.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

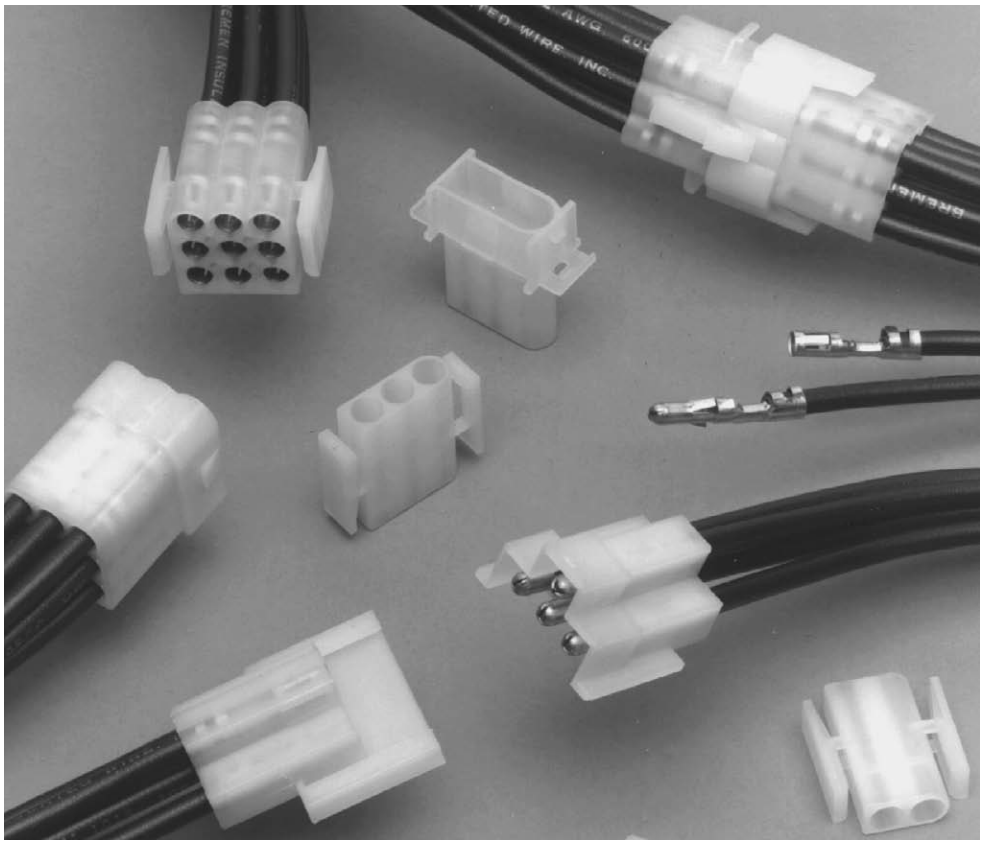
Connector Unmating—.8 lb. min. per circuit

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		Termination Resistance		Contact Crimp Tensile Force	
AWG	mm2	Test Current (Amps)	Resistance Milliohms (Max. Init.)	Force (Min.) lbs.	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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Hong Kong: 852-2735-1628
Japan: 81-44-844-8013
UK: 44-8706-080-208

.140 MATE-N-LOK Connectors (Large Insulation), .240 Centerline (Continued)

Contacts

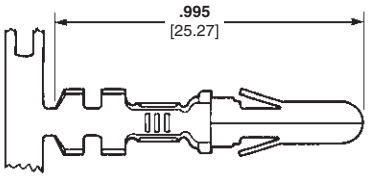
Pin diameter .140 [3.57]
Stock thickness .014 [.357]

Related Product Data

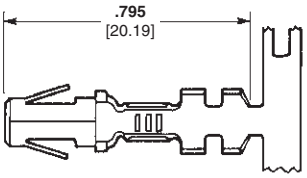
Product Specification
108-1032 .140 Diameter MATE-N-LOK Connectors

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

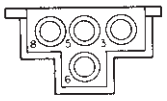
Housings

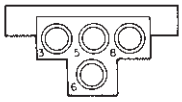
Free-Hanging
.240 [6.09] Centerline spacing

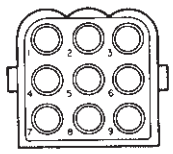
Material
Nylon, natural color

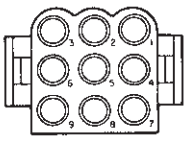
Flammability Rating—UL94V-2

Cavity Identification
(Rear View)

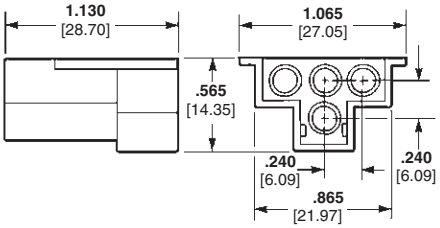

Cap


Plug

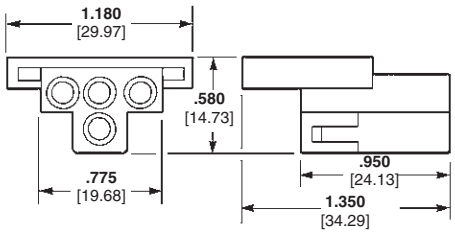

Cap


Plug

4 Circuit

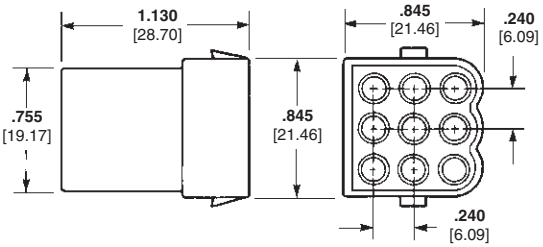


Pin Housing (Cap)
Part No. 1-480512-0
Part No. 794700-1 (Black Color High Temp.)

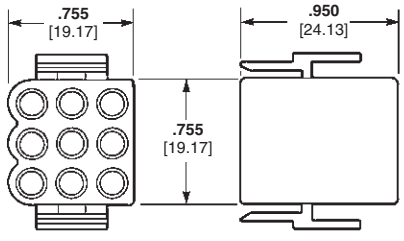


Socket Housing (Plug)
Part No. 1-480510-0

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.**

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.140 MATE-N-LOK Connectors (Large Insulation), .240 Centerline (Continued)

Housings

Panel Mount

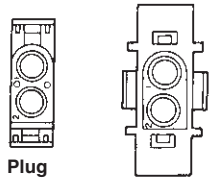
.240 [6.09] Centerline spacing

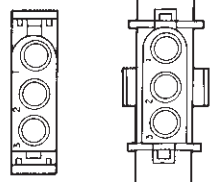
Material

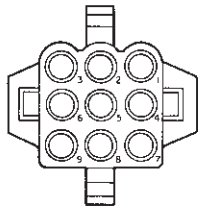
Housing — Nylon, natural color

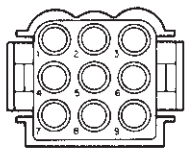
Flammability Rating — UL94V-2

Cavity Identification
(Rear View)









Related Product Data

Product Specification

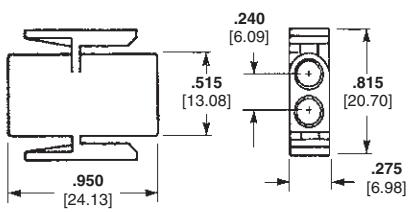
108-1032 .140 Diameter MATE-N-LOK Connectors

Application Specification

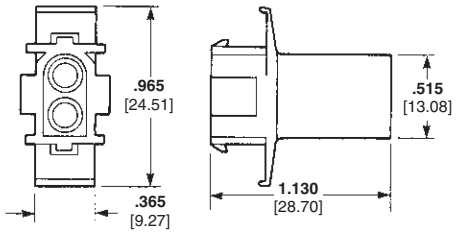
114-1007 .140 Diameter MATE-N-LOK Contacts

Performance Characteristics— page 165
Keying Plug— none
Contacts— page 166
Technical Documents— pages 165 and 205-206

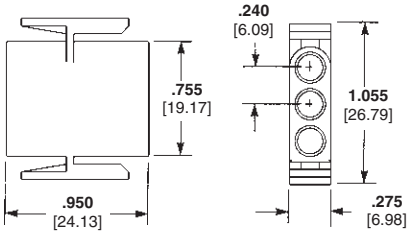
2 and 3 Circuit, In-Line



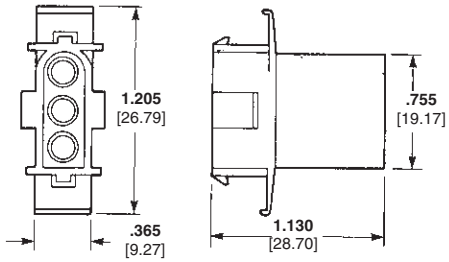
Socket Housing (Plug)
Part No. 1-350344-0
Part No. 794699-1 (Black Color High Temp.)



Pin Housing (Cap)
Part No. 1-350345-0
Part No. 1586305-1 (Black Color High Temp.)

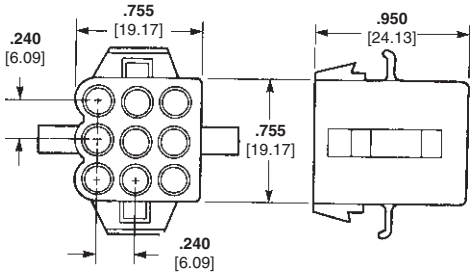


Socket Housing (Plug)
Part No. 1-350346-0

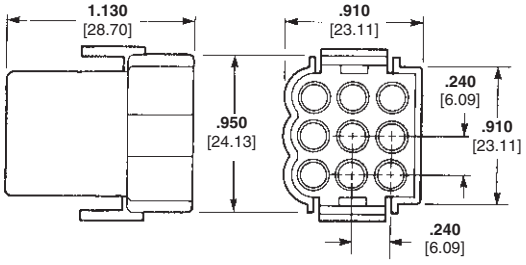


Pin Housing (Cap)
Part No. 1-350347-0
Part No. 794061-1 (Black Color High Temp.)

9 Circuit, Matrix



Socket Housing (Plug)
Part No. 1-480672-0
Part No. 1586305-1 (Black Color High Temp.)

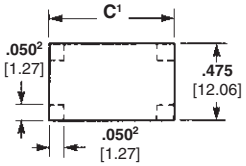


Pin Housing (Cap)
Part No. 1-480673-0
Part No. 794683-1 (Black Color High Temp.)

Recommended Panel Cutouts

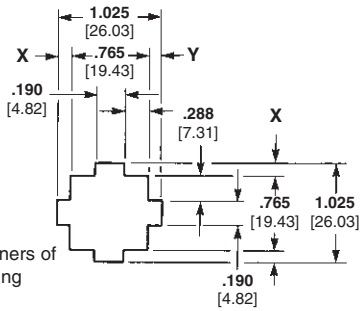
View is from housing entry side

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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