: FH Positive Lock	Pre-tin	1-380999-0	350425-1	—	—	—
					1-480271-0	Pin: MM Positive Lock	Duplex[1]	2-1586546-0	1586526-2	—	—	—
			Socket: PM Positive Lock	1-480273-0	1-480276-0	Pin: PM Positive Lock	Pre-tin	—	—	—	—	—
							Duplex[1]	—	—	—	—	—
			Pin: PM Positive Lock	1-480276-0	1-480273-0	Socket: PM Positive Lock	Pre-tin	—	—	—	350641-1	350576-1
							Duplex[1]	—	—	—	—	—
8	UL94V-2	Dual Row	Socket: FH Positive Lock	1-480283-0	1-480345-0	Pin: FH Positive Lock	Pre-tin	350212-1	350426-1	—	—	—
					1-480284-0	Pin: MM Positive Lock	Duplex[1]	1586518-2	1586528-2	—	—	—
9	UL94V-2	Matrix	Pin: PM Positive Lock	1-480277-0	1-480274-0	Socket: PM Positive Lock	Pre-tin	—	—	—	350642-1	350577-1
							Duplex[1]	—	—	—	—	—
10	UL94V-2	Dual Row	Socket: FH Positive Lock	1-480285-0	1-480339-0	Pin: FH Positive Lock	Pre-tin	1-380991-0	350219-1	—	—	—
					1-480286-0	Pin: MM Positive Lock	Duplex[1]	2-1586544-0	—	—	—	—
12	UL94V-2	Dual Row	Socket: MM Positive Lock	1-480287-0	1-480288-0	Pin: MM Positive Lock	Pre-tin	350213-1	350220-1	—	—	—
							Duplex[1]	1586520-2	1586524-2	—	—	—
		Matrix	Pin: PM Positive Lock	1-480278-0	1-480275-0	Socket: PM Positive Lock	Pre-tin	—	—	—	350643-1	350578-1
							Duplex[1]	—	—	—	—	—
15	UL94V-2	Matrix	Pin: PM Positive Lock	1-480324-0	1-480323-0	Socket: PM Positive Lock	Pre-tin	—	—	—	350644-1	350579-1
							Duplex[1]	—	—	—	—	—
16	UL94V-2	Dual Row	Socket: MM Positive Lock	1-480438-0	1-480439-0	Pin: MM Positive Lock	Pre-tin	350214-1	350427-1	—	—	—
							Duplex[1]	1586522-2	1586529-2	—	—	—

FH: Free-Hanging **PM: Panel Mount** **MM: Motor Mount**

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.

Note: All part numbers are RoHS Compliant.

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UK: 44-8706-080-208

Commercial MATE-N-LOK 4 Position In-Line Mating Combinations (**Note:** These connectors are used by the disk drive industry.)

Connector Part Number			Mating Connector Part Number											
					Socket Connectors				PC Board Pin Headers					
									Vertical			Right-Angle		
Flammability Rating	Connector Type	Connector Part No.	Housing Part No.	Housing Type	Plating	Insulation Displacement Connector	AWG	PC Board Vertical Socket Header	Standard Tail	Long Tail	Surface Mount	Standard	W/Fixed Belt	W/Fixed Belt Reverse Pol.
UL94V-2	Socket Housing Positive Lock	1-480772-0	—	—	Pre-tin	—	—	—	350543-1	350544-1	—	—	—	—
					Duplex[1]	—	—	—	1586534-2	1586536-2	—	—	—	—
	Socket Housing Detent Lock	1-480424-0	1-480426-0	Pin	Pre-tin	—	—	—	350211-1 770328-1[3]	350424-1	770829-1	641737-1 770846-1	174804-1	174552-1
					Duplex[1]	—	—	—	1586515-2	1586525-2	—	—	—	—
	Pin Housing Detent Lock	1-480426-0	1-480424-0	Socket	Pre-tin	770156-2	22	770997-1 794287-1[2]	—	—	—	—	—	—
						770156-3	18							
						770156-4	20							
			1-480425-0	Socket PM		770156-5	16							
					Duplex[1]	770526-1	18	—	—	—	—	—	—	—
	Pin Housing Detent Lock High Temp	3-480426-0	3-480425-0	Socket High Temp	—	—	—	—	—	—	—	—	—	—
	Socket Header	770997-1 794287-1[2]	1-480426-0	Pin	Pre-tin	—	—	—	350211-1	350424-1	770829-1	641737-1 770846-1	174804-1	174552-1
	Insulation Displacement Connector (IDC)	770156-2 770156-3 770156-4 770156-5	1-480426-0	Pin	Pre-tin	—	—	—	350211-1	350424-1	770829-1	641737-1 770846-1	174804-1	174552-1
		770526-1			Duplex[1]	—	—	—	1586515-2	1586525-2	—	—	—	—
UL94V-0	Socket Housing	770827-1	794132-1	Pin	Pre-tin	—	—	—	—	—	—	1-641737-1	—	—
	Insulation Displacement Connector (IDC)	794036-1 794036-2 794036-3 794036-4	794132-1	—	Pre-tin	—	—	—	—	—	—	1-641737-1	—	—
	Right-Angle Pin Header	1-641737-1	770827-1	Socket	Pre-tin	794036-1	18	—	794236-1	—	—	—	—	—
						794036-2	20							
						794036-3	22							
						794036-4	16							

PM: Panel Mount

[1]Duplex Finish—Plated with .000030 [.000762] min. gold in matting area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.

[2]Surface Mount Compatible.

[3]With Drainholes

Note: All part numbers are RoHS Compliant.

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UK: 44-8706-080-208

Commercial MATE-N-LOK Connectors (Continued)

Contacts

Pin diameter .084 [2.13]
Stock thickness .012 [.305]
These contacts are to be used in Commercial MATE-N-LOK housings **only**.

Related Product Data

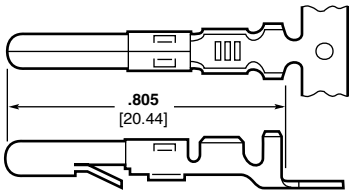
Product Specification

108-1000 Commercial MATE-N-LOK Connectors

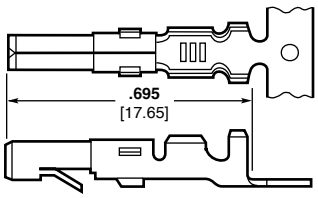
Application Specification

114-1012 Commercial MATE-N-LOK Contacts

Performance Characteristics—pages 151-152
Housings—pages 157-159
Technical Documents—pages 151 and 205-206
Application Tooling—pages 207-210



Pin



Socket

Wire Size Range AWG [mm²]	Ins. Dia. Range	Material & Finish	Contact Part Numbers				HDM Applicator Part No.	Hand Tool Part No.
			Pin		Socket			
			Strip Form	Loose Piece	Strip Form	Loose Piece		
30-22 [.05-.3]	**.040-.075** 1.02-1.91	Brass, Pre-tin	350079-1	61174-1	350078-1	61173-1	466426-1[3] 466426-2[3] 466426-3[3]	91515-1
		Phos. Brz., Pre-tin	350079-4	—	350078-4	61173-4		
		Brass, Gold[1]	350079-5	61174-5	350078-5	61173-5		
24-18 [.2-.8]	**.060-.100** 1.52-2.54	Brass, Pre-tin	61116-1	60618-1	61314-1	60617-1	466320-1[3] 466320-2[3] 466320-4[3]	91512-1 91528-1[4]
		Phos. Brz., Pre-tin	61116-4	60618-4	61314-4	60617-4		
		Brass, Gold[1]	61116-5	60618-5	61314-5	60617-5		
		Phos. Brz., Select Gold[2]	61116-6	60618-6	61314-6	60617-6		
		Brass, Select Gold[2]	61116-7	—	61314-7	—		
20-14 [.5-2.0]	**.100-.130** 2.54-3.30	Brass, Pre-tin	61118-1	60620-1	61117-1	60619-1	687763-1[3] 687763-2[3] 687763-6[3]	91504-1
		Phos. Brz., Pre-tin	61118-4	60620-4	61117-4	60619-4		
		Brass, Gold[1]	61118-5	60620-5	61117-5	60619-5		
		Phos. Brz., Gold[1]	61118-6	—	61117-6	60619-7		
		Brass, Select Gold[2]	61118-7	—	61117-7	—		
(2) 18 [.8] or (1) 18 [.8] and (1) 16 [1.2]	(2) **.115 Max.** 2.92 (stacked)	Brass, Pre-tin	350558-1	350639-1	350557-1	—	687898-1[3] 687898-2[3] 687898-4[3]	91504-1
		Phos. Brz., Pre-tin	350558-4	—	350557-4	350638-4		

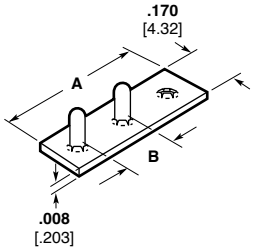
[1]Gold Finish — Plated with .000030 [.000762] min. gold in mating area and inside wire barrel over .000050 [.00127] min. nickel underplate on entire contact.
[2]Select Gold Finish — Plated with .000030 [.000762] min. gold in mating area over .000050 [.00127] min. nickel underplate on entire contact.
[3]HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine; -3, -4, or -6 is used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.
[4]Use Hand Tool No. 91528-1 for .043-.075 [1.09-1.90] insulation diameter.

Notes:
1. Extraction Tools: Pins — No. **1-305183-1** (IS 408-7158); Sockets — No. **1-305183-2** (IS 408-7158); Pins and Sockets — No. **465644-1** (IS 408-7211)
2. Insertion Tools: No. **455830-1** (IS 408-7984)

Commoning Tabs

Material and Finish

Brass, tin plated
Stock thickness .008 [.203]



Number of Holes	Dimensions		Part Number
	A	B	
2	**.377** 9.58	**.203** 5.16	60843-1
2	**.355** 9.02	**.195** 4.95	350444-1
3	**.579** 14.71	**.203** 5.16	60842-1
3	**.550** 13.97	**.195** 4.95	350444-2

Note: Commoning tabs are designed to be used with pin housings.

Note: All part numbers are RoHS Compliant.

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Commercial MATE-N-LOK Connectors (Continued)

Contacts

Pin diameter .084 [2.13]
Stock thickness .012 [.305]
These contacts are to be used in Commercial MATE-N-LOK housings **only**.

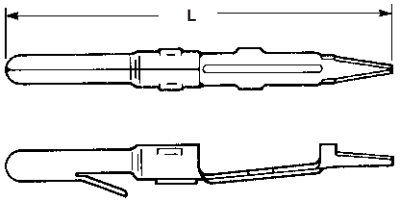
Related Product Data

Product Specification
108-1000 Commercial MATE-N-LOK Connectors

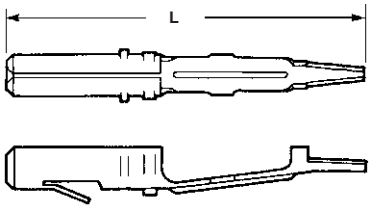
Application Specification
114-1012 Commercial MATE-N-LOK Contacts

Performance Characteristics—pages 151-152
Housings—pages 157-159
Technical Documents—pages 151 and 205-206
Application Tooling—pages 207-210

PC Board Contacts



Pin



Socket

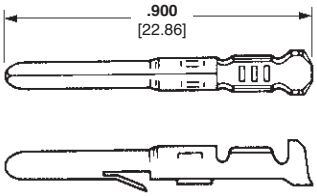
Type of Contact	L Dim.		Material & Finish	Part Numbers	
	Pin	Socket		Pin	Socket
				Loose Piece	Loose Piece
PC Board	**1.110** [28.19]	**1.010** [25.65]	Phos. Brz., Pre-tin	61518-1[1]	61320-1[1]
	1.210 [30.73]	**1.110** [28.19]	Phos. Brz., Pre-tin	350074-1[2]	350073-1[2]

[1]For .062 [1.57] max. board thickness — Board hole size .057 [1.45]
[2]For .125 [3.14] max. board thickness — Board hole size .057 [1.45]

Grounding Pin

(.095 [2.41] longer than standard pin)

(Mate first, break last, not for interrupting current)

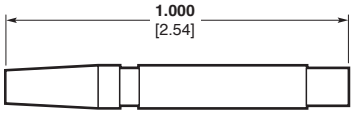


Wire Size Range AWG [mm²]	Ins. Dia. Range	Material & Finish	Contact Part Numbers		HDM Applicator Part No.	Hand Tool Part No.
			Strip Form	Loose Piece		
24-18 [.2-.8]	**.060-.100** 1.52-2.54	Brass, Pre-tin	61527-2	—	466320-1[1] 466320-2[1] 466320-4[1]	91512-1

[1]HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine; -3, -4, or -6 is used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.

Keying Plug

IS 408-7582



Part Number
200821-1
Note: Keying plug snaps into socket housing

Material

Housing — Nylon, natural color
Flammability Rating — UL94V-2

Note: All part numbers are RoHS Compliant.

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Commercial MATE-N-LOK Connectors (Continued)

Housings

Free-Hanging

.200 [5.08] Centerline spacing

Material

Housing—Nylon, natural color

Flammability Rating—UL94V-2

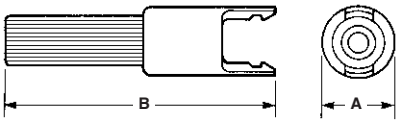
Related Product Data

Product Specification

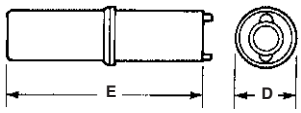
108-1000 Commercial MATE-N-LOK Connectors

Performance Characteristics—pages 151-152
Contacts—pages 155-156
Commoning Tabs—page 155
Keying Plug—page 156
Technical Documents—pages 151 and 205-206
Mating Pin Headers—pages 161-164
Mating Socket Headers—page 162
Mating IDC—page 163

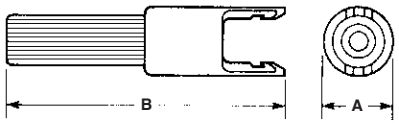
1 Circuit



Pin Housing (Cap) Detent Lock

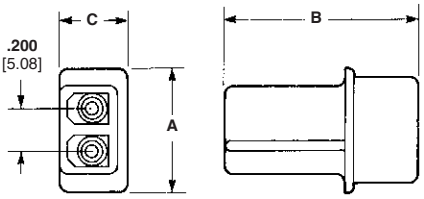


Socket Housing (Plug)

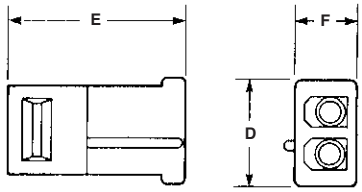


Pin Housing (Cap) Positive Lock

2, 3 and 4 Circuit, In-Line



Pin Housing (Cap)



Socket Housing (Plug)

Number of Circuits	Dimensions						Part Numbers	
	A	B	C	D	E	F	Pin Housing (Cap)	Socket Housing (Plug)
1	**.300** 7.62	**1.200** 30.48	—	**.260** 6.60	**.870** 22.10	—	1-480350-0[1]	1-480349-0
	.300 7.62	**1.240** 31.49	—	**.260** 6.60	**.870** 22.10	—	1-480351-0[2]	1-480349-0
	.300 7.62	**1.325** 33.65	—	**.260** 6.60	**.995** 25.27	—	1-480401-0[1,3]	1-480400-0[3]
2	**.610** 15.49	**.930** 23.62	**.330** 8.38	**.530** 13.46	**.860** 21.84	**.295** 7.49	1-480319-0[1,5]	1-480318-0[5]
	.610 15.49	**.930** 23.62	**.330** 8.38	**.530** 13.46	**.860** 21.84	**.295** 7.49	1-480498-1[1,3,5]	1-480393-1[3,5]
3	**.810** 20.57	**.930** 23.62	**.325** 8.25	**.825** 20.95	**.850** 21.60	**.290** 7.37	1-480305-0[1,5]	1-480303-0[5]
	.810 20.57	**.930** 23.62	**.325** 8.25	**.825** 20.95	**.850** 21.60	**.290** 7.37	1-480387-0[1,3,5]	1-480388-0[3,5]
4	**1.010** 25.65	**.930** 23.62	**.330** 8.38	**1.030** 26.16	**.850** 21.60	**.310** 7.88	1-480426-0[1,5,6]	1-480424-0[5,6]
	—	—	—	**1.030** 26.16	**.850** 21.60	**.310** 7.88	794132-1[4,5,6]	770827-1[4,5,6]

[1]Detent lock
[2]Positive lock
[3]UV Stable black color
[4]Housing Material UL94V-0 rated
[5]Housing accepts double wire applications where individual insulation diameters do not exceed .115 [2.92].
[6]Used by the disk drive industry.

Note: **All part numbers are RoHS Compliant.**

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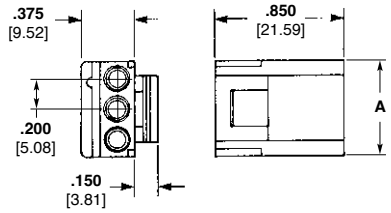
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Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Commercial MATE-N-LOK Connectors (Continued)

Housings
Free-Hanging, Positive Lock

Material
Housing—Nylon, natural color
Flammability Rating—UL94V-2

2, 3, and 4 Circuit, In-Line
.200 [5.08] Centerline spacing

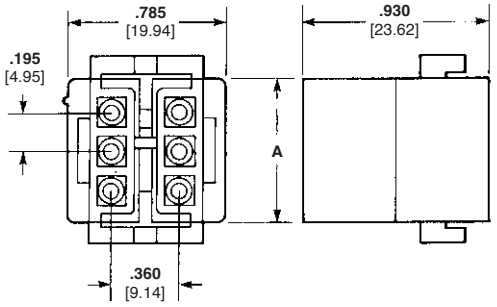


Socket Housing (Plug)

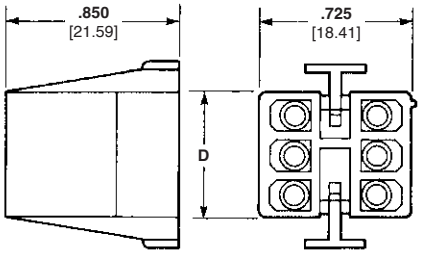
Number of Circuits	A Dim.	Part Numbers		
		Socket Housing (Plug)	Mates with Pin Headers	Mates with Cap Housing
2	**.435** 11.04	1-480720-0	350539, 350540	794012-1
3	**.630** 16.00	1-480721-0	350541	—
4	**.830** 21.09	1-480722-0[1]	350543[1], 350544[1]	–

[1]Used by the disk drive industry.

6 Circuit, Dual Row

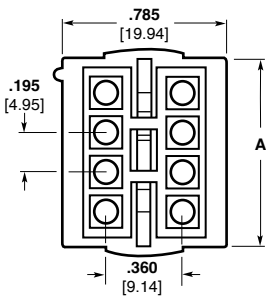


Pin Housing (Cap)

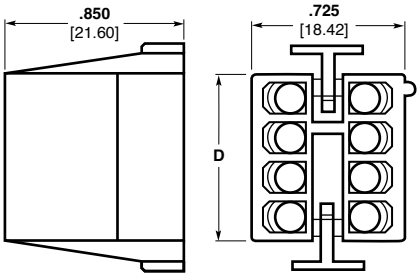


Socket Housing (Plug)

8 and 10 Circuit, Dual Row



Pin Housing (Cap)



Socket Housing (Plug)

Number of Circuits	Dimensions		Part Numbers	
	A	D	Pin Housing (Cap)	Socket Housing (Plug)
6	**.705** 17.91	**.610** 15.49	1-480340-0	1-480270-0[1]
8	**.900** 22.86	**.805** 20.44	1-480345-0	1-480283-0[1]
10	**1.095** 27.81	**1.000** 25.40	1-480339-0	1-480285-0[1]

[1]Housing accepts double wire applications where individual insulation diameters do not exceed .115 [2.92].

Note: All part numbers are RoHS Compliant.

Related Product Data
Product Specification
108-1000 Commercial MATE-N-LOK Connectors

Performance Characteristics—pages 151-152
Contacts—pages 155-156
Commoning Tabs—page 155
Keying Plug—page 156
Technical Documents—pages 151 and 205-206
Mating Headers—pages 161-164

Catalog 82181
Revised 4-08

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South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Commercial MATE-N-LOK Connectors (Continued)

Housings

Panel Mount, Positive Lock

Material

Housing—Nylon, natural color

Flammability Rating—UL94V-2

Related Product Data

Product Specification

108-1000 Commercial MATE-N-LOK Connectors

Performance Characteristics—pages 151-152
Contacts—pages 155-156
Commoning Tabs—page 155
Keying Plug—page 156
Technical Documents—pages 151 and 205-206
Mating Socket Headers—page 162
Mating IDC—page 163

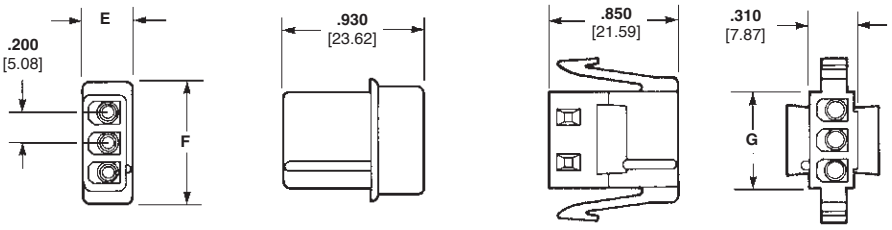
Recommended Panel Cutout for Panel Mount Socket Housing

View is from socket housing entry side

Mounting Information

1. Recommended panel thickness—.025-.065 [.635-1.65].
2. Both locking legs are to be squeezed together and the housing is to be inserted "straight-in", as opposed to a rocking manner.
3. The panel should be punched so that the housing enters the panel in the same direction as the punch.
4. The panel must not have any material (paint, porcelain, etc.) applied in the mounting hole area that would decrease the retention of the housing in the panel.
5. If the two items above are not complied with, the "A" dimension should be reduced .020 [5.08] for proper retention.

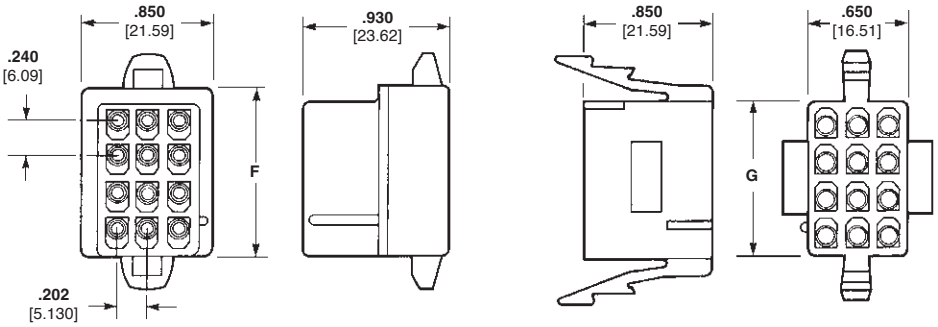
3 and 4 Circuit, In-Line



Pin Housing (Cap)

Socket Housing (Plug)

6, 9, 12 and 15 Circuit, Matrix



Pin Housing (Cap)

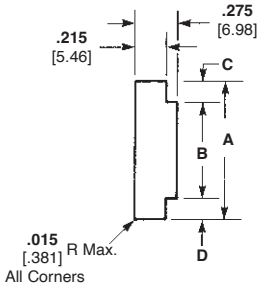
Socket Housing (Plug)

Number of Circuits	Dimensions			Part Numbers	
	E	F	G	Pin Housing (Cap)	Socket Housing (Plug)
3	**.325** 8.26	**.810** 20.57	**.630** 16.00	1-480305-0[2]	1-480304-0
4	**.330** 8.38	**1.010** 25.65	**.825** 20.96	1-480426-0[2,4] 3-480426-0[1,2,4]	1-480425-0[4] 3-480425-0[1,4]
6	—	**.665** 16.89	**.555** 14.10	1-480276-0[3]	1-480273-0
9	—	**.905** 22.99	**.795** 20.19	1-480277-0[3]	1-480274-0
12	—	**1.145** 29.08	**1.045** 26.54	1-480278-0[3]	1-480275-0
15	—	**1.382** 35.10	**1.280** 32.51	1-480324-0[3]	1-480323-0

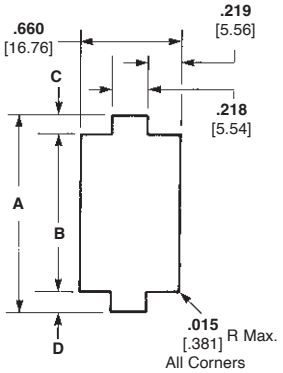
[1]Housing material has 125°C temperature rating
[2]Detent lock
[3]Positive lock
[4]Used by disk drive industry

Note: All part numbers are RoHS Compliant.

3 and 4 Circuit, In-Line



6, 9, 12 and 15 Circuit, Matrix



Number Circuits	Dimensions	
	A	B
3	**.890** 22.61	**.645–.635** 16.38–16.13
4	**1.100** 27.94	**.845–.835** 21.46–21.21
6	**.840** 21.34	**.575–.570** 14.61–14.48
9	**1.075** 27.31	**.815–.810** 20.70–20.57
12	**1.320** 33.53	**1.055–1.050** 26.80–26.67
15	**1.550** 39.37	**1.290–1.285** 32.77–32.64

Note: Dimensions "C" and "D" are to be equal.

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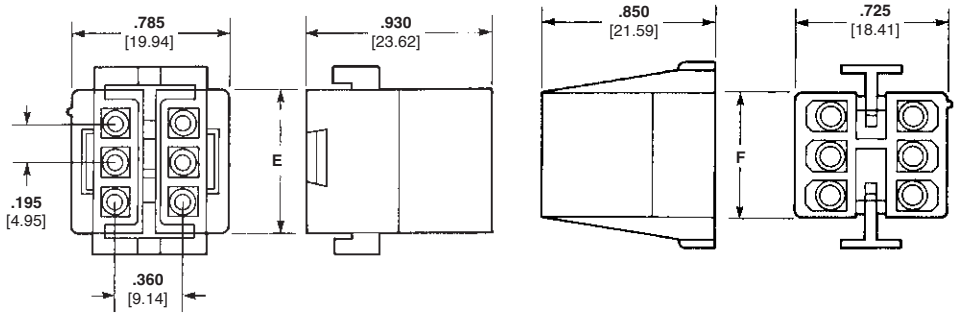
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Commercial MATE-N-LOK Connectors (Continued)

Motor Mount, Positive Lock

6, 8, 10, 12 and 16 Circuit, Dual Row



Pin Housing (Cap)

Socket Housing (Plug)

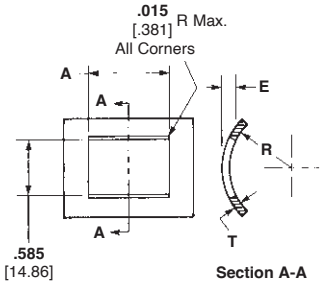
Number of Circuits	Dimensions		Part Numbers	
	E	F	Pin Housing (Cap)	Socket Housing (Plug)
			UL94V-2 Nylon, Natural Color	
6	**.705** 17.90	**.610** 15.49	1-480271-0	1-480270-0[1]
8	**.900** 22.86	**.805** 20.45	1-480284-0	1-480283-0[1]
10	**1.095** 27.81	**1.000** 25.4	1-480286-0	1-480285-0[1]
12	**1.290** 32.77	**1.195** 30.35	1-480288-0	1-480287-0
16	**1.680** 42.67	**1.585** 40.26	1-480439-0	1-480438-0

[1]Housing accepts double wire applications where individual insulation diameters do not exceed .115 [2.92].

Note: **All part numbers are RoHS Compliant.**

Recommended Panel Cutout for Motor Mount Pin Housing

View is from pin housing entry side.



Section A-A

Note: Motor mount housings may be used in flat panels

Number of Circuits	A Dim.
6	**.715** 18.16
8	**.910** 23.11
10	**1.105** 28.07
12	**1.300** 33.02
16	**1.690** 42.93

Mounting Information

1. Recommended panel thickness "E" is .040-.100 [1.02-2.54] and is dependent on "T" and "R".
2. The pin housing must be inserted in a rocking manner.
3. The panel must be punched so that the housing enters the panel in the same direction as the punch.

Commercial MATE-N-LOK Connectors (Continued)

PC Board Vertical Pin Headers

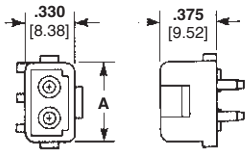
Material

Housing — Nylon, natural color
Flammability Rating — UL94V-2
Contacts — Phosphor bronze
Solder tail diameter .062 [1.57]

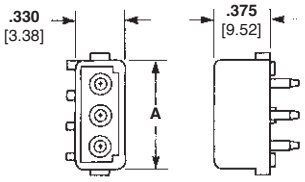
Related Product Data

Product Specifications
108-1077 Commercial MATE-N-LOK PC Board Headers
Performance Characteristics—pages 151-152
Technical Documents—pages 151 and 205-206
Mating Socket Housings—pages 157-160
Mating Socket Headers—page 162
Mating IDC—page 163

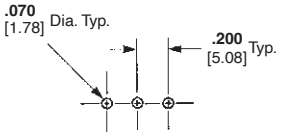
2, 3, and 4 Circuit, In-Line



Positive Lock

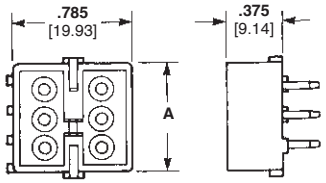


Detent Lock

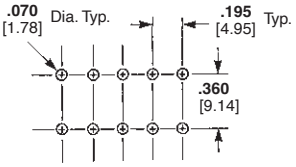


Recommended PC Board Hole Layout
Mounting Dimensions

6, 8, 10, 12 and 16 Circuit, Dual Row



Positive Lock



Recommended PC Board Hole Layout
Mounting Dimensions

Number of Circuits	A Dim.	Type Lock	Finish	Part Numbers: Standard[2] Tail	Part Numbers: Long[3] Tail	Mates with Socket Housing Part Number
2	**.515** 13.09	Positive	Pre-tin	350539-1	350540-1	1-480720-0
			Duplex[1]	1586530-2	—	
		Detent	Pre-tin	350209-1	350422-1	1-480318-0
			Duplex[1]	1586512-2	—	
3	**.715** 18.17	Positive	Pre-tin	350541-1	350542-1	1-480721-0
			Duplex[1]	1586532-2	—	
		Detent	Pre-tin	350210-1	350423-1	1-480303-0
			Duplex[1]	1586514-2	—	
4	**.915** 23.24	Positive	Pre-tin	350543-1[5]	350544-1[5]	1-480722-0[5]
			Duplex[1]	1586534-2[5]	1586536-2[5]	
		Detent	Pre-tin	350211-1[5] 794236-1[5,8]	350424-1[5]	1-480424-0[4,5]
			Post-tin	1586627-1[5,6] 1-1586627-1[5,6,7]		
			Duplex[1]	1586515-2[5]	1586525-2[5]	
6	**.705** 17.91	Positive	Pre-tin	1-380999-0	350425-1	1-480270-0
			Duplex[1]	2-1586546-0	1586526-2	
8	**.900** 22.86	Positive	Pre-tin	350212-1	350426-1	1-480283-0
			Duplex[1]	1586518-2	1586528-2	
10	**1.095** 27.81	Positive	Pre-tin	1-380991-0	350219-1	1-480285-0
			Duplex[1]	2-1586544-0	—	
12	**1.290** 32.77	Positive	Pre-tin	350213-1	350220-1	1-480287-0
			Duplex[1]	1586520-2	1586524-2	
16	**1.680** 42.68	Positive	Pre-tin	350214-1	350427-1	1-480438-0
			Duplex[1]	1586522-2	1586529-2	

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.
[2]Use standard tail for .062 [1.57] thick PC Board.
[3]Use long tail for .125 [3.18] thick PC Board.
[4]Other mating connectors include a vertical PC Board socket header and the insulation displacement connectors (IDC).
[5]Used by the disk drive industry.
[6]With drain holes.
[7]Tube loaded.
[8]Housing material UL94V-0 rated.

Note: All part numbers are RoHS Compliant.

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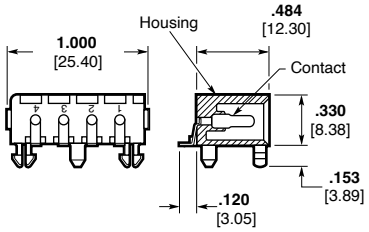
Commercial MATE-N-LOK Connectors (Continued)

PC Board Surface Mount Right-Angle Pin Header

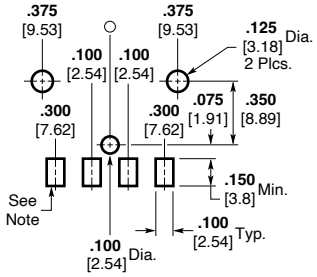
Material and Finish

Housing — Nylon, black color
Flammability Rating — UL94V-2
Contact — Phosphor bronze, pre-tin
Solder tail width .052 [1.32]

4 Circuit, In-Line



Part Number
770829-1



Note: .010 [.25] min. thick solder paste, 63/27 tin

Recommended PC Board Layout
.062 [1.57] thick PC Board

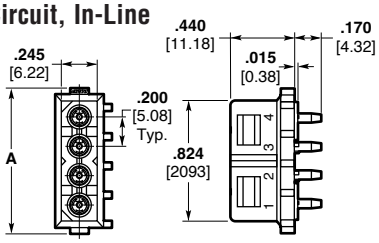
Notes:
1. Mating parts include socket housings, a vertical PC Board socket header below and the insulation displacement connectors (IDC).
2. Used by the disk drive industry.

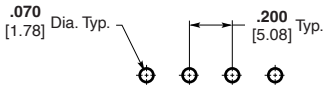
PC Board Vertical Socket Headers

Material

Housing — Nylon, natural color
Flammability Rating — UL94V-2
Contacts—Phosphor bronze
Solder tail diameter .062 [1.57]

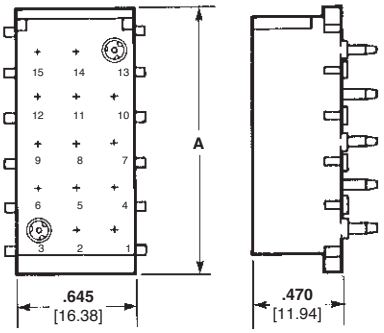
4 Circuit, In-Line

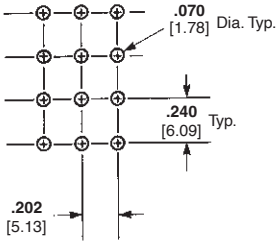




Recommended PC Board Hole Layout
.062 [1.57] thick PC Board

6, 9, 12 and 15 Circuit, Matrix





Recommended PC Board Hole Layout
.062 [1.57] thick PC Board

Number of Circuits	A Dim.	Finish	Part Numbers		Mates with Pin Housing Part Number
			Standard Tail[5]	Long Tail[6]	
4	**1.000** 25.40	Pre-tin	770997-1[3]	—	1-480426-0[2,3]
			794285-1[3,7]	—	
			794287-1[3,4,8]	—	
6	**.720** 18.29	Pre-tin	350641-1	350576-1	1-480276-0
		Duplex[1]	1586539-2	—	
9	**.960** 24.39	Pre-tin	350642-1	350577-1	1-480277-0
12	**1.200** 30.49	Pre-tin	350643-1	350578-1	1-480278-0
15	**1.440** 36.58	Pre-tin	350644-1	350579-1	1-480324-0

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.
[2]Other mating connectors include vertical, right-angle and surface mount PC Board pin headers.
[3]Used by the disk drive industry.
[4]Surface mount compatible.
[5]Use standard tail for .062 [1.57] thick PC Board.
[6]Use long tail for .125 [3.18] thick PC Board.
[7]Low Mating Force
[8]High Temperature
Note: All part numbers are RoHS Compliant.

Related Product Data

Product Specifications
108-1077 Commercial MATE-N-LOK PC Board Headers

Performance Characteristics—pages 151-152
Technical Documents—pages 151 and 205-206
Mating Pin Housings—pages 157-160
Mating Pin Headers—pages 161-164
Mating Socket Housings—pages 157-160
Mating Socket Headers—page 162
Mating IDC—page 163

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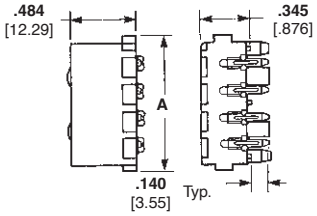
Commercial MATE-N-LOK Connectors (Continued)

PC Board Right-Angle Pin Headers

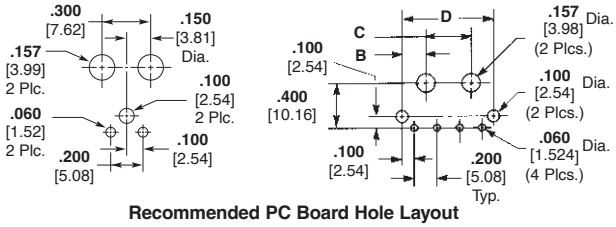
Material and Finish

Contact — Phosphor bronze, pre-tin
Solder tail width .052 [1.32]

2, 3, and 4 Circuit, In-Line



2, 3, and 4 Circuit



Recommended PC Board Hole Layout
.062 [1.57] thick PC Board

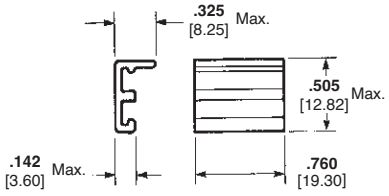
Number of Circuits	Dimensions A	B	C	D	Housing Material	Part Numbers	Mates with Socket Housing Part Number
2	**.600** 15.24	—	**.300** 7.62	—	UL94V-2 Nylon Natural Color	794120-1	1-480318-0
3	**.800** 20.32	**.150** 3.81	**.300** 7.62	**.600** 15.24	UL94V-0 Nylon	643488-1	1-480303-0
4	**1.000** 25.40	**.200** 5.08	**.400** 10.16	**.800** 20.32	UL94V-2 Nylon, Natural Color	641737-1[3] 770846-1[1,3]	1-480424-0[2,3]
					UL94V-0 Nylon	1-641737-1[3]	770827-1[2,3]

[1]Surface Mount Compatible. [2]Other mating connectors include a vertical PC Board socket header and the insulation displacement connectors (IDC). [3]Used by the disk drive industry.

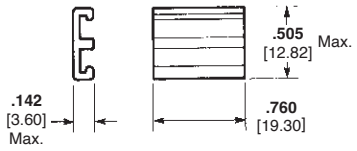
Dust Covers

Material

Housing — Polyester, white color
Flammability Rating — UL94V-2



For Feed-To Wiring
Part Number 770232-1



For Feed-Through Wiring
Part Number 770233-1

Note: These parts are used with the insulation displacement connectors below.

Insulation Displacement Connectors (IDC)

Material

Housing — Nylon
Contact — Phosphor bronze

Related Product Data

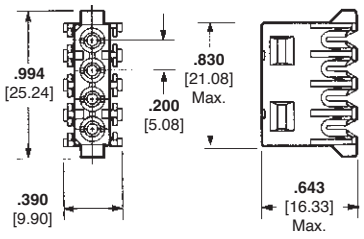
Used by the disk drive industry.

Product Specifications
108-1077 Commercial MATE-N-LOK PC Board Headers
108-49000 IDC Connectors

Application Specification
114-49001 IDC Connectors

Performance Characteristics— pages 151-152
Technical Documents— pages 151 and 205-206
Mating Socket Housings— pages 157-160
Mating Pin Housings— pages 157-160
Mating Pin Headers— pages 161-164

4 Circuit, In-Line



Socket Assembly (Plug)

Wire Size Range AWG [mm²]	Color Code	Finish	Part Number UL94V-2	Part Number UL94V-0	Mates with Part Numbers
22 [.3]	Red	Pre-tin	770156-2	794036-3	1-480426-0** 350211-1 350211-2 350424-1 350424-2 641737-1 1-641737-1 770827-1 770829-1 770846-1
20 [.5]	Yellow	Pre-tin	770156-4	794036-2	
18 [.8]	Orange	Pre-tin	770156-3	794036-1	
16 [1.2]	Blue	Pre-tin	770156-5*	794036-4	

*Application Tooling: Arbor Tool 91085-2 uses head 231920-2. **Pin Housing

Notes:
1. Insulation diameter .095 [2.41] max.
2. Application Tooling
Power Unit No. **91112-2** (IS 408-7763) uses Head No. **231920-2** (IS 408-9330) and Hand Tool Handle No. **58074-1** (IS 408-6790) uses Terminating Head No. **231894-1**(IS 408-3186)

Note: All part numbers are RoHS Compliant.

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Commercial MATE-N-LOK Connectors (Continued)

PC Board Right-Angle Pin Header with Fix Belt

Material

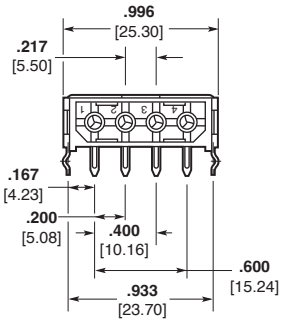
Housing — Thermoplastic
Flammability Rating — UL94V-2
Contacts — Copper Alloy

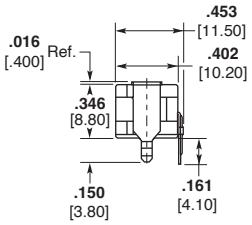
Related Product Data

Used by the disk drive industry

Product Specification
108-5155

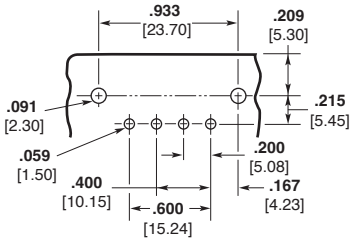
4 Circuit, In-Line





Part No. 174552-1

Notes: Mates with socket housing Part No. 1-480424-0. Other mating connectors include a vertical PC Board socket header and the insulation displacement connectors (IDC).



Recommended PC Board Hole Layout
.062 [1.57] thick PC Board

PC Board Right-Angle Pin Headers with Fix Belt

Reverse Polarization

Material and Finish

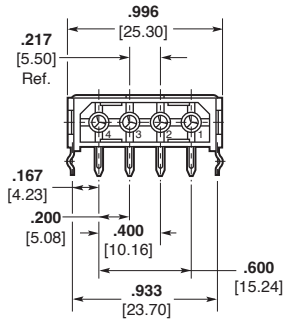
Housing — Nylon
Flammability Rating — UL94V-2
Contacts — Tin plated, Copper alloy

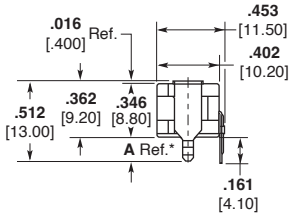
Related Product Data

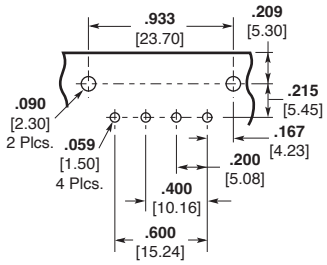
Used by the disk drive industry

Product Specification
108-5155

4 Circuit, In-Line







Part No.	A Dim.*	Description
174804-1	.150 3.80	Long Clamp with Kink

Part No. 174804*

Recommended PC Board Hole Layout
.062 [1.57] thick PC Board

Notes: Mates with socket housing Part No. 1-480424-0. Other mating connectors include a vertical PC Board socket header and the insulation displacement connectors (IDC).

Note: **All part numbers are RoHS Compliant.**

Catalog 82181
Revised 4-08

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Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

.140 MATE-N-LOK Connectors (Large Insulation), .240 Centerline

Product Facts

- **Available in 2, 3 and 9 circuit configurations for panel mounting; 4 and 9 circuit configurations for free-hanging applications**
- **Standard natural nylon housings**
- **Housings fully polarized**
- **Contacts fully protected in housings**
- **Contacts accept wire size range 20-10 AWG [.5-5.0 mm²] with insulation diameters from .100 [2.54] to .180 [4.57]**
- **Low insertion/extraction forces**
- **Dual locking lances provide optimum contact stability**
- **Extraction tool removes both pins and sockets**
- **Contacts are on .240 [6.09] centerline spacing**
- **Not for interrupting current**
- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476**
- **Certified by Canadian Standards Association, File No. LR 7189A**

Performance Characteristics

The .140 MATE-N-LOK Connector performance characteristics found on this page are based on free-hanging and panel mount connectors, loaded with contacts crimped on stranded wire.

Dielectric Withstand Voltage—3.0 KVAC between adjacent circuits

Insulation Resistance—1000 megohms minimum initial between adjacent circuits

Voltage Rating—600 V AC or DC

Connector Mating—4.5 lb. max. per circuit

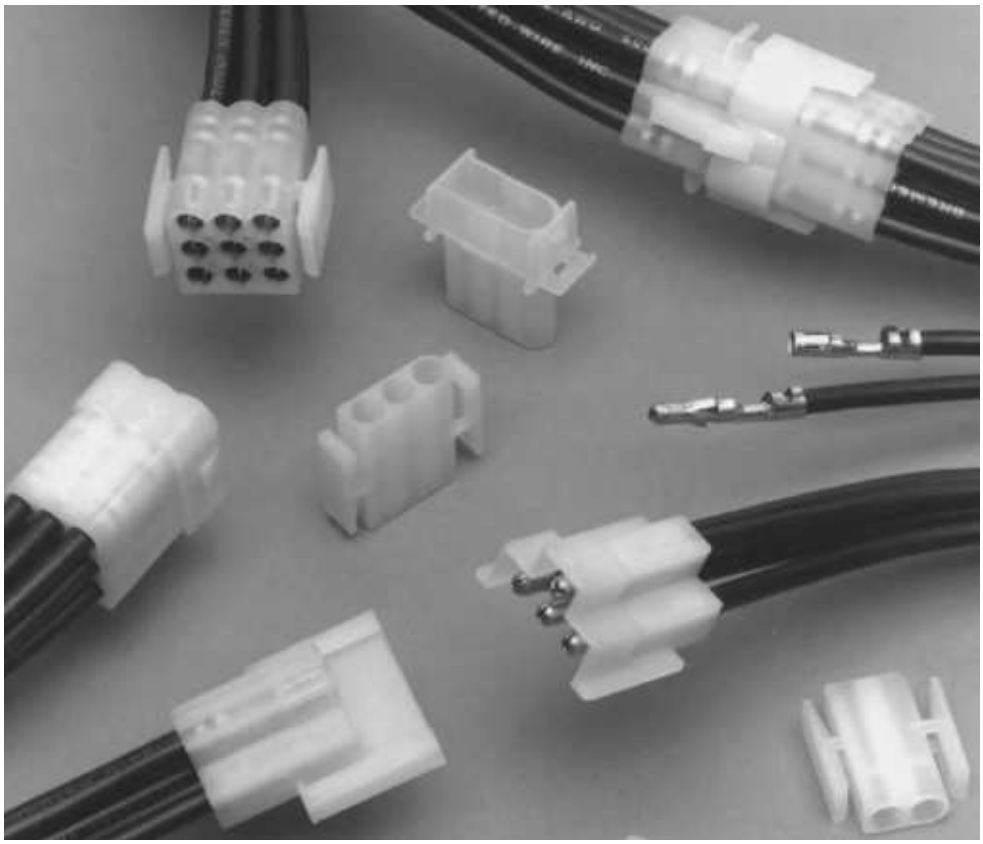
Connector Unmating—.8 lb. min. per circuit

Contact Retention—30 lb. min.

Durability—25 cycles, mating and unmating

Thermal Shock— -55°C to +85°C

Temperature-Humidity Cycling—25°C to 65°C at 95 RH



Maximum Current—Maximum current rating of .140 MATE-N-LOK Connectors is limited by the maximum operating temperature of the housings which is 105°C and the temperature rise of the contacts which is 30°C. There are several variables which have a direct effect on this maximum current-carrying capability for a given connector and must be considered for each application. These variables are:

Wire Size—Larger diameter wire will carry more current since it has less internal resistance to current flow and thus generates less heat. Longer wire lengths also enhance current-carrying capabilities since the wire conducts heat away from the connector.

Connector Size—In general, the more circuits in a connector, the less current can be carried.

Ambient Temperature—The higher the ambient temperature, the less current can be carried in any given connector.

Technical Documents

Product Specification

108-1032 .140 Diameter MATE-N-LOK Connectors

Application Specification

114-1007 .140 Diameter MATE-N-LOK Contacts

Wire Size AWG	Wire Size mm²	Termination Resistance: Test Current (Amps)	Termination Resistance: Resistance Milliohms (Max. Init.)	Contact Crimp Tensile Force: Force (Min.) lbs.	Contact Crimp Tensile Force: Force (Min.) N
20	.5	4.5	3.0	20	89
18	.8	6	2.5	30	133
16	1.2	8	2.5	45	200
14	2.0	10	2.0	50	222
12	3.0	12	1.5	60	267
10	5.0	14	1.5	65	289

Note: This is the total resistance between wire crimps of a mated pin and socket.

Current Rating Verification for 30°C Maximum Temperature Rise 100% Energized

Wire-to-Wire

.140 MATE-N-LOK Connector Calculated Current Table

Number of Circuits	Wire AWG 10	12	14	16	18	20
2	28.00	23.00	18.50	15.00	13.50	10.50
3	25.00	21.00	17.00	13.50	12.00	9.50
9	18.50	15.00	12.00	10.00	9.00	7.00

Values are based on initial Temperature Rise versus Current Testing and are intended to be a guide in the selection of a connector family. All applications should be tested by the end user. The values listed are per circuit for fully loaded housings being 100% energized. **Note:** All combinations were not tested, and this chart contains interpolated and extrapolated values.

Minimum Wire Lengths for T-Rise vs. Current Testing

Note: If wire lengths used are less than those listed, the current carrying ability of the system will be reduced due to less heat being conducted away from the connector. The customer should fully test all applications.

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UK: 44-8706-080-208

.140 MATE-N-LOK Connectors (Large Insulation), .240 Centerline (Continued)

Contacts

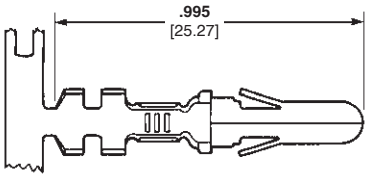
Pin diameter .140 [3.57]
Stock thickness .014 [.357]

Related Product Data

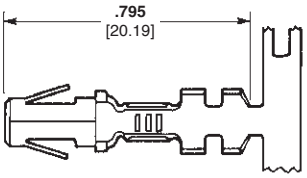
Product Specification
108-1032 .140 Diameter MATE-N-LOK Connectors

Application Specification
114-1007 .140 Diameter MATE-N-LOK Contacts

Performance Characteristics—page 159
Keying Plug—none
Housings—pages 166-167
Technical Documents—pages 165 and 205-206
Application Tooling—pages 207-210



Pin



Socket

Wire Size Range AWG [mm²]	Ins. Dia. Range	Material & Finish	Contact Part Numbers				HDM Applicator Part No.	Hand Tool Part No.
			Pin		Socket			
			Strip Form	Loose Piece	Strip Form	Loose Piece		
20-14 [.5-2.0]	.100-.180 2.54-4.5	Brass. pre-tin	61627-1	350389-1	61626-1	350388-1	567306-1 567306-2 567306-3	90247-1
		Phos. Brz., pre-tin	61627-2	—	61626-2	—		
14-10 [2.0-5.0]	.100-.180 2.54-4.5	Brass. pre-tin	350201-1	350391-1	350200-1	350390-1	567309-1 567309-2 567309-3	69710-1[2]
		Phos. Brz., pre-tin	350201-2	350391-2	350200-2	350390-2		

[1]HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -3 is used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.
[2]Hand Tool No. **69710-1** uses die set No. **58374-1** for 14-12 AWG and No. **58373-1** for 10 AWG.


Contact Extraction Tool
Part No. 318845-1
IS 408-4378

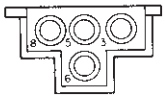
Housings

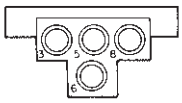
Free-Hanging
.240 [6.09] Centerline spacing

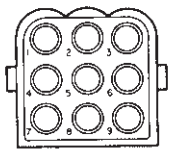
Material
Nylon, natural color

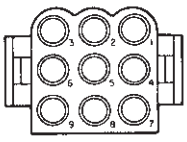
Flammability Rating—UL94V-2

Cavity Identification
(Rear View)

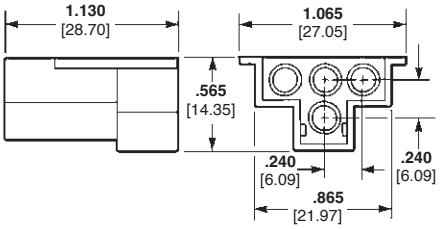

Cap


Plug

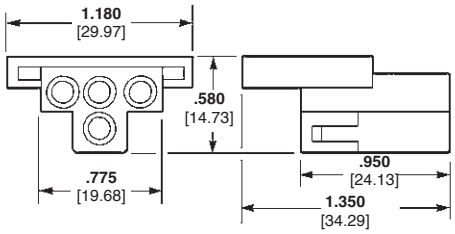

Cap


Plug

4 Circuit

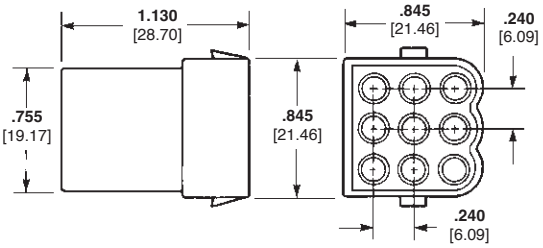


Pin Housing (Cap)
Part No. 1-480512-0
Part No. 794700-1 (Black Color High Temp.)

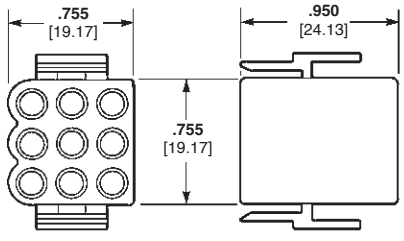


Socket Housing (Plug)
Part No. 1-480510-0

9 Circuit, Matrix



Pin Housing (Cap)
Part No. 1-480586-0



Socket Housing (Plug)
Part No. 1-480585-0

Note: **All part numbers are RoHS Compliant.**

Catalog 82181
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.140 MATE-N-LOK Connectors (Large Insulation), .240 Centerline (Continued)

Housings

Panel Mount

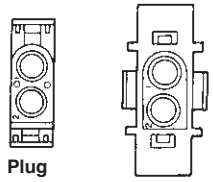
.240 [6.09] Centerline spacing

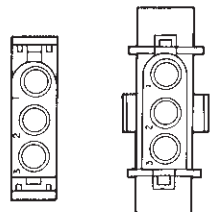
Material

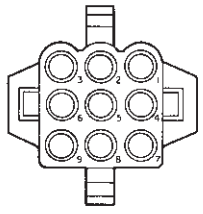
Housing—Nylon, natural color

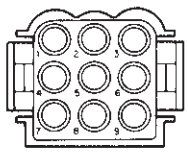
Flammability Rating—UL94V-2

Cavity Identification
(Rear View)









Related Product Data

Product Specification

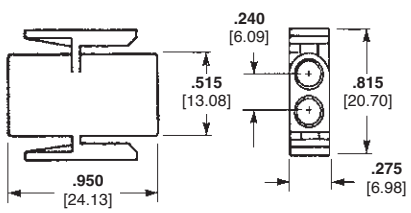
108-1032 .140 Diameter MATE-N-LOK Connectors

Application Specification

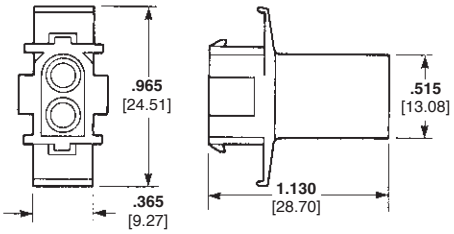
114-1007 .140 Diameter MATE-N-LOK Contacts

Performance Characteristics—page 165
Keying Plug—none
Contacts—page 166
Technical Documents—pages 165 and 205-206

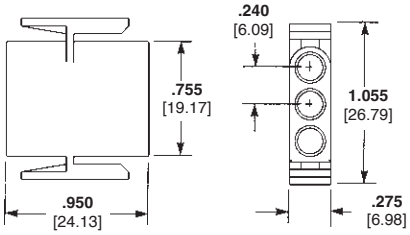
2 and 3 Circuit, In-Line



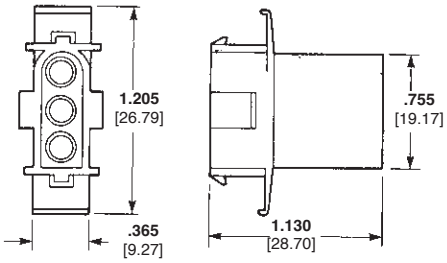
Socket Housing (Plug)
Part No. 1-350344-0
Part No. 794699-1 (Black Color High Temp.)



Pin Housing (Cap)
Part No. 1-350345-0
Part No. 1586305-1 (Black Color High Temp.)

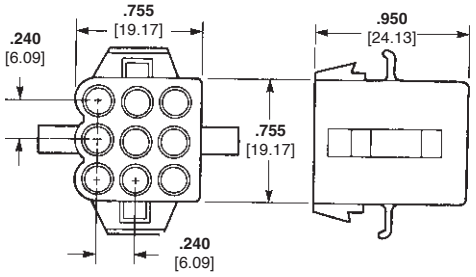


Socket Housing (Plug)
Part No. 1-350346-0

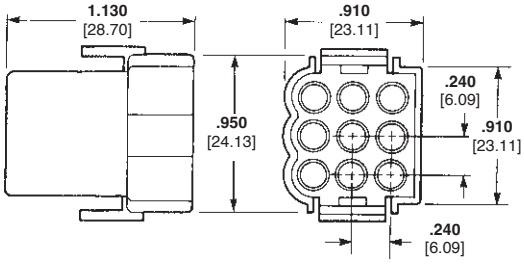


Pin Housing (Cap)
Part No. 1-350347-0
Part No. 794061-1 (Black Color High Temp.)

9 Circuit, Matrix



Socket Housing (Plug)
Part No. 1-480672-0
Part No. 1586305-1 (Black Color High Temp.)

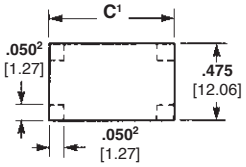


Pin Housing (Cap)
Part No. 1-480673-0
Part No. 794683-1 (Black Color High Temp.)

Recommended Panel Cutouts

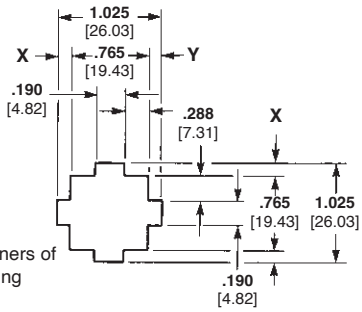
View is from housing entry side

2 and 3 Circuit



¹2 Circuit-.725 [18.42]
3 Circuit- .965 [24.51]
².050 x .050 [1.27-1.27] tabs in corners of outlet are optional to reduce housing float in panel.

9 Circuit



Notes:
1. Panel thickness .040-.070 [1.02-1.78].
2. "X" and "Y" dimensions must be within .005 [.127] of each other.
3. Panel should be punched so that the housing enters the panel in the same direction as the punch for ease of assembly.

Note: **All part numbers are RoHS Compliant.**

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Engineering Notes

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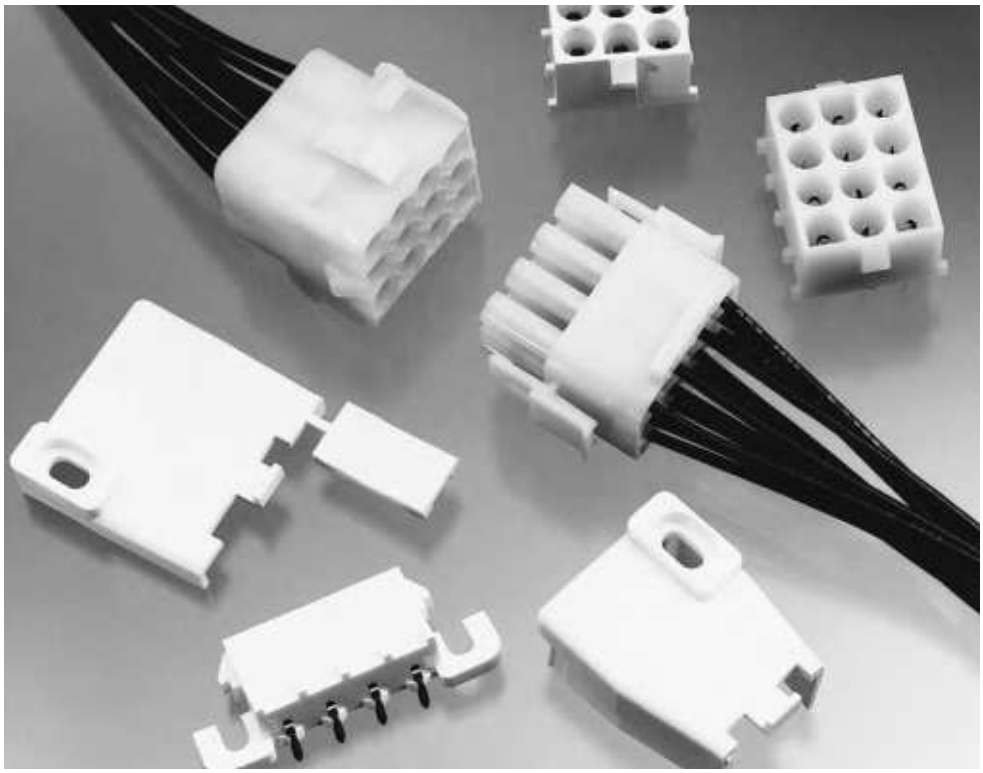
USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Universal MATE-N-LOK Connectors

Product Facts

- Pins and sockets can be intermixed in the same housing
- Positive polarization
- Rear cavity identification
- Contacts completely enclosed in housings
- Positive locking housings
- Insulation capability to .200 [5.08] diameter
- Removable, crimp snap-in contacts
- Low contact mating force
- Contacts accept 30-10 AWG [.05-5.0 mm^2] wire sizes
- Contacts available with pre-tin or gold plating
- Dual locking lances provide optimum contact stability
- Panel mount or free-hanging
- Mate with Universal MATE-N-LOK II Housings
- Available in UL 94V-O flame retardant material. Meets the material requirements of table 25.1 of U.L. Standard 1410 (television receivers and video products)
- Not for interrupting current
- Harness to PC Board capability using pin or socket headers
- Pin and socket headers are available in both vertical and right-angle style
- Solderability—headers meet MIL-STD 202 Method 208
- Contacts are on .250 [6.35] centerline spacing
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 7189
- Passed test by VDE under their Registration Number 3980/Continuous Surveillance



Performance Characteristics

The Universal MATE-N-LOK Connector performance characteristics found on pages 169-170 are based on free-hanging and panel mount connectors, loaded with contacts crimped on stranded wire.

Dielectric Withstanding Voltage—5.0 KVAC or 5.0 KVDC between adjacent circuits

Insulation Resistance—1000 megohms minimum initial between adjacent circuits

Voltage Rating—600 V AC or DC

Contact Insertion Force—5.0 lb. max. per contact

Contact Retention—15 lb. min. per contact

Durability—50 cycles, mating and unmating

Technical Documents

Product Specifications

108-1031 Universal MATE-N-LOK Connectors

108-1053 Universal MATE-N-LOK PC Board Headers

Application Specification

114-1010 Universal MATE-N-LOK Contacts

Instruction Sheet

408-7714 Plug, Cap, Headers, Pin, Socket and Accessories

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C. America: 52-55-1106-0803

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Universal MATE-N-LOK Connectors (Continued)

Performance Characteristics (Continued)

Maximum Current—Maximum current rating of Universal MATE-N-LOK connectors is limited by the maximum operating temperature of the housings which is 125°C for 94V-2 housings and 120°C for 94V-0 housings including the temperature rise of the contacts which is a maximum of 30°C. There are several variables which have a direct effect on this maximum current-carrying capability for a given connector and must be considered for each application. These variables are:

Wire Size—Larger diameter wire will carry more current since it has less internal resistance to current flow and thus generates less heat. Longer wire lengths also enhance current carrying capabilities since the wire conducts heat away from the connector.

Connector Size—In general, the more circuits in a connector, the less current can be carried.

Ambient Temperature—The higher the ambient temperature, the less current can be carried in any given connector.

Printed Wiring Board Conductor Size—The finished trace conductor width and thickness should be maximized to allow for the greatest current carrying capacity and heat dissipation.

Universal MATE-N-LOK connectors also will withstand the following tests:

Vibration—10-55-10 cycles per minute at .06 inch total excursion

Physical Shock—18 drops, 50 G sawtooth at 10 milliseconds

Housing Panel Retention—75 lb. min.

Housing Lock Strength—30 lb. min.

Thermal Shock— -55°C to +85°C

Temperature-Humidity Cycling—25°C to 65°C at 95 RH

Corrosion—48 hr. at 5% salt concentration

Related Product Data

Product Specifications

108-1031 Universal MATE-N-LOK Connectors

108-1053 Universal MATE-N-LOK Headers

Current Rating Verification for 30°C Maximum Temperature Rise 100% Energized

Wire-to-Wire

Calculated Current Table

Number of Circuits	Wire Gauge									
	10	12	14	16	18	20	22	24	26	30
2	19.00	18.00	17.00	14.50	13.00	10.00	8.00	6.50	5.50	3.50
3	17.50	16.50	15.50	13.00	12.00	9.00	7.50	6.00	5.00	3.00
4	16.50	15.50	15.00	12.50	11.00	8.50	7.00	5.50	4.50	3.00
5	16.00	15.00	14.00	12.00	10.50	8.00	6.50	5.50	4.50	3.00
6 In-Line	15.50	14.50	13.50	11.50	10.00	8.00	6.50	5.00	4.00	2.50
6 Matrix	15.00	14.00	13.00	11.00	9.50	7.50	6.00	5.00	4.00	2.50
8	14.50	14.00	13.00	10.50	9.50	7.50	6.00	5.00	4.00	2.50
9	13.50	12.50	11.50	9.50	8.50	6.50	5.50	4.50	3.50	2.00
10	14.00	13.00	12.50	10.00	9.00	7.00	5.50	4.50	3.50	2.50
12	12.50	12.00	11.00	9.00	8.00	6.00	5.00	4.00	3.00	2.00
15	12.00	11.50	10.00	8.50	7.50	6.00	4.50	4.00	3.00	2.00

Values are based on initial Temperature Rise versus Current Testing and are intended to be a guide in the selection of a connector family. All applications should be tested by the end user. The values listed are per circuit for fully loaded housings being 100% energized. **Note:** All combinations were not tested, and this chart contains interpolated and extrapolated values.

Minimum Wire Lengths for T-Rise vs. Current Testing

AWG	Min. Length (in.)	AWG	Min. Length (in.)
30	2.6	18	9.4
28	3.2	16	11.3
26	4.1	14	13.7
24	5.1	12	16.4
20	7.8	10	19.3

Note: If wire lengths used are less than those listed above, the current carrying ability of the system will be reduced due to less heat being conducted away from the connector. The customer should fully test all applications.

Wire-to-Board

Due to the vast differences in trace geometry and printed circuit board configurations, we are unable to provide a separate current carrying chart for our printed circuit board header products. However, the above Wire-to-Wire charts may be used as a guideline for headers if the trace width and thickness is equal to the listed wire gauge. For vertical headers, only 95% of the Wire-to-Wire value should be used. For right-angle headers, only 75% of the Wire-to-Wire value should be used. The chart values are only a tool for connector selection and will require the customer to fully test their application.

Termination Resistance/Contact Crimp Tensile Force

Wire Size		Termination Resistance		Contact Crimp Tensile Force	
AWG	mm²	Test Current (Amps)	Resistance Milliohms (Max. Init.)	Force (Min.) lbs.	Force (Min.) N
30	.05	—	—	2	9
28	.08	—	—	3	13
26	.12	—	—	6	27
24	.2	1.5	3.50	8	36
22	.3	3	3.50	14	62
20	.5	4.5	3.00	14	62
18	.8	6	3.00	30	133
16	1.2	8	2.75	45	200
14	2.0	10	2.75	50	222
12	3.0	—	—	60	267
10	5.0	—	—	70	311

Note: This is the total resistance between wire crimps of a mated pin and socket.

Catalog 82181
Revised 4-08

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Dimensions are shown for reference purposes only. Specifications subject to change.

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C. America: 52-55-1106-0803

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Universal MATE-N-LOK Connectors (Continued)

Universal MATE-N-LOK Connector Mating Combinations

Connector Part Number[7]					Mating Connector Part Number								
					PC Board Headers[7]								
						Vertical Pin[2]			Vertical Socket[2]			Right-Angle[2]	
Number of Circuits	Flammability Rating	Style	Plug Part Number[2]	Cap Part Number[2]	Plating	Standard Tail	Standard Tail Polarized	Long Tail	Standard Tail	Standard Tail Polarized	Long Tail	Pin	Socket
1	UL94V-2	—	1-350867-0	770421-1	—	—	—	—	—	—	—	—	—
	UL94V-0	—	350865-1	350866-1	—	—	—	—	—	—	—	—	—
2	UL94V-2	In-Line	1-480698-0 794814-1[3]	1-480699-0 794815-1[3]	Pre-tin	350428-1	641963-1	350582-1	350759-4	643411-1	350986-4	—	—
					Duplex[1]	350428-4	641963-3	350582-4	350759-5	—	—	—	—
	UL94V-0	In-Line	350777-1	350778-1	Pre-tin	350786-1	641964-1 1-641964-1[5]	350787-1	350824-1	643412-1	350831-1	1-350942-0	643226-1
					Duplex[1]	350786-3	641964-3	350787-3	350824-4	643412-3	—	3-350942-0	—
3	UL94V-2	In-Line[6]	1-480700-0 794901-1[3]	1-480701-0 794900-1[3]	Pre-tin	350429-1	641965-1	350583-1	350760-4	643413-1	350987-4	—	—
					Duplex[1]	350429-4	—	350583-4	350760-5	—	—	—	—
	UL94V-0	In-Line	350766-1	350767-1	Pre-tin	350789-1	641966-1 1-641966-1[4]	350790-1	350825-1	643414-1	350832-1	1-350943-0	643228-1
					Duplex[1]	350789-3	—	350790-3	350825-4	643414-3	350832-4	3-350943-0	3-643228-0
4	UL94V-2	In-Line	1-480702-0 794899-1[3]	1-480703-0 794707-1[3]	Pre-tin	350430-1	641967-1	350584-1	350761-4	643415-1	350988-4	1-350948-0	—
					Duplex[1]	350430-4	—	350584-4	350761-5	—	350988-5	—	—
	UL94V-0	In-Line	350779-1	350780-1	Pre-tin	350792-1	641968-1	350793-1	350826-1	643416-1	350833-1	1-350944-0	643230-1
					Duplex[1]	350792-3	—	350793-3	350826-4	—	350833-4	3-350944-0	3-643230-0
5	UL94V-2	In-Line	1-480763-0	1-480764-0[3] 794863-1[3]	Pre-tin	640466-1	643405-1	—	640467-1	—	—	1-350949-0	—
					Duplex[1]	640466-3	—	—	640467-3	—	—	—	—
	UL94V-0	In-Line	350809-1	350810-1	Pre-tin	640900-1	643406-1	—	640901-1	—	—	1-350945-0	643232-1
					Duplex[1]	640900-3	—	—	640901-3	—	—	3-350945-0	3-643232-0
6	UL94V-2	In-Line	640585-1	926307-1	Pre-tin	641832-1	643407-1	—	—	—	—	640587-1	—
					Duplex[1]	641832-3	—	—	—	—	—	—	—
	UL94V-0	In-Line	640581-1	926307-3	Pre-tin	641831-1	643408-1	—	770262-1	—	—	640583-1	643234-1
					Duplex[1]	641831-3	—	—	770262-3	—	—	640583-3	3-643234-0
	UL94V-2	Matrix[6]	1-480704-0 794535-1[3] 794096-1[5]	1-480705-0 794536-1[3]	Pre-tin	350431-1	641969-1	350585-1	350762-4	643423-1	350989-4	—	—
					Duplex[1]	350431-4	—	350585-4	350762-5	—	350989-5	—	—
	UL94V-0	Matrix	350715-1	350781-1	Pre-tin	350711-1	641970-1	350732-1	350827-1	643424-1	350834-1	—	—
					Duplex[1]	350711-4	641970-3	350732-4	350827-4	643424-3	350834-4	—	—
8	UL94V-2	In-Line	640586-1	926308-1	Pre-tin	641825-1	—	770143-1	—	—	—	—	—
					Duplex[1]	—	—	—	—	—	—	—	—
	UL94V-0	In-Line	640582-1	926308-3	Pre-tin	641828-1	643410-1	—	—	—	—	640584-1	643236-1
					Duplex[1]	—	643410-3	—	—	—	—	640584-3	3-643236-0
9	UL94V-2	Matrix	1-480706-0 794537-1[3]	1-480707-0 794538-1[3]	Pre-tin	350432-1	641971-1	350586-1	350763-4	643425-1	350990-4	—	—
					Duplex[1]	350432-4	641971-3	350586-4	350763-5	—	350990-5	—	—
	UL94V-0	Matrix	350720-1	350782-1	Pre-tin	350712-1	641972-1 1-641972-1[4]	350742-1	350828-1	643426-1	350835-1	—	—
					Duplex[1]	350712-4	641972-3	350742-4	350828-4	643426-3	350835-4	—	—
10	UL94V-2	In-Line	926302-1	926309-1	Pre-tin	—	—	—	—	—	—	—	—
					Duplex[1]	—	—	—	—	—	—	—	—
	UL94V-0	In-Line	926302-3	926309-3	Pre-tin	—	—	—	—	—	—	—	—
					Duplex[1]	—	—	—	—	—	—	—	—
12	UL94V-2	Matrix	1-480708-0 794851-1[3]	1-480709-0 794727-1[3]	Pre-tin	350433-1	641973-1	350587-1	350764-4	—	350991-4	—	—
					Duplex[1]	350433-4	—	350587-4	350764-5	—	350991-5	—	—
	UL94V-0	Matrix	350735-1	350783-1	Pre-tin	350713-1	641974-1 1-641974-1[4]	350737-1	350829-1	643428-1	350836-1	—	—
					Duplex[1]	350713-4	641974-3	350737-4	350829-4	—	350836-4	—	—
15	UL94V-2[6]	Matrix	1-480710-0 794546-1[3]	1-480711-0 794545-1[3]	Pre-tin	350434-1	641975-1	350588-1	350765-4	643429-1	350992-4	—	—
					Duplex[1]	350434-4	—	350588-4	350765-5	—	—	—	—
	UL94V-0	Matrix	350736-1	350784-1	Pre-tin	350714-1	641976-1	350738-1	350830-1	643430-1	350837-1	—	—
					Duplex[1]	350714-4	641976-4	350738-4	350830-4	—	350837-4	—	—

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.
[2]Universal MATE-N-LOK Plug and Cap housings accept pin or socket contacts. Use the appropriate contacts in the Plug housing as required by the mating component.
[3]Housing material has 125°C temperature rating.
[4]Black in color.
[5]Tool Removable
[6]UV Resistant housing material available.
[7]European glow wire housing material available.

Note: **All part numbers are RoHS Compliant.**

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UK: 44-8706-080-208

Universal MATE-N-LOK Connectors (Continued)

Contacts

Solid pin diameter .084 [2.13]

Stock thickness .012 [.305] unless otherwise noted.

These contacts can be used in either Universal MATE-N-LOK Plug or Cap housings **only**.

Related Product Data

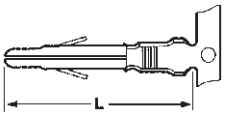
Product Specification

108-1031 Universal MATE-N-LOK Connectors

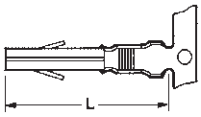
Application Specification

114-1010 Universal MATE-N-LOK Contacts

Performance Characteristics—pages 169-170
Technical Documents—pages 169 and 205-206
Application Tooling—pages 207-210
Housings—page 174



Solid Pin



Socket

Wire Size Range AWG [mm²]	Ins. Dia. Range	L Dim. Pin	L Dim. Socket	Material & Finish	Contact Part Numbers Pin Strip Form	Pin Loose Piece	Socket Strip Form	Socket Loose Piece	HDM Applicator Part No.	Hand Tool Part No.
30-26 [.05-.12]	**.032-.057** .813-1.45	**.790** 20.06	**.760** 19.30	Brass, Pre-tin	350924-1	770672-1	350925-1	770673-1	466616-2[6] 466616-3[6]	58439-1
				Phos. Brz., Gold[2]	350924-6	770672-6	350925-6	—		
24-18 [.2-.8]	**.040-.100** 1.02-2.54	**.790** 20.06	**.760** 19.30	Brass, Pre-tin	350561-1	350690-1	350851-1 350570-1[1]	350689-1[1]	466320-1[6] 466320-2[6] 466320-4[6]	91510-1
				Brass, Gold[2]	350561-2	350690-2	350851-2 350570-2[1]	640347-2 350689-2[1]		
				Brass, Select Gold[3]	350561-7	350690-7	350851-7 350570-7[1]	350689-7[1]		
				Phos. Brz., Pre-tin	350561-3	350690-3	350570-3[1]	350689-3[1]		
				Phos. Brz., Select Gold[3]	—	—	350570-6[1]	—		
20-14 [.5-2.0]	**.060-.130** 1.52-3.30	**.790** 20.06	**.760** 19.30	Brass, Pre-tin	350218-1	350547-1	350536-1	350550-1	687763-1[6] 687763-2[6] 687763-6[6]	91500-1
				Brass, Gold[2]	350218-2	350547-2	350536-2	350550-2		
				Brass, Select Gold[3]	350218-7	350547-7	350536-7	350550-7		
				Phos. Brz., Pre-tin	350218-3	350547-3	350536-3	350550-3		
				Phos. Brz., Select Gold[3]	350218-6	350547-6	350536-6	350550-6		
20-14 [.5-2.0] or 2@18 [.8]	**.130-.200** 3.30-5.08	**.810** 20.57	**.780** 19.81	Brass, Pre-tin	350538-1	350552-1	350537-1	350551-1	687926-1[6] 687926-2[6] 687926-6[6]	91508-1[7] 91506-1[7]
				Brass, Gold[2]	350538-2	350552-2	350537-2	350551-2		
				Brass, Select Gold[3]	350538-7	350552-7	350537-7	350551-7		
				Phos. Brz., Pre-tin	350538-3	350552-3	350537-3	350551-3		
				Phos. Brz., Select Gold[3]	350538-6	350552-6	350537-6	350551-6		
18-14[4] [.8-2.0]	**.130-.200** 3.30-5.08	**.810** 20.57	**.780** 19.81	Brass, Pre-tin	350873-1	—	350874-1	—	466588-1[6] 466588-2[6] 466588-3[6]	91508-1[7] 91506-1[7]
				Phos. Brz., Pre-tin	350873-3	350918-3	350874-3	350919-3		
12-10 [3.0-5.0]	**.200 max.**[5] 5.08	**.810** 20.57	**.780** 19.81	Phos. Brz., Pre-tin	350922-3	640309-3	350923-3	640310-3	466597-1[6] 466597-2[6] 466597-3[6]	69710-1[7]
				Phos. Brz., Select Gold[3]	350922-6	640309-6	350923-6	640310-6		

[1]Socket Contact — .010 [.254] stock thickness
[2]Gold Finish — Plated with .000030 [.000762] min. gold in mating area and inside wire barrel over .000050 [.00127] min. nickel underplate on entire contact.
[3]Select Gold Finish — Plated with .000030 [.000762] min. gold in mating area over .000050 [.00127] min. nickel underplate on entire contact.
[4]Recommended for predominant use of 14 AWG wire.
[5]There is no insulation barrel on this contact. Insulation maximum diameter is limited by the housing.
[6]HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -3, -4 & -6 are used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.
[7]Hand Tool No. **91508-1** is for wire size 20-18 AWG. Hand Tool No. **91506-1** is for wire size 16-14 AWG. Hand Tool No. **69710-1** use die set No. **58380-1** for 12 AWG and No. **58380-2** for 10 AWG.

Note: Phosphor bronze material contacts should be used in high temperature/humidity cycling applications.
Note: All part numbers are RoHS Compliant.



Contact Retention Test Tool
Part No. 1586701-1
IS 408-10003



Contact Extraction Tool
Part No. 318851-1
IS 408-4371



Contact Insertion Tool
(For inserting contacts applied to small diameter wire)
Part No. 91002-1
IS 408-7347

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Japan: 81-44-844-8013
UK: 44-8706-080-208

Universal MATE-N-LOK Connectors (Continued)

Contacts

Split pin diameter .086 [2.18]

Stock thickness .012 [.305]

These contacts can be used in either Universal MATE-N-LOK Plug or Cap housings **only**.

Related Product Data

Product Specification

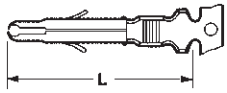
108-1031 Universal MATE-N-LOK Connectors

Application Specification

114-1010 Universal MATE-N-LOK Contacts

Performance Characteristics—pages 169-170
Technical Documents—pages 169 and 205-206
Application Tooling—pages 207-210
Housings—page 174

Split Pins



Wire Size Range AWG [mm²]	Ins. Dia. Range	L Dim.	Material & Finish	Contact Part Number		HDM Applicator Part No.	Hand Tool Part No.
				Strip Form	Loose Piece		
24-18 [.2-.8]	**.040-.100** 1.02-2.54	**.790** 20.06	Brass, Pre-tin	350699-1	350706-1	466320-1[3] 466320-2[3] 466320-4[3]	91510-1
			Brass, Gold[1]	350699-2	350706-2		
			Brass, Select Gold[2]	350699-7	350706-7		
20-14 [.5-2.0]	**.060-.130** 1.52-3.30	**.790** 20.06	Brass, Pre-tin	350687-1	350705-1	687763-1[3] 687763-2[3] 687763-6[3]	91500-1
			Brass, Gold[1]	350687-2	350705-2		
			Brass, Select Gold[2]	350687-7	350705-7		
20-14 [.5-2.0] or 2@18 [.8]	**.130-.200** 3.30-5.08	**.810** 20.57	Brass, Pre-tin	350700-1	350707-1	687926-1[3] 687926-2[3] 687926-6[3]	91508-1[4] 91506-1[4]
			Brass, Gold[1]	350700-2	350707-2		
			Brass, Select Gold[2]	350700-7	350707-7		

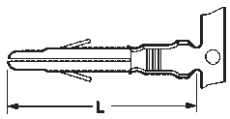
[1]Gold Finish — Plated with .000030 [.000762] min. gold in mating area and inside wire barrel over .000050 [.00127] min. nickel underplate on entire contact.
[2]Select Gold Finish — Plated with .000030 [.000762] min. gold in mating area over .000050 [.00127] min. nickel underplate on entire contact.
[3]HDM Applicator part number ending in -1, is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -4 & -6 are used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.
[4]Hand Tool No. **91508-1** for wire size 20-18 AWG. Hand Tool No. **91506-1** for wire size 16-14 AWG.

Notes:
1. Split pins recommended for use in housings having 6, 9, 12 and 15 circuits to reduce mating force.
2. Phosphor bronze material contacts are available for use in high temperature/humidity cycling applications, consult Tyco Electronics.

Grounding Pins

(.100 [2.54] longer than standard pin)

(Mate first, break last, not for interrupting current)



Wire Size Range AWG [mm²]	Ins. Dia. Range	L Dim.	Material & Finish	Contact Part Number		HDM Applicator Part No.	Hand Tool Part No.
				Strip Form	Loose Piece		
24-18 [.2-.8]	**.060-.130** 1.52-3.30	**.890** 22.60	Brass, Pre-tin	770210-1	—	567216-2[2] 567216-3[2]	—
20-14 [.5-2.0]	**.060-.130** 1.52-3.30	**.890** 22.60	Brass, Pre-tin	350654-1	350669-1	687763-1[2] 687763-2[2] 687763-6[2]	91500-1
12-10 [3.0-5.0]	**.200 max.**[1] 5.08	**.910** 23.11	Phos. Brz., Pre-tin	770234-3	—	466597-1[2] 466597-2[2] 466597-3[2]	—

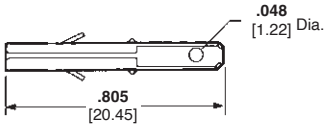
[1]There is no insulation barrel on this contact. Insulation maximum diameter is limited by the housing.
[2]HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -3 & -6 are used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.

Programmable Connector Contact

(Socket with 110 Series Special FASTON Tab)

Material and Finish

Brass, pre-tin



Part Number
350877-1

Note: This contact will accept a 110 Series FASTON Receptacle — Part No. **350871-1** (strip form) allowing simple field wiring or wiring changes.

Note: All part numbers are RoHS Compliant.

Catalog 82181
Revised 4-08

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UK: 44-8706-080-208

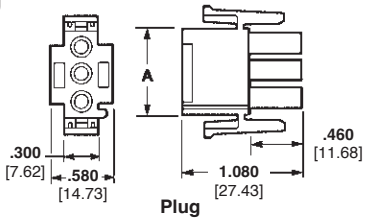
Universal MATE-N-LOK Connectors (Continued)

Housings

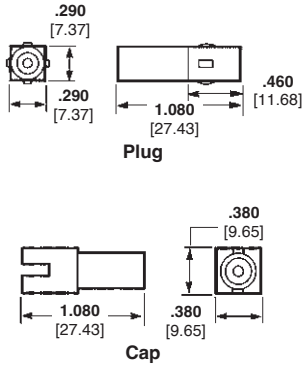
Free-Hanging or Panel Mount

.250 [6.35] Centerline spacing

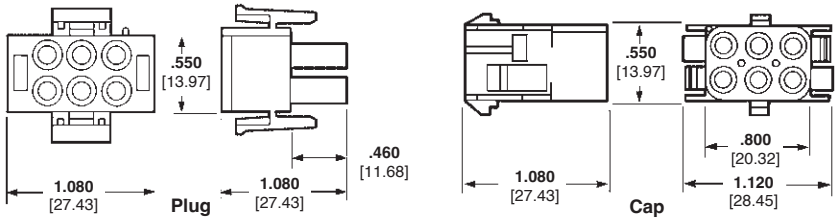
2, 3, 4, 5, 6, 8 and 10 Circuit, In-Line



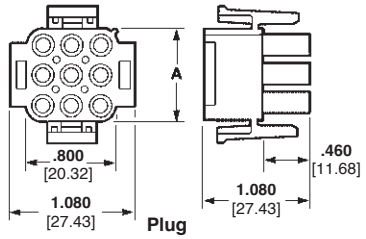
1 Circuit, Free-Hanging



6 Circuit, Matrix



9, 12 and 15 Circuit, Matrix



Related Product Data

Product Specification

108-1031 Universal MATE-N-LOK Connectors

Performance Characteristics—pages 169-170
Contacts—pages 172-173
Panel Cutout Recommendations—page 175
Keying Plug—page 175
Strain Reliefs—pages 175-176
Technical Documents—pages 169 and 205-206
Mating Headers—pages 182-183 and 185
Other Mating Connectors
Universal MATE-N-LOK II Housings—pages 193-194

Note: See charts on page 182 to order Plug and Cap Housings in **colors**.

Number of Circuits	A Dim.	Housing Part Numbers			
		UL94V-2 Nylon, Natural Color[2]		UL94V-0 Nylon[3]	
		Plug	Cap	Plug	Cap
1	—	1-350867-0	770421-1	350865-1	350866-1
2	**.550** 13.97	1-480698-0[1]	1-480699-0[1]	350777-1[1]	350778-1[1]
3	**.800** 20.32	1-480700-0[1]	1-480701-0[1]	350766-1[1]	350767-1[1]
4	**1.050** 26.67	1-480702-0[1]	1-480703-0[1]	350779-1[1]	350780-1[1]
5	**1.300** 33.02	1-480763-0[1]	1-480764-0[1]	350809-1[1]	350810-1[1]
6	**1.550** 39.37	640585-1[1]	926307-1[1]	640581-1[1]	926307-3[1]
	—	1-480704-0 794096-1[4]	1-480705-0	350715-1	350781-1
8	**2.050** 52.07	640586-1[1]	926308-1[1]	640582-1[1]	926308-3[1]
9	**.800** 20.32	1-480706-0	1-480707-0	350720-1	350782-1
10	**2.550** 64.77	926302-1[1]	926309-1[1]	926302-3[1]	926309-3[1]
12	**1.050** 26.67	1-480708-0	1-480709-0	350735-1	350783-1
15	**1.300** 33.02	1-480710-0	1-480711-0	350736-1	350784-1

[1]In-Line style.
[2]Housing material has 125°C temperature rating.
[3]Housing material has 120°C temperature rating.
[4]Tool Removable.

Note: **All part numbers are RoHS Compliant.**

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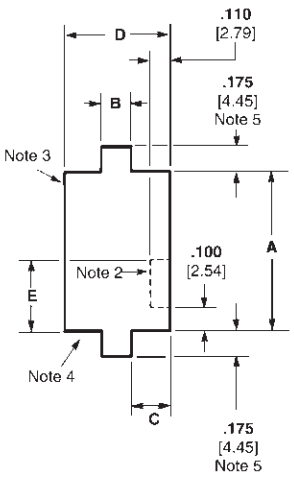
South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
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Universal MATE-N-LOK Connectors (Continued)

Recommended Cap Housing Panel Cutouts

View is from cap entry side

Refer to Application Specification 114-1010

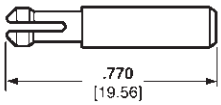


Style	Number of Circuits	Dimensions				
		A	B	C	D	E
In-Line	2	**.565** 14.35	**.340** 8.64	**.095** 2.41	**.530** 13.46	**.250** 6.35
	3	**.815** 20.70	**.340** 8.64	**.095** 2.41	**.530** 13.46	**.250** 6.35
	4	**1.065** 27.05	**.340** 8.64	**.095** 2.41	**.530** 13.46	**.250** 6.35
	5	**1.315** 33.40	**.340** 8.64	**.095** 2.41	**.530** 13.46	**.250** 6.35
	6	**1.567** 39.80	**.154** 3.91	**.189** 4.80	**.531** 13.49	**.394** 10.0
	8	**2.067** 52.50	**.154** 3.91	**.189** 4.80	**.531** 13.49	**.394** 10.0
	10	**2.567** 65.20	**.154** 3.91	**.189** 4.80	**.530** 13.46	**.394** 10.0
Matrix	6	**.565** 14.35	**.480** 12.19	**.275** 6.99	**1.030** 26.16	**.250** 6.35
	9	**.815** 20.70	**.480** 12.19	**.275** 6.99	**1.030** 26.16	**.250** 6.35
	12	**1.065** 27.05	**.480** 12.19	**.275** 6.99	**1.030** 26.16	**.350** 8.89
	15	**1.315** 33.40	**.480** 12.19	**.275** 6.99	**1.030** 26.16	**.350** 8.89

Notes:
1. Recommended panel thickness — .030-.090 [.762-2.286]. Panel must be punched so that housing enters panel in same direction as the punch.
2. Optional — Do not remove this material when keying cap housing to panel.
3. Circuit #1 location when using panel keying with 6, 9, 12 and 15 circuit Matrix housings.
4. Circuit #1 location when using panel keying with 2, 3, 4, 5, 6, 8 and 10 circuit In-Line housings.
5. .175 [4.45] dimension is .125 [3.18] for 6, 8 and 10 circuit In-Line housings.

Keying Plugs

IS 408-3320

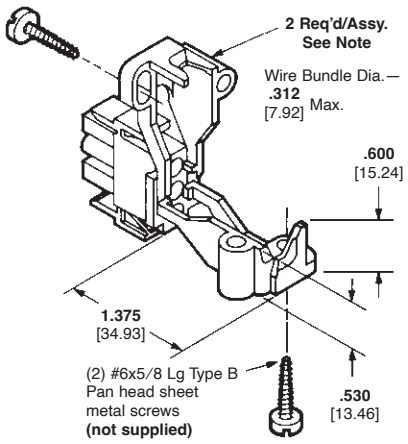


Part Numbers
UL94V-2 Nylon material, natural color — **1-640415-1**
UL94V-0 Nylon material — **1-640415-0**
Note: Keying plug snaps into plug or cap housing

Plug Housing Strain Reliefs

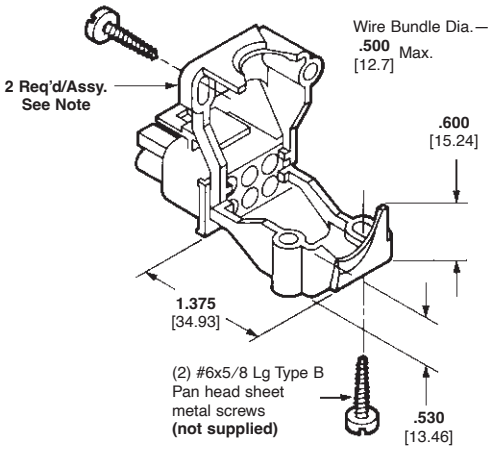
IS 408-3320

2, 3, 4, 5, 6 and 8 Circuit, In-Line



Part Numbers
UL94V-2 Nylon material, natural color — **1-350589-0**
UL94V-0 Nylon material — **350811-1**

6, 9, 12 and 15 Circuit, Matrix



Part Numbers
UL94V-2 Nylon material, natural color — **1-350590-0**
UL94V-0 Nylon material — **350812-1**

Note: Strain relief part number represents one half of a strain relief. Two strain reliefs required per housing.

Note: All part numbers are RoHS Compliant.

Related Product Data

Plug Housings— page 174
Technical Documents— pages 169 and 205-206

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Universal MATE-N-LOK Connectors (Continued)

Plug or Cap Housing Strain Reliefs

IS 408-3320

Related Product Data

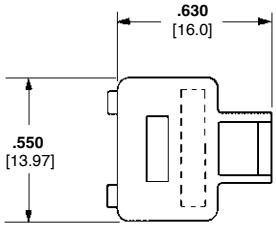
Housings—page 174
Technical Documents—pages 169 and 205-206

Cap Housing Adapters

These adapters are designed to anchor the cap housing strain reliefs to the housings and prevent the strain relief halves from "drawing in" when the screws are being torqued down to clamp the cable.

IS 408-3320

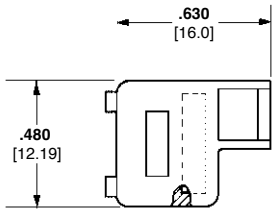
For All Positions Except 2, 6 and 8 Circuit Cap Housings



UL94V-2 Nylon material, natural color — **641777-1**

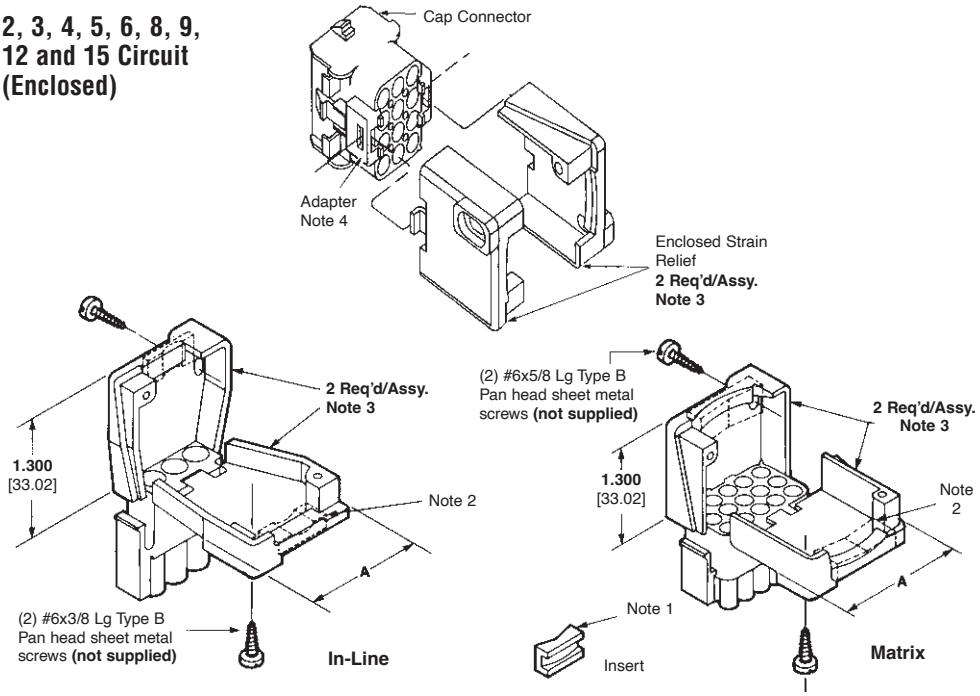
UL94V-0 Nylon material — **641778-1**

For 2 In-Line and 6 Matrix Circuit Cap Housings Only



UL94V-2 Nylon material, natural color — **643182-1**
UL94V-0 Nylon material — **643182-2**

2, 3, 4, 5, 6, 8, 9, 12 and 15 Circuit (Enclosed)



Style	Number of Circuits	A Dim.	Insert Supplied	Single Wire Dia. Range	Wire Bundle Dia. Range	Part Numbers	
						UL94V-2 Nylon, Natural Color	UL94V-0 Nylon
In-Line	2	**.960** 24.38	Yes	**.040-.190** 1.02-4.83	—	1-640719-0	640713-1
			No	—	**.200-.350** 5.08-8.89	1-640719-1	640713-2
	3	**1.140** 28.96	Yes	**.040-.190** 1.02-4.83	—	1-640720-0	640714-1
			No	—	**.200-.350** 5.08-8.89	641763-1	641945-1
	4	**1.325** 33.65	Yes	**.040-.190** 1.02-4.83	—	641775-1	641776-1
			No	—	**.200-.350** 5.08-8.89	641775-2	641776-2
	5	**1.530** 38.86	Yes	**.040-.190** 1.02-4.83	—	643030-3	643030-1
			No	—	**.200-.350** 5.08-8.89	643030-2	643030-4
	6 Note 5	**1.780** 45.21	Yes	**.040-.190** 1.02-4.83	—	643585-1	643313-1
			No	—	**.200-.350** 5.08-8.89	643585-2	643313-2
	8 Note 5	**2.280** 56.08	Yes	**.040-.190** 1.02-4.83	—	—	643314-1
			No	—	**.200-.350** 5.08-8.89	—	643314-2
Matrix	6	**1.030** 26.16	Yes	—	**.120-.650** 3.05-16.51	1-640721-0	640715-1
	9	**1.030** 26.16	Yes	—	**.120-.650** 3.05-16.51	1-640722-0	640716-1
	12	**1.280** 32.51	Yes	—	**.150-.750** 3.81-19.05	1-640723-0	640717-1
	15	**1.530** 38.86	Yes	—	**.200-.850** 5.08-21.59	1-640724-0	640718-1

Notes:
1. Cable clamping insert comes attached to strain relief. It can be used to provide additional adjustment for small wire bundles or discarded.
2. Insert to be positioned as shown by dotted lines.
3. **Strain relief part number represents one-half of a strain relief. Two strain reliefs required per housing.**
4. Must use cap housing adapters when attaching strain reliefs to a cap housing. **Two adapters required per housing.**
5. Strain reliefs for 6 and 8 circuit In-Line fits plug housings only.

Note: All part numbers are RoHS Compliant.

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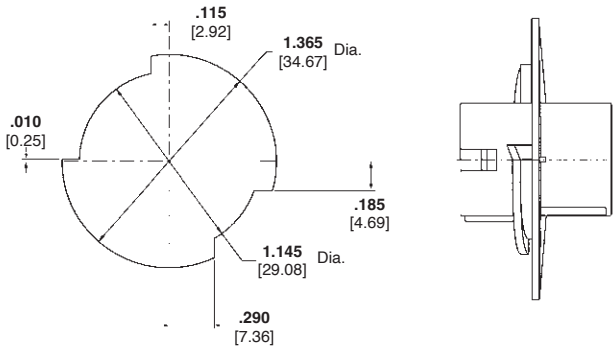
South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Universal MATE-N-LOK Flanged Cap Housings with Twist and Lock Feature

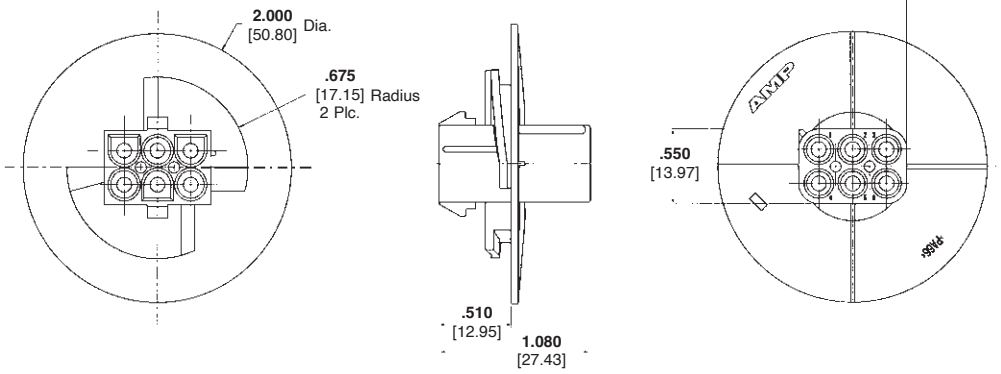
Product Facts

- **Available in a 6, 9, and 12 circuit design**
- **Designed for household appliances where a bulkhead connector system is needed in conjunction with foam-in insulation**
- **Mates with standard Universal MATE-N-LOK plug housings (page 174)**
- **Accepts Universal MATE-N-LOK pin and socket contacts (page 167)**
- **Designed to utilize the Splash Proof/Sealed Universal MATE-N-LOK seals for additional sealing protection (pages 174-175)**





Recommended Panel Cutout (for 6 and 9 Pos. Housings)



Material and Finish

Housing—Nylon, UL 94V-0 or UL 94V-2 rated
Contacts—Phosphor Bronze or Brass
Plating—Pre-tin or Gold

Related Product Data

Contacts—pages 172-173
Plug Housings—page 174
Seals—page 180

Notes:
1. Recommended Panel Thickness: 0.76-2.29 [.030-.090]
2. Panel must be punched so that the housing enters the panel in the same direction as the punch.
3. Asymmetrical panel cutout provides polarization for Pin 1 location.

Number of Circuits	Cap Housing Part Numbers	
	UL 94V-0	UL 94V-2
6	794760-1	794714-1
9	794761-1	794715-1
12	794762-1	794716-1

Note: **All part numbers are RoHS Compliant.**

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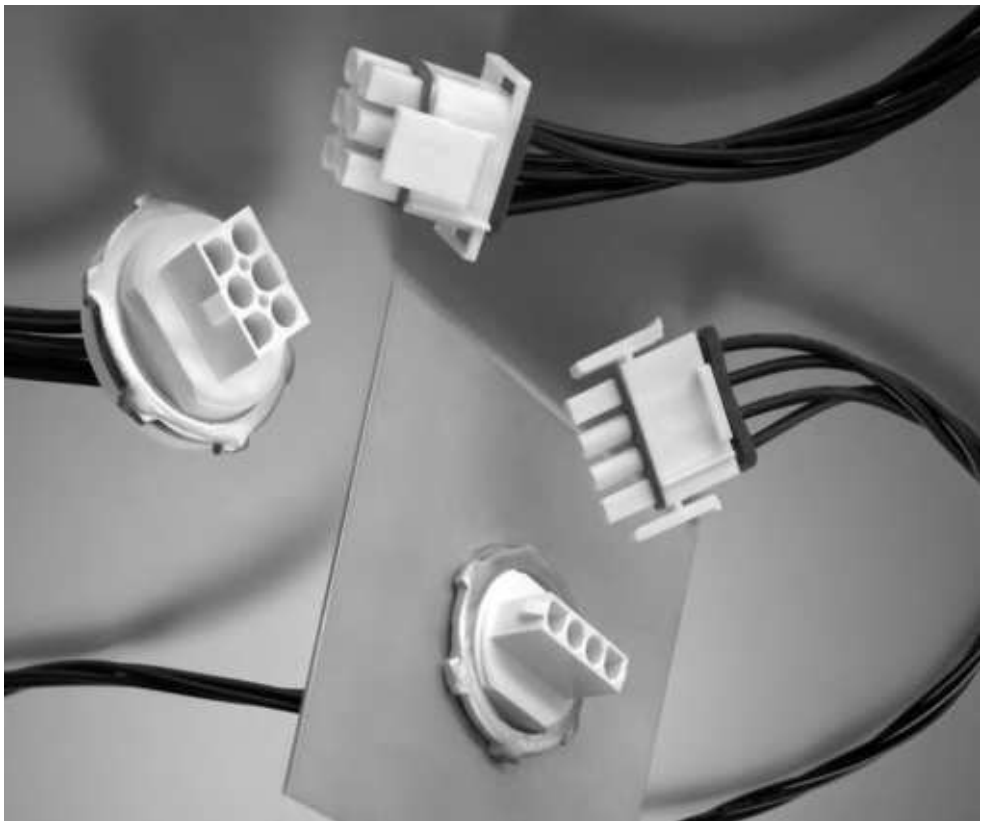
Universal MATE-N-LOK Sealed Bulkhead Connectors

Product Facts

- Bulkhead mount Universal MATE-N-LOK connector that facilitates sealed panel mounting and works with existing Universal MATE-N-LOK seals to provide a fully-sealed interconnection system
- Available in 4, 6, 9 and 12 positions
- Sealed, flange mount design
- Mates to standard Universal MATE-N-LOK plug housings
- Accepts standard Universal MATE-N-LOK contacts
- Works with standard Universal MATE-N-LOK connector interface and wire seals
- Anti-rotation feature aids installation
- Rear mount flange design enables use in wire harnesses
- Pins and sockets can be intermixed in the same housing
- UL Recognized, File No. E28476
- CSA Certified, File No. 1030930

Applications

- Vending Machines
- Industrial Machinery
- Lighting
- HVAC Equipment



Performance Characteristics

Dielectric Withstanding Voltage—5.0 KVAC or 5.0 KVDC between adjacent circuits

Insulation Resistance—1000 megohms minimum initial between adjacent circuits

Voltage Rating—600 V AC or DC

Durability—50 cycles, mating and unmating

Technical Documents

Product Specification
108-1031 Universal MATE-N-LOK Connectors

Application Specification
114-1010 Universal MATE-N-LOK Contacts

Instruction Sheet
408-10017 Universal MATE-N-LOK Bulkhead Connectors

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Universal MATE-N-LOK Sealed Bulkhead Connectors (Continued)

Connector Housings

Material and Finish

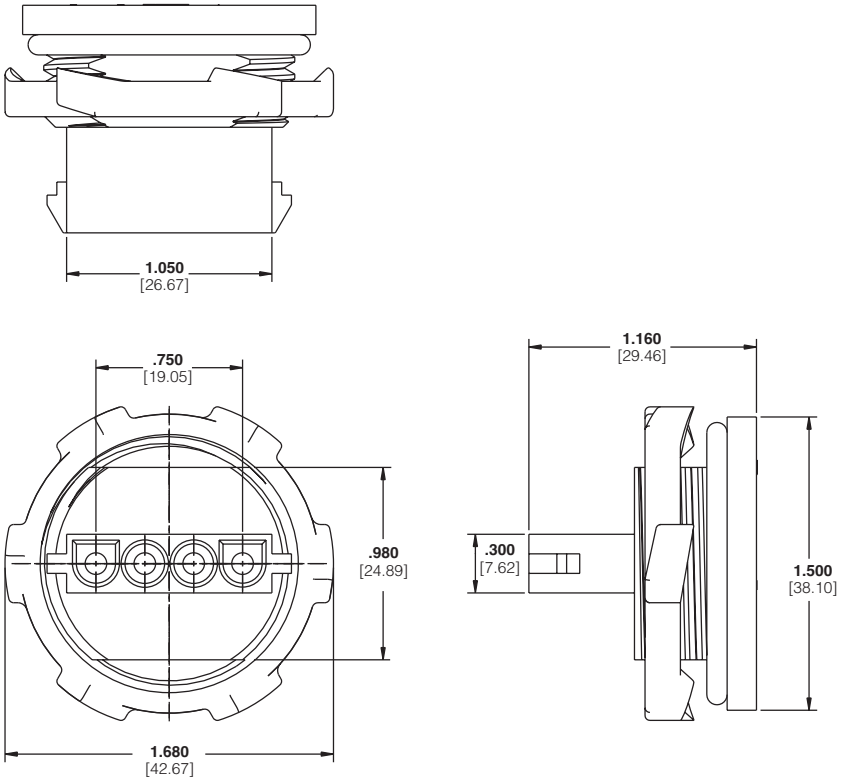
Housing—Nylon, UL 94V-0 rated

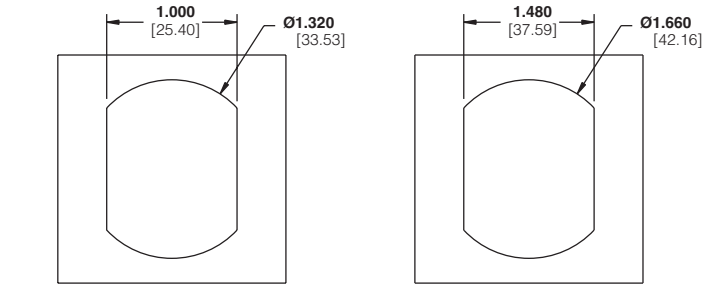
Contacts—Brass with pre-tin or gold plating

O-ring Seal—Neoprene

Locking Nut—Steel, zinc plated

4 Position Connector Housing (shown)





Recommended Panel Cut-Out for 4, 6 & 9 Position Product Only

Recommended Panel Cut-Out for 12 Position Product Only

No. of Pos.	Style	Housing Part Number
4	In Line	1604256-1
6	Matrix	1604210-1
9	Matrix	1604254-1
12	Matrix	1604941-1

Note: All part numbers are RoHS Compliant.

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UK: 44-8706-080-208

Universal MATE-N-LOK Sealed Connectors

Splash Proof Seals

Product Facts

- Economical splash proof sealed connector system
- No design changes to existing Universal MATE-N-LOK product
- Existing applications utilizing Universal MATE-N-LOK connectors can be upgraded to a splash proof system
- Utilizes two wire seals and one interface seal
- Wire range is 20-14 AWG [.5-2.0] with insulation diameter range .060-.130 [1.52-3.30]
- .110-.130 [2.79-3.30] insulation diameter passed IP56 sealing level (swirling dust and splash proof)
- .0.60-.110 [1.52-2.79] insulation diameter passed IP56 sealing level (swirling dust and splash proof)
- Universal MATE-N-LOK II keying plug can be used to seal unused circuits
- Primary application is for wire-to-wire; wire-to-board application must use a closed bottom header

Material

Silicone rubber, blue color

Technical Documents

Product Specification

108-1031 Splash Proof Seal, Universal MATE-N-LOK Connectors

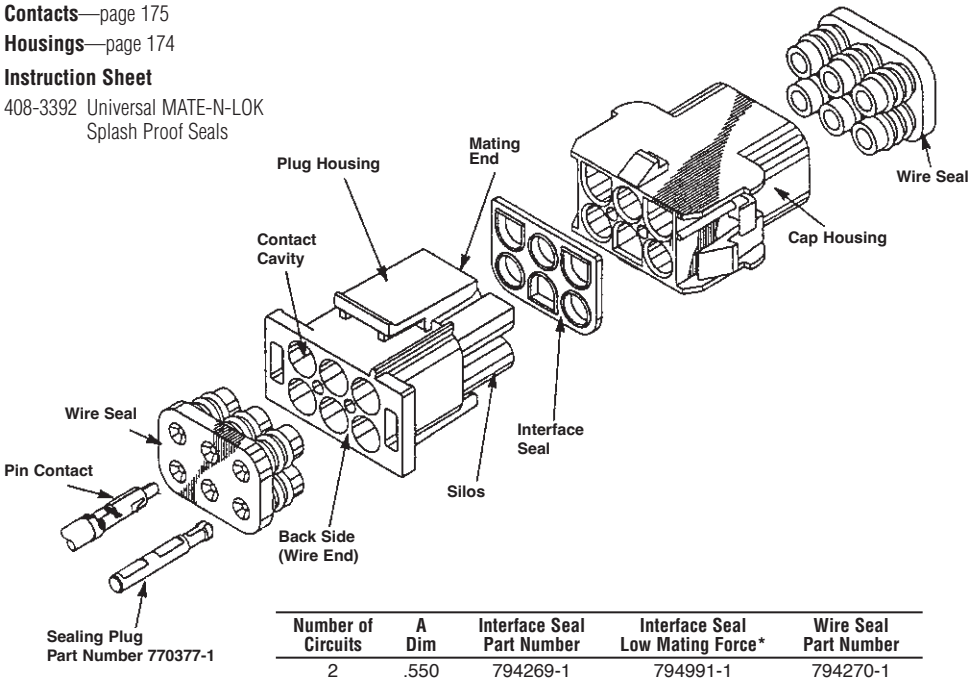
Contacts—page 175

Housings—page 174

Instruction Sheet

408-3392 Universal MATE-N-LOK Splash Proof Seals

Note: For proper use of this product, customer should make sure that Instruction Sheet 408-3392 is available for review.

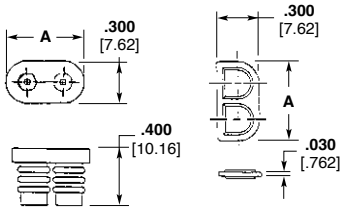


Number of Circuits	A Dim	Interface Seal Part Number	Interface Seal Low Mating Force*	Wire Seal Part Number
2	.550	794269-1	794991-1	794270-1
3	.800	794271-1	794992-1	794272-1
4	1.050	794273-1	794785-1	794274-1
6	—	794275-1	794993-1	794276-1
9	.800	794277-1	794994-1	794278-1
12	1.050	794279-1	—	794280-1
15	1.300	794281-1	—	794282-1

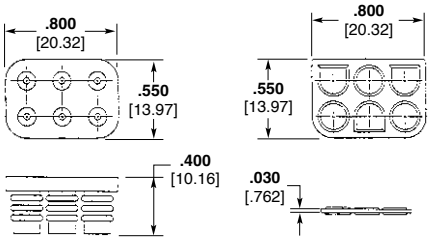
Note: One interface seal and two wire seals required per mated assembly.
*Low mating force interface seals do not meet any IP ratings.

Note: All part numbers are RoHS Compliant.

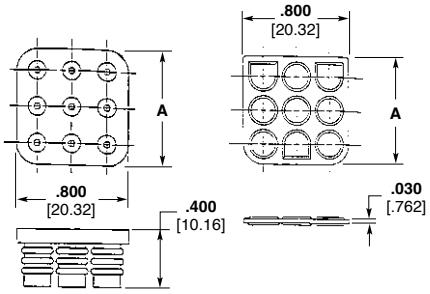
2, 3, 4 Circuit, In-Line



6 Circuit, Matrix



9, 12, and 15 Circuit, Matrix



Catalog 82181
Revised 4-08

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Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

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C. America: 52-55-1106-0803

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Universal MATE-N-LOK Sealed Connectors (Continued)

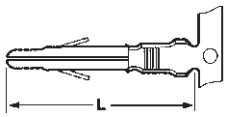
Contacts (used with Splash Proof Seals)

Solid pin diameter .084 [2.13]

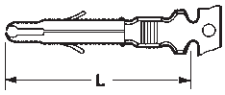
Split pin diameter .086 [2.18]

Stock thickness .012 [.305] unless otherwise noted.

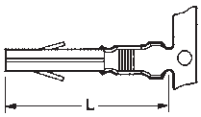
These contacts can be used in either Universal MATE-N-LOK Plug or Cap housings **only**.



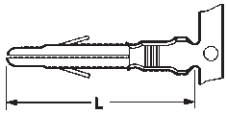
Solid Pin



Split Pin



Socket



Grounding Pin
(.100 [2.54] longer than standard pin)
(Mate first, break last, not for interrupting current)

Related Product Data

Product Specification

108-1031 Universal MATE-N-LOK Connectors

Application Specification

114-1010 Universal MATE-N-LOK Contacts

Performance Characteristics— pages 169-170
Technical Documents— pages 169 and 205-206
Application Tooling— pages 207-210
Housings—page 174

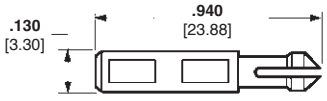
Wire Size Range AWG [mm²]	Ins. Dia. Range	L Dim. Pin	L Dim. Socket	Material & Finish	Style	Contact Part Numbers Pin Strip Form	Contact Part Numbers Pin Loose Piece	Contact Part Numbers Socket Strip Form	Contact Part Numbers Socket Loose Piece	HDM Applicator Part No.	Hand Tool Part No.
20-14 [.5-2.0]	.060-.130 1.52-3.30	.790 20.06	.760 19.30	Brass, Pre-tin	Solid	350218-1	350547-1	350536-1	350550-1	687763-1[3] 687763-2[3] 687763-6[3]	91500-1
				Brass, Gold[1]	Solid	350218-2	350547-2	350536-2	350550-2		
				Brass, Select Gold[2]	Solid	350218-7	350547-7	350536-7	350550-7		
				Phos. Brz., Pre-tin	Solid	350218-3	350547-3	350536-3	350550-3		
				Phos. Brz., Select Gold[2]	Solid	350218-6	350547-6	350536-6	350550-6		
				Brass, Pre-tin	Split	350687-1	350705-1	—	—		
				Brass, Gold[1]	Split	350687-2	350705-2	—	—		
				Brass, Select Gold[2]	Split	350687-7	350705-7	—	—		
		.890 22.60	—	Brass, Pre-Tin	Grounding	350654-1	350669-1				

[1]Gold Finish — Plated with .000030 [.000762] min. gold in mating area and inside wire barrel over .000050 [.00127] min. nickel underplate on entire contact.
[2]Select Gold Finish — Plated with .000030 [.000762] min. gold in mating area over .000050 [.00127] min. nickel underplate on entire contact.
[3]HDM Applicator part number ending in -1, is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -4 & -6 are used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.

Notes:
1. Split pins recommended for use in housings having 6, 9, 12 and 15 circuits to reduce mating force.
2. Phosphor bronze material contacts are available for use in high temperature/humidity cycling applications, consult Tyco Electronics.
3. 18-24 AWG contacts (page 166) can be used with splash proof seals if insulation diameter range is .060-.100 [1.52-2.54].

Universal MATE-N-LOK II Keying Plug/Splash Proof Sealing Plug

IS 408-3392



Part Number
UL94V-0 Nylon material — **770377-1**

Related Product Data

Housings— page 174
Technical Documents— pages 169 and 205-206



Seal Latch Tool
Part No. 794381-1
IS 408-3392



Contact Extraction Tool
Part No. 318851-1
IS 408-4371



Contact Insertion Tool (For inserting contacts applied to small diameter wire)
Part No. 91002-1
IS 408-7347

Note: **All part numbers are RoHS Compliant.**

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Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Universal MATE-N-LOK Connectors

PC Board Vertical Pin Headers

.250 [6.35] Centerline spacing

Material

Housing —
UL94V-2 Nylon, natural color
UL94V-0 Nylon

Contacts — Phosphor bronze

Solder tail diameter .062 [1.57]

Related Product Data

Product Specification

108-1053 Universal MATE-N-LOK PC Board Headers

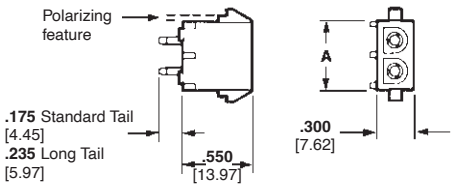
Performance Characteristics— pages 169-170
Recommended PC Board Hole Layout— page 184
Technical Documents— pages 169 and 205-206

Mating Connectors

Universal MATE-N-LOK
Plug Housings — page 174

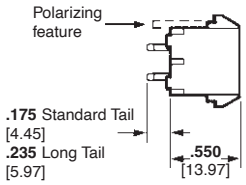
Universal MATE-N-LOK II
Plug Housings — pages 193-194

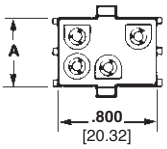
2, 3, 4, 5, 6 and 8 Circuit, In-Line



Number of Circuits	A Dim.	Flammability Rating	Pin Finish	Pin Header Part Numbers: Standard Tail[2]	Pin Header Part Numbers: Standard Tail Polarized[2]	Pin Header Part Numbers: Long Tail[3]	Mates with Plug Housing Part Number (Using Socket Contacts): Universal MATE-N-LOK	Mates with Plug Housing Part Number (Using Socket Contacts): Universal MATE-N-LOK II
2	.550 13.97	UL94V-2	Pre-tin	350428-1	641963-1	350582-1	1-480698-0	—
			Duplex[1]	350428-4	641963-3	350582-4		
		UL94V-0	Pre-tin	350786-1	641964-1 / 1-641964-1[4]	350787-1	350777-1	770017-1
			Duplex[1]	350786-3	641964-3	350787-3		
3	.800 20.32	UL94V-2	Pre-tin	350429-1	641965-1	350583-1	1-480700-0	—
			Duplex[1]	350429-4	—	350583-4		
		UL94V-0	Pre-tin	350789-1	641966-1 / 1-641966-1[4]	350790-1	350766-1	770018-1
			Duplex[1]	350789-3	—	350790-3		
4	1.050 26.67	UL94V-2	Pre-tin	350430-1	641967-1	350584-1	1-480702-0	—
			Pre-tin	770351-1[5]	—	—		
			Duplex[1]	350430-4	—	350584-4		
		UL94V-0	Pre-tin	350792-1	641968-1	350793-1	350779-1	770019-1
			Duplex[1]	350792-3	—	350793-3		
5	1.300 33.02	UL94V-2	Pre-tin	640466-1	643405-1	—	1-480763-0	—
			Duplex[1]	640466-3	—	—		
		UL94V-0	Pre-tin	640900-1	643406-1	—	350809-1	770016-1
			Duplex[1]	640900-3	—	—		
6	1.550 39.37	UL94V-2	Pre-tin	641832-1	643407-1	—	640585-1	—
		UL94V-0	Pre-tin	641831-1	643408-1	—	640581-1	—
8	2.050 52.07	UL94V-2	Pre-tin	641825-1	—	770143-1	640586-1	—
		UL94V-0	Pre-tin	641828-1	643410-1	770272-1	640582-1	—
		UL94V-0	Duplex[1]	—	643410-3	770272-3	—	—

6, 9, 12 and 15 Circuit, Matrix





Number of Circuits	A Dim.	Flammability Rating	Pin Finish	Pin Header Part Numbers: Standard Tail[2]	Pin Header Part Numbers: Standard Tail Polarized[2]	Pin Header Part Numbers: Long Tail[3]	Mates with Plug Housing Part Number (Using Socket Contacts): Universal MATE-N-LOK	Mates with Plug Housing Part Number (Using Socket Contacts): Universal MATE-N-LOK II
6	.550 13.97	UL94V-2	Pre-tin	350431-1	641969-1	350585-1	1-480704-0	—
					—	643749-1[5]		
			Duplex[1]	350431-4	—	350585-4		
		UL94V-0	Pre-tin	350711-1	641970-1 / 1-641970-1[4]	350732-1	350715-1	770020-1
			Duplex[1]	350711-4	641970-3	350732-4		
9	.800 20.32	UL94V-2	Pre-tin	350432-1	641971-1	350586-1	1-480706-0	—
			Duplex[1]	350432-4	641971-3	350586-4		
		UL94V-0	Pre-tin	350712-1	641972-1 / 1-641972-1[4]	350742-1	350720-1	770021-1
			Duplex[1]	350712-4	641972-3	350742-4		
12	1.050 26.67	UL94V-2	Pre-tin	350433-1	641973-1	350587-1	1-480708-0	—
			Duplex[1]	350433-4	—	350587-4		
		UL94V-0	Pre-tin	350713-1	641974-1 / 1-641974-1[4]	350737-1	350735-1	770022-1
			Duplex[1]	350713-4	641974-3	350737-4		
15	1.300 33.02	UL94V-2	Pre-tin	350434-1	641975-1	350588-1	1-480710-0	—
			Duplex[1]	350434-4	—	350588-4		
		UL94V-0	Pre-tin	350714-1	641976-1	350738-1	350736-1	770023-1
			Duplex[1]	350714-4	641976-4	350738-4		

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.
[2]Use Standard Tail for .062 [1.57] thick PC Board. [3]Use Long Tail for .125 [3.18] thick PC Board.
[4]Black in color. [5]No drain holes, used w/ seals, page 180. **Note:** **All part numbers are RoHS Compliant.**

Note: Header Housings on pages 182-185 are available in **colors** listed on page 188. Call Technical Support for exact Part Numbers.

Catalog 82181
Revised 4-08

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South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Universal MATE-N-LOK Connectors (Continued)

PC Board Vertical Socket Headers

.250 [6.35] Centerline spacing

Material

Housing —
UL94V-2 Nylon, natural color
UL94V-0 Nylon

Contacts — Phosphor bronze

Solder tail diameter .062 [1.57]

Related Product Data

Product Specification

108-1053 Universal MATE-N-LOK PC Board Headers

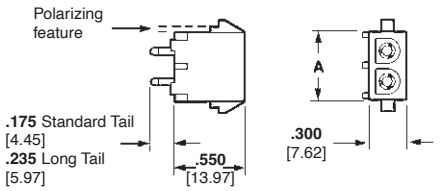
Performance Characteristics— pages 169-170
Recommended PC Board Hole Layout— page 184
Technical Documents— pages 169 and 205-206

Mating Connectors

Universal MATE-N-LOK
Plug Housings — page 174

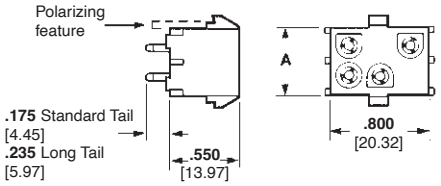
Universal MATE-N-LOK II
Plug Housings — pages 193-194

2, 3, 4, 5, and 6 Circuit, In-Line



Number of Circuits	A Dim.	Flammability Rating	Socket Finish	Socket Header Part Numbers			Mates with Plug Housing Part Number (Using Pin Contacts)	
				Standard Tail[2]	Standard Tail Polarized[2]	Long Tail[3]	Universal MATE-N-LOK	Universal MATE-N-LOK II
2	.550 13.97	UL94V-2	Pre-tin	350759-4	643411-1	350986-4	1-480698-0	—
			Duplex[1]	350759-5	—	—		
		UL94V-0	Pre-tin	350824-1	643412-1	350831-1	350777-1	770017-1
			Duplex[1]	350824-4	643412-3	—		
3	.800 20.32	UL94V-2	Pre-tin	350760-4	643413-1	350987-4	1-480700-0	—
			Duplex[1]	350760-5	—	—		
		UL94V-0	Pre-tin	350825-1	643414-1	350832-1	350766-1	770018-1
			Duplex[1]	350825-4	643414-3	350832-4		
4	1.050 26.67	UL94V-2	Pre-tin	350761-4	643415-1	350988-4	1-480702-0	—
			Duplex[1]	350761-5	—	350988-5		
		UL94V-0	Pre-tin	350826-1	643416-1	350833-1	350779-1	770019-1
			Duplex[1]	350826-4	—	350833-4		
5	1.300 33.02	UL94V-2	Pre-tin	640467-1	—	—	1-480763-0	—
			Pre-tin	640467-3	—	—		
		UL94V-0	Pre-tin	640901-1	—	—	350809-1	770016-1
			Duplex[1]	640901-3	—	—		
6	1.550 39. 37	UL94V-0	Duplex[1]	770262-3	—	—	640581-1	—

6, 9, 12 and 15 Circuit, Matrix



Number of Circuits	A Dim.	Flammability Rating	Socket Finish	Socket Header Part Numbers			Mates with Plug Housing Part Number (Using Pin Contacts)	
				Standard Tail[2]	Standard Tail Polarized[2]	Long Tail[3]	Universal MATE-N-LOK	Universal MATE-N-LOK II
6	.550 13.97	UL94V-2	Pre-tin	350762-4	643423-1	350989-4	1-480704-0	—
			Duplex[1]	350762-5	—	350989-5		
		UL94V-0	Pre-tin	350827-1	643424-1	350834-1	350715-1	770020-1
			Duplex[1]	350827-4	643424-3	350834-4		
9	.800 20.32	UL94V-2	Pre-tin	350763-4	643425-1	350990-4	1-480706-0	—
			Duplex[1]	350763-5	—	350990-5		
		UL94V-0	Pre-tin	350828-1	643426-1	350835-1	350720-1	770021-1
			Duplex[1]	350828-4	643426-3	350835-4		
12	1.050 26.67	UL94V-2	Pre-tin	350764-4	—	350991-4	1-480708-0	—
			Duplex[1]	350764-5	—	350991-5		
		UL94V-0	Pre-tin	350829-1	643428-1	350836-1	350735-1	770022-1
			Duplex[1]	350829-4	—	350836-4		
15	1.300 33.02	UL94V-2	Pre-tin	350765-4	643429-1	350992-4	1-480710-0	—
			Duplex[1]	350765-5	—	—		
		UL94V-0	Pre-tin	350830-1	643430-1	350837-1	350736-1	770023-1
			Duplex[1]	350830-4	—	350837-4		

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.
[2]Use Standard Tail for .062 [1.57] thick PC Board.
[3]Use Long Tail for .125 [3.18] thick PC Board.

Note: All part numbers are RoHS Compliant.

Note: Header Housings on pages 182-185 are available in **colors** listed on page 188. Call Technical Support for exact Part Numbers.

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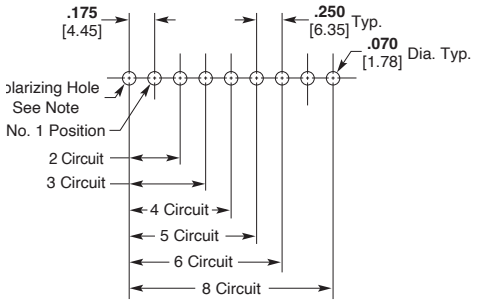
Universal MATE-N-LOK Connectors (Continued)

Recommended PC Board Hole Layouts for Pin and Socket Vertical Headers

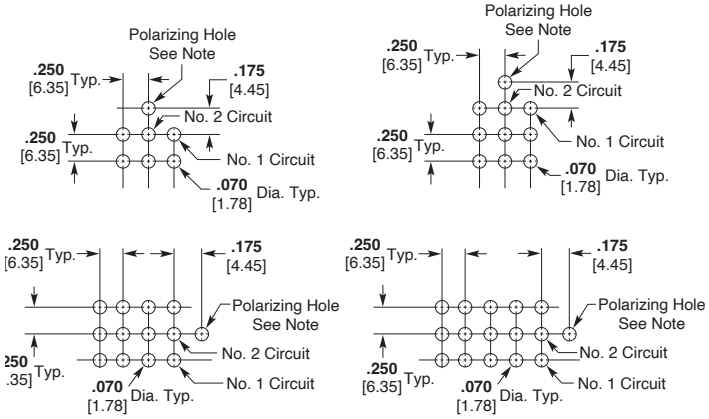
Related Product Data

Vertical Headers—pages 182-183

2, 3, 4, 5, 6 and 8 Circuit, In-Line



6, 9, 12 and 15 Circuit, Matrix



Note: Polarizing hole **.070** [1.78] Dia. required for polarized headers only.

PC Board Vertical Pin Headers with ACTION PIN Contacts

Material and Finish

Housing — PBT, black

Flammability Rating — UL94V-0

Contacts — Copper alloy, plated with tin over nickel on entire contact

Related Product Data

Performance Characteristics—pages 169-170

Technical Documents — pages 169 and 205-206

Product Specification

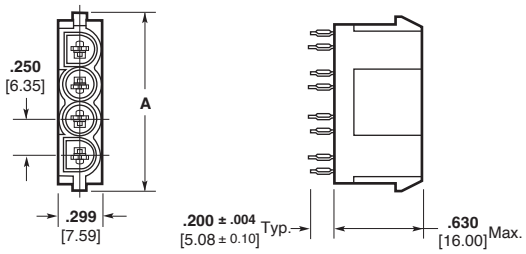
108-5222 ACTION PIN Universal MATE-N-LOK Header Assembly

Mating Connectors

Universal MATE-N-LOK
Plug Housings — page 174

Universal MATE-N-LOK II
Plug Housings — pages 193-194

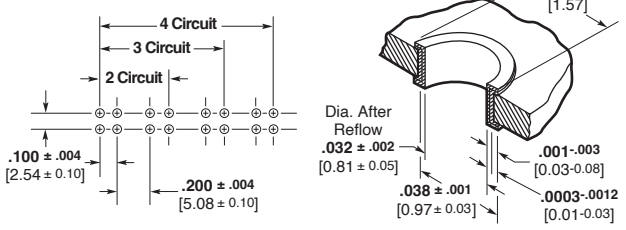
Note: Header Housings on pages 182-185 are available in **colors** listed on page 188. Call Technical Support for exact Part Numbers.



Number of Circuits	A Dim.	Part Number	Mates with Plug Housing Part Number (Using Socket Contacts)	
			Universal MATE-N-LOK	Universal MATE-N-LOK II
2	**.750** 19.05	173924-1	1-480698-0 350777-1	770017-1
3	**1.000** 25.40	173925-1	1-480700-0 350766-1	770018-1
4	**1.250** 31.75	173926-1	1-480702-0 350779-1	770019-1

Note: Install in PC Board with arbor tool.

Note: All part numbers are RoHS Compliant.



Recommended PC Board Hole Layout **PC Board Hole Dimensions**

Catalog 82181
Revised 4-08

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Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

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USA: 1-800-522-6752
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Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Universal MATE-N-LOK Connectors (Continued)

PC Board Right-Angle Pin and Socket Headers

.250 [6.35] Centerline spacing

Material

Housing — Nylon

Contacts — Phosphor bronze

Solder tail width .052 [1.32]

Related Product Data

Product Specification

108-1053 Universal MATE-N-LOK PC Board Headers

Performance Characteristics— pages 169-170

Technical Documents— pages 169 and 205-206

Mating Connectors

Universal MATE-N-LOK

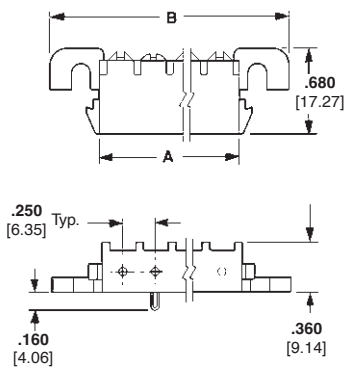
Plug Housings — page 174

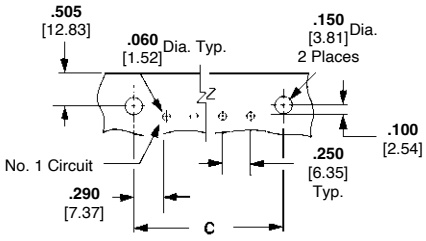
Universal MATE-N-LOK II

Plug Housings — pages 193-194

Note: Header Housings on pages 182-185 are available in **colors** listed on page 188. Call Technical Support for exact Part Numbers.

2, 3, 4, 5, 6 and 8 Circuit, In-line





Use 6-32 UNC Pan Head Screw
3/8 [9.53] long for mounting
(Not Supplied)

Recommended PC Board Hole Layout
.062 [1.57] Board Thickness

No. of Circuits	Dimensions A	B	C	Contact Finish	Right-Angle Header Part Numbers UL94V-2 Pin	Socket	Mates with	UL94V-0 Pin	Socket	Mates with Universal MATE-N-LOK	Mates with Universal MATE-N-LOK II
2	.550 13.97	1.245 31.62	.830 21.08	Pre-tin	—	—	—	1-350942-0	643226-1	350777-1	770017-1
								770994-1[2]	—		
				Duplex[1]	—	—	—	3-350942-0	—		
3	.800 20.32	1.495 37.97	1.080 27.43	Pre-tin	—	—	—	1-350943-0	643228-1	350766-1	770018-1
				Duplex[1]	—	—		3-350943-0	3-643228-0		
4	1.050 26.67	1.745 44.32	1.330 33.78	Pre-tin	1-350948-0	—	1-480702-0	1-350944-0	643230-1	350779-1	770019-1
				Duplex[1]	—	—		3-350944-0	3-643230-0		
5	1.300 33.02	1.995 50.67	1.580 40.13	Pre-tin	1-350949-0	—	1-480763-0	1-350945-0	643232-1	350809-1	770016-1
				Duplex[1]	—	—		3-350945-0	3-643232-0		
6	1.550 39.37	2.245 57.02	1.830 46.48	Pre-tin	640587-1	643235-1	640585-1	640583-1	643234-1	640581-1	—
				Duplex[1]	—			640583-3	3-643234-0		
8	2.050 52.07	2.745 69.72	2.330 59.18	Pre-tin	—	643237-1	640586-1	640584-1	643236-1	640582-1	—
				Duplex[1]	—			640584-3	3-643236-0		

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact. [2]Black in color.

Test Connectors (with spring loaded contacts)

Material

Housing — Nylon

Flammability Rating — UL94V-0

Related Product Data

Mating Connectors — Housings and headers having the same number of circuits. The housings can have pin or socket contacts, or a combination of both.

Mating Housings — page 174

Mating Headers — pages 182-185

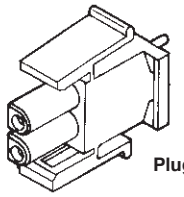
Other Mating Connectors

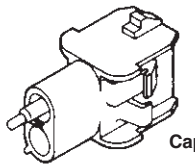
Universal MATE-N-LOK II Housings— pages 193-194

Notes:

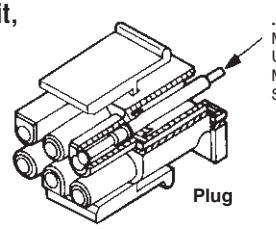
1. Test probes have 5 amp maximum current rating. 1,000,000 cycles.
2. Test Connector housings are of the same configuration as standard housings. Refer to page 23 for dimensional specifications.

2, 3, 4 and 5 Circuit, In-Line

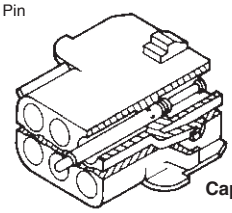

Plug


Cap

6, 9, 12 and 15 Circuit, Matrix



Plug


Cap

Number of Circuits	Part Numbers Plug	Cap
2	350848-2	350849-2
3	350848-3	350849-3
4	350848-4	350849-4
5	350848-5	350849-5
6	350848-6	350849-6
9	350848-9	350849-9
12	1-350848-2	1-350849-2
15	1-350848-5	1-350849-5

Note: All part numbers are RoHS Compliant.

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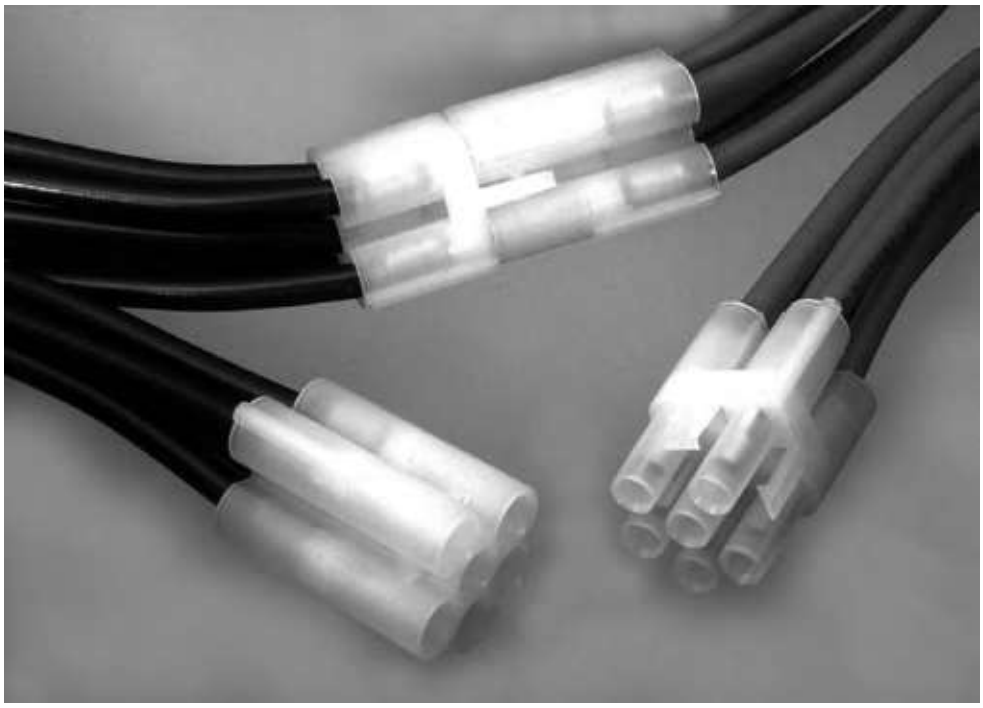
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C. America: 52-55-1106-0803

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Universal MATE-N-LOK Circular Connectors



Product Facts

- Unique product designed to accommodate the specific needs of the lighting industry
- Circular design allows the connector to pass through 7/8 inch knock-out holes in electrical fixtures and boxes
- 6-position accommodates most major electrical industry requirements
- Universal MATE-N-LOK connector centerline spacing maintains UL and CSA approvals
- Uses standard Universal MATE-N-LOK contacts and application tooling
- Positive polarized housing helps prevent incorrect mating
- UL Recognized, File No. E28476
- CSA Certified, File No. LR7189

Applications

- Primary applications are in the Lighting, Vending, and Appliance industries
- Applications where use of a completed harness that will pass through a 7/8 inch knock-out is required
- Provides the capability to quickly disconnect individual fixtures from sensitive environmental areas and perform maintenance at other sites
- Not for interrupting current

Performance Characteristics

Voltage—600 V AC or DC

Current—20 amps maximum per UL-1977 (6 position, fully energized)

Dielectric Withstanding Voltage—5 KVAC or KVDC

Insulation Resistance—1000 MΩ max. between adjacent circuits

Durability—50 cycles mating and unmating

Contact Retention—15 lb. minimum per contact

Technical Documents

Product Specification
108-2069 Universal MATE-N-LOK Circular Connector

Application Specification
114-1010 Universal MATE-N-LOK Connectors

Catalog 82181
Revised 4-08

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Dimensions are in inches and millimeters unless otherwise specified. Values in brackets are metric equivalents.

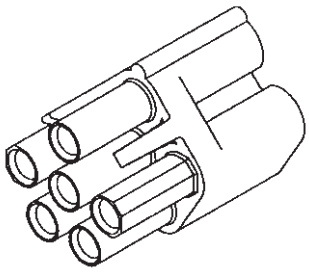
Dimensions are shown for reference purposes only. Specifications subject to change.

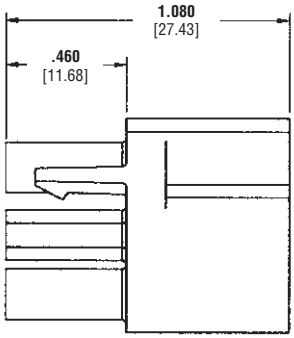
USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

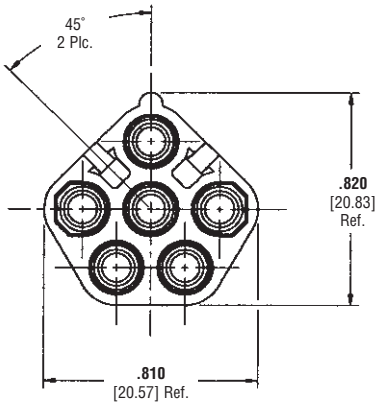
South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Universal MATE-N-LOK Circular Connectors (Continued)

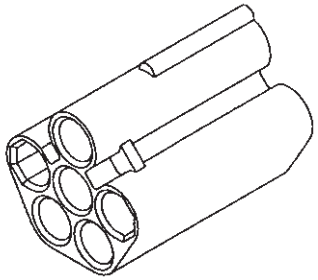
Plug
Part No. 794911-1

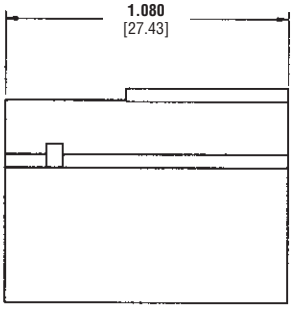


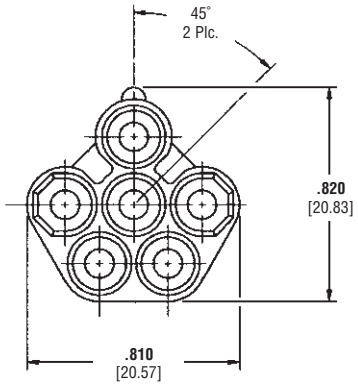




Cap
Part No. 794912-1







Material and Finish
Housings—Nylon, UL 94V-2 rated

Related Product Data
Contacts—pages 172-173

Note: **All part numbers are RoHS Compliant.**

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Universal MATE-N-LOK Connectors — Available in Colors

Note: See corresponding Universal MATE-N-LOK Plug and Cap Housing Base Part Numbers on page 175.

Header Housings on pages 182-185 are also available in **colors**. Call Technical Support for exact Part Numbers.

Base Part Number	No. of Circuits	Housing	Material
480698	2	Plug	V-2
480699	2	Cap	V-2
480700	3	Plug	V-2
480701	3	Cap	V-2
480702	4	Plug	V-2
480703	4	Cap	V-2
480763*	5	Plug*	V-2
480764*	5	Cap*	V-2
480704	6	Plug	V-2
480705	6	Cap	V-2
480706	9	Plug	V-2
480707	9	Cap	V-2
480708	12	Plug	V-2
480709	12	Cap	V-2
480710	15	Plug	V-2
480711	15	Cap	V-2
350777	2	Plug	V-0
350778	2	Cap	V-0
350766	3	Plug	V-0
350767	3	Cap	V-0
350799	4	Plug	V-0
350780	4	Cap	V-0
350809	5	Plug	V-0
350810	5	Cap	V-0
350715	6	Plug	V-0
350781	6	Cap	V-0
350720	9	Plug	V-0
350782	9	Cap	V-0
350735	12	Plug	V-0
350783	12	Cap	V-0
350736	15	Plug	V-0
350784	15	Cap	V-0

Dash Number	Color
1-xxxxxx-0	Natural
1-xxxxxx-1	Brown
1-xxxxxx-2	Red
1-xxxxxx-3	Orange
1-xxxxxx-4	Yellow
1-xxxxxx-5	Green
1-xxxxxx-6	Blue
1-xxxxxx-8	Gray
1-xxxxxx-9	Black

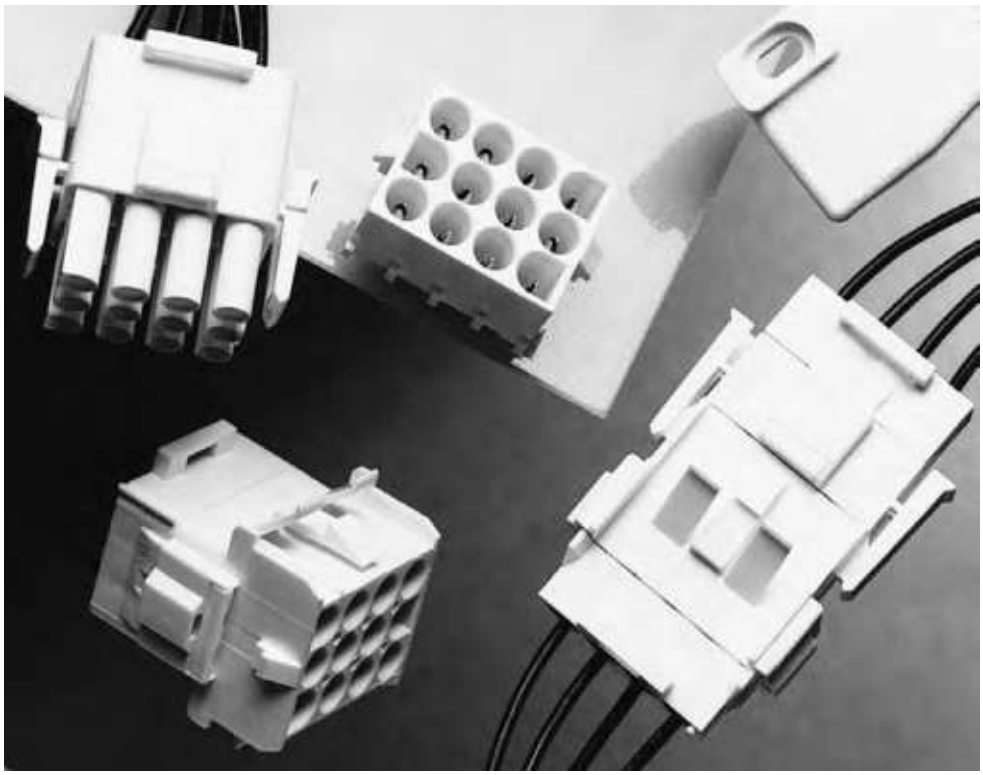
*** Special for Base Part Numbers 480763 and 480764**

Dash Number	Color
xxxxxx-1	Natural
1-xxxxxx-1	Brown
1-xxxxxx-2	Red
1-xxxxxx-3	Orange
1-xxxxxx-4	Yellow
1-xxxxxx-5	Green
1-xxxxxx-6	Blue
1-xxxxxx-8	Gray
1-xxxxxx-9	Black

Universal MATE-N-LOK II Connectors

Product Facts

- High reliability
- For use where repair or replacement would be difficult
- Pins and sockets can be intermixed in the same housing
- Available in 2 through 15 circuit sizes for free-hanging or panel mount wire-to-wire connection
- Mate with standard Universal MATE-N-LOK Housings and PC Board Headers
- Uses standard Universal MATE-N-LOK panel cutouts and strain reliefs
- Polarized housings available in UL94V-0 flammability rated material
- Enclosed contacts for shock protection
- F-Crimp terminals accept 30-10 AWG [.05-5.0 mm²] wire sizes
- Contacts available in strip and loose form
- Lanceless contacts for tangle-free handling
- Insulation capability to .200 [5.08] diameter
- Connector design provides for complete contact insertion
- Three-point stabilization precisely controls contact alignment, minimizing stubbing
- Tin or duplex gold plated contacts
- Contacts are on .250 [6.35] centerline spacing
- Not for interrupting current
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association, File No. LR 7189
- Passed test by VDE under their Registration Number 3980/Continuous Surveillance



Performance Characteristics

The Universal MATE-N-LOK II Connector performance characteristics found on pages 189-190 are based on free-hanging and panel mount connectors, loaded with contacts crimped on stranded wire.

Dielectric Withstanding Voltage—5.0 KV AC or DC between adjacent circuits initially

Insulation Resistance—1000 megohms minimum between adjacent circuits

Voltage Rating—600 V AC or DC

Connector Mating—Split Pin—1.5 lb. max. per circuit

Connector Unmating—Split Pin—.5 lb. min. per circuit

Contact Insertion Force—3.0 lb. max. per contact unassembled

Contact Retention—35 lb. min. per contact

Durability—50 cycles, mating and unmating

Technical Documents

Product Specification

108-1090 Universal MATE-N-LOK II Connectors

Application Specification

114-1043 Universal MATE-N-LOK II Connectors

Instruction Sheet

408-3200 Housing, Contacts and Accessories

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UK: 44-8706-080-208

Universal MATE-N-LOK II Connectors (Continued)

Performance Characteristics (Continued)

Maximum Current—Maximum current rating of Universal MATE-N-LOK II connectors is limited by the maximum operating temperature of the housings which is 120°C including the temperature rise of the contacts which is a maximum of 30°C. There are several variables which have a direct effect on this maximum current-carrying capability for a given connector and must be considered for each application. These variables are:

Wire Size—Larger diameter wire will carry more current since it has less internal resistance to current flow and thus generates less heat. Longer wire lengths also enhance current carrying capabilities since the wire conducts heat away from the connector.

Connector Size—In general, the more circuits in a connector, the less current can be carried.

Ambient Temperature—The higher the ambient temperature, the less current can be carried in any given connector.

Universal MATE-N-LOK II connectors also will withstand the following tests:

Vibration—10-55-10 cycles per minute at .06 inch total excursion

Physical Shock—18 drops, 50 g sawtooth at 10 milliseconds

Housing Panel Retention—75 lb. min.

Housing Lock Strength—35 lb. min.

Thermal Shock— -55°C to +85°C

Temperature-Humidity Cycling—25°C to 65°C at 95 RH

Corrosion—48 hr. at 5% salt concentration

Related Product Data

Product Specification

108-1090 Universal MATE-N-LOK II Connectors

Current Rating Verification for 30°C Maximum Temperature Rise 100% Energized

Wire-to-Wire

Calculated Current Table

Number of Circuits	Wire Gauge									
	10	12	14	16	18	20	22	24	26	30
2	19.00	18.00	17.00	14.50	13.00	10.00	8.00	6.50	5.50	3.50
3	17.50	16.50	15.50	13.00	12.00	9.00	7.50	6.00	5.00	3.00
4	16.50	15.50	15.00	12.50	11.00	8.50	7.00	5.50	4.50	3.00
5	16.00	15.00	14.00	12.00	10.50	8.00	6.50	5.50	4.50	3.00
6 Matrix	15.00	14.00	13.00	11.00	9.50	7.50	6.00	5.00	4.00	2.50
8	14.50	14.00	13.00	10.50	9.50	7.50	6.00	5.00	4.00	2.50
9	13.50	12.50	11.50	9.50	8.50	6.50	5.50	4.50	3.50	2.00
10	14.00	13.00	12.50	10.00	9.00	7.00	5.50	4.50	3.50	2.50
12	12.50	12.00	11.00	9.00	8.00	6.00	5.00	4.00	3.00	2.00
15	12.00	11.50	10.00	8.50	7.50	6.00	4.50	4.00	3.00	2.00

Values are based on initial Temperature Rise versus Current Testing and are intended to be a guide in the selection of a connector family. All applications should be tested by the end user. The values listed are per circuit for fully loaded housings being 100% energized. **Note:** All combinations were not tested, and this chart contains interpolated and extrapolated values.

Minimum Wire Lengths for T-Rise vs. Current Testing

AWG	Min. Length (in.)	AWG	Min. Length (in.)
30	2.6	18	9.4
28	3.2	16	11.3
26	4.1	14	13.7
24	5.1	12	16.4
20	7.8	10	19.3

Note: If wire lengths used are less than those listed above, the current carrying ability of the system will be reduced due to less heat being conducted away from the connector. The customer should fully test all applications.

Wire-to-Board

Due to the vast differences in trace geometry and printed circuit board configurations, we are unable to provide a separate current carrying chart for our printed circuit board header products. However, the above Wire-to-Wire charts may be used as a guideline for headers if the trace width and thickness is equal to the listed wire gauge. For vertical headers, only 95% of the Wire-to-Wire value should be used. For right-angle headers, only 75% of the Wire-to-Wire value should be used. The chart values are only a tool for connector selection and will require the customer to fully test their application.

Termination Resistance/Contact Crimp Tensile Force

Wire Size		Termination Resistance		Contact Crimp Tensile Force	
AWG	mm^2	Test Current (Amps)	Resistance Milliohms (Max. Init.)	Force (Min.) lbs.	Force (Min.) N
30	.05	—	—	1.5	7
28	.08	—	—	3	13
26	.12	—	—	5	22
24	.2	1.5	3.50	7	31
22	.3	3	3.50	12	53
20	.5	4.5	3.00	17	66
18	.8	6	3.00	30	133
16	1.2	8	2.75	45	200
14	2.0	10	2.75	50	222
12	3.0	—	—	60	267
10	5.0	—	—	70	311

Note: This is the total resistance between wire crimps of a mated pin and socket.

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Universal MATE-N-LOK II Connectors (Continued)

Universal MATE-N-LOK II Connector Mating Combinations

Connector Part Number				Mating Connector Part Number									
						PC Board Headers							
						Vertical Pin[2]			Vertical Socket[2]			Right-Angle[2]	
Number of Circuits	Flammability Rating	Style	Plug Kit Part Number[2]	Cap Kit Part Number[2]	Plating	Standard Tail	Standard Tail Polarized	Long Tail	Standard Tail	Standard Tail Polarized	Long Tail	Pin	Socket
2	UL94V-0	In-Line	770017-1	770024-1	Pre-tin	350786-1	641964-1	350787-1	350824-1	643412-1	350831-1	1-350942-0	643226-1
					Duplex[1]	350786-3	641964-3	350787-3	350824-4	643412-3	—	3-350942-0	—
3	UL94V-0	In-Line	770018-1	770025-1	Pre-tin	350789-1	641966-1	350790-1	350825-1	643414-1	350832-1	1-350943-0	643228-1
					Duplex[1]	350789-3	—	350790-3	350825-4	643414-3	350832-4	3-350943-0	3-643228-0
4	UL94V-0	In-Line	770019-1	770026-1	Pre-tin	350792-1	641968-1	350793-1	350826-1	643416-1	350833-1	1-350944-0	643230-1
					Duplex[1]	350792-3	—	350793-3	350826-4	—	350833-4	3-350944-0	3-643230-0
5	UL94V-0	In-Line	770016-1	—	Pre-tin	640900-1	643406-1	—	640901-1	—	—	1-350945-0	643232-1
					Duplex[1]	640900-3	—	—	640901-3	—	—	3-350945-0	3-643232-0
6	UL94V-0	Matrix	770020-1	770027-1	Pre-tin	350711-1	641970-1	350732-1	350827-1	643424-1	350834-1	—	—
					Duplex[1]	350711-4	641970-3	350732-4	350827-4	643424-3	350834-4	—	—
9	UL94V-0	Matrix	770021-1	770028-1	Pre-tin	350712-1	641972-1	350742-1	350828-1	643426-1	350835-1	—	—
					Duplex[1]	350712-4	641972-3	350742-4	350828-4	643426-3	350835-4	—	—
12	UL94V-0	Matrix	770022-1	770029-1	Pre-tin	350713-1	641974-1	350737-1	350829-1	643428-1	350836-1	—	—
					Duplex[1]	350713-4	641974-3	350737-4	350829-4	—	350836-4	—	—
15	UL94V-0	Matrix	770023-1	770030-1	Pre-tin	350714-1	641976-1	350738-1	350830-1	643430-1	350837-1	—	—
					Duplex[1]	350714-4	641976-4	350738-4	350830-4	—	350837-4	—	—

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.
[2]Universal MATE-N-LOK II Plug and Cap housings accept pin or socket contacts. Use the appropriate contacts in the Plug housing as required by the mating component.

Note: All part numbers are RoHS Compliant.

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UK: 44-8706-080-208

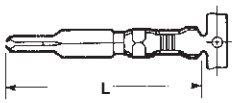
Universal MATE-N-LOK II Connectors (Continued)

Contacts

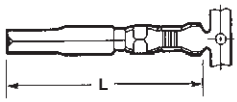
Split pin diameter .086 [2.18]
Stock thickness .012 [.305]
These contacts can be used in either Universal MATE-N-LOK II Plug or Cap housings.

Related Product Data

Product Specification
108-1090 Universal MATE-N-LOK II Connectors
Application Specification
114-1043 Universal MATE-N-LOK II Contacts
Performance Characteristics— pages 189-190
Housings— pages 193-194
Technical Documents— pages 189 and 205-206
Application Tooling— pages 207-210



Pin



Socket

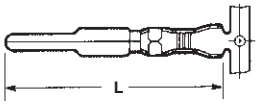
Wire Size Range AWG [mm²]	Ins. Dia. Range	L Dim. Pin	L Dim. Socket	Material & Finish	Contact Part Numbers Pin Strip Form	Contact Part Numbers Pin Loose Piece	Contact Part Numbers Socket Strip Form	Contact Part Numbers Socket Loose Piece	HDM Applicator Part No.	Hand Tool Part No.
30-26 [.05-.12]	**.032-.057** .813-1.45	**1.005** 25.53	**.980** 24.90	Phos. Brz. Gold[1]	770011-6	770512-6	770012-6	770416-6	567252-1[6] 567252-4[6]	58439-1
24-18 [.2-.8]	**.040-100** 1.02-2.54	**1.005** 25.53	**.980** 24.90	Brass. Pre-tin	770009-1	770252-1	—	—	567214-1[6] 567214-2[6] 567214-4[6]	91510-1
				Brass. Duplex[2]	1-770009-0	1-770252-0	—	—		
				Phos. Brz. Pre-tin	—	—	770010-3	770253-3		
				Phos. Brz. Duplex[2]	—	—	1-770010-0	1-770253-0		
20-14 [.5-2.0]	**.060-.130** 1.52-3.30	**1.005** 25.53	**.980** 24.90	Brass. Pre-tin	770007-1	770250-1	—	—	567213-1[6] 567213-2[6] 567213-4[6]	91500-1
				Brass. Duplex[2]	1-770007-0	1-770250-0	—	—		
				Phos. Brz. Pre-tin	—	—	770008-3	770251-3		
				Phos. Brz. Duplex[2]	—	—	1-770008-0	1-770251-0		
	.130-.200 3.30-5.08	**.995** 25.27	**.970** 24.63	Brass. Pre-tin	770005-1	770248-1	—	—	567212-1[6] 567212-2[6] 567212-4[6]	91508-1[4] 91506-1[4]
				Brass. Duplex[2]	1-770005-0	1-770248-0	—	—		
				Phos. Brz. Pre-tin	770005-3	—	770006-3	770249-3		
				Phos. Brz. Duplex[2]	1-770005-1	—	1-770006-0	1-770249-0		
12-10 [3.0-5.0]	**.200 max.**[3] 5.08	**1.005** 25.53	**.980** 24.90	Phos. Brz. Pre-tin	770003-3	770246-3	770004-3	770247-3	567211-1[6] 567211-2[6] 567211-4[6]	69710-1[5]
				Phos. Brz. Duplex[2]	1-770003-0	1-770246-0	1-770004-0	1-770247-0		

[1]Gold Finish — Plated with .000030 [.000762] min. gold in mating area and inside wire barrel over .000050 [.00127] min. nickel underplate on entire contact.
[2]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area and .000050 [.00127] min. tin in crimp area over .000050 [.00127] min. nickel underplate on entire contact.
[3]There is no insulation barrel on this contact. Insulation maximum diameter is limited by the housing. Use of strain relief is recommended with these contacts.
[4]Use Hand Tool No. **91508-1** for 20–18 AWG and No. **91506-1** for 16–14 AWG.
[5]Hand Tool No. 69710-1 uses die set No. **58380-1** for 12 AWG and No. **58380-2** for 10 AWG.
[6]HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -4 is used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.

Grounding Pin

(Mate first, break last, not for interrupting current)

Solid pin diameter .084 [2.13]
.100 [2.54] longer than standard pin
Stock thickness .012 [.304]
These contacts can be used in either Universal MATE-N-LOK II Plug or Cap housings only.



Wire Size Range AWG [mm²]	Ins. Dia. Range	L Dim.	Material & Finish	Contact Part Numbers Strip Form	Contact Part Numbers Loose Piece	HDM Applicator Part No.	Hand Tool Part No.
20-14 [.5-2.0]	**.060-.130** 1.52-3.30	**1.105** 25.53	Brass. Pre-tin	770193-1	770254-1	567213-1[3] 567213-2[3] 567213-4[3]	91500-1
			Brass. Duplex[1]	1-770193-0	1-770254-0		
	.130-.200 3.30-5.08	**1.085** 27.56	Brass. Pre-tin	770194-1	770255-1	567212-1[3] 567212-2[3] 567212-4[3]	91508-1[2] 91506-1[2]
			Brass. Duplex[1]	1-770194-0	1-770255-0		

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area and .000050 [.00127] min. tin in crimp area over .000050 [.00127] min. nickel underplate on entire contact.
[2]Use Hand Tool No. **91508-1** for 20–18 AWG and No. **91506-1** for 16–14 AWG.
[3]HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -4 is used on AMP-O-LECTRIC Model G Machine. See pages 207-210 for further information.


Latch Disengaging Tool
Part No. 58382-1
IS 408-9436


Contact Extraction Tool
(For extracting contacts crimped on 24 AWG or smaller wire)
Part No. 318851-1
IS 408-4371


Contact Insertion Tool
(For inserting contacts applied to small diameter wire)
Part No. 91002-1
IS 408-7347

Note: **All part numbers are RoHS Compliant.**

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Universal MATE-N-LOK II Connectors (Continued)

Housing Kits

Free-Hanging or Panel Mount

.250 [6.35] Centerline spacing

Material — Nylon
Flammability Rating — UL 94V-0

Related Product Data

Product Specification

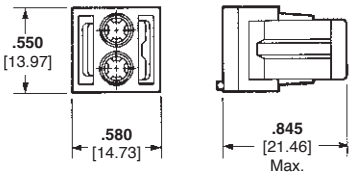
108-1090 Universal MATE-N-LOK II Connectors

Performance Characteristics— pages 189-190
Contacts— page 192
Panel Cutout Recommendations— page 195
Keying Plug— page 196
Strain Reliefs— page 196
Kit Components— page 195
Technical Documents— pages 189 and 205-206

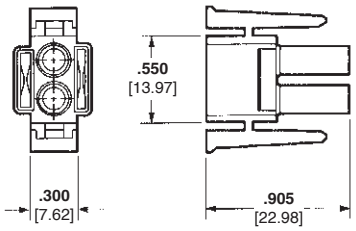
Other Mating Connectors

Universal MATE-N-LOK Housings — page 175
Universal MATE-N-LOK Headers — pages 182-183 and 185
Universal MATE-N-LOK Test Connectors — page 185

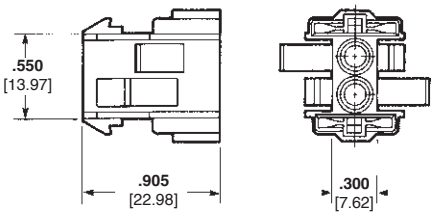
2 Circuit, In-line



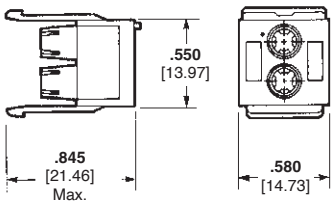
Plug Rear



Plug Front

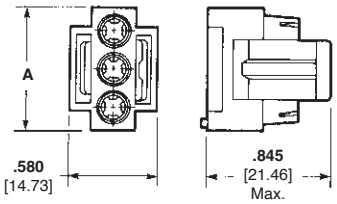


Cap Front

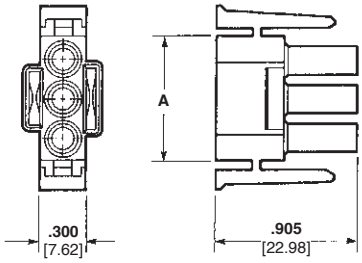


Cap Rear

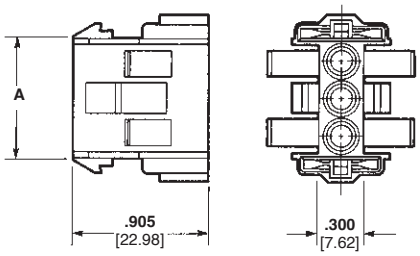
3, 4 and 5 Circuit, In-Line



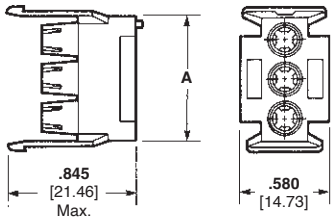
Plug Rear



Plug Front



Cap Front



Cap Rear

Number of Circuits	A Dim.	Kit Part Numbers (Includes Front and Rear)	
		Plug	Cap
2	—	770017-1	770024-1
3	**.800** 20.32	770018-1	770025-1
4	**1.050** 26.67	770019-1	770026-1
5	**1.300** 33.02	770016-1[4]	—

Notes:
1. Kits consist of a front and rear component.
2. Kit components can be purchased separately. Page 195.
3. Packaging: Bulk — 250 each component per poly bag/box.
4. Mates with standard Universal MATE-N-LOK cap housing P/N 350810-1 and 640900-X or 640901-X Vertical headers.

Note: **All part numbers are RoHS Compliant.**

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Universal MATE-N-LOK II Connectors (Continued)

Housing Kits

Free-Hanging or Panel Mount

.250 [6.35] Centerline spacing

Material — Nylon
Flammability Rating — UL 94V-0

Related Product Data

Product Specification

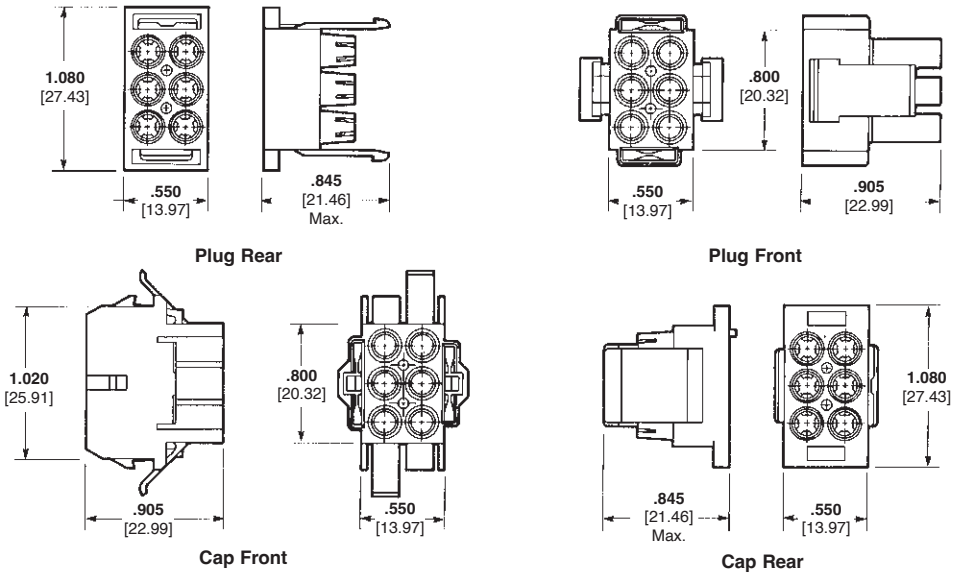
108-1090 Universal MATE-N-LOK II Connectors

Performance Characteristics— pages 189-190
Contacts— page 192
Panel Cutout Recommendations— page 195
Keying Plug— page 196
Strain Reliefs— page 196
Kit Components— page 195
Technical Documents— pages 189 and 205-206

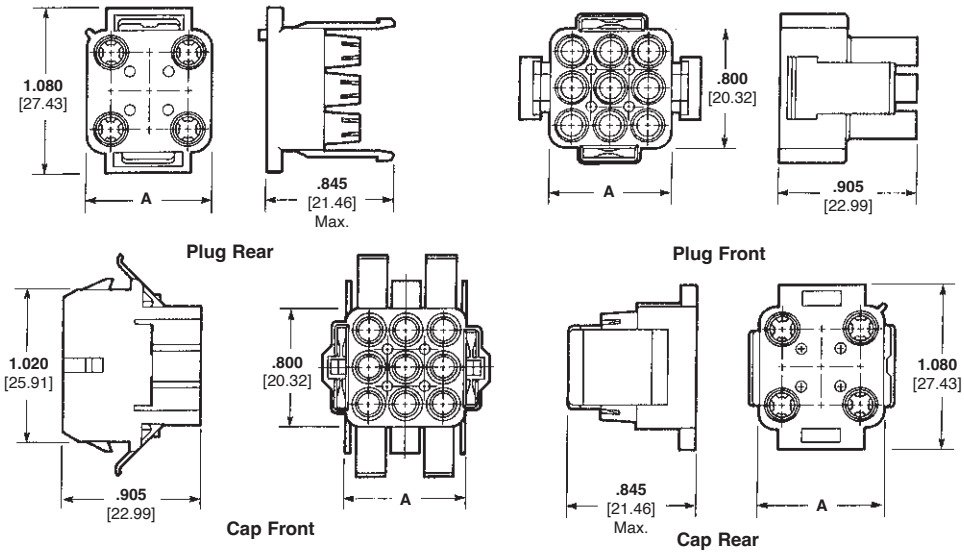
Other Mating Connectors

Universal MATE-N-LOK Housings — page 176
Universal MATE-N-LOK Headers — pages 182-183 and 185
Universal MATE-N-LOK Test Connectors — page 185

6 Circuit, Matrix



9, 12 and 15 Circuit, Matrix



Number of Circuits	A Dim.	Kit Part Numbers (Includes Front and Rear)	
		Plug	Cap
6	—	770020-1	770027-1
9	**.800** 20.32	770021-1	770028-1
12	**1.050** 26.67	770022-1	770029-1
15	**1.300** 33.02	770023-1	770030-1

Notes:
1. Kits consist of a front and rear component.
2. Kit components can be purchased separately. Page 195.
3. Packaging: Bulk — 250 each component per poly bag/box.

Note: **All part numbers are RoHS Compliant.**

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Universal MATE-N-LOK II Connectors (Continued)

Housing Components

Free-Hanging or Panel Mount

.250 [6.35] Centerline spacing

Material — Nylon
Flammability Rating — UL 94V-0

Related Product Data

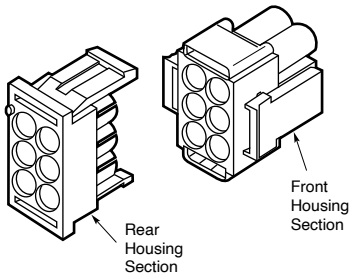
Product Specification

108-1090 Universal MATE-N-LOK II Connectors

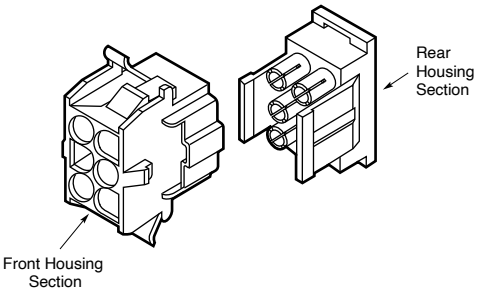
Performance Characteristics— pages 189-190
Contacts— page 192
Illustrations and Dimensions— pages 193-194
Panel Cutout Recommendations— page 195
Keying Plug— page 196
Strain Reliefs— page 196
Technical Documents— pages 189 and 205-206

Other Mating Connectors

Universal MATE-N-LOK Connectors — page 176
Universal MATE-N-LOK Headers — pages 182-183 and 185
Universal MATE-N-LOK Test Connectors — page 185



Plug Housing



Cap Housing

Number of Circuits	Kit Component Part Numbers					
	Plug			Cap		
	Kit	Front	Rear	Kit	Front	Rear
2	770017-1	770031-1	770032-1	770024-1	770045-1	770046-1
3	770018-1	770033-1	770034-1	770025-1	770047-1	770048-1
4	770019-1	770035-1	770036-1	770026-1	770049-1	770050-1
5	770016-1	770319-1	770320-1	—	—	—
6	770020-1	770037-1	770038-1	770027-1	770051-1	770052-1
9	770021-1	770039-1	770040-1	770028-1	770053-1	770054-1
12	770022-1	770041-1	770042-1	770029-1	770055-1	770056-1
15	770023-1	770043-1	770044-1	770030-1	770057-1	770058-1

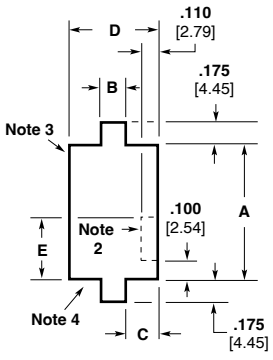
Notes:
1. Kits consist of a front and rear component.
2. Kit components can be purchased separately.

Note: All part numbers are RoHS Compliant.

Recommended Cap Housing Panel Cutouts

View is from cap entry side

Refer to Application Specification 114-1043



Number of Circuits	Dimensions				
	A	B	C	D	E
2	.565 14.35	.340 8.63	.095 2.41	.530 13.46	.250 6.35
3	.815 20.70	.340 8.63	.095 2.41	.530 13.46	.250 6.35
4	1.065 27.05	.340 8.63	.095 2.41	.530 13.46	.250 6.35
6	.565 14.35	.480 12.19	.275 6.99	1.030 26.16	.250 6.35
9	.815 20.70	.480 12.19	.275 6.99	1.030 26.16	.250 6.35
12	1.065 27.05	.480 12.19	.275 6.99	1.030 26.16	.350 8.89
15	1.315 33.40	.480 12.19	.275 6.99	1.030 26.16	.350 8.89

Notes:
1. Recommended panel thickness — .030-.090 [.762-2.286]. Panel must be punched so that housing enters panel in same direction as the punch.
2. Optional — Do not remove this material when keying cap housing to panel.
3. Circuit #1 location when using panel keying with 6, 9, 12 and 15 circuit housings.
4. Circuit #1 location when using panel keying with 2, 3, and 4 circuit housings.

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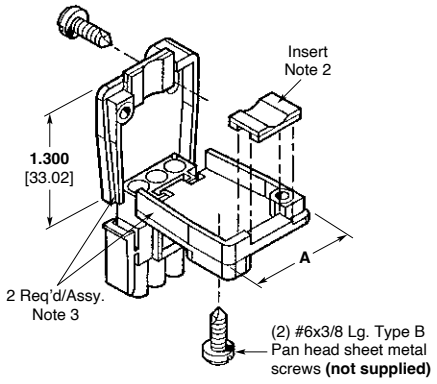
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Universal MATE-N-LOK II Connectors (Continued)

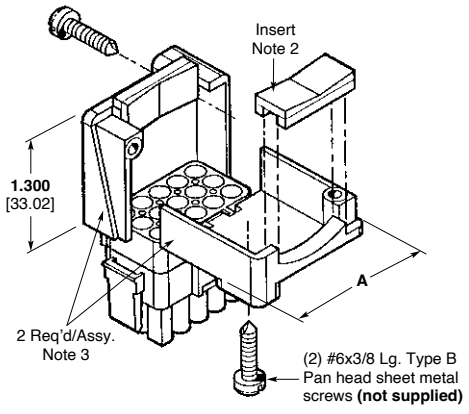
Plug or Cap Housing Strain Reliefs
IS 408-3320

Material — Nylon
Flammability Rating — UL 94V-0

2, 3, 4, 5, 6, 9, 12 and 15 Circuit (Enclosed)



In-Line

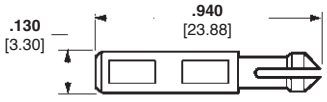


Matrix

Style	Number of Circuits	A Dim.	Insert Supplied	Single Wire Dia. Range	Wire Bundle Dia. Range	Strain Relief Part Numbers
In-Line	2	**.960** 24.38	Yes	**.040 – .190** 1.02 – 4.83	—	640713-1
			No	—	**.200 – .350** 5.08 – 8.89	640713-2
	3	**1.140** 28.96	Yes	**.040 – .190** 1.02 – 4.83	—	640714-1
			No	—	**.200 – .350** 5.08 – 8.89	641945-1
	4	**1.340** 34.04	Yes	**.040 – .190** 1.02 – 4.83	—	641776-1
			No	—	**.200 – .350** 5.08 – 8.89	641776-2
	5	**1.530** 38.86	Yes	**.040 – .190** 1.02 – 4.83	—	643030-1
			No	—	**.200 – .350** 5.08 – 8.89	643030-4
Matrix	6	**1.030** 26.16	Yes	—	**.120 – .650** 3.05 – 16.51	640715-1
	9	**1.030** 26.16	Yes	—	**.120 – .650** 3.05 – 16.51	640716-1
	12	**1.280** 32.51	Yes	—	**.150 – .750** 3.81 – 19.05	640717-1
	15	**1.530** 38.86	Yes	—	**.200 – .850** 5.08 – 21.59	640718-1

Notes:
1. Insert comes attached to strain relief. It can be used to provide additional adjustment for small wire bundles or discarded.
2. Insert to be positioned as shown by dotted lines.
3. Strain relief part number represents one-half of a strain relief. Two of a part number are required for one connector.

Keying Plug
IS 408-3200



Part Number
UL94V-0 Nylon material — **770377-1**

Related Product Data

Housings— pages 193-194
Technical Documents— pages 189 and 205-206

Note: All part numbers are RoHS Compliant.

Catalog 82181
Revised 4-08

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UK: 44-8706-080-208

Universal MATE-N-LOK Headers for UMNL II Connectors

PC Board Vertical Pin Headers

.250 [6.35] Centerline spacing

Material

Housing — Nylon

Flammability Rating — UL94V-0

Contacts — Phosphor bronze

Solder tail diameter .062 [1.57]

Related Product Data

Product Specification

108-1053 Universal MATE-N-LOK PC Board Headers

Performance Characteristics— pages 189-190

Recommended PC Board Hole Layout— page 199

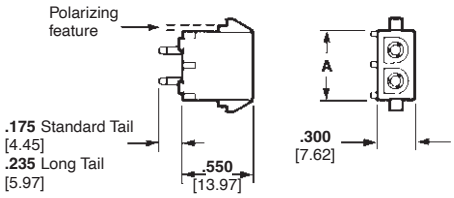
Technical Documents— pages 189 and 205-206

Mating Connectors

Universal MATE-N-LOK II
Plug Housings — pages 193-194

Universal MATE-N-LOK
Plug Housings — page 175

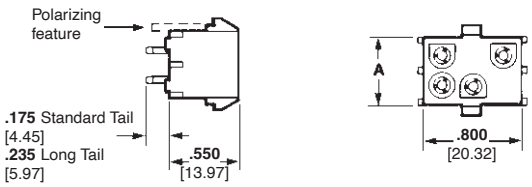
2, 3, 4 and 5 Circuit, In-Line



Number of Circuits	A Dim.	Pin Finish	Pin Header Part Numbers: Standard Tail[2]	Pin Header Part Numbers: Standard Tail Polarized[2]	Pin Header Part Numbers: Long Tail[3]	Mates with Plug Housing Part Number (Using Socket Contacts): Universal MATE-N-LOK II	Mates with Plug Housing Part Number (Using Socket Contacts): Universal MATE-N-LOK
2	.550 13.97	Pre-tin	350786-1	641964-1 1-641964-1[4]	350787-1	770017-1	350777-1
		Duplex[1]	350786-3	641964-3	350787-3		
3	.800 20.32	Pre-tin	350789-1	641966-1 1-641966-1[4]	350790-1	770018-1	350766-1
		Duplex[1]	350789-3	—	350790-3		
4	1.050 26.67	Pre-tin	350792-1	641968-1	350793-1	770019-1	350779-1
		Duplex[1]	350792-3	—	350793-3		
5	1.300 33.02	Pre-tin	640900-1	643406-1	—	770016-1	350809-1
		Duplex[1]	640900-3	—	—		

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.
[2]Use Standard Tail for .062 [1.57] thick PC Board.
[3]Use Long Tail for .125 [3.18] thick PC Board.
[4]Black in color.

6, 9, 12 and 15 Circuit, Matrix



Number of Circuits	A Dim.	Pin Finish	Pin Header Part Numbers: Standard Tail[2]	Pin Header Part Numbers: Standard Tail Polarized[2]	Pin Header Part Numbers: Long Tail[3]	Mates with Plug Housing Part Number (Using Socket Contacts): Universal MATE-N-LOK II	Mates with Plug Housing Part Number (Using Socket Contacts): Universal MATE-N-LOK
6	.550 13.97	Pre-tin	350711-1	641970-1	350732-1	770020-1	350715-1
		Duplex[1]	350711-4	641970-3	350732-4		
9	.800 20.32	Pre-tin	350712-1	641972-1 1-641972-1[4]	350742-1	770021-1	350720-1
		Duplex[1]	350712-4	641972-3	350742-4		
12	1.050 26.67	Pre-tin	350713-1	641974-1 1-641974-1[4]	350737-1	770022-1	350735-1
		Duplex[1]	350713-4	641974-3	350737-4		
15	1.300 33.02	Pre-tin	350714-1	641976-1	350738-1	770023-1	350736-1
		Duplex[1]	350714-4	641976-4	350738-4		

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.
[2]Use Standard Tail for .062 [1.57] thick PC Board.
[3]Use Long Tail for .125 [3.18] thick PC Board.
[4]Black in color.

Note: **All part numbers are RoHS Compliant.**

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Universal MATE-N-LOK Headers for UMNL II Connectors (Continued)

PC Board Vertical Socket Headers

.250 [6.35] Centerline spacing

Material

Housing — Nylon

Flammability Rating — UL94V-0

Contacts — Phosphor bronze

Solder tail diameter .062 [1.57]

Related Product Data

Product Specification
108-1053 Universal MATE-N-LOK PC Board Headers

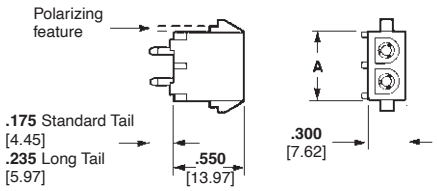
Performance Characteristics— pages 189-190
Recommended PC Board Hole Layout— page 199
Technical Documents— pages 189 and 205-206

Mating Connectors

Universal MATE-N-LOK II
Plug Housings — pages 193-194

Universal MATE-N-LOK
Plug Housings — page 175

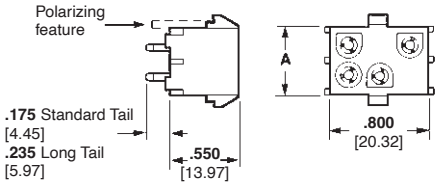
2, 3, 4 and 5 Circuit, In-Line



Number of Circuits	A Dim.	Socket Finish	Socket Header Part Numbers			Mates with Plug Housing Part Number (Using Pin Contacts)	
			Standard Tail[2]	Standard Tail Polarized[2]	Long Tail[3]	Universal MATE-N-LOK II	Universal MATE-N-LOK
2	.550 13.97	Pre-tin	350824-1	643412-1	350831-1	770017-1	350777-1
		Duplex[1]	350824-4	643412-3	—		
3	.800 20.32	Pre-tin	350825-1	643414-1	350832-1	770018-1	350766-1
		Duplex[1]	350825-4	643414-3	350832-4		
4	1.050 26.67	Pre-tin	350826-1	643416-1	350833-1	770019-1	350779-1
		Duplex[1]	350826-4	—	350833-4		
5	1.300 33.02	Pre-tin	640901-1	—	—	770016-1	350809-1
		Duplex[1]	640901-3	—	—		

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.
[2]Use Standard Tail for .062 [1.57] thick PC Board.
[3]Use Long Tail for .125 [3.18] thick PC Board.

6, 9, 12 and 15 Circuit, Matrix



Number of Circuits	A Dim.	Socket Finish	Socket Header Part Numbers			Mates with Plug Housing Part Number (Using Pin Contacts)	
			Standard Tail[2]	Standard Tail Polarized[2]	Long Tail[3]	Universal MATE-N-LOK II	Universal MATE-N-LOK
6	.550 13.97	Pre-tin	350827-1	643424-1	350834-1	770020-1	350715-1
		Duplex[1]	350827-4	643424-3	350834-4		
9	.800 20.32	Pre-tin	350828-1	643426-1	350835-1	770021-1	350720-1
		Duplex[1]	350828-4	643426-3	350835-4		
12	1.050 26.67	Pre-tin	350829-1	643428-1	350836-1	770022-1	350735-1
		Duplex[1]	350829-4	—	350836-4		
15	1.300 33.02	Pre-tin	350830-1	643430-1	350837-1	770023-1	350736-1
		Duplex[1]	350830-4	—	350837-4		

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.
[2]Use Standard Tail for .062 [1.57] thick PC Board.
[3]Use Long Tail for .125 [3.18] thick PC Board.

Note: **All part numbers are RoHS Compliant.**

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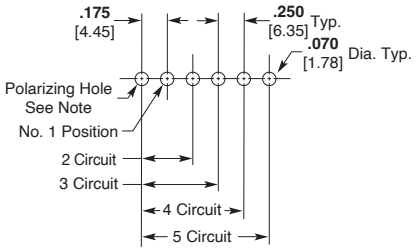
Universal MATE-N-LOK Headers for UMNL II Connectors (Continued)

Recommended PC Board Hole Layouts for Pin and Socket Vertical Headers

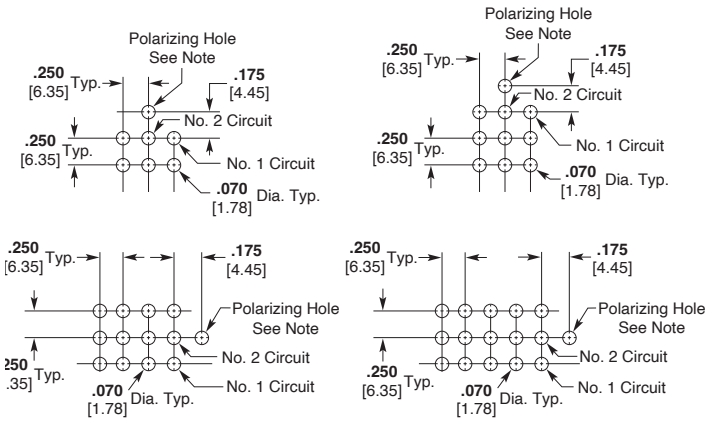
Related Product Data

Vertical Headers — pages 197-198

2, 3, 4 and 5 Circuit, In-Line



6, 9, 12 and 15 Circuit, Matrix



Note: Polarizing hole **.070** [1.78] Dia. required for polarized headers only.

PC Board Vertical Pin Headers with ACTION PIN Contacts

Material and Finish

Housing — PBT, black

Flammability Rating — UL94V-0

Contacts — Copper alloy, plated with tin over nickel on entire contact

Related Product Data

Performance Characteristics— pages 189-190

Technical Documents— pages 189 and 205-206

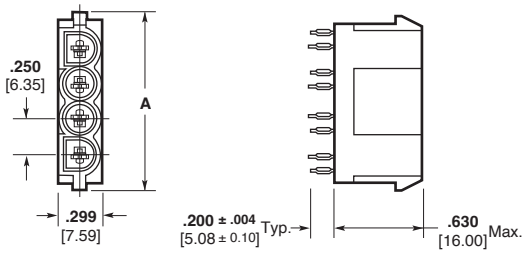
Product Specification

108-5222 ACTION PIN Universal MATE-N-LOK Header Assembly

Mating Connectors

Universal MATE-N-LOK II
Plug Housings — pages 193-194

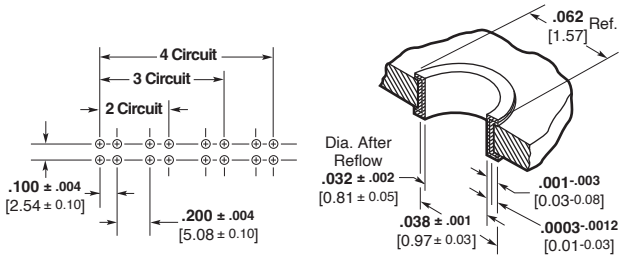
Universal MATE-N-LOK
Plug Housings — page 175



Number of Circuits	A Dim.	Part Number	Mates with Plug Housing Part Number (Using Socket Contacts)	
			Universal MATE-N-LOK II	Universal MATE-N-LOK
2	.750 19.05	173924-1*	770017-1	350777-1
3	1.000 25.40	173925-1*	770018-1	350766-1
4	1.250 31.75	173926-1*	770019-1	350779-1

*Install in PC Board with arbor tool.

Note: All part numbers are RoHS Compliant.



Recommended PC Board Hole Layout **PC Board Hole Dimensions**

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Revised 4-08

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Universal MATE-N-LOK Headers for UMNL II Connectors (Continued)

PC Board Right-Angle Pin and Socket Headers

.250 [6.35] Centerline spacing

Material

Housing — Nylon

Flammability Rating — UL 94V-0

Contacts — Phosphor bronze
Solder tail width .052 [1.32]

Related Product Data

Product Specification
108-1053 Universal MATE-N-LOK PC Board Headers

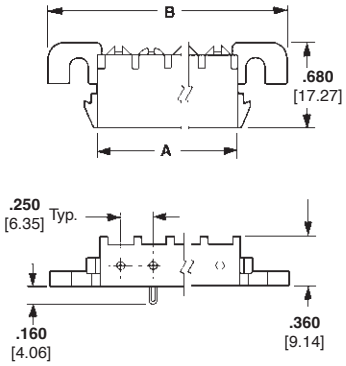
Performance Characteristics— pages 189-190
Technical Documents— pages 189 and 205-206

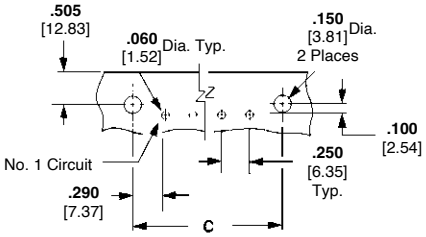
Mating Connectors

Universal MATE-N-LOK II
Plug Housings — pages 193-194

Universal MATE-N-LOK
Plug Housings — page 175

2, 3, 4 and 5 Circuit, In-line





Use 6-32 UNC Pan Head Screw
3/8 [9.53] long for mounting
(Not Supplied)

Recommended PC Board Hole Layout
.062 [1.57] Board Thickness

Number of Circuits	Dimensions A	Dimensions B	Dimensions C	Contact Finish	Part Numbers: Right-Angle Header Pin	Part Numbers: Right-Angle Header Socket	Part Numbers: Mates with Plug Housing — Universal MATE-N-LOK II	Part Numbers: Mates with Plug Housing — Universal MATE-N-LOK
2	**.550** 13.97	**1.245** 31.62	**.830** 21.08	Pre-tin	1-350942-0	643226-1	770017-1	350777-1
				Duplex[1]	3-350942-0	—		
3	**.800** 20.32	**1.495** 37.97	**1.080** 27.43	Pre-tin	1-350943-0	643228-1	770018-1	350766-1
				Duplex[1]	3-350943-0	3-643228-0		
4	**1.050** 26.67	**1.745** 44.32	**1.330** 33.78	Pre-tin	1-350944-0	643230-1	770019-1	350779-1
				Duplex[1]	3-350944-0	3-643230-0		
5	**1.300** 33.02	**1.995** 50.67	**1.580** 40.13	Pre-tin	1-350945-0	643232-1	770016-1	350809-1
				Duplex[1]	3-350945-0	3-643232-0		

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.

Note: **All part numbers are RoHS Compliant.**

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Universal MATE-N-LOK Headers for UMNL II Connectors (Continued)

High Current Contacts

The Louvertac bands have the versatility of being designed into contact dimensions used in existing AMP connectors.

Universal MATE-N-LOK II High Current contacts have been designed to fit into an existing Universal MATE-N-LOK II housing. An initial T-Rise test of a fully energized 4 circuit connector with 10 gage wires has shown a 31 amp capability per line with a 30° T-rise.

Cable-to-Cable

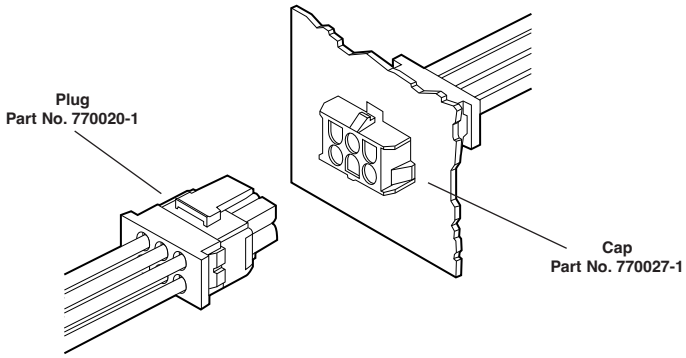
Material

Body — Copper Alloy
Louvertac Band — Beryllium Copper
Finish — Silver
Contact Extraction Tool No. 318851-1
Latch Disengaging Tool No. 58382-1

- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476**
- **Certified by Canadian Standards Association, File No. LR7189**
- **Passed test by VDE under their Registration Number 3980/Continuous Surveillance**

Design Objective—108-1583

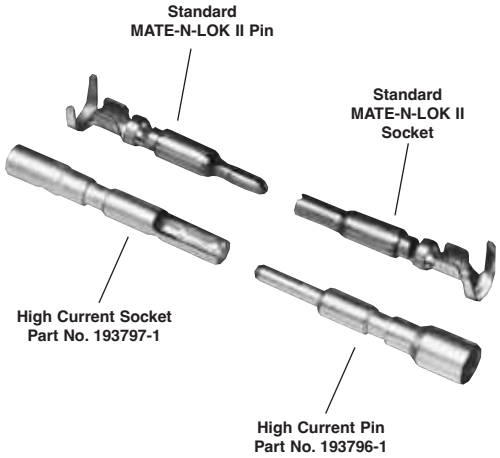
Application Specification—114-16021



Contacts

Wire Size AWG	Contact Part Numbers		Crimp Tools
	Pin	Socket	
10	193796-1	193797-1	Daniels Hand Tool #M310 or AMP P/N 356114-1 Positioner #TP1013 or AMP P/N 356337-1
12-14	193841-1	193842-1	

Note: High Current contacts are **not** intermateable with any other Universal MATE-N-LOK contact.



Connector Housings

No. of Circuits	Kit Part Numbers	
	Plug	Cap
2	770017-1	770024-1
3	770018-1	770025-1
4	770019-1	770026-1
5	770016-1	—
6	770020-1	770027-1
9	770021-1	770028-1
12	770022-1	770029-1
15	770023-1	770030-1

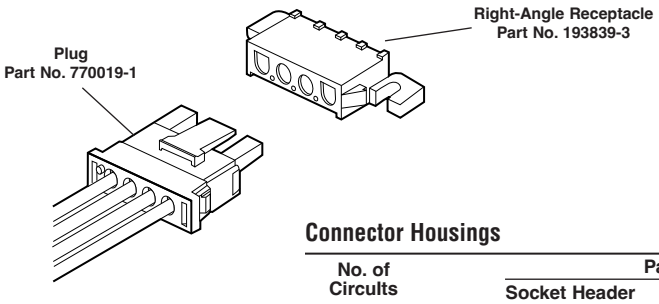
Cable-to-Right-Angle Board

Material

Housing — UL 94V-0 Nylon
Contact Body — Copper Alloy
Louvertac Band — Beryllium Copper
Finish — Silver

- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476**
- **Certified by Canadian Standards Association, File No. LR7189**
- **Passed test by VDE under their Registration Number 3980/Continuous Surveillance**

Design Objective—108-1594



Connector Housings

No. of Circuits	Part Numbers	
	Socket Header	Mates with Plug Housing
2	193839-1	770017-1
3	193839-2	770018-1
4	193839-3	770019-1
5	193839-4	770016-1

Notes: 1. High Current contacts with Louvertac bands are **not** intermateable with any other contact.
2. Additional information on connectors is available in AMP High Current Products Catalog 65141.
3. Additional information on contacts is available in AMP Precision Pin and Socket Contacts Catalog 65910.

Note: All part numbers are RoHS Compliant.

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UK: 44-8706-080-208

Universal MATE-N-LOK Headers for UMNL II Connectors (Continued)

High Current Vertical Pin Headers

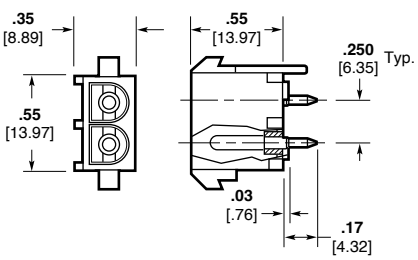
High Current Universal MATE-N-LOK II Vertical Pin Headers are designed to accept Universal MATE-N-LOK II Plugs with High Current Socket contacts. All housings are polarized in order to allow proper circuit board placement. Eight versions are available from 2 circuit to 15 circuits.

Material

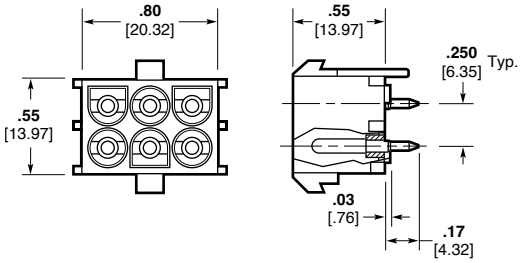
Housing — UL 94V-0 Nylon
Contacts — Copper Alloy
Finish — Silver

- **Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476**
- **Certified by Canadian Standards Association, File No. LR7189**
- **Passed test by VDE under their Registration Number 3980/Continuous Surveillance**

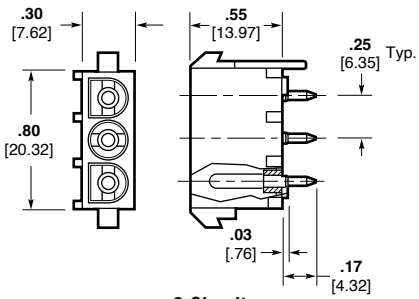
Design Objective —108-1594



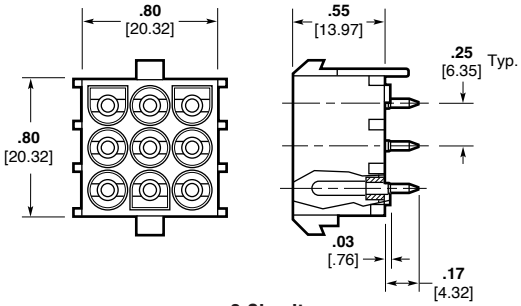
2 Circuit
Part No. 194009-1



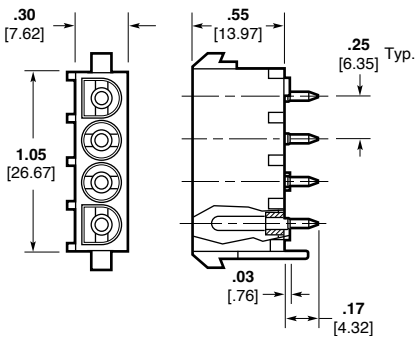
6 Circuit
Part No. 194002-1



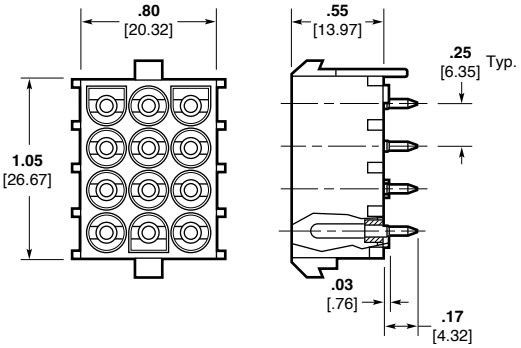
3 Circuit
Part No. 194017-1



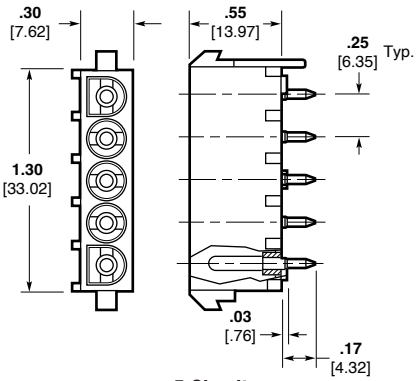
9 Circuit
Part No. 194012-1



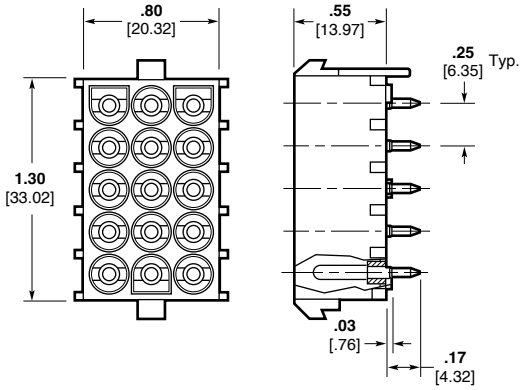
4 Circuit
Part No. 194010-1



12 Circuit
Part No. 194014-1



5 Circuit
Part No. 194018-1



15 Circuit
Part No. 194013-1

Notes: 1. High Current contacts with Louvertac bands are **not** intermateable with any other contact.
2. Additional information on connectors is available in AMP High Current Products Catalog 65141.

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Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

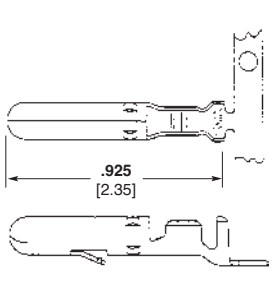
South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

.156 MATE-N-LOK Connectors

Product Facts

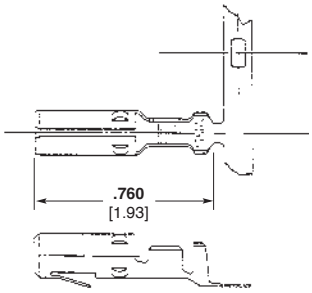
- Positive polarized nylon housings
- Panel mount or free-hanging
- Numbered cavities for easy circuit identification
- Removable, crimp snap-in contacts
- Contacts accept 20-10 AWG wire sizes
- Pin contacts are used in cap housings, socket contacts are used in plug housings
- Not for interrupting current
- Recognized under the Component Program of Underwriters Laboratories Inc., File No. E28476
- Certified by Canadian Standards Association File No. LR7189





Pin

Used in Caps



Socket

Used in Plugs

Contacts

Pin diameter .156 [3.96]

Material and Finish

Contacts—
Brass, Pre-tin plated
Stock thickness .018 [.457]

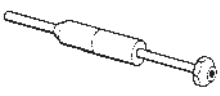
Wire Size Range AWG [mm²]	Ins. Dia. Range	Contact Part Number				HDM[1] Applicator Part No.	Hand Tool Part No.
		Pin		Socket			
		Strip Form	Loose Piece	Strip Form	Loose Piece		
20-14 [.5-2.0]	.125 max.	61086-1	61251-1	61085-1	61250-1	466462-1 466462-2 466462-3	58631-1
12-10 [3.0-6.0]	.185 max.	61234-1	61253-1	61233-1	61252-1	687765-2 687765-3	58632-1

[1]To be used with appropriate application machine. See pages 201-204 for further information.

Note: All part numbers are RoHS Compliant.



Insertion Tool
Part No. 91002-1
(IS 408-7347)



Extraction Tool
Part No. 691458-1 (Pins)
Part No. 691458-2 (Sockets)
(IS 408-4322)

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.156 MATE-N-LOK Connectors (Continued)

Housings
Free-Hanging or Panel Mount

Related Product Data

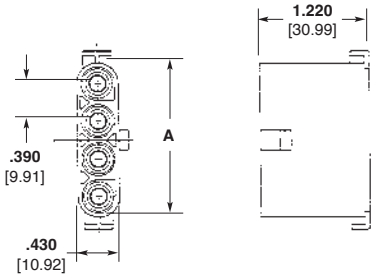
Contacts—page 203

Product Specification
108-8002

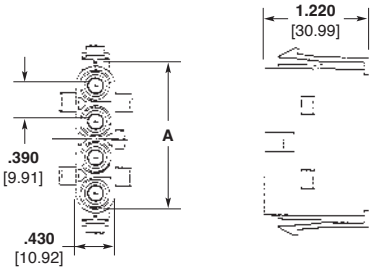
Application Specification
114-1109

Material

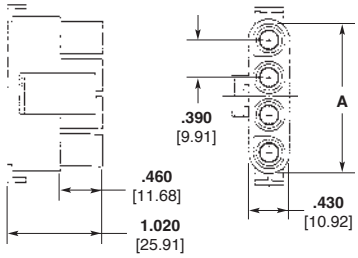
Housings—
Nylon, Natural Color
Flammability Rating—UL94V-2



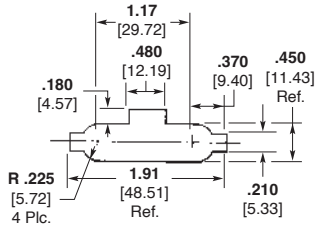
**Pin Housing (Cap)
Free-Hanging
Part Number 794117-1**



**Pin Housing (Cap)
Panel Mount
Part Number 794118-1**



**Socket Housing (Plug)
Part Number 794116-1**



Panel Mount Cutout

Note: Panel must be punched in the same direction as the housing will be inserted.

Number of Circuits	A Dim.	Plug	Cap	
			Free-Hanging	Panel Mount
3	.048 1.210	794412-1	794413-1	—
4	.063 1.590	794116-1	794117-1	794118-1

Note: **All part numbers are RoHS Compliant.**

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Technical Documents

Related Product Data

Connectors

2.5 mm Signal Double Lock (SDL)—pages 9-16

Micro MATE-N-LOK 3 mm—pages 17-47

Grace Inertia Connectors (GIC) 3.5—pages 49-52

.062 Commercial Pin and Socket—pages 53-57

Power Double Lock (PDL)—pages 59-81

Mini Universal MATE-N-LOK—pages 83-94

Mini Universal MATE-N-LOK 2—pages 99-107

(MR) Miniature Rectangular—pages 109-118

VAL-U-LOK Connector System—pages 119-124

AMP-DUAC—pages 125-133

5.0 mm Power Key Connectors (PKC)—pages 135-141

.093 Commercial Pin and Socket—pages 143-149

Commercial MATE-N-LOK—pages 151-162

.140 MATE-N-LOK—pages 165-167

Universal MATE-N-LOK—pages 169-188

Universal MATE-N-LOK II—pages 189-195

.156 MATE-N-LOK—pages 203-204

Various technical documents are available for your use:

Product Specifications describe technical performance characteristics and verification tests. They are intended for the Design, Component and Quality Engineer.

108-1000	Commercial MATE-N-LOK Connectors
108-1022	(MR) Miniature Rectangular Connectors
108-1031	Universal MATE-N-LOK Connectors
108-1031	Splash Proof Seal, Universal MATE-N-LOK Connectors
108-1032	.140 Diameter MATE-N-LOK Pin and Socket Connectors
108-1037	.062 Commercial Pin and Socket Connectors
108-1037-1	.062 Commercial Pin and Socket Contacts
108-1038	.093 Commercial Pin and Socket Connector
108-1053	Universal MATE-N-LOK Printed Circuit Board Headers
108-1077	Commercial MATE-N-LOK Printed Circuit Board Headers
108-1078	(MR) Miniature Rectangular Printed Circuit Board Headers
108-1090	Universal MATE-N-LOK II Connectors
108-1542	Mini-Universal MATE-N-LOK Connectors
108-1542-2	Splash Proof Seals for Mini-Universal MATE-N-LOK Connectors
108-1543	Mini-Universal MATE-N-LOK Headers
108-1594	Universal MATE-N-LOK Headers with High Current Contacts
108-1693	Mini-Universal MATE-N-LOK II Connectors
108-1694	Mini-Universal MATE-N-LOK II Headers
108-1699	AMP-DUAC Headers
108-1836	Micro MATE-N-LOK 3 mm Connectors
108-2069	Universal MATE-N-LOK Circular Connector
108-5138	Mini-Universal MATE-N-LOK Connectors (UL 94V-0)
108-5151	Mini-Universal MATE-N-LOK Connectors (UL 94V-2)
108-5155	Commercial MATE-N-LOK Pin Header Assembly
108-5222	Universal MATE-N-LOK Headers with ACTION PIN Contacts
108-5410	Power Double Lock (PDL) Connectors
108-5439	Power Double Lock (PDL) Connectors (SMT)
108-5459	2.5 mm Signal Double Lock (SDL) Connectors
108-5699	5.0 mm Power Key Connectors (PKC)
108-5810	Grace Inertia Connectors (GIC) 3.5
108-8002	.156 Diameter MATE-N-LOK Connectors
108-19099	AMP-DUAC Receptacles
108-49000	Commercial MATE-N-LOK IDC Insulation Displacement Connectors

Application Specifications describe requirements for using the product in its intended application and/or crimping information. They are intended for the Packaging and Design Engineer and the Machine Setup Person.

114-1007	.140 Diameter MATE-N-LOK Contacts
114-1010	Universal MATE-N-LOK Connectors
114-1012	Commercial MATE-N-LOK Contacts
114-1013	.062 Commercial Pin and Socket Connectors
114-1014	(MR) Miniature Rectangular Contacts
114-1043	Universal MATE-N-LOK II Connectors (housings, contacts and strain reliefs)
114-1109	.156 Diameter MATE-N-LOK Connectors
114-1111	Mini-Universal MATE-N-LOK 2 Connectors
114-5175	Power Double Lock (PDL) Connectors
114-5203	2.5 mm Signal Double Lock (SDL) Connectors
114-5292	5.0 mm Power Key Connectors (PKC)
114-5306	Grace Inertia Connectors (GIC) 3.5
114-6067	AMP-DUAC Crimping Contacts
114-13000	Micro MATE-N-LOK 3 mm Connectors

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UK: 44-8706-080-208

Technical Documents (Continued)

Application Specifications (Continued)

114-13089	Mini-Universal MATE-N-LOK Sealed Connectors
114-16017	Mini-Universal MATE-N-LOK Connectors
114-19048	AMP-DUAC Receptacles (Use of)
114-49000	.093 Commercial Pin and Socket Connectors
114-49001	Commercial MATE-N-LOK IDC Insulation Displacement Connectors

Instruction Sheets provide instructions for assembling or applying the product. They are intended for the Manufacturing Assembler or Operator.

408-3186	Terminating Head (PN 231894-1) (Commercial MATE-N-LOK IDC Connector)
408-3200	Universal MATE-N-LOK II Connectors (Housings, Contacts and Accessories)
408-3231	(MR) Miniature Rectangular Connectors (Pin Housing, Socket Housing, Contacts, and Accessories)
408-3234	Mini-Universal MATE-N-LOK Connectors
408-3320	Universal MATE-N-LOK Strain Relief Assembly and Keying Plug
408-3392	Universal MATE-N-LOK Splash Proof Seals
408-3393	Mini-Universal MATE-N-LOK 2 Connectors
408-4118	Contact Extraction Tool (PN 189727-1)
408-4322	Contact Extraction Tools [PN 691458-1 (Pins) and 691458-2 (Sockets)]
408-4370	Contact Extraction Tool (PN 318831-1)
408-4371	Contact Extraction Tool (PN 318851-1)
408-4375	Contact Extraction Tool (PN 318837-1)
408-4378	Extraction Tool (PN 318845-1)
408-6790	Hand Tool Handle (PN 58074-1)
408-7158	Contact Extraction Tools [PN 1-305183-1 (Pins) and 1-305183-2 (Sockets)]
408-7166	Commercial MATE-N-LOK Panel Mount Connector
408-7200	Commercial MATE-N-LOK Free-Hanging Connector
408-7201	Commercial MATE-N-LOK Detent Engagement Connectors, 2 and 3 circuit
408-7209	Commercial MATE-N-LOK Commoning Tabs
408-7211	Pin and Socket Extraction Tool (PN 465644-1)
408-7215	Commercial MATE-N-LOK Single Circuit Connector
408-7300	MATE-N-LOK Contact and Housing Selection Charts
408-7347	Contact Insertion Tool (PN 91002-1)
408-7582	Commercial MATE-N-LOK Keying Plug
408-7714	Universal MATE-N-LOK Connectors
408-7763	Power Unit (PN 91112-2)
408-7984	Contact Insertion Tool (PN 455830-1)
408-9330	Head (PN 231920-2) (Used with Arbor Tool PN 91085-2)
408-9436	Latch Disengaging Tool (PN 58382-1)
408-9570	Contact Extraction Tool (PN 455822-2)
408-10003	Contact Retention Test Tool (PN 1586700-1)
408-10017	Universal MATE-N-LOK Sealed Bulkhead Connectors
411-5105	Mini-Universal MATE-N-LOK Connectors
411-5638	Power Double Lock (PDL) Connectors

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Application Tooling

Semiautomatic Machines

AMP-O-LECTRIC Model "G" Terminating Machines, 354500-1, -9, -11



Semiautomatic bench machines for crimping reeled terminals and contacts, featuring a quiet and reliable direct motor drive, microprocessor controls for ease of setup and operation, and guarding and lighting designed for operator convenience and safety. All models are equipped with either manual or automatic precision adjustment of crimp height. Machine-mounted sensors are available for crimp quality monitoring using conventional miniature-style applicators.

Specifications
Width—18.7-25.3 [475-643] depending on applicator type
Depth—21.5-28.1 [546-713] depending on applicator type
Height—20 [508]
Weight—240 lb [110 kg]
Electrical—120 or 220 VAC, 50 or 60 Hz
Air—90-110 psi [6.21-7.59 bar], 6 scfm [0.00282 m^3/s] when required with air-feed applicators
Wire Range—26-10 AWG [0.12-6 mm^2] solid or stranded, depending on product applied
For more information, request Catalog **65828**, Catalog **82275 [Crimp Quality Monitor (CQM)].**

AMP-O-MATIC Stripper-Crimper Machine, 854040-3, -4



Semiautomatic bench crimping machines that also strip the wire, and are therefore used for terminating jacketed cable. Feature manual precision adjustment of crimp height, keyed strip blades for faster, more accurate setups, and an efficient scrap removal system. All adjustments can be made from the front of the machines without special tools. Available with crimp quality monitoring.

Specifications
Width—14 [355]
Depth—18 [457]
Height—33 [838] without reel
Weight—150 lb [68 kg]
Electrical—120 VAC, 50 or 60 Hz, .5 A
Air—80-100 psi [5.52-6.90 bar], 3.5 scfm [0.00165 m^3/s]
Wire Range—32-14 AWG [0.03-2 mm^2]
For more information, request Catalog **65004.**

AMP 3K/40 and AMP 5K/40 Terminators



As value oriented terminators, the AMP 3K/40 and AMP 5K/40 are designed for customers that require the increased output and quality of a semiautomatic machine at a competitive price. By incorporating the most commonly requested features as standard and offering a long list of optional equipment, these terminators offer flexibility to meet the specific needs of various applications at the lowest possible cost.

Optional Stripping Module for the AMP 3K/40, AMP 5K/40 and AMP-O-LECTRIC Model G Terminators



The combination of the Stripping Module with the AMP-O-LECTRIC Model G Terminator or the AMP 3K/40, 5K/40 provides an economical, proficient method of stripping wire and crimping terminals on the same machine. Wires are stripped moments before crimping, meaning there is virtually no chance of damaging wire conductors during handling or storage. Once the wire is fed into the start sensor the Stripping Module does the rest, improving placement accuracy.

For more information, request Catalog **1309085.**

Crimp Quality Monitor



This system measures the crimp height of each termination as it is made. It also evaluates the quality of each crimp. If a crimp is questionable, the monitor alerts the operator with both visual and audible alarms. It also features ports for printing and networking. For use with AMP-O-LECTRIC Model "G" and AMP-O-MATIC Stripper-Crimper Machines, the monitor is mounted to the machine. For use with AMPOMATOR CLS IV+ Machines, it is integrated into the machine's operating system, with the displays appearing on the machine's touch screen.

For more information, request Catalog **82275.**

Note: This listing is for reference purposes only. To obtain part numbers for specific applications call Technical Support.

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Application Tooling (Continued)

Automatic Machines

AMPOMATOR System III Leadmaker



The AMPOMATOR System III Leadmaker is designed for the demands of low-volume/high-mix manufacturing and precision quality. This leadmaker combines the best wire processing capabilities with new technologies in terminal feeding and machine set-up found in the System III Applicator to offer significant advantages for higher throughput and efficiencies. *Request Catalog 1654956-5.*

System III Applicator



The System III Applicator introduces several new technologies into the applicator including a precision servo-electric motorized feeding system, a built-in data module for storing terminal crimp and set-up information, a precision fit round ram, and a newly designed terminal depressor. It still utilizes the proven quality of the HD-M crimper and anvil tooling.

AMPOMATOR CLS IV+ Lead-Making Machines, 356500-1, -2



Fully-automatic machines that measure, cut, strip and terminate single leads. Microprocessor-controlled, and programmed and operated using an easy-to-follow, menu-driven touchscreen. Features include direct-drive terminating units with precision crimp height adjustment, fully programmable setups, wire runout and splice detection, and motorized pre-feed with wire straightener. Crimp quality monitoring is also available.

Specifications

Width—159 [4 039]
Depth—68 [1 730]
Height—90 [2 285] min., with 24 [610] dia. reel
Weight—2 000 lb [907 kg]
Electrical—220 VAC, 50 or 60 Hz, 1 ∅, 20 A with neutral and ground
Air—90 psi [6.21 bar], 15 scfm [0.00708 m^3/s] sustained
Wire Range—26-10 AWG [0.12-6 mm^2] stranded, 26-16 AWG [0.12-1.4 mm^2] solid
Lead Lengths—3-90 [76.2-2 286], 90-1 000 [2 286-25 400] with long lead conveyors

For more information, request Catalog **124324.**

EDGE Electronic Applicator Counter



The new, versatile EDGE applicator counter tracks wearable tool usage for the most effective maintenance planning. The completely electronic counter, with clear LCD display, indicates cycles since installation. By performing maintenance at measured intervals with pre-set limits, operators avoid breakdowns and rejects caused by tool wear or mis-adjustment.

For more information, request Catalog **1773385**.

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Application Tooling (Continued)

Applicator Styles

End- and Side-Feed Heavy-Duty Miniature (HDM) Applicators



- Handle a wide variety of products
- Used with both semi- and fully-automatic machines
- Quickly interchangeable to run different products
- Easily repaired
- Simple dial-in settings to handle similar products and various wire sizes

Stripper-Crimper (SCA) Applicators



- For use with AMP-O-MATIC Stripper-Crimper Machines
- Terminate a wide variety of open-barrel products
- Quickly interchangeable to run different products
- Easily repaired
- Simple dial-in settings to handle similar products and various wire sizes
- CQM applicators are available

Crimp Quality Monitor (CQM) Applicators



- Same basic features as regular HDM and SCA applicators
- Recommended for use with machines featuring manual or automatic precision-adjust
- Use two built-in sensors to provide the Crimp Quality Monitor with data to measure crimp height, and evaluate the quality of each crimp

Applicator and Hand Tool Selection Guide

Density	Product Line	Applicators			Hand Tools	
		A	B	C	D	E
High	2.5 mm Signal Double Lock (SDL)	*	*	*	X	-
	Micro MATE-N-LOK 3 mm	X	X	X	X	-
	Grace Inertia Connectors (GIC) 3.5	*	*	*	X	-
	.062 Commercial Pin and Socket	X	X	X	-	X
	Power Double Lock (PDL)	*	*	*	X	-
	Mini-Universal MATE-N-LOK	X	X	X	X	X
	Sealed Mini-Universal MATE-N-LOK	X	X	X	X	-
	Mini-Universal MATE-N-LOK 2	X	X	X	X	X
	(MR) Miniature Rectangular	X	X	X	X	-
	VAL-U-LOK Connector System	X	-	-	-	X
	AMP-DUAC	X	X	-	X	-
Standard	5.0 mm Power Key Connectors (PKC)	*	*	*	X	-
	.093 Commercial Pin and Socket	X	X	X	-	X
	Commercial MATE-N-LOK	X	X	X	X	X
	.140 MATE-N-LOK	X	X	X	X	-
	Universal MATE-N-LOK	X	X	X	X	X
	Universal MATE-N-LOK II	X	X	X	X	X
	.156 MATE-N-LOK	X	-	-	X	-

A—Heavy Duty Miniature (HDM) Applicators
B—Stripper-Crimper Applicators (SCA)
C—Crimp Quality Monitor (CQM) Applicators
D—CERTI-CRIMP Hand Tool
E—PRO-CRIMPER III Commercial Hand Tool
* Contact the Tooling Assistance Center (TAC) at 1-800-722-1111 for Applicator Part Numbers.

Related Product Data

Contacts

2.5 mm Signal Double Lock (SDL)—page 12
Micro MATE-N-LOK 3 mm—page 22
Grace Inertia Connectors (GIC) 3.5—page 50
.062 Commercial Pin and Socket—page 55
Power Double Lock (PDL)—page 61
Mini Universal MATE-N-LOK—page 84
Mini Universal MATE-N-LOK 2—pages 100-101
(MR) Miniature Rectangular—page 112
VAL-U-LOK Connector System—page 120
AMP-DUAC—pages 126-127
5.0 mm Power Key Connectors (PKC)—page 137
.093 Commercial Pin and Socket—page 145
Commercial MATE-N-LOK—pages 155-156
.140 MATE-N-LOK—page 166
Universal MATE-N-LOK—pages 172-173
Universal MATE-N-LOK II—page 192
.156 MATE-N-LOK—page 203

Mechanical Hand Tools

CERTI-CRIMP II Straight Action Hand Tools (SAHT) 91501-1, 91502-1



Premium grade hand tools. Feature ratchet control to provide complete crimp cycle. Die sets close in a straight line. Include a contact locator and wire stop, plus an insulation crimp adjustment lever, when applicable. Approximate weight 1.3 lb [0.59 kg]

For more information, request Catalog **65780**.

Note: This listing is for reference purposes only. To obtain part numbers for specific applications call Technical Support.

Catalog 82181
Revised 4-08

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Application Tooling (Continued)

Hand Tools

Related Product Data

Contacts

2.5 mm Signal Double Lock (SDL)—page 12
Micro MATE-N-LOK 3 mm—page 22
Grace Inertia Connectors (GIC) 3.5—page 50
.062 Commercial Pin and Socket—page 55
Power Double Lock (PDL)—page 61
Mini Universal MATE-N-LOK—page 86
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5.0 mm Power Key Connectors (PKC)—page 137
.093 Commercial Pin and Socket—page 145
Commercial MATE-N-LOK—pages 155-156
.140 MATE-N-LOK—page 166
Universal MATE-N-LOK—pages 172-173
Universal MATE-N-LOK II—page 192
.156 MATE-N-LOK—page 203

CERTI-CRIMP II Hand Tool



Catalog 65780

PRO-CRIMPER III Hand Tool



Catalog 82276

Features	CERTI-CRIMP Hand Tool	PRO-CRIMPER III Hand Tool
Field Repair/Prototyping	X	X
OEM Applications/Low Volume Production	X	—
Ratchet Control	X	X
Brush/Bellmouth Control	X	X
Precision Crimp Height Control	X	X
Little/No Operator Training	X	—
Insulation Adjustment	X	—
Repairable	X	—

Density	Product Line	CERTI-CRIMP Hand Tool		PRO-CRIMPER III Hand Tool	
		Part Number	Instruction Sheet	Part Number	Instruction Sheet
High	2.5 mm Signal Double Lock (SDL)	234603-1	411-5735	—	—
		234604-1	411-5736	—	—
	Micro MATE-N-LOK 3 mm	91501-1	408-8547	—	—
		91502-1	408-8547	—	—
	Grace Inertia Connectors (GIC) 3.5	1596277-1	411-78101	—	—
	.062 Commercial Pin & Socket	—	—	90870-1	408-9965
		—	—	90869-1	408-9964
	Power Double Lock (PDL)	91567-1	408-8547	—	—
		91569-1	408-8547	—	—
	Mini-Universal MATE-N-LOK and Sealed Mini-Universal MATE-N-LOK	91529-1	408-8547	90758-1	408-9938
		91522-1	408-8547	90759-1	408-9962
		91594-1	408-8547	90760-1	408-9963
		90717-2	408-4443	—	—
	Mini-Universal MATE-N-LOK 2	91529-1	408-8547	—	—
		91522-1	408-8547	—	—
		91594-1	408-8547	—	—
		90717-2	408-4443	—	—
	(MR) Miniature Rectangular	91534-1	408-8547	58514-1	408-9973
		91526-1	408-8547	58514-1	408-9973
	VAL-U-LOK Connector System	—	—	91387-1	408-8917
		—	—	91388-1	408-8918
	AMP-DUAC	90714-1	408-4385	—	—
		734202-2	—	—	—
Standard	5.0 mm Power Key Connectors (PKC)	—	—	—	—
	.093 Commercial Pin & Socket	—	—	90872-1	408-9967
		—	—	90871-1	408-9966
	Commercial MATE-N-LOK	91515-1	408-8547	—	—
		91512-1	408-8547	90574-1	408-9886
		91504-1	408-8547	90575-1	408-9887
	.140 MATE-N-LOK	91552-1	408-8547	—	—
		69710-1[1]	408-2095	—	—
		58373-1[2]	408-9442	—	—
		58374-1[2]	408-9442	—	—
	Universal MATE-N-LOK and Universal MATE-N-LOK II	58439-1	408-9591	—	—
		91510-1	408-8547	90548-1	408-9885
		91500-1	408-8547	90546-1	408-9883
		91508-1	408-8547	90547-1	408-9884
		91506-1	408-8547	90547-1	408-9884
		69710-1[1]	408-2095	—	—
		58380-1[2]	408-9433	—	—
		58380-2[2]	408-9433	—	—
	.156 MATE-N-LOK	58631-1	408-4341	—	—
		58632-1	408-4340	—	—

[1]Hand tool requires die set. [2]Die set.
Note: This listing is for reference purposes only. To obtain part numbers for specific applications call Technical Support.

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Applicator Options

	Strip Form Contact Part Number		Heavy-Duty Miniature Applicator Part Numbers			
			Used on Bench Top Terminators		Used on Automatic Leadmaking Equipment (*AMPOMATOR* CLS Machine with T or G Terminators)	Used on *AMP-O-MATIC* Stripper-Crimper Machine
	Pin	Socket	*AMP-O-LECTRIC* Model K Machine	*AMP-O-LECTRIC* Model G Machine		
2.5 mm Signal Double Lock (SDL) Contacts	917764-1	917683-1	*	*	*	*
	917765-1	917684-1	*	*	*	*
Micro MATE-N-LOK 3 mm Connector System	1-794608-0	—	1385194-2	1385194-3	1385194-1	—
	1-794608-1	—				
	1-794608-2	—				
	1-794609-0	—	1385377-2	1385377-3	1385377-1	—
	1-794609-1	—				
	1-794609-2	—				
	—	794606-1	680893-2	680893-3	680893-1	—
	—	1-794606-1				
	—	1-794606-2				
	—	794607-1	680894-2	680894-3	680894-1	—
	—	1-794607-1				
	—	1-794607-2				
Grace Inertia Connectors (GIC) 3.5	1565080-1	1565079-1	*	*	*	*
	1612335-1	1612334-1	*	*	*	*
.062 Commercial Pin and Socket Contacts	640391-1	640392-1	466686-2	466686-3	466686-1	466955-1
	640391-5	640392-5				
	—	640392-2				
	—	794046-1				
	350629-1	350628-1	687996-2	687996-3	687996-1	—
	—	350628-2				
	350629-5	350628-5				
	—	350628-6				
	—	794103-1				
Power Double Lock (PDL)	177916-1	177914-1	*	*	*	*
		177914-2†	*	*	*	*
	177917-1	177915-1	*	*	*	*
		177915-2†	*	*	*	*
	† High contact pressure type.					
Mini-Universal MATE-N-LOK Contacts	770835-1	770834-1	567418-2	567418-3	567418-1	—
	1-770835-0	1-770834-0				
	770901-1	770902-1	567066-4	567066-5	567066-3	466990-2
	1-770901-0	1-770902-0				
	770903-1	770904-1	567067-2	567067-3	567067-1	466986-1
	1-770903-0	1-770904-0				
	171636-1	171637-1	680582	567251-1	680582	567902-1
	—	171637-3				
Mini-Universal MATE-N-LOK 2 Contacts	794216-1	794217-1	567418-2	567418-3	567418-1	—
	1-794216-0	1-794217-0				
	794218-1	794219-1	567066-4	567066-5	567066-3	466990-2
	1-794218-0	1-794219-0				
	794220-1	794221-1	680854-2	680854-3	680854-1	466986-1
	1-794220-0	1-794221-0				
	794222-1	794223-1	680582-2	680582-3	—	567902-1
	1-794222-0	1-794223-0				
(MR) Miniature Rectangular Contacts	350968-1	794000-1	466352-2	466352-3	466352-1	—
	350968-2	794000-2				
	350967-1	641294-1	466351-2	466351-4	466351-1	466913-1
	350967-2	641294-2				
	350969-1	—	466351-2	466351-4	466351-1	466913-1
	350969-2	—				

Note: Stripper Crimper (SCA) and Crimp Quality Monitor Applicators may be available. Call Technical Support for Part Numbers.
* Contact the Tooling Assistance Center (TAC) at 1-800-722-1111 for Applicator Part Numbers.
Note: All part numbers are RoHS Compliant.

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Applicator Options (Continued)

	Strip Form Contact Part Number		Heavy-Duty Miniature Applicator Part Numbers			
			Used on Bench Top Terminators		Used on Automatic Leadmaking Equipment (*AMPOMATOR* CLS Machine with T or G Terminators)	Used on *AMP-O-MATIC* Stripper-Crimper Machine
	Pin	Socket	*AMP-O-LECTRIC* Model K Machine	*AMP-O-LECTRIC* Model G Machine		
VAL-U-LOK Connector System	794955-1	794956-1	1385817-2	1385817-3	1385817-1	—
	794955-2	794956-2				
	794955-3	794956-3				
	794955-4	794956-4				
	794957-1	794958-1	1385448-2	1385448-3	1385448-1	—
	794957-2	794958-2				
	794957-3	794958-3				
	794957-4	794958-4				
AMP-DUAC	794576-1	106529-2	680308-2	680308-3	—	567959-1
		1-794138-3				
	794578-1	106528-2	680307-2	680307-3	—	567960-1
		1-794139-3				
	—	1-794140-3	680350-2	680350-3	—	—
		794418-1				
5.0 mm Power Key Connectors (PKC)	—	1376347-1	*	*	*	*
	—	1376348-1	*	*	*	*
.093 Commercial Pin and Socket Contacts	350418-1	350417-1	466656-2	466656-3	466656-1	466922-1
	—	350417-3				
	350418-5	350417-5				
	350416-1	350415-1	466878-2	466878-3	466878-1	466959-1
	350416-5	350415-5				
	770530-1	770529-1	567337-4	567337-6	567337-3	—
	770385-1	770383-1	567273-2	567273-4	567273-3	—
	—	—				
Commercial MATE-N-LOK Contacts	350079-1	350078-1	466426-2	466426-3	466426-1	—
	350079-4	350078-4				
	350079-5	350078-5				
	61116-1	61314-1	466320-2	466320-4	466320-1	466917-1
	61116-4	61314-4				
	61116-5	61314-5				
	61116-6	61314-6				
	61116-7	61314-7				
	61118-1	61117-1	687763-2	687763-6	687763-1	466920-1
	61118-4	61117-4				
	61118-5	61117-5				
	61118-6	61117-6				
	61118-7	61117-7				
	350558-1	350557-1	687898-2	687898-4	687898-1	—
	350558-4	350557-4				
	61527-2	—	466320-2	466320-4	466320-1	466917-1
.140 MATE-N-LOK Contacts	61627-1	61626-1	567306-2	567306-3	567306-1	—
	61627-2	61626-2				
	350201-1	350200-1	567309-2	567309-3	587309-1	—
	350201-2	350200-2				
Universal MATE-N-LOK Contacts	350924-1	350925-1	466616-2	466616-3	—	—
	350924-6	350925-6				
	350561-1	350851-1	466320-2	466320-4	466320-1	466917-1
	—	350570-1				
	350561-2	350851-2				
	—	350570-2				
	350561-7	350851-7				
	—	350570-7				
	350561-3	350570-3				
	—	350570-6				

Note: Stripper Crimper (SCA) and Crimp Quality Monitor Applicators may be available. Call Technical Support for Part Numbers.
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	Pin	Socket	*AMP-O-LECTRIC* Model K Machine	*AMP-O-LECTRIC* Model G Machine		
Universal MATE-N-LOK Contacts (Continued)	350218-1	350536-1	687763-2	687763-6	687763-1	466920-1
	350218-2	350536-2				
	350218-7	350536-7				
	350218-3	350536-3				
	350218-6	350536-6				
	350538-1	350537-1	687926-2	687926-6	687926-1	466989-1
	350538-2	350537-2				
	350538-7	350537-7				
	350538-3	350537-3				
	350538-6	350537-6				
	350873-1	350874-1	466588-2	466588-3	466588-1	—
	350873-3	350874-3				
	350922-3	350923-3	466597-2	466597-3	466597-1	—
	350922-6	350923-6				
	350922-4	350923-4				
	350699-1	—	466320-2	466320-4	466320-1	466917-1
	350699-2	—				
	350699-7	—				
	350687-1	—	687763-2	687763-6	687763-1	466920-1
	350687-2	—				
	350687-7	—				
	350700-1	—	687926-2	687926-6	687926-1	466989-1
	350700-2	—				
	350700-7	—				
	770210-1	—	567216-2	567216-3	567216-1	466920-1
	350654-1	—	687763-2	687763-6	687763-1	
	770234-3	—	466597-2	466597-3	466597-1	
Universal MATE-N-LOK II Contacts	770011-6	770012-6	—	567252-4	567252-1	—
	770009-1	—	—	567214-4	567214-1	567914-1
	1-770009-0	—				
	—	770010-3				
	—	1-770010-0				
	770007-1	—	—	567213-4	567213-1	567913-1
	1-770007-0	—				
	—	770008-3				
	—	1-770008-0				
	770005-1	—	—	567212-4	567212-1	—
	1-770005-0	—				
	—	770006-3				
	1-770005-1	1-770006-0				
	770003-3	770004-3	—	567211-4	567211-1	—
	1-770003-0	1-770004-0				
	770193-1	—	—	567213-4	567213-1	567913-1
	1-770193-0	—				
	770194-1	—	—	567212-4	567212-1	—
	1-770194-0	—				
.156 MATE-N-LOK Contacts	61086-1	61085-1	466462-1	466462-3	466462-1	—
	61234-1	61233-1	687765-2	687765-2	—	—

Note: Stripper Crimper (SCA) and Crimp Quality Monitor Applicators may be available. Call Technical Support for Part Numbers.
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Product Feature Comparisons

High Density	2.5 mm Signal Double Lock (SDL)	Micro MATE-N-LOK 3 mm	Grace Inertia Connectors (GIC) 3.5	.062 Commercial Pin & Socket	Power Double Lock (PDL)	Mini-Universal MATE-N-LOK	Sealed Mini-Universal MATE-N-LOK	Mini-Universal MATE-N-LOK 2	(MR) Miniature Rectangular	VAL-U-LOK Connector System	AMP-DUAC
Wire AWG —											
Maximum	20	20	18	18	16	16	18	16	18	18	18
Minimum	26	30	26	30	26	30	26	30	26	26	26
Current Rating —											
10 AWG Wire	—		—		—					—	—
14 AWG Wire	—	—	—	—	—	—	—	—	—	—	—
16 AWG Wire	—		—		14					—	—
18 AWG Wire	—	**	7	17	—	9	9	10.5	6	9	9
20 AWG Wire	3		—		—					—	—
Max. Operating Voltage (AC or DC)	50	250	300	250	300	600	600	600	250	600	600
Flammability Rating —											
UL 94V-0	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
UL 94V-2	No	No	No	Yes	No	Yes*	No	Yes	No	Yes	Yes
Approvals —											
UL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Submitted	Yes	Yes	Yes
CSA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Submitted	Yes	Yes	Yes
VDE	Yes	Yes	—	No	Yes	Yes	Yes	Submitted	No	—	No
Contact Material —											
Brass	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	—
Phos. Bronze	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes	Yes
Plating Finish —											
Tin Plating	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gold Plating	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Centerline Spacing —	.098 [2.50]	.118 [3.00]	.137 [3.50]	.145 [3.68]	.156 [3.96] 256 [6.50] .312 [7.92] .512 [13.00]	.163 [4.14]	.163 [4.14]	.163 [4.14]	.165 [4.20]	.165 [4.20]	.165 [4.20]
Housings —											
Panel Mount	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Free-Hanging	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Secondary Locking Latches	Yes	No	Yes	No	Yes	No	No	Yes	No	Yes	Yes
Contact Position Control	Yes	No	No	No	No	No	No	Yes	No	No	Yes
In-Line Config.	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Dual Row Config.	No	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes
Matrix Config.	No	No	No	Yes	Yes	Yes	No	Yes	Yes	No	No
Accessories —											
Strain Relief	No	No	Yes	No	Yes	Yes	No	No	Yes	No	Yes
Keying Plug	No	No	No	No	No	Yes	Yes	Yes	Yes	No	No
Seals	No	No	No	No	No	Yes	Yes	No	No	No	No
Headers —											
Vertical	Yes	Yes	No	No	Yes	Yes	Yes	Mini-Universal MATE-N-LOK	Yes	Yes	Yes
Blindmate	No	No	No	No	No	Yes	Yes	Mini-Universal MATE-N-LOK	No	Yes	No
Right-Angle	Planned	Yes	No	No	No	Yes	Yes	Mini-Universal MATE-N-LOK	No	Yes	Yes
Positions —											
Minimum	2	2	2	1	1	1	2	2	2	2	2
Maximum	13	24	6	9	12	24	10	24	36	24	24

* Wire-to-Wire Only.
** 5 A on 20 AWG*

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Product Feature Comparisons (Continued)

Standard Density	5.0 mm Power Key Connectors (PKC)	.093 Commercial Pin & Socket	Commercial MATE-N-LOK	.140 MATE-N-LOK	Universal MATE-N-LOK	Universal MATE-N-LOK II	.156 MATE-N-LOK
Wire AWG—							
Maximum	16	14	14	10	10	10	10
Minimum	24	24	30	20	30	30	20
Current Rating —							
10 AWG Wire	—			28			32.5
14 AWG Wire	—	19	13	—	15	19	—
16 AWG Wire	10			—			—
18 AWG Wire	—	—	—	—	—	—	—
20 AWG Wire	—			—			—
Max. Operating Voltage (AC or DC)	300	250	250	600	600	600	600
Flammability Rating —							
UL 94V-0	Yes	No	Yes	No	Yes	Yes	No
UL 94V-2	No	Yes	Yes	Yes	Yes	No	Yes
Approvals —							
UL	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CSA	Yes	Yes	Yes	Yes	Yes	Yes	No
VDE	No	No	No	No	Yes	Yes	No
Contact Material —							
Brass	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Phos. Bronze	No	Yes	Yes	Yes	Yes	Yes	No
Plating Finish —							
Tin Plating	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Gold Plating	No	Yes	Yes	No	Yes	Yes	No
Centerline Spacing —	.197 [5.00]	.198 [5.03] .250 [6.35] .248 [6.30]	.200 [5.08] .240 [6.10] x .202 [5.13] .195 [4.95] x .360 [9.14]	.240 [6.10]	.250 [6.35]	.250 [6.35]	.390 [9.91]
Housings —							
Panel Mount	No	Yes	Yes	Yes	Yes	Yes	Yes
Free-Hanging	No	Yes	Yes	Yes	Yes	Yes	Yes
Secondary Locking Latches	Yes	No	No	Yes	No	Yes	Yes
Contact Position Control	No	No	No	No	No	Yes	No
In-Line Config.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dual Row Config.	Yes	No	Yes	No	No	No	No
Matrix Config.	No	Yes	Yes	Yes	Yes	Yes	No
Accessories —							
Strain Relief	Yes	No	No	No	Yes	Universal MATE-N-LOK	No
Keying Plug	No	No	Yes	No	Yes	Yes	No
Seals	No	No	No	No	Yes	No	No
Headers —							
Vertical	Yes	No	Yes	No	Yes	Universal MATE-N-LOK	No
Blindmate	No	No	No	No	No	No	No
Right-Angle	No	No	Yes	No	Yes	Universal MATE-N-LOK	No
Positions —							
Minimum	2	1	1	2	1	2	3
Maximum	6	15	16	9	15	15	4

* Wire-to-Wire Only.
** 5 A on 20 AWG*

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Non-Compliant to RoHS Compliant Part Number Cross Reference

Non-Compliant Part Number	RoHS Compliant Part Number
350209-2	1586512-2
350210-2	1586514-2
350211-2	1586515-2
350211-3	1586515-3
350212-2	1586518-2
350213-2	1586520-2
350214-2	1586522-2
350220-2	1586524-2
1-350375-0	2-350375-0
1-350376-0	2-350376-0
1-350377-0	2-350377-0
1-350378-1	2-350378-1
1-350379-1	2-350379-1
1-350380-1	2-350380-1
350424-2	1586525-2
350425-2	1586526-2
350426-2	1586528-2
350428-2	350428-4
350429-2	350429-4
350430-2	350430-4
350431-2	350431-4
350432-2	350432-4
350433-2	350433-4
350434-2	350434-4
350539-2	1586530-2
350541-2	1586532-2
350543-2	1586534-2
350544-2	1586536-2
350582-2	350582-4
350583-2	350583-4
350584-2	350584-4
350585-2	350585-4
350586-2	350586-4
350587-2	350587-4
350588-2	350588-4
350641-2	1586539-2
350711-2	350711-4
350712-2	350712-4
350713-2	350713-4
350714-2	350714-4
350714-3	350714-5
350732-2	350732-4
350737-2	350737-4
350738-2	350738-4
350742-2	350742-4
350759-3	350759-5
350760-3	350760-5
350761-3	350761-5
350762-3	350762-5
350763-3	350763-5
350764-3	350764-5
350765-3	350765-5
350786-2	350786-3
350787-2	350787-3
350789-2	350789-3
350790-2	350790-3
350792-2	350792-3
350793-2	350793-3
350824-2	350824-4
350825-2	350825-4
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350830-2	350830-4
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350833-2	350833-4
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350835-2	350835-4
350836-2	350836-4
350837-2	350837-4
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2-350943-0	3-350943-0
2-350944-0	3-350944-0
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1-380936-0	2-380936-0
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2-380999-0	2-1586546-0
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640467-2	640467-3
640497-2	2-640497-2
640497-4	2-640497-4
640498-2	2-640498-2
640498-4	2-640498-4
640499-2	2-640499-2
640499-4	2-640499-4
640500-2	2-640500-2
640500-4	2-640500-4
640501-2	2-640501-2
640501-4	2-640501-4
640502-2	2-640502-2
640502-4	2-640502-4
640503-2	2-640503-2
640503-4	2-640503-4
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640504-4	2-640504-4
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640505-4	2-640505-4
640506-2	2-640506-2
640506-4	2-640506-4
640583-2	640583-3
640584-2	640584-3
640900-2	640900-3
640901-2	640901-3
641831-2	641831-3
641832-2	641832-3
641963-2	641963-3
641964-2	641964-3
641970-2	641970-3
641971-2	641971-3
641972-2	641972-3
641974-2	641974-3
641976-2	641976-4
643228-2	3-643228-0
643230-2	3-643230-0
643232-2	3-643232-0
643234-2	3-643234-0
643236-2	3-643236-0
643410-2	643410-3
643412-2	643412-3
643414-2	643414-3
643424-2	643424-3
643426-2	643426-3
770003-4	1-770003-0
770004-4	1-770004-0
770005-2	1-770005-0
770005-4	1-770005-1
770006-4	1-770006-0
770007-2	1-770007-0
770008-4	1-770008-0
770010-4	1-770010-0
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770166-2	1-770166-1
770170-1	1-770170-0
770170-2	1-770170-1
770174-1	1-770174-0
770174-2	1-770174-1
770178-1	1-770178-0
770178-2	1-770178-1
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770186-1	1-770186-0
770186-2	1-770186-1
770190-1	1-770190-0
770190-2	1-770190-1
770193-2	1-770193-0
770194-2	1-770194-0
770246-4	1-770246-0
770247-4	1-770247-0
770248-2	1-770248-0
770249-4	1-770249-0
770250-2	1-770250-0
770251-4	1-770251-0
770252-2	1-770252-0
770254-2	1-770254-0
770255-2	1-770255-0
770262-2	770262-3
770328-1	1586627-1
1-770328-1	1-1586627-1
770621-1	1-770621-0
770621-2	1-770621-1
770743-1	1-770743-0
770743-2	1-770743-1
770834-3	1-770834-0
770834-6	1-770834-1
770835-3	1-770835-0
770858-1	1-770858-0
770858-2	1-770858-1
770859-1	1-770859-0
770859-2	1-770859-1
770872-1	1-770872-0
770872-2	1-770872-1
770873-1	1-770873-0
770873-2	1-770873-1
770874-2	1-770874-1
770875-1	1-770875-0
770875-2	1-770875-1
770876-1	1-770876-0
770876-2	1-770876-1
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770902-3	1-770902-0
770902-6	1-770902-1
770903-3	1-770903-0
770903-6	1-770903-1
770904-3	1-770904-0
770904-6	1-770904-1
770966-1	1-770966-0
770966-2	1-770966-1
770967-1	1-770967-0
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770968-2	1-770968-1
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770971-2	1-770971-1
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770973-2	1-770973-1
770974-1	1-770974-0
770974-2	1-770974-1
770985-3	1-770985-0
770986-3	1-770986-0
770987-3	1-770987-0
770988-3	1-770988-0
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794040-2	1-794040-1
794058-3	1-794058-0
794059-3	1-794059-0
794065-1	1-794065-0
794065-2	1-794065-1
794066-1	1-794066-0
794066-2	1-794066-1
794067-1	1-794067-0
794067-2	1-794067-1
794068-1	1-794068-0
794068-2	1-794068-1
794069-1	1-794069-0
794069-2	1-794069-1
794070-1	1-794070-0
794070-2	1-794070-1
794071-1	1-794071-0
794071-2	1-794071-1
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794073-1	1-794073-0
794073-2	1-794073-1
794074-1	1-794074-0
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794075-2	1-794075-1
794076-1	1-794076-0
794076-2	1-794076-1
794077-1	1-794077-0
794077-2	1-794077-1
794078-1	1-794078-0

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Non-Compliant to RoHS Compliant Part Number Cross Reference (Continued)

Non-Compliant Part Number	RoHS Compliant Part Number
794078-2	1-794078-1
794079-1	1-794079-0
794079-2	1-794079-1
794105-1	1-794105-0
794105-2	1-794105-1
794106-1	1-794106-0
794106-2	1-794106-1
794107-1	1-794107-0
794107-2	1-794107-1
794108-1	1-794108-0
794108-2	1-794108-1
794126-1	1-794126-0
794130-2	1-794130-1
794136-3	1-794136-1
794137-3	1-794137-1
794138-3	1-794138-3
794139-3	1-794139-3
794140-3	1-794140-3
794141-3	1-794141-3
794142-3	1-794142-3
794143-3	1-794143-3
794181-1	1-794181-1
794181-2	1-794181-2
794216-3	1-794216-0
794217-3	1-794217-0
794218-3	1-794218-0
794219-3	1-794219-0
794220-3	1-794220-0
794221-3	1-794221-0
794222-3	1-794222-0
794223-3	1-794223-0
794224-3	1-794224-0
794225-3	1-794225-0
794226-3	1-794226-0
794227-3	1-794227-0
794228-3	1-794228-0
794229-3	1-794229-0
794230-3	1-794230-0
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794305-2	1-794305-2
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794308-2	1-794308-2
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794312-2	1-794312-2
794313-1	794313-3
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794327-1	1-794327-0
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794360-2	1-794360-2
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794415-1	1-794415-1
794415-2	1-794415-2
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794429-2	1-794429-2
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794453-1	1-794453-1
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794454-2	1-794454-2
794455-1	1-794455-1
794455-2	1-794455-2
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794621-2	3-794621-2
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794621-8	3-794621-8
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1-794621-2	4-794621-2
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794622-2	3-794622-2
794622-4	3-794622-4
794622-6	3-794622-6

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Non-Compliant Part Number	RoHS Compliant Part Number
794622-8	3-794622-8
1-794622-0	4-794622-0
1-794622-2	4-794622-2
1-794622-4	4-794622-4
1-794622-6	4-794622-6
1-794622-8	4-794622-8
2-794622-0	5-794622-0
2-794622-2	5-794622-2
2-794622-4	5-794622-4
794623-2	3-794623-2
794623-4	3-794623-4
794623-6	3-794623-6
794623-8	3-794623-8
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1-794623-2	4-794623-2
1-794623-4	4-794623-4
1-794623-6	4-794623-6
1-794623-8	4-794623-8
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2-794623-2	5-794623-2
2-794623-4	5-794623-4
794624-2	3-794624-2
794624-4	3-794624-4
794624-6	3-794624-6
794624-8	3-794624-8
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1-794624-2	4-794624-2
1-794624-4	4-794624-4
1-794624-6	4-794624-6
1-794624-8	4-794624-8
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1-794632-8	4-794632-8
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2-794632-2	5-794632-2
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1-794636-2	4-794636-2
1-794636-4	4-794636-4
1-794636-6	4-794636-6
1-794636-8	4-794636-8
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2-794636-2	5-794636-2
2-794636-4	5-794636-4
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794637-4	3-794637-4
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1-794637-4	4-794637-4
1-794637-6	4-794637-6
1-794637-8	4-794637-8
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794638-8	3-794638-8
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1-794638-4	4-794638-4
1-794638-6	4-794638-6
1-794638-8	4-794638-8
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794662-2	1586489-2
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1-794662-6	1-1586489-6
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794663-4	1586490-4
794663-6	1586490-6
794663-8	1586490-8
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1-794663-6	1-1586490-6
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794664-2	1586491-2
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794664-6	1586491-6
794664-8	1586491-8
1-794664-0	1-1586491-0
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1-794664-4	1-1586491-4
1-794664-6	1-1586491-6
1-794664-8	1-1586491-8
2-794664-0	2-1586491-0
2-794664-2	2-1586491-2
2-794664-4	2-1586491-4
794665-2	1586492-2
794665-4	1586492-4
794665-6	1586492-6
794665-8	1586492-8
1-794665-0	1-1586492-0
1-794665-2	1-1586492-2
1-794665-4	1-1586492-4

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USA: 1-800-522-6752
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Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Non-Compliant to RoHS Compliant Part Number Cross Reference (Continued)

Non-Compliant Part Number	RoHS Compliant Part Number
1-794665-8	1-1586492-8
2-794665-0	2-1586492-0
2-794665-2	2-1586492-2
2-794665-4	2-1586492-4
794666-2	1586493-2
794666-4	1586493-4
794666-6	1586493-6
794666-8	1586493-8
1-794666-0	1-1586493-0
1-794666-2	1-1586493-2
1-794666-4	1-1586493-4
1-794666-6	1-1586493-6
1-794666-8	1-1586493-8
2-794666-0	2-1586493-0
2-794666-2	2-1586493-2
2-794666-4	2-1586493-4
794667-2	1586494-2
794667-4	1586494-4
794667-6	1586494-6
794667-8	1586494-8
1-794667-0	1-1586494-0
1-794667-2	1-1586494-2
1-794667-4	1-1586494-4
1-794667-6	1-1586494-6
1-794667-8	1-1586494-8
2-794667-0	2-1586494-0
2-794667-2	2-1586494-2
2-794667-4	2-1586494-4
794668-2	1586495-2
794668-4	1586495-4
794668-6	1586495-6
794668-8	1586495-8
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1-794668-2	1-1586495-2
1-794668-4	1-1586495-4
1-794668-6	1-1586495-6
1-794668-8	1-1586495-8
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2-794668-2	2-1586495-2
2-794668-4	2-1586495-4
794669-2	1586496-2
794669-4	1586496-4
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794669-8	1586496-8
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1-794677-6	4-794677-6
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794678-2	3-794678-2
794678-4	3-794678-4
794678-6	3-794678-6
794678-8	3-794678-8
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1-794678-4	4-794678-4
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2-794678-0	5-794678-0
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2-794678-4	5-794678-4
794679-2	3-794679-2
794679-4	3-794679-4
794679-6	3-794679-6
794679-8	3-794679-8
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1-794679-8	4-794679-8
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794680-4	3-794680-4
794680-6	3-794680-6
794680-8	3-794680-8
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1-794680-2	4-794680-2
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1-794680-6	4-794680-6
1-794680-8	4-794680-8
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2-794680-2	5-794680-2
2-794680-4	5-794680-4
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794681-4	3-794681-4
794681-6	3-794681-6
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794682-2	3-794682-2
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794682-6	3-794682-6
794682-8	3-794682-8
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1-794682-4	4-794682-4
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794704-1	1586542-1
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1445050-8	2-1445050-8
1445050-9	2-1445050-9
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1445051-3	2-1445051-3
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1445084-7	2-1445084-7
1445084-8	2-1445084-8
1445084-9	2-1445084-9
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1445085-3	2-1445085-3
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1445085-5	2-1445085-5
1445085-6	2-1445085-6
1445085-7	2-1445085-7
1445085-8	2-1445085-8
1445085-9	2-1445085-9
1-1445085-0	3-1445085-0

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UK: 44-8706-080-208

Non-Compliant to RoHS Compliant Part Number Cross Reference (Continued)

Non-Compliant Part Number	RoHS Compliant Part Number
1-1445085-1	3-1445085-1
1-1445085-2	3-1445085-2
1445086-2	2-1445086-2
1445086-3	2-1445086-3
1445086-4	2-1445086-4
1445086-5	2-1445086-5
1445086-6	2-1445086-6
1445086-7	2-1445086-7
1445086-8	2-1445086-8
1445086-9	2-1445086-9
1-1445086-0	3-1445086-0
1-1445086-1	3-1445086-1
1-1445086-2	3-1445086-2
1445087-2	2-1445087-2
1445087-3	2-1445087-3
1445087-4	2-1445087-4
1445087-5	2-1445087-5
1445087-6	2-1445087-6
1445087-7	2-1445087-7
1445087-8	2-1445087-8
1445087-9	2-1445087-9
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1-1445087-1	3-1445087-1
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1445088-2	2-1445088-2
1445088-3	2-1445088-3
1445088-4	2-1445088-4
1445088-5	2-1445088-5
1445088-6	2-1445088-6
1445088-7	2-1445088-7
1445088-8	2-1445088-8
1445088-9	2-1445088-9
1-1445088-0	3-1445088-0
1-1445088-1	3-1445088-1
1-1445088-2	3-1445088-2
1445089-2	2-1445089-2
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USA: 1-800-522-6752
Canada: 1-905-470-4425
Mexico: 01-800-733-8926
C. America: 52-55-1106-0803

South America: 55-11-2103-6000
Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

Engineering Notes

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Revised 4-08

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Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

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Fax: +717-986-7575
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Fax: +61-2-9502-2556
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Fax: +61-2-9634-6188

India – Bangalore
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Fax: +91-80-285-40820

Indonesia – Jakarta
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Fax: +65-6482-1012

Japan – Toyko
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Fax: +81-44-812-3207
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Phone: +81-44-844-8013
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Fax: +43-1 90 5 60-1333

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Fax: +49-6251-133-1600
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Fax: +49-6103-709-1223

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Fax: +49-6232-30-2243

Germany - HTS Division – Neunkirchen
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Hungary – Budapest
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Fax: +36-1-289-1010

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Fax: +353-1-820-9790

Israel – Yokneam
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Netherlands – 's-Hertogenbosch
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Fax: +31-73-621-23-65
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Norway – Nesbru
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Fax: +47-66-77-8855

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Fax: +48-22-45-76-720

Romania – Bucharest
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Russia – Moscow
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Russia – St. Petersburg
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Fax: +34-93-200-3779

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Fax: +46-8-50-72-50-01

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Phone: +41-71-447-0447
Fax: +41-71-447-0444

Turkey – Istanbul
Phone: +90-212-281-8181/2/3
Fax: +90-212-281-8184

Ukraine – Kiev
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Fax: +380-044-206-2264

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Fax: +44-1793-572-516
Product Information Center: (Technical Support)
Freephone GB: 0800-267-666
Phone: +44-8706-080-208
Fax: +44-208-420-8081

For Middle East/African Countries Not Shown
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Fax: +33-1-3420-8300

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