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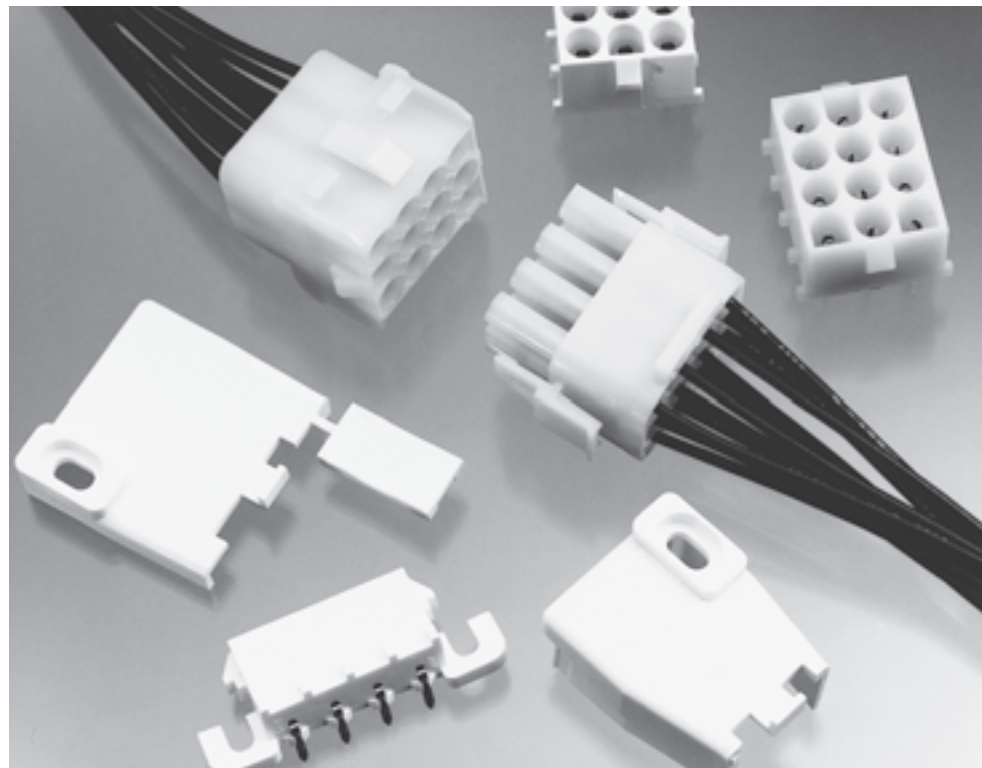
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Jameco Part Number 921934

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 mm²] 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-0 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 163-164 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

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

Universal MATE-N-LOK Connectors (Continued)

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	mm ²	Test Current (Amps)	Resistance Milliohms (Max. Init.)	Force (Min.)	
				lbs.	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.

Universal MATE-N-LOK Connectors (Continued)

Universal MATE-N-LOK Connector Mating Combinations

Connector Part Number					Mating Connector Part Number								
Number of Circuits	Flammability Rating	Style	Plug Part Number ²	Cap Part Number ²	Plating	Vertical Pin ²			Vertical Socket ²			Right-Angle ²	
						Standard Tail	Standard Tail Polarized	Long Tail	Standard Tail	Standard Tail Polarized	Long Tail	Pin	Socket
1	UL94V-2	—	1-350867-0 1-641084-0 ³	770421-1 1-641083-0 ³	—	—	—	—	—	—	—	—	—
	UL94V-0	—	350865-1	350866-1	—	—	—	—	—	—	—	—	—
2	UL94V-2	In-Line	1-480698-0 1-770113-0 ³	1-480699-0 1-770114-0 ³	Pre-tin Duplex ¹	350428-1 350428-4	641963-1 641963-3	350582-1 350582-4	350759-4 350759-5	643411-1 —	350986-4 —	—	—
	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	1-480700-0 1-641771-0 ³	1-480701-0 1-641767-0 ³	Pre-tin Duplex ¹	350429-1 350429-4	641965-1 —	350583-1 350583-4	350760-4 350760-5	643413-1 —	350987-4 —	—	—
	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 770208-1 ³	1-480703-0 770209-1 ³	Pre-tin Duplex ¹	350430-1 350430-4	641967-1 —	350584-1 350584-4	350761-4 350761-5	643415-1 —	350988-4 350988-5	1-350948-0	—
	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	Pre-tin Duplex ¹	640466-1 640466-3	643405-1 —	— 640467-3	640467-1 —	— —	— —	1-350949-0	—
	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 Duplex ¹	641832-1 641832-3	643407-1 —	— —	— —	— —	— —	640587-1	—
	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	1-480704-0 1-641770-0 ³ 794096-1 ⁵	1-480705-0 1-641766-0 ³	Pre-tin Duplex ¹	350431-1 350431-4	641969-1 —	350585-1 350585-4	350762-4 350762-5	643423-1 —	350989-4 350989-5	—	—
UL94V-0	Matrix	350715-1	350781-1	Pre-tin Duplex ¹	350711-1 350711-4	641970-1 641970-3	350732-1 350732-4	350827-1 350827-4	643424-1 643424-3	350834-1 350834-4	—	—	
8	UL94V-2	In-Line	640586-1	926308-1	Pre-tin Duplex ¹	641825-1 —	— —	770143-1 —	— —	— —	— —	— —	—
	UL94V-0	In-Line	640582-1	926308-3	Pre-tin	641828-1	643410-1	—	—	—	—	640584-1	643326-1
					Duplex ¹	—	643410-3	—	—	—	—	640584-3	3-643326-0
9	UL94V-2	Matrix	1-480706-0 1-641769-0 ³	1-480707-0 1-641765-0 ³	Pre-tin Duplex ¹	350432-1 350432-4	641971-1 641971-3	350586-1 350586-4	350763-4 350763-5	643425-1 —	350990-4 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 1-641768-0 ³	1-480709-0 641764-1 ³	Pre-tin Duplex ¹	350433-1 350433-4	641973-1 —	350587-1 350587-4	350764-4 350764-5	— —	350991-4 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	Matrix	1-480710-0	1-480711-0	Pre-tin Duplex ¹	350434-1 350434-4	641975-1 —	350588-1 350588-4	350765-4 350765-5	643429-1 —	350992-4 —	—	—
	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	—	—

¹Duplex 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.

²Universal 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.

³Housing material has 125°C temperature rating. Lime green color. 12 Circuit cap black color.

⁴Black in color.

⁵Tool Removable

Note: All part numbers are RoHS Compliant.

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

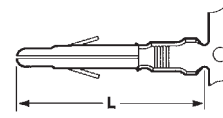
114-1010 Universal MATE-N-LOK Contacts

Performance Characteristics—
pages 163-164

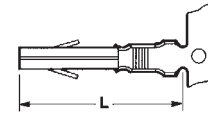
Technical Documents—pages 163 and 199-200

Application Tooling—pages 201-204

Housings—page 168



Solid Pin



Socket

Wire Size Range AWG [mm ²]	Ins. Dia. Range	L Dim.		Material & Finish	Contact Part Numbers				HDM Applicator Part No.	Hand Tool Part No.
		Pin	Socket		Pin		Socket			
					Strip Form	Loose Piece	Strip Form	Loose Piece		
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	—		
				Brass, Pre-tin	350561-1	350690-1	350851-1 350570-1 ¹	350689-1 ¹		
				Brass, Gold ²	350561-2	350690-2	350851-2 350570-2 ¹	640347-2 350689-2 ¹	466320-1 ⁶ 466320-2 ⁶ 466320-4 ⁶	91510-1
24-18 [.2-.8]	.040-.100 1.02-2.54	.790 20.06	.760 19.30	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	—		
				Brass, Pre-tin	350218-1	350547-1	350536-1	350550-1		
				Brass, Gold ²	350218-2	350547-2	350536-2	350550-2	687763-1 ⁶ 687763-2 ⁶ 687763-6 ⁶	91500-1
20-14 [.5-2.0]	.060-.130 1.52-3.30	.790 20.06	.760 19.30	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		
				Brass, Pre-tin	350538-1	350552-1	350537-1	350551-1		
				Brass, Gold ²	350538-2	350552-2	350537-2	350551-2	687926-1 ⁶ 687926-2 ⁶ 687926-6 ⁶	91508-1 ⁷ 91506-1 ⁷
20-14 [.5-2.0] or 2@18 [.8]	.130-.200 3.30-5.08	.810 20.57	.780 19.81	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		
				Phos. Brz., Pre-tin	350922-3	640309-3	350923-3	640310-3	466597-1 ⁶ 466597-2 ⁶ 466597-3 ⁶	69710-1 ⁷
12-10 [3.0-5.0]	.200 max. ⁵ 5.08	.810 20.57	.780 19.81	Phos. Brz., Select Gold ³	350922-6	640309-6	350923-6	640310-6		

¹Socket Contact—.010 [.254] stock thickness

²Gold Finish—Plated with .000030 [.000762] min. gold in mating area and inside wire barrel over .000050 [.00127] min. nickel underplate on entire contact.

³Select Gold Finish—Plated with .000030 [.000762] min. gold in mating area over .000050 [.00127] min. nickel underplate on entire contact.

⁴Recommended for predominant use of 14 AWG wire.

⁵There is no insulation barrel on this contact. Insulation maximum diameter is limited by the housing.

⁶HDM 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 201-204 for further information.

⁷Hand 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. 1586700-1
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

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 163-164

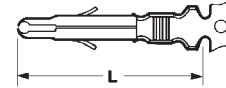
Technical Documents—pages 163
and 199-200

Application Tooling—pages 201-204

Housings—page 168

Universal MATE-N-LOK Connectors (Continued)

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	91510-1
			Brass, Gold ¹	350699-2	350706-2	466320-2 ³	
			Brass, Select Gold ²	350699-7	350706-7	466320-4 ³	
20-14 [.5-2.0]	.060-.130 1.52-3.30	.790 20.06	Brass, Pre-tin	350687-1	350705-1	687763-1 ³	91500-1
			Brass, Gold ¹	350687-2	350705-2	687763-2 ³	
			Brass, Select Gold ²	350687-7	350705-7	687763-6 ³	
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	91508-1 ⁴ 91506-1 ⁴
			Brass, Gold ¹	350700-2	350707-2	687926-2 ³	
			Brass, Select Gold ²	350700-7	350707-7	687926-6 ³	

¹Gold Finish—Plated with .000030 [.000762] min. gold in mating area and inside wire barrel over .000050 [.00127] min. nickel underplate on entire contact.

²Select Gold Finish—Plated with .000030 [.000762] min. gold in mating area over .000050 [.00127] min. nickel underplate on entire contact.

³HDM 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 201-204 for further information.

⁴Hand Tool No. **91508-1** for wire size 20-18 AWG. Hand Tool No. **91506-1** for wire size 16-14 AWG.

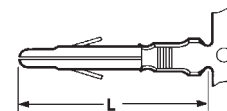
Notes:

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	—

¹There is no insulation barrel on this contact. Insulation maximum diameter is limited by the housing.

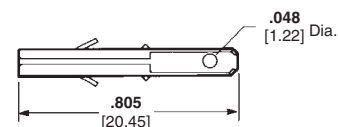
²HDM Applicator part number ending in -1 is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-LECTRIC Model K Machine, -3 & -6 are used on AMP-O-LECTRIC Model G Machine. See pages 201-204 for further information.

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.

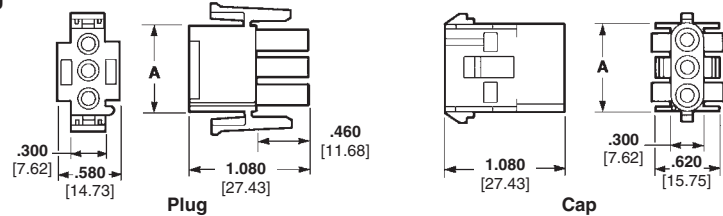
Universal MATE-N-LOK Connectors (Continued)

Housings

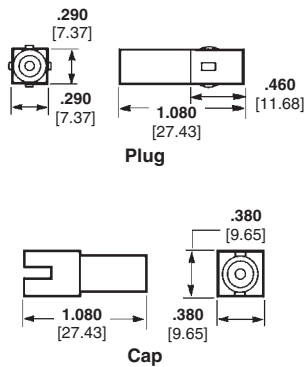
Free Hanging or Panel Mount

.250 [6.35] Centerline spacing

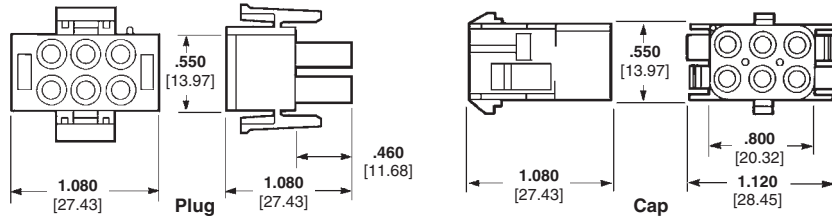
**2, 3, 4, 5, 6, 8 and 10
Circuit, In-Line**



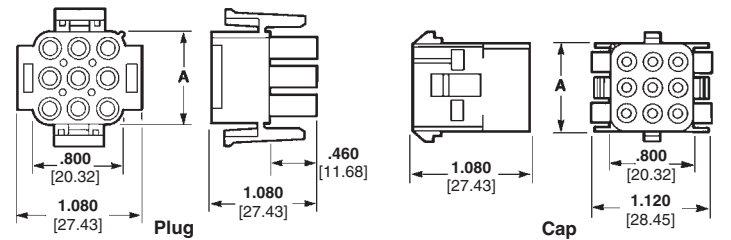
1 Circuit, Free Hanging



6 Circuit, Matrix



**9, 12 and 15 Circuit,
Matrix**



Related Product Data

Product Specification

108-1031 Universal MATE-N-LOK
Connectors

Performance Characteristics—

pages 163-164

Contacts—pages 166-167

Panel Cutout

Recommendations—page 169

Keying Plug—page 169

Strain Reliefs—pages 169-170

Technical Documents—pages 163
and 199-200

Mating Headers—pages 176-177
and 179

Other Mating Connectors

Universal MATE-N-LOK II Housings—
pages 187-188

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	1-480705-0	350715-1	350781-1
	—	794096-1 ⁴			
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

¹In-Line style.

²Housing material has 125°C temperature rating.

³Housing material has 120°C temperature rating.

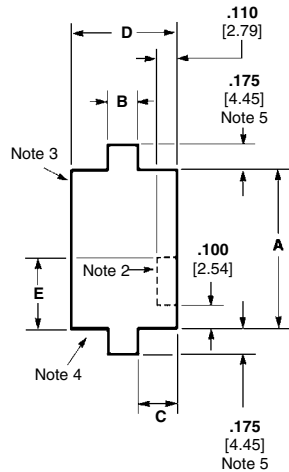
⁴Tool Removable.

Note: All part numbers are RoHS Compliant.

Recommended Cap Housing Panel Cutouts

View is from cap entry side

Refer to Application Specification
114-1010



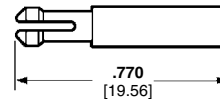
Notes:

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.

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
	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
Matrix	15	1.315 33.40	.480 12.19	.275 6.99	1.030 26.16	.350 8.89

Keying Plugs

IS 408-3320



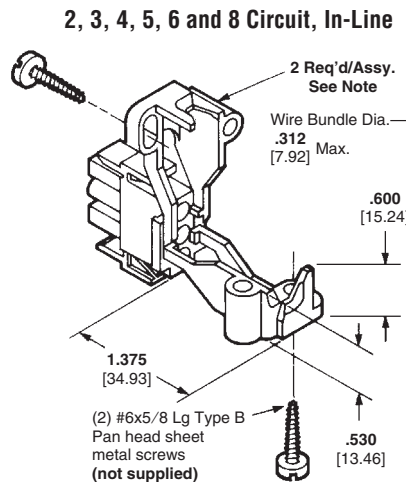
Part Numbers

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

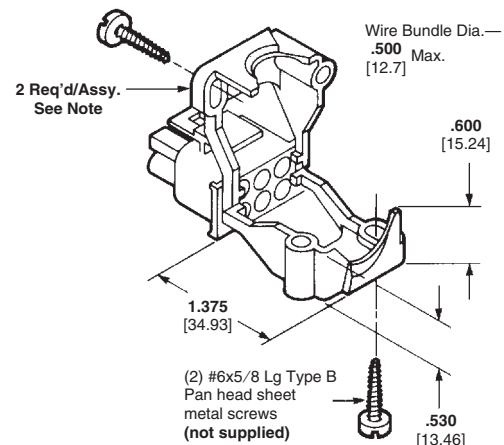
IS 408-3320



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.

**Plug or
Cap Housing
Strain Reliefs**

IS 408-3320

Related Product Data

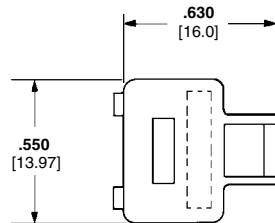
Housings—page 168
Technical Documents—pages 163
and 199-200

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.

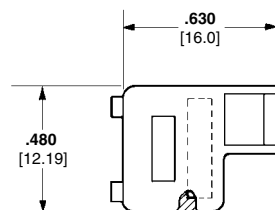
IS 408-3320

**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

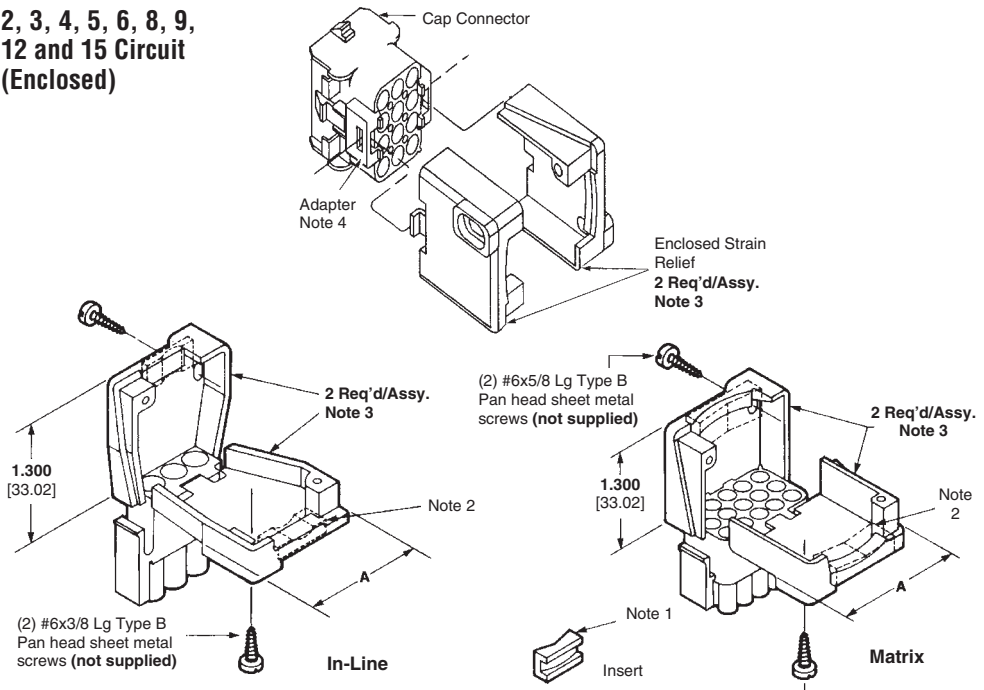
**For 2 In-Line and 6 Matrix
Circuit Cap Housings Only**



UL94V-2 Nylon material,
natural color—**643182-1**
UL94V-0 Nylon material—
643182-2

Universal MATE-N-LOK Connectors (Continued)

**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

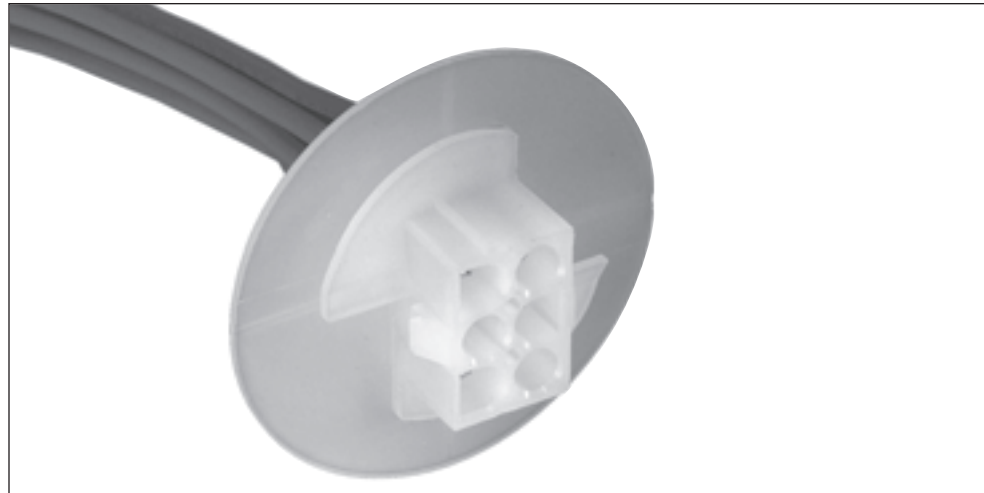
Notes:

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.

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 168)
- 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)



Material and Finish

Housing—Nylon, UL 94V-0 or UL 94V-2 rated

Contacts—Phosphor Bronze or Brass

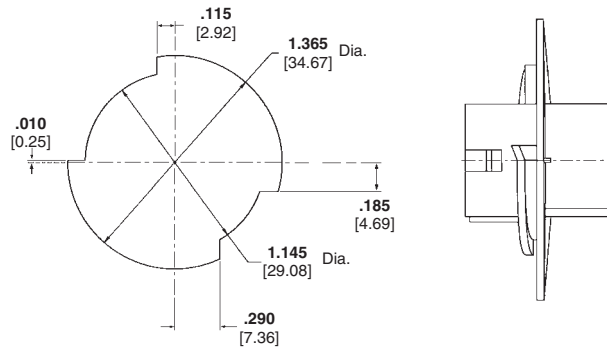
Plating—Pre-tin or Gold

Related Product Data

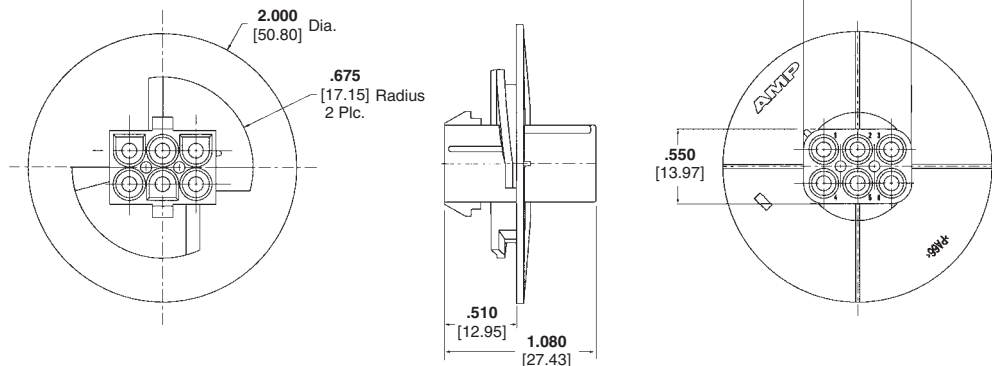
Contacts—pages 166-167

Plug Housings—page 168

Seals—page 174



**Recommended Panel Cutout
(for 6 and 9 Pos. Housings)**



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.

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

Connector Housings

Material and Finish

Housing—Nylon, UL 94V-0 rated

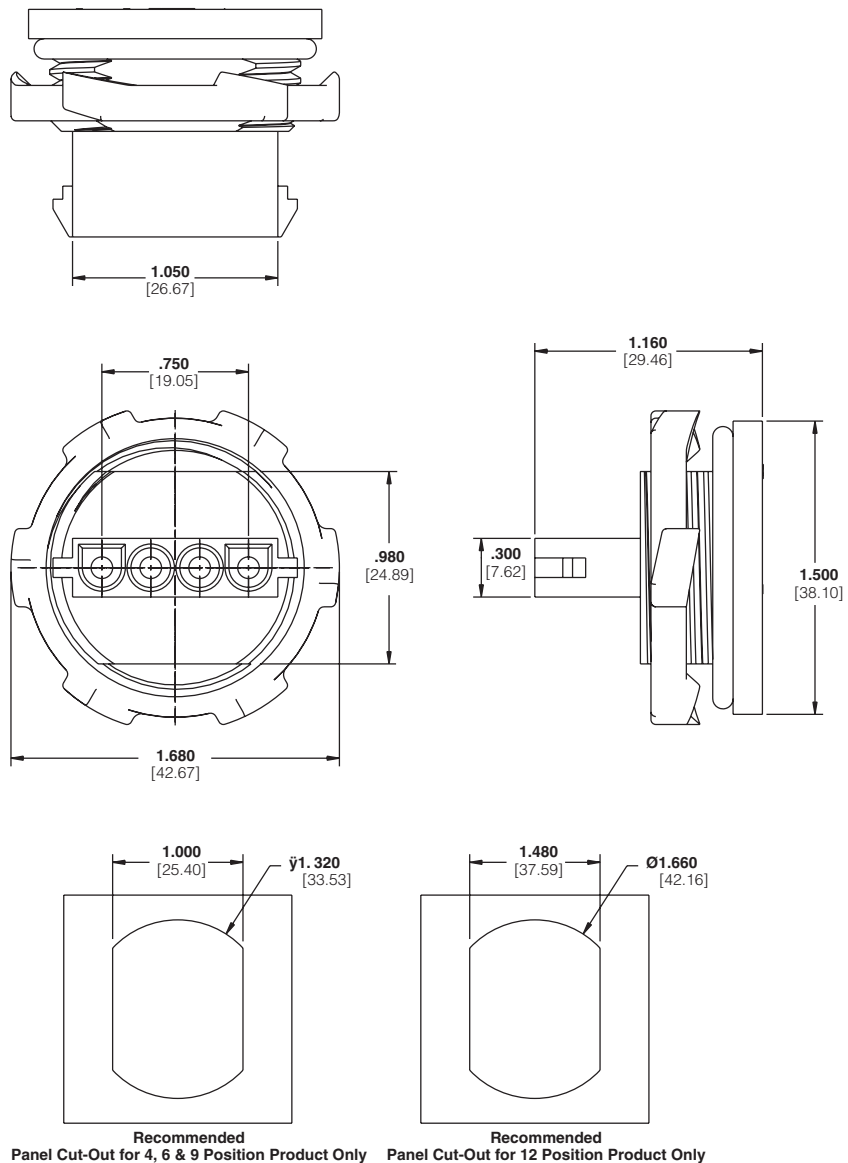
Contacts—Brass with pre-tin or gold plating

O-ring Seal—Neoprene

Locking Nut—Steel, zinc plated

Universal MATE-N-LOK Sealed Bulkhead Connectors (Continued)

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.

Universal MATE-N-LOK Sealed Connectors

Splash Proof Seals

Product Facts

- Economical splash proof/immersion 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 European IP sealing level 5/6 + 7 (swirling dust/immersion to 1 meter for 30 minutes)
- .060-.110 [1.52-2.79] insulation diameter passed European IP sealing level 5/5 + 7 (swirling dust/heavy seas)
- 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

108-1031-1 Splash Proof Seal, Universal MATE-N-LOK Connectors

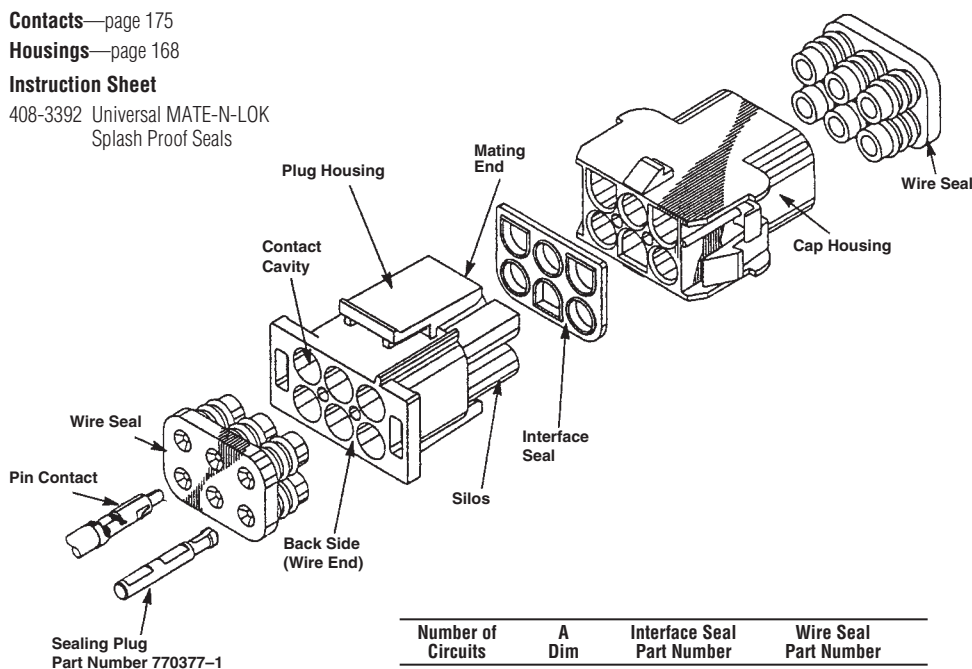
Contacts—page 175

Housings—page 168

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.

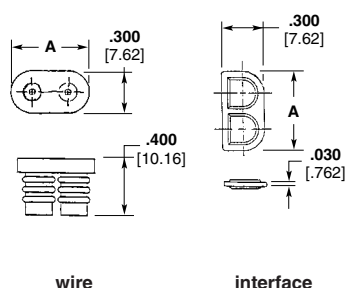


Number of Circuits	A Dim	Interface Seal Part Number	Wire Seal Part Number
2	.550	794269-1	794270-1
3	.800	794271-1	794272-1
4	1.050	794273-1	794274-1
6	—	794275-1	794276-1
9	.800	794277-1	794278-1
12	1.050	794279-1	794280-1
15	1.300	794281-1	794282-1

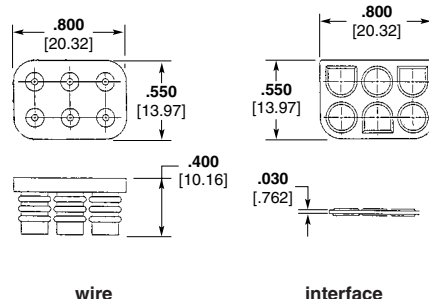
Note: One interface seal and two wire seals required per mated assembly.

Note: All part numbers are RoHS Compliant.

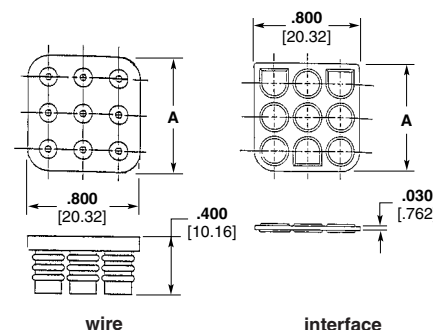
2, 3, 4 Circuit, In-Line



6 Circuit, Matrix



9, 12, and 15 Circuit, Matrix



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**.

Related Product Data

Product Specification

108-1031 Universal MATE-N-LOK
Connectors

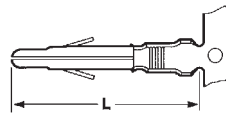
Application Specification

114-1010 Universal MATE-N-LOK
Contacts

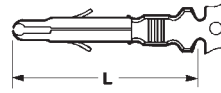
Performance Characteristics—
pages 163-164

Technical Documents— pages 163
and 199-200

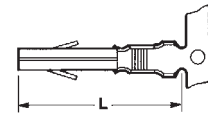
Application Tooling— pages 201-204
Housings— page 168



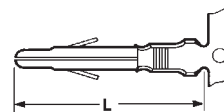
Solid Pin



Split Pin



Socket



Grounding Pin

(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	Style	Contact Part Numbers				HDM Applicator Part No.	Hand Tool Part No.
		Pin	Socket			Pin		Socket			
						Strip Form	Loose Piece	Strip Form	Loose Piece		
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		350218-2	350547-2	350536-2	350550-2		
				Brass, Select Gold ²		350218-7	350547-7	350536-7	350550-7		
				Phos. Brz., Pre-tin		350218-3	350547-3	350536-3	350550-3		
				Phos. Brz., Select Gold ²		350218-6	350547-6	350536-6	350550-6		
				Brass, Pre-tin		350687-1	350705-1	—	—		
		.890 22.60	—	Brass, Gold ¹	Split	350687-2	350705-2	—	—		
				Brass, Select Gold ²		350687-7	350705-7	—	—		
				Brass, Pre-Tin	Grounding	350654-1	350669-1				

¹Gold Finish—Plated with .000030 [.000762] min. gold in mating area and inside wire barrel over .000050 [.00127] min. nickel underplate on entire contact.

²Select Gold Finish—Plated with .000030 [.000762] min. gold in mating area over .000050 [.00127] min. nickel underplate on entire contact.

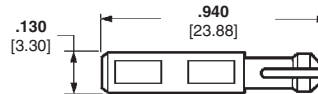
³HDM Applicator part number ending in -1, is used on AMPOMATOR CLS Machine with T or G Terminators, -2 is used on AMP-O-ELECTRIC Model K Machine, -4 & -6 are used on AMP-O-ELECTRIC Model G Machine. See pages 201-204 for further information.

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



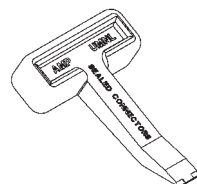
Part Number

UL94V-0 Nylon material—770377-1

Related Product Data

Housings— page 168

Technical Documents— pages 163
and 199-200



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.

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 163-164

Recommended PC Board Hole Layout—

page 178
Technical Documents—pages 163 and 199-200

Mating Connectors

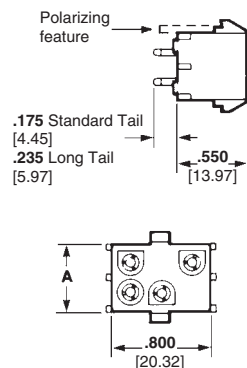
Universal MATE-N-LOK

Plug Housings—page 168

Universal MATE-N-LOK II

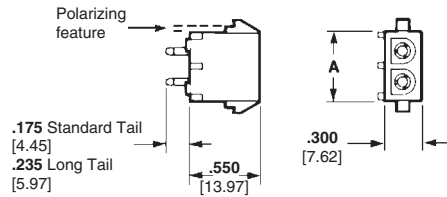
Plug Housings—pages 187-188

6, 9, 12 and 15 Circuit, Matrix



Universal MATE-N-LOK Connectors

2, 3, 4, 5, 6 and 8 Circuit, In-Line



Number of Circuits	A Dim.	Flammability Rating	Pin Finish	Pin Header Part Numbers			Mates with Plug Housing Part Number (Using Socket 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	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	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	350790-1	350766-1	770018-1
			Duplex ¹	350789-3	1-641966-1 ⁴	350790-3		
4	1.050 26.67	UL94V-2	Pre-tin	350430-1	641967-1	350584-1	1-480702-0	—
			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	—	—

Number of Circuits	A Dim.	Flammability Rating	Pin Finish	Pin Header Part Numbers			Mates with Plug Housing Part Number (Using Socket 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	350431-1	641969-1	350585-1	1-480704-0	—
			Duplex ¹	350431-4	—	643749-1 ⁵		
		UL94V-0	Pre-tin	350711-1	641970-1	350732-1	350715-1	770020-1
			Duplex ¹	350711-4	1-641970-1 ⁴	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	350742-1	350720-1	770021-1
			Duplex ¹	350712-4	1-641972-1 ⁴	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	350737-1	350735-1	770022-1
			Duplex ¹	350713-4	1-641974-1 ⁴	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		

¹Duplex 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.

²Use Standard Tail for .062 [1.57] thick PC Board. ³Use Long Tail for .125 [3.18] thick PC Board.

⁴Black in color. ⁵No drain holes, used w/ seals, page 174.

Note: All part numbers are RoHS Compliant.

**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 163-164

**Recommended PC Board Hole
Layout**—page 178

Technical Documents—pages 163
and 199-200

Mating Connectors

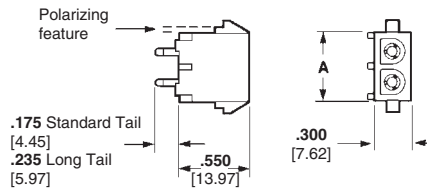
Universal MATE-N-LOK

Plug Housings—page 168

Universal MATE-N-LOK II

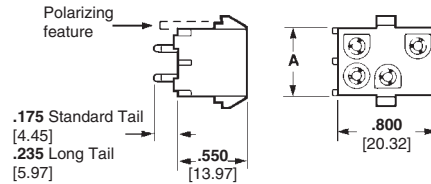
Plug Housings—pages 187-188

**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	—	—

¹Duplex 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.

²Use Standard Tail for .062 [1.57] thick PC Board.

³Use Long Tail for .125 [3.18] thick PC Board.

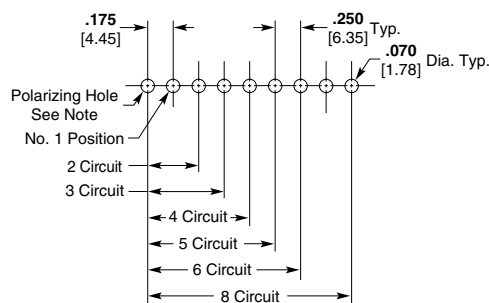
Note: All part numbers are RoHS Compliant.

**Recommended
PC Board
Hole Layouts
for Pin and Socket
Vertical Headers**

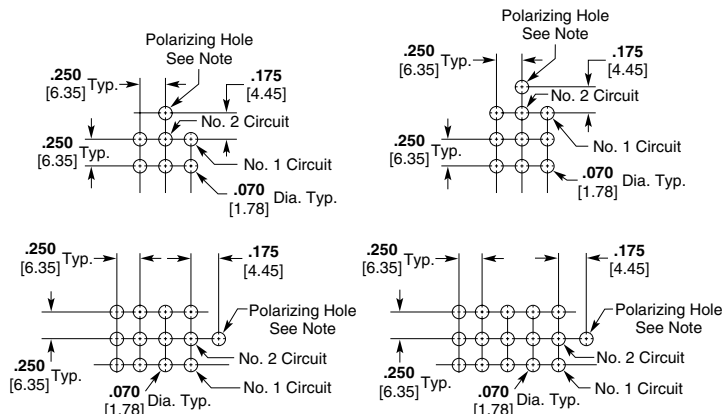
Related Product Data

Vertical Headers—pages 176-177

**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.

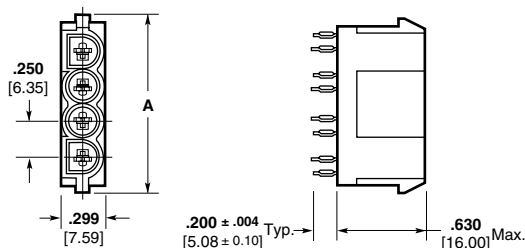
**PC Board Vertical
Pin Headers with
ACTION PIN Contacts**

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 163-164

Technical Documents—pages 163
and 199-200

Product Specification

108-5222 ACTION PIN Universal
MATE-N-LOK Header
Assembly

Mating Connectors

Universal MATE-N-LOK

Plug Housings—page 168

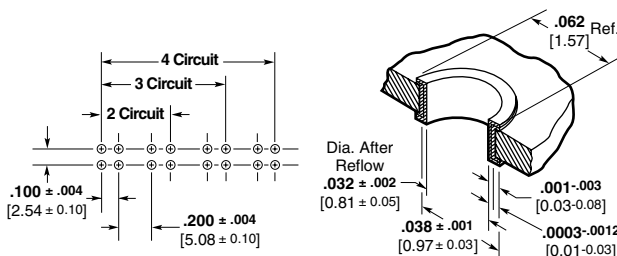
Universal MATE-N-LOK II

Plug Housings—pages 187-188

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

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 163-164

Technical Documents — pages 163
and 199-200

Mating Connectors

Universal MATE-N-LOK

Plug Housings — page 168

Universal MATE-N-LOK II

Plug Housings — pages 187-188

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 168

Mating Headers — pages 176-179

Other Mating Connectors

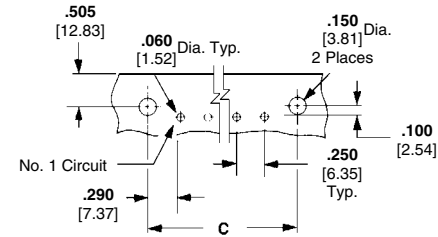
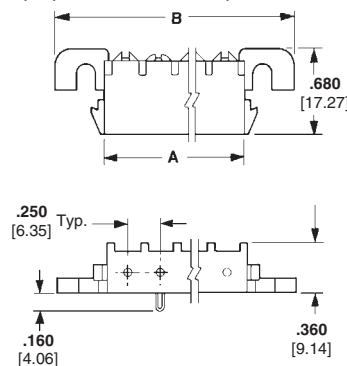
Universal MATE-N-LOK II Housings —
pages 187-188

Notes:

1. Test probes have 5 amp maxi-
mum current rating, 1,000,000
cycles.
2. Test Connector housings are of
the same configuration as stan-
dard housings. Refer to page 23
for dimensional specifications.

Universal MATE-N-LOK Connectors (Continued)

2, 3, 4, 5, 6 and 8 Circuit, In-line



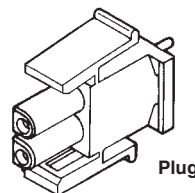
Use 6-32 UNC Pan Head Screw
3/8 [9.53] long for mounting
(Not Supplied)

Recommended PC Board Hole Layout
.062 [1.57] Board Thickness

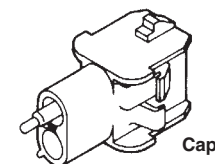
No. of Circuits	Dimensions			Contact Finish	Right-Angle Header Part Numbers						
					UL94V-2			UL94V-0			
	A	B	C		Pin	Socket	Mates with	Pin	Socket	Mates with	
										Universal MATE-N-LOK	Universal MATE-N-LOK II
2	.550 13.97	1.245 31.62	.830 21.08	Pre-tin	—	—	—	1-350942-0 770994-1 ²	643226-1 —	350777-1	770017-1
	Duplex ¹	—	—	—	3-350942-0	—					
3	.800 20.32	1.495 37.97	1.080 27.43	Pre-tin	—	—	—	1-350943-0 3-350943-0	643228-1 3-643228-0	350766-1	770018-1
	Duplex ¹	—	—	—	1-350944-0 3-350944-0	643230-1 3-643230-0					
4	1.050 26.67	1.745 44.32	1.330 33.78	Pre-tin	1-350948-0	—	1-480702-0	1-350944-0 3-350944-0	643230-1 3-643230-0	350779-1	770019-1
	Duplex ¹	—	—	3-350945-0 3-350945-0	643232-1 3-643232-0						
5	1.300 33.02	1.995 50.67	1.580 40.13	Pre-tin	1-350949-0	—	1-480763-0	1-350945-0 3-350945-0	643232-1 3-643232-0	350809-1	770016-1
	Duplex ¹	—	—	640583-1 640583-3	643234-1 3-643234-0						
6	1.550 39.37	2.245 57.02	1.830 46.48	Pre-tin	640587-1	643235-1	640585-1	640583-1 640583-3	643234-1 3-643234-0	640581-1	—
	Duplex ¹	—	640584-1 640584-3	643236-1 3-643236-0							
8	2.050 52.07	2.745 69.72	2.330 59.18	Pre-tin	—	643237-1	640586-1	640584-1 640584-3	643236-1 3-643236-0	640582-1	—
	Duplex ¹	—	640584-3								

¹Duplex 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. ²Black in color.

2, 3, 4 and 5 Circuit, In-Line

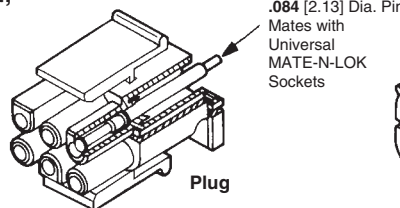


Plug

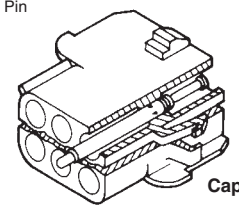


Cap

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.

Universal MATE-N-LOK Circular Connectors

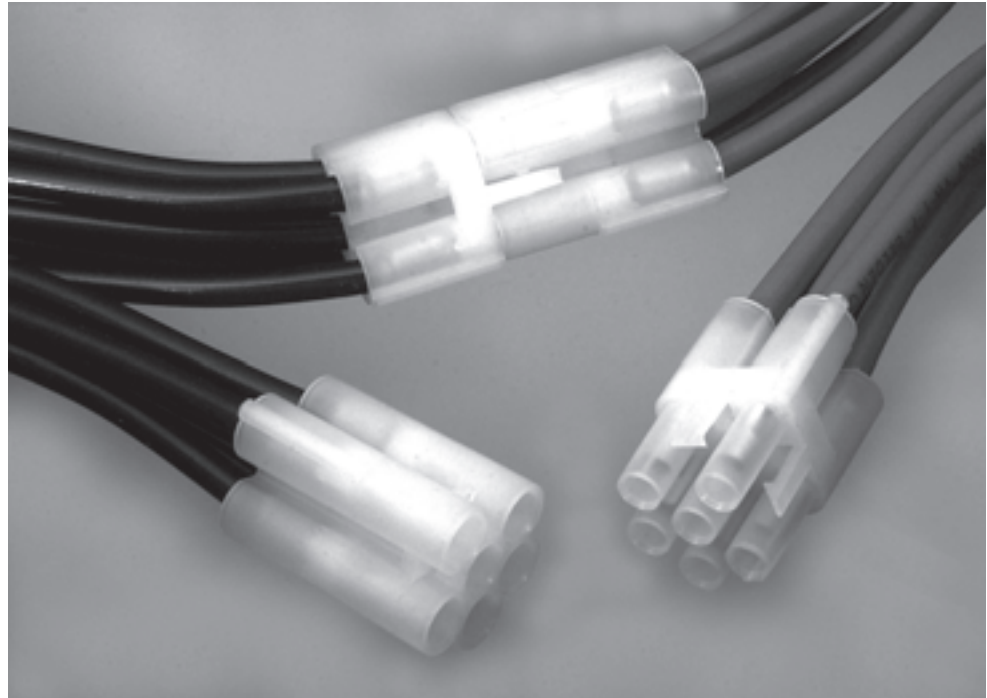
Product Facts

- 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

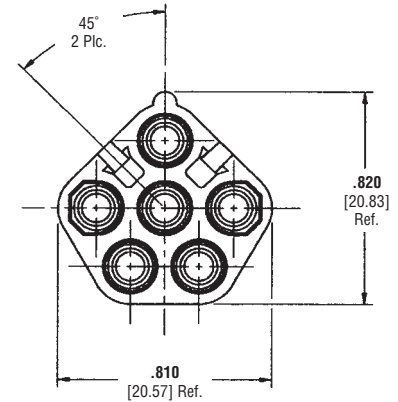
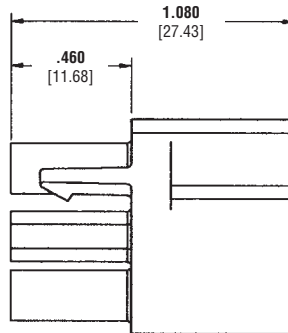
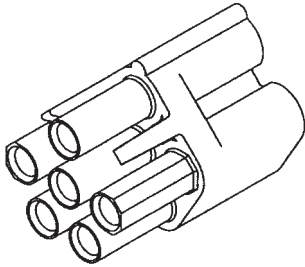
Technical Documents

Product Specification
 108-2069 Universal MATE-N-LOK Circular Connector
Application Specification
 114-1010 Universal MATE-N-LOK Connectors

Universal MATE-N-LOK Circular Connectors (Continued)

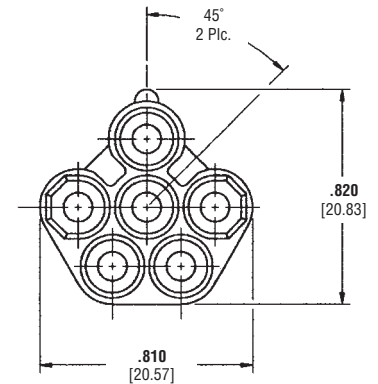
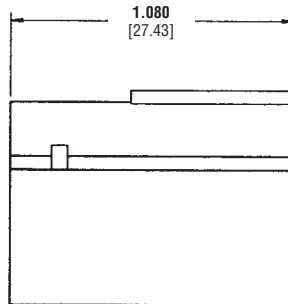
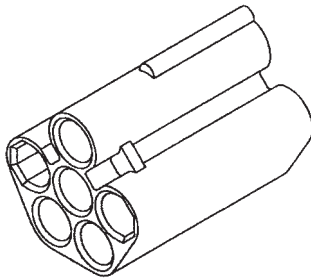
Plug

Part No. 794911-1



Cap

Part No. 794912-1



Material and Finish

Housings—Nylon, UL 94V-2 rated

Related Product Data

Contacts—pages 166-167

Note: All part numbers are RoHS Compliant.

Engineering Notes