

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

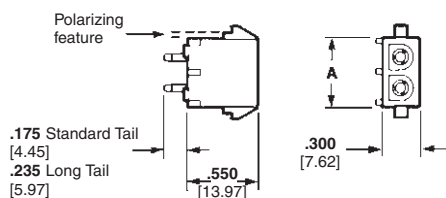
Universal MATE-N-LOK II

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			Mates with Plug Housing Part Number (Using Socket 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	350786-1	641964-1 1-641964-14	350787-1	770017-1	350777-1
		Duplex ¹	350786-3	641964-3	350787-3		
3	.800 20.32	Pre-tin	350789-1	641966-1 1-641966-14	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	—	—		

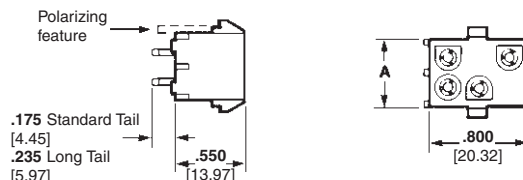
¹Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.

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

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

⁴Black in color.

6, 9, 12 and 15 Circuit, Matrix



Number of Circuits	A Dim.	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 II	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 1-641972-14	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 1-641974-14	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		

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.

Note: All part numbers are RoHS Compliant.

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

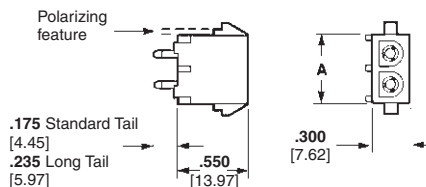
Universal MATE-N-LOK II

Plug Housings — pages 193-194

Universal MATE-N-LOK

Plug Housings — page 175

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



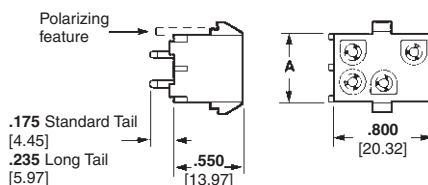
Number of Circuits	A Dim.	Socket Finish	Socket Header Part Numbers			Mates with Plug Housing Part Number (Using Pin Contacts)	
			Standard Tail ¹	Standard Tail Polarized ²	Long Tail ³	Universal MATE-N-LOK II	Universal MATE-N-LOK
2	.550 13.97	Pre-tin	350824-1	643412-1	350831-1	770017-1	350777-1
		Duplex 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	—	—		

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.

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 ¹	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		

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.

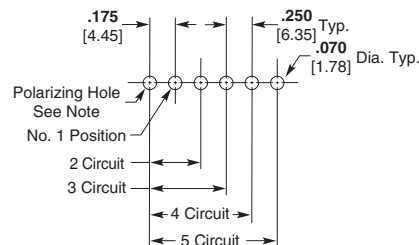
Universal MATE-N-LOK Headers for UMNL II Connectors (Continued)

Recommended PC Board Hole Layouts for Pin and Socket Vertical Headers

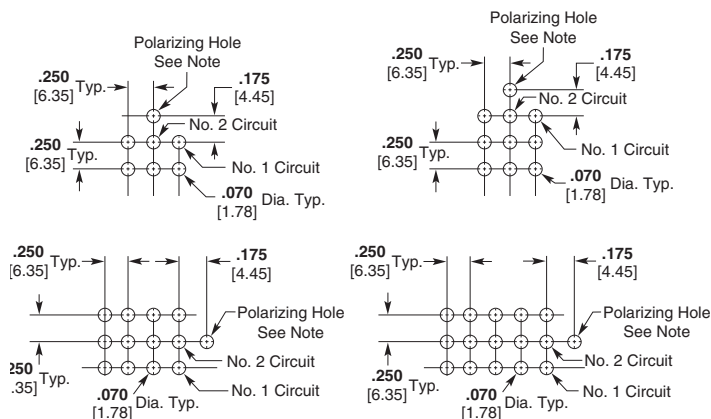
Related Product Data

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

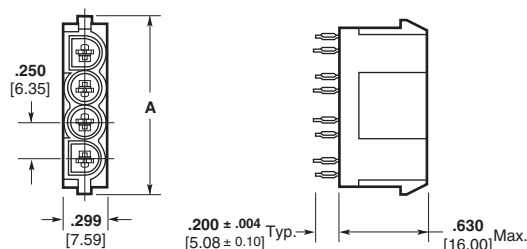
Product Specification

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

Mating Connectors

Universal MATE-N-LOK II
Plug Housings — pages 193-194

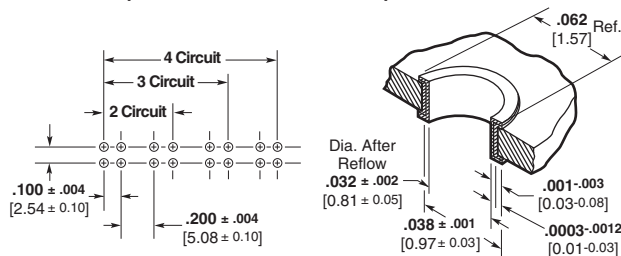
Universal MATE-N-LOK
Plug Housings — page 175



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

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

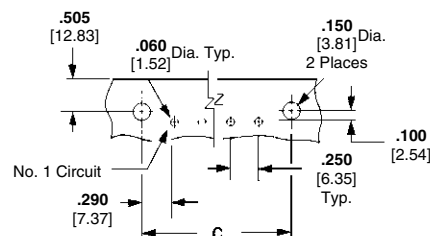
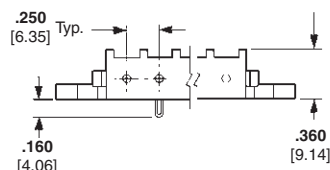
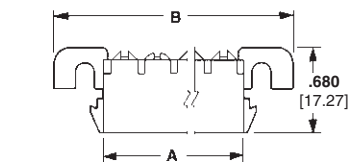
Universal MATE-N-LOK II

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			Contact Finish	Part Numbers			
	A	B	C		Right-Angle Header		Mates with Plug Housing	
					Pin	Socket	Universal MATE-N-LOK II	Universal MATE-N-LOK
2	.550	1.245	.830	Pre-tin	1-350942-0	643226-1	770017-1	350777-1
	13.97	31.62	21.08	Duplex ¹	3-350942-0	—		
3	.800	1.495	1.080	Pre-tin	1-350943-0	643228-1	770018-1	350766-1
	20.32	37.97	27.43	Duplex ¹	3-350943-0	3-643228-0		
4	1.050	1.745	1.330	Pre-tin	1-350944-0	643230-1	770019-1	350779-1
	26.67	44.32	33.78	Duplex ¹	3-350944-0	3-643230-0		
5	1.300	1.995	1.580	Pre-tin	1-350945-0	643232-1	770016-1	350809-1
	33.02	50.67	40.13	Duplex ¹	3-350945-0	3-643232-0		

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.

Note: All part numbers are RoHS Compliant.

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

Cable-to-Right-Angle Board

Material

Housing — UL 94V-0 Nylon

Contact Body — Copper Alloy

Louvertac Band — Beryllium Copper

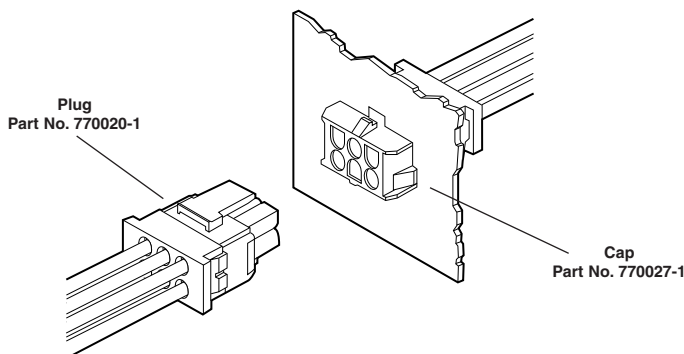
Finish — Silver

■ **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**

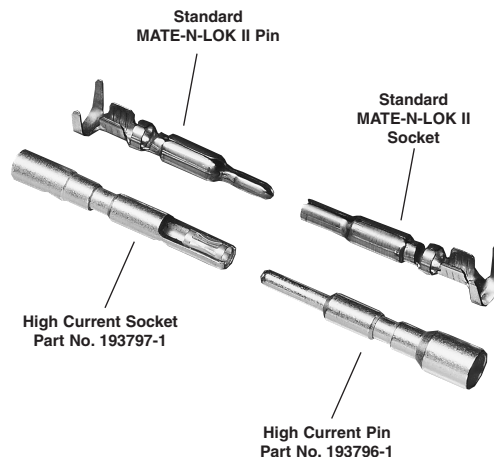
Design Objective — 108-1594



Contacts

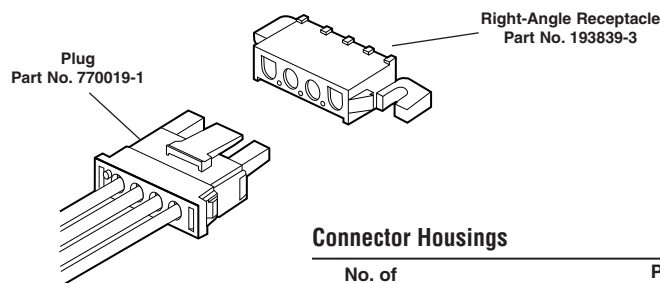
Wire Size AWG	Contact Part Numbers		Crimp Tools
	Pin	Socket	
10	193796-1	193797-1	Daniels Hand Tool #M310 or AMP P/N 356114-1 Positioner #TP1013 or AMP P/N 356337-1
12-14	193841-1	193842-1	

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



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.

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

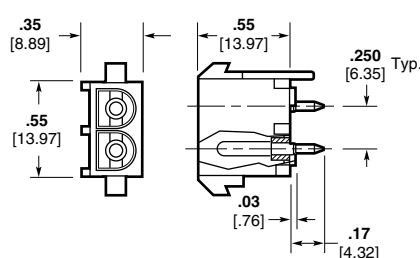
Finish—Silver

■ Recognized under the
Component Program of
Underwriters
Laboratories Inc.,
File No. E28476

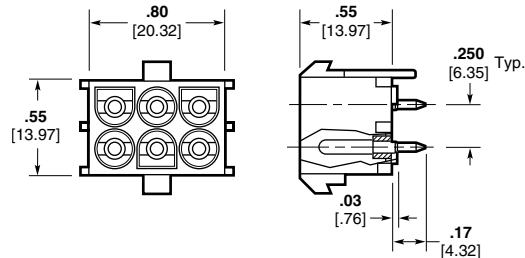
■ Certified by Canadian
Standards
Association,
File No. LR7189

■ Passed test by VDE under
their Registration Number
3980/Continuous
Surveillance

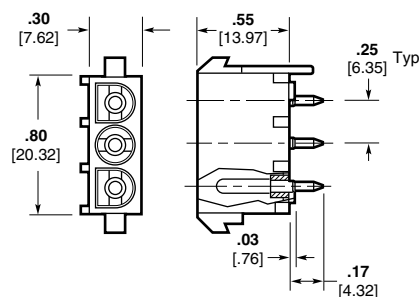
Design Objective—108-1594



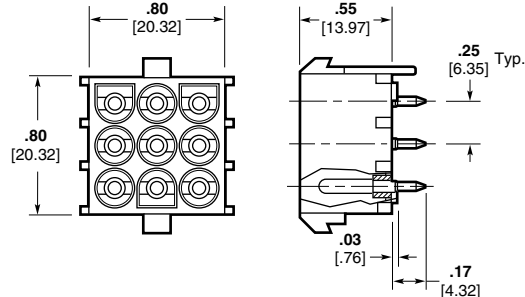
2 Circuit
Part No. 194009-1



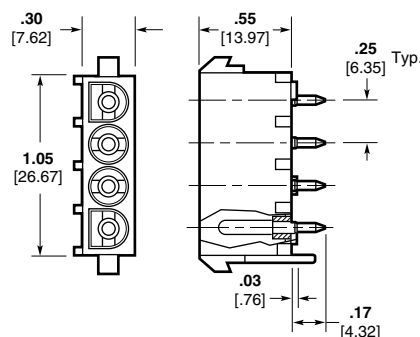
6 Circuit
Part No. 194002-1



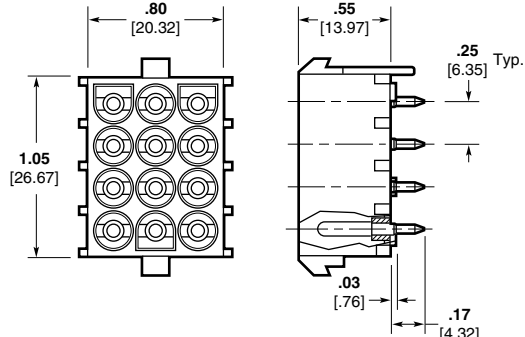
3 Circuit
Part No. 194017-1



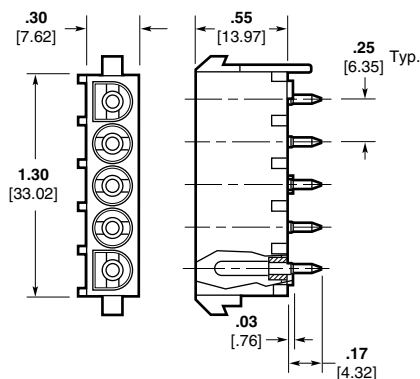
9 Circuit
Part No. 194012-1



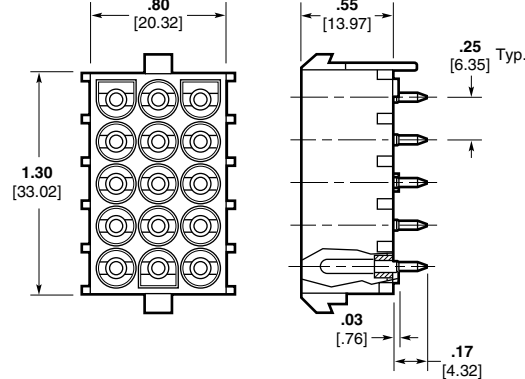
4 Circuit
Part No. 194010-1



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.

Standard Density

Universal MATE-N-LOK Headers
.250 [6.35] Centerline