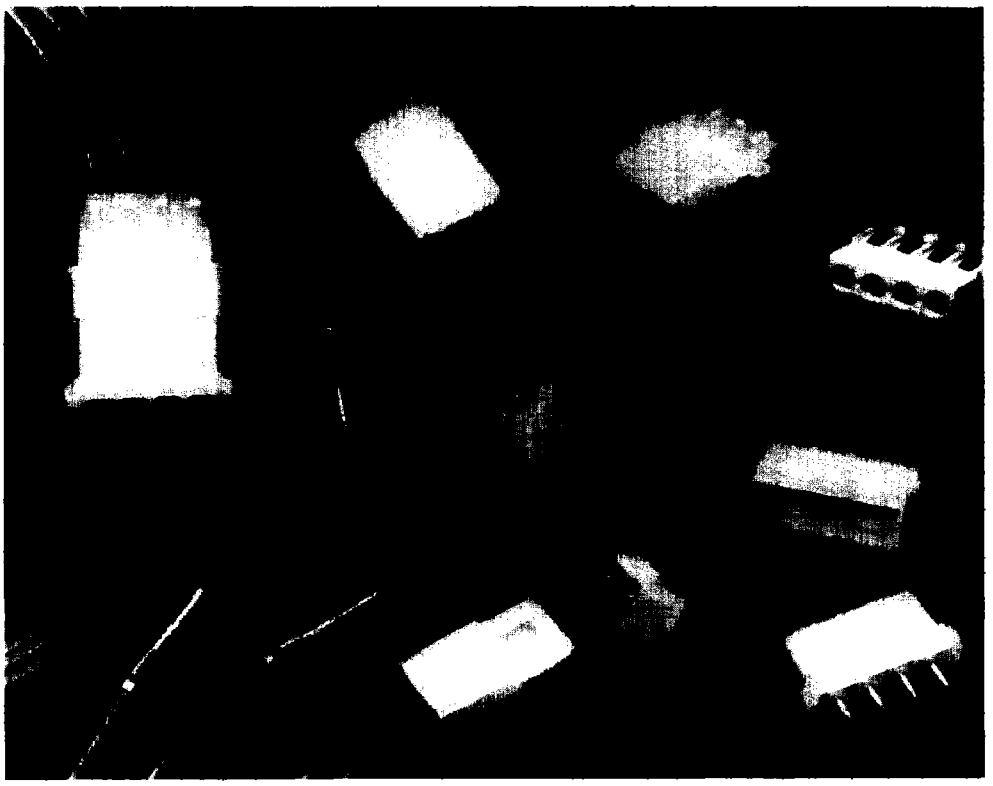
Jameco Part Number 527064

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
- Ultra-violet (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-381



Performance Characteristics

The Commercial MATE-N-LOK Connector performance characteristics found on pages 30 and 31 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 250V 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

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 saw-tooth at 11 milliseconds

Mounting Housing Panel 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

CMNL 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.

CMNL Calculated Current Table

Number of Position	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 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.

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]	350209-2	—	—	—	—
			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]	350539-2	—	—	—	—
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]	350210-2	—	—	—	—
			Socket: PM	1-480304-0			—	—	—	—	—	—
			Socket: FH Positive Lock	1-480721-0	—	—	Pre-tin	350541-1	350542-1	—	—	—
							Duplex[1]	350541-2	—	—	—	—
			Socket: FH UV Stable	1-480388-0	1-480387-0	Pin: FH UV Stable	—	—	—	—	—	—
4					See page 33 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]	2-380999-0	350425-2	—	—	—
			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]	350212-2	350426-2	—	—	—
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]	—	—	—	350642-2	—
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]	2-380991-0	—	—	—	—
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]	350213-1	350220-2	—	—	—
		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]	350214-2	350427-2	—	—	—

FH: Free Hanging **PM: Panel Mount** **MM: Motor Mount**

[1]Duplex Finish — Plated with .000030 [.00076Z] min. gold in mating area, matte tin-lead on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.

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	Edgemount	Standard	Mid Mount Reverse Pol.	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]	—	—	—	350543-2	350544-2	—	—	—	—	—	—
	Socket Housing Detent Lock	1-480424-0	1-480426-0	Pin	Pre-tin	—	—	—	350211-1 770328-1[3] 1-770328-1[4]	350424-1	770829-1	175332-2 175332-3	641737-1 770846-1	84069-1	174804-1 174804-2 174804-3	174552-1
					Duplex[1]	—	—	—	350424-2	350424-2	—	—	—	—	—	—
	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	175332-2 175332-3	641737-1 770846-1	84069-1	174804-1 174804-2 174804-3	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	175332-2 175332-3	641737-1 770846-1	84069-1	174804-1 174804-2 174804-3	174552-1
		770526-1			Duplex[1]	—	—	—	350424-2	350424-2	—	—	—	—	—	—
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-lead on solder tail end over .000050 [.00127] min. nickel underplate on entire contact.

[2]Surface Mount Compatible.

[3]With Drainholes

[4]Tube Loaded

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

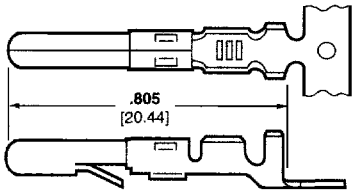
Product Specification

108-1000 Commercial MATE-N-LOK Connectors

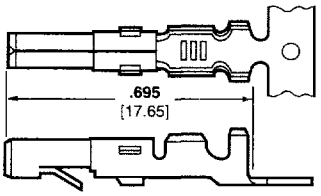
Application Specification

114-1012 Commercial MATE-N-LOK Contacts

Performance Characteristics — pg. 30 and 31
Housings — pg. 36, 37, 38 and 39
Technical Documents — pg. 30 and 91
Application Tooling — pg. 92-94



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 Form	Strip Form	Loose Form		
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]	90066-7
		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]	90123-2 90123-5[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]	90124-2
		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]	90124-2
		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 page 96 for further information.
[4]Use Hand Tool No. 90123-5 for .043-.075 [1.09-1.90] insulation diameter.

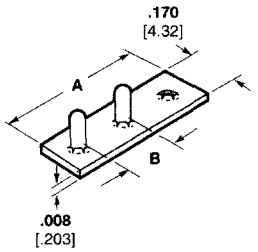
Notes:
1. Extraction Tools: Pins — No. **1-305183-1** (IS 408-7158); Sockets — No. **1-305183-2** (IS 408-7158); Pins and Sockets — No. **465644-1** (IS 408-7211)
2. Insertion Tools: No. **455830-1** (IS 408-7984)

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.

Dimensions are for reference only.

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 Specifications

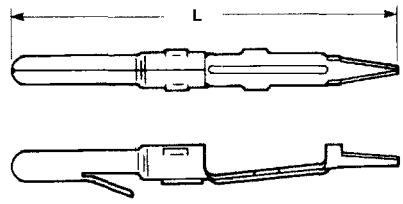
108-1000 Commercial MATE-N-LOK Connectors

Application Specification

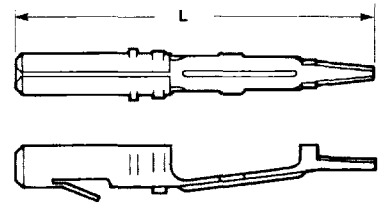
114-1012 Commercial MATE-N-LOK Contacts

Performance Characteristics — pg. 30 and 31
Housings — pg. 36, 37, 38 and 39
Technical Documents — pg. 30 and 91
Application Tooling — pg. 92-94

PC Board Contacts



Pin



Socket

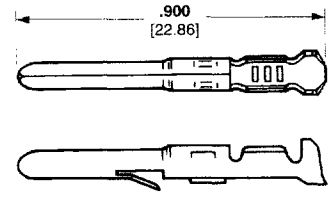
Type of Contact	L Dim.		Material & Finish	Part Numbers	
	Pin	Socket		Pin	Socket
				Loose Form	*Loose Form*
PC Board	**1.110** [28.19]	**1.010** [25.65]	Phos. Brz., Pre-tin	61518-1[1]	61320-1[1]
	1.210 [30.73]	**1.110** [28.19]	Phos. Brz., Pre-tin	350074-1[2]	350073-1[2]

[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)

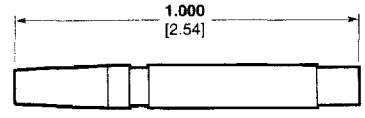


Wire Size Range AWG [mm²]	Ins. Dia. Range	Material & Finish	Contact Part Numbers		HDM Applicator Part No.	Hand Tool Part No.
			Strip Form	Loose Form		
24-18 [.2-.8]	**.060-.100** 1.52-2.54	Brass, Pre-tin	61527-2	—	466320-1[1] 466320-2[1] 466320-4[1]	90123-2

[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, -4, or -6 is used on AMP-O-LECTRIC Model G Machine. See page 96 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

Dimensions are for reference only.

Commercial MATE-N-LOK Connectors (Continued)

Housings

Free Hanging

.200 [5.08] Centerline spacing

Material

Housing — Nylon, natural color

Flammability Rating — UL94V-2

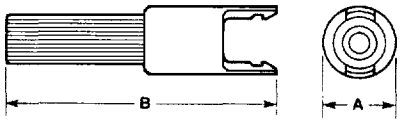
Related Product Data

Product Specification

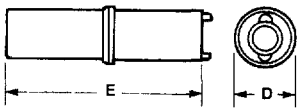
108-1000 Commercial MATE-N-LOK Connectors

Performance Characteristics — pg. 30 and 31
Contacts — pg. 34 and 35
Keying Plug — pg. 35
Commoning Tab — pg. 34
Technical Documents — pg. 30 and 91
Mating Pin Headers — pg. 40, 41 and 42
Mating Socket Header — pg. 41
Mating IDC — pg. 42

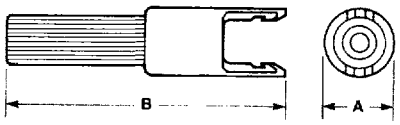
1 Circuit



Pin Housing (Cap) Detent Lock

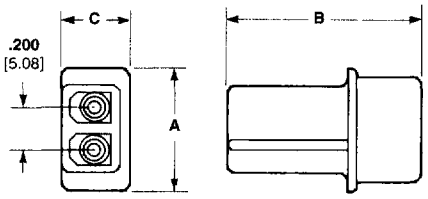


Socket Housing (Plug)

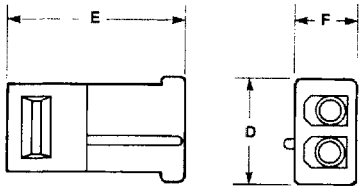


Pin Housing (Cap) Positive Lock

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.

Dimensions are for reference only.

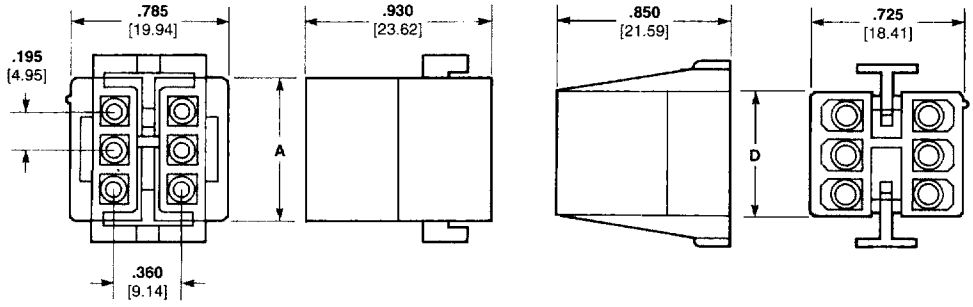
Commercial MATE-N-LOK Connectors (Continued)

Housings

Material

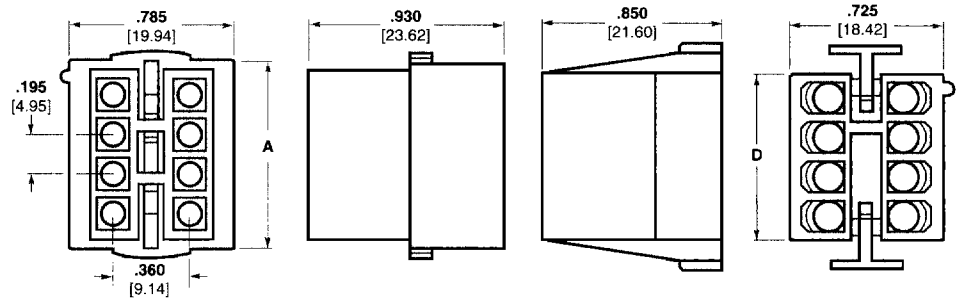
Housing — Nylon, natural color
Flammability Rating — UL94V-2

Free Hanging 6 Circuit, Dual Row, Positive Lock



Pin Housing (Cap) — Socket Housing (Plug)

Free Hanging 8 and 10 Circuit, Dual Row, Positive Lock



Pin Housing (Cap) — Socket Housing (Plug)

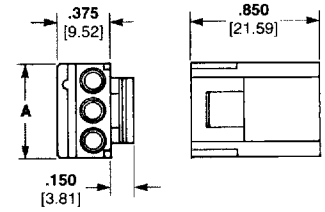
Number of Circuits	Dimensions		Part Numbers	
	A	D	Pin Housing (Cap)	Socket Housing (Plug)
6	**.705** 17.91	**.610** 15.49	1-480340-0	1-480270-0[1]
8	**.900** 22.86	**.805** 20.44	1-480345-0	1-480283-0[1]
10	**1.095** 27.81	**1.000** 25.40	1-480339-0	1-480285-0[1]

[1]Housing accepts double wire applications where individual insulation diameters do not exceed .115 [2.92].

Positive Lock

.200 [5.08] Centerline spacing

2, 3, and 4 Circuit, In-Line



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.

Related Product Data

Product Specification

108-1000 Commercial MATE-N-LOK Connectors

Performance Characteristics — pg. 30 and 31
Contacts — pg. 34 and 35
Commoning Tabs — pg. 34
Keying Plug — pg. 35
Technical Documents — pg. 30 and 91
Mating Headers — pg. 40

Dimensions are for reference only.

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 — pg. 30 and 31
Contacts — pg. 34 and 35
Keying Plug — pg. 35
Commoning Tab — pg. 34
Technical Documents — pg. 30 and 91
Mating Socket Headers — pg. 41
Mating IDC — pg. 42

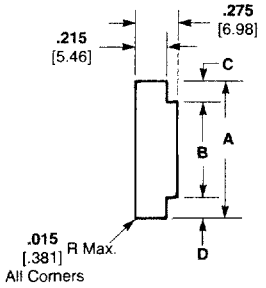
Recommended Panel Cutout for Panel Mount Socket Housing

View is from socket housing entry side

Mounting Information

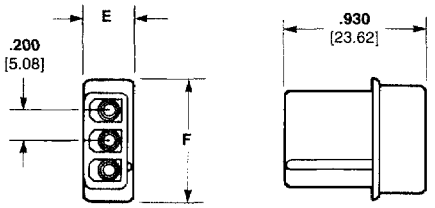
1. Recommended panel thickness—.025-.065 [.635-1.65].
2. Both locking legs are to be squeezed together and the housing is to be inserted "straight-in", as opposed to a rocking manner.
3. The panel should be punched so that the housing enters the panel in the same direction as the punch.
4. The panel 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] to assure proper retention.

3 and 4 Circuit, In-Line

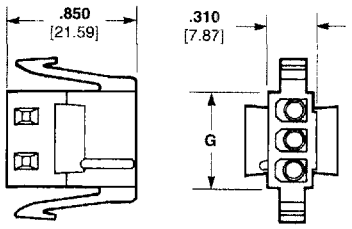


Dimensions are for reference only.

3 and 4 Circuit, In-Line

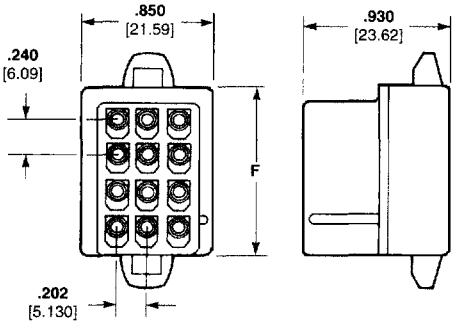


Pin Housing (Cap)

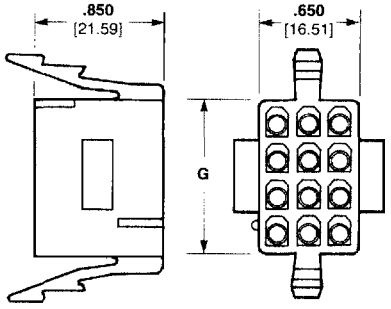


Socket Housing (Plug)

6, 9, 12 and 15 Circuit, Matrix



Pin Housing (Cap)

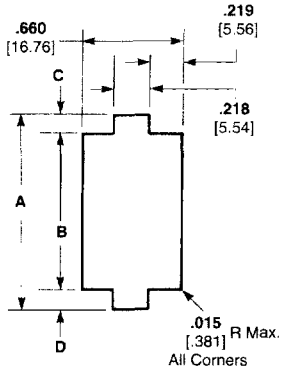


Socket Housing (Plug)

Number of Circuits	Dimensions E	F	G	Part Numbers 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

6, 9, 12 and 15 Circuit, Matrix

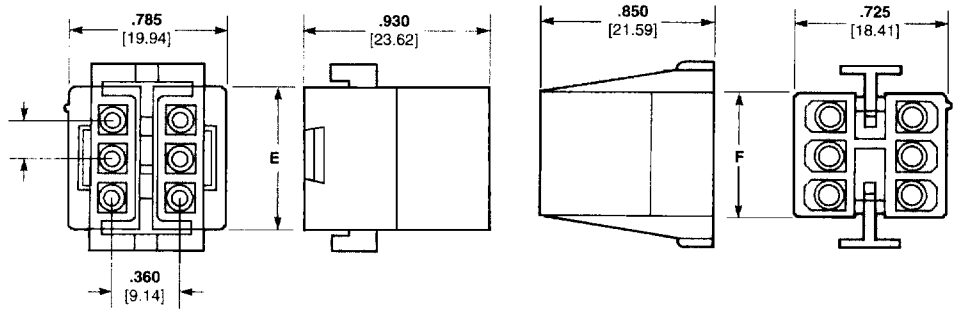


Number Circuits	Dimensions A	B
3	**.890** 22.61	**.645–.635** 16.38–16.13
4	**1.100** 27.94	**.845–.835** 21.46–21.21
6	**.840** 21.34	**.575–.570** 14.61–14.48
9	**1.075** 27.31	**.815–.810** 20.70–20.57
12	**1.320** 33.53	**1.055–1.050** 26.80–26.67
15	**1.550** 39.37	**1.290–1.285** 32.77–32.64

Note: Dimensions "C" and "D" are to be equal.

Commercial MATE-N-LOK Connectors (Continued)

Motor Mount 6, 8, 10, 12 and 16 Circuit, Dual Row, Positive Lock



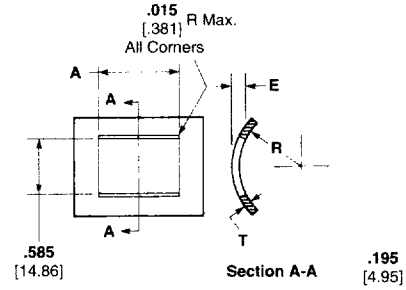
Pin Housing (Cap) Socket Housing (Plug)

Number of Circuits	Dimensions E	Dimensions F	Part Numbers Pin Housing (Cap) UL94V-2 Nylon, Natural Color	Part Numbers 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].

Recommended Panel Cutout for Motor Mount Pin Housing

View is from pin housing entry side.



Note: Motor mount housings may be used in flat panels

Number 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.

Dimensions are for reference only.

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]

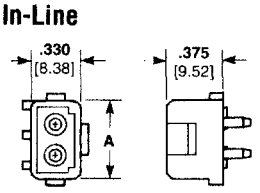
Related Product Data

Product Specifications

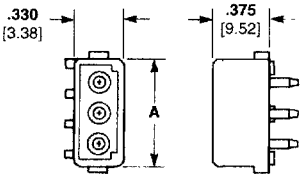
108-1077 Commercial MATE-N-LOK PC Board Headers

Performance Characteristics — pg. 31
Technical Documents — pg. 30 and 91
Mating Socket Housings — pg. 36, 37 and 39
Mating Socket Header — pg. 41
Mating IDC — pg. 42

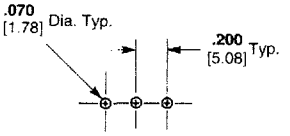
2, 3, and 4 Circuit, In-Line



Positive Lock

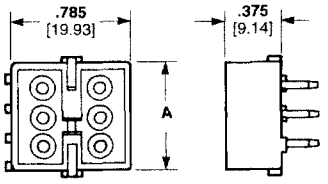


Detent Lock

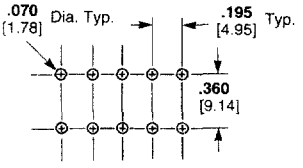


Recommended PC Board Hole Layout
Mounting Dimensions

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]	350539-2	—	
		Detent	Pre-tin	350209-1	350422-1	1-480318-0
			Duplex[1]	350209-2	—	
3	**.715** 18.17	Positive	Pre-tin	350541-1	350542-1	1-480721-0
			Duplex[1]	350541-2	—	
		Detent	Pre-tin	350210-1	350423-1	1-480303-0
			Duplex[1]	350210-2	—	
4	**.915** 23.24	Positive	Pre-tin	350543-1[5]	350544-1[5]	1-480722-0[5]
			Duplex[1]	350543-2[5]	350544-2[5]	
		Detent	Pre-tin	350211-1[5] 770328-1[5,6] 1-770328-1[5,6,7] 794236-1[5,8]	350424-1[5]	1-480424-0[4,5]
			Duplex[1]	350211-2[5]	350424-2[5]	
6	**.705** 17.91	Positive	Pre-tin	1-380999-0	350425-1	1-480270-0
			Duplex[1]	2-380999-0	350425-2	
8	**.900** 22.86	Positive	Pre-tin	350212-1	350426-1	1-480283-0
			Duplex[1]	350212-2	350426-2	
10	**1.095** 27.81	Positive	Pre-tin	1-380991-0	350219-1	1-480285-0
			Duplex[1]	2-380991-0	—	
12	**1.290** 32.77	Positive	Pre-tin	350213-1	350220-1	1-480287-0
			Duplex[1]	350213-2	350220-2	
16	**1.680** 42.68	Positive	Pre-tin	350214-1	350427-1	1-480438-0
			Duplex[1]	350214-2	350427-2	

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area, matte tin-lead 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.

Dimensions are for reference only.

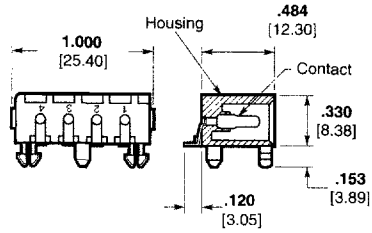
Commercial MATE-N-LOK Connectors (Continued)

PC Board Surface Mount Pin Header

Material and Finish

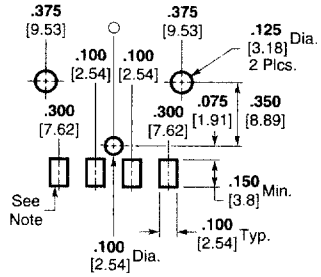
Housing — Nylon, black color
Flammability Rating — UL94V-2
Contact — Phosphor bronze, pre-tin
Solder tail width .052 [1.32]

4 Circuit, In-Line



Part Number
770829-1

Note:
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.



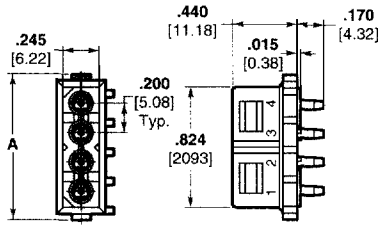
Note: .010 [.25] min. thick solder paste, 63/27
Recommended PC Board Layout
.062 [1.57] thick PC Board

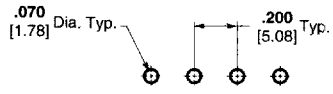
PC Board Vertical Socket Headers

Material

Housing — Nylon, natural color
Flammability Rating — UL94V-2
Contacts — Phosphor bronze
Solder tail diameter .062 [1.57]

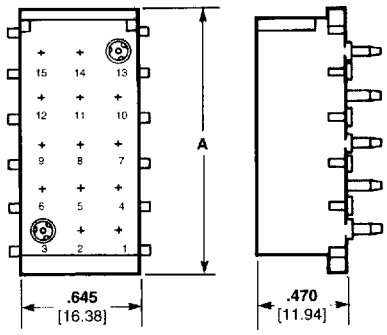
4 Circuit, In-Line

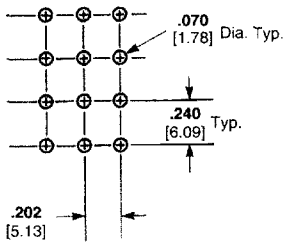




Recommended PC Board Hole Layout
.062 [1.57] thick PC Board

6, 9, 12 and 15 Circuit, Matrix





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

Related Product Data

Product Specifications

108-1077 Commercial MATE-N-LOK PC Board Headers

Performance Characteristics — pg. 31
Technical Documents — pg. 30 and 91
Mating Pin Housings — pg. 36 and 38
Mating Pin Headers — pg. 40, 41 and 42
Mating Socket Housings — pg. 36
Mating Socket Header — pg. 41
Mating IDC — pg. 42

Dimensions are for reference only.

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]
			794287-1[4]	—	
6	**.720** 18.29	Pre-tin	350641-1	350576-1	1-480276-0
		Duplex[1]	—	—	
9	**.960** 24.39	Pre-tin	350642-1	350577-1	1-480277-0
		Duplex[1]	350642-2	—	
12	**1.200** 30.49	Pre-tin	350643-1	350578-1	1-480278-0
		Duplex[1]	—	—	
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-lead 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.

Commercial MATE-N-LOK Connectors (Continued)

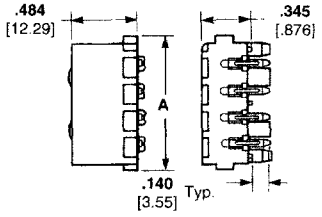
PC Board Right Angle Pin Headers

2, 3 and 4 Circuit, In-Line

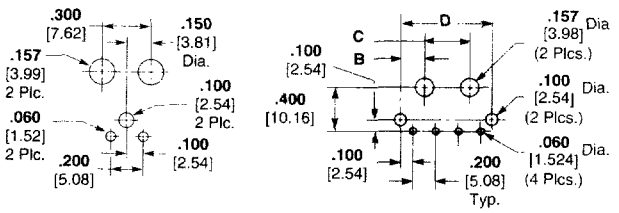
Material and Finish

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

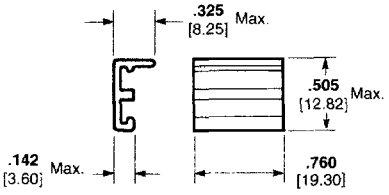
Number of Circuits	Dimensions A	B	C	D	Housing Material	Part Numbers	Mates with Socket Housing Part Number
2	.600 15.24	—	.300 7.62	—	UL94V-2 Nylon Natural Color	794120-1	1-480318-0
3	.800 20.32	.150 3.81	.300 7.62	.600 15.24	UL94V-0 Nylon	643488-1	1-480303-0
4	1.000 25.40	.200 5.08	.400 10.16	.800 20.32	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.

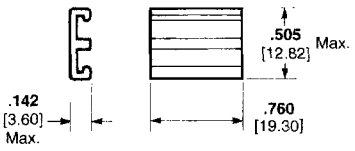
Dust Covers

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

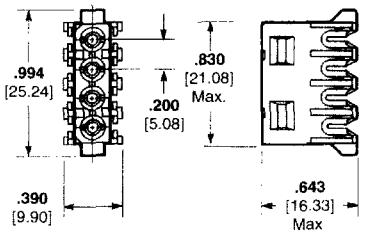
Application Specification

114-49001 IDC Connectors

Performance Characteristics — pg. 31
Technical Documents — pg. 30 and 91
Mating Socket Housings — pg. 36
Mating Socket Header — pg. 40
Mating IDC — pg. 41
Mating Pin Housings — pg. 36, 38
Mating Pin Headers — pg. 40, 41 and 42

Dimensions are for reference only.

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[2]
20 [.5]	Yellow	Pre-tin	770156-4	794036-2	350211-1 350211-2 350424-1
18 [.8]	Orange	Pre-tin	770156-3	794036-1	350424-2 641737-1
		Duplex[1]	770526-1	—	1-641737-1
16 [1.2]	Blue	Pre-tin	770156-5	794036-4	770827-1 770829-1 770846-1

[1]Duplex Finish — Plated with .000030 [.000762] min. gold in mating area over .000050 [.00127] min. nickel underplate on entire contact. [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 Head No. **231894-1** (IS 408-3186)

Commercial MATE-N-LOK Connectors (Continued)

PC Board Edge Mount Headers

Material

Housing — Thermoplastic, black color
Flammability Rating — UL94V-0
Contacts — Pre-tin Copper Alloy

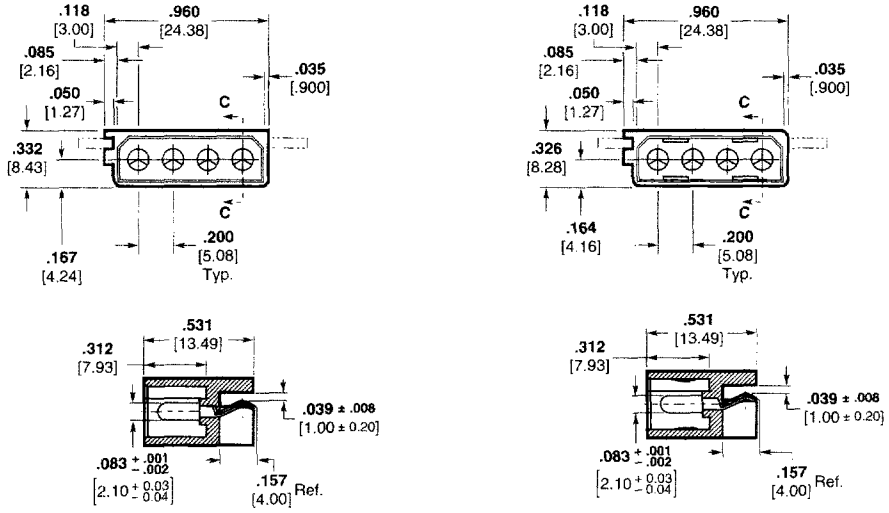
Related Product Data

Used by the disk drive industry

Product Specifications

108-5155-5

4 Circuit, In-Line



Part No. 175332-2 **Part No. 175332-3**

Notes: Mates with plug housing Part No. 1-480424-0. Other mating connectors include a vertical PC Board socket header and the insulation displacement connectors (IDC). Molded ribs provide interference for .057 [1.45] to .067 [1.70].

PC Board Right Angle Mid Mount Header Assembly Reverse Plug Side Guided

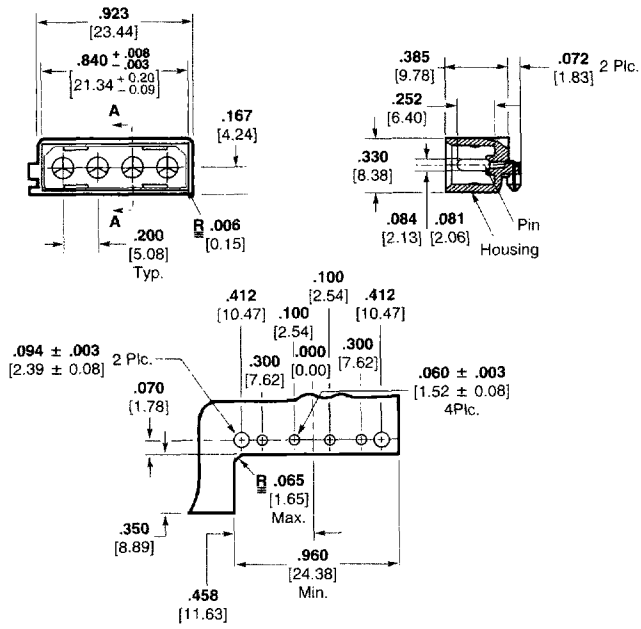
Material

Housing — Nylon
Flammability Rating — UL94V-0
Contacts — Pre-tin, Phosphor Bronze

Related Product Data

Used by the disk drive industry

4 Circuit, In-Line



Part No. 84069-1

Recommended PC Board Hole Layout
.047 [1.20] thick PC Board

Notes: Mates with plug housing Part No. 1-480424-0. Other mating connectors include a vertical PC Board socket header and the insulation displacement connectors (IDC).

Commercial MATE-N-LOK Connectors (Continued)

PC Board Right Angle Header with Fix Belt

Material

Housing — Thermoplastic
Flammability Rating — UL94V-2
Contacts — Copper Alloy

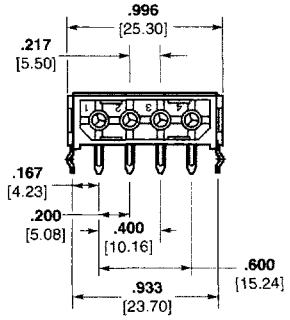
Related Product Data

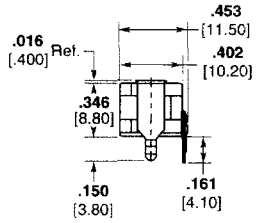
Used by the disk drive industry

Product Specifications

108-5155

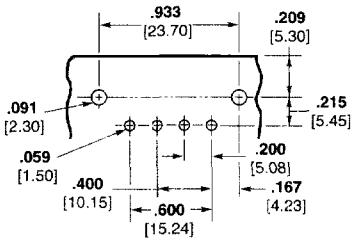
4 Circuit, In-Line





Part No. 174552-1

Notes: Mates with plug 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 Headers with Fix Belt

Reverse Polarization

Material

Housing — Nylon
Flammability Rating — UL94V-2
Contacts — Tin plated, Copper alloy

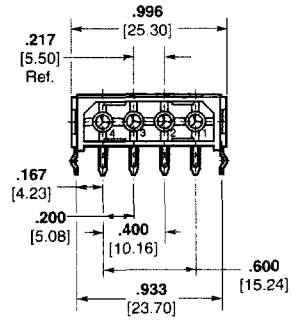
Related Product Data

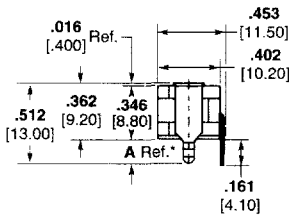
Used by the disk drive industry

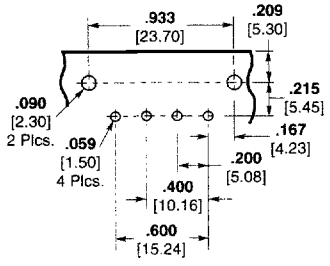
Product Specifications

108-5155

4 Circuit, In-Line







Part No.	A Dim.*	Description
174804-1	**.150** 3.80	Long Clamp with Kink
174804-2	**.150** 3.80	Clamp without Kink
174804-3	**.116** 2.95	Short Clamp

Part No. 174804*

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

Notes: Mates with plug housing Part No. 1-480424-0. Other mating connectors include a vertical PC Board socket header and the insulation displacement connectors (IDC).