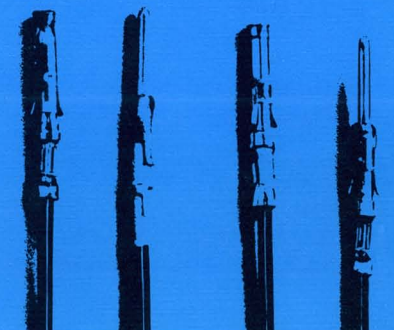
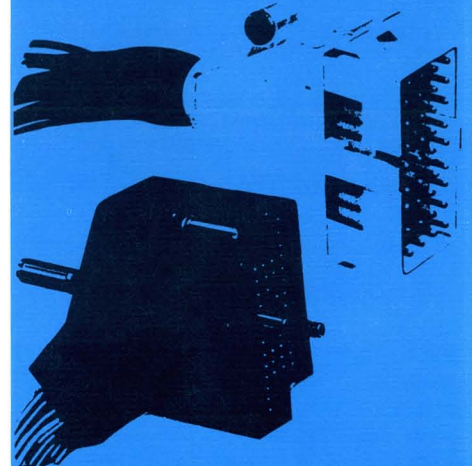
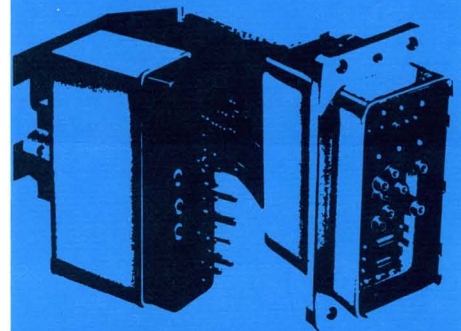


9

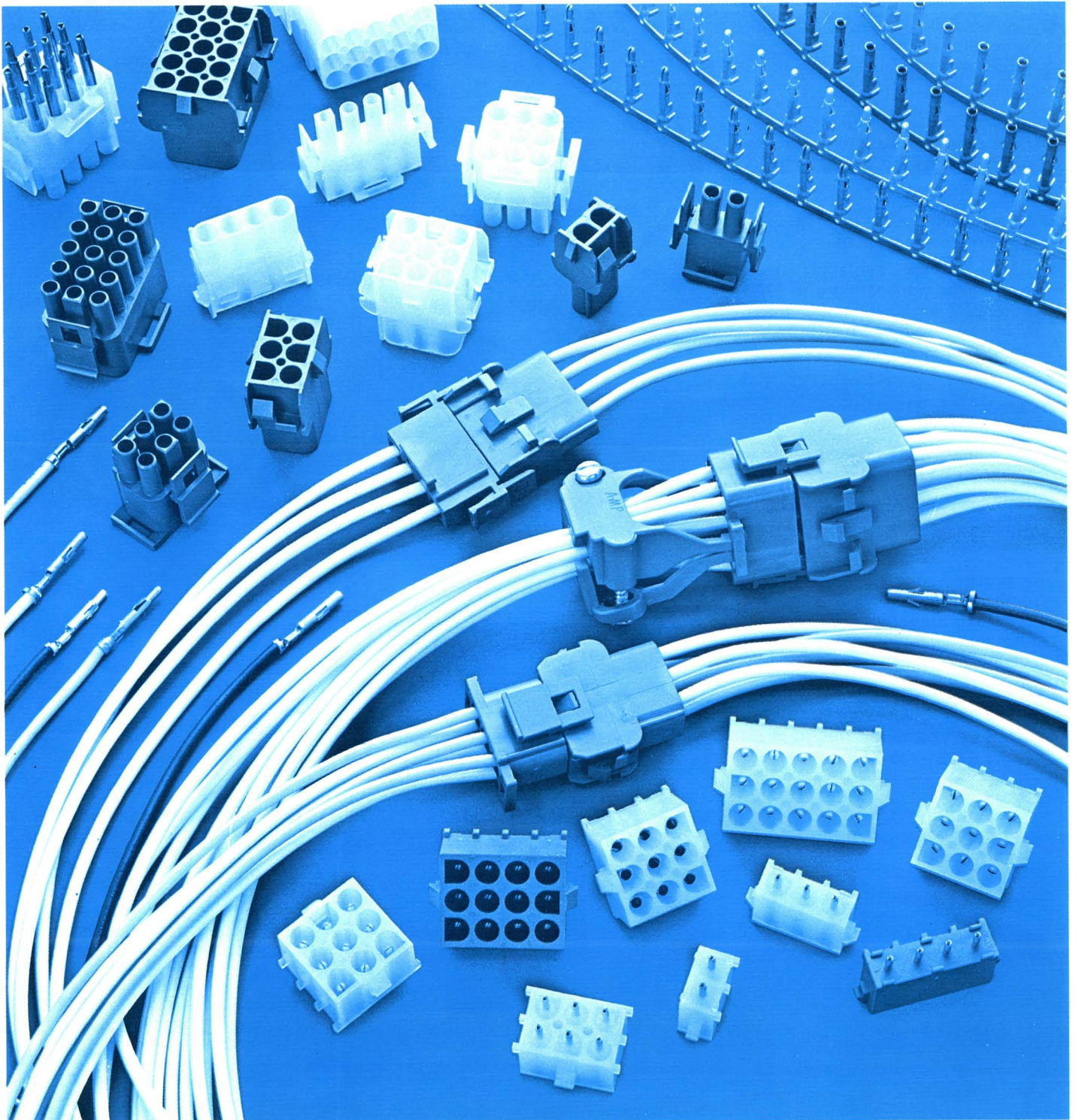
A full range of connectors for consumer, commercial, military and special applications. Crimp, solder or posted contacts provide fast, convenient, selective loading. Pin and socket contacts available for wire sizes from 8 to 32 AWG.

Rectangular self-locking connectors for mounted and free hanging applications	9-3
Universal MATE-N-LOK Connectors	
Self-locking connectors for mounted and free hanging applications	9-13
Commercial MATE-N-LOK Connectors include single and dual lance types, European style and 25 ampere versions with .140 dia. contacts	
Self-locking connectors for mounted and free hanging automotive applications	9-38
MATE-N-LOK Connectors for Automotive Industry	
Circular self-locking connectors for mounted and free hanging applications	9-45
COMBO LINE Connectors	
Miniature rectangular connectors	9-49
MR Series Connectors	
Program of contact interchangeability within various AMP connector families	9-63
Multi-Mate Contact-Connector Assemblies	
Multiple-position connectors for general purpose applications	9-69
"M" Series Pin and Socket Connectors	
Circular plastic connectors	9-149
CPC Series Connectors	
True metric specification connectors for rack and panel applications	9-179
MI Series Connectors	
D, DD, W & WW Series pin and socket connectors	9-185
Rack and panel connectors per ARINC Spec. 404 and MIL-C-81659	9-211
Rack and panel connectors with EMI filtering	9-245
High-density rectangular connectors	9-249
HDR Series Connectors	
High-density metal shell connectors for special applications	9-265
AMPLIMITE HD-20 & HD-22 Series Connectors	
High-density right angle all-plastic connectors for printed circuit applications	9-287
AMPLIMITE HDP-20 Series Connectors	
High-density metal shell connector for flexible flat cable applications	9-291
AMPLIMITE HDF-20 Series Connector	
Subminiature rectangular and circular connectors for Type VII pin and socket contacts	9-295
Pin and socket breakaway splices	9-298

PIN & SOCKET CONNECTORS



UNIVERSAL MATE-N-LOK PIN AND SOCKET CONNECTORS



Universal MATE-N-LOK Connectors

Features

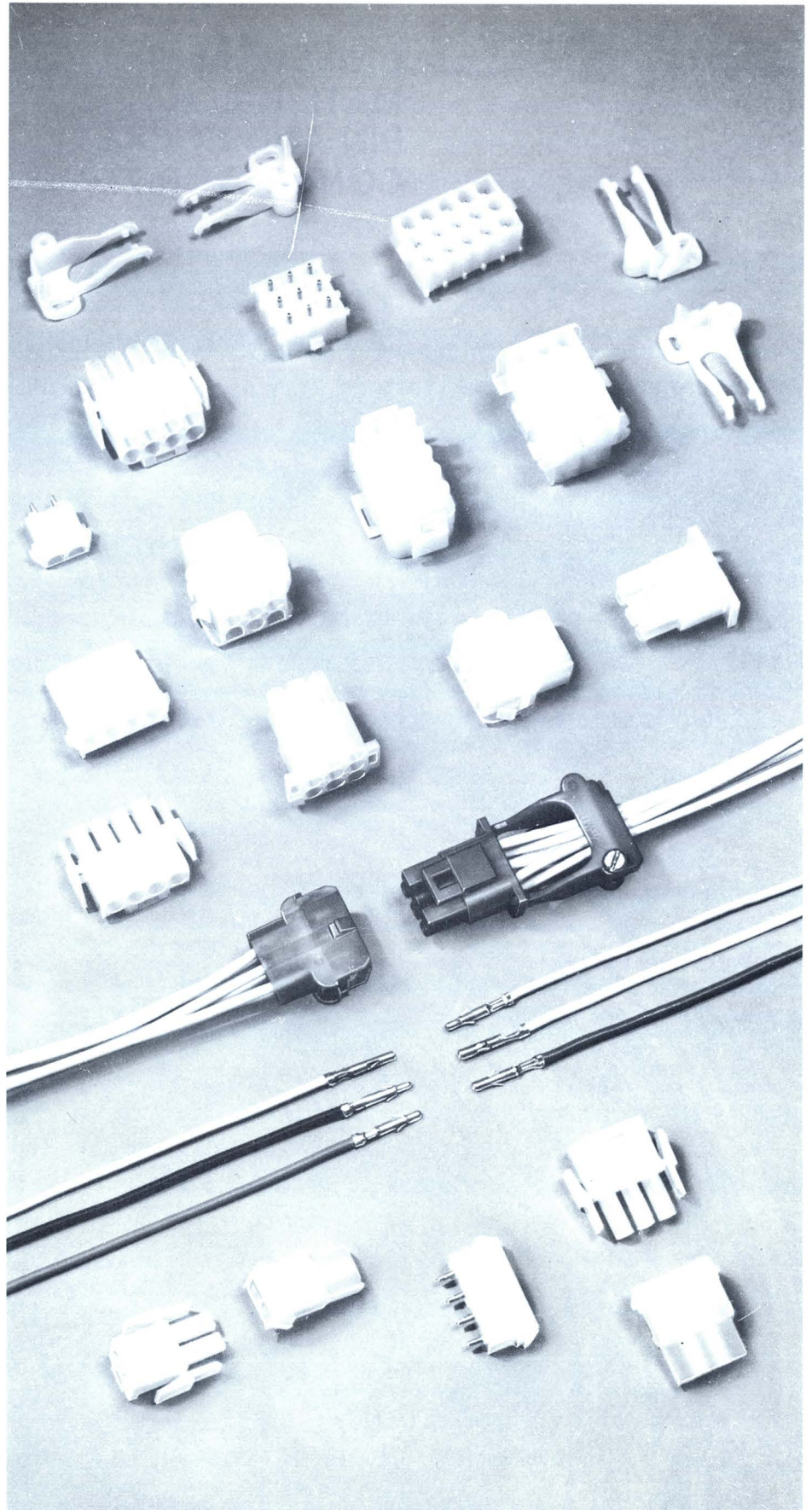
- Innumerable keying combinations
- Pins and sockets can be inter-mixed in the same housing
- Positive polarization
- Rear cavity identification
- Pin or socket contact can be hot
- Positive locking housings
- Contacts and housings have dual-wire capability
- Insulation capability to .200" [5.08 mm] diameter
- Removable, crimp snap-in contacts rated to 25 amperes (based on 105°C max. operating temp.)
- Low contact mating force
- Dual locking lances provide optimum contact stability
- Continuous strip contacts permit high-speed application with AMP automatic terminating machines using quick-change miniature applicators
- Panel mount or free hanging
- Available in 94V-0 flame retardant material
- Make first, break last capability using grounding pin
- Harness to pc board capability using pin or socket header assemblies

Recognized under
Component Recognition
Program of Underwriters'
Laboratories, Inc.
Elec File No. E28476



CSA Certified under File
No. LR16455

Tested by VDE under their test
Report #4751-800-2/A



Specifications subject to change without notice.

General Information

Dimensioning:

All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

INTRODUCTION

AMP Universal MATE-N-LOK connectors provide a highly reliable and economic means of grouping multiple-lead connections in today's computer, computer/peripheral equipment, and business machines offering worldwide application approval. AMP Universal MATE-N-LOK connectors are now finding additional application and acceptance in home entertainment, appliances, vending machines and other commercial equipment due to their reliability and shock hazard protection features. Designed to meet 600 volt U.L. and 380 volt VDE requirements, these connectors feature fully polarized housings to assure proper plug-to-cap mating plus the ability of intermixing pins and sockets in either the plug or cap half to offer a high number of possible keying combinations. Also, contacts are completely enclosed when installed in the housings, allowing hot leads to be terminated with either pins or sockets, eliminating shock hazards.

AMP offers this versatile family of connectors in a wide range of sizes, including 1, 2, 3, 4, 5, 6, 9, 12 and 15 circuit configurations. Both plug and cap have positive locking housings to prevent accidental disengagement when used in panel mounted applications or as free-hanging connectors. The cap itself can be mounted in a panel .030"

[0.76 mm] to .090" [2.29 mm] thick.

Standard housings are molded from durable nylon material and come in natural color; NEMA colors are available upon request. Natural color of 94V-0 flame retardant material is brick red. Additional housing features include: numbered cavities for easy circuit identification and large rear-entry cavities to permit the termination of two wires to a contact.

The stamped and formed contacts, in pre-tinned or gold plating, are available for terminating wire sizes ranging from No. 24 to 14 AWG [0.2 to 2 mm²]. Rated to 25 amperes, these crimp snap-in contacts feature dual locking lances for optimum contact stability and are especially designed for low-force mating. They are easily hand loaded into the housings, requiring no orientation. Only one simple extraction tool is needed to remove both pins and sockets.

AMP furnishes the contacts in continuous strip form for automatic machine termination and in loose piece form for hand tool crimping. AMP's high-speed machines use the versatile quick-change miniature applicator for crimping both pins and sockets at volume production rates and at the lowest possible installed cost.

Dimensioning:
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

Performance Specifications

Unless otherwise indicated, the data given below applies to both mounting and free-hanging types of the Universal MATE-N-LOK Connector.

Contact Resistance

Using Tin-Plated Contacts

Wire Size AWG	Wire Size mm ²	Test Current (Amperes)	Potential Drop (Millivolts)
24	0.2	1.5	4
22	0.3-0.4	2	7
20	0.5-0.6	4	11
18	0.8-0.9	7	15
16	1.25-1.4	10	21
14	2	15	27

Engagement & Separation Forces*

Typical engagement force for any housing — 4 lb. [17.79 N] per circuit.

Typical separation force for any housing — 3 lb. [13.34 N] per circuit with locking feature depressed.

Minimum mated housing retention with positive locking devices engaged — 35 lb. [155.7 N].

Minimum mounted housing retention exceeds 100 lb. [444.8 N].

*Typical engagement forces using split pins are 1 to 1.5 lbs. [4.5 to 6.7 N] per circuit. AMP recommends split pins be used with circuit sizes 6, 9, 12 and 15.

Tensile Force per Contact (Wire pullout)

Wire Size AWG	Wire Size mm ²	Force (Min.)	
		Lb.	N
24	0.2	7	31.1
22	0.3-0.4	10	44.5
20	0.5-0.6	15	66.7
18	0.8-0.9	20	89
16	1.25-1.4	20	89
14	2	35	155.7

Low Level Contact Resistance:

Measured across friction connection of pin initially and after 50 insertions and extractions — resistance readings in milliohms.

Initially:

Maximum — 2.00 milliohms.

50 Insertions:

Maximum — 2.03 milliohms.

Universal MATE-N-LOK Connectors

Test Specifications

Universal MATE-N-LOK connectors can carry up to, and in some cases in excess of, 25 amperes. The maximum current that can be carried is limited by the maximum operating temperature of the housings which is 105°C (221°F). There are several variables which must be considered when determining this maximum current capability for your application. These variables are:

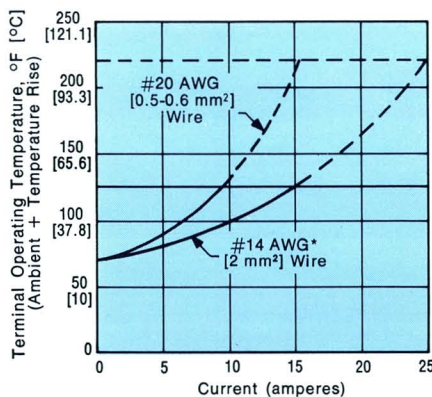
Wire Size — Larger wire will carry more current since it has less internal resistance to current flow and thus it generates less heat. The wire also conducts heat away from the connector.

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.

The following graphs show how these variables affect current carrying capacity in Universal MATE-N-LOK terminals and are also a guide to the product's performance.

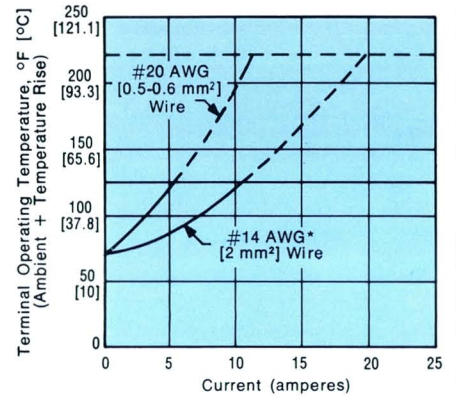
A comparison of Universal MATE-N-LOK terminals on #20 AWG [0.5-0.6 mm²] wire and #14 AWG [2 mm²] wire used in 4-circuit housings. All circuits carrying indicated current.



— Component Recognition, 30°C (54°F) T-rise
- - - Maximum Connector Limit, 105°C (221°F)

Universal MATE-N-LOK Performance Curves

A comparison of Universal MATE-N-LOK terminals on #20 AWG [0.5-0.6 mm²] wire and #14 AWG [2 mm²] wire used in 12-circuit housings. All circuits carrying indicated current.



— Component Recognition, 30°C (54°F) T-rise
- - - Maximum Connector Limit, 105°C (221°F)

Contact Retention in Housings — 15 lbs. [66.72 n] to AMP Spec. 108-1031.

Durability — 50 cycles (Contact Resistance).

Dielectric Withstanding Voltage — 600 Vrms adjacent circuits, 10 KVDC.

Insulation Resistance — 1000 megohms.

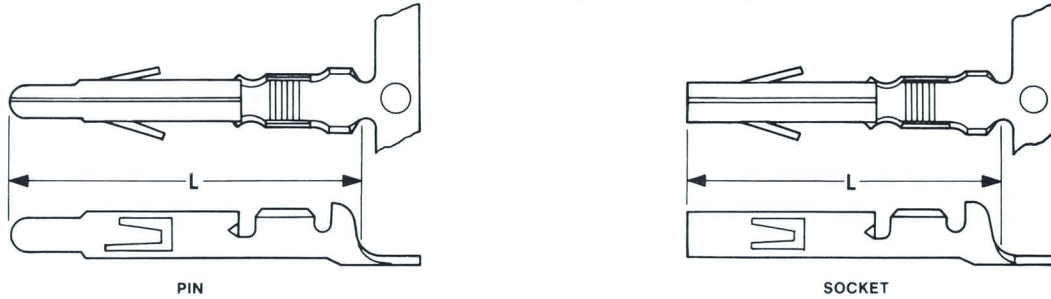
*This curve was developed using contacts of Phos. Bronze.

Contact Specifications

Dimensioning:

- All dimensions in inches and millimetres. Values in brackets are metric equivalents.
- Charts contain dimensions in inches over millimetres.

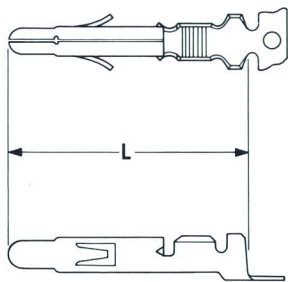
Universal Contacts — Pins and sockets can be used in either plug or cap housings



Wire Size Range		Ins. Dia. (Max.)	Stock Thickness	L Dim.		Material and Finish	Strip Form Contact No.		Loose Piece Contact No.		Hand Tool No.
AWG	mm ²			Pin	Socket		Pin	Socket	Pin	Socket	
24-18	0.2-0.9	.100 2.54	.012* 0.3*	.790 20.07	.760 19.3	Brass, Pre-tin	350561-1	350570-1 350851-1†	350690-1	350689-1	90300-1
							350561-2	350570-2	350690-2	350689-2	
							350561-7	350570-7	350690-7	350689-7	
							350561-3	350570-3	350690-3	350689-3	
							—	350570-6	—	—	
20-14	0.5-2	.130 3.31	.012 0.3	.790 20.07	.760 19.3	Brass, Pre-tin	350218-1	350536-1	350547-1	350550-1	90296-1
							350218-2	350536-2	350547-2	350550-2	
							350218-7	350536-7	350547-7	350550-7	
							350218-3	350536-3	350547-3	350550-3	
							350218-6	350536-6	—	—	
20-14	0.5-2	.200 5.08	.012 0.3	.810 20.57	.780 19.81	Brass, Pre-tin	350538-1	350537-1	350552-1	350551-1	90298-1** 90299-1**
							350538-2	350537-2	350552-2	350551-2	
							350538-7	350537-7	350552-7	350551-7	
							350538-3	350537-3	350552-3	350551-3	
							350538-6	350537-6	—	—	
18-14‡	0.8-2	.200 5.08	.012 0.3	.810 20.57	.780 19.81	Brass, Pre-tin	350873-1	350874-1	—	—	—
							350873-2	350874-2	—	—	
							350873-3	350874-3	—	—	
							350873-7	350874-7	—	—	
							350873-6	350874-6	—	—	

*Socket Contact — .010 [0.25].
 Contact Extraction Tool **Part No. 458994-1**.
 Contact Insertion Tool **Part No. 455830-1**.
 †Hand Tool **No. 90298-1** for wire size 20-18 AWG [0.5-0.9 mm²], Hand Tool **No. 90299-1** for wire size 16-14 AWG [1.25-2 mm²].
 ‡Stock Thickness — .012 [0.3].
 †To be used in high current applications.
 Note: Phos. bronze should be used in high temperature applications.

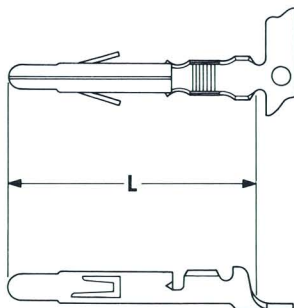
Split Pins — Can be used in either plug or cap housings



Wire Size Range		Ins. Dia. (Max.)	Stock Thickness	L Dim.	Material and Finish	Strip Form Contact No.	Loose Piece Contact No.	Hand Tool No.
AWG	mm ²							
24-18	0.2-0.9	.100 2.54	.012 0.3	.790 20.07	Brass, Pre-tin	350699-1	350706-1	90300-1
					Brass, Gold	350699-2	350706-2	
					Brass, Select Gold	350699-7	350706-7	
20-14	0.5-2	.130 3.31	.012 0.3	.790 20.07	Brass, Pre-tin	350687-1	350705-1	90296-1
					Brass, Gold	350687-2	350705-2	
					Brass, Select Gold	350687-7	350705-7	
20-18	0.5-0.9	.200 5.08	.012 0.3	.810 20.57	Brass, Pre-tin	350700-1	350707-1	90298-1
					Brass, Gold	350700-2	350707-2	
					Brass, Select Gold	350700-7	350707-7	
16-14	1.25-2	.200 5.08	.012 0.3	.810 20.57	Brass, Pre-tin	350700-1	350707-1	90299-1
					Brass, Gold	350700-2	350707-2	
					Brass, Select Gold	350700-7	350707-7	

AMP recommends split pins be used in housings having 6, 9, 12 and 15 circuits.

Grounding Pin (.100 [2.54] longer) — Can be used in either plug or cap housings



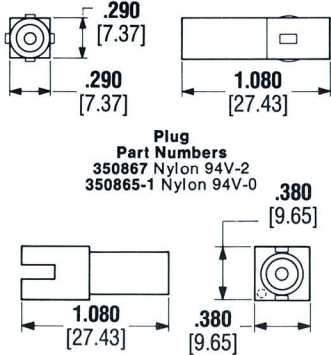
Wire Size Range		Ins. Dia. (Max.)	Stock Thickness	L Dim.	Material and Finish	Strip Form Contact No.	Loose Piece Contact No.	Hand Tool No.
AWG	mm ²							
20-14	0.5-2	.130 3.31	.012 0.3	.890 22.61	Brass, Pre-tin	350654-1	350669-1	90296-1

Connector Housing Specifications

Dimensioning:
 1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
 2. Charts contain dimensions in inches over millimetres.

NOTE:
 Part numbers shown are for natural nylon color. NEMA colors available upon request, except for 94V-0 nylon housings. Contacts are on .250 [6.35] centerline spacing.

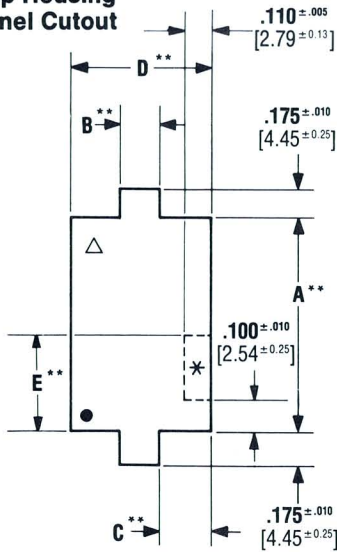
1 Circuit Free Hanging



Plug Part Numbers
 350867 Nylon 94V-2
 350865-1 Nylon 94V-0

Cap Part Numbers
 350868 Nylon 94V-2
 350866-1 Nylon 94V-0

Cap Housing Panel Cutout

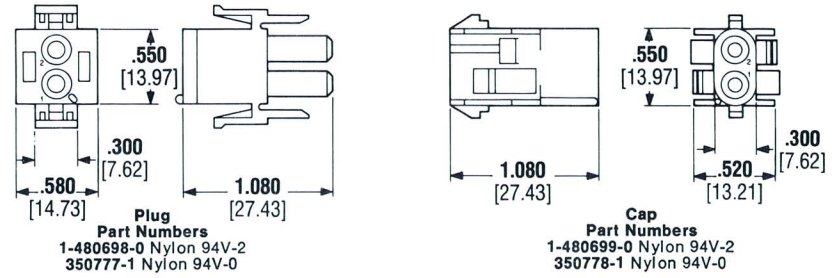


NOTE:
 Recommended panel thickness — .030 [0.76] to .090 [2.29]
 Panel must be punched so that housing enters panel in same direction as the punch.
 * Optional for keying housing to panel.
 ^ Circuit #1 location when using panel keying with 6, 9, 12 and 15 circuit.
 ● Circuit #1 location when using panel keying with 2, 3, 4 and 5 circuit.

No. of Circuits	Dimensions **				
	A	B	C	D	E
2	.565	.340	.095	.530	.250
	14.35	8.64	2.41	13.46	6.35
3	.815	.340	.095	.530	.250
	20.7	8.64	2.41	13.46	6.35
4	1.065	.340	.095	.530	.250
	27.05	8.64	2.41	13.46	6.35
5	1.315	.340	.095	.530	.250
	33.4	8.64	2.41	13.46	6.35
6	.565	.480	.275	1.030	.350
	14.35	12.19	6.99	26.16	8.89
9	.815	.480	.275	1.030	.350
	20.7	12.19	6.99	26.16	8.89
12	1.065	.480	.275	1.030	.350
	27.05	12.19	6.99	26.16	8.89
15	1.315	.480	.275	1.030	.350
	33.4	12.19	6.99	26.16	8.89

** Dimensional tolerances are: ±.005 [0.13] for dims. A and D; ±.010 [0.25] for dims. B, C and E.

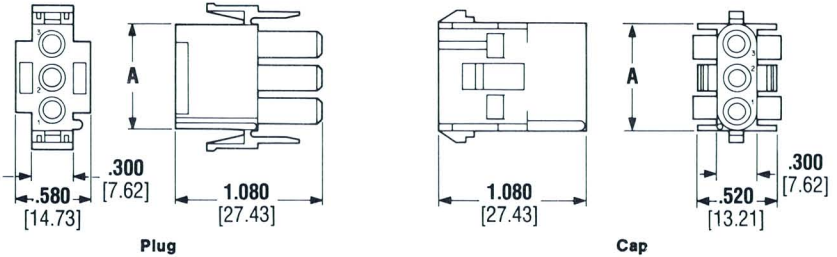
2 Circuit



Plug Part Numbers
 1-480698-0 Nylon 94V-2
 350777-1 Nylon 94V-0

Cap Part Numbers
 1-480699-0 Nylon 94V-2
 350778-1 Nylon 94V-0

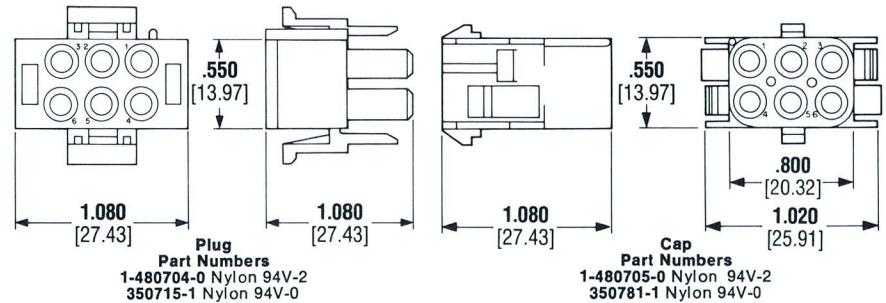
3, 4 and 5 Circuit



No. of Circuits	A Dim.	Housing Part Numbers			
		Plug Nylon 94 V-2	Plug Nylon 94V-0	Cap Nylon 94 V-2	Cap Nylon 94 V-0
3	.800	1-480700-0	350766-1	1-480701-0	350767-1
	20.32				
4	1.050	1-480702-0	350779-1	1-480703-0	350780-1
	26.67				
5	1.300	1-480763-0	350809-1	1-480764-0	350810-1
	33.02				

Note: 5 position cavity identification located on side of housing.

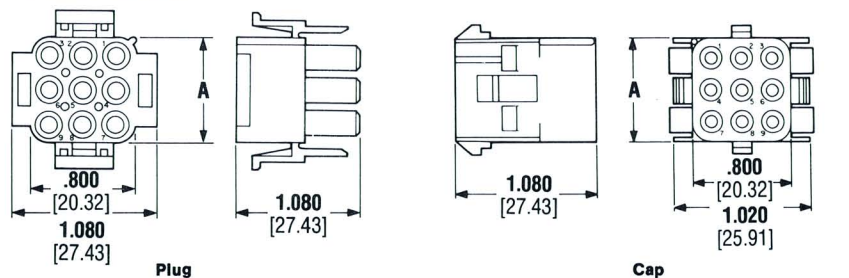
6 Circuit



Plug Part Numbers
 1-480704-0 Nylon 94V-2
 350715-1 Nylon 94V-0

Cap Part Numbers
 1-480705-0 Nylon 94V-2
 350781-1 Nylon 94V-0

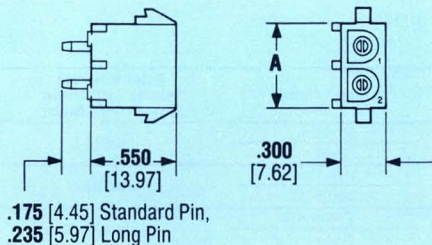
9, 12 and 15 Circuit



No. of Circuits	A Dim.	Housing Part Numbers			
		Plug Nylon 94V-2	Plug Nylon 94V-0	Cap Nylon 94V-2	Cap Nylon 94V-0
9	.800	1-480706-0	350720-1	1-480707-0	350782-1
	20.32				
12	1.050	1-480708-0	350735-1	1-480709-0	350783-1
	26.67				
15	1.300	1-480710-0	350736-1	1-480711-0	350784-1
	33.02				

Dimensioning:

- All dimensions in inches and millimetres. Values in brackets are metric equivalents.
- Charts contain dimensions in inches over millimetres.



Printed Circuit Board Pin Header Assemblies

2, 3 and 4 Circuit

Housing Material: Nylon 94V-2 rating, natural color (NEMA colors available)

Pin Material: Phos. Bronze

No. of Circuits	Assembly Part Number		A Dim.	Pin Finish	Mates with Plug Housing Part Number (Using Socket Contacts)
	Standard Pin*	Long Pin**			
2	350428-1	350582-1	.550	Pre-tin	1-480698-0
	350428-2	350582-2	13.97	Gold	
3	350429-1	350583-1	.800	Pre-tin	1-480700-0
	350429-2	350583-2	20.32	Gold	
4	350430-1	350584-1	1.050	Pre-tin	1-480702-0
	350430-2	350584-2	26.67	Gold	

*Use Standard Pin for .062 [1.57] thick printed circuit board.

**Use Long Pin for .125 [3.18] thick printed circuit board.

2, 3 and 4 Circuit

Housing Material: Nylon 94V-0 rating, natural color is brick red

Pin Material: Phos. Bronze

No. of Circuits	Assembly Part Number		A Dim.	Pin Finish	Mates with Plug Housing Part Number (Using Socket Contacts)
	Standard Pin*	Long Pin**			
2	350786-1	350787-1	.550	Pre-tin	350777-1
	350786-2	350787-2	13.97	Gold	
3	350789-1	350790-1	.800	Pre-tin	350766-1
	350789-2	350790-2	20.32	Gold	
4	350792-1	350793-1	1.050	Pre-tin	350779-1
	350792-2	350793-2	26.67	Gold	

*Use Standard Pin for .062 [1.57] thick printed circuit board.

**Use Long Pin for .125 [3.18] thick printed circuit board.

6, 9, 12 and 15 Circuit

Housing Material: Nylon 94V-2 rating, natural color (NEMA colors available)

Pin Material: Phos. Bronze

No. of Circuits	Assembly Part Number		A Dim.	Pin Finish	Mates with Plug Housing Part Number (Using Socket Contacts)
	Standard Pin*	Long Pin**			
6	350431-1	350585-1	.550	Pre-tin	1-480704-0
	350431-2	350585-2	13.97	Gold	
9	350432-1	350586-1	.800	Pre-tin	1-480706-0
	350432-2	350586-2	20.32	Gold	
12	350433-1	350587-1	1.050	Pre-tin	1-480708-0
	350433-2	350587-2	26.67	Gold	
15	350434-1	350588-1	1.300	Pre-tin	1-480710-0
	350434-2	350588-2	33.02	Gold	

*Use Standard Pin for .062 [1.57] thick printed circuit board.

**Use Long Pin for .125 [3.18] thick printed circuit board.

6, 9, 12 and 15 Circuit

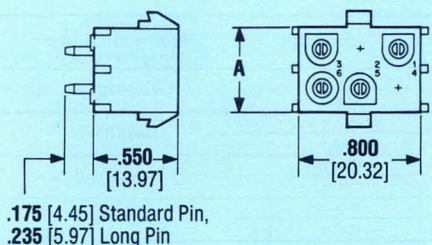
Housing Material: Nylon 94V-0 rating, natural color is brick red

Pin Material: Phos. Bronze

No. of Circuits	Assembly Part Number		A Dim.	Pin Finish	Mates with Plug Housing Part Number (Using Socket Contacts)
	Standard Pin*	Long Pin**			
6	350711-1	350732-1	.550	Pre-tin	350715-1
	350711-2	350732-2	13.97	Gold	
9	350712-1	350742-1	.800	Pre-tin	350720-1
	350712-2	350742-2	20.32	Gold	
12	350713-1	350737-1	1.050	Pre-tin	350735-1
	350713-2	350737-2	26.67	Gold	
15	350714-1	350738-1	1.300	Pre-tin	350736-1
	350714-2	350738-2	33.02	Gold	

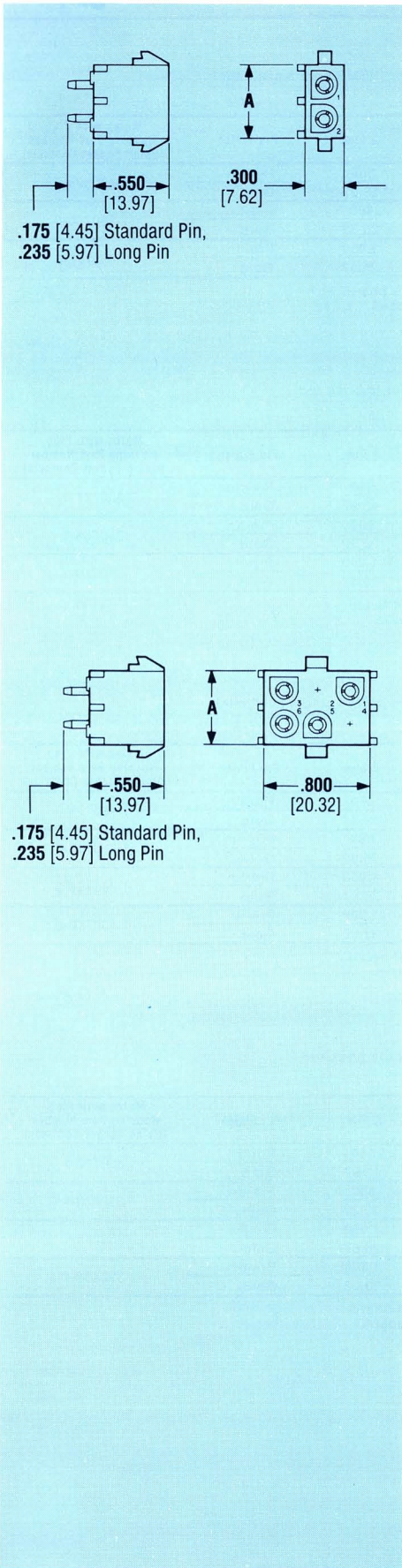
*Use Standard Pin for .062 [1.57] thick printed circuit board.

**Use Long Pin for .125 [3.18] thick printed circuit board.



Printed Circuit Board Socket Header Assemblies

- Dimensioning:**
 1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
 2. Charts contain dimensions in inches over millimetres.



2, 3 and 4 Circuit

Housing Material: Nylon 94V-2 rating, natural color (NEMA colors available)

Socket Material: Phos. Bronze

No. of Circuits	Assembly Part Number		A Dim.	Socket Finish	Mates with Plug Housing Part Number (Using Pin Contacts)
	Standard Pin*	Long Pin**			
2	350759-4	350759-3	.550	Pre-tin	1-480698-0
			13.97	Gold	
3	350760-4	350760-3	.800	Pre-tin	1-480700-0
			20.32	Gold	
4	350761-4	350761-3	1.050	Pre-tin	1-480702-0
			26.67	Gold	

2, 3 and 4 Circuit

Housing Material: Nylon 94V-0 rating, natural color is brick red

Socket Material: Phos. Bronze

No. of Circuits	Assembly Part Number		A Dim.	Socket Finish	Mates with Plug Housing Part Number (Using Pin Contacts)
	Standard Pin*	Long Pin**			
2	350824-1	350831-1	.550	Pre-tin	350777-1
	350824-2	350831-2	13.97	Gold	
3	350825-1	350832-1	.800	Pre-tin	350766-1
	350825-2	350832-2	20.32	Gold	
4	350826-1	350833-1	1.050	Pre-tin	350779-1
	350826-2	350833-2	26.67	Gold	

*Use Standard Pin for .062 [1.57] thick printed circuit board.
 **Use Long Pin for .125 [3.18] thick printed circuit board.

6, 9, 12 and 15 Circuit

Housing Material: Nylon 94V-2 rating, natural color (NEMA colors available)

Socket Material: Phos. Bronze

No. of Circuits	Assembly Part Number		A Dim.	Socket Finish	Mates with Plug Housing Part Number (Using Pin Contacts)
	Standard Pin*	Long Pin**			
6	350762-4	350762-3	.550	Pre-tin	1-480704-0
			13.97	Gold	
9	350763-4	350763-3	.800	Pre-tin	1-480706-0
			20.32	Gold	
12	350764-4	350764-3	1.050	Pre-tin	1-480708-0
			26.67	Gold	
15	350765-4	350765-3	1.300	Pre-tin	1-480710-0
			33.02	Gold	

6, 9, 12 and 15 Circuit

Housing Material: Nylon 94V-0 rating, natural color is brick red

Socket Material: Phos. Bronze

No. of Circuits	Assembly Part Number		A Dim.	Socket Finish	Mates with Plug Housing Part Number (Using Pin Contacts)
	Standard Pin*	Long Pin**			
6	350827-1	350834-1	.550	Pre-tin	350715-1
	350827-2	350834-2	13.97	Gold	
9	350828-1	350835-1	.800	Pre-tin	350720-1
	350828-2	350835-2	20.32	Gold	
12	350829-1	350836-1	1.050	Pre-tin	350735-1
	350829-2	350836-2	26.67	Gold	
15	350830-1	350837-1	1.300	Pre-tin	350736-1
	350830-2	350837-2	33.02	Gold	

*Use Standard Pin for .062 [1.57] thick printed circuit board.
 **Use Long Pin for .125 [3.18] thick printed circuit board.

Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Charts contain dimensions in inches over millimetres.

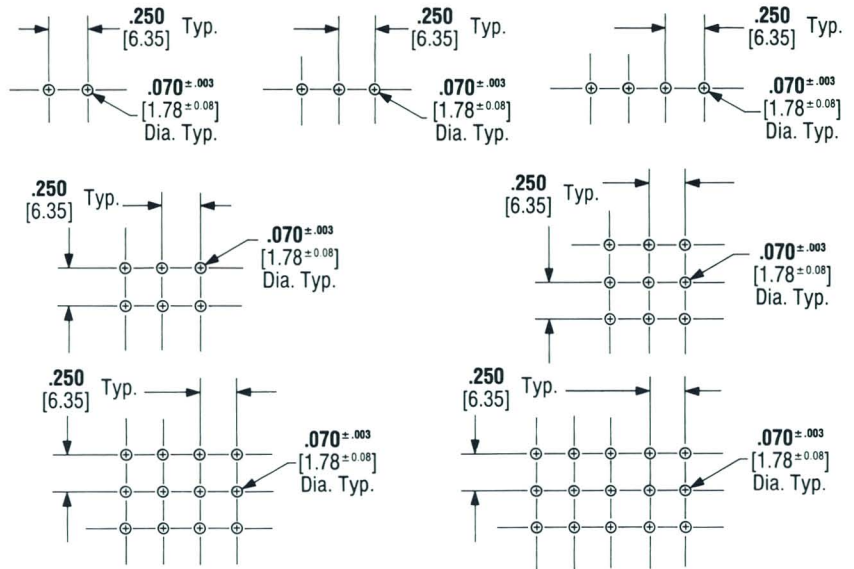
Printed Circuit Board Mounting Dimensions, Test Connectors and Strain Reliefs

2, 3 and 4 Position Pin or Socket Header Assemblies

6, 9, 12 and 15 Position Pin or Socket Header Assemblies

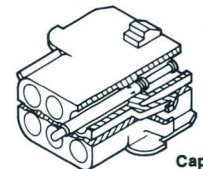
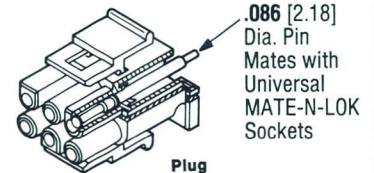
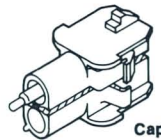
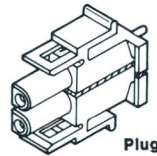
Test Connectors (with spring loaded contacts)

Strain Relief



2, 3, 4 and 5 Circuit Test Assemblies

6, 9, 12 and 15 Circuit Test Assemblies

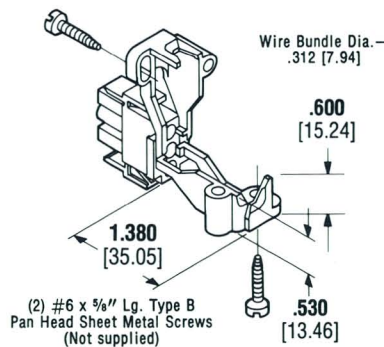


Note: Housing Dimensions same as those on page 4.

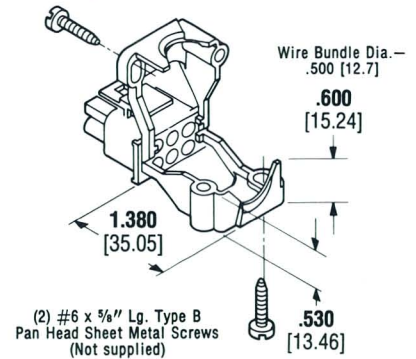
No. of Circuits	Part Numbers			
	Plug Nylon 94V-2	Plug Nylon 94V-0	Cap Nylon 94V-2	Cap Nylon 94V-0
2	350772-2	350848-2	350773-2	350849-2
3	350772-3	350848-3	350773-3	350849-3
4	350772-4	350848-4	350773-4	350849-4
5	350772-5	350848-5	350773-5	350849-5
6	350772-6	350848-6	350773-6	350849-6
9	350772-9	350848-9	350773-9	350849-9
12	1-350772-2	1-350848-2	1-350773-2	1-350849-2
15	1-350772-5	1-350848-5	1-350773-5	1-350849-5

2, 3, 4 and 5 Circuit

6, 9, 12 and 15 Circuit

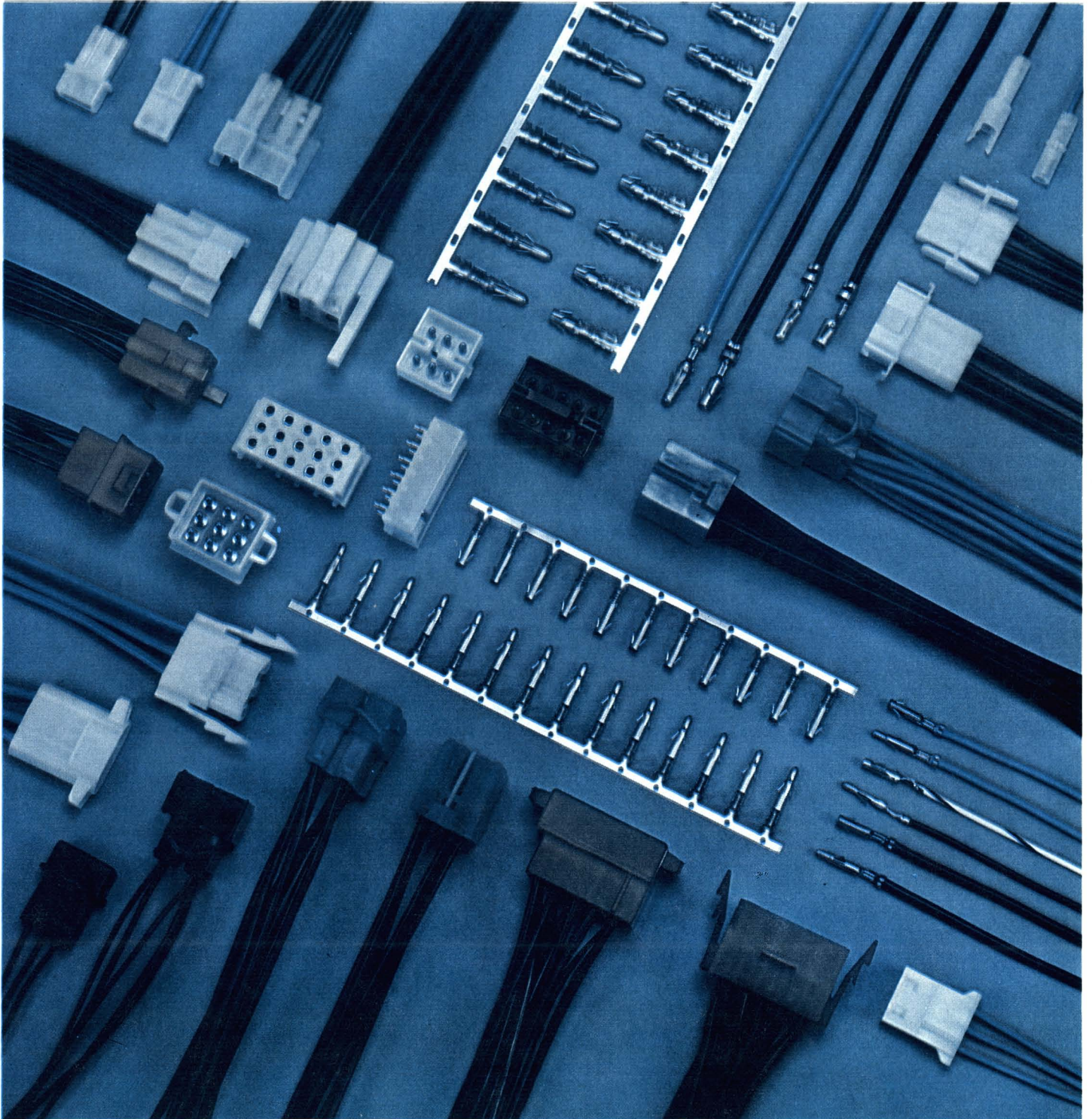


Part Numbers
1-350589-0 Nylon 94V-2
350811-1 Nylon 94V-0



Part Numbers
1-350590-0 Nylon 94V-2
350812-1 Nylon 94V-0

MATE-N-LOK PIN AND SOCKET CONNECTORS



Commercial MATE-N-LOK Pin and Socket Connectors

Introduction

In home entertainment centers, appliances, vending machines . . . in computers and other sophisticated commercial equipment, the demand is ever increasing for complete package reliability with maximum versatility and at the lowest possible installed cost.

An integral part of these packages is the electrical connector. Electrical functions have increased in complexity and new designs continually call for the maximum use of space. The MATE-N-LOK pin and socket connector offers the design and features to answer these modern industry requirements.

The MATE-N-LOK Connector Line offers three distinct advantages:

VERSATILITY — A wide line of pin and socket connectors provides a choice of circuit configurations from single in-line connectors to 21 position connectors.

Since each application presents a different circuit termination problem, housing configurations are offered for panel mounting, motor mounting, free-hanging, cap mount; with special cavity identification, even a split plug housing that permits you to disengage ten of twenty circuits without disturbing the others. Certain applications lend themselves more readily to circular configurations — a 7 and 12 position MATE-N-LOK Circular Connector is designed for these requirements.

A full selection of contacts is available covering wire size ranges 30-22, 24-18 and 20-14 AWG.

Depending on your circuit requirements you can choose from either plain brass or phosphor bronze contacts, or either brass or phosphor bronze with tin or gold over nickel plating. Further versatility is added in contact selection by solder tab pins and sockets, printed circuit board contacts and a pre-crimped pin for use with commoning tabs.

RELIABILITY — The advent of solid state design into the home entertainment and appliance field was a natural outgrowth of the advanced state-of-the-arts in the computer and commercial equipment industries.

The consumer's increased demand for quality products engendered the momentum needed to introduce this concept. MATE-N-LOK Connectors have proven their reliability in answering this challenge.

AMP's precision engineering philosophy can be found throughout this line of connectors. Most connector housings have many of these preferred quality features:

- 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.
- Custom hot stamp marking available upon request.
- Keying plug available Part No. 200821-1.
- Contact AMP Incorporated for availability of colored housings prior to specification.
- Housing colors are identified by suffix number in Housing Part Number.

Example: 1-480284-9

- └ Black
- 0 Natural
- 1 Brown
- 2 Red
- 3 Orange
- 4 Yellow
- 5 Green
- 6 Blue
- 7 Violet
- 8 Gray
- 9 Black

All Dimensions in inches.
Specifications subject to change without notice.

Commercial MATE-N-LOK Pin and Socket Connectors

MATE-N-LOK Contacts feature:

- “Clean” design — no sharp projections to impede insertion or damage housings.
- Carries up to 25 Amperes. (Based on 105°C operating temperature.)
- Low insertion/extraction forces.
- Available in plain, tin or gold over nickel plated to fit the application requirements. (Tin and gold plating is .000030” minimum.)
- U.L. recognized for 250 volts, AC or DC.

**Recognized under the Component Program of Underwriters' Laboratories, Incorporated.
UL File No. E28476**

ECONOMY — At the heart of today's reliability is the important factor of applied costs. While reliability requirements increase, production cost must be maintained at reasonable levels.

For over 25 years, AMP has been a leader in automated termination products designed to provide maximum production efficiency and lowest applied costs.

MATE-N-LOK Contacts are furnished in strip form on reels for automatic machine application. Your application determines the amount of automation required.

To meet your production needs, AMP offers you a complete line of matched application tooling that includes a variety of hand tools, electrically operated, semi-automatic bench mounted machines and fully automatic, high speed production machines. Each is precision engineered to produce consistently high quality terminations and at the lowest possible cost.

MATE-N-LOK Connectors Selection Guide

	Commoning Tab	P.C. Board Pin Header Assys. (Pg. 9)	P.C. Board Socket Hdr. Assys. (Pg. 10)	Connector Test Assy. (Pg. 18)	Approval
Commercial Panel Mount 3, 4, 6, 9, 12, & 15 (Pg. 6)	Yes (Pg. 4)	No	Yes	Yes	250 Volt UL 250 Volt CSA
Commercial Motor Mount 6, 8, 10, 12 & 16 (Pg. 7)	Yes (Pg. 4)	Yes	No	Yes	250 Volt UL 250 Volt CSA
Commercial Free Hanging 1, 2, 3, 4, 6, 8 & 10 (Pg. 8)	Yes (Pg. 4)	Yes	No	Yes	250 Volt UL 250 Volt CSA
Commercial Special Application Cap Mount 6, 10 & 12 (Pg. 11)	Yes (Pg. 4)	Yes	No	Yes	250 Volt UL 250 Volt CSA
Commercial Special Application Panel Mount 8 Circuit (Pg. 11)	No	No	No	No	250 Volt UL 250 Volt CSA
Commercial Special Application Circular 7 & 12 (Pg. 12)	No	No	No	No	250 Volt UL 250 Volt CSA
Commercial Special Application Split Conn. Free-Hanging 20 (Pg. 12)	Yes (Pg. 12)	No	No	No	250 Volt UL 250 Volt CSA
Commercial Special Application Split Plug Free-Hanging or Panel Mount 10 (Pg. 12)	Yes (Pg. 4)	No	No	No	250 Volt UL 250 Volt CSA
European 3, 6 & 12 (Pg. 13)	Yes (Pg. 4)	No	No	No	250 Volt UL 250 Volt CSA 600 Volt VDE
Dual Lance Panel Mount 3, 4, 6, 9, 12 & 15 (Pg. 16)	No	No	Yes	Yes	250 Volt UL 250 Volt CSA
Dual Lance Free-Hanging 2 & 3 (Pg. 17)	No	Yes	No	Yes	250 Volt UL 250 Volt CSA
Dual Lance Motor Mount 6, 12 & 16 (Pg. 17)	No	Yes	No	Yes	250 Volt UL 250 Volt CSA
.140 Free-Hanging 4, 8 & 9 (Pg. 22)	Yes (Pg. 21)	No	No	No	250 Volt UL 250 Volt CSA
.140 Panel Mount 2, 3 & 9 (Pg. 23)	Yes (Pg. 21)	No	No	No	250 Volt UL 250 Volt CSA

Commercial MATE-N-LOK Connectors

Performance Specifications

Unless otherwise indicated, the data given below applies to both mounting and free-hanging types of the MATE-N-LOK Connector.

Contact Resistance

Using Tin-Plated Contacts

Wire Size	Test Current (Amperes)	Potential Drop (Millivolt)
#24	1.5	4
#22	2	7
#20	4	11
#18	7	15
#16	10	21
#14	15	27

Engagement & Separation Forces

Typical engagement force for any housing — 4 lbs. per circuit.

Typical separation force for any housing — 3 lbs. per circuit with locking feature depressed.

Minimum mated housing retention with positive locking devices engaged — 35 lbs.

Minimum mounted housing retention exceeds 100 lbs.

Tensile Force per Contact

Wire Size	Force (Lbs. Min.)
#30	3
#28	4
#26	9
#24	12
#22	15
#20	20
#18	25
#16	30
#14	40

Low Level Contact Resistance:

Measured across friction connection of pin initially and after 50 insertions and extractions — resistance readings in milliohms.

Initially:

Maximum — 2.00 milliohms.

50 Insertions:

Maximum — 2.03 milliohms.

Test Specifications

MATE-N-LOK connectors can carry up to, and in some cases in excess of 25 amperes. The maximum current that can be carried is limited by the maximum operating temperature of the housings which is 105°C (221°F). There are several variables which must be considered when determining this maximum current capability for your application. These variables are:

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

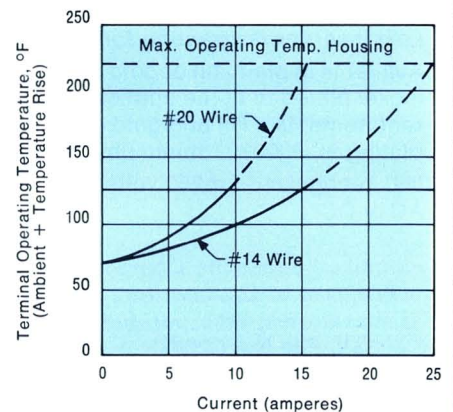
Connector Size — In general, the more circuits in a connector, the less current can be carried.

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

The graphs show how these variables affect current carrying capacity in MATE-N-LOK terminals and are also a guide to the product's performance.

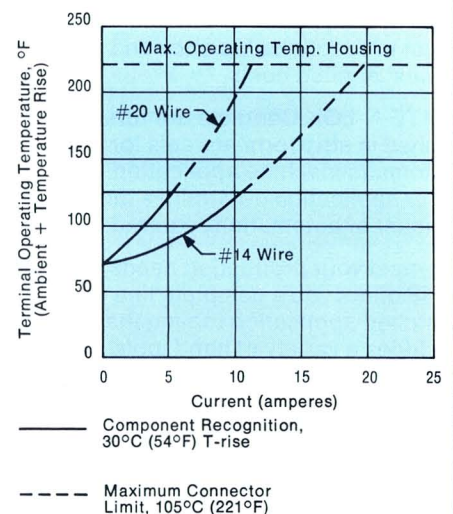
Maximum Terminal Temperature vs. Current

A comparison of MATE-N-LOK terminals on #20 wire and #14 wire used in 4 circuit free hanging housings.



Performance Curve

A comparison of MATE-N-LOK terminals on #20 wire and #14 wire used in 12 circuit panel mount housings.

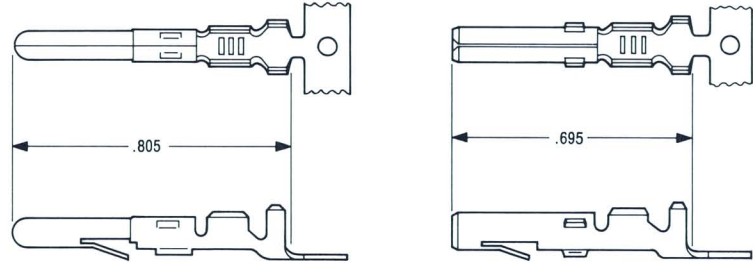


Commercial MATE-N-LOK Contacts

To meet the varied requirements of industry, the MATE-N-LOK contact line is available in a variety of forms.

Application rate and requirements dictate your choice of either side feed or end feed. Circuitry and environment determines your choice of material and plating. Circuitry also dictates your wire size range. All these factors have been taken into consideration in the building of MATE-N-LOK Contact Specifications to assure you of maximum selectivity to meet the applicable requirements.

Side Feed Contacts for Commercial and European Housings Only

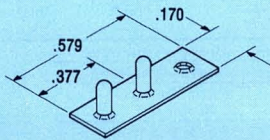


Wire Size # AWG	Insulation Range (Dimensions in Inches)	Pin Part Number (.084 Diameter)		Socket Part Number		Material and Finish	Stock Thickness	Hand Tool
		Strip Form	Loose Piece	Strip Form	Loose Piece			
30-22	.075 Max.	350079-1	61174-1	350078-1	61173-1	Brass—Tin Plated	.012	90066-5
		350079-2	—	350078-2	—	Brass—Unplated		
		350079-3	—	350078-3	—	Phos. Bronze—Unplated		
		350079-4	—	350078-4	—	Phos. Bronze—Tin Plated		
		350079-5	61174-5	350078-5	61173-5	Brass—Gold over Nickel Plated		
30-22	.075 Max.	—	—	350178-1	350182-1	Brass—Tin Plated	.010	90066-5
		—	—	350178-2	350182-2	Brass—Unplated		
		—	—	350178-3	350182-3	Phos. Bronze—Unplated		
		—	—	350178-4	350182-4	Phos. Bronze—Tin Plated		
		—	—	350178-5	350182-5	Brass—Gold over Nickel Plated		
Two #18 or one #18 and one #16	Two .115 Max. Stacked	350558-1	350639-1	350557-1	350638-1	Brass—Tin Plated	.012	90124-2
		350558-2	350639-2	350557-2	350638-2	Brass—Unplated		
		350558-3	350639-3	350557-3	350638-3	Phos. Bronze—Unplated		
		350558-4	350639-4	350557-4	350638-4	Phos. Bronze—Tin Plated		
24-18	.100 Max.	61116-1	60618-1	61314-1	60617-1	Brass—Tin Plated	.012	90123-2 (90123-5 for .043 Minimum Insulation Diameter)
		61116-2	60618-2	61314-2	60617-2	Brass—Unplated		
		61116-3	60618-3	61314-3	60617-3	Phos. Bronze—Unplated		
		61116-4	60618-4	61314-4	60617-4	Phos. Bronze—Tin Plated		
		61116-5	60618-5	61314-5	60617-5	Brass—Gold over Nickel Plated		
		61116-6	60618-6	61314-6	60617-6	Phos. Bronze—Gold over Nickel Plated		
		61116-7	—	61314-7	—	Brass—Gold Flash		
24-18	.100 Max.	—	—	61115-1	61473-1	Brass—Tin Plated	.010	90123-2
		—	—	61115-2	61473-2	Brass—Unplated		
		—	—	61115-3	61473-3	Phos. Bronze—Unplated		
		—	—	61115-4	61473-4	Phos. Bronze—Tin Plated		
		—	—	61115-5	61473-5	Brass—Gold over Nickel Plated		
20-14	.130 Max.	61118-1	60620-1	61117-1	60619-1	Brass—Tin Plated	.012	90124-2
		61118-2	60620-2	61117-2	60619-2	Brass—Unplated		
		61118-3	60620-3	61117-3	60619-3	Phos. Bronze—Unplated		
		61118-4	60620-4	61117-4	60619-4	Phos. Bronze—Tin Plated		
		61118-5	60620-5	61117-5	60619-5	Brass—Gold over Nickel Plated		
		61118-6	—	61117-6	—	Phos. Bronze—Gold over Nickel Plated		
		61118-7	—	61117-7	—	Brass—Gold Flash		

Strip Form Contacts (For use in Miniature Applicators only).
Extraction Tools (For both Side and End Feed Contacts). **Part No. 1-305183-1** for Pins only; **Part No. 1-305183-2** for Sockets only; **Part No. 465644-1** for both Pins and Sockets.
Wire Strip Length: $\frac{3}{32}$ " for Machine Applications; $\frac{3}{16}$ " for Hand Tool Applications.
Insertion Tool Part No. 91002-1.

Commercial MATE-N-LOK Contacts (continued)

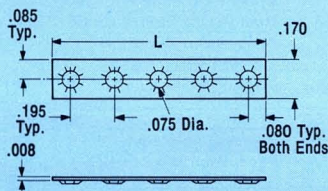
Commoning Tabs



Part No. 60843-1
2 Circuit

Part No. 60842-1
3 Circuit

NOTE:
Part No. 60842-1 to be used to common any 3 adjacent terminals. **Part No. 60843-1** to common any 2 adjacent terminals in the following circuit cavity groups of panel mount housing 1, 2, 3, or 4, 5, 6, or 7, 8, 9, or 10, 11, 12 or 13, 14, 15. Both are tin-plated brass.



For use with Motor Mount and Cap Mount Housings

No. of Holes	L Dimension	Part Number
2	.355	350444-1
3	.550	350444-2
4	.745	350444-3
5	.940	350444-4
6	1.135	350444-5
7	1.130	350444-6
8	1.525	350444-7

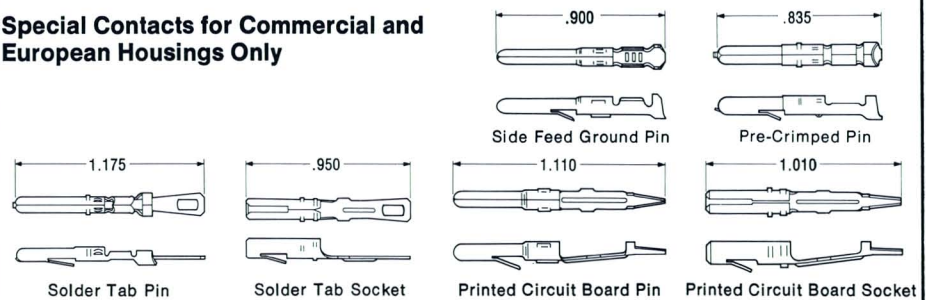
End Feed Contacts for Commercial and European Housings Only



Wire Size # AWG	Insulation Range (Dimensions in Inches)	Pin Part Number (.084 Diameter)		Socket Part Number		Material and Finish	Stock Thickness	Hand Tool
		Strip Form	Loose Piece	Strip Form	Loose Piece			
30-22	.075 Max.	60910-1	61174-1	60909-1	61173-1	Brass—Tin Plated	.012	90066-5
		60910-2	—	60909-2	—	Brass—Unplated		
		60910-3	—	60909-3	—	Phos. Bronze—Unplated		
		60910-4	—	60909-4	—	Phos. Bronze—Tin Plated		
		60910-5	61174-5	60909-5	61173-5	Brass—Gold over Nickel Plated		
Two #18 or one #18 and one #16	Two .115 Max. Stacked	60497-1	60616-1	60496-1	60615-1	Brass—Tin Plated	.012	90124-2
		60497-2	60616-2	60496-2	60615-2	Brass—Unplated		
		60497-3	60616-3	60496-3	60615-3	Phos. Bronze—Unplated		
		60497-4	60616-4	60496-4	60615-4	Phos. Bronze—Tin Plated		
24-18	.100 Max.	60511-1	60618-1	60510-1	60617-1	Brass—Tin Plated	.012	90123-2
		60511-2	60618-2	60510-2	60617-2	Brass—Unplated		
		60511-3	60618-3	60510-3	60617-3	Phos. Bronze—Unplated		
		60511-4	60618-4	60510-4	60617-4	Phos. Bronze—Tin Plated		
		60511-5	60618-5	60510-5	60617-5	Brass—Gold over Nickel Plated		
24-18	.130 Max.	61010-1	61109-1	61009-1	61108-1	Brass—Tin Plated	.012	90123-4
		61010-2	—	61009-2	—	Brass—Unplated		
		61010-5	—	61009-5	—	Brass—Gold over Nickel Plated		
20-14	.130 Max.	60528-1	60620-1	60527-1	60619-1	Brass—Tin Plated	.012	90124-2
		60528-2	60620-2	60527-2	60619-2	Brass—Unplated		
		60528-3	60620-3	60527-3	60619-3	Phos. Bronze—Unplated		
		60528-4	60620-4	60527-4	60619-4	Phos. Bronze—Tin Plated		
		60528-5	60620-5	60527-5	60619-5	Brass—Gold over Nickel Plated		

Extraction Tools (For both Side and End Feed Contacts). **Part No. 1-305183-1** for Pins only; **Part No. 1-305183-2** for Sockets only; **Part No. 465644-1** for both Pins and Sockets. **Wire Strip Length:** $\frac{3}{32}$ " for Machine Applications; $\frac{1}{16}$ " for Hand Tool Applications. **Insertion Tool Part No. 91002-1.**

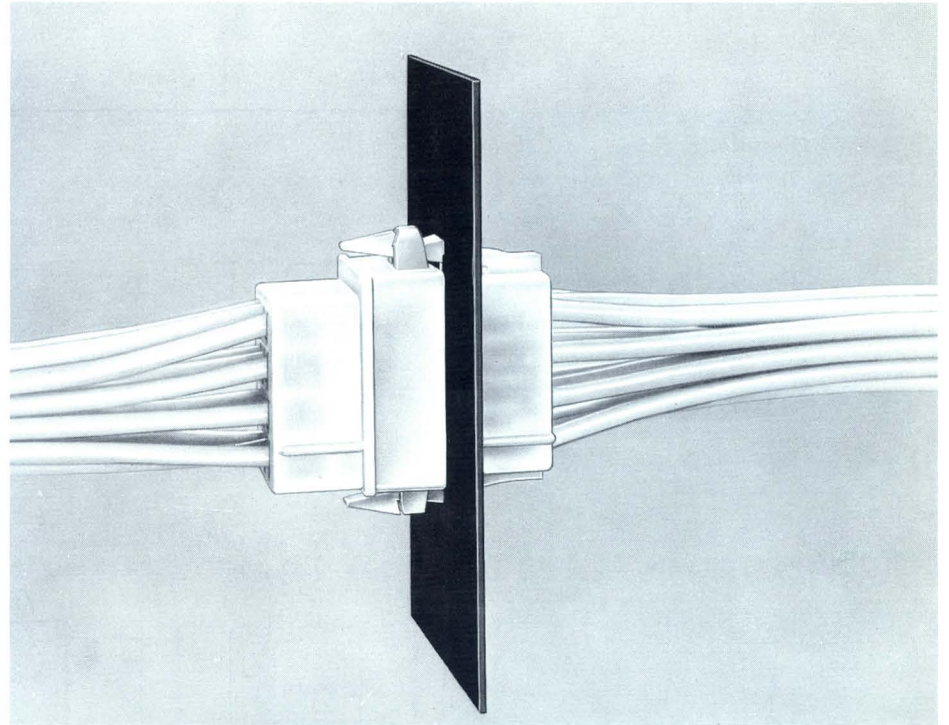
Special Contacts for Commercial and European Housings Only



Type of Contact	Loose Piece Pin Part No.	Loose Piece Socket Part No.	Material and Finish	Stock Thickness
Solder Tab	60780-1	60662-1	Brass—Tin Plated	.012
Printed Circuit Board	61518-1*	61320-1*	Brass—Tin Plated	
	61518-2*	61320-2*	Brass—Gold Plated	
	350074-1**	350073-1**	Brass—Tin Plated	
Pre-Crimped Pin for Commoning Tabs	60927-1	—	Brass—Tin Plated	
Side Feed Ground Pin	61527-1	—	Phos. Bronze—Gold Plated	
	61527-2	—	Brass—Tin Plated	

*For .062 Max. Board Thickness—Board Hole Size .057 ± .003.
**For .125 Max. Board Thickness—Board Hole Size .057 ± .003.

Commercial MATE-N-LOK Panel Mount Connectors



MATE-N-LOK Panel Mount Connectors are available in 3, 4, 6, 9, 12 and 15 circuit configurations. With these panel mount connectors, there is no chance of accidental disengagement of the mated connector or of dislodgement from the panel because of the positive locking device built into the housings. This positive locking device also permits their use as free-hanging connectors. (A detent locking device is used on the 3 and 4 circuit housings.)

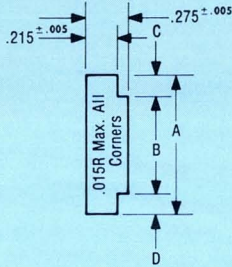
No hardware is required for mounting. MATE-N-LOK Panel Mount Connectors snap and lock in their mounting hole. Locking and mounting device on connector housing will accommodate panel thickness of .025 to .055 inches. Additional assembly features include full polarization for error free assembly; hot side mount

capability due to receptacle contacts being fully enclosed in an egg-crate design housing.

For greater tensile strength, resistance to vibration, and maximum electrical conductivity, MATE-N-LOK Contacts utilize AMP's patented "F" crimp serrated wire barrel with insulation support. The crimped area is a homogeneous mass which prevents oxide build-up and other corrosive elements. The serrations in the wire barrel permit application to solid or stranded wire. The contacts accept wire size ranges 30-22, 24-18 and 20-14 AWG. Both the pin and socket housings accept double wire applications where individual insulation diameters do not exceed .115 inches. AMP's matched automatic machine crimping and the snap-in feature of the contacts add up to low applied cost.

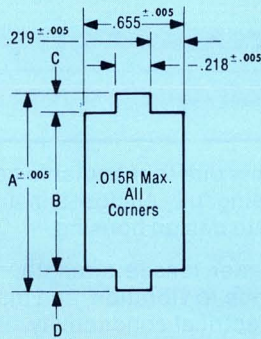
Commercial MATE-N-LOK Panel Mount Connectors

3 and 4 Circuits



Mounting Holes

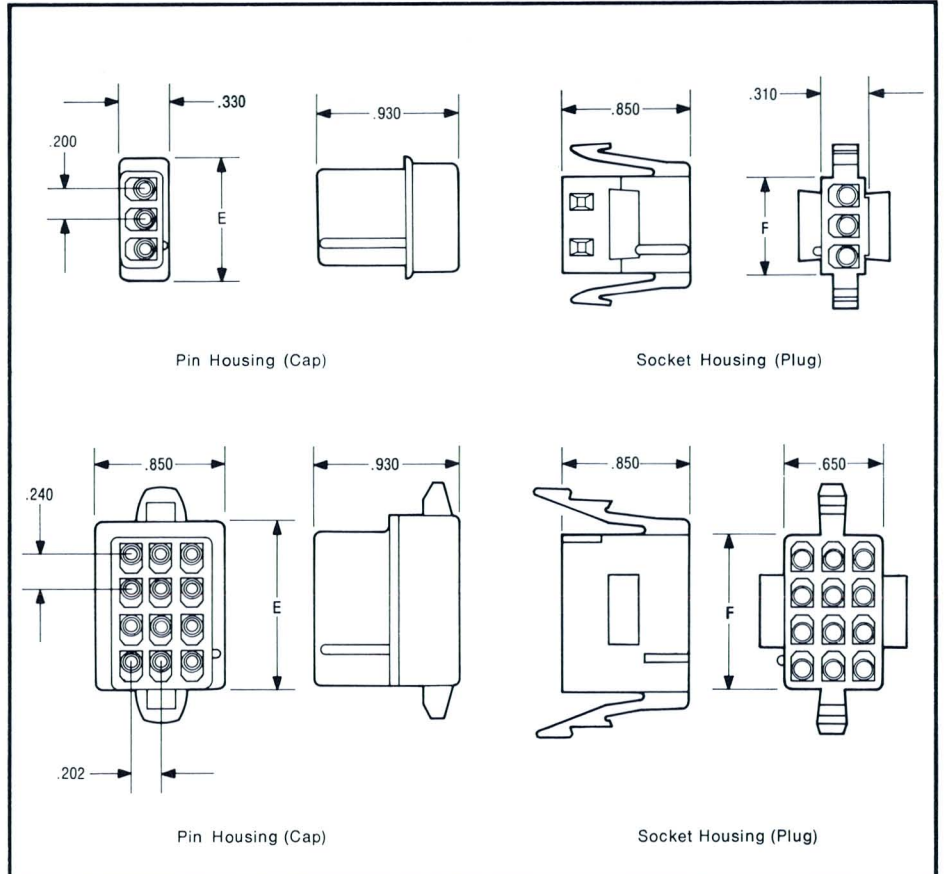
6, 9, 12 and 15 Circuits



Mounting Holes

Mounting Information Socket Housing (Plug) Only

1. Recommended panel thickness .025-.065 inches.
2. Both locking legs to be squeezed together and housing to be inserted "straight-in," as opposed to a rocking manner of insertion.
3. The panel should be punched so that the housing enters the panel in the same direction as the punch for best retention.
4. Dimensions "C" and "D" to be equal within a tolerance of .005 inches.
5. Panel must not have any material (paint, porcelain, etc.) applied in the mounting hole area that would decrease retention of the housing in the panel.



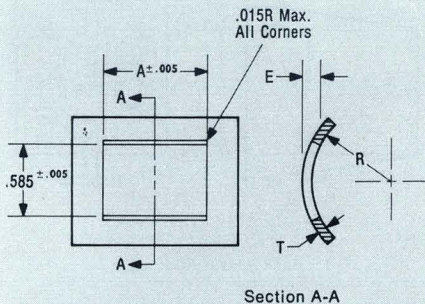
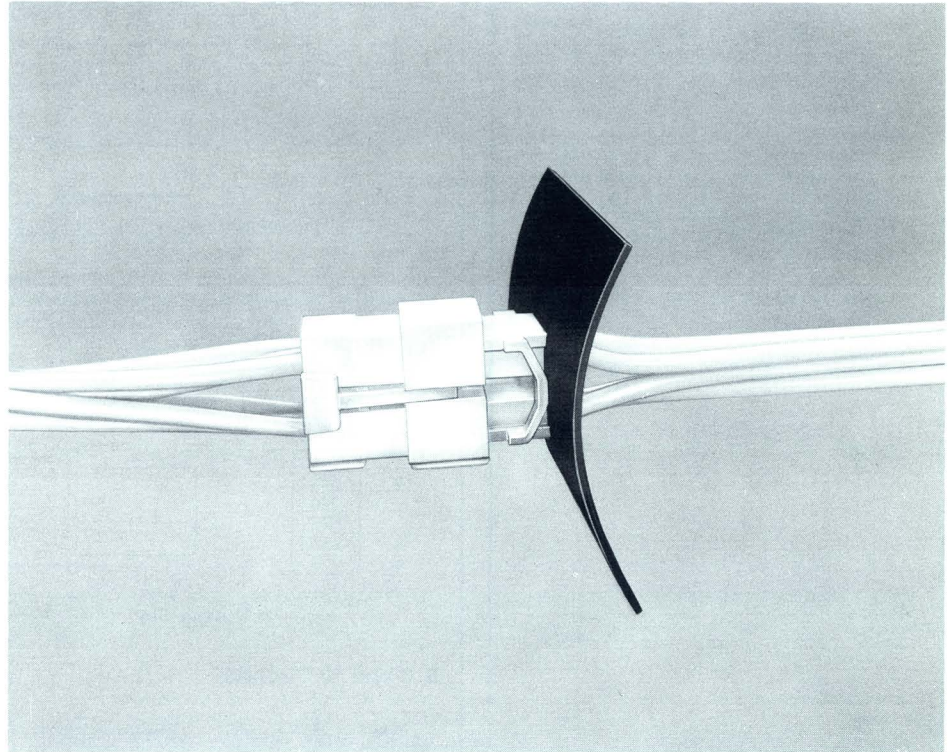
No. of Circuits	Pin Housing Part Number	E	Socket Housing Part Number	F	Mounting	
					A ± .005	B
3	1-480305-0	.810	1-480304-0	.630	.890	.645/.635
4	1-480426-0	1.010	1-480425-0	.830	1.090	.845/.835
6	1-480276-0	.665	1-480273-0	.565	.850	.575/.570
9	1-480277-0	.905	1-480274-0	.805	1.085	.815/.810
12	1-480278-0	1.145	1-480275-0	1.045	1.320	1.050/1.045
15	1-480324-0	1.382	1-480323-0	1.280	1.555	1.290/1.285

Unless Specified Tolerance ± .015.

Commercial MATE-N-LOK Motor Mount Connectors

6, 8, 10, 12 and 16 Circuits

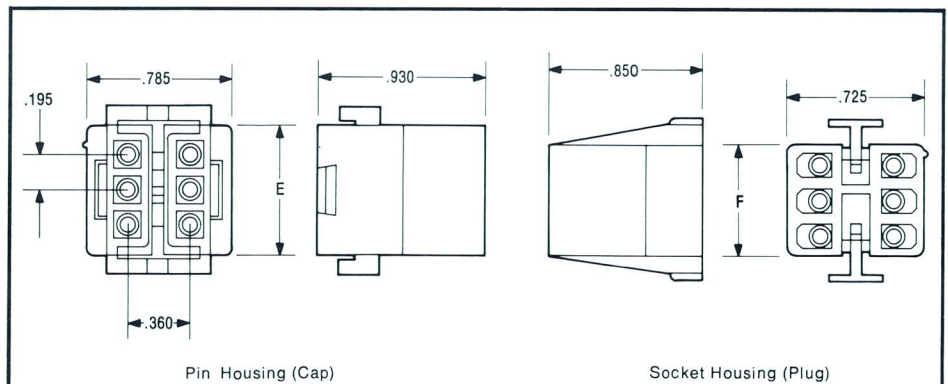
Designed to solve the assembly problems of motor manufacturers, it can also be used for cold side mounting in flat panels. This connector incorporates many of the features of its panel mount counterpart, plus a retention feature design which permits cold side snap-in mounting on the motor housing and fingertip release of the housing interlocks. The connector projects into the motor cavity only a short .10". Minimal projection allows for maximum use of space between the shell and motor windings and makes packing-in of conductor excess easier. This connector accommodates three wire size ranges #30-22, #24-18 and #20-14. Socket housings accept double wire applications where individual insulation diameters do not exceed .115 inches. Housings available: 6, 8, 10, 12 and 16 circuits.



Mounting Information Pin Housing (Cap) Only

1. Effective panel thickness "E" is .040-.100 inches and is dependent on "T" and "R."
2. 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.

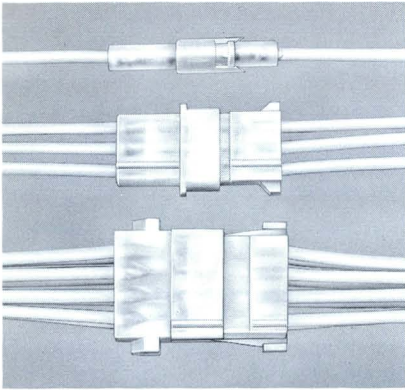
NOTE:
Motor mount housings may be used in flat panels.



No. of Circuits	Pin Housing Part Number	E	Socket Housing Part Number	F	Mounting A
6	1-480271-0	.705	1-480270-0	.610	.715
8	1-480284-0	.900	1-480283-0	.805	.910
10	1-480286-0	1.095	1-480285-0	1.000	1.105
12	1-480288-0	1.290	1-480287-0	1.195	1.300
16	1-480439-0	1.680	1-480438-0	1.585	1.690

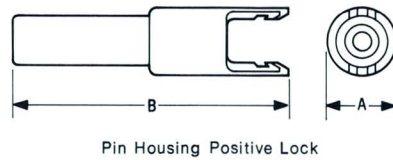
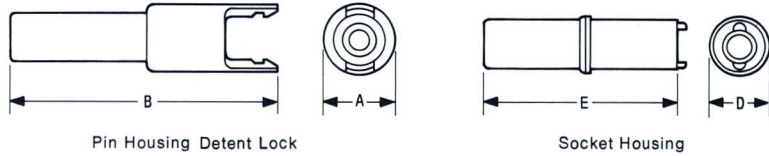
Unless Specified Tolerance ± .015.

Commercial MATE-N-LOK Free Hanging Connectors

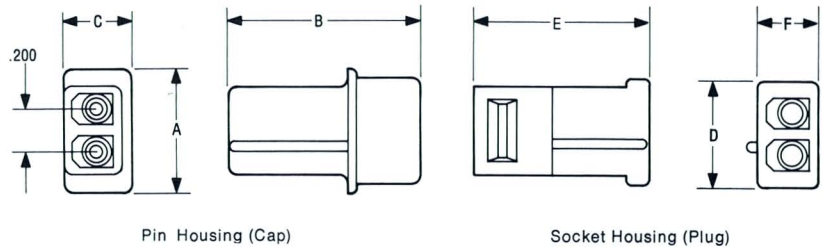


This version of the MATE-N-LOK Connector provides all the quality features of the panel mount and motor mount types, yet was designed for free-hanging installations. The 2, 3 and 4 circuit configurations feature detent locking housings while the 6, 8 and 10 circuit configurations utilize positive lock housings. A single circuit connector is available with an option of detent or positive lock housings. The multiple circuit configurations are polarized to assure proper electrical connection. The advantages of matched automatic machine crimping and snap-in contacts provide low applied cost and greater flexibility in system design. All configurations accommodate wire ranges #30-22, #24-18 and #20-14 AWG.

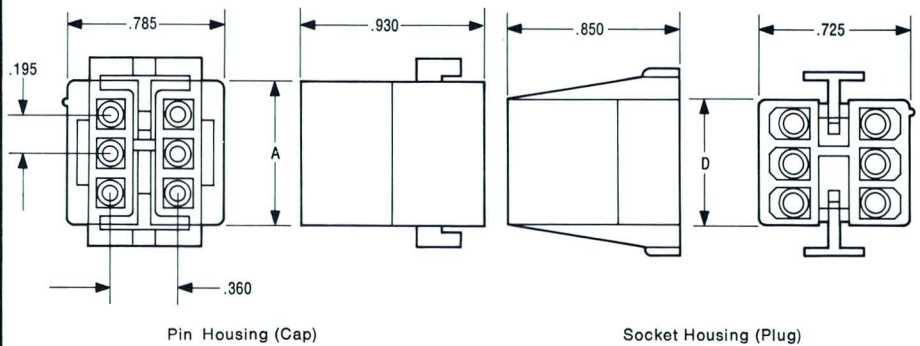
Single Circuit



2, 3 and 4 Circuits



6, 8 and 10 Circuits

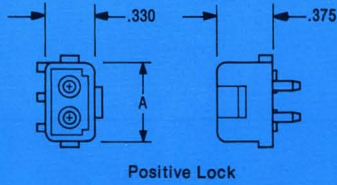


No. of Circuits	Pin Housing Part Number	A	B	C	Socket Housing Part Number	D	E	F
1	1-480350-0 (Detent Lock)	.300	1.200	—	1-480349-0	.260	.870	—
1	1-480351-0 (Positive Lock)	.300	1.240	—	1-480349-0	.260	.870	—
2	1-480319-0†	.610	.930	.330	1-480318-0†	.530	.860	.295
3	1-480305-0†	.810	.930	.325	1-480303-0†	.825	.850	.310
4	1-480426-0†	1.010	.930	.330	1-480424-0†	1.025	.850	.310
6	1-480340-0	.705	—	—	1-480270-0†	.610	—	—
8	1-480345-0	.900	—	—	1-480283-0†	.805	—	—
10	1-480339-0	1.095	—	—	1-480285-0†	1.000	—	—

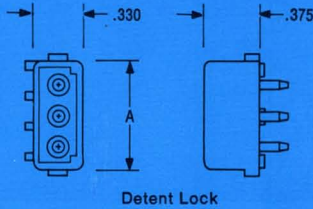
†Housing accepts double wire applications where individual insulation diameters do not exceed .115 inches.

Printed Circuit Board Pin Header Assemblies

(Mates with Commercial and Dual Lance Motor Mount or Free Hanging Socket Housings)

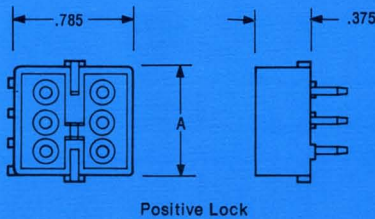


Positive Lock



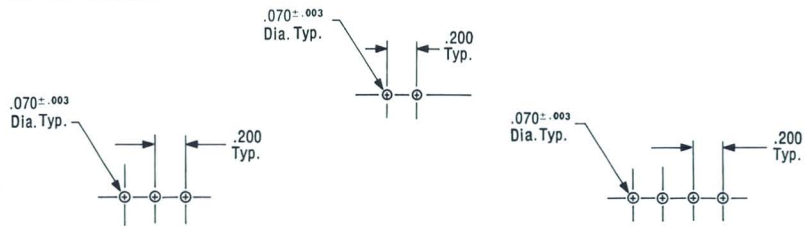
Detent Lock

Mating Positive Lock Housings



Positive Lock

2, 3 and 4 Circuits

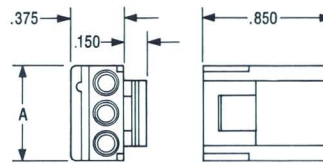


Housing Material: Nylon — Color: Natural (NEMA Colors Available)

No. of Circuits	Part Number With Positive Lock		Part Number With Detent Lock		A	Pin Material and Finish	Mates with Socket Housing Part Number
	Standard Pin*	Long Pin**	Standard Pin*	Long Pin**			
2	350539-1	350540-1	350209-1	350422-1	.515	Brass—Tin Plated	1-480318-0
	350539-2	350540-2	350209-2	350422-2		Brass—Gold Plated	1-480723-0
3	350541-1	350542-1	350210-1	350423-1	.715	Brass—Tin Plated	1-480303-0
	350541-2	350542-2	350210-2	350423-2		Brass—Gold Plated	1-480729-0
4	350543-1	350544-1	350211-1	350424-1	.915	Brass—Tin Plated	1-480424-0
	350543-2	350544-2	350211-2	350424-2		Brass—Gold Plated	

*Use Standard Pin for .062 thick printed circuit board.
**Use Long Pin for .125 thick printed circuit board.

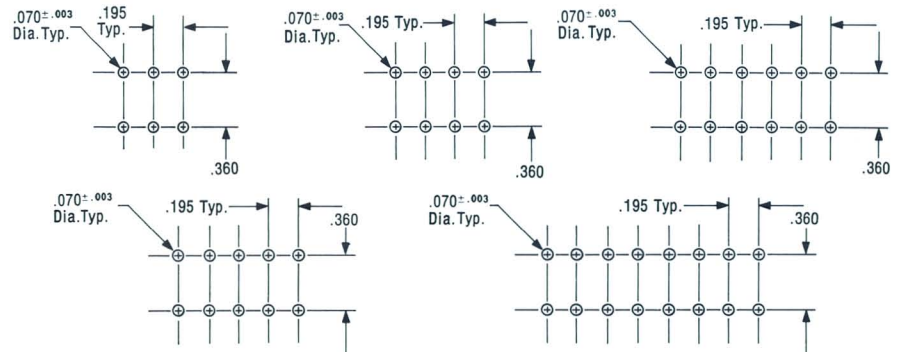
2, 3 and 4 Circuits



Positive Lock Housings — Color: Natural (NEMA Colors Available)

No. of Circuits	Socket Housing Part Number	A	Mates with Pin Header Assembly
2	1-480720-0	.435	350539, 350540
3	1-480721-0	.630	350541, 350542
4	1-480722-0	.830	350543, 350544

6, 8, 10, 12 and 16 Circuits



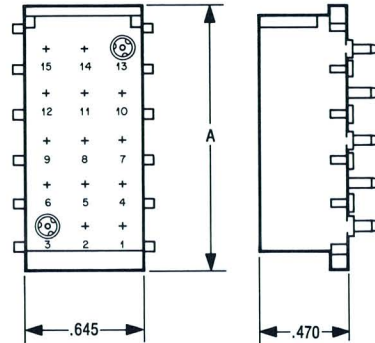
Housing Material: Nylon — Color: Natural (NEMA Colors Available)

No. of Circuits	Part Number With Positive Lock		Part Number With Detent Lock		A	Pin Material and Finish	Mates with Socket Housing Part Number
	Standard Pin*	Long Pin**	Standard Pin*	Long Pin**			
6	1-380999-0	350425-1	—	—	.705	Brass—Tin Plated	1-480270-0
	—	350425-2	—	—		Brass—Gold Plated	1-480696-0
8	350212-1	350426-1	—	—	.900	Brass—Tin Plated	1-480283-0
	350212-2	350426-2	—	—		Brass—Gold Plated	
10	1-380991-0	350219-1	—	—	1.095	Brass—Tin Plated	1-480285-0
	2-380991-0	350219-2	—	—		Brass—Gold Plated	
12	350213-1	350220-1	—	—	1.290	Brass—Tin Plated	1-480287-0
	350213-2	350220-2	—	—		Brass—Gold Plated	1-480733-0
16	350214-1	350427-1	—	—	1.680	Brass—Tin Plated	1-480438-0
	350214-2	350427-2	—	—		Brass—Gold Plated	1-480747-0

*Use Standard Pin for .062 thick printed circuit board.
**Use Long Pin for .125 thick printed circuit board.

**Printed Circuit Board
Socket Header Assemblies**
(Mates with Commercial and Dual Lance
Panel Mount Pin Housings)

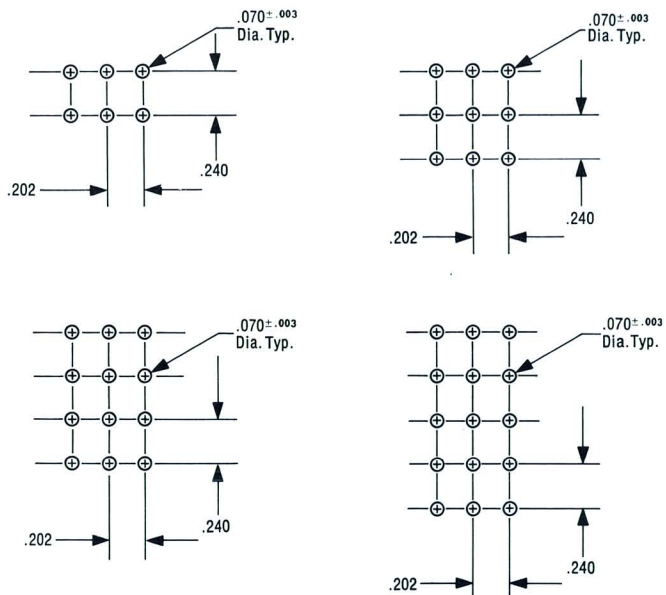
6, 9, 12 and 15 Circuits



Material: Nylon — Color: Natural (NEMA Colors Available)

No. of Circuits	Part Number Standard Pin*	Part Number Long Pin**	A	Pin Material and Finish	Mates with Pin Housing Part Number
6	350641-1	350576-1	.720	Brass—Tin Plated	1-480276-0
	350641-2	350576-2		Brass—Gold Plated	1-480693-0
9	350642-1	350577-1	.960	Brass—Tin Plated	1-480277-0
	350642-2	350577-2		Brass—Gold Plated	1-480694-0
12	350643-1	350578-1	1.200	Brass—Tin Plated	1-480278-0
	350643-2	350578-2		Brass—Gold Plated	1-480695-0
15	350644-1	350579-1	1.440	Brass—Tin Plated	1-480324-0
	350644-2	350579-2		Brass—Gold Plated	1-480713-0

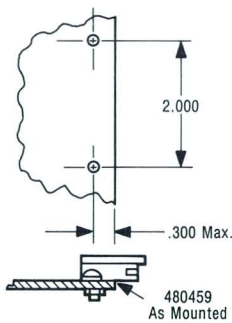
*Use Standard Pin for .062 thick printed circuit board.
**Use Long Pin for .125 thick printed circuit board.



Commercial MATE-N-LOK Special Application Connectors

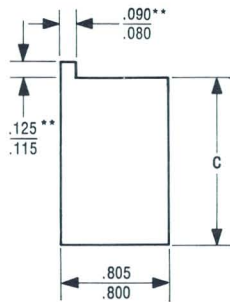
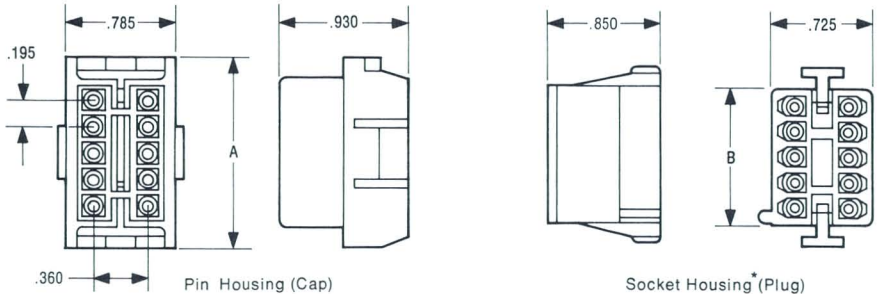
The industry-wide acceptance of the MATE-N-LOK Connector has made possible the extension of the line in many varied configurations designed for a wide range of applications. The following data contains specific information on these added configurations.

While these configurations differ from the standard panel mount, motor mount and free-hanging lines, they are designed to the same critical specifications. Each features: positive locking devices built into many of the housings; fully polarized for error free assembly; egg crate design in socket housings; choice of end or side fed pin and socket contacts; proven "F" crimp with insulation support; quick snap-in contacts and auto-machine termination for low applied costs.



Mounting Information

Cap Mount Connectors 6, 10 and 12 Circuits



Mounting Hole
(as viewed from punched side)

*Accepts double wire applications where individual insulation diameters do not exceed .115 inches.

Mounting Information

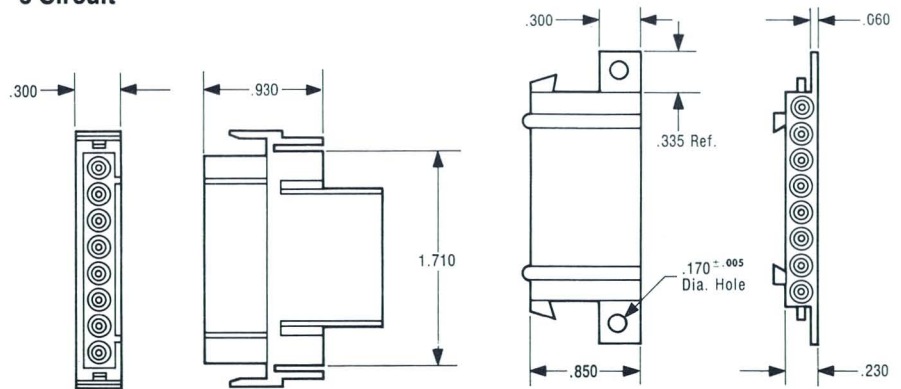
1. Panel must be punched for the housing to enter the panel in the same direction as the punch.
2. Panel must not have any material (paint, porcelain, etc.) applied in the mounting hole area that would decrease retention of the housing in the panel.
3. Recommended panel thickness — .020-.060.

**Not Required on 6 Circuit Cutout.

Housing Material: Nylon

No. of Circuits	Pin Housing Part Number	A	Socket Housing Part Number	B	Mounting C
6	1-480402-0	1.015	1-480765-0	.610	.855 / .845
10	1-480432-0	1.405	1-480431-0	1.000	1.235 / 1.230
12	1-480434-0	1.600	1.195	1.430 / 1.425	

Panel Mount Connector 8 Circuit



Pin Housing (Cap)
Part No. 1-480460-0

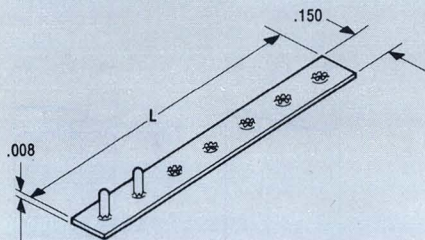
Socket Housing (Plug)
Part No. 1-480459-0

Unless Specified Tolerance ±.015

Commercial MATE-N-LOK Special Application Connectors

Commoning Tab

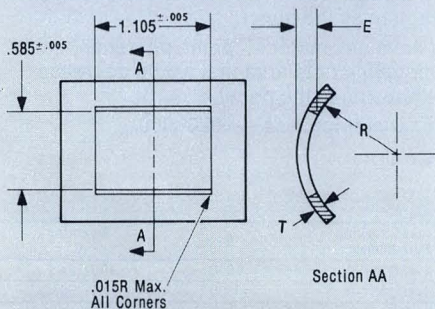
(For use with Housing 420404 only)



Number of Holes	L	Part Number
2	.420	60990-1
3	.650	60990-2
4	.880	60990-3
5	1.110	60990-4
6	1.340	60990-5
7	1.570	60990-6

Unless Specified Tolerance $\pm .015$

Mounting Information



Unless Specified Tolerance $\pm .015$

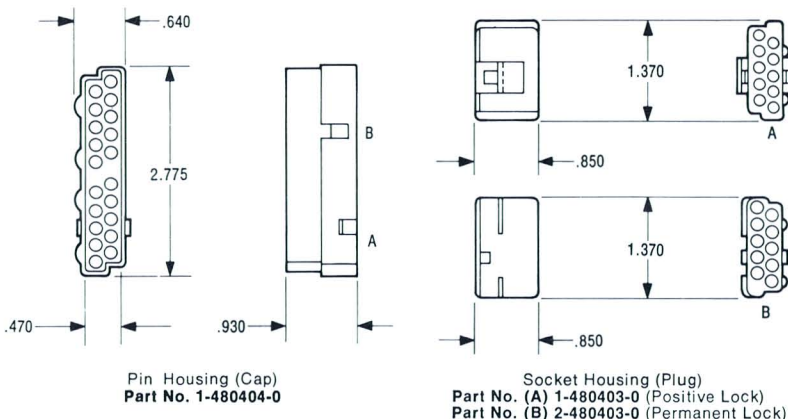
Mounting Information

1. Effective panel thickness "E" is .040-.100 inches and is dependent on "T" and "R."
2. 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.

NOTE:

Housings may be used in flat panels.

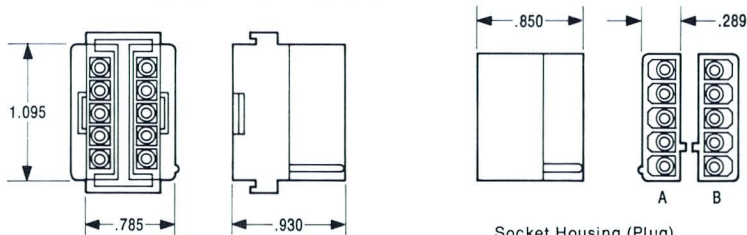
Split Connector 20 Circuit Free Hanging Housing Material: Nylon, Natural



Pin Housing (Cap)
Part No. 1-480404-0

Socket Housing (Plug)
Part No. (A) 1-480403-0 (Positive Lock)
Part No. (B) 2-480403-0 (Permanent Lock)

Split Plug Connector 10 Circuit Free Hanging or Panel Mount

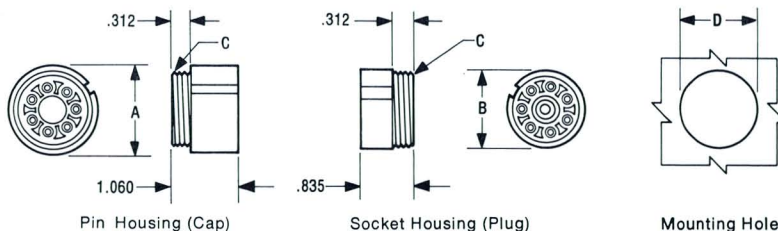


Pin Housing (Cap)
Part No. 1-480389-1

Housing Material: Outdoor nylon, black

Socket Housing (Plug)
Part No. (A) 1-480390-1 (Detent Lock)
Part No. (B) 2-480390-1 (Detent Lock)
Accepts double wire applications where individual insulation diameters do not exceed .115 inches.

Circular Connectors 7 and 12 Circuits



Pin Housing (Cap)

Socket Housing (Plug)

Mounting Hole

Housing Material: Polycarbonate, Black

Unless Specified Tolerance $\pm .015$

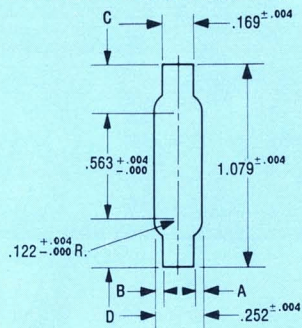
No. of Circuits	Pin Housing Part Number	A Dia.	Socket Housing Part Number	B Dia.	C Threads	Mounting D Dia.
7	1-480455-9	1.400	1-480454-9	1.305	1 11/64-24	1.190*
12	1-480457-9	1.550	1-480456-9	1.455	1 13/32-24	1.410*

Extraction Tools: Part No. 691458-3 for Pins; Part No. 691458-4 for Sockets.

*Tolerance $\pm .010$

MATE-N-LOK
Connectors
European Style

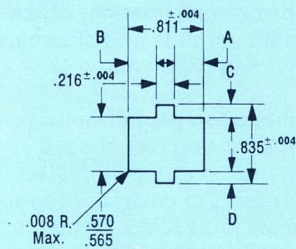
Mounting Information
Socket Housing (Plug) Only



Mounting Hole
Recommended Panel Cut-out

NOTES:

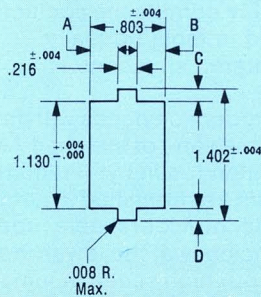
Dimensions "A" and "B" to be equal within .008; Dimensions "C" and "D" to be equal within .008.
Recommended panel thickness .025-.065.
Connector must enter from punched side.



Mounting Hole
Recommended Panel Cut-Out

NOTES:

Dimensions "A" and "B" to be equal within .008; dimensions "C" and "D" to be equal within .008.
Recommended panel thickness .025-.065.
Connector must enter from punched side.

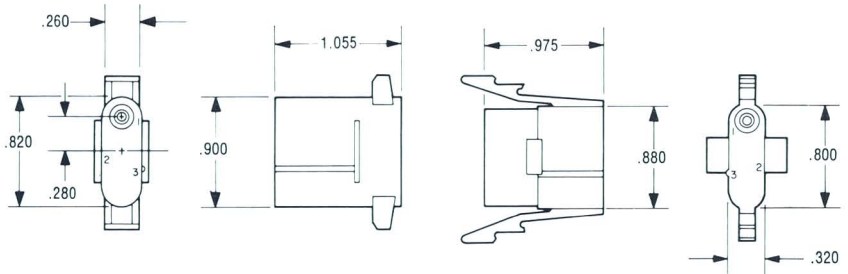


Mounting Hole
Recommended Panel Cut-Out

NOTES:

Dimensions "A" and "B" to be equal within .008; Dimensions "C" and "D" to be equal within .008.
Recommended panel thickness .025-.065.
Connector must enter from punched side.

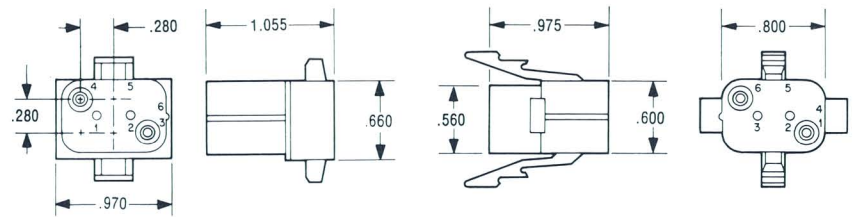
3 Circuit



Pin Housing (Cap)
Part No. 1-480755-0

Socket Housing (Plug)
Part No. 1-480756-0

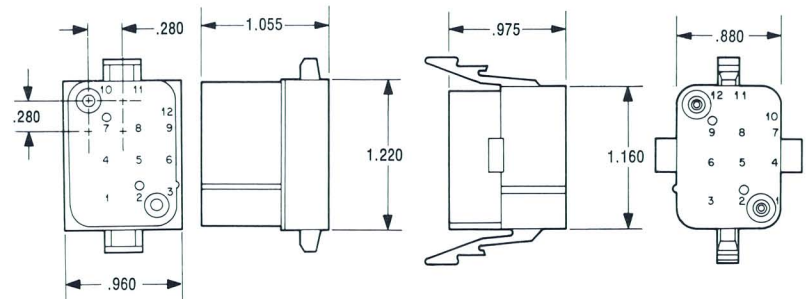
6 Circuit



Pin Housing (Cap)
Part No. 1-480753-0

Socket Housing (Plug)
Part No. 1-480754-0

12 Circuit



Pin Housing (Cap)
Part No. 1-480751-0

Socket Housing (Plug)
Part No. 1-480752-0

NOTE:

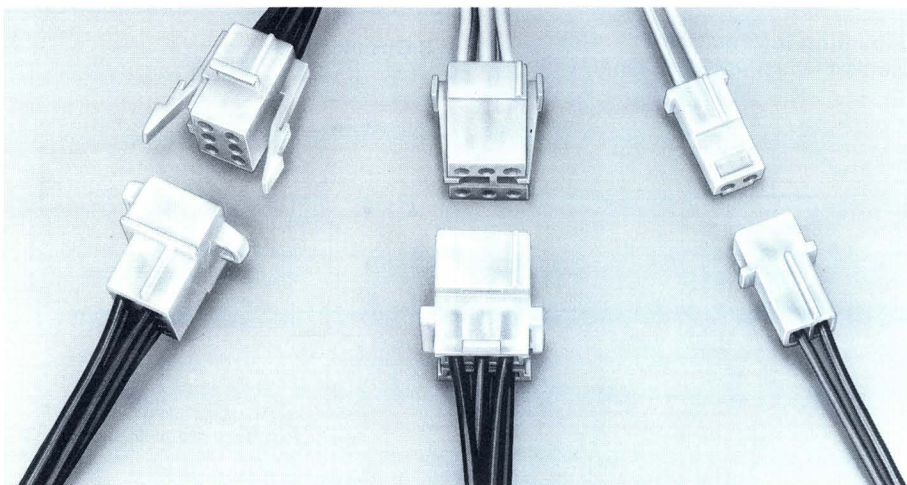
For use with Standard Side Feed and End Feed Contacts — Refer to Pages 3 and 4.

Dual Lance MATE-N-LOK Connectors

Features

- Totally mateable with existing commercial MATE-N-LOK connector housings.
- Dual lance contacts for superior stability.
- Positive polarization.
- Removable crimp snap-in contacts, rated to 25 amperes (based on 105°C maximum housing operating temperature).
- Positive locking features.
- Circuit/cavity identification.
- Available in NEMA colors upon request.
- Single and double wire capability in contacts and housings.
- Low mating force.
- Continuous strip contacts allow high speed application with AMP automatic terminating machines using the same quick-change miniature applicators that are used to crimp standard Commercial MATE-N-LOK contacts.
- Both contacts terminated in the same applicator.
- Pre-tin or gold plated brass contacts.
- Housing mounts in panel .025 to .065 inch thick.

Recognized under the Component Program of Underwriters' Laboratories, Incorporated.
UL File No. E28476



AMP Incorporated now offers a line of MATE-N-LOK connectors with dual lance contacts designed to provide superior contact stability in the housings. Intended for use in home entertainment centers, appliances, vending machines, computers, and sophisticated commercial equipment, these connectors were specifically designed to give you the combination of package reliability and maximum versatility that provide the lowest possible applied cost.

These new connectors will complement the already well known line: they are totally intermateable with existing connectors so that no retrofitting is required for a change-over, however contacts are not interchangeable within the dual lance and commercial housings. They are available in 3, 4, 6, 9, 12 and 15 circuit panel mounted versions; 2 and 3 circuit free-hanging versions; plus 6 and 12 circuit motor mounted versions. All versions may be obtained in NEMA colors to allow the coding requirements for your application to be met.

The housings combine features that allow an extremely versatile range of applications. Made of durable nylon, the housings will hold up under harsh treatment; the integral positive lock feature holds the housings together under severe

vibration and shock. All housings incorporate easy circuit/cavity identification, and are fully polarized to prevent mismatching, which protects the circuits and eliminates field servicing problems.

Depending upon your circuit requirements, you can choose between pre-tin and gold plated brass contacts to cover a wire range from No. 20 to 14 AWG. Contacts are available to permit two wire applications. All contacts are the convenient crimp snap-in removable type to allow a variety of production techniques. Low mating force enables easy connections with no danger of damaging or forcing out the contacts. High current carrying capability permits the contacts to be used in most normally encountered situations.

Your production needs will determine which line of matched AMP application tooling you require. Contacts are furnished in continuous strip form for reliable production efficiency at the lowest applied cost in our high speed automatic or semi-automatic machines, and in loose piece form for hand tool crimping. The high speed terminating machines use the AMP quick change applicator to allow a wide range of contact sizes to be applied in one machine.

Dual Lance MATE-N-LOK Connectors

Performance Specifications

Unless otherwise indicated, the data given below applies to both mounting and free-hanging types of the MATE-N-LOK Connector.

Contact Resistance

Using Tin-Plated Contacts

Wire Size	Test Current (Amperes)	Potential Drop (Millivolt)
#24	1.5	4
#22	2	7
#20	4	11
#18	7	15
#16	10	21
#14	15	27

Engagement & Separation Forces

Typical engagement force for any housing — 4 lbs. per circuit.

Typical separation force for any housing — 3 lbs. per circuit with locking feature depressed.

Minimum mated housing retention with positive locking devices engaged — 35 lbs.

Minimum mounted housing retention exceeds 100 lbs.

Tensile Force per Contact

Wire Size	Force (Lbs. Min.)
#24	10
#22	10
#20	15
#18	20
#16	20
#14	35

Low Level Contact Resistance:

Measured across friction connection of pin initially and after 50 insertions and extractions — resistance readings in milliohms.

Initially:

Maximum — 2.00 milliohms.

50 Insertions:

Maximum — 2.03 milliohms.

Test Specifications

MATE-N-LOK connectors can carry up to, and in some cases in excess of 25 amperes. The maximum current that can be carried is limited by the maximum operating temperature of the housings which is 105°C (221°F). There are several variables which must be considered when determining this maximum current capability for your application. These variables are:

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

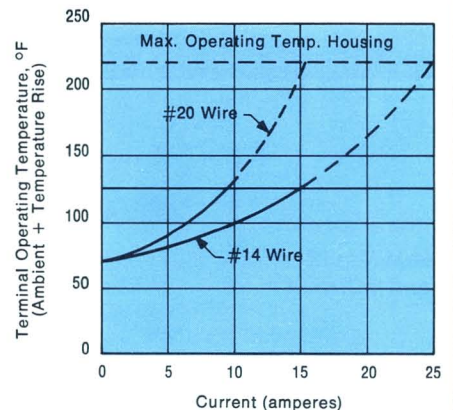
Connector Size — In general, the more circuits in a connector, the less current can be carried.

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

The graphs show how these variables affect current carrying capacity in MATE-N-LOK terminals and are also a guide to the product's performance.

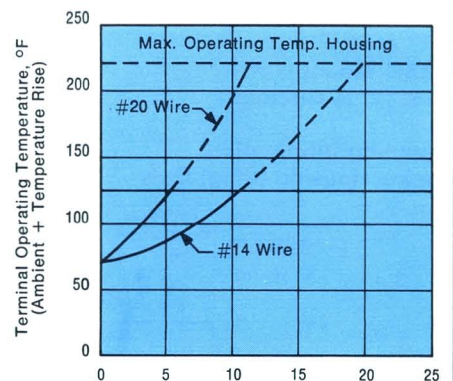
Maximum Terminal Temperature vs. Current

A comparison of MATE-N-LOK terminals on #20 wire and #14 wire used in 4 circuit free hanging housings.



Performance Curve

A comparison of MATE-N-LOK terminals on #20 wire and #14 wire used in 12 circuit panel mount housings.

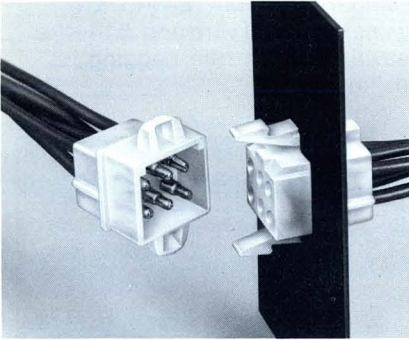


— Component Recognition, 30°C (54°F) T-rise

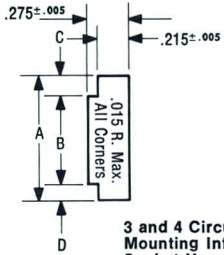
- - - Maximum Connector Limit, 105°C (221°F)

Dual Lance MATE-N-LOK Connectors

Contacts



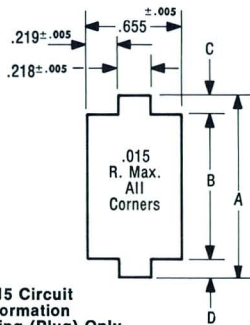
Panel Mount 3 and 4 Circuit



3 and 4 Circuit
Mounting Information
Socket Housing (Plug) Only

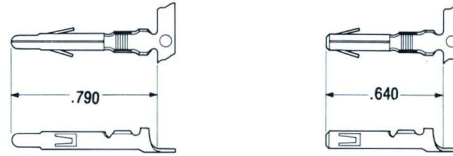
Panel Mount 6, 9, 12, 15 Circuits

Mounting Information Socket Housing (Plug) Only



6, 9, 12 and 15 Circuit
Mounting Information
Socket Housing (Plug) Only

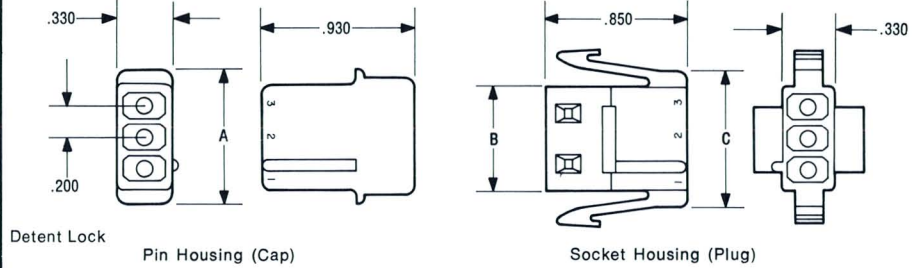
No. of Circuits	A	B
3	.890	.645/.635
4	1.090	.845/.835
6	.850	.575/.570
9	1.085	.815/.810
12	1.320	1.050/1.045
15	1.555	1.290/1.285



Dual Lance Contacts for Dual Lance Housings Only

Wire Size Range (AWG)	Ins. Dia. Max.	Material and Finish	Stock Thickness	Strip Form Contact No.		Loose Piece Contact No.		Hand Tool No.
				Pin	Socket	Pin	Socket	
20-14	.130	Brass, Pre-tin	.012	350218-1	350217-1	350547-1	350546-1	90296-1
		Brass, Gold	.012	350218-2	350217-2	—	—	
Two #18 or One #18 and One #16 Stacked	Two .115	Brass, Pre-tin	.012	350513-1	350512-1	350549-1	350548-1	90297-1
		Brass, Gold	.012	350513-2	350512-2	—	—	
24-18	.100	Brass, Pre-tin	.012*	350561-1	350560-1	350690-1	350691-1	90300-1
		Brass, Gold	.012*	350561-2	350560-2	350690-2	350691-2	

*Socket Contact—.010.
Contact Extraction Tool **Part No. 458994-1**.
Contact Insertion Tool **Part No. 91002-1**.

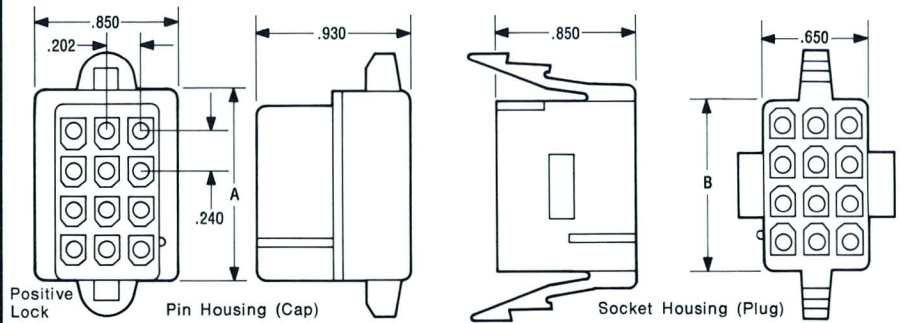


Detent Lock

Pin Housing (Cap)

Socket Housing (Plug)

No. of Circuits	Dimensions			Housing Part No.	
	A	B	C	Pin	Socket
3	.810	.630	.825	1-480726-0	1-480725-0
4	1.010	.830	1.025	1-480728-0	1-480727-0



Positive Lock

Pin Housing (Cap)

Socket Housing (Plug)

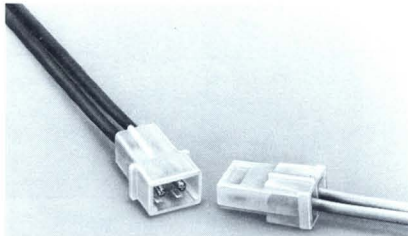
No. of Circuits	Dimensions		Housing Part No.	
	A	B	Pin	Socket
6	.665	.565	1-480693-0	1-480690-0
9	.905	.805	1-480694-0	1-480691-0
12	1.145	1.045	1-480695-0	1-480692-0
15	1.385	1.280	1-480713-0	1-480712-0

NOTES: Unless Specified, Tolerance ±.005

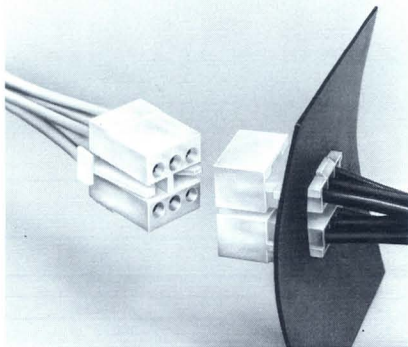
1. Recommended panel thickness .025-.065 inch.
2. Both locking legs should be squeezed together and the housing inserted "straight-in" as opposed to a rocking manner of insertion.
3. The panel should be punched so that the housing enters the panel in the same direction as the punch for best retention.
4. Dimensions "C" and "D" to be equal within a tolerance of .005 inch.
5. Panel must not have any material (paint, porcelain, etc.) applied in the mounting hole area that would decrease retention of the housing in the panel.
6. If notes 3 and/or 5 are not complied with, the "A" dimension should be reduced by .030" to assure proper housing retention in panel.
7. Dual Lance housing can be identified from Commercial MATE-N-LOK housing by the fact that their part no. appears on wire entry side of the housing.

Dual Lance MATE-N-LOK Connectors

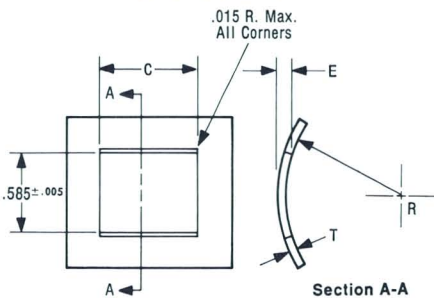
Free-Hanging Connector Housings



Motor Mounted Connector Housings



Mounting Information Pin Housing (Cap) Only



NOTES:

1. Effective panel thickness "E" is .040-.100 inch and is dependent on "T" and "R".
2. Pin housing (cap) 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.
4. The panel must not have any material (paint, porcelain, etc.) applied in the mounting hole area that would decrease retention of the housing in the panel.
5. Motor mount housings may be used in flat panels.

2 and 3 Circuit

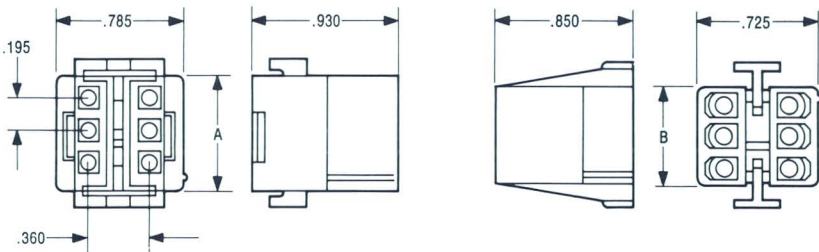


Pin Housing (Cap)

Socket Housing (Plug)

No. of Circuits	Dimensions		Pin Housing Part No.	Dimensions			Socket Housing Part No.
	A	B		C	D	E	
2	.610	.330	1-480724-0	.860	.530	.330	1-480723-0
3	.810	.325	1-480726-0	.850	.825	.330	1-480729-0

6, 12 and 16 Circuit



Pin Housing (Cap)

Socket Housing (Plug)

No. of Circuits	Dim. A	Pin Housing Part No.*	Dim. B	Socket Housing Part No.	Mounting Dim. C
6	.705	1-480697-1	.610	1-480696-0	.715
12	1.290	1-480734-0	1.195	1-480733-0	1.300
16	1.680	1-480748-0	1.585	1-480747-0	1.690

*Accepts single wire terminations only.

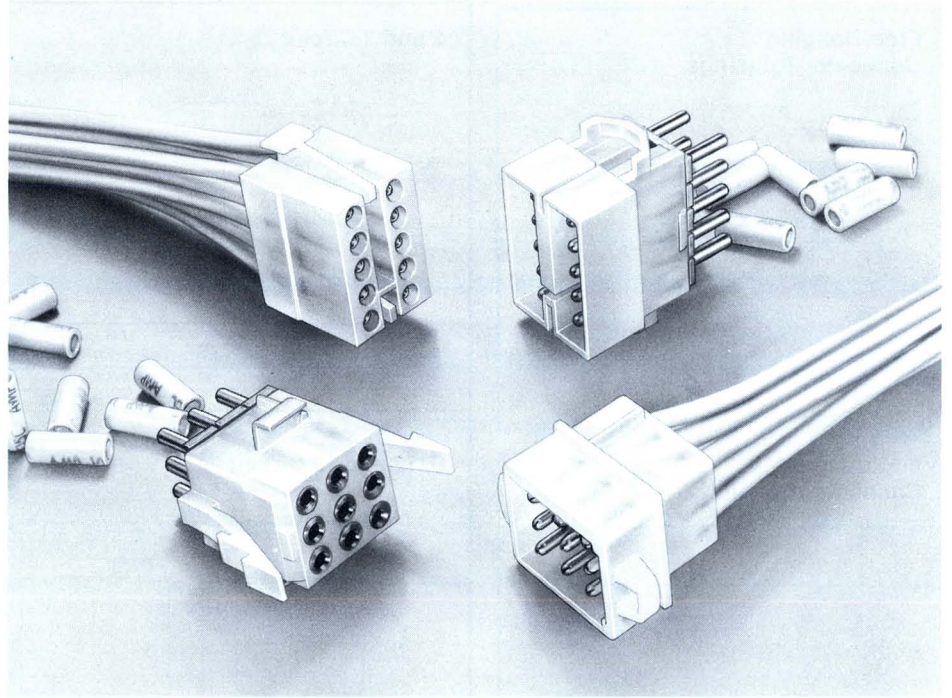
Commercial and Dual Lance MATE-N-LOK Connector Test Assemblies

A full range of MATE-N-LOK Connector test assemblies is available in motor mount, panel mount and free-hanging designs. These assemblies have been specifically designed for circuit testing on the assembly line. Each test housing is equipped with screw machined contacts to withstand repeated insertions and extractions in the production line housing.

The contacts accept the mating contact under test to assure proper contact seating and electrical continuity. Contacts in the assemblies have provisions to accept leads directly from test equipment by soldering or using .093 pin receptacles.

Testing Information

Power must be shut off from circuit when engaging or disengaging assembly to eliminate shock hazard.



Housing Material: Nylon

Style	No. of Circuits	Part Number Plug*	Part Number Cap**
Panel Mount	3	1-380780-2	1-380721-2
	6	1-380780-3	1-380721-3
	9	1-380780-4	1-380721-4
	12	1-380780-5	1-380721-5
	15	1-380780-6	1-380721-6
Motor Mount	6	1-380780-7	1-380721-7
	8	1-380780-8	1-380721-8
	10	1-380780-9	1-380721-9
	12	2-380780-0	2-380721-0
Free-hanging	1	1-380780-0	1-380721-0
	2	1-380780-1	1-380721-1

*The test plug mates with the pin housing.

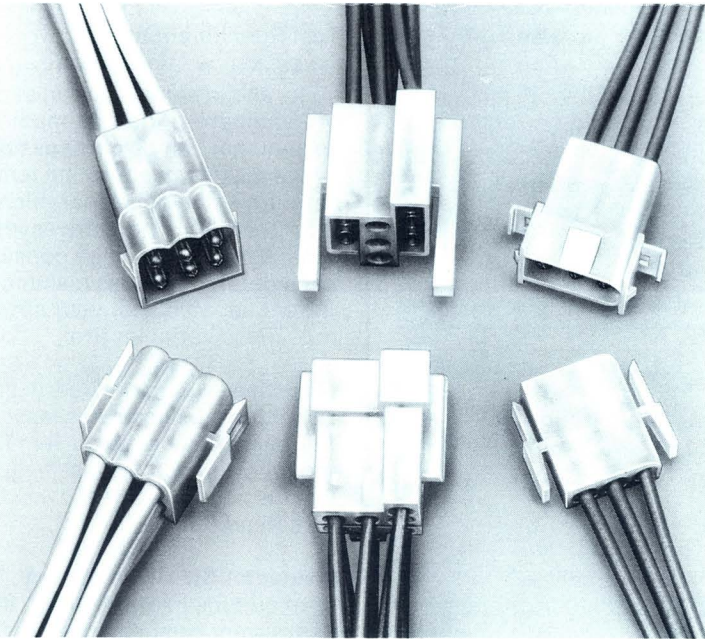
**The test cap mates with the socket housing.

.140 MATE-N-LOK Connectors

Features

- Available in 2, 3, and 9 circuit configurations for panel mounting; 4 and 9 circuit configurations for free hanging applications; and an 8 circuit socket housing (plug) which accepts two separate 4 circuit pin housings (caps).
- Standard natural nylon housings. Other colors also available.
- Housings fully polarized.
- Contacts fully protected in housings.
- Contacts accept No. 20 through No. 10 AWG, with insulation diameters from .100" to .180".
- Contacts carry up to 25 amperes (based on +105°C max. operating temperature).
- Low insertion/extraction forces.
- Dual locking lances assure optimum contact stability.
- Extraction tool removes both pins and sockets.
- Continuous strip contacts allow high speed application with AMP automatic terminating machines using quick change miniature applicators.

Recognized under the Component Program of Underwriters' Laboratories, Incorporated.
UL File No. E28476



Now available from AMP, large insulation connectors especially designed for use in today's refrigerators, freezers, air conditioning units, ranges, etc. These U.L. recognized connectors employ .140" diameter pins and sockets which have a 25-ampere current-carrying capacity and are capable of accepting wire with insulation diameters up to .180".

This versatile family of AMP connectors offers a wide selection of available sizes and configurations. Included are: 4- and 9-circuit connectors for free-hanging applications; an 8-circuit plug designed to accept two separate 4-circuit caps; plus 2-, 3- and 9-circuit connectors that can be mounted to a .040"-.070" thick panel by simply snapping the plug half into the panel cutout — no mounting hardware required.

All connector housings are molded from durable nylon material and are fully polarized to assure proper plug-to-cap mating. Additional housing features include: positive locking designs to prevent accidental disengagement of mated connectors or dislodgement from the panel; plugs

that fully enclose the socket contacts; an extended skirt on the caps to provide complete protection for the pin contacts; numbered cavities for easy circuit identification; and the availability of commoning tabs.

The contacts themselves are stamped and formed from pre-tinned brass and are designed to accept a wire range of No. 20 to 10 AWG, either solid or stranded, as well as insulation diameters from .100" to .180". Both pins and sockets are equipped with dual locking lances which assure positive contact retention when installed in the housings. They are easily hand loaded into the housings and require no orientation. Removal is also equally simple, requiring one extraction tool to remove both pins and sockets.

AMP furnishes these contacts in continuous strip form for their high-speed application to wire with one of several automatic terminating machines. These machines, using the versatile AMP miniature applicator which crimps both pins and sockets, assure volume production at the lowest possible installed cost.

.140 MATE-N-LOK Connectors

Performance Specifications

Unless otherwise indicated, the data given below applies to both mounting and free-hanging types of the MATE-N-LOK Connector.

Contact Resistance

Using Tin-Plated Contacts

Wire Size	Test Current (Amperes)	Potential Drop (Millivolt)
#20	4	11
#18	7	15
#16	10	21
#14	15	27

Engagement & Separation Forces

Typical engagement force for any housing — 4 lbs. per circuit.

Typical separation force for any housing — 3 lbs. per circuit with locking feature depressed.

Minimum mated housing retention with positive locking devices engaged — 35 lbs.

Minimum mounted housing retention exceeds 100 lbs.

Tensile Force per Contact

Wire Size	Force (Lbs. Min.)
#20	15
#18	20
#16	20
#14	35

Low Level Contact Resistance:

Measured across friction connection of pin initially and after 50 insertions and extractions — resistance readings in milliohms.

Initially:

Maximum — 2.00 milliohms.

50 Insertions:

Maximum — 2.03 milliohms.

Test Specifications

MATE-N-LOK connectors can carry up to, and in some cases in excess of 25 amperes. The maximum current that can be carried is limited by the maximum operating temperature of the housings which is 105°C (221°F). There are several variables which must be considered when determining this maximum current capability for your application. These variables are:

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

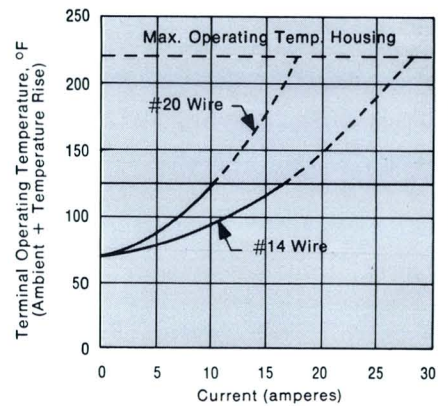
Connector Size — In general, the more circuits in a connector, the less current can be carried.

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

The graphs show how these variables affect current carrying capacity in MATE-N-LOK terminals and are also a guide to the product's performance.

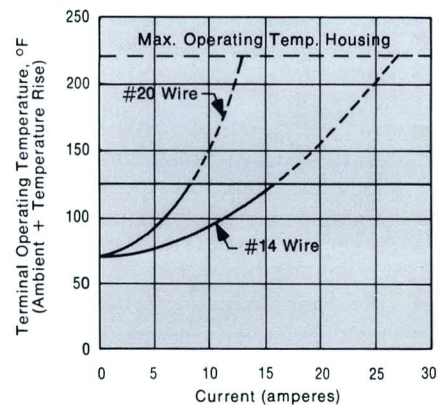
Maximum Terminal Temperature vs. Current

A comparison of .140 MATE-N-LOK terminals on #20 wire and #14 wire used in 2 circuit free hanging housings.



Performance Curve

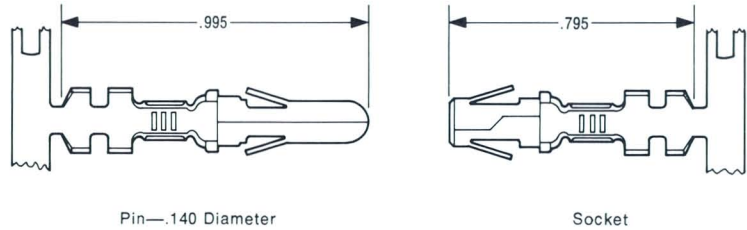
A comparison of MATE-N-LOK terminals on #20 wire and #14 wire used in 8 circuit free hanging housings.



— Component Recognition, 30°C (54°F) T-rise
 - - - Maximum Connector Limit, 105°C (221°F)

**.140
MATE-N-LOK
Connectors**

Contacts

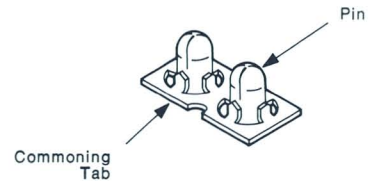
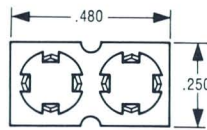


Material and Finish: Brass, Pre-Tinned

Wire Range (AWG)	Ins. Dia. Range	Strip Form Contact No.		Loose Piece Contact No.		Hand Tool No.
		Pin	Socket	Pin	Socket	
20-14	.100-.180	61627-1	61626-1	350389-1	350388-1	90247-1
14-10	.100-.180	350201-1	350200-1	350391-1	350390-1	69710*

*This hand tool requires die insert No. 90306-1.
Stock Thickness .014
Extraction Tool **Part No. 453300-1**

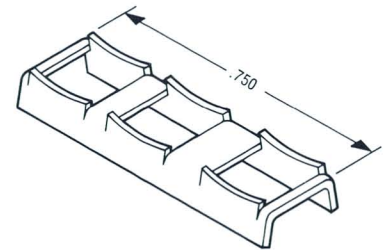
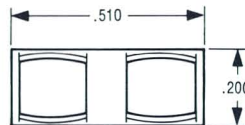
Commoning Tab



Part No. 61739-1 (Brass, Unplated) .010
Part No. 61739-2 (Beryllium Copper, Unplated) .010

NOTE:
Two-pin commoning bar can be used to common adjacent pins in any column or row, except at polarized end of 3 and 9 circuit housings. Cannot be used in 2 circuit housings.

The above illustration shows the proper installation of the two-pin commoning bar.



2 Circuit Commoning Tab
Part No. 61628-1 (Brass, Unplated) .010
Part No. 61628-2 (Beryllium Copper, Unplated) .010
For 8 Circuit Socket Housing Only

3 Circuit Commoning Tab
Part No. 61629-1 (Brass, Unplated) .010
Part No. 61629-2 (Beryllium Copper, Unplated) .010
For 8 Circuit Socket Housing Only

.140
MATE-N-LOK
Free Hanging
Connectors

4 Circuit Housings

Cavity Identification
(Rear View)



Cap

Plug

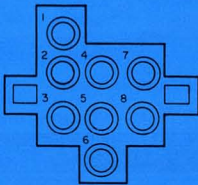
Cavity Identification
(Rear View)



Cap

8 Circuit Housings

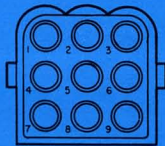
Cavity Identification
(Rear View)



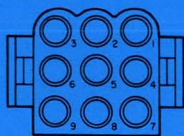
Plug

9 Circuit Housings

Cavity Identification
(Rear View)

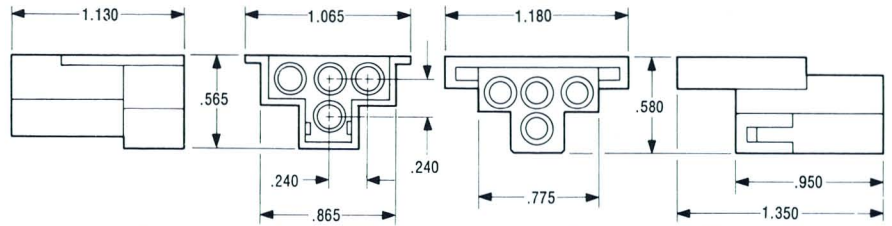


Cap



Plug

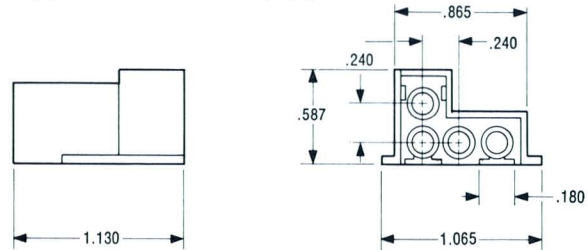
Housing Material (for all circuit sizes): Nylon; Color, Natural (other colors available upon request)



Pin Housing (Cap)
Part No. 1-480512-0*

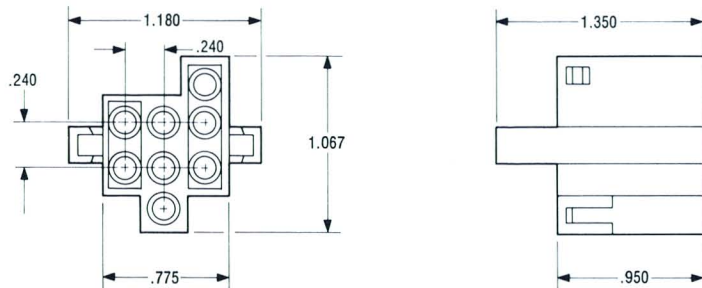
Socket Housing (Plug)
Part No. 1-480510-0

*Mates with 4-circuit plug #1-480510-0 and 8-circuit plug #1-480511-0.



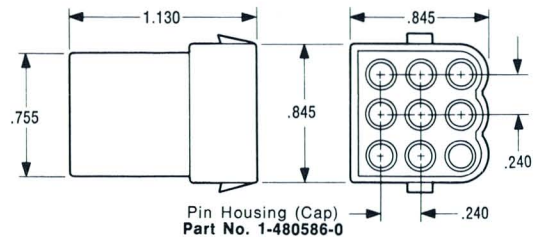
Pin Housing (Cap)
Part No. 1-480513-0*

*Mates with 8-circuit plug #1-480511-0 only.

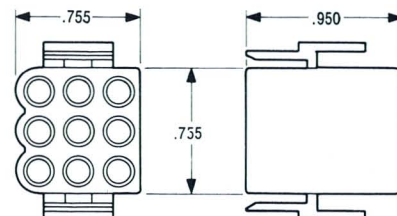


Socket Housing (Plug)
Part No. 1-480511-0*

*Mates with 4-circuit caps #1-480512-0 and #1-480513-0.



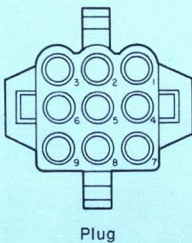
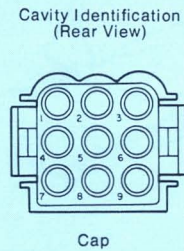
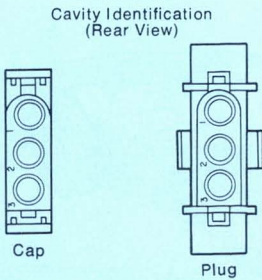
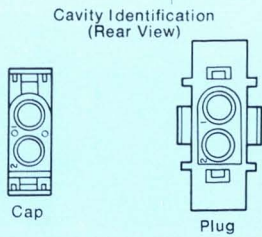
Pin Housing (Cap)
Part No. 1-480586-0



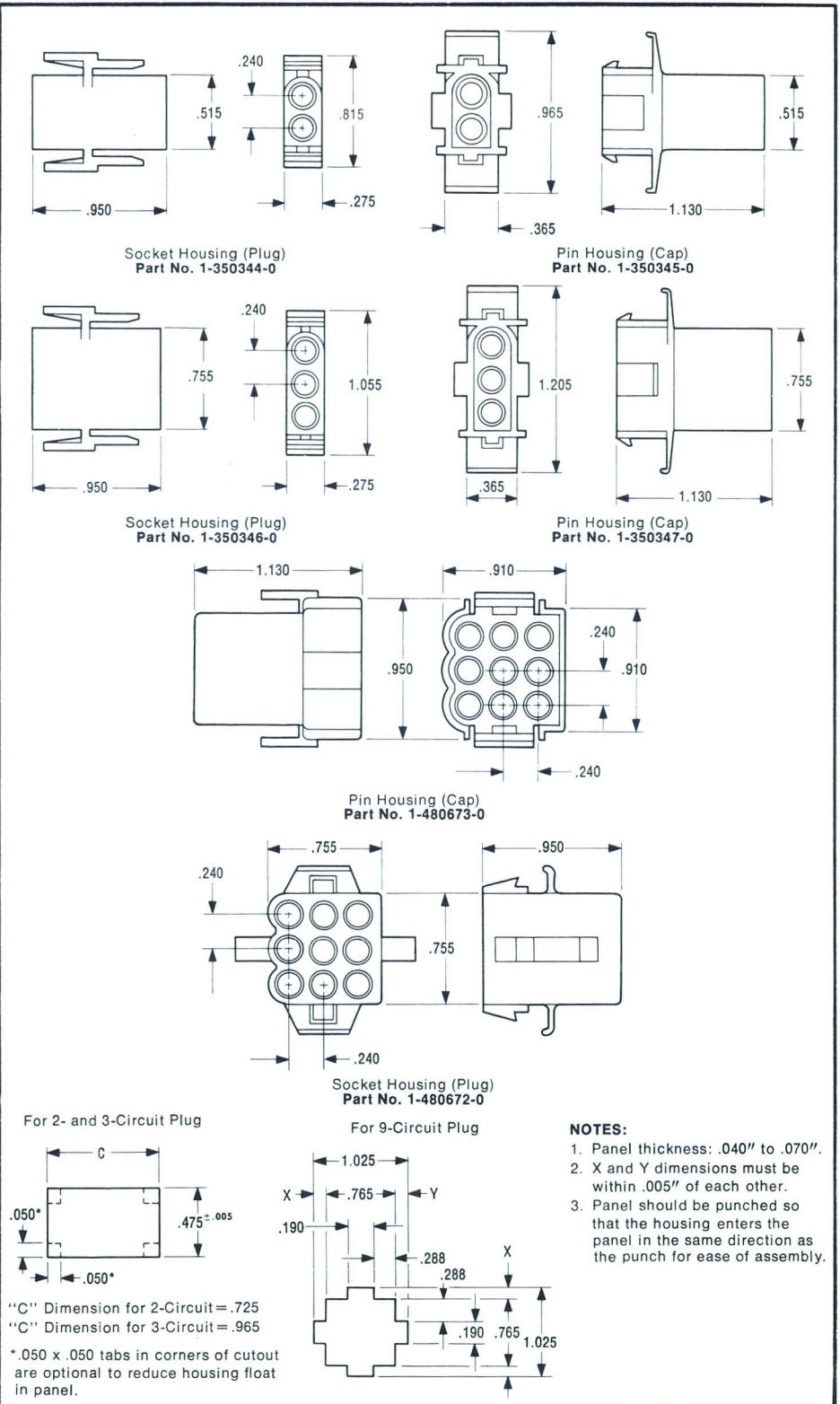
Socket Housing (Plug)
Part No. 1-480585-0

**.140
MATE-N-LOK
Panel Mounted
Connectors**

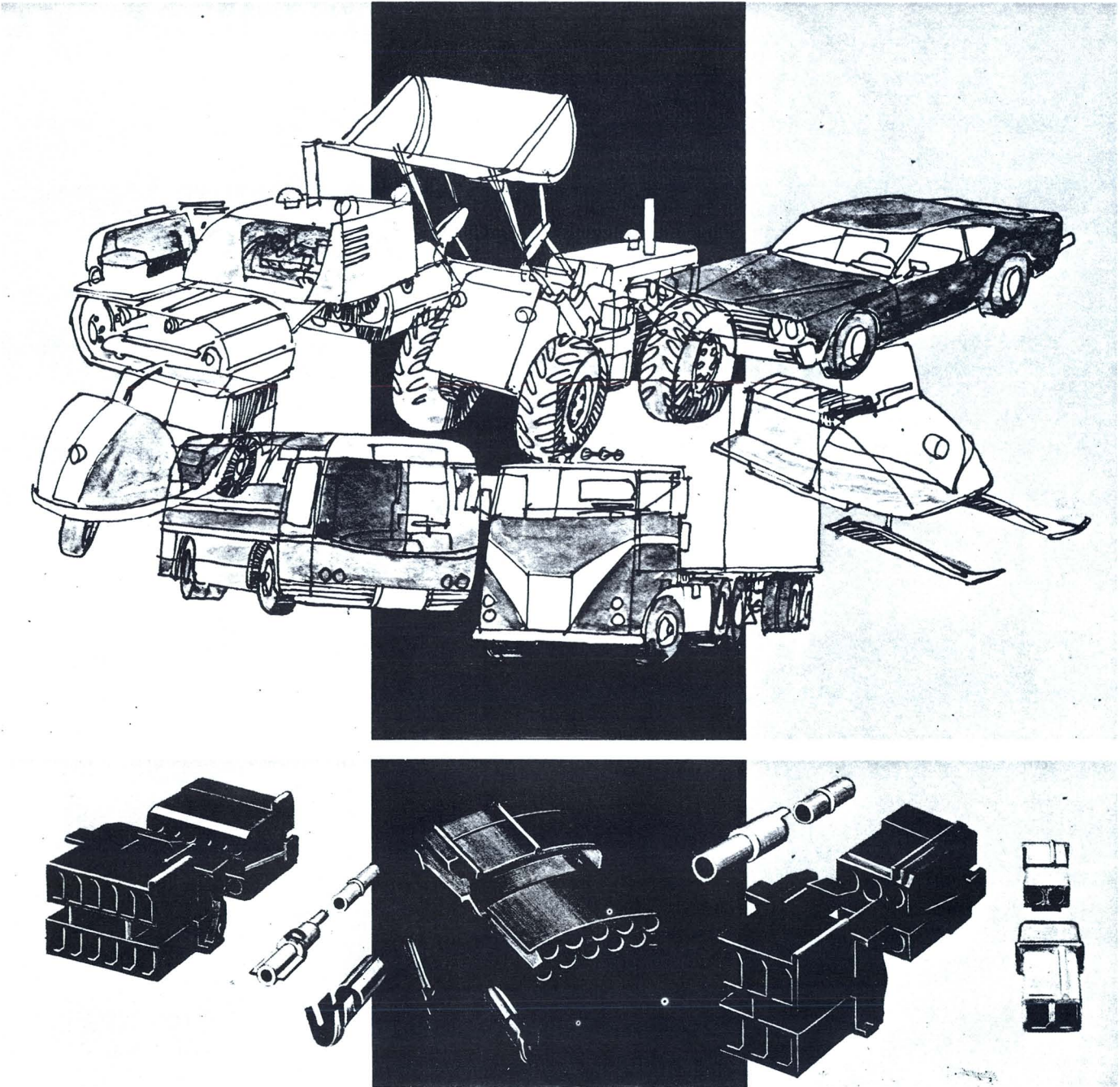
2, 3 and 9 Circuit Housings



Recommended Panel Cutouts

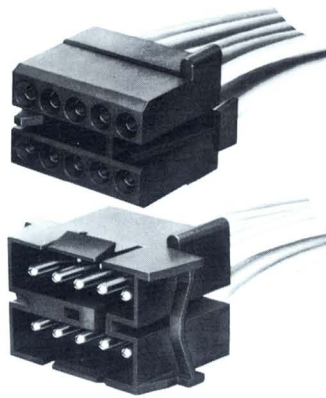


MATE-N-LOK CONNECTORS FOR THE AUTOMOTIVE INDUSTRY



Connectors for the Automotive Industry

AMPECONOMATION Program ... Speed, Low Cost, Reliability



MATE-N-LOK connectors are built to stand up to the rugged use and environments encountered by vehicles of all types. They can be used to connect nearly all the electrical equipment in passenger cars, trucks, buses, tractors, and even pleasure boats. These connectors simplify and modernize assembly procedures for both the auto industry and related industries. They eliminate mounting and locking hardware, assemble quickly because of AMP's automated tooling, and they are economical. And for the same reasons MATE-N-LOK connectors satisfy the needs of manufacturers of electrical wiring harnesses, auto diagnostic equipment, and auto accessories and subassemblies.

All automotive MATE-N-LOK panel mount connectors may be used in free-hanging applications.

AMP's long experience in engineering products for high-speed, high-volume production gives you a head start. AMP's automated terminating machines are geared to steady, large-scale production. Tooling is matched to the products, turning out hundreds of thousands of uniformly reliable terminations day after day. And AMP provides complete in-plant training of your machine operators and maintenance personnel that will keep your production running smoothly. This combination of automation and cost-saving installation is one of

AMP's major achievements — we call it our AMPECONOMATION Program. It means mass-produced savings and reliability to the Automotive Industry.

Performance Specifications for Automotive “.086” MATE-N-LOK Connectors

AMP's automotive MATE-N-LOK connectors have been engineered to meet the exacting standards and specifications of the automotive industry. Data shows results of tests of tensile strength, temperature rise, contact resistance, and insertion/extraction force. Unless otherwise indicated, data applies to all automotive “.086” MATE-N-LOK connectors.

Engagement and Disengagement Forces

A. Typical engagement force for any housing is three pounds per circuit.

B. Minimum retention force (with locking devices engaged) for multiple-circuit housings is 35 pounds; for single-circuit housings, 15 pounds.

C. Retention of mounted housing is a minimum of 50 pounds.

AWG Wire Size	Tensile Strength Per Contact (Lbs)	Contact Resistance	
		Test Current (Amps)	Voltage Drop (mv) MAX.
22	15	2	4
20	20	4	8
18	30	7	14
16	40	10	20
14	60	15	30
20 (2)	15*	—	—
18 (2)	25*	—	—

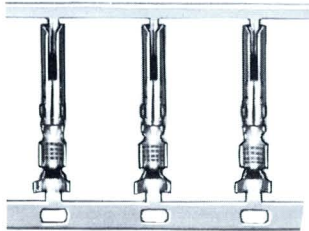
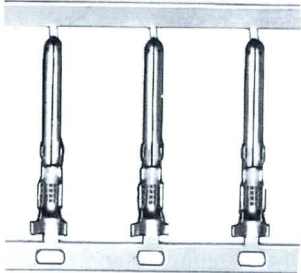
*per wire

All Dimensions in Inches

Note: Specifications subject to change. Consult AMP Incorporated for latest design specifications.

Contacts for MATE-N-LOK Connectors

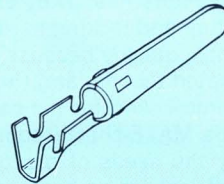
Contact Features



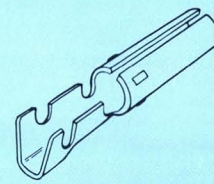
Contacts for MATE-N-LOK automotive connectors are low-priced stamped and formed pin and socket type. Available in strip form for high-speed application, they meet the volume production requirements of the Automotive Industry. Pin contacts snap into the cap half of the connector, while socket contacts snap into the plug half. For reliable electrical and mechanical wire termination, MATE-N-LOK contacts are crimped to both the conductor and insulation. Barrel serrations assure high tensile strength and good conductivity. A variety of contacts may be used in the same connector to accommodate various sizes of wires and insulation thicknesses. Pins and sockets have anti-overstress features and stabilizing embossments to resist damage and assure proper mating. The contact surfaces of both pin and socket are cleaned when the connector is mated to provide excellent electrical contact. Stops on both pins and

sockets prevent overinsertion. In addition, contacts are available which accept two wires each and they fit into all, except the single circuit and steering column housings.

- Snap-in design with positive retention.
- Anti-overstress feature on both pins and sockets.
- Insulation support over complete wire range.
- Single-wire contacts can be hand inserted without pre-orientation.
- High-speed automatic tooling or fully automated machines provide lowest applied cost.
- Contacts may be readily extracted for servicing.
- Accommodate wires from 22 thru 14 AWG: two 20 AWG or two 18 AWG wires.
- Lubricated contacts available for lower engagement force. Consult AMP Incorporated for specifications.



PIN CONTACT



SOCKET CONTACT

AUTOMOTIVE MATE-N-LOK CONTACTS (.086 DIA.)

Wire Size AWG	Insulation Range	REELED FOR STANDARD APPLICATORS			REELED FOR MINIATURE APPLICATORS		
		Dual Carrier Pin No.	Single Carrier Pin No.	Socket No.	Dual Carrier Pin No.	Single Carrier Pin No.	Socket No.
22-18	.085/.105	61209-1	61271-1	60996-1	61213-1	61296-1	60951-1
16-14	.105/.125	61208-1	61270-1	60994-1	61212-1	61295-1	60949-1
		—	—	—	—	—	60949-3*
16-12	.100/.150	—	—	—	—	505037-1	—
12	.180 Max.	—	—	61081-1	—	—	61143-1
Two 20 or Two 18	Two .115 Dia. Max. Stacked	61214-1	61273-1	60995-1	61216-1	61297-1	60950-1
Two 20 or One 18 & One 24	.140 Max.	61215-1	61274-1	—	61217-1	61298-1	—

Material and Finish: Brass — Tin Plated — *Phosphor Bronze — Plain. Other finishes and materials available, consult AMP engineering.

Hand Tool No. 90184-1
 Insertion Tool No. 91002-1
 Pin Extraction Tool No. 1-305183-1
 Socket Extraction Tool No. 1-305183-2

MATE-N-LOK Cap Mounted Connectors

(accept .086 dia. contacts)

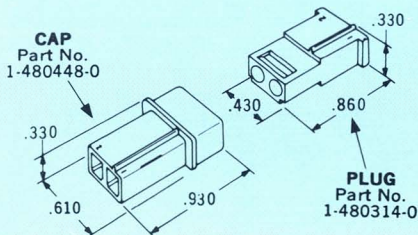
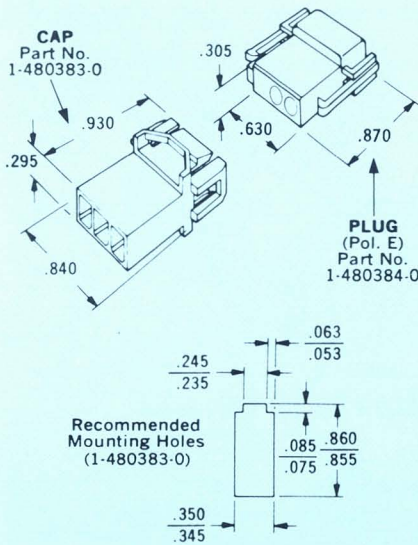
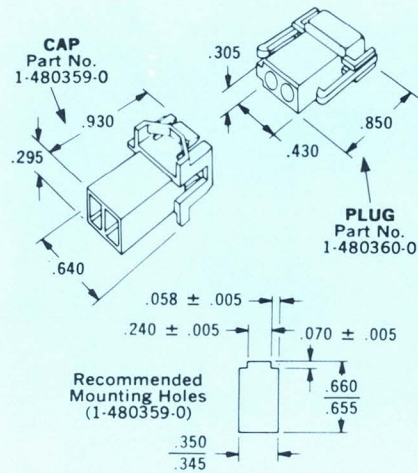
Designed for mounting in panels, these MATE-N-LOK connectors snap into mounting holes without hardware. Their design also includes positive polarization to prevent mismatching, indexing ribs for easy orientation, and color coding for quick identification of cap and plug housings. All contacts are fully protected, front and rear, by eggcrate design. Stabilizing embossments molded into the nylon housings prevent excessive movement of the contacts but allow contacts to "float" so that cap and plug mate easily.

A fast, versatile and reliable means of grouping circuits, MATE-N-LOK automotive connectors mount in panels that are between .060 to .020 inches thick. They are available in various styles having from one to twelve cavities. All except single-circuit housings will accept double-wire terminal pins or sockets. Commoning tabs are available to ground or group circuits. The housings are mounted with a spring fit so that they do not rattle in place. When mounted, they lock in place automatically and offer strong resistance to vibration and shock: 35 pounds is the minimum force required to separate multiple circuit connector halves — 50 pounds is the minimum force required to disengage the housing from the panel.

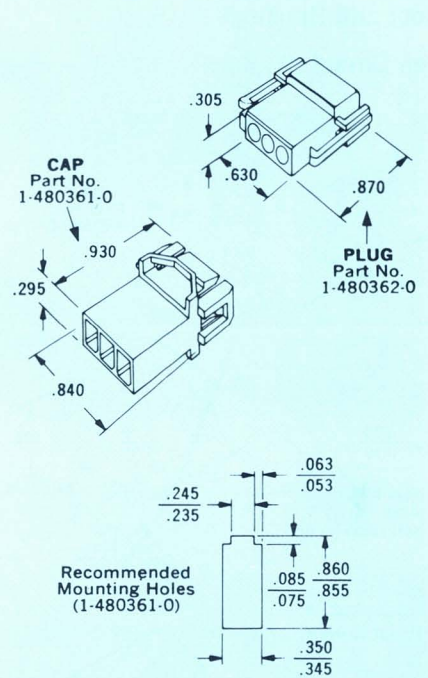
MATE-N-LOK connectors for the Automotive Industry are ruggedly built to withstand the handling of installation and the natural environment of automotive equipment. Performance specifications are given on outside back cover. Cost-saving automated crimping methods and simplified assembly save both time and money. Well-engineered and highly reliable, MATE-N-LOK connectors are ideal for automotive and related equipment.

NOTE:
Consult AMP Engineering for recommendations as to painting, plating or other operations involving panel mounting. — Panel thickness — .060/.020

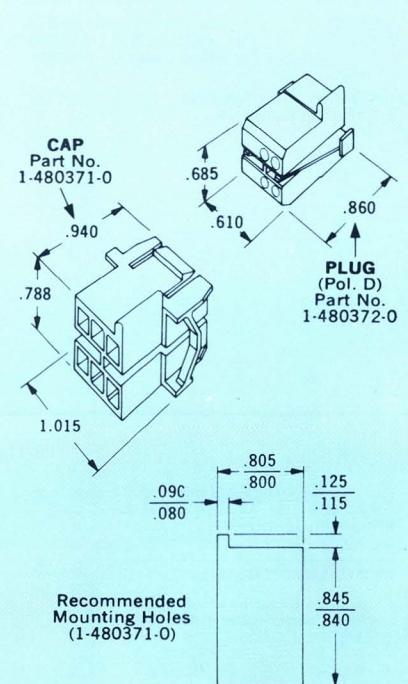
Two Circuit Connector



Three Circuit Connector



Four Circuit Connector

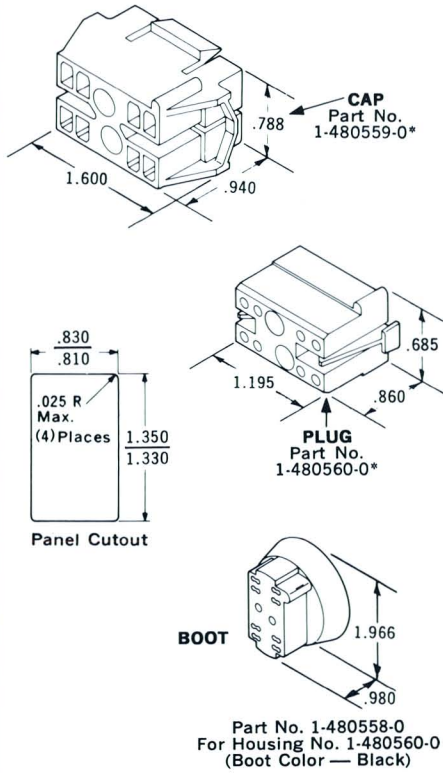


MATE-N-LOK Cap Mounted Connectors

(accept .086 dia. contacts)

Splash Resistant Boot and Housings

Ten Circuit



*Accepts 8-.086 Dia. Contacts
and 2-.156 Dia. Contacts.

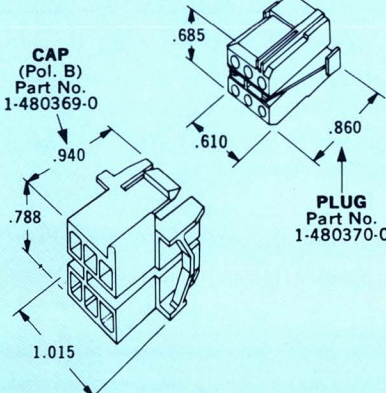
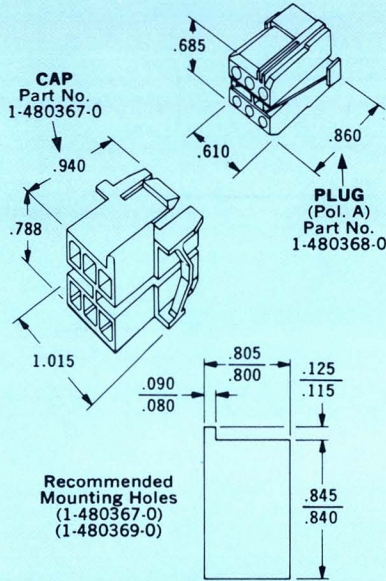
NOTE

- (1) All cap housings accommodate pin terminals and have integral panel mounting features.
- (2) All plug housings accommodate socket terminals.

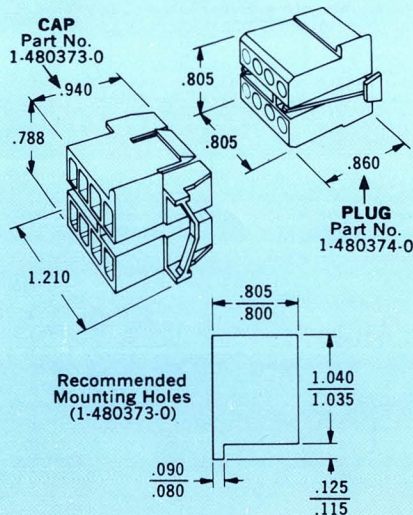
Zero suffix denotes natural nylon. For other colors substitute suffix numbers as follows:

- | | |
|-----------|-----------|
| —1 Black | —6 Brown |
| —2 Red | —7 Violet |
| —3 Blue | —8 Grey |
| —4 Yellow | —9 Orange |
| —5 Green | |

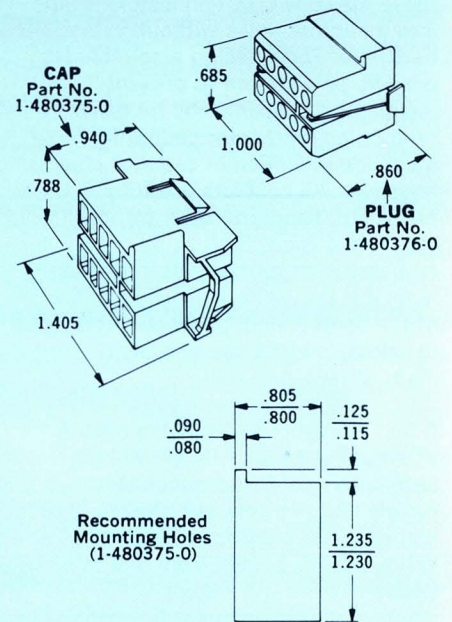
Six Circuit Connector



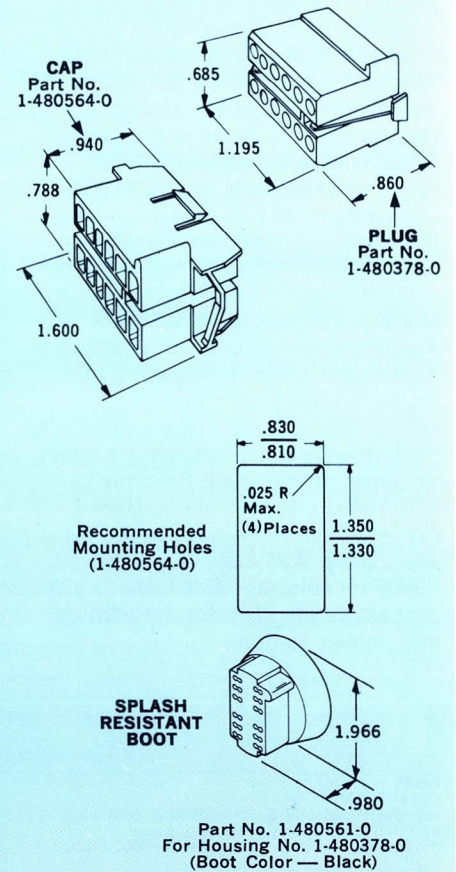
Eight Circuit Connector



Ten Circuit Connector

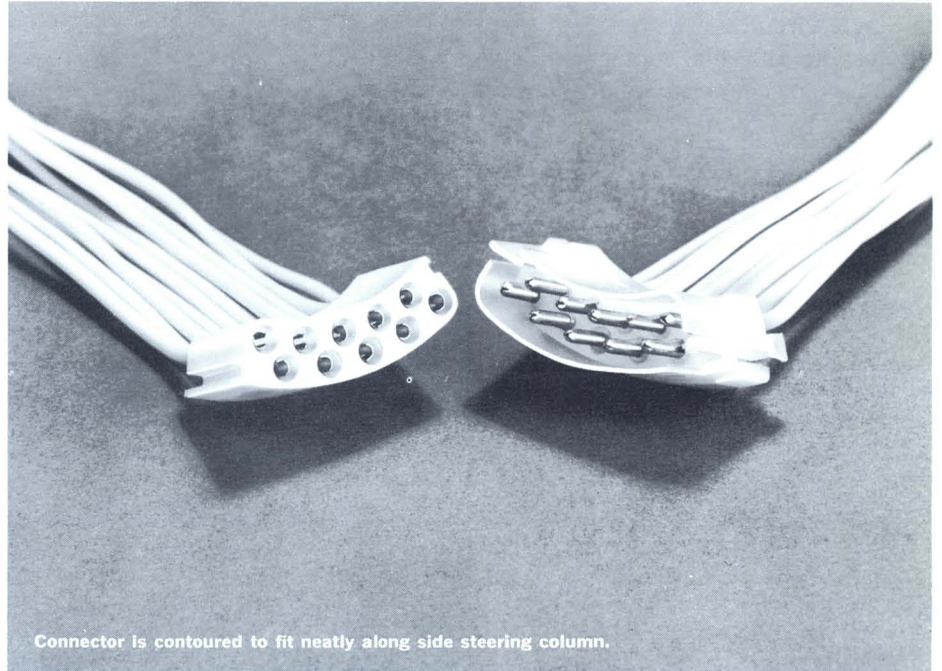


Twelve Circuit Connector

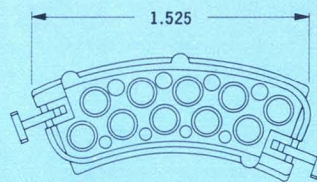


MATE-N-LOK Steering Column Connector

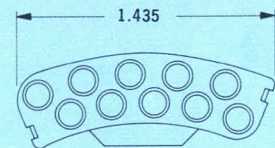
Ten Circuit Connectors



Connector is contoured to fit neatly along side steering column.



CAP
Part No.
1-480450-0



PLUG
Part No.
1-480516-0

The MATE-N-LOK steering column connector was developed specifically for conveniently connecting all steering-column signal and control wiring. Up to ten separate circuits may be connected thru this connector, including turn signals, emergency flasher and horn.

Just push cap and plug together and this free-hanging connector is securely locked. It can be released with slight fingertip pressure. The MATE-N-LOK cap housing accepts two-wire combinations to allow commoning. Contacts are capable of carrying up to 25 amperes using 14 AWG tinned copper conductor.

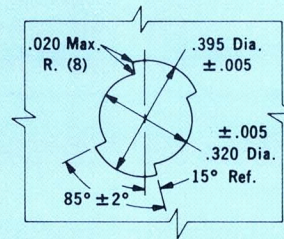
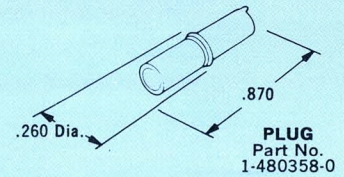
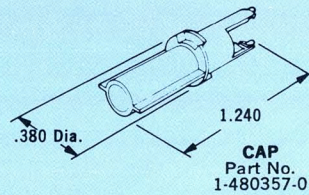
AMP's steering column connector is fully polarized by reason of its

curved shape and all pin and socket contacts are protected inside the cap and plug to prevent damage during handling and installation. Full eggcrating at the rear of plug and cap prevents accidental shorting or arcing of wires or contacts. Any .086 dia. MATE-N-LOK contact pin may be used in the steering column cap. The plug will only accommodate single wire terminals. Contacts may be inserted by hand without prior orientation. Utilizing AMP's "F" crimp, these contacts may be terminated with high-speed automatic machines for lowest applied cost. Each connector half is a one piece molded nylon housing, with integral polarizing, locking and cavity contours.

MATE-N-LOK Single Circuit Connectors

Single Circuit

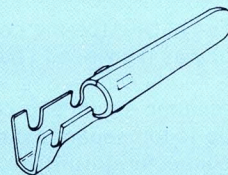
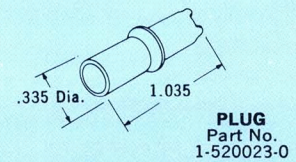
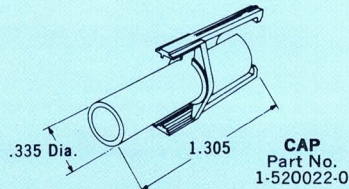
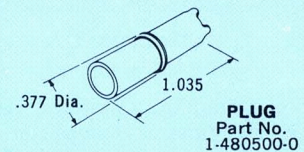
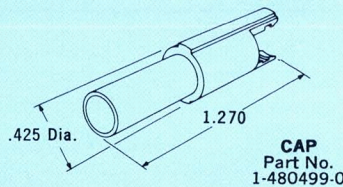
(accepts .086 dia. contact — see page 3 for contact specifications)



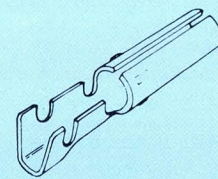
Recommended Mounting Holes
Panel Thickness .040/.030

Single Circuit

(accepts .156 dia. contact)



Pin



Socket

AUTOMOTIVE MATE-N-LOK CONTACTS (.156 DIA.)

NOTE

(1) All cap housings accommodate pin terminals and have integral panel mounting features.

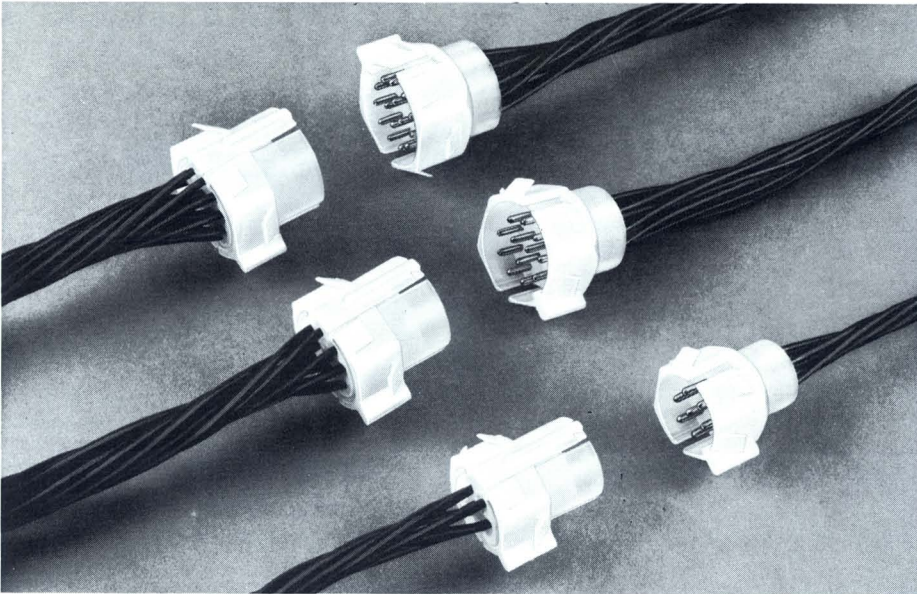
(2) All plug housings accommodate socket terminals.

Zero suffix denotes natural nylon. For other colors substitute suffix numbers as follows:

- 1 Black
- 2 Red
- 3 Blue
- 4 Yellow
- 5 Green
- 6 Brown
- 7 Violet
- 8 Grey
- 9 Orange

Wire Size AWG	Insulation Range	Pin Part Number	Socket Part Number	REVERSE REEL (For Mini Applicator)		
				Pin Part Number	Socket Part Number	Material and Finish
20-14	.125 Max.	61086-1	61085-1	61086-2	—	Brass—Tin Plated
12-10	.185 Max.	61211-1	61210-1	61234-1	61233-1	Brass—Tin Plated
12-10	.185 Max.	—	61210-2	—	—	Beryllium Copper— Tin Plated

Insertion Tool No. 91002-1
Pin Extraction Tool No. 691458-1
Socket Extraction Tool No. 691458-2



COMBO LINE ★ Connectors

The COMBO LINE Connector is designed for low current applications requiring an economical, versatile, and reliable connector. This connector is finding ready application in the radio, television, stereo, and electronic organ industries, plus such other diversified industries as business machines, solid state control systems, computers, and various home appliances.

The built-in economies of the COMBO LINE Connector are realized by the reel-fed, stamped and formed contacts designed for high speed automatic machine application; both the plug and the cap are self mounting eliminating expensive accessory hardware, plus time consuming mounting operation. This means you stock only one type of plug, cap, and pin and socket contact for further reduction in inventory cost and problems.

Today's complex needs for packaging electrical components present many and varied connector problems. The COMBO LINE Connector offers you a variety of answers to these problems. The plug and cap can be mounted in the same chassis cutout—both can be mounted from either direction. Each half is polarized, has a positive lock, and is oriented in the chassis cutout.

Where it is desirable to have an even distribution of the connector on each

side of the panel, you simply mount the cap. (See Figure A, Page 2).

If a clearance problem exists on one side of the panel, the plug should be mounted. This will cut the amount of protrusion of the connector on the tight side of the panel to approximately one-quarter of an inch. (See Figure B, Page 2).

The COMBO LINE pin and socket contacts add further versatility. They can be used in either plug or cap. Regardless of whether you are hot or cold side mounting, in a plug or a cap, you can insert the exact contacts required—you can even mix them.

While the COMBO LINE Connector is both economical and versatile, it is reliable too. The housings provide closed entry for the socket contacts and completely protect the two retention members since they are buried within the cavity. (See Figures C and D Page 2). The contact cavities provide three points of stabilization for the socket contacts, and four for the pin contacts. This stability overcomes mating problems arising as a result of wires and cables dressed in opposite directions.

This unique circular connector provides the most sought after features ever offered by any connector family.

FEATURES

- Pins and sockets terminated by same applicator.
- Plug and cap provide protective skirt for pins.
- U.L. recognized.
- Contacts available for wire sizes 22-18 and 24-20 AWG.
- 7, 12 and 15 circuit connector configurations.
- Choice of NEMA colors.



Figure A
Typical Cap Mounting for even connector distribution



Figure B
Typical Plug Mounting for one side clearance problems

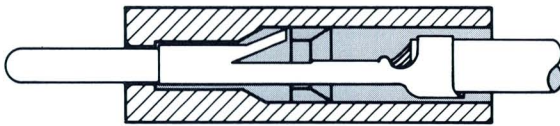


Figure C
Cross-Section of Pin Contact in housing

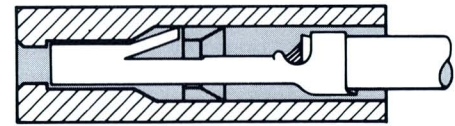
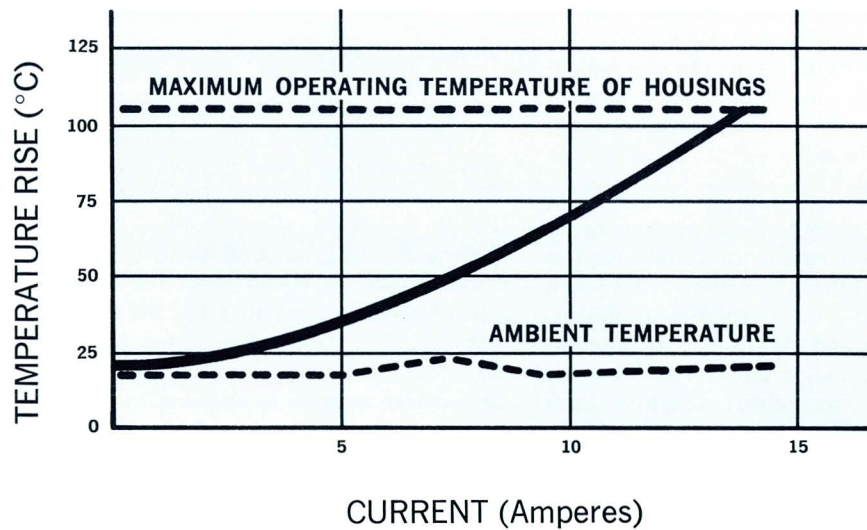


Figure D
Cross-Section of Socket Contact in housing

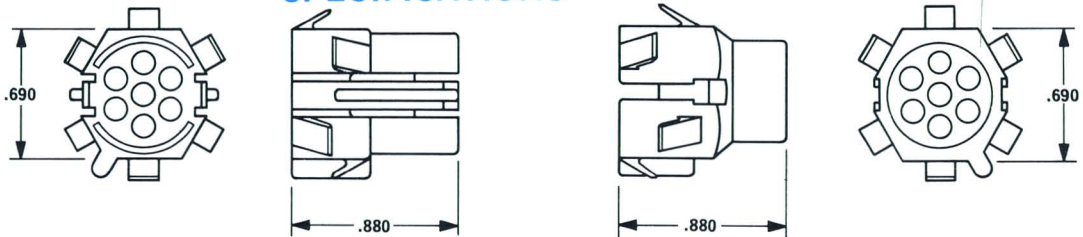
TERMINAL TEMPERATURE VS. CURRENT
7 CIRCUIT COMBO LINE ASSEMBLY

TEST DATA



7
CIRCUIT

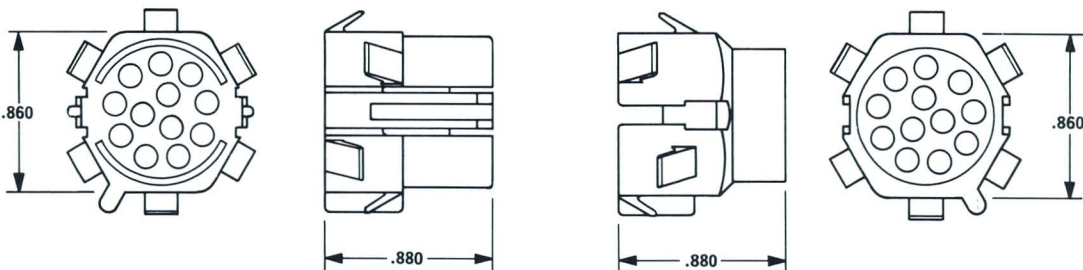
SPECIFICATIONS



PLUG HOUSING
#1-480421-0 Nylon

CAP HOUSING
#1-480420-0 Nylon

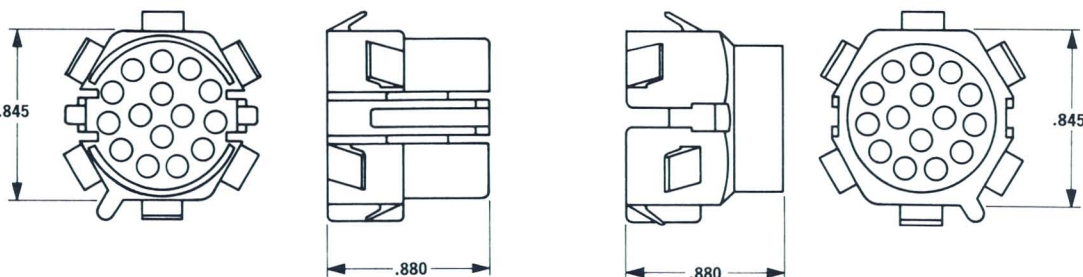
12
CIRCUIT



PLUG HOUSING
#1-480409-0 Nylon

CAP HOUSING
#1-480408-0 Nylon

15
CIRCUIT



PLUG HOUSING
#1-480423-0 Nylon

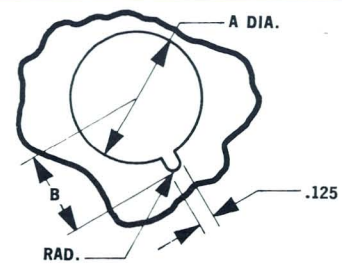
CAP HOUSING
#1-480422-0 Nylon

RECOMMENDED MOUNTING HOLE

.030—.065 Panel Thickness

SIZE	A	B
7 Circuit	.815	.515
12 Circuit	.985	.615
15 Circuit	1.070	.665

All dimensions ± .005

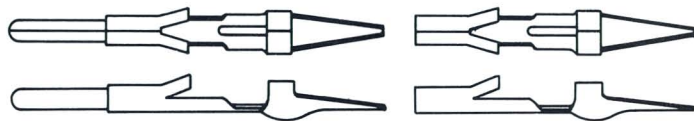
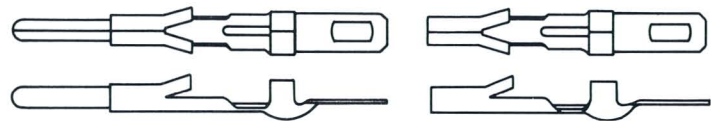


CONTACTS

WIRE RANGE	INSULATION DIA. RANGE	MATERIAL AND FINISH	PIN PART NO.	SOCKET PART NO.	HAND TOOL PART NO.	EXTRACTION TOOL PART NO.
24-20	.050-.090	Tin Plated Brass	61061-1	61063-1	90209-1	689892-2
		Gold Plated Brass	61061-5	61063-5		
22-18	.060-.110	Tin Plated Brass	61062-1	61064-1		
		Gold Plated Brass	61062-5	61064-5		

SOLDER TAB

PRINTED CIRCUIT TAB



PIN—#61241-1

SOCKET—#61242-1

PIN—#61239-1

SOCKET—#61240-1

Tin Plated Brass

Tin Plated Brass
Fits .057 ± .002 Dia. Hole

MR SERIES MINIATURE RECTANGULAR CONNECTORS



MR Miniature Rectangular Connectors

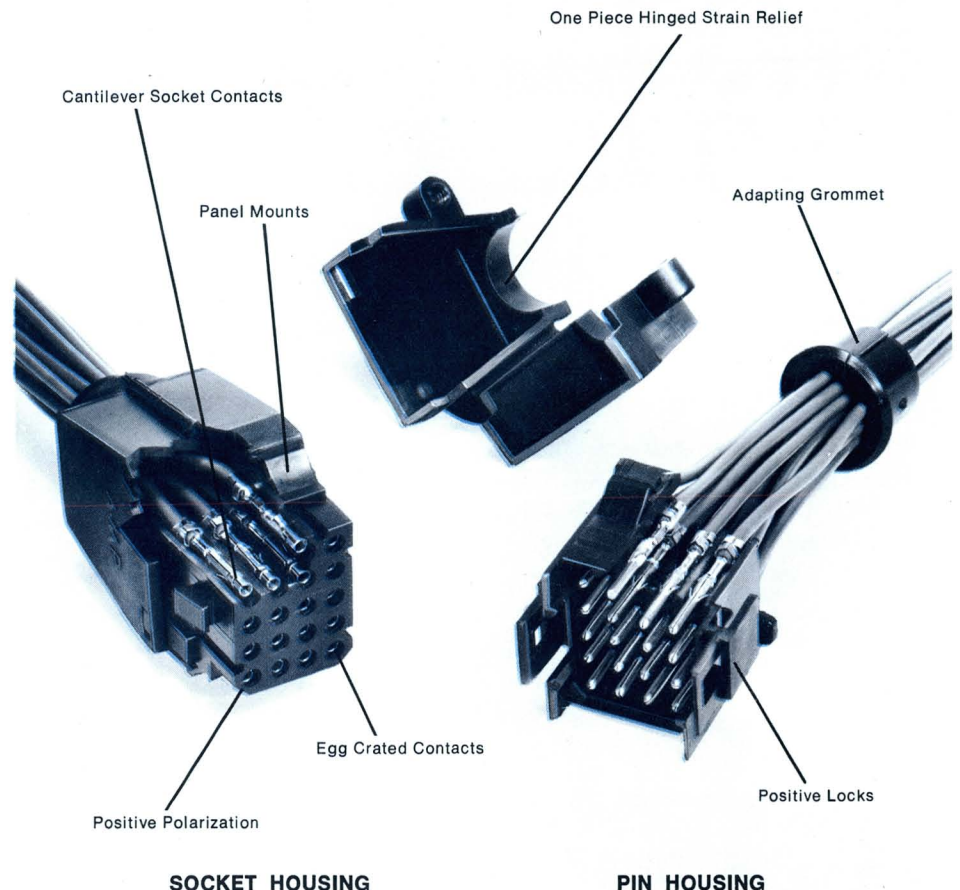
AMP Miniature Rectangular Connectors consist of two basic types. Series I features a cap half only latching release system while Series II has individual releases on either half. Both halves of each series can be panel mounted without the use of additional hardware. Either series can be used for free hanging applications.

The AMP line of Miniature Rectangular Connectors is expressly designed to offer complete packaging reliability, maximum versatility and miniaturization for a wide range of electrical/electronic products from home entertainment centers to computers.

They have been used and proven themselves in business machines, copying machines, solid state control systems and other sophisticated commercial equipment. This line of connectors offers a wide choice of sizes and related accessories plus complete ease of assembly through AMP automated termination techniques.

The Pin contacts for these connectors are made of high conductivity brass and the socket contacts of phosphor bronze. A choice of tin or gold-over-nickel plating is available for both. Two, three and four circuit commoning bars are available. Also, a strain relief is made available for either half of the 6 thru 36-position connectors.

An integral, circumferential cantilever design of the socket assures electrical characteristics with low insertion and extraction forces. Dual locking lance in both pin and socket contacts provides firm retention when installed in the housings. Contacts are easily snapped into housings, and a simple, inexpensive tool facilitates removal. A special stabilizing barrel on both pins and sockets assures consistent and accurate alignment in the housing cavity.



(MR I and MR II are not intermateable)

Printed circuit board pin headers are available in the MR II Series Connectors. These headers allow I/O leads to be connected to printed circuit boards internally leaving the board edge free for signal on other power connections. Since the headers are pre-assembled with pin contacts on .165" centers, no insertion tooling is required. Headers are positioned into pre-drilled or pre-punched boards, ready for soldering.

Pin headers are available in a

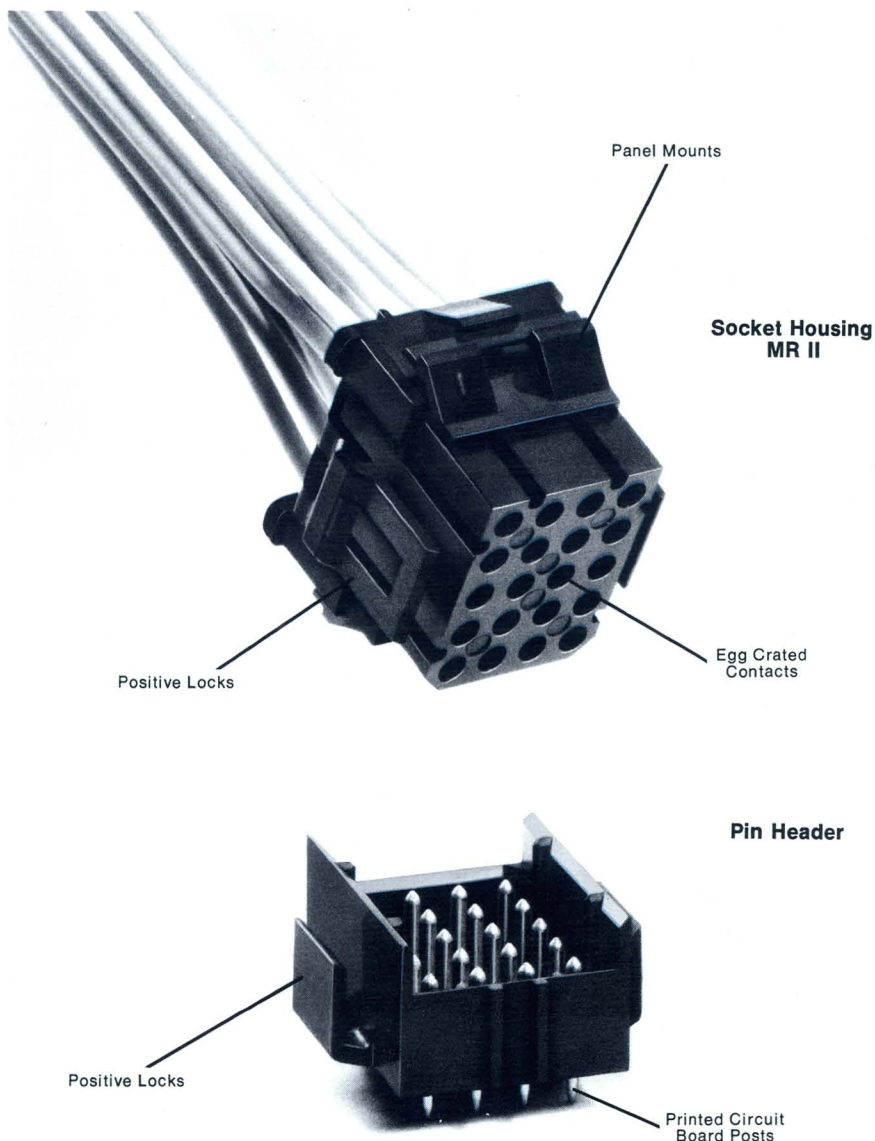
choice of 3 pin lengths to accommodate 1/16", 3/32" and 1/8" thick boards. All header sizes are fully mateable with MR II Series socket housings of identical circuit patterns. A complete line of test connectors are available.

Test data, performance specifications and other information which you may consider pertinent will be sent to you when requested on company letterhead. Address all such inquiries to: AMP Incorporated, Harrisburg, Pa. 17105.

MR Miniature Rectangular Connectors

Features

- Recognized under the Component Program of Underwriters' Laboratories', Inc. Electrical File #E-28476 and certified by Canadian Standards Association. File #LR 16455-19.
- Housings positively lock to prevent accidental disengagement
- Either cap or plug housing can be mounted in same rectangular panel cutout without additional hardware.
- Standard black nylon housings.
- Natural or NEMA colors available upon request. Consult AMP Incorporated.
- Plug and cap design includes molded-in polarizing feature to assure proper mating.
- Numbered cavities for easy circuit identification.
- Egg crate design of plug half fully encloses socket contacts, reducing shock hazard.
- Molded skirt extension on cap protects pin contacts.
- Strain relief for 6 thru 36-position is one-piece molded "clam shell" design, and can be provided with grommets to accommodate various wire bundle sizes and insulation diameters.
- Automated termination of contacts achieve utmost reliability at lowest applied cost.
- Choice of tin or gold plated contacts.
- Contacts carry up to 10 amperes (based on 105° operating temperature).
- Special make-first/break-last pin contacts available.
- Socket solder tail contacts available for hot side pc board mounting.



- High density achieved through .165" contact centers.
- Extraction tool removes both pins and sockets.
- Contacts accept 26-18 AWG wire and insulation diameters of .025" to .110".

- Same applicator crimps pins and sockets (of same style).
- PC board pin headers permit cable connections to center of printed circuit.
- Pin header standoffs on housings at board interface facilitates gas venting and cooling during soldering.

MR Series Connector Selection Guide

A quick-reference Selector Chart that will enable you to match the various connectors with the applicable accessories. The referenced catalog page number indicates location of product, part numbers, and engineering information.

Note: MR II and MR I Housings are not intermateable.

For Details on product specification and performance see AMP Incorporated product specification Sheet No. 108-1022.

Available

	No. of Circuits	Housing Type	Strain Relief (Pg. 9)	Grommet (Pg. 9)	Commoning Bar (Pg. 8)	Pin Header (Pg. 6 & 7)	Keying Plug (Pg. 8)	Test Connector (Pg. 13)
MR II	2 (Pg. 4)	Pin						
		Socket						
	3 (Pg. 4)	Pin						
		Socket						
	4 (Pg. 4)	Pin						
		Socket						
	6 (Pg. 4)	Pin						
		Socket						
	9 (Pg. 4)	Pin						
		Socket						
	12 (Pg. 4)	Pin						
		Socket						
	15 (Pg. 4)	Pin						
		Socket						
	20 (Pg. 5)	Pin						
		Socket						
	24 (Pg. 5)	Pin						
		Socket						
36 (Pg. 5)	Pin							
	Socket							
MR I	1 (Pg. 10)	Pin						
		Socket						
	2 (Pg. 10)	Pin						
		Socket						
	3 (Pg. 10)	Pin						
		Socket						
	4 (Pg. 10)	Pin						
		Socket						
	6 (Pg. 10)	Pin						
		Socket						
	9 (Pg. 11)	Pin						
		Socket						
	12 (Pg. 11)	Pin						
		Socket						
	15 (Pg. 11)	Pin						
		Socket						
	20 (Pg. 11)	Pin						
		Socket						
24 (Pg. 11)	Pin							
	Socket							
36 (Pg. 12)	Pin							
	Socket							

MR II Series Connector Specifications

2 and 3 Circuit Housings

No. of Circuits	Dimensions			Part Number (Standard Black*)	
	A	B	C	Pin Housing	Socket Housing
2	.455	.365	.755	1-350351-9	1-350354-9
3	.620	.530	.920	1-350352-9	1-350355-9

*Available in Natural Color Housings as -0. Also available in NEMA colors—consult AMP Incorporated.

NOTE: See page 9-58 for panel cutout.

4 and 6 Circuit Housings

No. of Circuits	Dimensions A	Part No. (Standard Black*)	
		Pin Housing	Socket Housing
4	.455	1-350233-9	1-350240-9
6	.620	1-350234-9	1-350241-9

*Available in Natural Color Housings as -0. Also available in NEMA colors—consult AMP Incorporated.

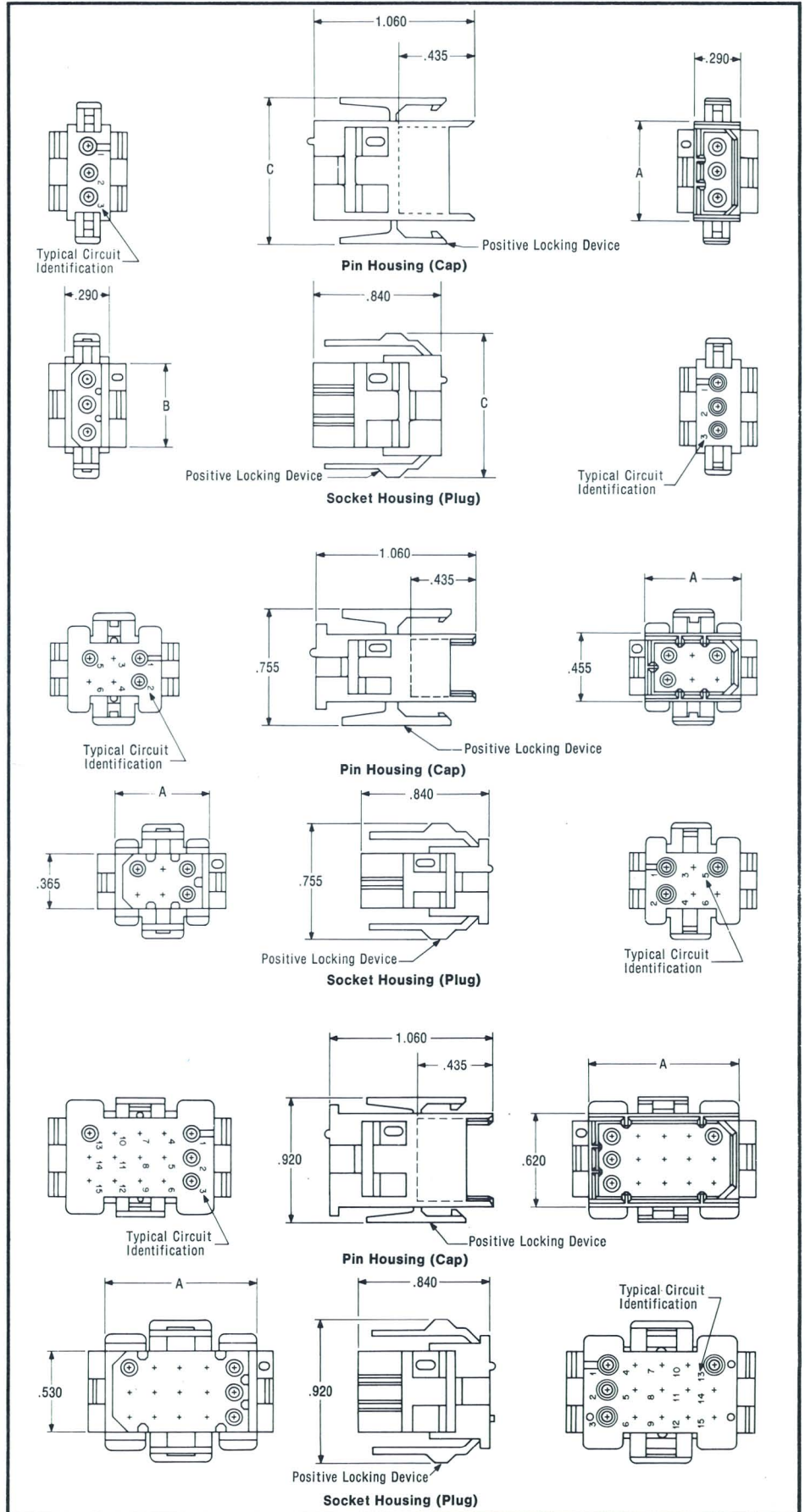
NOTE: See page 9-58 for panel cutout.

9, 12, and 15 Circuit Housings

No. of Circuits	Dimensions A	Part Number (Standard Black*)	
		Pin Housing	Socket Housing
9	.620	1-350235-9	1-350242-9
12	.785	1-350236-9	1-350243-9
15	.950	1-350237-9	1-350244-9

*Available in Natural Color Housings as -0. Also available in NEMA colors—consult AMP Incorporated.

NOTE: See page 9-58 for panel cutout.



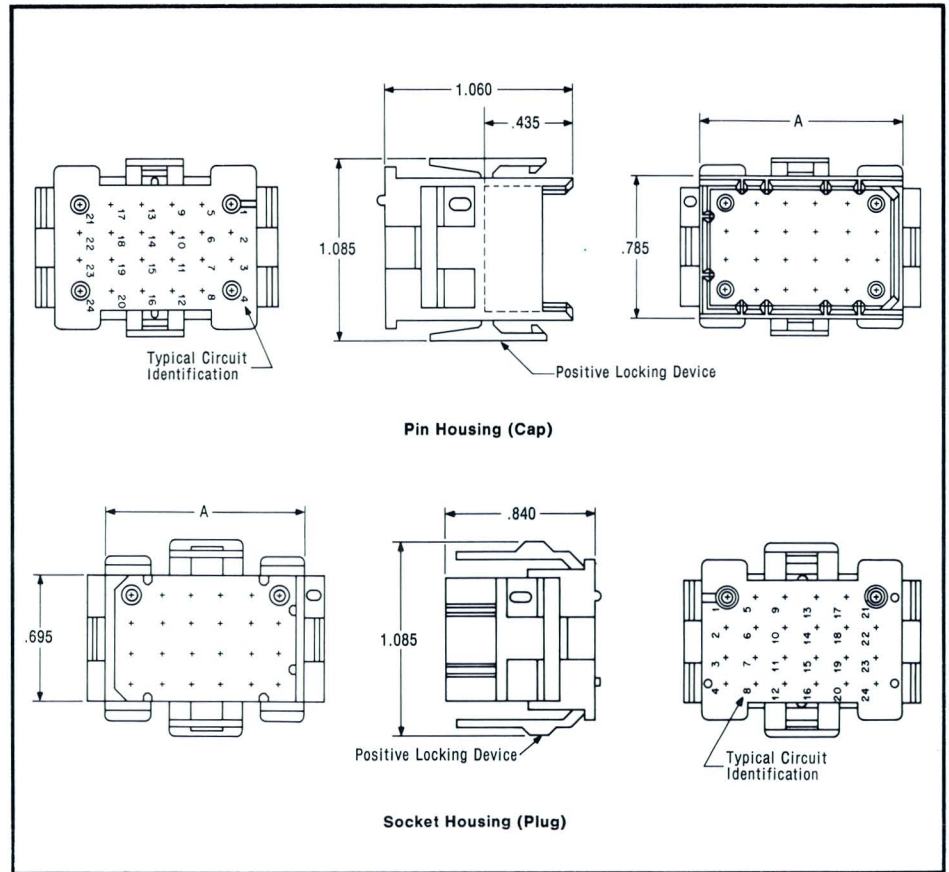
MR II Series Connector Specifications

20 and 24 Circuit Housings

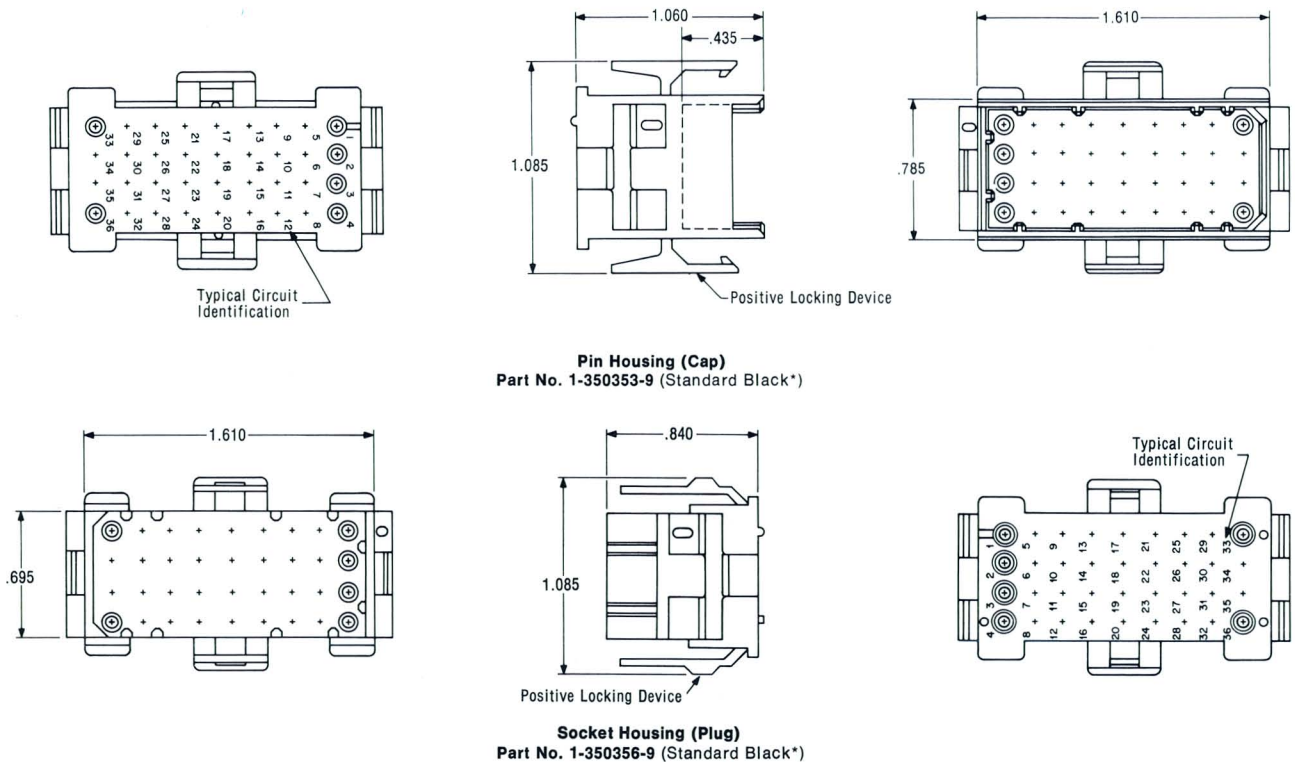
No. of Circuits	Dimensions A	Part Number (Standard Black*)	
		Pin Housing	Socket Housing
20	.950	1-350238-9	1-350245-9
24	1.115	1-350239-9	1-350246-9

*Available in Natural Color Housings as -0. Also available in NEMA colors — consult AMP Incorporated.

NOTE: See page 9-58 for panel cutout.



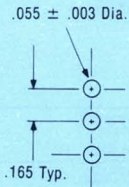
36 Circuit Housings



*Available in Natural Color Housing as -0. Also available in NEMA colors — consult AMP Incorporated.
NOTE: See page 9-58 for panel cutout.

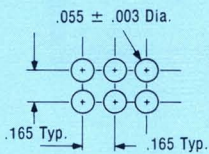
MR II Series Printed Circuit Board Pin Header Specifications

2 and 3 Circuit Pin Header



Typical P.C. Board Layout
10:1 ϕ Grid Transparency for P.C. Board
Layout available on request

4 and 6 Circuit Pin Header

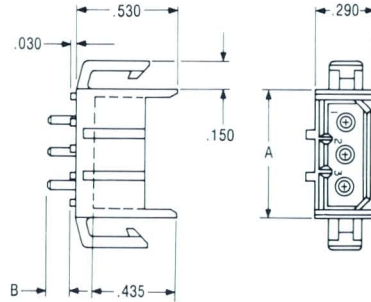


Typical P.C. Board Layout
10:1 ϕ Grid Transparency for P.C. Board
Layout available on request

Materials (All Header Sizes)

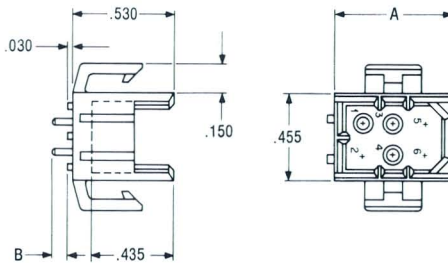
Housings — Nylon.

Pin Contacts — Brass, tin-over-copper or gold over .000050 min. nickel, .000030 gold on contact area only. Gold flash over remainder.



No. of Circuits	Dimensions		Board Thickness	Pin Finish	Pin Header Part No. (Standard Black*)	Mates with Socket Housing Part No.
	A	B				
2	.455	.120	$\frac{1}{16}$	Tin	9-350359-1	350354 (Page 9-53)
				Gold	9-350359-2	
	.150	$\frac{3}{32}$	Tin	9-350361-1		
		Gold	9-350361-2			
3	.455	.180	$\frac{1}{8}$	Tin	9-350360-1	350355 (Page 9-53)
				Gold	9-350360-2	
	.620	.120	$\frac{1}{16}$	Tin	9-350362-1	
				Gold	9-350362-2	
.150	$\frac{3}{32}$	Tin	9-350364-1			
		Gold	9-350364-2			
.620	.180	$\frac{1}{8}$	Tin	9-350363-1		
			Gold	9-350363-2		

*Available in Natural Color Housing by specifying part number without prefix dash number. Also available in NEMA colors — consult AMP Incorporated.

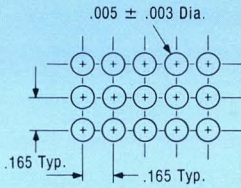


No. of Circuits	Dimensions		Board Thickness	Pin Finish	Pin Header Part No. (Standard Black*)	Mates with Socket Housing Part No.
	A	B				
4	.455	.120	$\frac{1}{16}$	Tin	9-350255-1	350240 (Page 9-53)
				Gold	9-350255-2	
	.150	$\frac{3}{32}$	Tin	9-350257-1		
			Gold	9-350257-2		
6	.455	.180	$\frac{1}{8}$	Tin	9-350256-1	350241 (Page 9-53)
				Gold	9-350256-2	
	.620	.120	$\frac{1}{16}$	Tin	9-350258-1	
				Gold	9-350258-2	
.150	$\frac{3}{32}$	Tin	9-350260-1			
		Gold	9-350260-2			
.620	.180	$\frac{1}{8}$	Tin	9-350259-1		
			Gold	9-350259-2		

*Available in Natural Color Housing by specifying part number without prefix dash number. Also available in NEMA colors — consult AMP Incorporated.

MR II Series Printed Circuit Board Pin Header Specifications

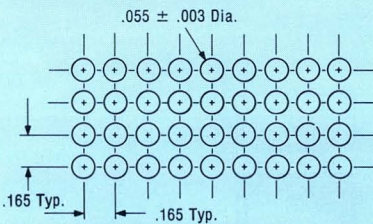
9, 12 and 15 Circuit Housings



Typical P.C. Board Layout

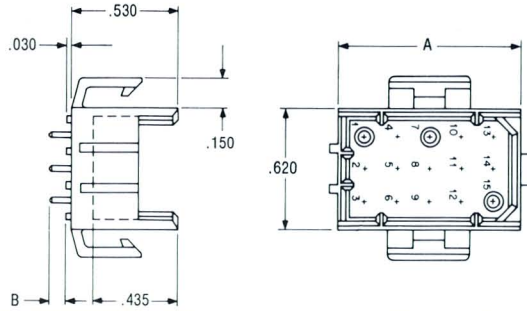
10:1 ϕ Grid Transparency for P.C. Board Layout available on request

20, 24 and 36 Circuit Housings



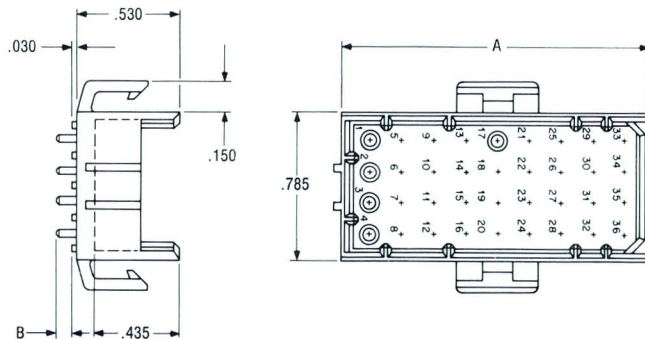
Typical P.C. Board Layout

10:1 ϕ Grid Transparency for P.C. Board Layout available on request



No. of Circuits	Dimensions		Board Thickness	Pin Finish	Pin Header Part No. (Standard Black*)	Mates with Socket Housing Part No.
	A	B				
9	.620	.120	$\frac{1}{16}$	Tin	9-350261-1	350242 (Page 9-54)
				Gold	9-350261-2	
	.620	.150	$\frac{3}{32}$	Tin	9-350263-1	
				Gold	9-350263-2	
	.620	.180	$\frac{1}{8}$	Tin	9-350262-1	
				Gold	9-350262-2	
12	.785	.120	$\frac{1}{16}$	Tin	9-350264-1	350243 (Page 9-54)
				Gold	9-350264-2	
	.785	.150	$\frac{3}{32}$	Tin	9-350266-1	
				Gold	9-350266-2	
	.785	.180	$\frac{1}{8}$	Tin	9-350265-1	
				Gold	9-350265-2	
15	.950	.120	$\frac{1}{16}$	Tin	9-350267-1	350244 (Page 9-54)
				Gold	9-350267-2	
	.950	.150	$\frac{3}{32}$	Tin	9-350269-1	
				Gold	9-350269-2	
	.950	.180	$\frac{1}{8}$	Tin	9-350268-1	
				Gold	9-350268-2	

*Available in Natural Color Housing by specifying part number without prefix dash number. Also available in NEMA colors — consult AMP Incorporated.

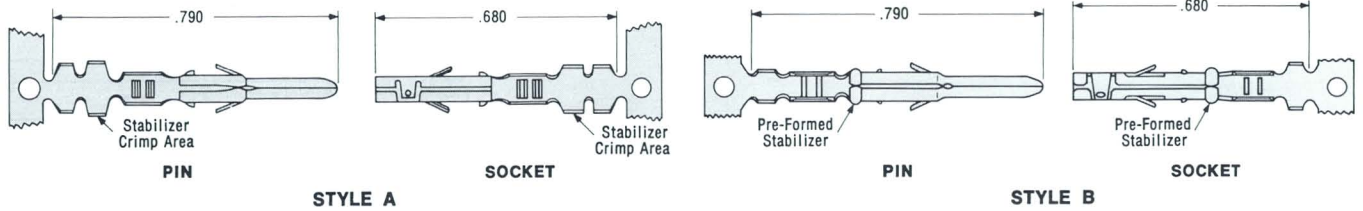


No. of Circuits	Dimensions		Board Thickness	Pin Finish	Pin Header Part No. (Standard Black*)	Mates with Socket Housing Part No.
	A	B				
20	.950	.120	$\frac{1}{16}$	Tin	9-350270-1	350245 (Page 9-54)
				Gold	9-350270-2	
	.950	.150	$\frac{3}{32}$	Tin	9-350272-1	
				Gold	9-350272-2	
	.950	.180	$\frac{1}{8}$	Tin	9-350271-1	
				Gold	9-350271-2	
24	1.115	.120	$\frac{1}{16}$	Tin	9-350273-1	350246 (Page 9-54)
				Gold	9-350273-2	
	1.115	.150	$\frac{3}{32}$	Tin	9-350275-1	
				Gold	9-350275-2	
	1.115	.180	$\frac{1}{8}$	Tin	9-350274-1	
				Gold	9-350274-2	
36	1.610	.120	$\frac{1}{16}$	Tin	9-350276-1	350356 (Page 9-54)
				Gold	9-350276-2	
	1.610	.150	$\frac{3}{32}$	Tin	9-350278-1	
				Gold	9-350278-2	
	1.610	.180	$\frac{1}{8}$	Tin	9-350277-1	
				Gold	9-350277-2	

*Available in Natural Color Housing by specifying part number without prefix dash number. Also available in NEMA colors — consult AMP Incorporated.

MR I and MR II Series Contacts, Commoning Bar and Keying Plug Specifications

Standard Contacts — Pin and Socket



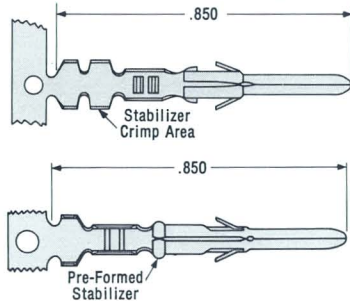
Pins: .058 Dia. Material: .008 Brass Socket Material: .008 Phosphor Bronze

Style	Wire Range	Insulation Range	Finish	Standard Pin Part Number		Standard Socket Part Number		Hand Tool Part Number		
				Strip Form		Strip Form				
				For use with Miniature Applicator	For use with Stripper Crimper	For use with Miniature Applicator	For use with Stripper Crimper			
A	26-18	.050-.110	Pre-Tin	350018-1	350018-6	350036-1	350019-1	350019-4	350037-1	90242-2
			Gold*	350018-3	350018-7	350036-2	350019-2	350019-5	350037-2	
B	26-18	.050-.110	Pre-Tin	350663-5	350663-7	350664-3	350665-1	350665-3	350666-1	90325-1
			Gold*	350663-6	350663-8	350664-4	350665-2	350665-4	350666-2	
A	26-24	.025-.050	Pre-Tin	350183-1	—	350185-1	350184-1	—	350186-1	90288-1
			Gold*	350183-2	—	350185-2	350184-2	—	350186-2	
B	26-24	.025-.050	Pre-Tin	350694-1	—	350695-1	350696-1	—	350697-1	90326-1
			Gold*	350694-2	—	350695-2	350696-2	—	350697-2	

*.000030 Gold selective plating on contact areas only over .000050 Nickel.

NOTE: Refer to AMP Incorporated Specifications 114-1000 for crimping specifications.

Special Contact — Grounding Pin



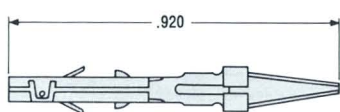
Pins: .058 Dia. Material: .008 Brass

Style	Wire Range	Insulation Range	Finish	Grounding Pin Part Number			Hand Tool Part Number
				Strip Form		Loose Piece	
				For use with Miniature Applicator	For use with Stripper Crimper	For use with Hand Tool	
A	26-18	.050-.110	Pre-Tin	350171-1	350171-3	350197-1	90242-2
			Gold*	350171-2	350171-4	350197-2	
B	26-18	.050-.110	Pre-Tin	350684-1	350684-3	350685-1	90325-1
			Gold*	350684-2	350684-4	350685-2	

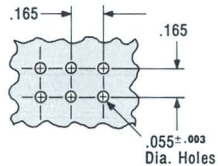
*.000030 Gold selective plating on contact areas only over .000050 Nickel.

NOTE: Refer to AMP Incorporated Specifications 114-1000 for crimping specifications.

Solder Tail Socket (Recommended for use with MR II — 15, 20, 24, 36 and MR I — 15, 20, 24 circuit socket housings)

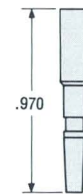


Part No. 350838-1 Pre-Tin
Part No. 350838-2 2 Gold
Pin: .058 Dia.
Material: .008 Phosphor Bronze



Recommended PC Board Layout
(.062 Thick Board)

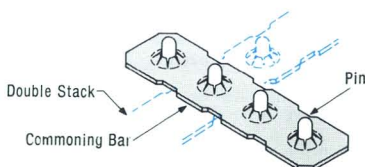
Keying Plug



Part No. 350591-1
Material: Natural Nylon

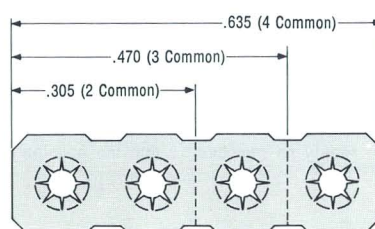
Special Contact — Commoning Bar

Use Mating Socket Housing to Assemble — Extraction tool No. 457306-1



The above illustrates the proper insertion of the Commoning Bar.

NOTE: Commoning bars can be used to common adjacent pin contacts in any column or row. Maximum stack per pin-two.



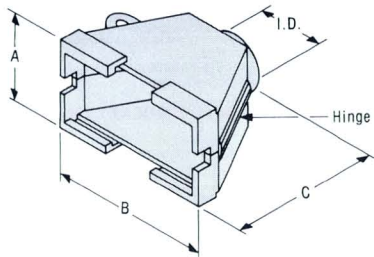
No. of Circuits	Part No.	Finish
2	350020-1	Pre-Tin
	350020-2	.000030 Gold over .000050 Nickel
3	350021-1	Pre-Tin
	350021-2	.000030 Gold over .000050 Nickel
4	350022-1	Pre-Tin
	350022-2	.000030 Gold over .000050 Nickel

Material: .008 Brass.

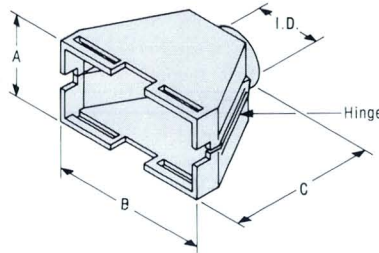
MR I and MR II Series Strain Relief, Adapting Grommet, and Panel Cutout Specifications

Strain Relief — One Piece — Clam Shell

(Illustrated in Closed Position)



6, 9, 12, 15 and 20 Strain Relief



24 and 36 Strain Relief

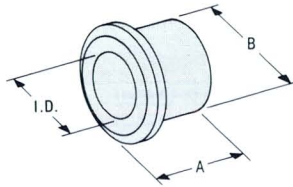
No. of Circuits	Part Number (Standard Black*)	Dimensions			
		I.D.	A	B	C
6	1-350373-9	.374	.634	.760	1.000
9	1-350522-9	.420	.800	.760	1.000
12	1-350374-9	.420	.790	.925	1.000
15	1-350523-9	.420	.790	1.090	1.000
20	1-480634-9	.560	.960	1.090	1.280
24	1-350524-9	.560	.900	1.255	1.280
36	1-480594-9	.560	.900	1.750	1.280

Material: Nylon.

NOTE: These strain reliefs can be used with either pin or socket housings. Customer Supplied: One No. 6 Pan-head, Type B, Self-tapping Screw, 3/8" long. Plating — optional to conform to customer requirements.

*Available in Natural Color Housings as -0. Also available in NEMA colors — consult AMP Incorporated.

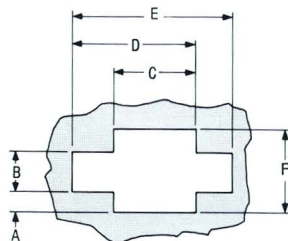
Adapting Grommet for Strain Relief



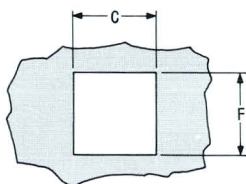
Material — Flexible PVC (50/60 Durometer) Black

No. of Circuits	Part Number	Dimensions		
		I.D.	A	B
6	1-350377-0	.156	.375	.375
	1-350376-0	.218	.375	.375
	1-350375-0	.296	.375	.375
9, 12 & 15	1-350378-1	.218	.375	.420
	1-350379-1	.250	.375	.420
	1-350380-1	.281	.375	.420
20, 24 & 36	1-380935-0	.437	.500	.562
	1-380936-0	.375	.500	.562
	1-380937-0	.312	.500	.562

Recommended Panel Cutouts — MR I and MR II Series Pin (Cap) and Socket (Plug) Housings



Connector Housings with Positive Locking MR I & MR II



Optional Connector Housings without Positive Locking MR I Only

No. of Circuits	Panel Cutout Dimensions						Panel Thickness
	A	B	C	D	E	F	
2	.105	.220	.475	.630	.785	.430	.068 Max.
3	.105	.220	.640	.795	.950	.430	
4	.157	.280	.475	.630	.785	.595	
6	.208	.345	.475	.630	.785	.760	
9	.208	.345	.640	.795	.950	.760	
12	.225	.475	.640	.795	.950	.925	
15	.308	.475	.640	.795	.950	1.090	
20	.308	.475	.805	.960	1.115	1.090	
24	.390	.475	.805	.960	1.115	1.255	
36†	.625	.500	.800	.950	1.100	1.750	

†When mounted in an .060" thick panel the 36 position cap extends .765" beyond panel front; wire end extends .235" from panel rear. Plug mating end extends .545" beyond panel front; wire end extends .238" from panel rear.

NOTE: When mounted in an .060" thick panel, the cap's mating end extends .865" beyond panel front; wire end extends .220" from panel rear. Plug's mating end extends .560" beyond panel front; wire end extends .220" from panel rear.

The panel should be punched so that the housing enters the panel in the same direction as the punch for ease of assembly.

MR I Series Connector Specifications

Single Circuit Housings

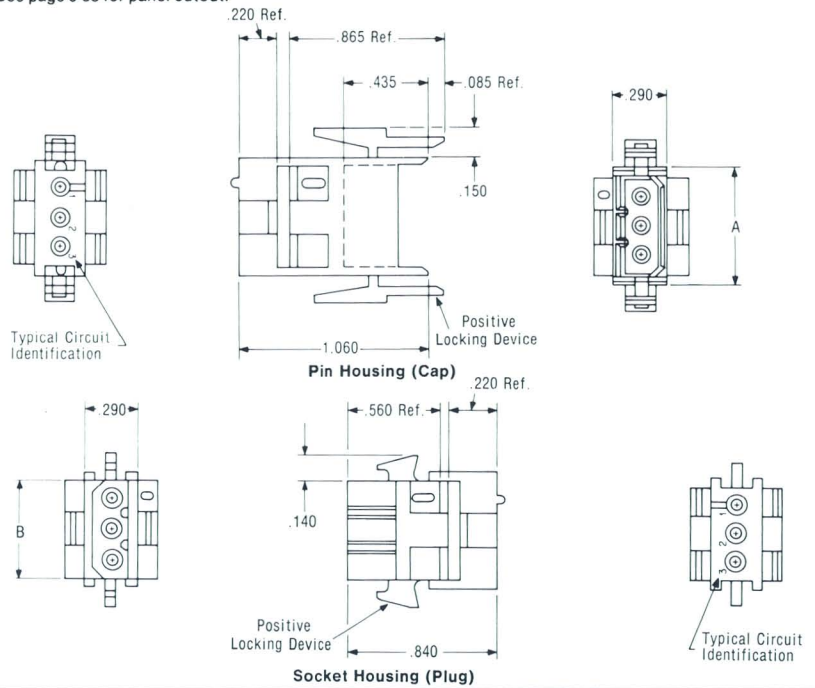


Pin Housing (Cap)
Part Number 1-480606-9

Socket Housing (Plug)
Part Number 1-480607-9

*Available in Natural Color Housings as -0. Also available in NEMA colors — consult AMP Incorporated.
NOTE: See page 9-58 for panel cutout.

2 and 3 Circuit Housings



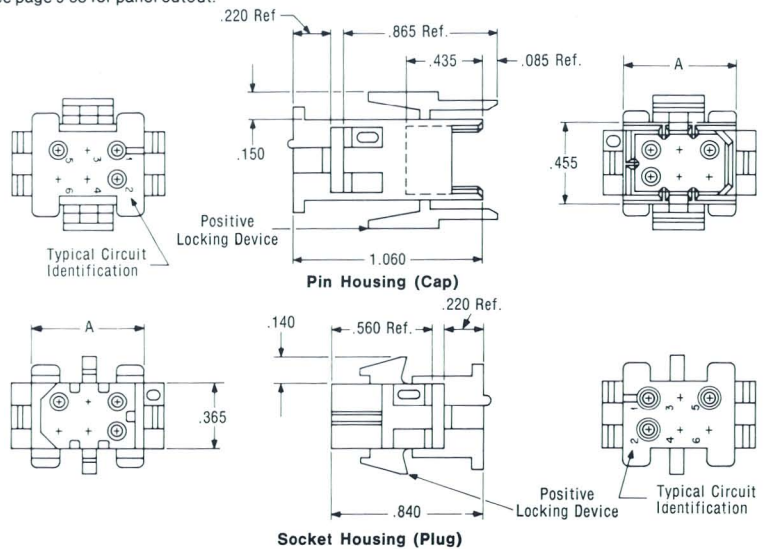
Pin Housing (Cap)

Socket Housing (Plug)

No. of Circuits	Dimensions		Part Number (Standard Black*)			
	A	B	With Positive Locking		Without Positive Locking	
			Pin Housing	Socket Housing	Pin Housing	Socket Housing
2	.455	.365	1-480608-9	1-480609-9	1-480654-9	1-480655-9
3	.620	.530	1-480610-9	1-480611-9	1-480656-9	1-480657-9

*Available in Natural Color Housing as -0. Also available in NEMA colors — consult AMP Incorporated.
NOTE: See page 9-58 for panel cutout.

4 and 6 Circuit Housings



Pin Housing (Cap)

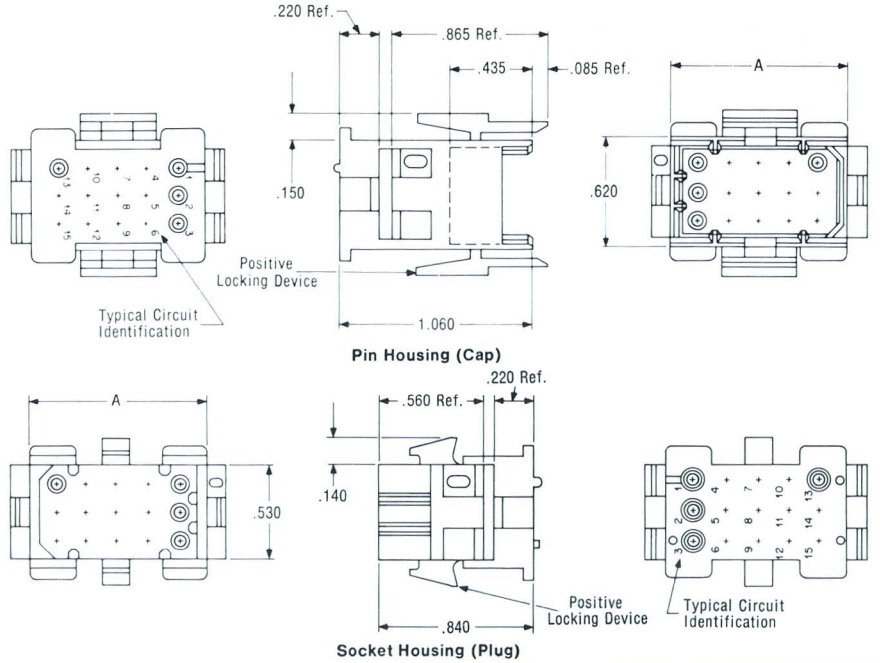
Socket Housing (Plug)

No. of Circuits	Dimensions		Part Number (Standard Black*)			
	A		With Positive Locking		Without Positive Locking	
			Pin Housing	Socket Housing	Pin Housing	Socket Housing
4	.455		1-480676-9	1-480677-9	1-480678-9	1-480679-9
6	.620		1-480612-9	1-480613-9	1-480658-9	1-480659-9

*Available in Natural Color Housing as -0. Also available in NEMA colors — consult AMP Incorporated.
NOTE: See page 9-58 for panel cutout.

MR I Series Connector Specifications

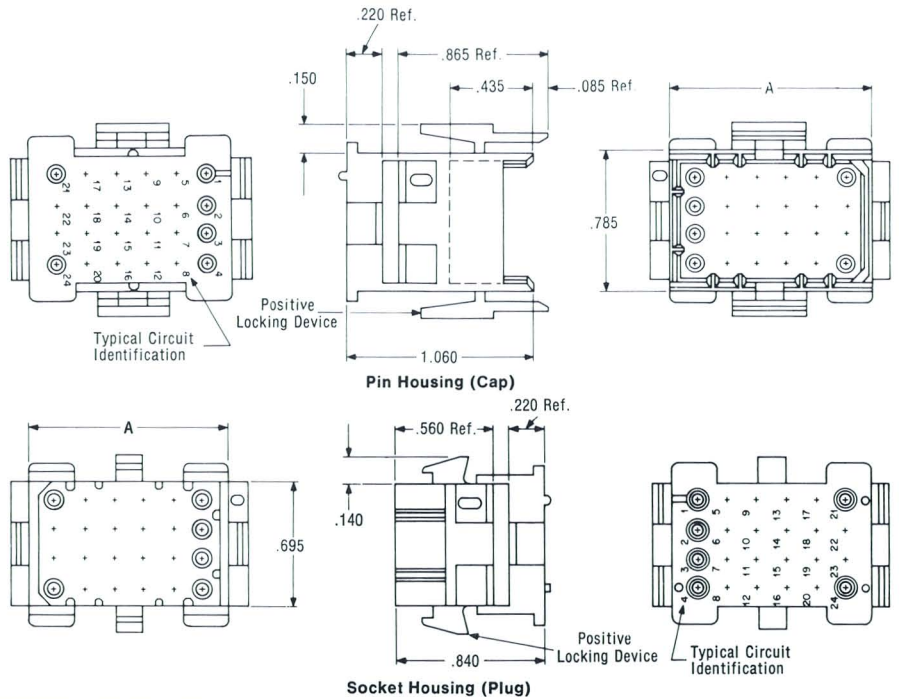
9, 12 and 15 Circuit Housings



No. of Circuits	Dimensions		Part Number (Standard Black*)			
	A		With Positive Locking		Without Positive Locking	
			Pin Housing	Socket Housing	Pin Housing	Socket Housing
9	.620		1-480616-9	1-480617-9	1-480660-9	1-480661-9
12	.785		1-480618-9	1-480619-9	1-480662-9	1-480663-9
15	.950		1-480620-9	1-480621-9	1-480664-9	1-480665-9

*Available in Natural Color Housings as --0. Also available in NEMA colors — consult AMP Incorporated.
NOTE: See page 9-58 for panel cutout.

20 and 24 Circuit Housings

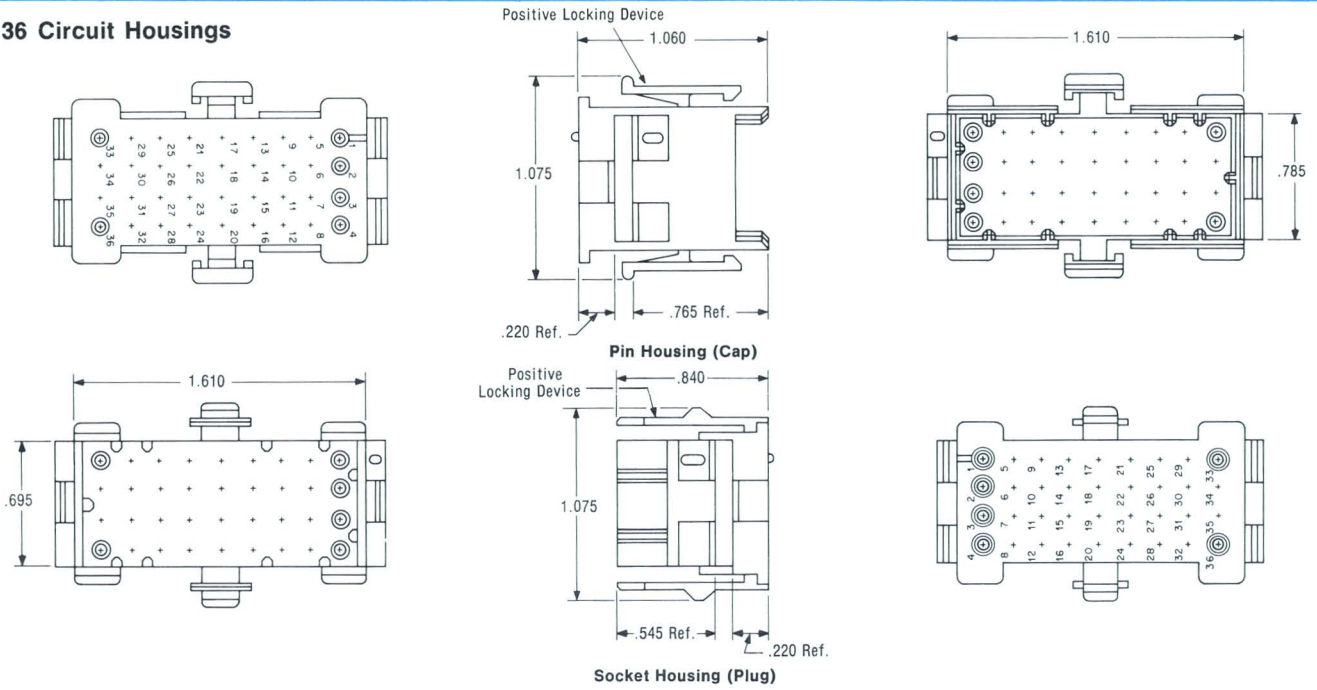


No. of Circuits	Dimensions		Part Number (Standard Black*)			
	A		With Positive Locking		Without Positive Locking	
			Pin Housing	Socket Housing	Pin Housing	Socket Housing
20	.950		1-480624-9	1-480625-9	1-480666-9	1-480667-9
24	1.115		1-480626-9	1-480627-9	1-480668-9	1-480669-9

*Available in Natural Color Housings as -0. Also available in NEMA colors — consult AMP Incorporated.
NOTE: See page 9-58 for panel cutout.

MR I Series Connector Specifications

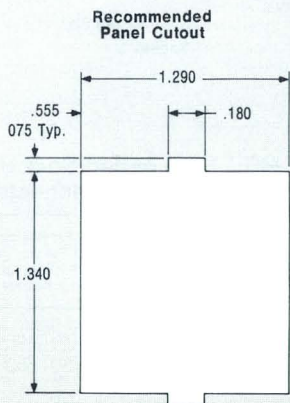
36 Circuit Housings



No. of Circuits	Part Numbers*			
	With Positive Locking		Without Positive Locking	
	Pin Housing	Socket Housing	Pin Housing	Socket Housing
36	1-480589-9	1-480591-9	1-480590-9	1-480592-9

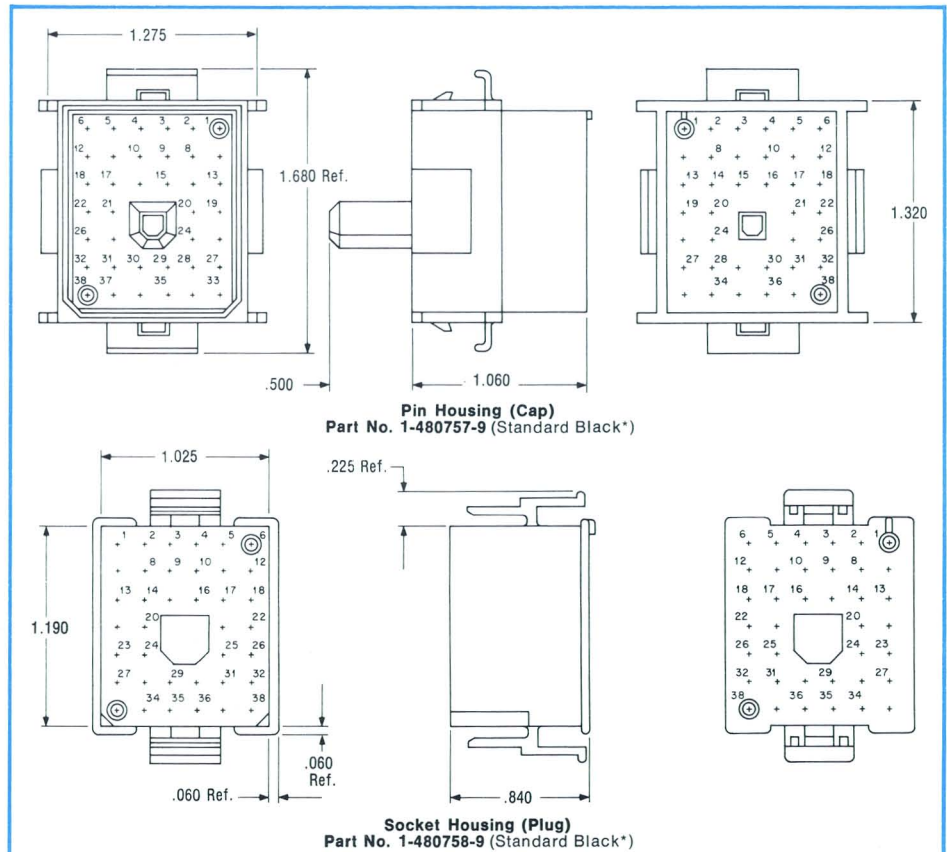
*Color: Suffix -9 Standard Black Housing. Available in Natural Housing as -0.

38 Position MR Connector With Post Control



The panel should be punched so that the housing enters the panel in the same direction as the punch for ease of assembly.

*Available in Natural Color Housings as -0. Also available in NEMA colors—consult AMP Incorporated.

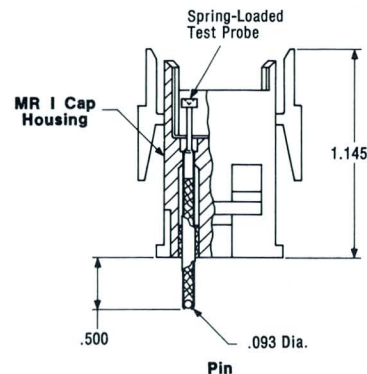
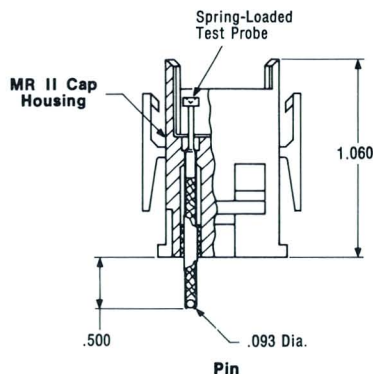


Pin Housing (Cap)
Part No. 1-480757-9 (Standard Black*)

Socket Housing (Plug)
Part No. 1-480758-9 (Standard Black*)

MR I and MR II Series Spring Loaded Test Connector Specifications

Preloaded test connectors are available for testing all pin and socket housing sizes. The part numbers of these test connectors are tabulated in the charts, with the respective mating housings to be tested and the page numbers on which the mating housings appear. These page references also may be used to determine the particular configuration of each size test connector, since a test connector and standard housing of a given size are essentially the same without the positive lock feature.



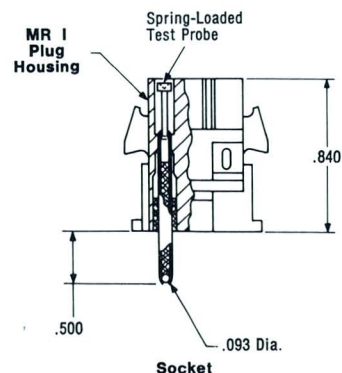
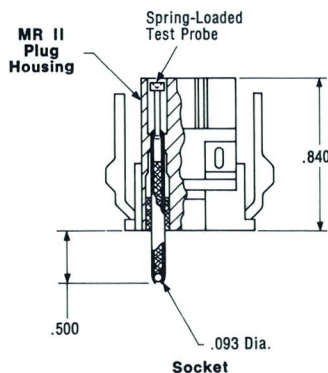
NOTE: Power must be off when engaging and disengaging connector to eliminate shock hazard.

MR II Preloaded Pin Assembly Test Connectors

No. of Circuits	Assembly Part Number (Standard Black)	For Mating With MR Socket Housing Part Number
2	350844-0	1-350354-9
3	350844-1	1-350355-9
4	350844-2	1-350240-9
6	350844-3	1-350241-9
9	350844-4	1-350242-9
12	350844-5	1-350243-9
15	350844-6	1-350244-9
20	350844-7	1-350245-9
24	350844-8	1-350246-9
36	350844-9	1-350356-9

MR I Preloaded Pin Assembly Test Connectors

No. of Circuits	Assembly Part Number (Standard Black)	For Mating With MR I Socket Housings With Positive Lock - Part Number
2	350842-0	1-480609-9
3	350842-1	1-480611-9
4	350842-2	1-480677-9
6	350842-3	1-480613-9
9	350842-4	1-480617-9
12	350842-5	1-480619-9
15	350842-6	1-480621-9
20	350842-7	1-480625-9
24	350842-8	1-480627-9
36	350842-9	1-480591-9



NOTE: Power must be off when engaging and disengaging connector to eliminate shock hazard.

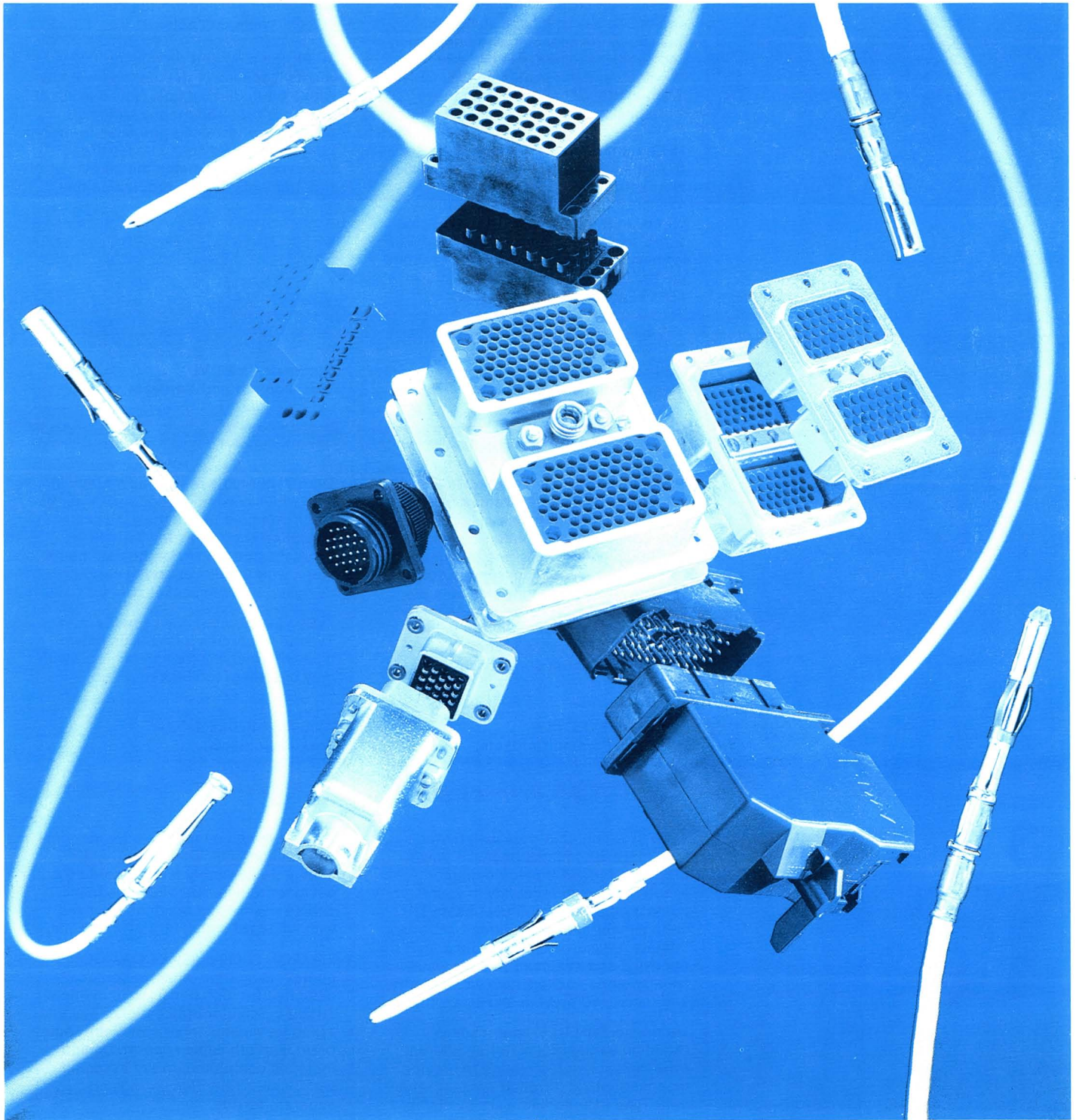
MR II Pre-Loaded Socket Assembly Test Connectors

No. of Circuits	Assembly Part Number (Standard Black)	For Mating With Pin Housing Part Numbers	
		MR II	MR II Printed Circuit Pin Header Assembly
2	350843-0	350351	350359, 350360, 350361
3	350843-1	350352	350362, 350363, 350364
4	350843-2	350233	350255, 350256, 350257
6	350843-3	350234	350258, 350259, 350260
9	350843-4	350235	350261, 350262, 350263
12	350843-5	350236	350264, 350265, 350266
15	350843-6	350237	350267, 350268, 350269
20	350843-7	350238	350270, 350271, 350272
24	350843-8	350239	350273, 350274, 350275
36	350843-9	350353	350276, 350277, 350278

MR I Pre-Loaded Socket Assembly Test Connectors

No. of Circuits	Assembly Part Number (Standard Black)	For Mating With MR I Pin Housing With Positive Lock - Part Number
2	350841-0	1-480608-9
3	350841-1	1-480610-9
4	350841-2	1-480676-9
6	350841-3	1-480612-9
9	350841-4	1-480616-9
12	350841-5	1-480618-9
15	350841-6	1-480620-9
20	350841-7	1-480624-9
24	350841-8	1-480626-9
36	350841-9	1-480589-9

AMP Multimate Contact-Connector Assemblies



AMP Multimate Contacts

Introduction:

AMP Multimate assemblies are a timely AMP innovation which allows you to condense your contact-connector design and production into three simple steps. Multimate assemblies are AMP's carefully considered answer to the proliferation of contact types and styles which have been the cause of much confusion and needless expense in the past. Development of a Multimate assembly is straightforward and follows these three basic steps:

1) Designer chooses among three size 16 Multimate pin and socket type contacts which can be intermixed as needed. He can specify 1- or 2-piece precision formed contacts as well as a screw machine contact, and all provide for necessary signals and power requirements. Also, Multimate subminiature coaxial contacts are available.

2) He determines the AMP Multimate connector best suited for his design from CPC, M Series, AMP Metric Series, "G" Series, "D" and "DD" Series, and "W" and "WW" Series. All Multimate connectors provide for subminiature coaxial cable contacts.

3) Prototyping and production follow readily because of the tooling flexibility with Multimate contacts. Only one set of tooling is required for any Multimate assembly when using precision formed contacts, and you can choose the tools you need to match the output requirements of your production line.

Contact Variety with Multimate:

The standard plating used by AMP for Multimate contacts is gold over nickel. The AMP contact with standard plating is extremely low in electrical resistance, and possesses high resistance to oxidation, humidity and corrosion.

Gold is required for "dry circuits," signal circuits and other types of sensitive circuits. Other platings are available for applications in non-critical environments.

Multimate TYPE II Screw Machine Solid Contacts:



The Multimate Type II contact is a crimp snap-in contact, with a confined "C" crimp to assure minimum distortion and high conductivity. Type II is a versatile and reliable member of the Multimate family. Offering quick assembly and firm seating, these Multimate contacts are available loose piece or on tape for machine application. Socket contacts are closed entry, with a cantilever beam engagement spring.

Multimate TYPE III + Precision Formed Contacts:



Type III + contacts work well in AMP Multimate assemblies because these precision formed 2-piece contacts assure maximum reliability in your contact design. A cantilever beam engagement spring provides controlled contact pressures for optimum conductivity, and minimum surface wear. Bell-mouthed sockets give closed entry and increased mechanical strength.

Multimate Type III + contact uses a retention spring of a material different from the socket or pin body to provide independently controlled contact retention. Type III + contacts are available loose or in strip form as needed.

Multimate TYPE VI Precision Formed Contacts:



Type VI contacts are 1-piece, precision formed for maximum economy. Type VI Multimate contacts feature the same insulation support as the Type III + contacts, and also have the bell-mouth entry, with cantilever spring contact designed into the socket contact.

Type VI is exceedingly versatile, and Type III + permits intermixing of two types of precision formed contacts with only one set of tooling required.

Multimate Subminiature Coaxial Contacts:



All Multimate connectors offer identical coaxial contacts. This special AMP Multimate assembly feature permits a designer to use matched impedance cables or shielded conductors mixed with standard signal or power circuits.

The AMP Subminiature COAXICON contact is a crimp, snap-in contact, designed for high density and multiple circuit connector applications. A single crimp terminates inner conductor, outer braid, and the cable support. Design includes complete contact assembly, with built-in retention spring and separate ferrule.

AMP Multimate Connectors

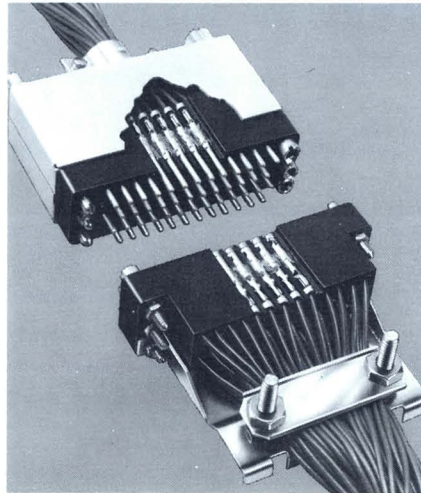
AMP Circular Plastic Connectors:



AMP Circular Plastic Connectors for Multimate assemblies are molded plugs and receptacles that house pin and socket contacts. They are designed for use in such applications as automotive, computer, aircraft and instrumentation. These versatile connectors provide substantial savings in both weight and cost through the use of plastic shells and a variety of hand machine terminated contacts. Circular Plastic Connectors for Multimate units are standard density connectors. Using size 16 contacts, they are available in four shell sizes: 11, 13, 17 and 23. AMP Multimate CPC are supplied as Class A for normal unsealed applications, as Class F for pressure bulkhead feed-through uses, and Class S for waterproof applications.

CPC shell sizes include size 11, 13, 17 and 23. Shell size 11 offers 4, 8 and 9 contact arrangements, shell 13 a 9-contact arrangement; shell 17 has 14, 16 and 28 contact arrangements, and shell 23 features 24, 37, 57 and 63 contact arrangements.

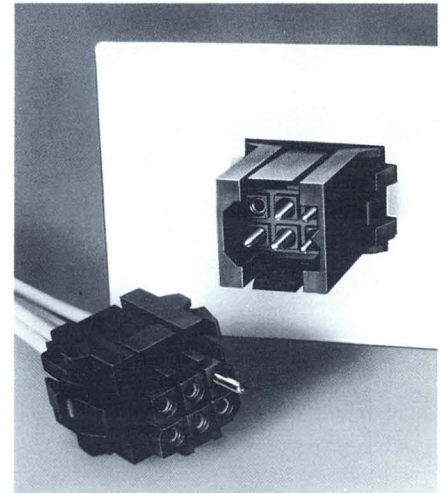
AMP "M" Series Pin and Socket Connectors:



Over many years, millions of "M" Series connectors have proved their quality, economy, reliability and flexibility in commercial and military applications. You'll find them in such diverse uses as computers and rugged truck transmissions. The versatility of the AMP "M" Series makes them a natural choice for inclusion in the Multimate assemblies.

Connector blocks are molded of either phenolic or diallyl phthalate, in configurations from six to one hundred and sixty positions. Many design problems will yield to a combination of an "M" Series Connector and one or more of the one design contacts available in the Multimate assembly.

AMP Metric Connector:



A useful Multimate Connector is AMP's Metric Connector, made with true metric dimensioning, and manufactured to European safety standards. Contacts are 0.197" (5 mm) on centers, and this inexpensive pin and socket connector conforms to the requirements of UL, CSA, CEE (Common Market Commission for Approval of Electrical Equipment), IEC (International Electrotechnical Commission) and VDE (German Society of Electrical Engineers). AMP Metric Connector, designed for equipment manufacturers who sell in both national and international markets, is a real Multimate assembly plus.

The AMP Metric Connector is made of 94V-0 rated thermoplastic and is available in 4, 6, 12, 36 and 62 positions. Pin headers in all configurations except the 62 position are provided for economical PC board mounting.

All configurations can be panel mounted, plug or receptacle, without accessory hardware. The 4 thru 36 position connector can be panel mounted from either side and removed from either the same or opposite side. Either plug or receptacle will accept pin or socket contacts.

AMP Multimate Connectors

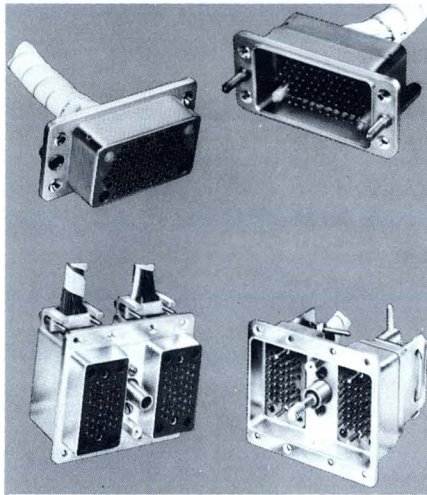
AMP Series "G" Pin and Socket Connectors:



AMP Multimate assemblies offer a practical way of mixing various types of electrical circuits in one connector if the designer chooses a Series "G" Connector. "G" Connectors offer modular versatility by accepting 1, 2, or 3 module inserts. Such arrangement permits multiple combinations of signal, power and coaxial circuits in a single connector configuration. With module inserts, you can change your circuit connections should circuitry requirements be changed.

Basically, each connector of the "G" Series is made from two parts; a shell subassembly of cast aluminum, and module inserts of phenolic or diallyl phthalate. The subassembly is a shell and retainer plate, allowing for easy drop-in positioning of modules. The connectors are polarized with keyways in the receptacle and matching keys on the plug.

D and DD Series Connectors:

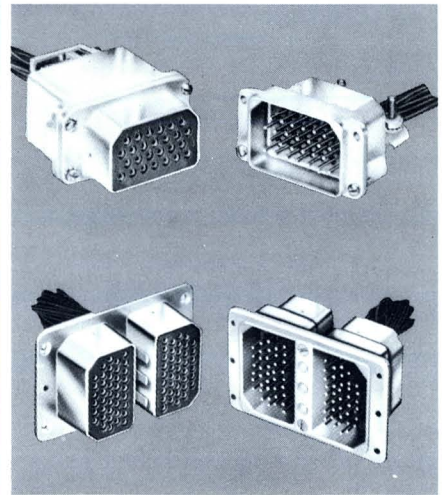


These Multimate pin and socket connectors have a high circuit count, from 60 to 156 circuits. The "D" Series connectors can be doubled (referred to as "DD") and they are generally rack and panel or bulkhead mounted.

The metal shells are zinc plated, and the plastic inserts are of diallyl phthalate. The connectors utilize one or more of several types of gold-over-nickel plated pin and socket contacts, and both male and female contacts are fully enclosed within the connector for maximum protection.

Jackscrews and cable clamp hardware are available, and provide those features desired by many process control engineers.

W and WW Series Connectors:



Multimate connectors designated as W and WW are rack and panel connectors which have been designed for blind mating. Their keystone design, cast housings and lean-in features make them an excellent choice for racking designs. The 26 to 90-position versions allow a great deal of freedom in packaging designs.

The male and female contacts are fully enclosed within the W Connector housing, assuring maximum protection from the environment. Double configurations of the W, referred to as WW Series, add to the variety of Multimate assemblies possible. The metal shells are zinc plated, and the plastic inserts are molded of diallyl phthalate.

AMP Multimate Application Tooling



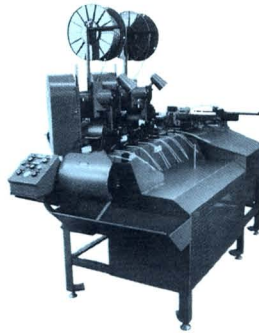
CERTI-CRIMP Hand Tool — Here is AMP's basic hand tool used for prototype production and experimental work. The patented ratchet keeps the tool pressure-locked until the jaws are brought together under the precise pressure needed to form a perfect crimp.



AMP hand tools are ideal for small production, prototype and experimental applications. They are used for terminating both pins and sockets to wire and feature the CERTI-CRIMP ratchet device to assure perfectly formed crimps, time after time.



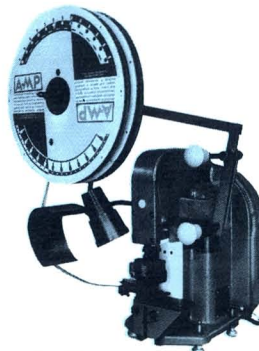
The AMP Miniature Stripper/Crimper Machine automatically strips and terminates wire in a single operation. The machine is a portable bench-mounted unit which can apply a wide range of open barrel, side-feed strip contacts. Minimum lead length is only 1½" [38.1 mm] and wire sizes from #32-14 AWG [0.03-2 mm²] may be terminated in this machine at production rates of up to 1200 terminations per hour.



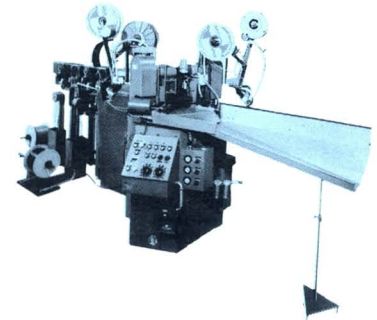
AMP-O-MATIC Dual Wire, Single End Lead Machine — For small production, prototype, experimental and servicing applications, CERTI-CRIMP hand tools are ideal. The ratchet device located between the tool handles keeps the tool pressure locked until the jaws are brought together under the precise pressure needed to form a perfect crimp.



AMP-TAPETRONIC All-Electric Machine for terminating prestripped leads and harnesses with tape mounted contacts. Capable of producing up to 2,000 terminations per hour this machine features left to right contact fed, open throat design for easy loading and automatic ejection of contact from tape which adds to the production rate and minimizes operator fatigue.



AMP-O-LECTRIC Automatic Machine — This automatic machine produces up to 3,000 crimps per hour. It is bench-mounted and is usually operated by a foot pedal. It accepts a wide range of wire sizes.



AMPOMATOR Machine — A high speed, high volume lead making device designed to cut, strip and terminate either one or both ends of a wire. Pulled directly from a bulk spool or barrel, the wire is passed through straightening wheels and is measured, cut, stripped. The wire is then terminated and pulled from the machine and stacked in a trough.



Miniature Applicators provides flexible operation for a variety of AMP Machines. They can be used in the AMPOMATOR Machine, producing up to 5700 doubly terminated leads per hour, or the AMP-O-LECTRIC Machine which applies contacts to wire at rates up to 4000 terminations an hour. All feature precision dies made of hard-metal alloys to assure identical terminations through countless operations. In addition, all adjustments are made rapidly, with no major interruptions in production. Crimping height on contact barrel for a given wire size is simply "dialed in."

Services to Back Up the Product

AMP's responsibility does not end with the sale of the product, or even with quality assurance and testing; it extends throughout the breadth and depth of each AMP customer relationship. Here are some of the ways in which AMP secures and maintains a high degree of usefulness, dependability, and cost reduction for each product it manufactures.



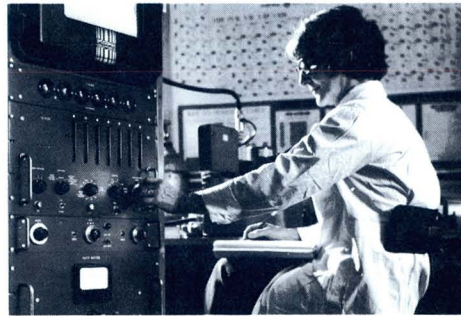
Seminar Sessions. Regularly scheduled periods of instruction featuring key personnel and modern audio-visual methods for a factual approach to new products and application techniques. Special seminars arranged at customer's convenience to maintain timely instructive application procedures for new customer personnel.



Sales Engineer. Qualified by education, training, and background, the Sales Engineer works out of conveniently located district offices as a dependable point of contact with the source of product and service. His contribution as a continuous source of information can be effectively used as part of the customer service team for faster, smoother, more economical operations.



Field Service Engineer. For preventive maintenance in the field and to assure continuous, trouble-free functioning of hand and automatic crimping tools, this service is regularly available to all AMP product users from any one of our conveniently located area offices.



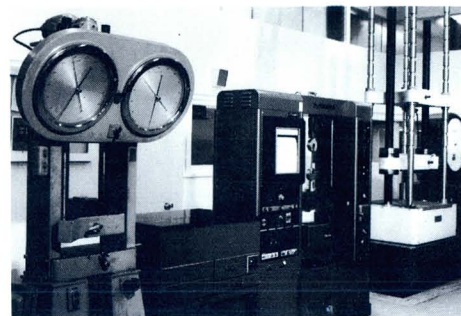
Research Laboratory. One of the most modern and complete facilities of its type anywhere. Research is conducted in every phase of activity associated with circuit problems, including metals, dielectrics, base materials and platings, and the study of radiation effects on electrical/electronic connections.



Customer Speed Order Service. A centralized order and inquiry section utilizing the most modern equipment including central telephone control. TWX and special computer systems to assure quick, positive and correct order processing and rapid delivery.



Product Coach. Compact, mobile unit which carries the latest products and demonstrates the newest techniques, bring the full AMP story, with up-to-the-minute changes and additions, right to the customer plant.

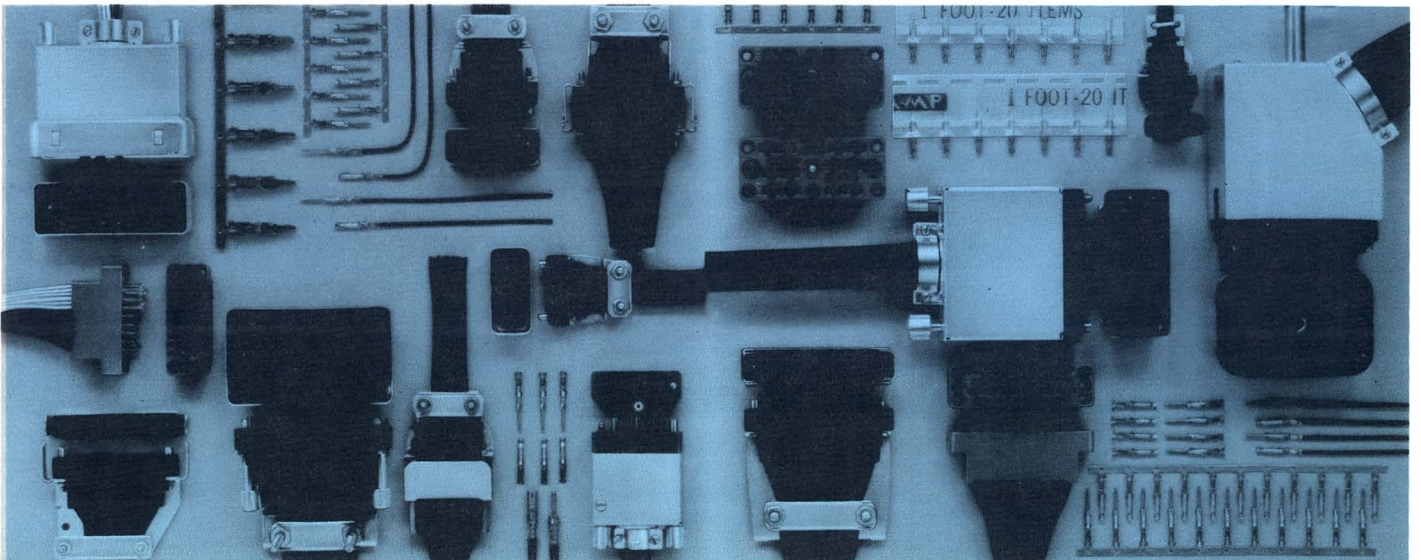


Test Laboratory. One of the outstanding facilities of its type, the Test Laboratory has been instrumental in creating quality and performance standards which are unmatched in the industry. Equipment of the most modern type includes 4 "White Rooms."



Creative Analysis. Time and cost savings studies are conducted by special AMP teams. Study is made on site to show customers how to improve quality, increase production and lower costs.

“M” SERIES PIN AND SOCKET CONNECTORS A Multimate Product





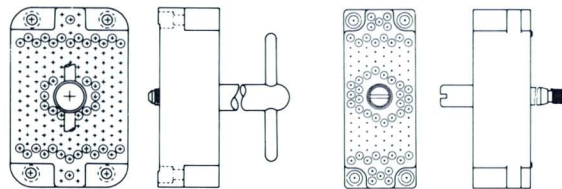
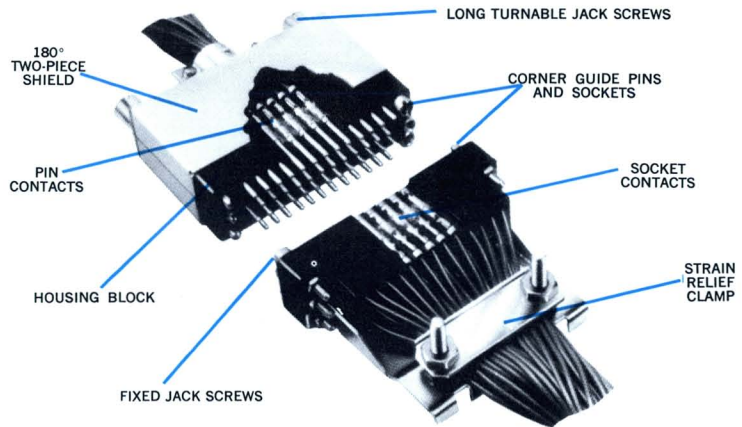
"M" SERIES PIN AND SOCKET CONNECTORS

INTRODUCTION

During the past ten years millions of "M" Series products have proven their quality, reliability and economy in commercial and military applications. "M" Series connectors have been used successfully in diverse fields of application ranging from sophisticated computers to rugged truck transmissions. A variety of contacts, including screw machine, precision formed signal and power, as well as coaxial versions, makes application possible in all major industries. Connector blocks for these contacts are molded in either phenolic or diallyl phthalate and in configurations ranging from six to one hundred and sixty positions. "M" Series connectors are also available with posted contacts, combining "M" Series reliability with the speed and versatility of automatic back bay wiring. Applying tooling, hardware and accessory items for all connectors makes "M" Series the most versatile and complete product line in the industry.

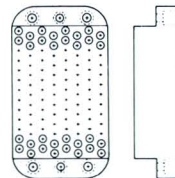
Specifications subject to change.
Consult AMP Incorporated for latest
design specifications.

A TYPICAL "M" SERIES CONNECTOR WITH HARDWARE

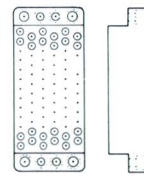


160 CENTER
FASTENER

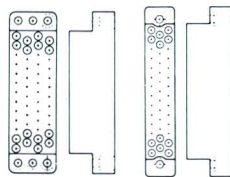
104 CENTER
FASTENER



104 POSITION

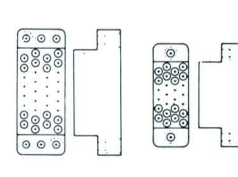


75 POSITION



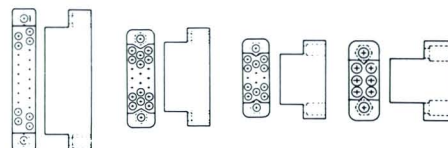
50 POSITION

41 POSITION



34 POSITION

26 POSITION



21 POSITION

20 POSITION

14 POSITION

6 POSITION

IMPORTANT CONSIDERATION IN THE SELECTION OF CONNECTORS

Important to the proper function of any "M" Series Pin and Socket Connector is the proper selection of hardware. Since your individual application will determine the type of hardware required, we recommend you follow this procedure.

Evaluate your application and determine your needs; such as, wire size, number of contacts required, space requirements, type of fastening device and protection required.

Once you have determined your wire size, select the type pins and sockets your application requires, referring to pages 9-76 thru 9-79 for contact description and pages 9-80 thru 9-87 for contact specifications.

Having noted your contact type and size refer to the foldout attached and determine the fastening method and size block needed.

This foldout is designed so you may have it readily available as a guide in the selection of block accessories. Keeping this foldout extended, refer to the selected block and configuration desired.

FEATURES

- High reliability
- Complete line of accessory items, including guide hardware, jackscrews, shields and strain reliefs
- Removable and replaceable contacts
- Automatic applicators offer the lowest overall applied cost

COST REDUCTION

- Precision formed contacts are lowest in cost, yet satisfy most applications
- AMP quality and reliability reduce rework
- Plating variety offers contacts to meet any application requirement
- Hand, semi-automatic and automatic crimping equipment assures quality terminations for all production needs
- Design assistance available from AMP Engineering Divisions

AMP SERVICES

- Customized service to customers through AMP direct Sales organization
- Direct sales to secondary markets through AMP Subsidiaries
- Worldwide sales and manufacturing facilities
- Customer training provided at no cost either on location or in Harrisburg
- Full Field Engineering service on all AMP products and equipment
- Complete Research facilities for product evaluation and technology development

FOR MORE INFORMATION CONTACT YOUR AMP SALES ENGINEER!



ACCESSORY SELECTION INFORMATION

The first essential in accessory selection is the method of block to block fastening. Three methods are available:

1. Jackscrews. These give mechanical assistance in the mating operation of loaded connectors and provide positive locking.
2. Locking Springs. These are used to hold blocks firmly together after they have been engaged. On larger block sizes, 75 and over, actual hand mating of the connector is harder to accomplish and jackscrews should be used to provide the necessary mating assistance.
3. Guide Pins and Sockets. The prime function of these is to guide two connector halves together. They do not give a block to block fastening.

Choose the method of fastening required and refer to the relevant horizontal section of the chart below, which shows in simplified form the accessories available for the method of fastening selected.

JACKSCREWS

LEFT

	A	B	C	D	E	
6						Components Required 1 Block 1 Jackscrew Long Male 1 Jackscrew Long Female *2 Guides Corner Pin *2 Guides Corner Socket 1 Shield 2 piece short
14						Components Required 1 Block 1 Jackscrew Hex Male 1 Jackscrew Hex Female *2 Guides Corner Pin *2 Guides Corner Socket 1 Strain Relief Clamp
20						Components Required 1 Block 1 Jackscrew Short Male 1 Jackscrew Short Female *2 Guides Corner Pin *2 Guides Corner Socket
26						Components Required B or C with 1 Pinhead internal
34						Components Required 1 Block 1 Jackscrew Long Male 1 Jackscrew Long Female *2 Guides Corner Pin *2 Guides Corner Socket 1 Shield two piece long
41						A
50						B
75						C
104						D
						E

LOCKING SPRINGS

	J	K	L	M	N	
6						Components Required 1 Block 2 Locking Springs, Spring ** 2 Guides Corner Pin ** 2 Guides Corner Socket 1 Shield one piece short
14						Components Required 1 Block 2 Locking Springs, Spring ** 2 Guides Corner Pin ** 2 Guides Corner Socket 1 Strain Relief Clamp
20						Components Required 1 Block 2 Locking Springs, Spring ** 2 Guides Corner Pin ** 2 Guides Corner Socket
26						Components Required J, K or L with 1 Pinhead internal. Open end only.
34						Components Required 1 Block 2 Locking Springs, Spring ** 2 Guides Corner Pin ** 2 Guides Corner Socket 1 Shield one piece long
41						J
50						K
75						L
104						M
						N

NO FASTENING GUIDE PINS AND SOCKETS

LEFT

	T	U	V	W	X	
6						Components Required 1 Block 1 Guide Centre Pin 1 Guide Centre Socket *2 Guides Corner Pin *2 Guides Corner Socket 1 Shield one piece short
14						Components Required 1 Block 1 Guide Centre Pin 1 Guide Centre Socket *2 Guides Corner Pin *2 Guides Corner Socket 1 Strain Relief Clamp
20						Components Required 1 Block 1 Guide Centre Pin 1 Guide Centre Socket *2 Guides Corner Pin *2 Guides Corner Socket
26						Components Required T, U or V with 1 Pinhead internal
34						Components Required 1 Block 1 Guide Centre Pin 1 Guide Centre Socket *2 Guides Corner Pin *2 Guides Corner Socket 1 Shield one piece long
41						T
50						U
75						V
104						W
						X

*Use components, as specified, on sizes 34, 50, 75 and 104. No facility to fit on 6, 14, 20, 26 and 41.

**Use components, as specified, on sizes 34, 50, 75 and 104. On sizes 6, 14, 20, 26 and 41, use one center guide pin and one center guide socket.

Each of the three horizontal sections is divided into a left and right hand side.

Any assembly shown on the left hand side can be paired with any on the right hand side and conversely, e.g., A mates with F, G or H, and G mates with A, B, C, D or E.

On the extreme left and right of each horizontal section is a Possibility Table. This indicates if the assembly chosen is available for the particular block size selected.

Above each assembly is a complete list of its component parts and quantity of each part. Using the individual descriptions given (it is important that the exact description is used), the part numbers of these components can be obtained from the tabular detail for the selected block size.

Example on the use of the Possibility Tables

- POSSIBLE
- NOT POSSIBLE

Some components not available. Contact — AMP Incorporated for recommendations.

In the Possibility Table shown on the right the 6 Position arrangement F is not possible. The 6 Position arrangement G is possible.

	F	G	H	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	26
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	34
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	41

← RIGHT

Components Required
G or H with
1 Pinhead external

F



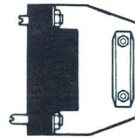
Components Required
1 Block
1 Jackscrew Fixed Male
1 Jackscrew Fixed Female
*2 Guides Corner Pin
*2 Guides Corner Socket

G



Components Required
1 Block
1 Jackscrew Fixed Male
1 Jackscrew Fixed Female
*2 Guides Corner Pin
*2 Guides Corner Socket
1 Strain Relief Clamp

H



	F	G	H	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	26
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	34
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	41
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	50
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	75
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	104

Components Required
Q, R or S with
1 Pinhead external.
Open end only.

P



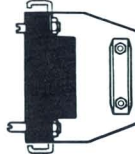
Components Required
1 Block
2 Locking Springs, Catch
**2 Guides Corner Pin
**2 Guides Corner Socket

Q



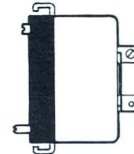
Components Required
1 Block
2 Locking Springs, Catch
**2 Guides Corner Pin
**2 Guides Corner Socket
1 Strain Relief Clamp

R



Components Required
1 Block
2 Locking Springs, Catch
**2 Guides Corner Pin
**2 Guides Corner Socket
1 Shield one piece short

S



	P	Q	R	S	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	6
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	20
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	26
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	34
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	41
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	50
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	75
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	104

← RIGHT

Components Required
V, U or T with
1 Pinhead external

Y



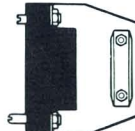
Components Required
1 Block
1 Guide Centre Pin
1 Guide Centre Socket
*2 Guides Corner Pin
*2 Guides Corner Socket

T



Components Required
1 Block
1 Guide Centre Pin
1 Guide Centre Socket
*2 Guides Corner Pin
*2 Guides Corner Socket
1 Strain Relief Clamp

U



Components Required
1 Block
1 Guide Centre Pin
1 Guide Centre Socket
*2 Guides Corner Pin
*2 Guides Corner Socket
1 Shield one piece short

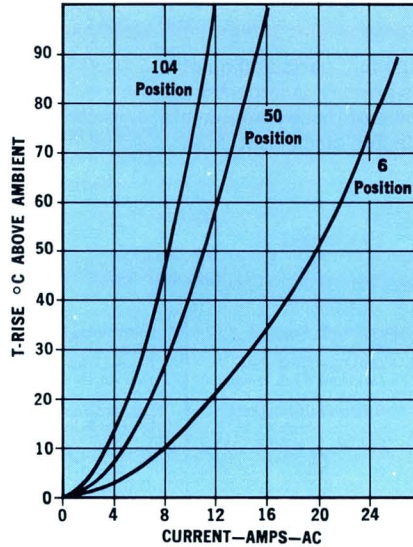
V



	Y	V	U	T	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	6
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	26
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	34
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	41
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	50
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	75
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	104



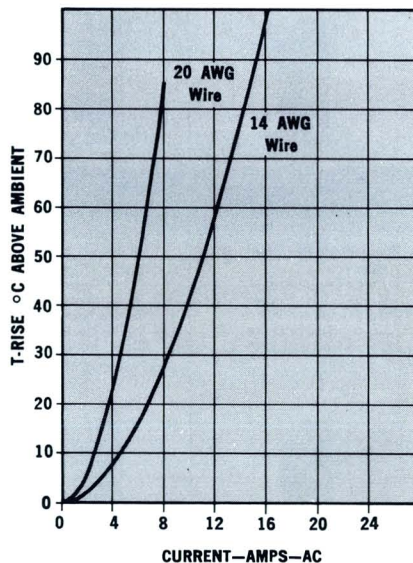
PERFORMANCE DATA



"M" SERIES CONNECTORS
Type III+ Size 16 Contacts
All contacts energized 14 AWG wire

The graphs show how the above variables affect current carrying capacity.

"M" SERIES CONNECTORS
50 Position
Type III+ Size 16 Contacts
All contacts energized



Recognized under the Component Program of Underwriters' Laboratories, Inc. and CSA Certified.

Working Temperature

Phenolic -55°C to +150°C. Diallyl Phthalate -65°C to 125°C. 94V-1 rated.

Current Rating

The maximum current that can be carried in any one given "M" Series connector is limited by the maximum working temperature of the housing material and influenced by the wire size, connector size (number of cavities operating) and ambient temperature in which the connector is operating in. Therefore, graph 1 and 2 show how these variables effect connector current capacity and serve as a guide to realistically select your connector for your particular design and application where those variables are known.

Dielectric Withstanding Voltage (AC-RMS)

At sea level with full complement of contacts in connector: Type II, 1500V; Type III(+) or Type VI, 900V.

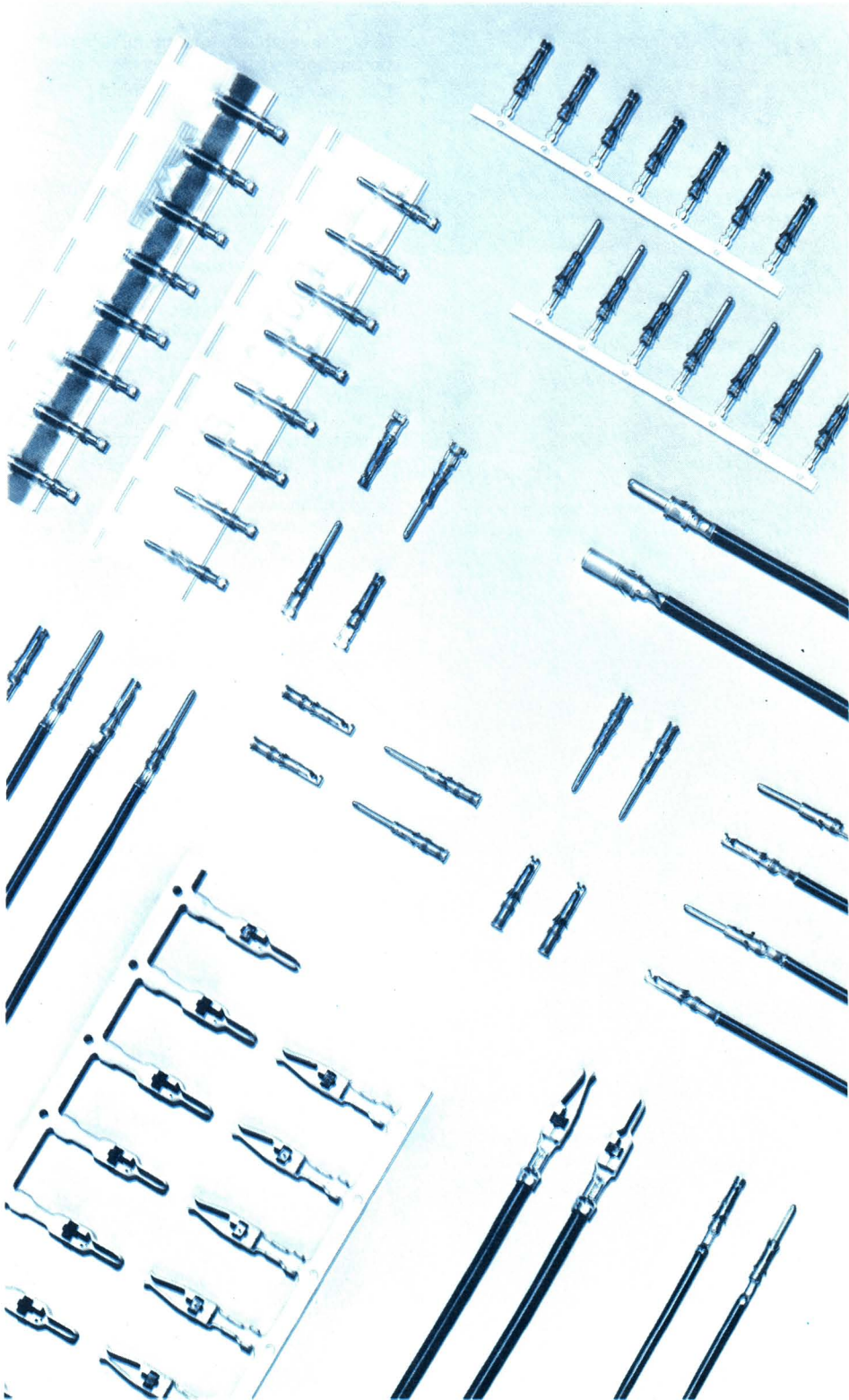
Durability

500 cycles mating/unmating gold plated contacts (Type II, III(+), VI); 250 cycles mating/unmating tin plated contacts (Type II, III(+), VI); 100 cycles mating/unmating Type I contacts.

Contact Retention

10 pounds after 10 cycles insertion/extraction per contact.

For detail information on the above performance data and further information on Insulation Resistance, Thermal Shock, Moisture Resistance, Vibration and Physical Shock performance data see "M" Series Product Specifications AMP 108-10001.





CONTACTS

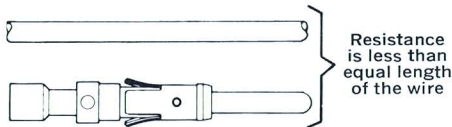
Contact Information

To be acceptable, contacts must perform simultaneously in three ways:

1. carry enough current, without overheating;
2. create a low-resistance path for the current;
3. tolerate repeated mating and unmating without damaging wear or loss of conductivity.

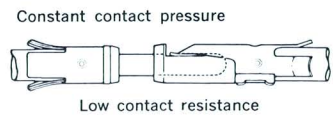
AMP provides a number of different types of contacts for connectors with different basic functions. In the Series "M" connector the current-carrying elements with the foregoing characteristics are pins and their mating sockets. The contacts are available in sizes 20, 18 and 16 and are generally used with equivalent or smaller wire gages. As a rule, the electrical resistance of pin and socket contacts should be no greater than the resistance of an equally long piece of the wire used in the connection.

In addition, stable resistance is achieved



with precisely engineered cantilever-beam type springs in the socket with enough built-in resilience to insure firm, uniform contact pressure at all times.

The AMP standard plating for contacts is gold over nickel.



Other platings are available for application in non-critical environments. The AMP contact with standard plating is extremely low in electrical resistance, and possesses high resistance to oxidation, humidity, and corrosion. Gold is especially required for "dry circuits", signal circuits and various other types of sensitive circuits. Following meticulous testing, X-ray measurement and analysis (in tolerances of millionths of an inch), AMP has chosen precisely controlled thicknesses of gold over nickel plating. (See section on plating for more complete details.)

To meet all requirements geared to specific needs, a choice of three types of contacts may be used for any Series "M" Connector:

available in loose-piece form for use with hand crimping tools, or mounted on tape for use with bench mounted or portable power-crimping tools.

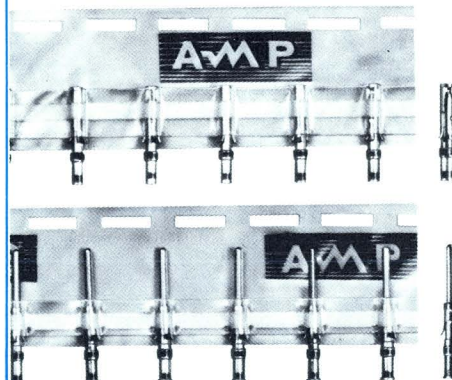
The Confined "C" Crimp — This crimp configuration (illustrated in the macro-photograph below) is used for crimping all screw-machined contacts. While confined to an oval, with minimum distortion, the electromechanical properties remain excellent, with resultant high conductivity and all-round reliability.



14 Times Enlargement of CRIMP CROSS SECTION

Solid Contacts

The screw machine method is used in producing Type I and Type II contacts. The precisely controlled AMP crimp prevents distortion and/or overstressing when contacts are terminated. They are



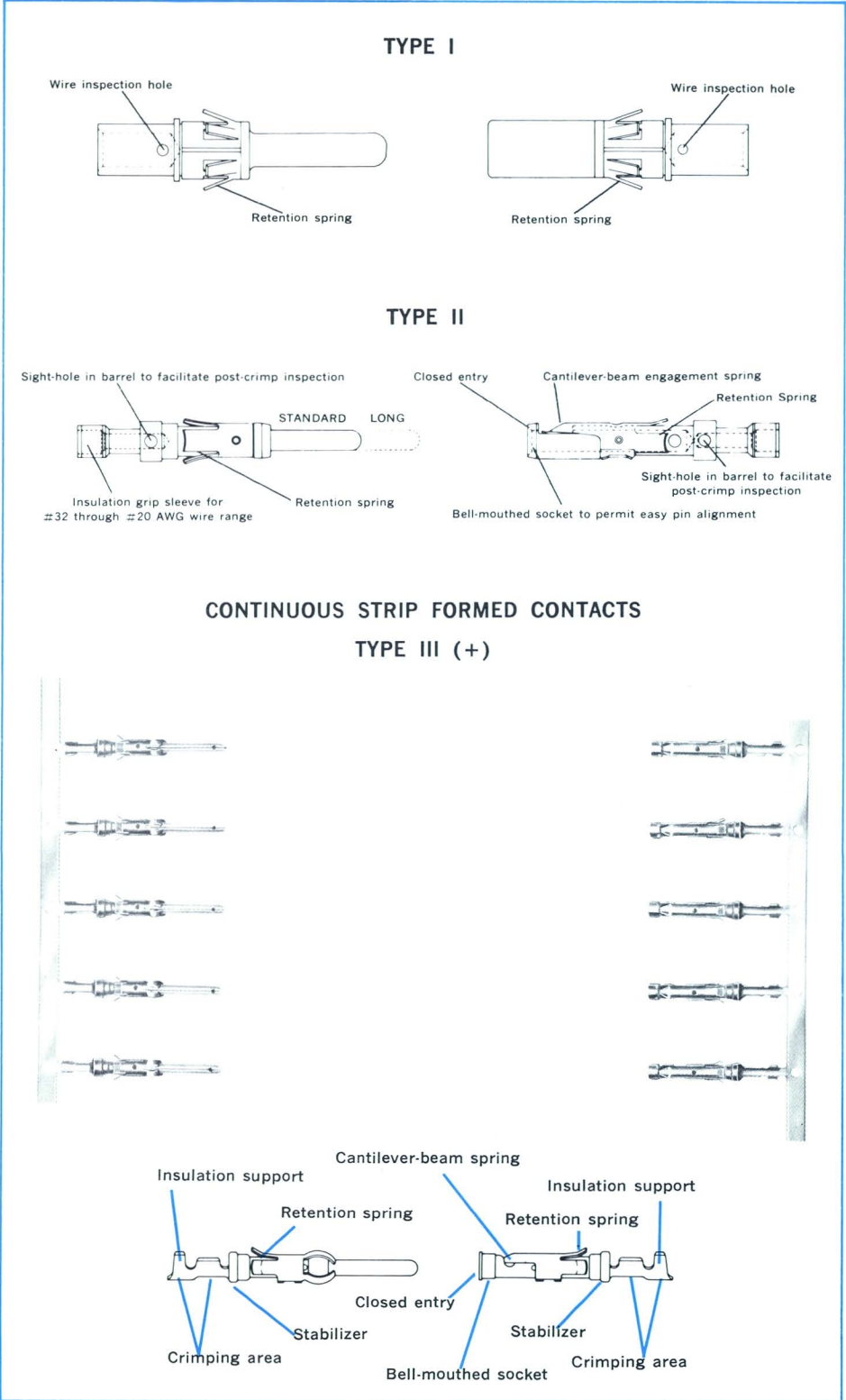
The TYPE I snap-in contact is of special value in critical circuit applications because of its low resistance factor. It incorporates independent cantilever-beam engagement springs which provide controlled contact pressures for maximum conductivity with minimum surface wear.

Pre-assembly plating of all parts assures optimal corrosion resistance. Type I contact is available in size 12 for a wire range of #18-16 through #14-12 AWG.

The TYPE II snap-in contact has a three-legged retention spring which provides firm seating in the connector block. A cantilever-beam contact spring provides controlled contact pressures for maximum conductivity with minimum surface wear.

Pre-assembly plating of all parts provides optimum resistance to oxidation and corrosion. Available in contact sizes 20, 18 and 16, for wire ranges of #32 through #14 AWG.

TYPE III (+) is another high-volume formed, crimp, snap-in contact for low-cost application. It is available in contact size 20, 18 and 16 for use with a wire range of #30 through #14 AWG. Bell-mouthed design and closed entry adds mechanical strength. Cantilever-beam contact spring insures maximum-controlled contact pressure for optimum conductivity and minimum surface wear. Additionally, the retention spring allows quick assembly and solid seating in the connector block. TYPE III (+) contacts also come in loose-piece form for use with hand-crimping tools.





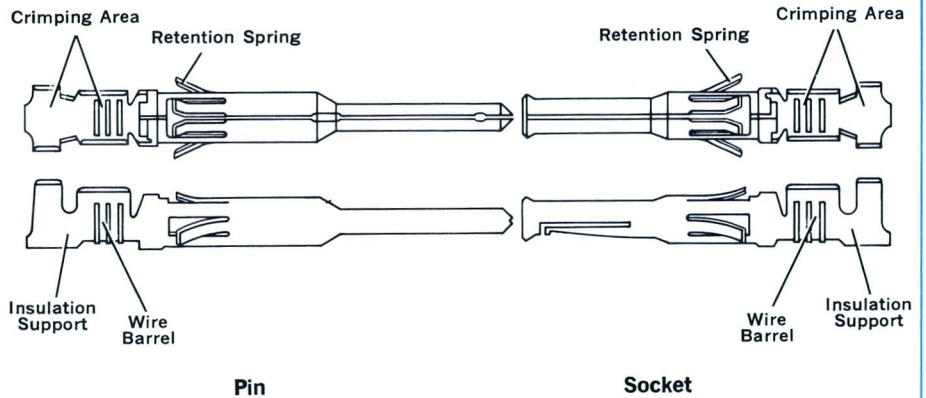
CONTACTS

TYPE VI contacts are economical, one-piece contacts for the "M" Series connector line. These contacts are available for four wire ranges, covering #28-14 AWG wire sizes. They feature a single-piece design with built-in insulation support, retention tines and a cantilever spring on the socket. Contacts for wire sizes #18-16 AWG and #14 AWG can be installed into connector housings without an insertion tool. Where smaller wires are involved, it may be necessary to use a simple insertion tool.

The TYPE XII contact is a crimp, snap-in, power contact, available in loose piece for hand tool application or in reel fed strip form for high speed automatic machine application. This completely new contact design is intended for power circuits up to 35 amps. The male and female contact assemblies consist of two heavy duty spring members. This heavy duty spring action assures proper electrical contact and withdrawal forces. This new contact provides positive insulation support and had an integral nylon latch for contact retention within the connector housing. TYPE XII contacts are available in two contact sizes for wire range 8 through 10 and 12 through 16. Contacts are made of high conductive copper and have gold over nickel plating or tin plating. A special grounding pin and a high voltage (3.5 KV) pin are available.

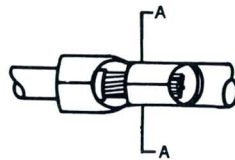
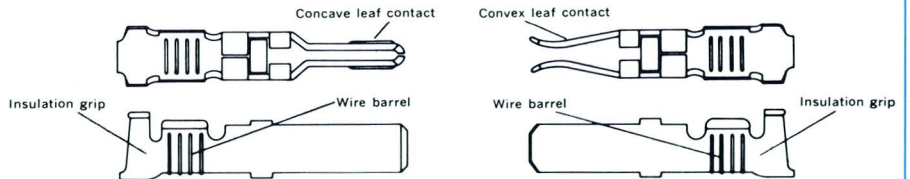
THE "F" CRIMP — The "F" Crimp is best suited for use on formed contacts. It produces high conductivity and high tensile strength on TYPE III (+) contacts. The pre-calibrated stroke of the crimping jaws the selected block and configuration of AMP automatic tools exert the exact pressure needed to produce an optimum crimp. This virtually eliminates corrosion-inducing voids. (See macro-photograph at right.)

TYPE VI



CONTINUOUS STRIP FORMED CONTACTS

TYPE XII



SECTION A-A

Posted contacts are acceptable for all applicable connectors that are wireable with hand tools and semi-automatic and fully automatic machines.

The COAXICON Miniature Contact is a crimp, snap-in type, designed for high density, multiple circuit connector applications . . . it features the exclusive AMP one-crimp termination of inner conductor, outer braid and cable support. Construction consists of male and female center contacts separated from outer shells by dielectric material. Inner contacts feature closed entry and a cantilever-beam engagement spring that is built into the socket itself.

Another cantilever-beam engagement spring in the male shell provides contact pressure between outer shells. Special type retention spring provides firm seating into the connector housing and acts as a shield over crimping ports. Wide range of cable sizes is accommodated by utilizing three sizes of outer shell termination ends and three sizes of inner contacts.

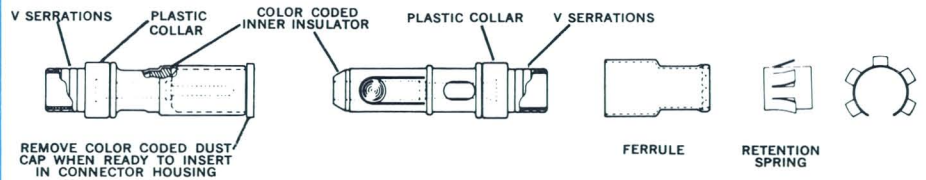
AMP's subminiature COAXICON contact is a crimp, snap-in contact, designed for high density, multiple circuit connector application. These subminiature coaxial contacts feature the exclusive one-crimp termination of inner conductor, outer braid and cable support. The design includes complete contact assembly with built in retention spring and a separate ferrule. IDEAL for mixing coaxial and pin and socket contacts in the same connector.

Subminiature coaxial contacts fit any connector cavity that will accept an AMP pin or socket contact. This means you can now bring power and shielded signal circuits through the same connector . . . and in any combination. No longer is it necessary to have special housings with specific positions for coaxial contacts. Now you can select from a variety of connector configurations in a number of positions, with a choice of housing materials and hardware.

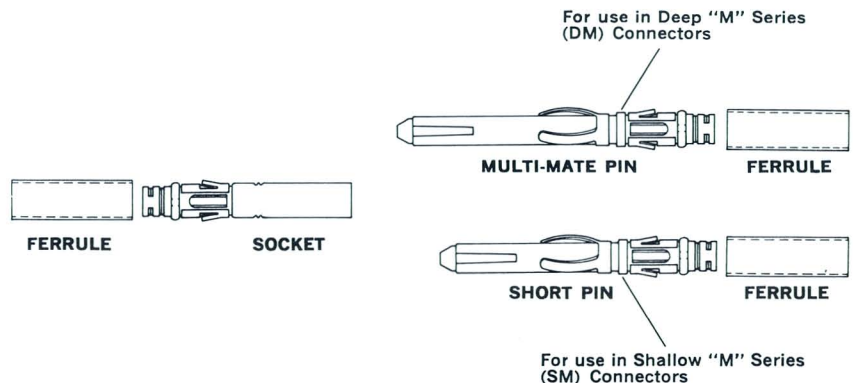
POSTED CONTACT



MINIATURE COAXICON CONTACT



SUBMINIATURE COAXICON CONTACT



To assemble your connector here's all that you need to do:

1. Choose any AMP Series "M" connector housing which accepts #16 contacts TYPE II, III(+) and VI.
2. Crimp and snap in the subminiature COAXICON contacts.

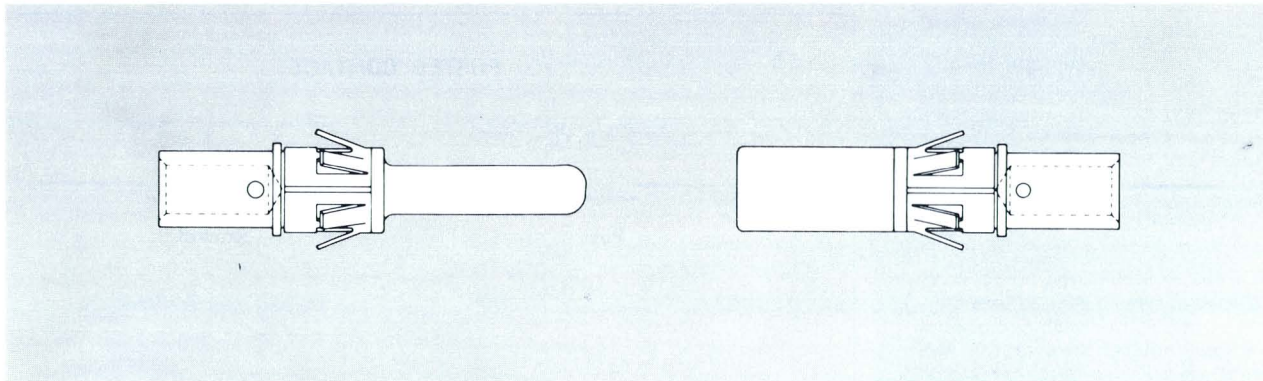
3. If you are mixing your power and shielded signal circuits, crimp and snap in the pin and socket contacts.

Whether you mix or match the contacts in the connector, you not only get quick, easy assembly, but a uniform reliability that eliminates rejects.



CONTACT SPECIFICATIONS

TYPE I

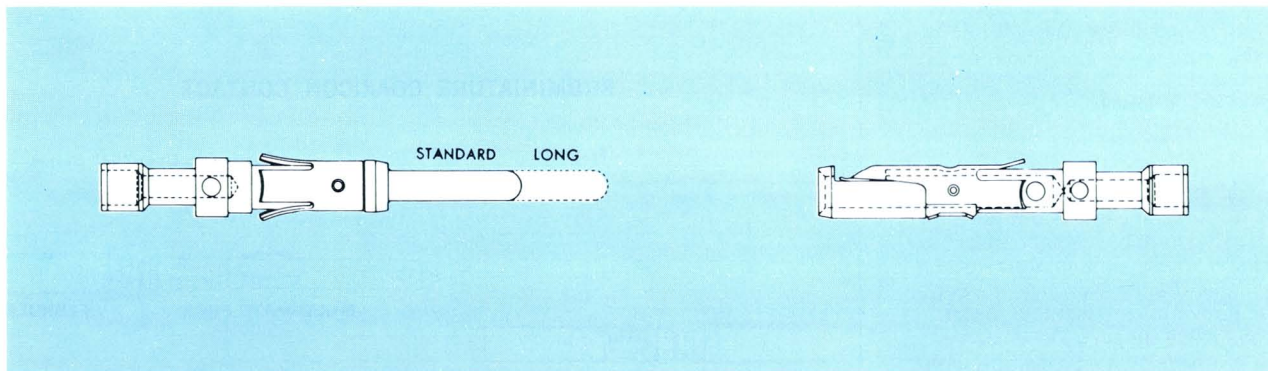


CONTACT SIZE 12 — PIN DIAMETER .094 (Test Current — 23 Amperes)‡

CONDUCTOR SIZE	WIRE RANGE		CONTACT ASSEMBLY NUMBER		BODY FINISH	WIRE STRIP LENGTH	FERRULE REQUIRED	CRIMPING TOOL				EXTRACTION TOOL
	INSULATION		PIN	SOCKET				CONTACT		FERRULE		
	MIN. COMB. O. D.	MAX. COMB. O. D.						69365 AIR GUN DIES	HAND TOOL	69365 AIR GUN DIES	HAND TOOL	
14-12	No Insulation		202422-1	202417-1	.00003 Gold over .00003 Nickel	1/4	206308	90122	90121	None	None	305183-8
18-16	Support		202421-1	202418-1								

‡Single Contact Free Air Test Currents only. Not to be construed as Contact Rating Current, use only for testing.

TYPE II



CONTACT SIZE 20 — PIN DIAMETER .040 (Test Current — 7.5 Amperes)‡

WIRE SIZE RANGE	PIN LENGTH	TAPE MOUNTED CONTACT ASSEMBLY NUMBER		LOOSE PIECE CONTACT ASSEMBLY NUMBER		INS. DIA. RANGE	COLOR CODE	WIRE STRIP LENGTH	CRIMPING TOOLS			
		PIN	SOCKET	PIN	SOCKET				69365 AIR GUN DIES	AMP-TAPEMATIC 69118-1 DIES*	AMP-TAPETRONIC 69875 DIES**	HAND TOOL
32-30		—	—	201625-1	201627-1	.030-.048	White/Red	13/64	90230-1	90103	90249-1	45099
		201607-4	201609-4	201607-1	201609-1	.035-.055	Red/Red					
28-24	Stand.	201354-2	201353-2	201354-1	201353-1	.048-.065	Red/Red	90111	None			90093
		—	—	202189-1	202190-1	.095-.110	Green					
24-20		201582-5	201584-5	201582-1	201584-1	.040-.062	Yellow/Red	90230-1	90103			45099
		200334-8	200331-8	200334-1	200331-1	.055-.075	Yellow/Red					
18-16		201591-4	201589-4	201591-1	201589-1	Non Insulation Support	Blue/Blue	1/4	90231-2	90080-2	90250-1	45098

Body Finish — .00003 Gold over .00003 Nickel
 Spring Material — Stainless Steel
 ‡Single Contact Free Air Test Currents only. Not to be construed as Contact Rating Current, use only for testing.

Insertion Tool—Part No. 200893-2 for .070 Ins. Dia. or less—Extraction Tool—Part N. 305183
 *Designates type of tape required (1M box)
 **Designates type of tape required (1M reel or 5M reel)

TYPE II (Continued)

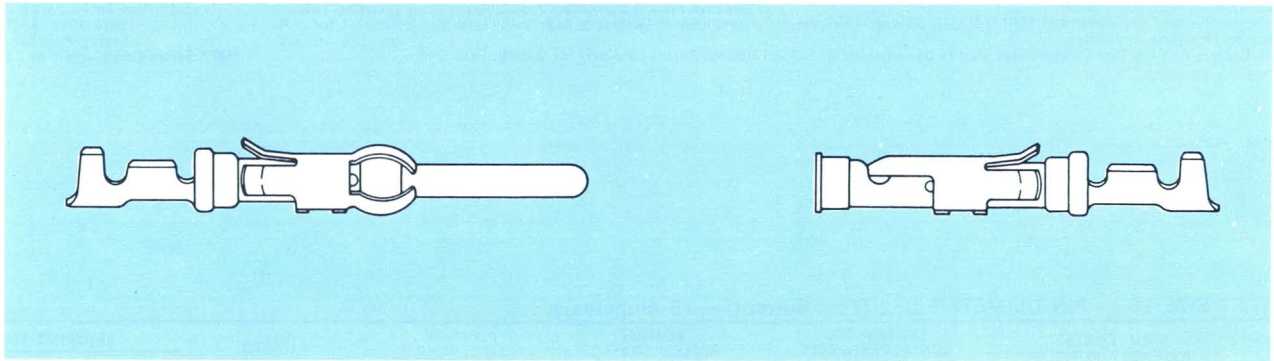
CONTACT SIZE 16 — PIN DIAMETER .062 (Test Current — 13 Amperes)‡

WIRE SIZE RANGE	PIN LENGTH	TAPE MOUNTED CONTACT ASSEMBLY NUMBER		LOOSE PIECE CONTACT ASSEMBLY NUMBER		INS. DIA. RANGE	COLOR CODE	WIRE STRIP LENGTH	CRIMPING TOOLS			HAND TOOL
		PIN	SOCKET	PIN	SOCKET				69365 AIR GUN DIES	AMP-TAPEMATIC 69118-1 DIES*	AMP-TAPETRONIC 69875 DIES**	
32-30	Long	—	—	201555-1	201554-1	.030-.048	White/Red	13/64	90230-1	90103	90249-1†	90093
	Stand.	—	201613-4	201649-1	201613-1	.035-.055	Red/Red					
28-24	Long	201611-4	201613-4	201611-1	201613-1	.035-.055	Red/Red	13/64	90230-1	90103	90249-1†	90093
	Long	201334-3	201332-3	201334-1	201332-1	.048-.065	Red/Red					
24-20	Long	—	—	202410-1	202411-1	.095-.110	Green	13/64	90111	None	90249-1†	90093
	Stand.	201647-2	201580-4	201647-1	201580-1	.040-.062	Yellow/Red					
22-18	Long	—	—	—	—	.040-.062	Yellow/Red	13/64	90230-1	90103	90249-1†	90093
	Stand.	200679-5	201328-9	200679-1	201328-1	.055-.085	Yellow/Red					
2-#18	Long	201330-6	201328-9	201330-1	201328-1	.055-.085	Yellow/Red	13/64	90231-2	90080-2	90250-1	90136-1
	Stand.	200681-3	200333-8	200681-1	200333-1	No Insulation Support	Blue/Blue					
18-16	Long	202507-2	202508-2	202507-1	202508-1	.080-.105	—	1/4	None	90207-1	90250-1	90136-1
	Long	200336-6	200333-8	200336-1	200333-1	No Insulation Support	Blue/Blue					
14	Grd. Pin	—	—	204219-1	—	No Insulation Support	—	1/4	90231-1	90080	—	45098
	Stand.	201645-2	201568-3	201645-1	201568-1	No Insulation Support	Violet/Blue					
14	Long	201570-2	201568-3	201570-1	201568-1	No Insulation Support	Violet/Blue	1/4	90231-2	90080-2	90250-1	45098

Body Finish—.00003 Gold over .00003 Nickel
 Spring Material—Stainless Steel
 †Die 90249-2 must be used for application of long pin contacts—
 Part Nos. 201330, 201334, 201578 and 201611

Insertion Tool—Part No. 200893-2 for .070 Ins. Dia. or less—Extraction Tool—Part No. 305183
 *Designates type of tape required (1M box)
 **Designates type of tape required (1M reel or 5M reel)
 ‡Single Contact Free Air Test Currents only. Not to be construed as Contact Rating Current, use only for testing.

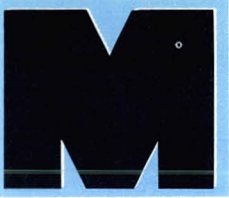
TYPE III (+)



CONTACT SIZE 20 — PIN DIAMETER .040 (Test Current — 7.5 Amperes)‡

WIRE SIZE RANGE	STRIP CONTACT ASSEMBLY NUMBER*		LOOSE PIECE CONTACT ASSEMBLY NUMBER		REVERSE REELED CONTACT ASSEMBLY NUMBER**		BODY FINISH	INS. DIA. RANGE	CRIMPING TOOL	
	PIN	SOCKET	PIN	SOCKET	PIN	SOCKET			HAND	AUTO-MACHINE
26-24	66294-1	66295-1	66306-1	66307-1	66294-5	66295-5	.00003 Gold over .00005 Nickel	.035-.055	90277-1 or 90066	
	66294-2	66295-2	66306-2	66307-2	66294-6	66295-6	Tin			
	66294-3	66295-3	66306-3	66307-3	66294-7	66295-7	.000015 Gold over .00005 Nickel			
	66294-4	66295-4	66306-4	66307-4	66294-8	66295-8	.00003 Gold over .00005 Nickel†			
24-20	66296-1	66297-1	66308-1	66309-1	66296-5	66297-5	.00003 Gold over .00005 Nickel	.040-.080	90277-1, 90066 or 90067	Electric Press with Air Feed
	66296-2	66297-2	66308-2	66309-2	66296-6	66297-6	Tin			
	66296-3	66297-3	66308-3	66309-3	66296-7	66297-7	.000015 Gold over .00005 Nickel			
	66296-4	66297-4	66308-4	66309-4	66296-8	66297-8	.00003 Gold over .00005 Nickel†			
18-16	66298-1	66299-1	66310-1	66311-1	66298-5	66299-5	.00003 Gold over .00005 Nickel	.080-.100	90277-1 or 90067	
	66298-2	66299-2	66310-2	66311-2	66298-6	66299-6	Tin			
	66298-3	66299-3	66310-3	66311-3	66298-7	66299-7	.000015 Gold over .00005 Nickel			
	66298-4	66299-4	66310-4	66311-4	66298-8	66299-8	.00003 Gold over .00005 Nickel†			

Spring Material—Stainless Steel. †Selective Plating on Contact Area Only. Insertion Tool—91002-1 for .070 Ins. Dia. or less. Extraction Tool—Part No. 305183
 *For use on Standard Applicator and AMP-O-MATIC Stripper/Crimper. Remainder of Contact to have Gold Flash. Wire Strip Length—5/32
 **For use on Miniature Applicator. ‡Single Contact Free Air Test Currents only. Not to be construed as Contact Rating Current, use only for testing. Keying Plug for Standard
 †M Series Cavity—Part No. 200821-1



TYPE III (+) (Continued)

CONTACT SIZE 18 — PIN DIAMETER .056 (Test Current — 10 Amperes)‡

WIRE SIZE RANGE	STRIP CONTACT ASSEMBLY NUMBER*		LOOSE PIECE CONTACT ASSEMBLY NUMBER		REVERSE REELED CONTACT ASSEMBLY NUMBER**		BODY FINISH	INS. DIA. RANGE	CRIMPING TOOL	
	PIN	SOCKET	PIN	SOCKET	PIN	SOCKET			HAND	AUTO-MACHINE
30-26	66418-1	66419-1	66422-1	66423-1	66418-5	66419-5	.000030 Gold over .000050 Nickel	.014-.030	90225-2	
	66418-2	66419-2	66422-2	66423-2	66418-6	66419-6	Tin			
	66418-3	66419-3	66422-3	66423-3	66418-7	66419-7	.000015 Gold over .000050 Nickel			
	66418-4	66419-4	66422-4	66423-4	66418-8	66419-8	.000030 Gold over .000050 Nickel†			
26-24	66188-1	66190-1	66237-1	66238-1	66188-5	66190-5	.00003 Gold over .00005 Nickel	.035-.055	90277-1 or 90066	
	66188-2	66190-2	66237-2	66238-2	66188-6	66190-6	Tin			
	66188-3	66190-3	66237-3	66238-3	66188-7	66190-7	.00003 Gold over .00005 Nickel†			
	66188-4	66190-4	66237-4	66238-4	66188-8	66190-8	.000015 Gold over .00005 Nickel			
24-20	66192-1	66194-1	66239-1	66240-1	66192-5	66194-5	.000030 Gold over .000050 Nickel	.040-.080	90277-1, 90066 or 90067	
	66192-2	66194-2	66239-2	66240-2	66192-6	66194-6	Tin			
	66192-3	66194-3	66239-3	66240-3	66192-7	66194-7	.00003 Gold over .00005 Nickel†			
	66192-4	66194-4	66239-4	66240-4	66192-8	66194-8	.000015 Gold over .00005 Nickel			
18-16	66196-1	66198-1	66241-1	66242-1	66196-5	66198-5	.00003 Gold over .00005 Nickel	.080-.100	90277-1 or 90067	
	66196-2	66198-2	66241-2	66242-2	66196-6	66198-6	Tin			
	66196-3	66198-3	66241-3	66242-3	66196-7	66198-7	.00003 Gold over .00005 Nickel†			
	66196-4	66198-4	66241-4	66242-4	66196-8	66198-8	.000015 Gold over .00005 Nickel			

Spring Material—Stainless Steel.

*For use on Standard Applicator and AMP-O-MATIC Stripper/Crimper.

**For use on Miniature Applicator.

‡Single Contact Free Air Test Currents only. Not to be construed as Contact Rating Current, use only for testing.

†Selective Plating on Contact Area Only. Remainder of Contact to have Gold Flash.

Insertion Tool—
91002-1 for .070
Ins. Dia. or less.

Extraction Tool—Part No. 305183
Wire Strip Length—5/32

Keying Plug for Standard
"M" Series Cavity—Part No. 200821-1

Electric Press with Air Feed

Electric Press With Air Feed

CONTACT SIZE 16 — PIN DIAMETER .062 (Test Current — 13 Amperes)‡

WIRE SIZE RANGE	STRIP CONTACT ASSEMBLY NUMBER*		LOOSE PIECE CONTACT ASSEMBLY NUMBER		REVERSE REELED CONTACT ASSEMBLY NUMBER**		BODY FINISH	INS. DIA. RANGE	CRIMPING TOOL	
	PIN	SOCKET	PIN	SOCKET	PIN	SOCKET			HAND	AUTO-MACHINE
30-26	66477-1	66479-1	—	66483-1	—	—	.00003 Gold over .00005 Nickel	.070-100	90282-1	
	66425-1	66424-1	66429-1	66428-1	66425-5	66424-5	.000030 Gold over .000050 Nickel			
	66425-2	66424-2	66429-2	66428-2	66424-6	66424-6	Tin			
	66425-3	66424-3	66429-3	66428-3	66425-7	66424-7	.000015 Gold over .000050 Nickel			
	66425-4	66424-4	66429-4	66428-4	66425-8	66424-8	.000030 Gold over .000050 Nickel†			
	66393-1	66394-1	66406-1	66405-1	66393-5	66394-5	.00003 Gold over .00005 Nickel			
	66393-2	66394-2	66406-2	66405-2	66393-6	66394-6	Tin			
	66393-3	66394-3	66406-3	66405-3	66393-7	66394-7	.000015 Gold over .00005 Nickel			
	66393-4	66394-4	66406-4	66405-4	66393-8	66394-8	.00003 Gold over .00005 Nickel†			
	66106-1	66108-1	66107-1	66109-1	66106-5	66108-5	.00003 Gold over .00005 Nickel			
26-24	66106-2	66108-2	66107-2	66109-2	66106-6	66108-6	Tin	.035-.055	90277-1 or 90066	
	66106-3	66108-3	66107-3	66109-3	66106-7	66108-7	.000015 Gold over .00005 Nickel			
	66106-4	66108-4	66107-4	66109-4	66106-8	66108-8	.00003 Gold over .00005 Nickel†			
	66102-1	66104-1	66103-1	66105-1	66102-6	66104-6	.00003 Gold over .00005 Nickel			
24-20	66102-2	66104-2	66103-2	66105-2	66102-7	66104-7	Tin	.040-.080	90277-1, 90066 or 90067	
	66102-3	66104-3	66103-3	66105-3	66102-8	66104-8	.000015 Gold over .00005 Nickel			
	66102-4	66104-4	66103-4	66105-4	66102-9	66104-9	.00003 Gold over .00005 Nickel†			

‡Single Contact Free Air Test Currents only. Not to be construed as Contact Rating Current, use only for testing.

TYPE III (+) (Continued)

CONTACT SIZE 16 — PIN DIAMETER .062 (Test Current — 13 Amperes)‡

WIRE SIZE RANGE	STRIP CONTACT ASSEMBLY NUMBER*		LOOSE PIECE CONTACT ASSEMBLY NUMBER		REVERSE REELED CONTACT ASSEMBLY NUMBER**		BODY FINISH	INS. DIA. RANGE	CRIMPING TOOL	
	PIN	SOCKET	PIN	SOCKET	PIN	SOCKET			HAND	AUTO-MACHINE
24-20	66332-1	66331-1	66400-1	66399-1	66332-5	66331-5	Tin	.080-.100	90277-1, 90067-2 or 90225-2	
	66332-2	66331-2	66400-2	66399-2	66332-6	66331-6	.00003 Gold over .00005 Nickel			
	66332-3	66331-3	66400-3	66399-3	66332-7	66331-7	.000015 Gold over .00005 Nickel			
	66332-4	66331-4	66400-4	66399-4	66332-8	66331-8	.00003 Gold over .00005 Nickel†			
18-16	66098-1	66100-1	66099-1	66101-1	66098-6	66100-6	.00003 Gold over .00005 Nickel	.080-.100	90277-1, 90067, 90208-1 or 90067-2	Electric Press With Air Feed
	66098-2	66100-2	66099-2	66101-2	66098-7	66100-7	Tin			
	66098-3	66100-3	66099-3	66101-3	66098-8	66100-8	.000015 Gold over .00005 Nickel			
	66098-4	66100-4	66099-4	66101-4	66098-9	66100-9	.00003 Gold over .00005 Nickel†			
14	66359-1	66358-1	66361-1	66360-1	66359-5	66358-5	.00003 Gold over .00005 Nickel	.080-.100	90208-1	
	66359-2	66358-2	66361-2	66360-2	66359-6	66358-6	Tin			
	66359-3	66358-3	66361-3	66360-3	66359-9	66358-9	.000015 Gold over .00005 Nickel			
	66359-4	66358-4	66361-4	66360-4	1-66359-0	1-66358-0	.00003 Gold over .00005 Nickel†			

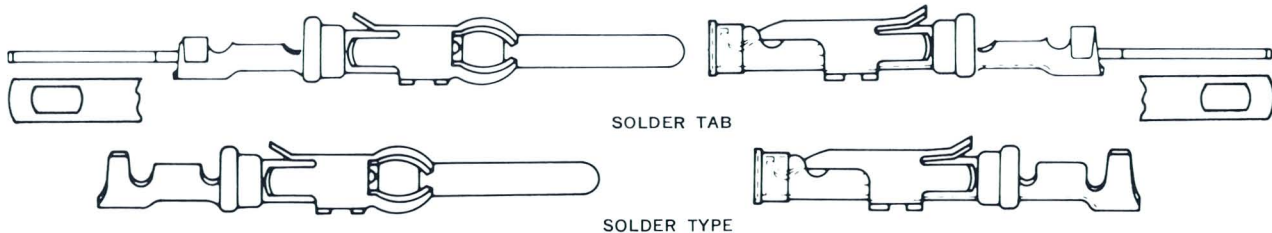
Spring Material—Stainless Steel. †Selective Plating on Contact Area Only. Insertion Tool—91002-1 for .070 Ins. Dia. or less. Extraction Tool—Part No. 305183 Wire Strip Length—5/32 Keying Plug for Standard “M” Series Cavity—Part No. 200821-1
 *For use on Standard Applicator and AMP-O-MATIC Stripper/Crimper. ‡Single Contact Free Air Test Currents only. Not to be construed as Contact Rating Current, use only for testing.
 **For use on Miniature Applicator.

TYPE III (+) WITH WRAP-TYPE INSULATED CRIMP

CONTACT SIZE 16 — PIN DIAMETER .062 (Test Current — 13 Amperes)‡

WIRE SIZE RANGE	STRIP CONTACT ASSEMBLY NUMBER*		LOOSE PIECE CONTACT ASSEMBLY NUMBER		REVERSE REELED CONTACT ASSEMBLY NUMBER**		BODY FINISH	INS. DIA. RANGE	CRIMPING TOOL	
	PIN	SOCKET	PIN	SOCKET	PIN	SOCKET			HAND	AUTO-MACHINE
24-20	66564-1	66563-1	66566-1	66565-1	66564-5	66563-5	.000030 Gold over .000050 Nickel	.060-.135	90331-1	Electric Press With Air Feed
	66564-2	66563-2	66566-2	66565-2	66564-6	66563-6	Tin			
	66564-3	66563-3	66566-3	66565-3	66564-7	66563-7	.000015 Gold over .000050 Nickel			
	66564-4	66563-4	66566-4	66565-4	66564-8	66563-8	.000030 Gold over .000050 Nickel†			
18-14	—	—	66602-1	66601-1	66597-1	66598-1	Tin	.110-.150	90310-1	
	—	—	66602-2	66601-2	66597-2	66598-2	.000030 Gold over .000050 Nickel†			

Spring Material—Stainless Steel. †Selective Plating on Contact Area Only. Extraction Tool—Part No. 305183 Wire Strip Length—5/32
 *For use on Standard Applicator and AMP-O-MATIC Stripper/Crimper. ‡Single Contact Free Air Test Currents only. Not to be construed as Contact Rating Current, use only for testing.
 **For use on Miniature Applicator.
 Note: These contacts are only used in 17 Position High Voltage Connector, Metric Connectors and large position Circular Plastic Connectors.



TYPE III (+) SOLDER TYPE CONTACTS

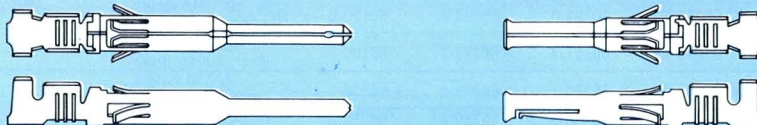
WIRE SIZE	LOOSE PIECE CONTACT ASSEMBLY		FINISH	CONTACT SIZE	PIN DIAMETER
	PIN NO.	SOCKET NO.			
26-20	66182-1	66183-1	.00003 Gold over .00005 Nickel	16	.062
18-16	66180-1	66181-1			
Solder Tab	202236-1	202237-1	Tin		
	202236-2	202237-2			

Spring Material—Stainless Steel.



CONTACT SPECIFICATIONS

TYPE VI



CONTACT SIZE 16 — PIN DIAMETER .062 (Test Current — 13 Amperes)‡

WIRE SIZE RANGE	STRIP CONTACT ASSEMBLY NUMBER*		LOOSE PIECE CONTACT ASSEMBLY NUMBER		REVERSE REELED CONTACT ASSEMBLY NUMBER**		BODY FINISH	INS. DIA. RANGE	HAND TOOL
	PIN	SOCKET	PIN	SOCKET	PIN	SOCKET			
28-26	66585-1	66586-1	66595-1	66596-1	66585-2	66586-2	Tin	.035-.055	90277-1 90066 or 90066-2
	66585-3	66586-3	66595-2	66596-2	66585-4	66586-4	.000030 Gold over .000050 Nickel†		
24-20	66583-1	66584-1	66593-1	66594-1	66583-2	66584-2	Tin	.040-.080	90277-1, 90066 or 90067
	66583-3	66584-3	66593-2	66594-2	66583-4	66584-4	.000030 Gold over .000050 Nickel†		
22-18	66581-1	66582-1	66591-1	66592-1	66581-2	66582-2	Tin	.055-.110	90327-1
	66581-3	66582-3	66591-2	66592-2	66581-4	66582-4	.000030 Gold over .000050 Nickel†		
18-16	66579-1	66580-1	66589-1	66590-1	66579-2	66580-2	Tin	.080-.100	90277-1, 90067, 90067-2 or 90208-1
	66579-3	66580-3	66589-2	66590-2	66579-4	66580-4	.000030 Gold over .000050 Nickel†		
14	66577-1	66578-1	66587-1	66588-1	66577-2	66578-2	Tin	.080-.135	90310-1
	66577-3	66578-3	66587-2	66588-2	66577-4	66578-4	.000030 Gold over .000050 Nickel†		

*For use on Standard Applicator and AMP-O-MATIC Stripper/Crimper Machine. †Selective Plating on Contact Area Only. ‡Single Contact Free Air Test Currents only. Not to be construed as Contact Rating Current, use only for testing.
 **For use on Miniature Applicator. ‡Remainder of Contact to have Gold Flash. †Insertion Tool—Part No. 91002 for .070 Ins. Dia. or less.
 †Extraction Tool—Part No. 305183 Wire Strip Length—5/32

TYPE XII

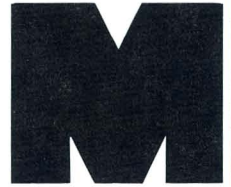
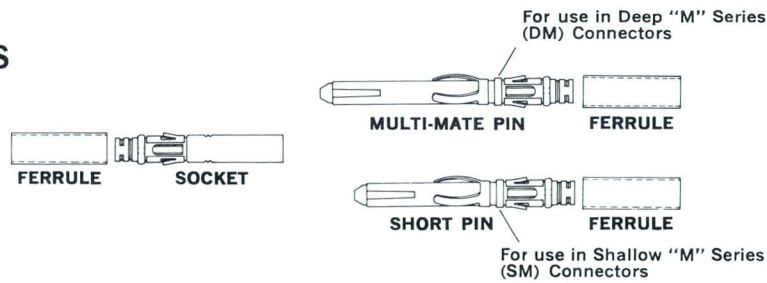


WIRE SIZE RANGE	CONTACT FORM	STANDARD		GROUNDING MALE	HI-VOLT (3.5 KV) MALE	FINISH	INS. DIA. RANGE	DIE INSERT NO. FOR TOOLS HAND 69710-1 OR PNEU. 69365
		MALE	FEMALE					
16 and 14-12	Strip	66255-1	66252-1	66256-1	66329-1	Tin	.135-160	90145-2 (16 Wire)
	Loose Piece	66261-1	66258-1	66262-1	66330-1			
	Strip	66255-2	66252-2	66256-2	66329-2	.00003 Gold over .00005 Nickel		90145-1 (14-12 Wire)
	Loose Piece	66261-2	66258-2	66262-2	66330-2			
	Strip	66255-3	66252-3	66256-3	66329-3	.000015 Gold over .00005 Nickel		
	Loose Piece	66261-3	66258-3	66262-3	66330-3			
10-8	Strip	66253-1	66251-1	66254-1	66326-1	Tin	.190-.220	90140-1
	Loose Piece	66259-1	66257-1	66260-1	66327-1			
	Strip	66253-2	66251-2	66254-2	66326-2	.00003 Gold over .00005 Nickel		
	Loose Piece	66259-2	66257-2	66260-2	66327-2			
	Strip	66253-3	66251-3	66254-3	66326-3	.000015 Gold over .00005 Nickel		
	Loose Piece	66259-3	66257-3	66260-3	66327-3			

Keying Plug—Part No. 206508-1

Extraction Tool—Part No. 91019-3

SUBMINIATURE COAXICON CONTACTS

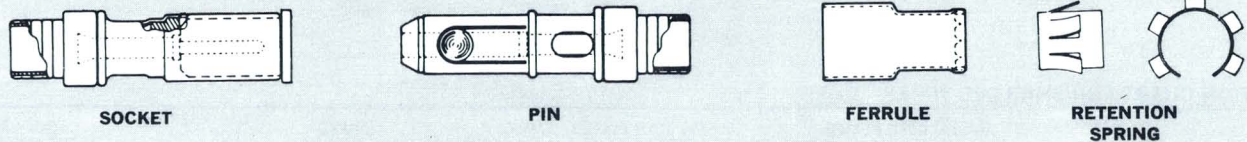


CABLE SIZE	CONTACT FORM	MULTI-MATE PIN NUMBER		SHORT PIN NUMBER		SOCKET NUMBER		FERRULE NUMBER	HAND CRIMPING TOOL NUMBER	DIE INSERT NOS. FOR HAND 69710, PNEU. 69365† & 69365-2 TOOLS	PRESS & APPLICATOR
		.000030 GOLD PLATED CONTACTS	.000050 GOLD PLATED CONTACTS	.000030 GOLD PLATED CONTACTS	.000050 GOLD PLATED CONTACTS	.000030 GOLD PLATED CONTACTS	.000050 GOLD PLATED CONTACTS				
RG-178, 196	Strip	226533-2	226533-5	51562-2*	51562-5*	51564-2*	51564-5*	1-332057-0	—	—	220014-2
	Loose Piece	226537-2	226537-5	51563-2*	51563-5*	51565-2*	51565-5*		69656-2, Mod. E	69690-2	—
RG-196 Double Braid	Strip	226533-2	226533-5	51562-2*	51562-5*	51564-2*	51564-5*	225088-1	—	—	—
	Loose Piece	226537-2	226537-5	51563-2*	51563-5*	51565-2*	51565-5*		69656-9, Mod. A	—	—
RG-174, 188, 316	Strip	226533-1	226533-4	51562-1	51562-4	51564-1	51564-4	1-332056-0	—	—	220014-1
	Loose Piece	226537-1	226537-4	51563-1	51563-4	51565-1	51565-4		69656, Mod. E	69690, Mod. D	—
RG-174 Double Braid	Strip	226533-1	226533-4	51562-1	51562-4	51564-1	51564-4	225088-3	—	—	—
	Loose Piece	226537-1	226537-4	51563-1	51563-4	51565-1	51565-4		69656-7, Mod. E	—	—
RG-179, 187	Strip	226533-1	226533-4	51562-1	51562-4	51564-1	51564-4	1-332056-0	—	—	220014-3
	Loose Piece	226537-1	226537-4	51563-1	51563-4	51565-1	51565-4		69656-1, Mod. E	69690-1, Mod. D	—
RG-187 Double Braid	Strip	226533-1	226533-4	51562-1	51562-4	51564-1	51564-4	225088-1	—	—	—
	Loose Piece	226537-1	226537-4	51563-1	51563-4	51565-1	51565-4		69656-8, Mod. E	—	—
RG-161	Strip	226533-1	226533-4	51562-1	51562-4	51564-1	51564-4	1-332056-0	—	—	—
	Loose Piece	226537-1	226537-4	51563-1	51563-4	51565-1	51565-4		69656-5, Mod. D	—	—
26 AWG Shielded, .075 Max. O.D.	Strip	226533-1	226533-4	51562-1	51562-4	51564-1	51564-4	1-332057-0	—	—	220014-4
	Loose Piece	226537-1	226537-4	51563-1	51563-4	51565-1	51565-4		69656-3, Mod. E	69690, Mod. D	—
26 AWG Tw. Pr. Solid or Stranded (7 Str.), .0063 Dia.	Loose Piece	226537-3	226537-6	51563-3	51563-6	51565-3	51565-6	1-332057-0	69656, Mod. E	69690, Mod. D	—
28 AWG Tw. Pr., Solid	Loose Piece	226537-3	226537-6	51563-3	51563-6	51565-3	51565-6	1-332057-0	69656, Mod. E	69690, Mod. D	—
28 AWG Tw. Pr., Stranded (7 Str.), .005 Dia.	Loose Piece	226537-3	226537-6	51563-3	51563-6	51565-3	51565-6	1-332057-0	69656-1, Mod. E or 69656-2, Mod. E	69690-1, Mod. D or 69690-2	—
30 AWG Tw. Pr., Solid	Loose Piece	226537-3	226537-6	51563-3	51563-6	51565-3	51565-6	1-332057-0	69656-2, Mod. E	69690-2	—

*These contacts have insulating liner inside support sleeve.
 †Requires Manual Take-Up Attachment No. 69689.

Extraction Tool—Part No. 305183

MINIATURE COAXICON CONTACTS



Part No. 201142-2

SELECTION CHART FOR COAXIAL CABLE*

FOR RG/U CABLE NO.	.000030 GOLD PLATED CONTACTS		.000100 GOLD PLATED CONTACTS		FERRULE NO.	HAND CRIMPING TOOL NO.	DIE INSERT NO. FOR TOOLS—HAND—69710 PNEU. 69365† & 69365-2	TOOL HANDLE DIE INSERT AND PLASTIC COLLAR COLOR CODE**
	SOCKET NO.	PIN NO.	SOCKET NO.	PIN NO.				
▲71, 71A, 71B	201098-1	201097-1	201098-3	201097-3	330016	69613	69675	Violet & Yellow
▲59, 59A, 59B, 62, 62A, 62B, 124, 140, 210	201098-1	201097-1	201098-3	201097-3	329006	45634-3	69675-1	Yellow
55, 55A, 55B, 141, 142, 223	201146-4	201145-4	201146-9	201145-9	330478	69248-4	69315-4	Blue & Orange
58, 58A, 58B, 58C	201146-4	201145-4	201146-9	201145-9	328663	45740-2	69220-2	Blue
174, 197A, 187, 21-598	201144-1	201143-1	201144-6	201143-6	328666	45638-2	69227-2	White
180, 180A, 195, 21-597	201146-2	201145-2	1-201146-0	1-201145-0	328664	45639-2	69222-2	Red
161	201144-4	201143-4	201144-8	201143-8	328666	69147-2	69230-1	Grey
178, 178A, 196	201512-1	201511-1	201512-3	201511-3	328667	69186-2	69373	Brown
188	201144-5	201143-5	201144-7	201143-7	328666	45638-2	69227-2	White
141A, 142A, 142B	1-201146-3	1-201145-3	—	—	330478	69248-4	69315-4	Blue & Orange
122	201146-1	201145-1	1-201146-5	1-201145-5	328664	45639-2	69222-2	Red



MINIATURE COAXICON CONTACTS (Continued)

SELECTION CHART FOR TWISTED PAIRS*

WIRE SIZE AND TYPE	INSUL- DIAMETER (TWO WIRES) COMBINED)	.000030 GOLD PLATED CONTACTS		.000100 GOLD PLATED CONTACTS		FERRULE NO.	HAND CRIMPING TOOL NO.	DIE INSERT NO. FOR TOOLS— HAND—69710 PNEU.—69365† & 69365-2	TOOL HANDLE, DIE INSERT AND PLASTIC COLLAR COLOR CODE**
		SOCKET NO.	PIN NO.	SOCKET NO.	PIN NO.				
No. 22 or No. 24 Stranded	.115 Max.	201144-5	201143-5	201144-7	201143-7	328666	45638-3	69672	Grey & White
No. 22 or No. 24 Solid or Stranded	.160 Max.	50080-1	50079-1	—	—	329029	45639-2	69222-2	Red
No. 26 or No. 28 Solid	.080 Max.	201512-1	201511-1	201512-3	201511-3	328667	69186-2	69373	Brown

SELECTION CHART FOR VARIOUS MANUFACTURER'S CABLES*

CENTER COND. AWG WIRE	MAX. DIELECT. O.D.	CABLE O.D.	BRAID	.000030 GOLD PLATED CONTACTS		.000100 GOLD PLATED CONTACTS		FERRULE NO.	HAND CRIMPING TOOL NO.	DIE INSERT NO. FOR TOOLS— HAND—69710 PNEU.—69365† & 69365-2	TOOL HANDLE, DIE INSERT AND PLASTIC COLLAR COLOR CODE**
				SOCKET NO.	PIN NO.	SOCKET NO.	PIN NO.				
Brand Rex T209A #29 Awg. 32-26	.076	.112 .122	Single	201146-6	201145-6	1-201146-6	1-201145-6	330587	69360-2	69440	Orange
Raychem 0030D1314 Army Ord. 11207177	.129	.122 .137	Single	201146-6	201145-6	1-201146-6	1-201145-6	330587	69360-2	69440	Orange
32-26	.129	.187 .199	Single or Double	1-201146-1	1-201145-1	—	—	328663	45740-2	69220-2	Blue
22-20	.129	.122 .137	Single	201146-7	201145-7	—	—	330587	69360-2	69440	Orange

*These contacts are for use with special connectors. Consult AMP Engineering for recommendations.

**Wire other than that listed above may be used. Send sample wire and/or specifications to AMP for engineering recommendation.

†Match Plastic Collar and Tool colors for application to cable. Inner Insulator color identifies Wire Barrel of Center Contact.

‡Requires manual take-up attachment No. 69689. Extraction Tool No. 305183-8.

SELECTION CHART FOR SHIELDED WIRE*

SHIELDED WIRE NO.	.000030 GOLD PLATED CONTACTS		.000100 GOLD PLATED CONTACTS		FERRULE NO.	HAND CRIMPING TOOL NO.	DIE INSERT NO. FOR TOOLS— HAND—69710 PNEU.—69365† & 69365-2	TOOL HANDLE, DIE INSERT AND PLASTIC COLLAR COLOR CODE**
	SOCKET NO.	PIN NO.	SOCKET NO.	PIN NO.				
No. 26, NAS-702, Class A & C No. 26, MIL-W-16878, Types E & EE No. 24, NAS-702, Class A & C No. 24, MIL-W-16878, Types E & EE No. 22, NAS-702, Class C No. 22, MIL-W-16878, Type E No. 22, MIL-C-7078 A, Type I No. 1 Dielectric, .068 O.D.	201144-2	201143-2	—	—	328666	69147-2	69230-1	Grey
No. 26, NAS-702, Class B No. 24, NAS-702, Class B No. 22, MIL-W-16878, Type EE	201146-3	201145-3	—	—	328665	45639-2	69222-2	Red
No. 22, NAS-702, Class A No. 22, MIL-C-7078 A, Type II	201144-3	201143-3	201144-9	201143-9	328666	45638-2	69227-2	White
No. 22, MIL-C-7078 A, Types I & II No. 2 Dielectric, .075 O.D. No. 3 Dielectric, .085 O.D.	201146-1	201145-1	—	—	328665	45639-2	69222-2	Red
No. 22, NAS-702, Class B	201146-4	201145-4	201146-9	201145-9	328663	45740-2	69220-2	Blue

*Wire other than that listed above may be used. Send sample wire and/or specifications to AMP for engineering recommendation.

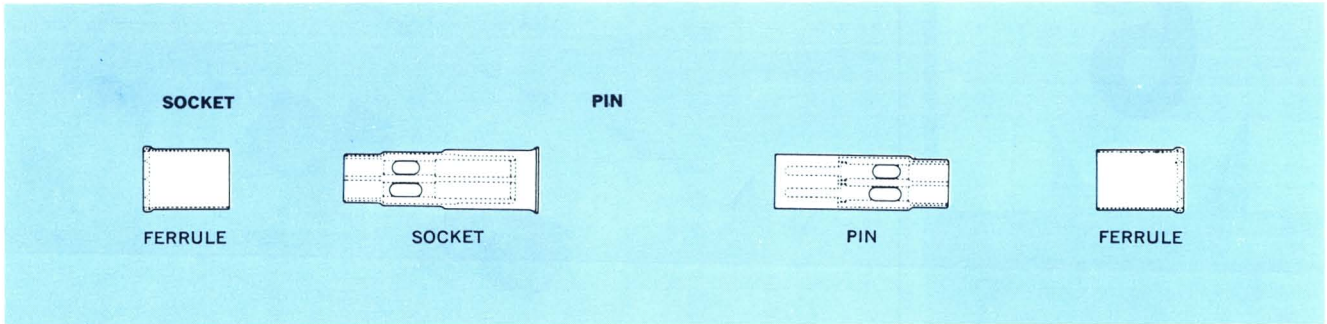
**Match Plastic Collar and Tool colors for application to cable. Inner Insulator color identifies Wire Barrel of Center Contact.

‡Requires manual take-up attachment No. 69689. Extraction Tool No. 305183-8.

CONTACT SPECIFICATIONS

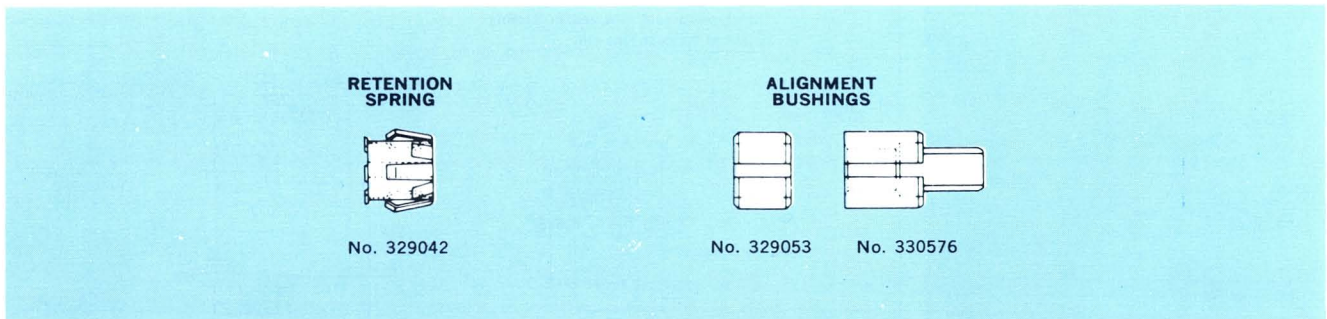


TWIN STANDARD COAXICON CONTACTS



CABLE NO.	SOCKET NO.	PIN NO.	FERRULE NO.	INSULATOR COLOR CODE	HAND CRIMPING TOOL NO.	DIE INSERT NO. FOR TOOLS HAND-69710 PNEU.-69365† & 69365-2
RG 108 A/U (Ctr. Cond. 7/.0089) BELDEN 8737 (Spiral Wrapped Shield)	329010	329009	329041	Natural (White)	45707-2	69231-2
RG 108/U & RG 108 A/U (Ctr. Cond. 7/.0126) BELDEN 8762, 8759	2-329010-1	2-329009-1	329041	Yellow	45707-2	69231-2
2-3932 (Microdot) 2-3934 (Microdot)	329055	329054	329056	Red	45707-2	69231-2
BELDEN 8451, 8641 & 8761	329010	329009	329056	Natural (White)	45707-4	69494-1

†Requires manual take up Attachment No. 69689.



ALIGNMENT BUSHING & RETENTION DEVICE SELECTION CHART

RETENTION SPRING	ALIGNMENT BUSHING NO. & COLOR	USED WITH		EXTRACTION TOOL NUMBER
		SOCKET NUMBER	PIN NUMBER	
329042 (Spring)	329053 Natural (White)	329010	329009,	305141-2
	330576 Yellow	2-329010-1	2-329009-1	
		329055,	329054,	
		329010	329009	

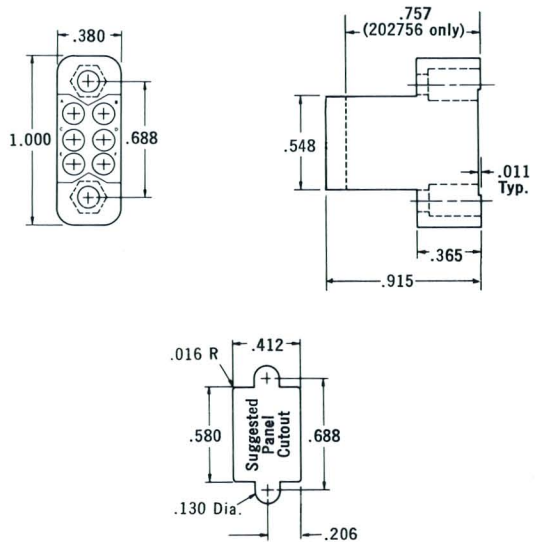
M
6



BLOCKS

6	CONFIGURATION	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
		Pin Block	Socket Block	Pin Block	Socket Block	
POSITION	Shallow	202756-1†	202757-1	202756-3†	202757-3	TYPE II Size 20, TYPE II Size 16 (Std.), TYPE III(+) Size 18 or 20, Sub-miniature COAXICON Contact (Short).
	Deep	202758-1*	202757-1*	202757-3*	202758-3*	TYPE II Size 16 (Long), TYPE III(+) Size 16, TYPE VI Size 16 and Sub-miniature COAXICON Contact (Long).

*Block will accept Pins and/or Sockets
 †Block will accept Pins only



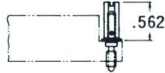
JACKSCREWS



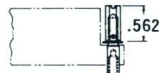
SHORT MALE



SHORT FEMALE



SHORT SHORT MALE



SHORT SHORT FEMALE



FIXED MALE



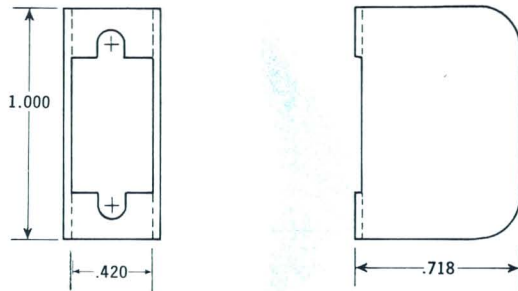
FIXED FEMALE

STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS				TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS							
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200874-1	200875-1	200874-2	200875-2	—	—	200868-1	200870-1	201388-1	201389-1	—	—	200868-2	200870-2	201388-2	201389-2

GUIDE PINS AND SOCKETS

STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	—	—	200389-4	200390-4	—	—

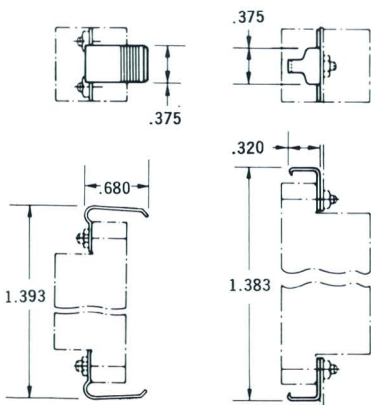
PIN HOODS



INTERNAL OPEN END

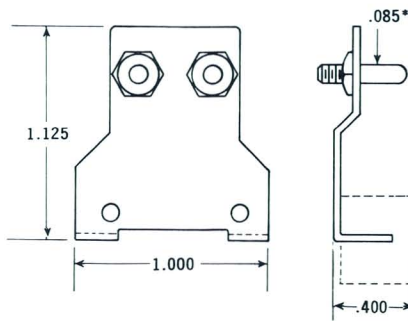
EXTERNAL CLOSED END		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
—	—	—	—	204258-3	—	204258-6	—	—	—

LOCKING SPRING SETS



NICKEL PLATED SPRING STEEL — Male	STAINLESS STEEL Female
201921-1	201922-1

STRAIN RELIEF CLAMPS

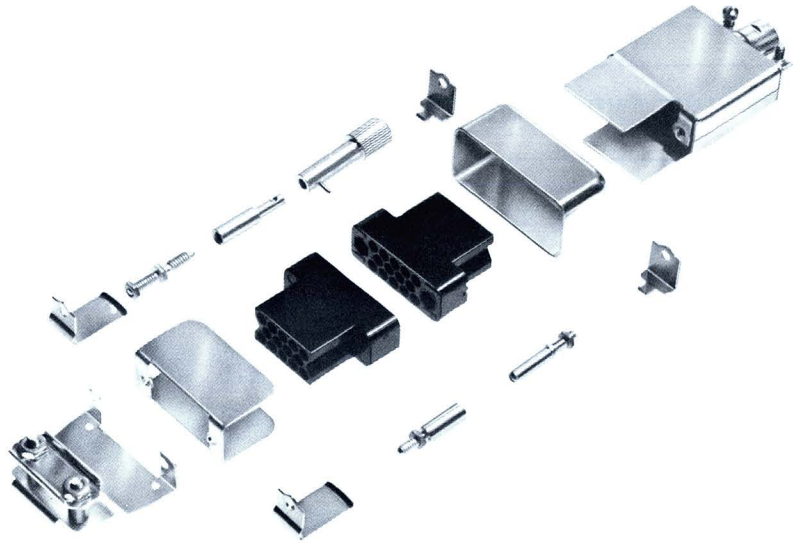


*Sq. In. Max. Cable Area

ZINC PLATED STEEL	
Long	Short
—	203432-1

PIN AND SOCKET CONNECTORS

**M
14**

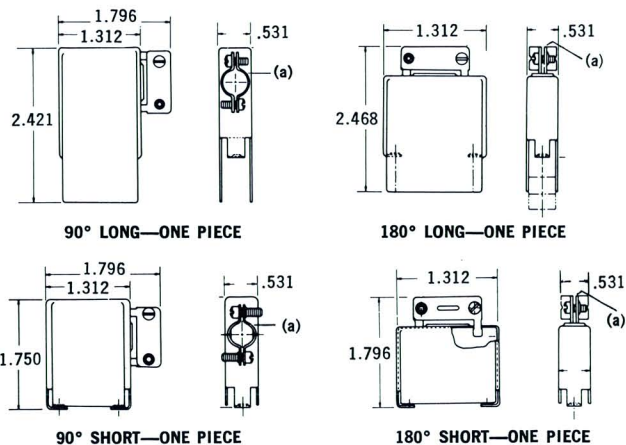


BLOCKS

14	CONFIGURATION	PHENOLIC		DIALYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
		Pin Block	Socket Block	Pin Block	Socket Block	
	Shallow	201297-1†	201298-1	201297-3†	201298-3	TYPE II Size 20, TYPE II Size 16 (Std.), TYPE III(+), Size 18 or 20, Sub-miniature COAXICON Contact (Short).
POSITION	Deep	201355-1*	201298-1*	201298-3*	201355-3*	TYPE II Size 16 (Long), TYPE III(+), Size 16, TYPE VI Size 16 and Sub-miniature COAXICON Contact (Long).

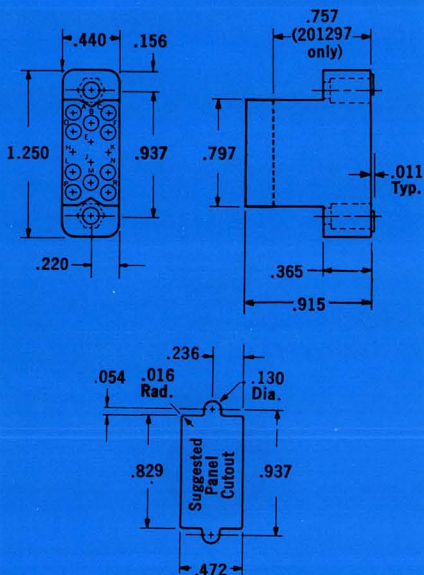
*Block will accept Pins and/or Sockets †Block will accept Pins only

SHIELDS



(a) Cable area — .0918-.1192 Sq. In.

90° 1 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Al. Anod.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
200477-2	201467-2	201378-2	201360-2	—	—	—	—



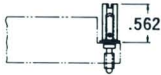
JACKSCREWS



SHORT MALE



SHORT FEMALE



SHORT SHORT MALE



SHORT SHORT FEMALE



FIXED MALE



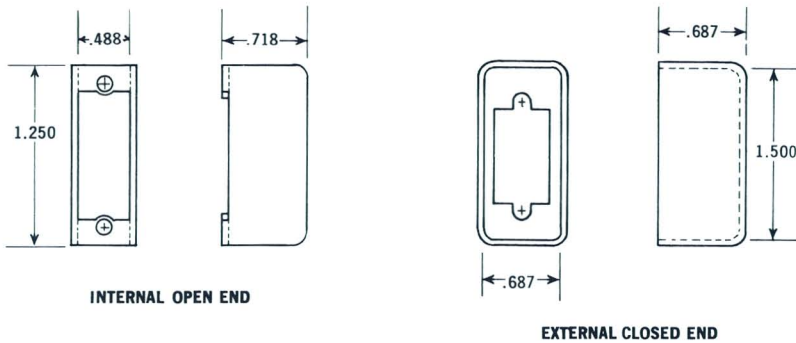
FIXED FEMALE

STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS				TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS							
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200874-1	200875-1	200874-2	200875-2	—	—	200868-1	200870-1	201388-1	201389-1	—	—	200868-2	200870-2	201388-2	201389-2

GUIDE PINS AND SOCKETS

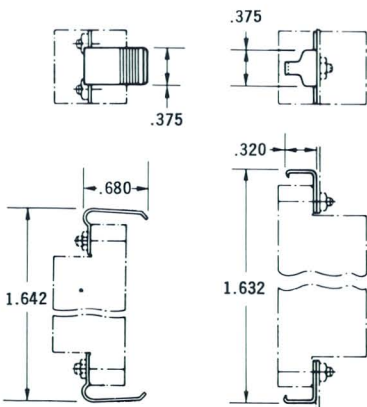
STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	—	—	200389-4	200390-4	—	—

PIN HOODS



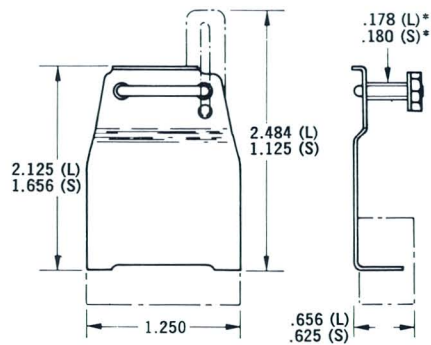
EXTERNAL CLOSED END		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
201347-2	201347-4	—	—	201363-2	—	201363-4	—	—	—

LOCKING SPRING SETS



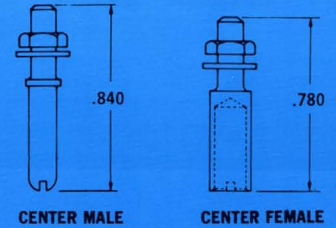
NICKEL PLATED SPRING STEEL — Male	STAINLESS STEEL Female
201921-1	201922-1

STRAIN RELIEF CLAMPS



*Sq. In. Max. Cable Area

ZINC PLATED STEEL	
Long	Short
201843-1	200686-1

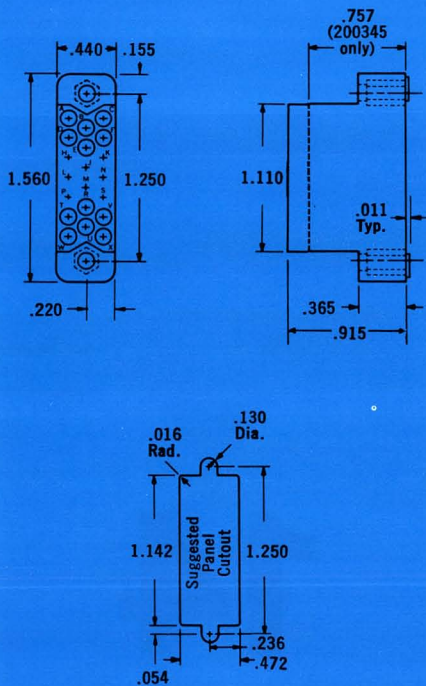
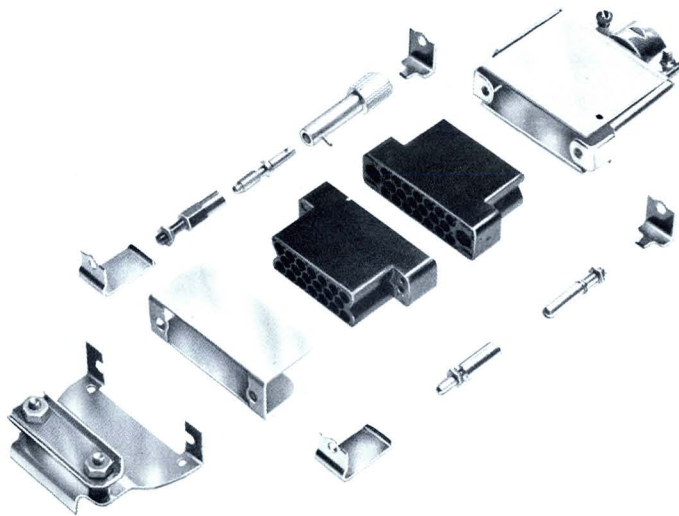


CENTER MALE

CENTER FEMALE

PIN AND SOCKET CONNECTORS

20

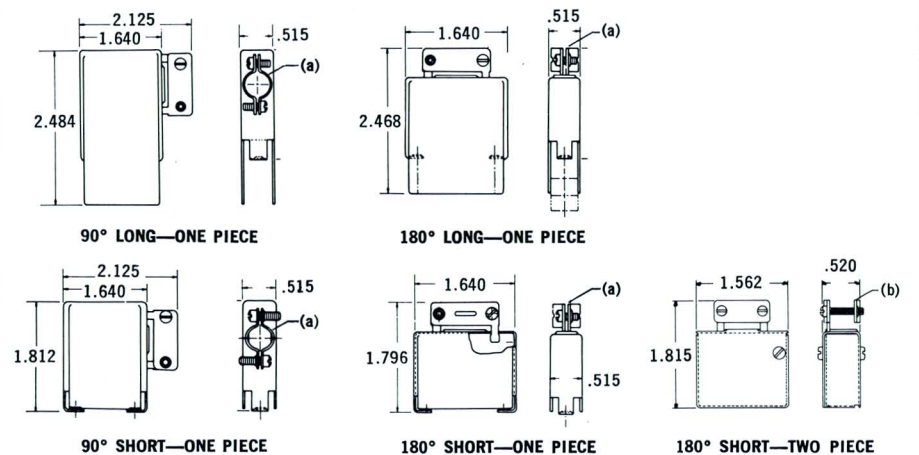


BLOCKS

20	CONFIGURATION	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
		Pin Block	Socket Block	Pin Block	Socket Block	
POSITION	Shallow	200345-2†	200346-2	200345-4†	200346-4	TYPE II Size 20, TYPE II Size 16 (Std.), TYPE III(+), Size 18 or 20, Sub-miniature COAXICON Contact (Short).
	Deep	201356-1*	200346-2*	200346-4*	201356-3*	TYPE II Size 16 (Long), TYPE III(+), Size 16, TYPE VI Size 16 and Sub-miniature COAXICON Contact (Long).

*Block will accept Pins and/or Sockets †Block will accept Pins only

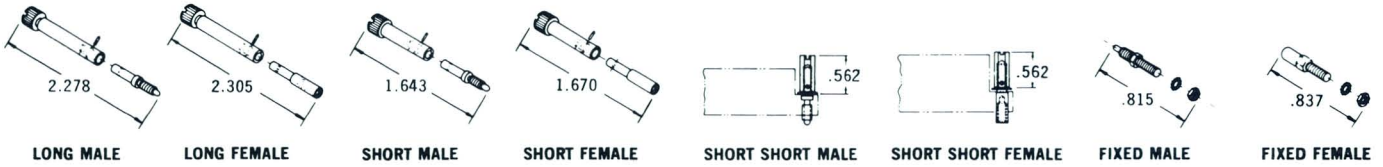
SHIELDS



(a) Cable area — .1176-.1643 Sq. In.
 (b) Cable area — .0260-.1510 Sq. In.

90° 1 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Al. Anod.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
200480-2	201460-2	201380-2	201227-2	—	—	—	204087-1

JACKSCREWS

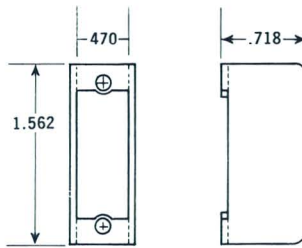


STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS						TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS					
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200874-1	200875-1	200874-2	200875-2	200871-1	200867-1	200868-1	200870-1	201388-1	201389-1	200871-2	200867-2	200868-2	200870-2	201388-2	201389-2

GUIDE PINS AND SOCKETS

STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	—	—	200389-4	200390-4	—	—

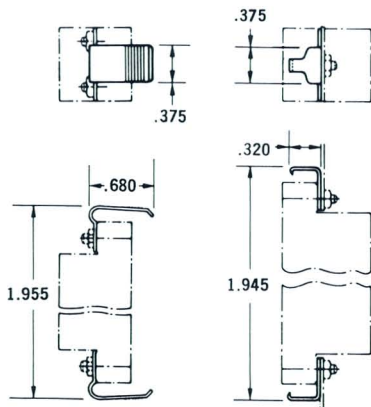
PIN HOODS



INTERNAL OPEN END

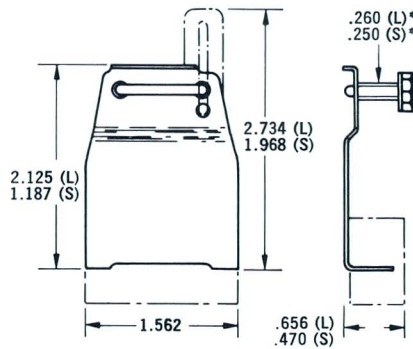
EXTERNAL CLOSED END		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
—	—	—	—	201362-2	—	201362-4	—	—	—

LOCKING SPRING SETS



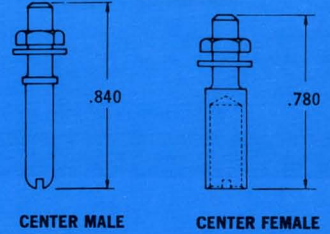
NICKEL PLATED SPRING STEEL — Male	STAINLESS STEEL Female
201921-1	201922-1

STRAIN RELIEF CLAMPS



*Sq. In. Max. Cable Area

ZINC PLATED STEEL	
Long	Short
201844-1	201237-1

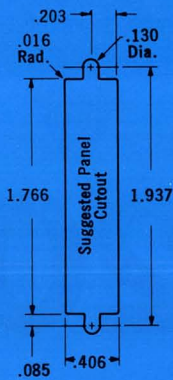
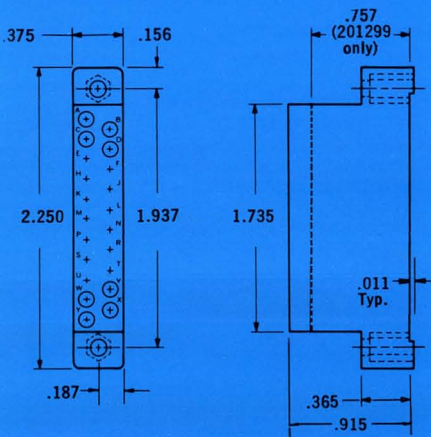
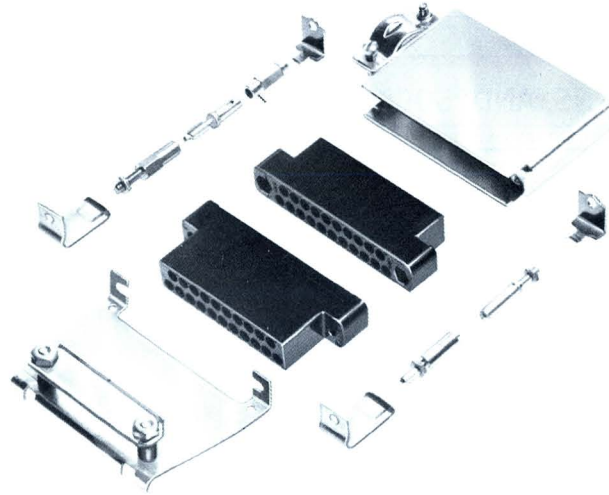


CENTER MALE

CENTER FEMALE

20

M 21



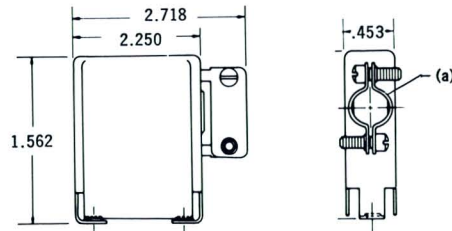
BLOCKS

21

CONFIGURATION	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
	Pin Block	Socket Block	Pin Block	Socket Block	
Shallow	201299-1	201300-1	201299-3	201300-3	TYPE II Size 20, TYPE II Size 16 (Std.), TYPE III(+)-Size 18 or 20, Sub-miniature COAXICON Contact (Short).

POSITION

SHIELDS



90° SHORT—ONE PIECE

(a) Cable area — .1176-.1894 Sq. In.

90° 1 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Al. Anod.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
—	201303-2	—	—	—	—	—	—

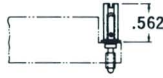
JACKSCREWS



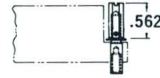
SHORT MALE



SHORT FEMALE



SHORT SHORT MALE



SHORT SHORT FEMALE



FIXED MALE

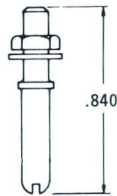


FIXED FEMALE

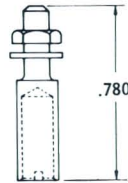
STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS				TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS							
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200874-1	200875-1	200874-2	200875-2	—	—	200868-1	200870-1	201388-1	201389-1	—	—	200868-2	200870-2	201388-2	201389-2

GUIDE PINS AND SOCKETS

STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	—	—	200389-4	200390-4	—	—

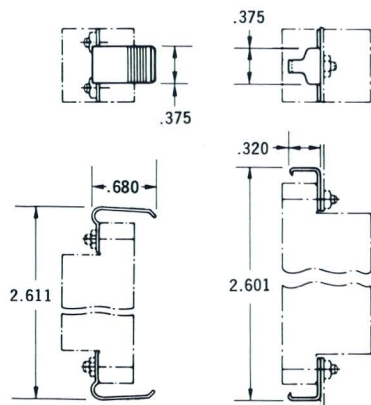


CENTER MALE



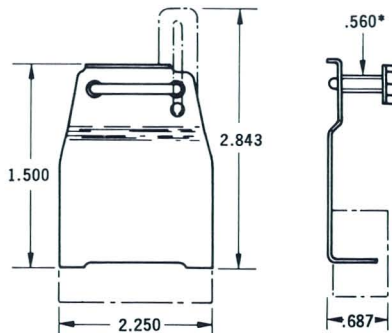
CENTER FEMALE

LOCKING SPRING SETS



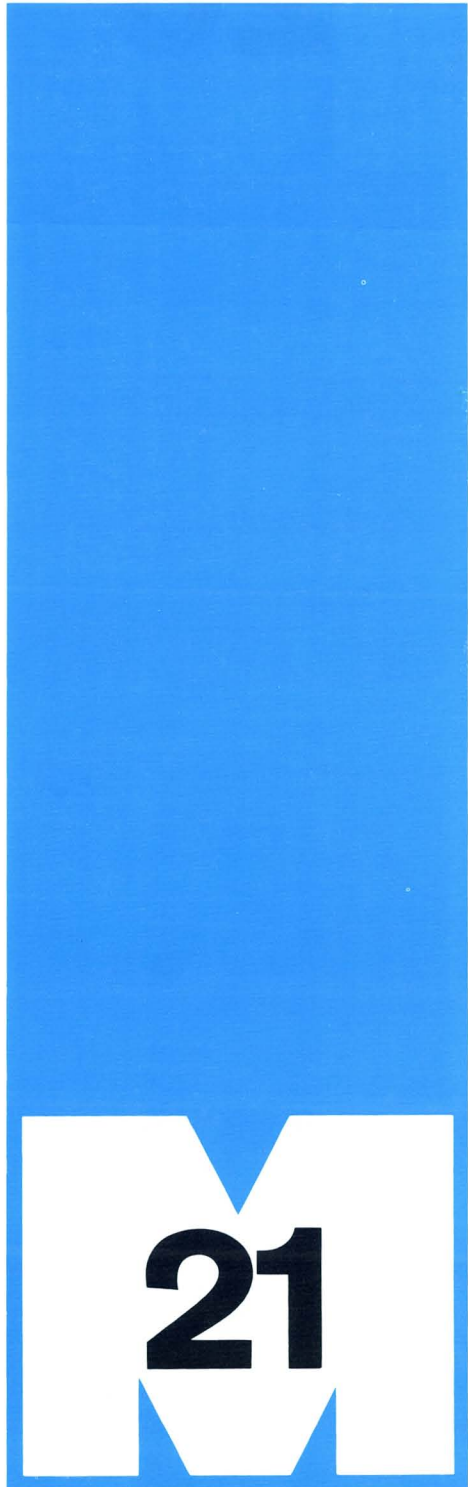
NICKEL PLATED SPRING STEEL — Male	STAINLESS STEEL Female
201923-1	201924-1

STRAIN RELIEF CLAMPS



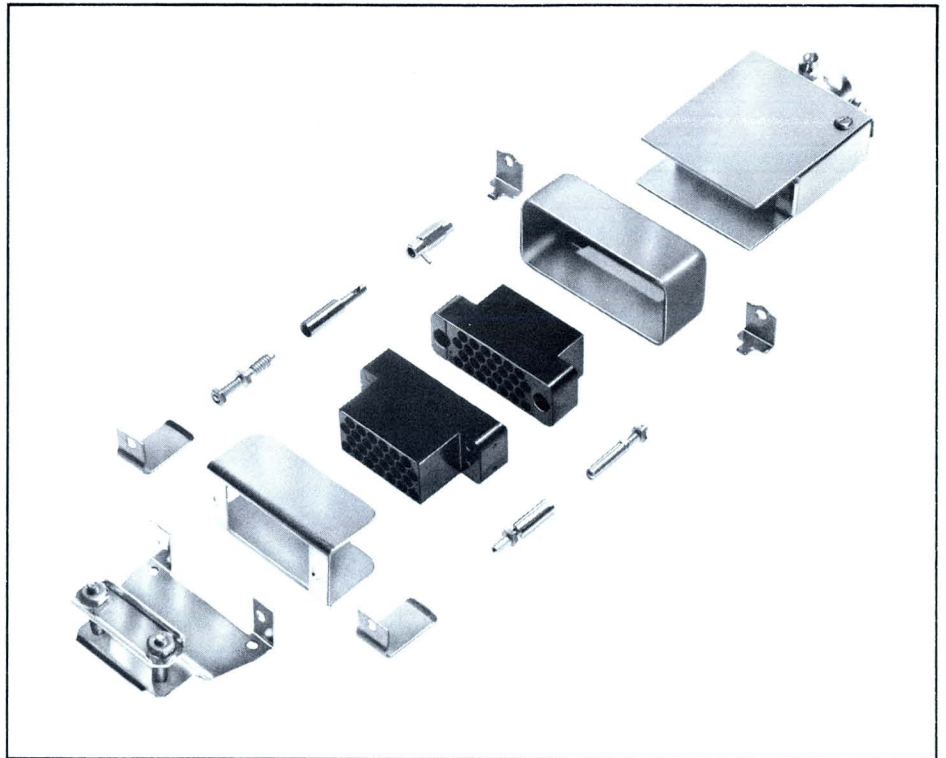
*Sq. In. Max. Cable Area

ZINC PLATED STEEL	
Long	Short
—	201765-1



PIN AND SOCKET CONNECTORS

26



BLOCKS

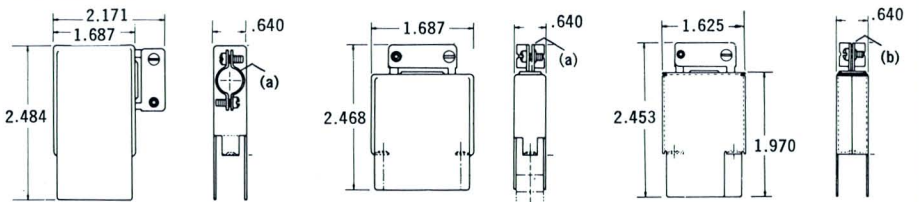
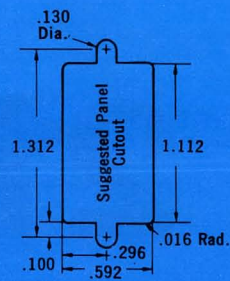
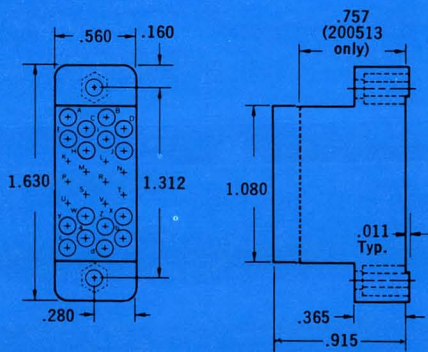
26

CONFIGURATION	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
	Pin Block	Socket Block	Pin Block	Socket Block	
Shallow	200513-2†	200512-2	200513-3†	200512-3	TYPE II, Size 20, TYPE II Size 16 (Std.), TYPE III(+), Size 18 or 20, Sub-miniature COAXICON Contact (Short).
Deep	201359-1*	200512-2*	200512-3*	201359-3*	TYPE II Size 16 (Long), TYPE III(+), Size 16, TYPE VI Size 16 and Sub-miniature COAXICON Contact (Long).

POSITION

*Block will accept Pins and/or Sockets †Block will accept Pins only

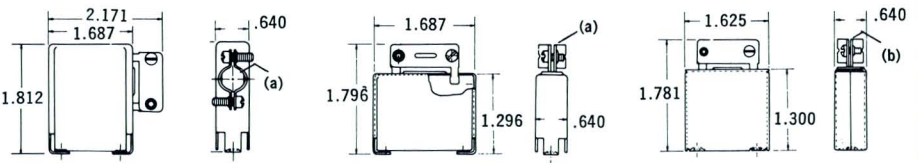
SHIELDS



90° LONG—ONE PIECE

180° LONG—ONE PIECE

180° LONG—TWO PIECE



90° SHORT—ONE PIECE

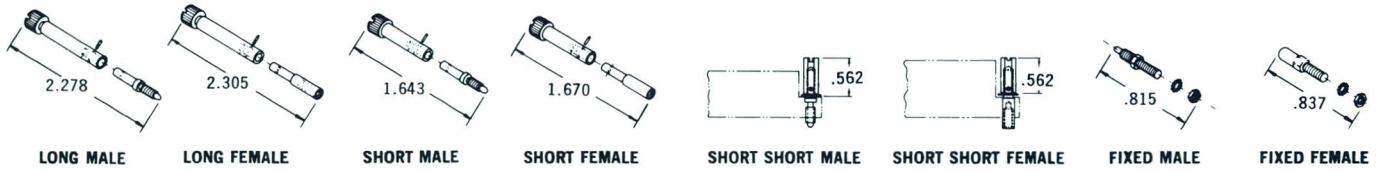
180° SHORT—ONE PIECE

180° SHORT—TWO PIECE

(a) Cable area — .1176-.1923 Sq. In.
(b) Cable area — .0956-.1896 Sq. In.

90° 1 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Al. Anod.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
200488-2	201468-2	201382-2	201169-2	201576-1	200514-1	201576-2	200514-2

JACKSCREWS

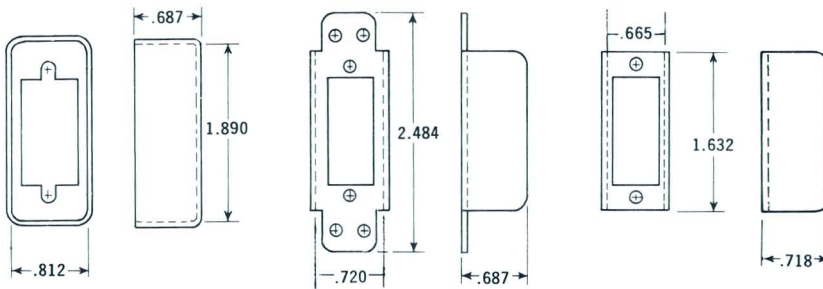


STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS						TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS					
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200874-1	200875-1	200874-2	200875-2	200871-1	200867-1	200868-1	200870-1	201388-1	201389-1	200871-2	200867-2	200868-2	200870-2	201388-2	201389-2

GUIDE PINS AND SOCKETS

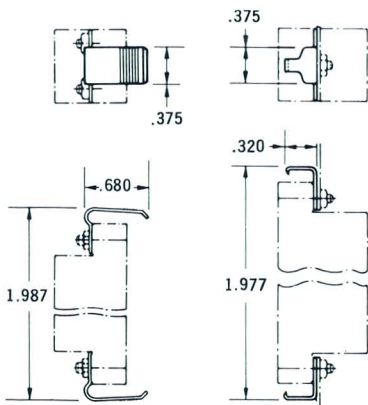
STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	—	—	200389-4	200390-4	—	—

PIN HOODS



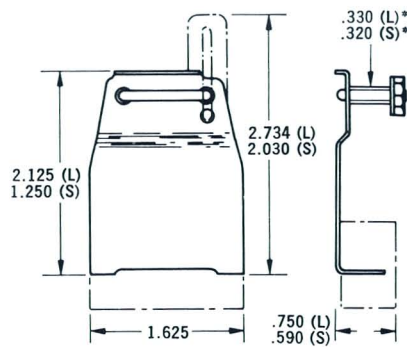
EXTERNAL CLOSED END		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
201349-2	—	202118-2	202118-5	201785-2	—	201785-4	—	—	—

LOCKING SPRING SETS



NICKEL PLATED SPRING STEEL — Male	STAINLESS STEEL Female
201923-1	201924-1

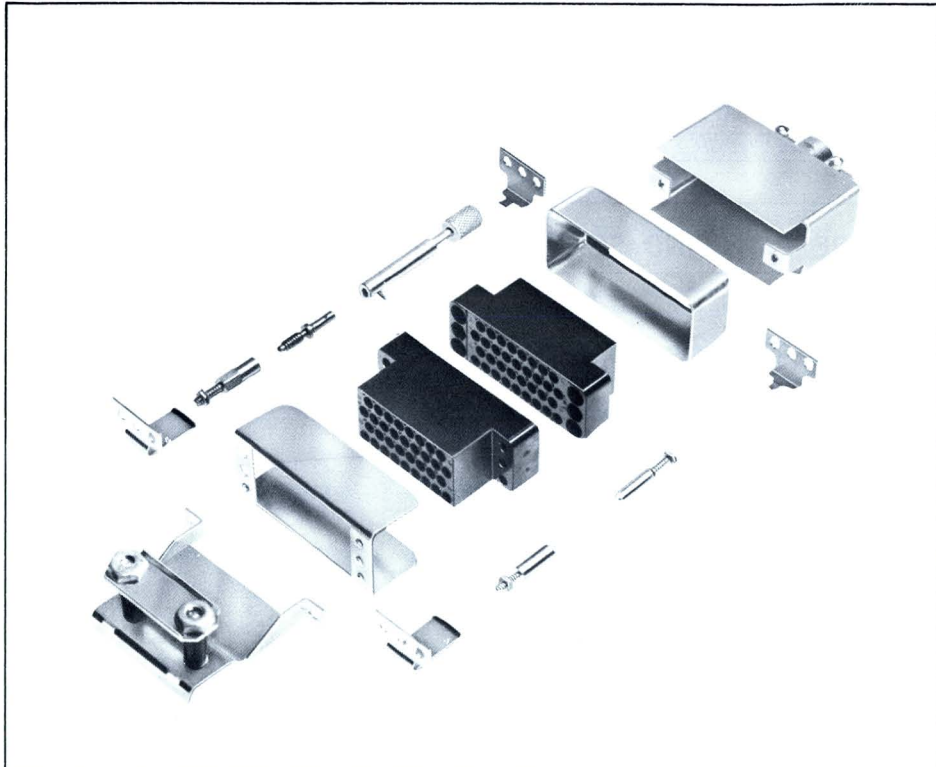
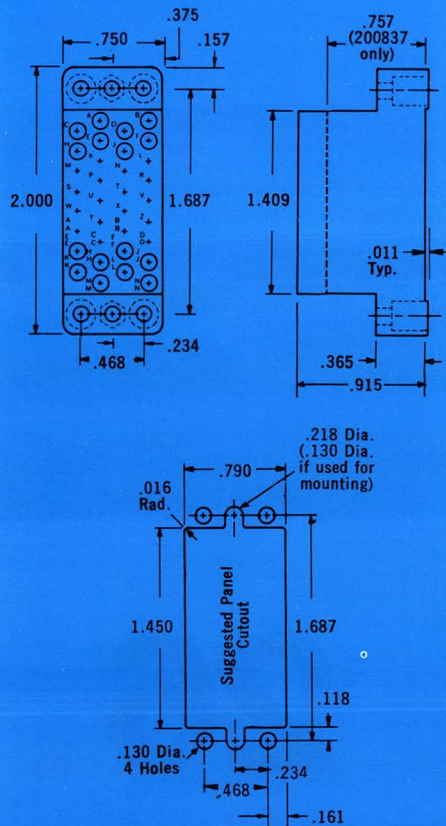
STRAIN RELIEF CLAMPS



*Sq. In. Max. Cable Area

ZINC PLATED STEEL	
Long	Short
201845-1	201229-1

34



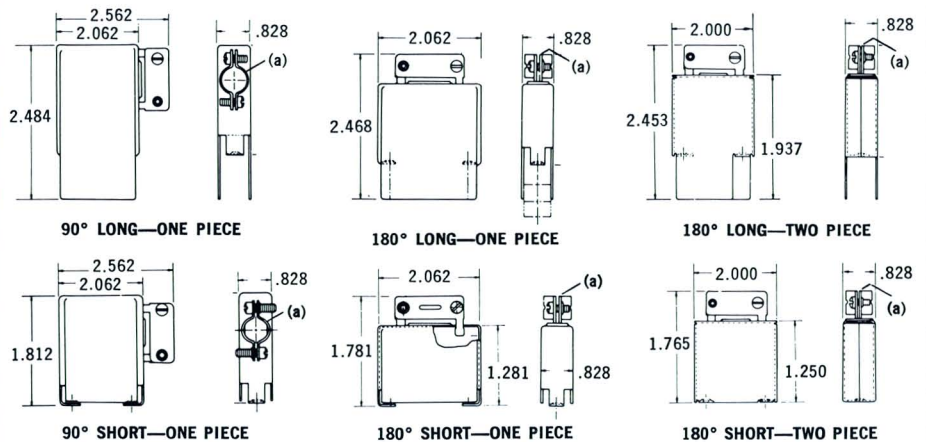
BLOCKS

34

CONFIGURATION	PHENOLIC		DIALYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
	Pin Block	Socket Block	Pin Block	Socket Block	
Shallow	200837-2†	200838-2	200837-3†	200838-3	TYPE II Size 20, TYPE II Size 16 (Std.), TYPE III(+), Size 18 or 20, Subminiature COAXICON Contact (Short).
Deep	201357-1*	200838-2*	200838-3*	201357-3*	TYPE II Size 16 (Long), TYPE III(+), Size 16, TYPE VI Size 16 and Subminiature COAXICON Contact (Long).

*Block will accept Pins and/or Sockets †Block will accept Pins only

SHIELDS

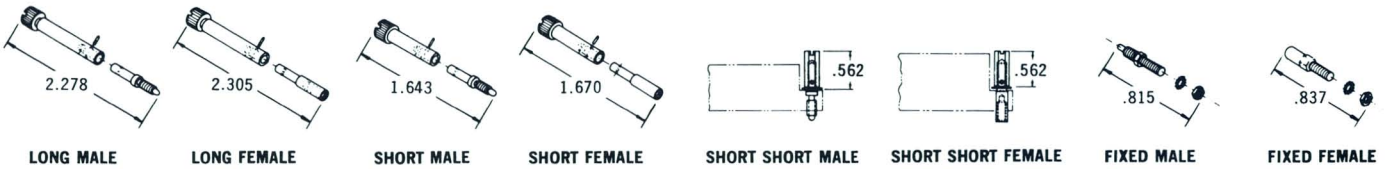


(a) Cable area — .1491-.2336 Sq. In.

90° 1 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Al. Anod.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
200490-2	201469-2	201384-2	201165-2	201571-1	200517-1	201571-2	200517-2*

*or 202774-1 (Larger Cable area — .1965-.2590 Sq. In.)

JACKSCREWS



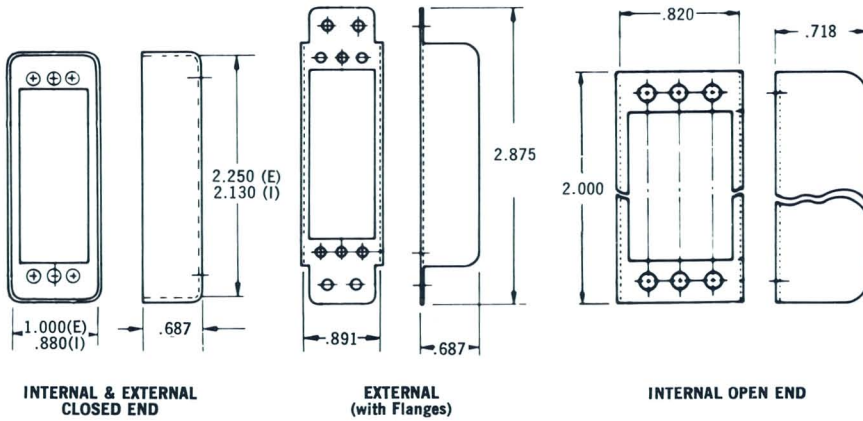
STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS						TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS					
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200874-1	200875-1	200874-2	200875-2	200871-1	200867-1	200868-1	200870-1	201388-1	201389-1	200871-2	200867-2	200868-2	200870-2	201388-2	201389-2

GUIDE PINS AND SOCKETS

STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	200833-2	200835-2*	200389-4	200390-4	200833-4	200835-4**

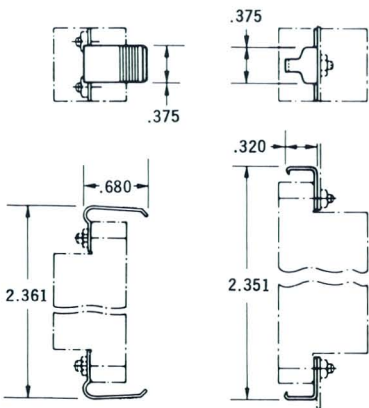
*or 203964-1 — **or 203964-2 for use with Subminiature COAXICON Contacts

PIN HOODS

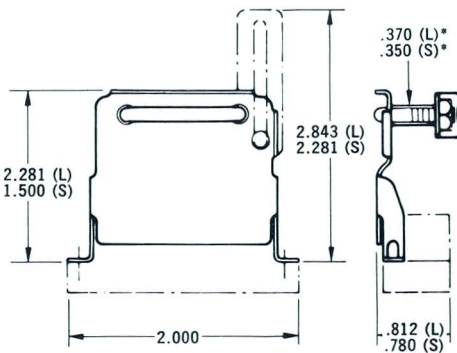


EXTERNAL CLOSED END (E)		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END (I)		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
201350-2	—	202095-2	202095-5	201786-2	—	201786-4	—	202434-2	202434-4

LOCKING SPRING SETS

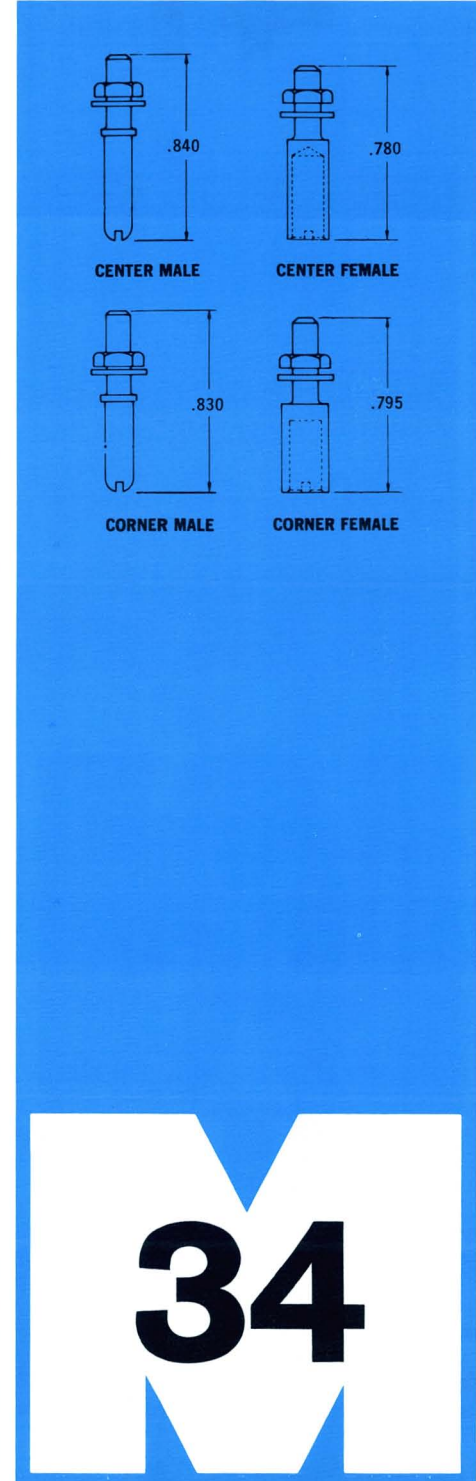


STRAIN RELIEF CLAMPS



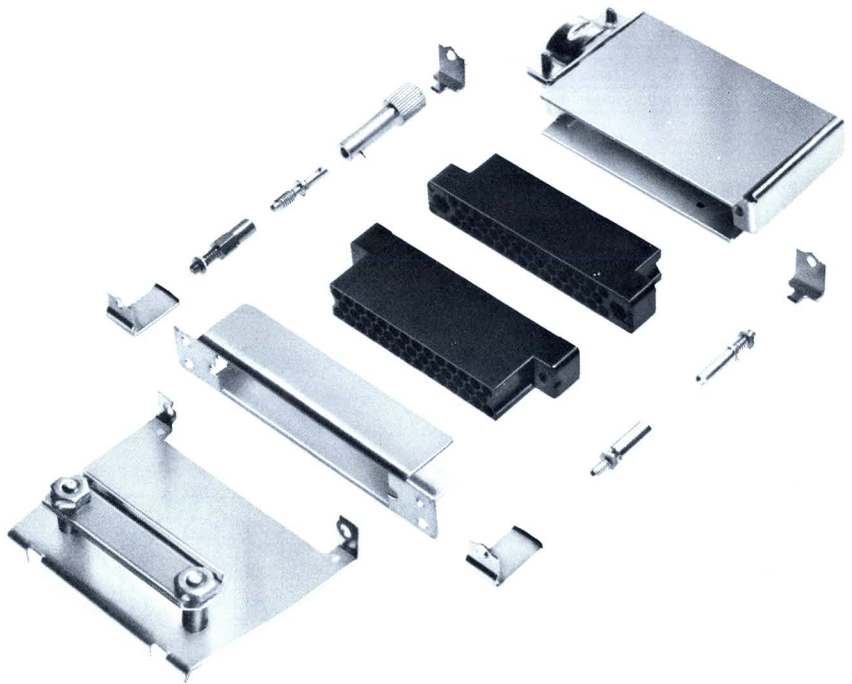
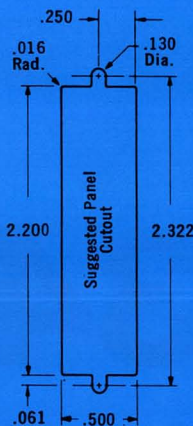
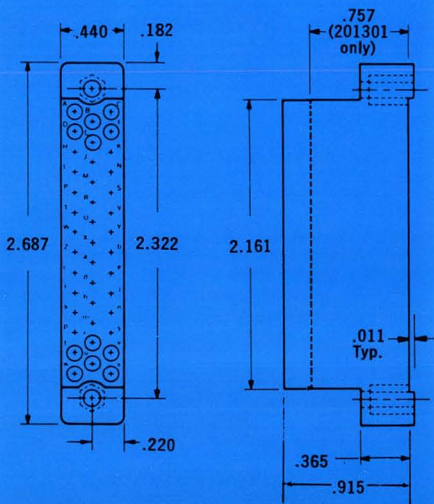
*Sq. In. Max. Cable Area

NICKEL PLATED SPRING STEEL — Male		STAINLESS STEEL Female		ZINC PLATED STEEL	
				Long	Short
201925-1		201926-1		201846-1	201224-1



PIN AND SOCKET CONNECTORS

41

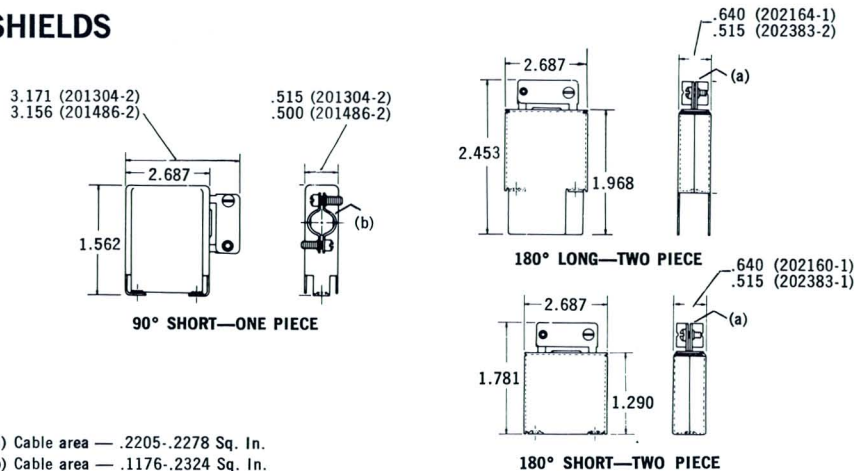


BLOCKS

41	CONFIGURATION	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
		Pin Block	Socket Block	Pin Block	Socket Block	
POSITION	Shallow	201301-1†	201302-1	201301-3†	201302-3	TYPE II Size 20, TYPE II Size 16 (Std.), TYPE III(+)- Size 18 or 20, Sub-miniature COAXICON Contact (Short).
	Deep	202135-2*	201302-1*	201302-3*	202135-4*	TYPE II Size 16 (Long), TYPE III(+)- Size 16, TYPE VI Size 16 and Sub-miniature COAXICON Contact (Long).

*Block will accept Pins and/or Sockets
†Block will accept Pins only

SHIELDS

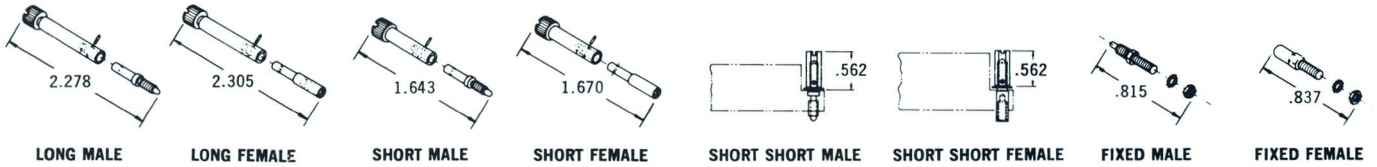


(a) Cable area — .2205-.2278 Sq. In.
(b) Cable area — .1176-.2324 Sq. In.

90° 1 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Al. Anod.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
—	201304-2*	—	—	—	—	202164-1**	202160-1†

*or 201486-2 **or 202383-2 †or 202383-1

JACKSCREWS

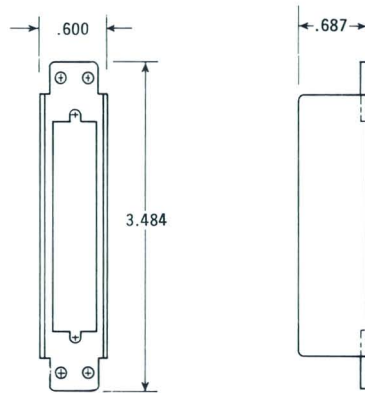


STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS						TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS					
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200874-1	200875-1	200874-2	200875-2	200871-1	200867-1	200868-1	200870-1	201388-1	201389-1	200871-2	200867-2	200868-2	200870-2	201388-2	201389-2

GUIDE PINS AND SOCKETS

STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	—	—	200389-4	200390-4	—	—

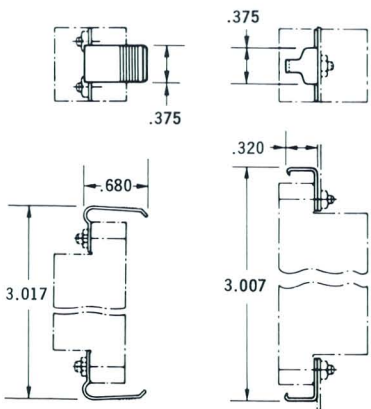
PIN HOODS



EXTERNAL (with Flanges)

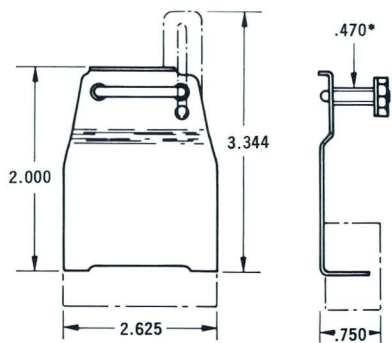
EXTERNAL CLOSED END		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
—	—	202165-3	202165-5	—	—	—	—	—	—

LOCKING SPRING SETS



NICKEL PLATED SPRING STEEL — Male	STAINLESS STEEL Female
201921-1	201922-1

STRAIN RELIEF CLAMPS

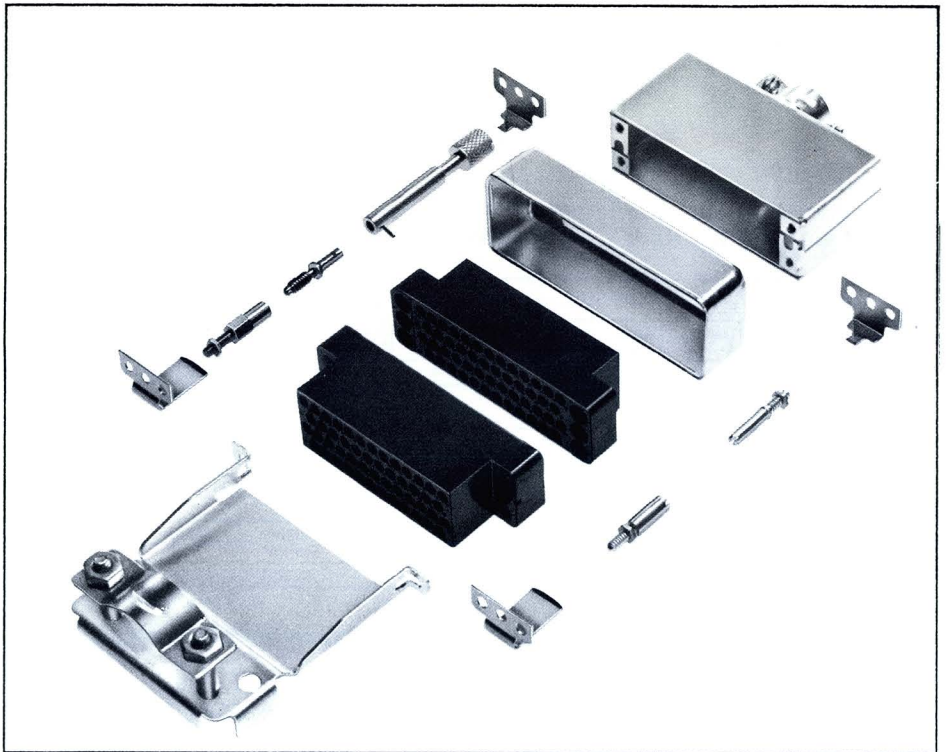


*Sq. In. Max. Cable Area

ZINC PLATED STEEL	
Long	Short
201766-1	—

PIN AND SOCKET CONNECTORS

50



BLOCKS

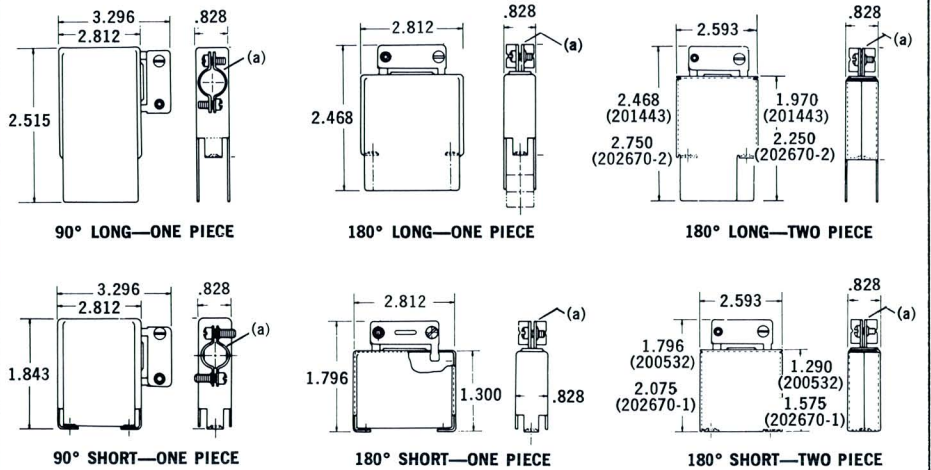
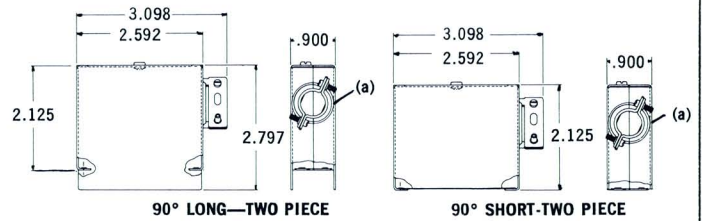
50

POSITION

CONFIGURATION	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
	Pin Block	Socket Block	Pin Block	Socket Block	
Shallow	200276-2†	200277-2	200276-4†	200277-4	TYPE II Size 20, TYPE II Size 16 (Std.), TYPE III(+), Size 18 or 20, Sub-miniature COAXICON Contact (Short).
Deep	201358-1*	200277-2*	200277-4*	201358-3*	TYPE II Size 16 (Long), TYPE III(+), Size 16, TYPE VI Size 16 and Sub-miniature COAXICON Contact (Long).

*Block will accept Pins and/or Sockets †Block will accept Pins only

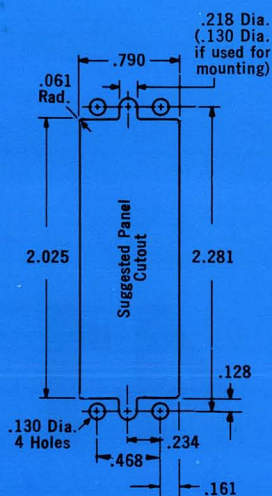
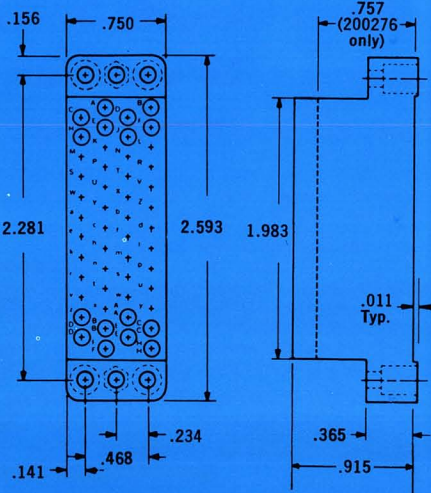
SHIELDS



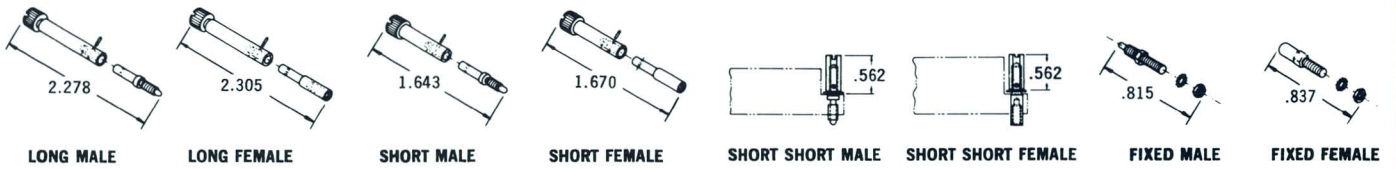
(a) Cable area — .1965-.2590 Sq. In.

90° 1 pc.		90° 2 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Zinc Pl. Steel		Al. Anod.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short	Long	Short
200492-2	201470-2	203975-2	203975-1	201386-2	201173-2	201443-1	200532-1	201443-2*	200532-2**

*or 202670-2 (Cable Area = .2590 Max., .1965 Min. Sq. In.) **or 202670-1 (Cable Area = .2590 Max., .1965 Min. Sq. In.) Use only with Jackscrews 202672-1 and 202673-1 in either case (Special not listed in Jackscrew table).



JACKSCREWS



STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS				TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS							
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200874-1	200875-1	200874-2	200875-2	200871-1*	200867-1**	200868-1	200870-1	201388-1	201389-1	200871-2†	200867-2††	200868-2	200870-2	201388-2	201389-2

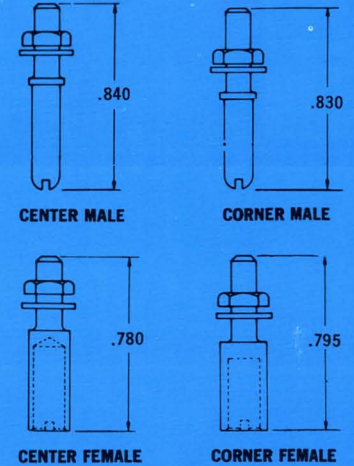
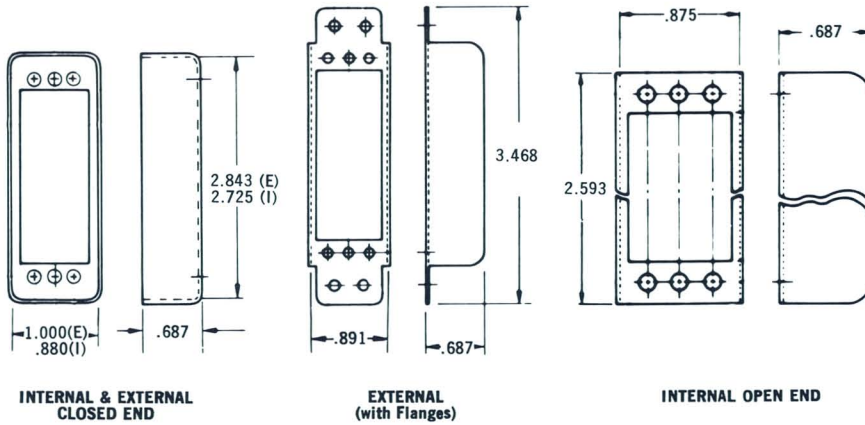
*or 201911-1 (3.278) **or 201910-1 (3.305) †or 201911-2 (3.278) ††or 201910-2 (3.305) — For use with Shields 203975-1 and -2.

GUIDE PINS AND SOCKETS

STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	200833-2	200835-2*	200389-4	200390-4	200833-4	200835-4**

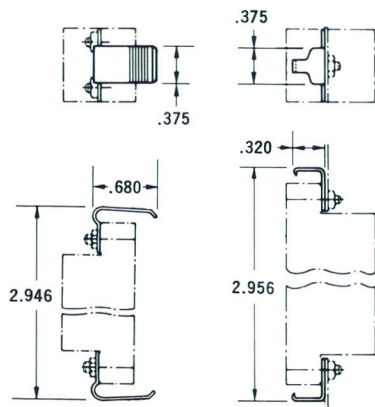
*or 203964-1 **or 203964-2 for use with Subminiature COAXICON Contacts

PIN HOODS

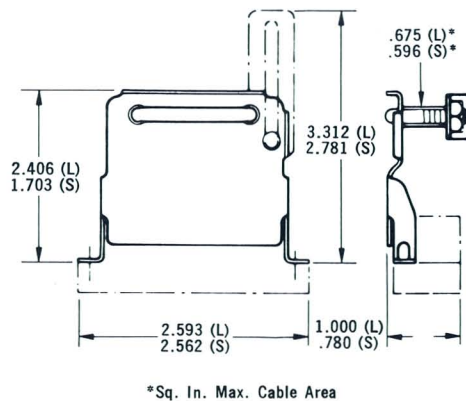


EXTERNAL CLOSED END (E)		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END (I)		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
201390-2	201390-5	202096-2	202096-5	—	201317-2	201317-4	202394-5	202394-1	202394-2

LOCKING SPRING SETS

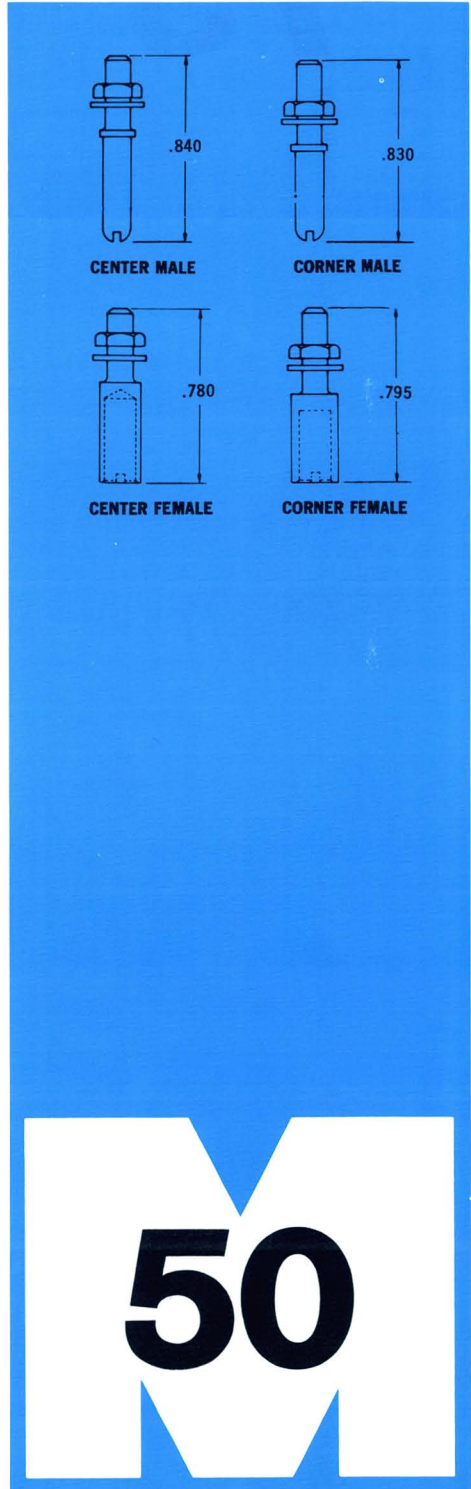


STRAIN RELIEF CLAMPS



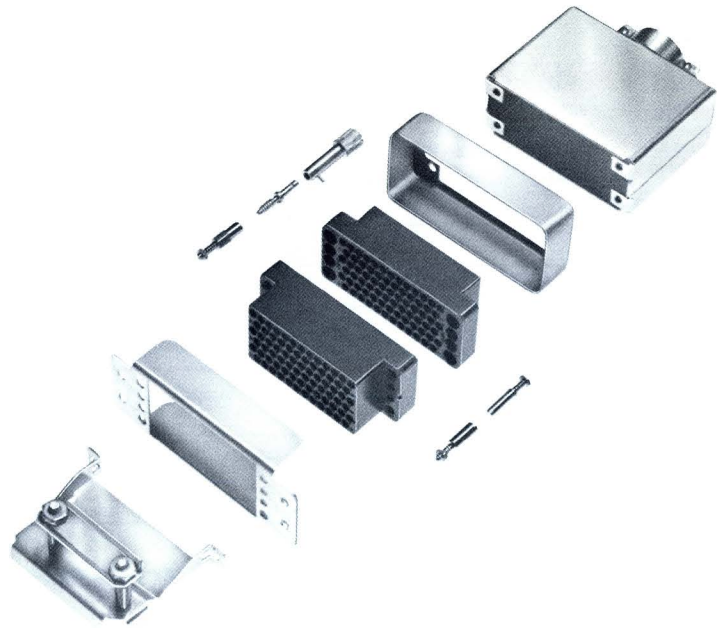
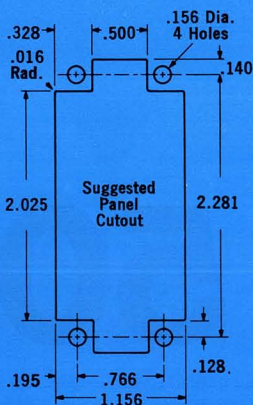
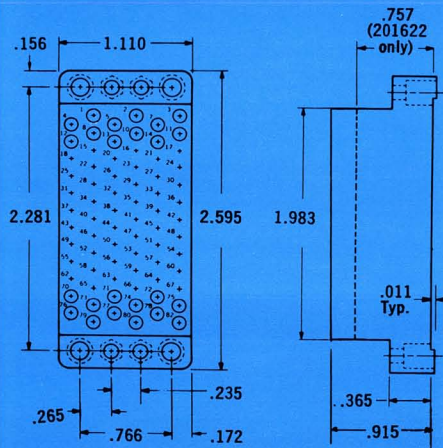
*Sq. In. Max. Cable Area

NICKEL PLATED SPRING STEEL — Male		STAINLESS STEEL Female		ZINC PLATED STEEL	
				Long	Short
201925-1		201926-1		201847-1	201182-1



PIN AND SOCKET CONNECTORS

75

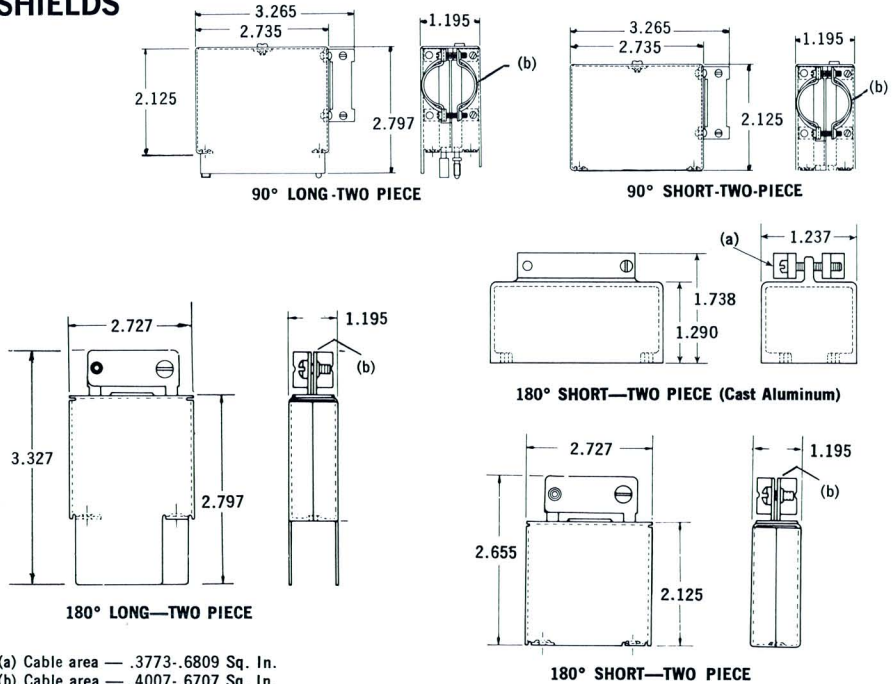


BLOCKS

75	CONFIGURATION	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
		Pin Block	Socket Block	Pin Block	Socket Block	
POSITION	Shallow	201622-1†	201311-1	201622-3†	201311-3	TYPE II Size 20, TYPE II Size 16 (Std.), TYPE III(+), Size 18 or 20, Sub-miniature COAXICON Contact (Short).
	Deep	201310-1*	201311-1*	201311-3*	201310-3*	TYPE II Size 16 (Long), TYPE III(+), Size 16, TYPE VI Size 16 and Sub-miniature COAXICON Contact (Long).

*Block will accept Pins and/or Sockets
†Block will accept Pins only

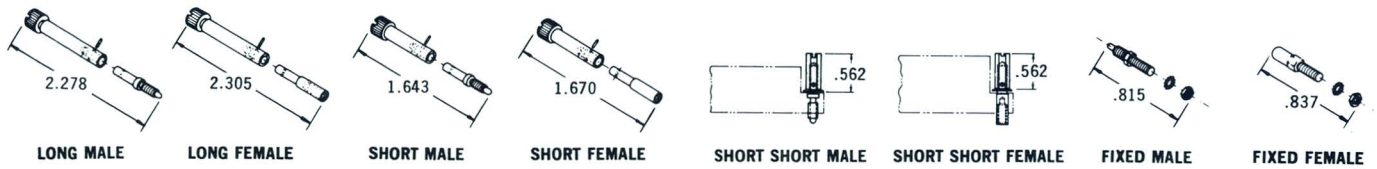
SHIELDS



(a) Cable area — .3773-.6809 Sq. In.
(b) Cable area — .4007-.6707 Sq. In.

90° 2 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Zinc Pl. Cast Al.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
202711-3	202711-1	—	—	—	204209-1	202713-2	202713-1

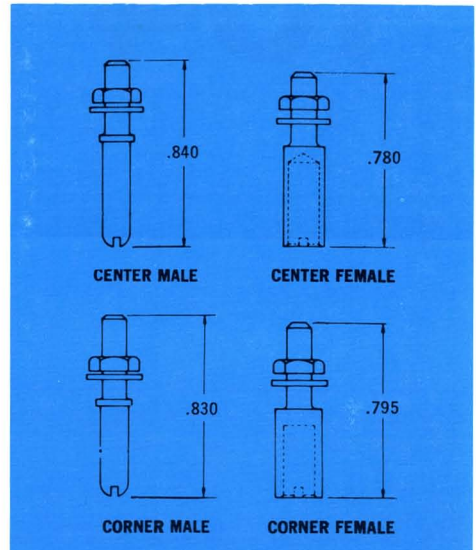
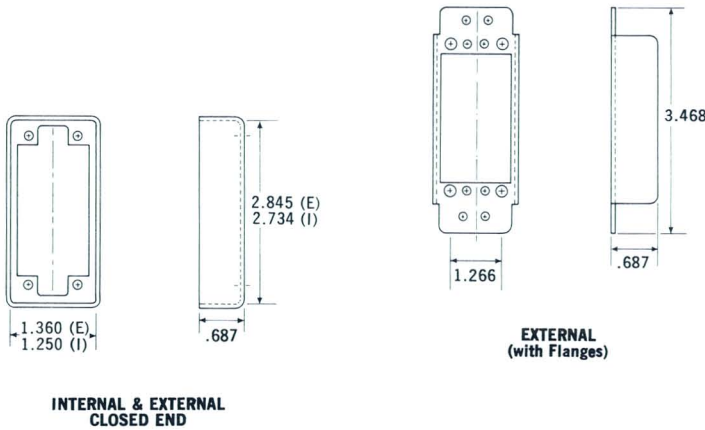
JACKSCREWS



STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS				TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS							
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200874-1	200875-1	200874-2	200875-2	200871-1*	200867-1**	200868-1	200870-1	201388-1	201389-1	200871-2†	200867-2††	200868-2	200870-2	201388-2	201389-2
*or 201911-1 (3.278)		**or 201910-1 (3.305)		†or 201911-2 (3.278)		††or 201910-2 (3.305)		— For use with Shields 202713-1 and -2, 202711-1 and -3.							

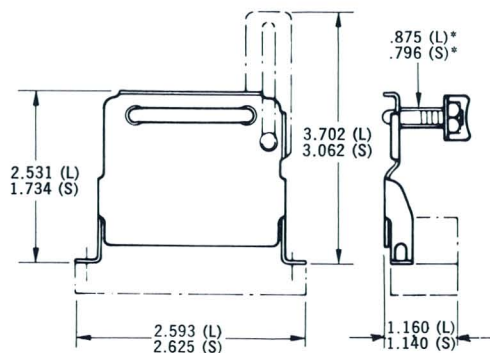
STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	201046-2	201047-2*	200389-4	200390-4	201046-4	201047-4**
*or 203966-1 — **or 203966-2 for use with Subminiature COAXICON Contacts							

PIN HOODS



EXTERNAL CLOSED END (E)		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END (I)		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
201368-2	201368-4	202097-2	202097-5	—	—	—	—	201369-2	201369-4

STRAIN RELIEF CLAMPS

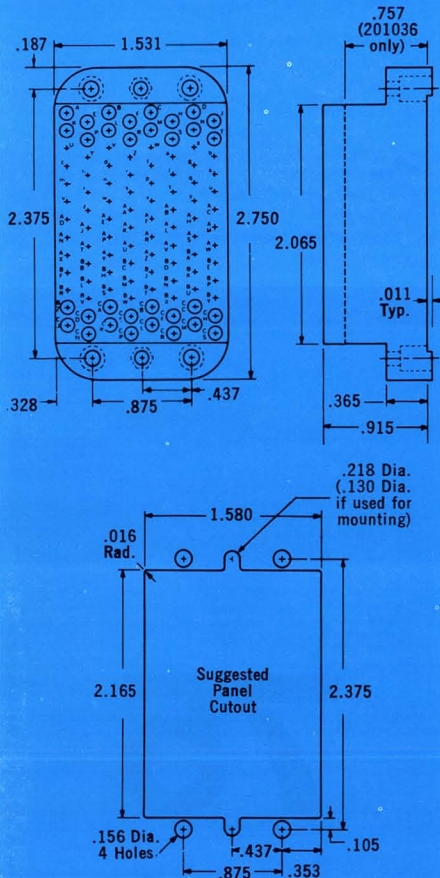
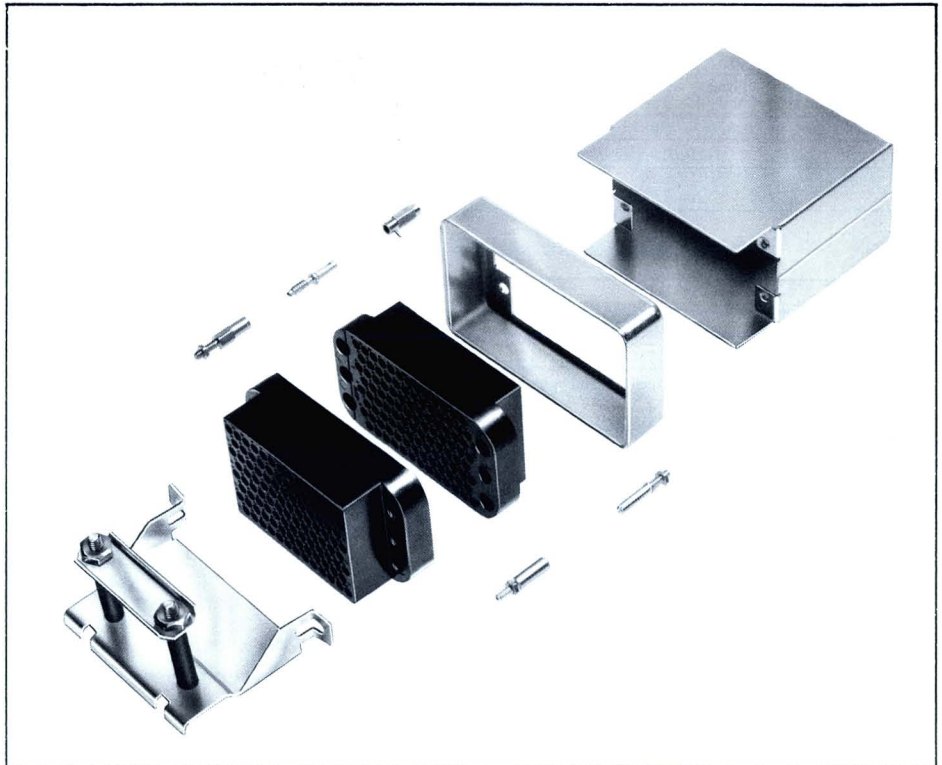


*Sq. In. Max. Cable Area

ZINC PLATED STEEL	
Long (L)	Short (S)
201848-1	200730-1



104



BLOCKS

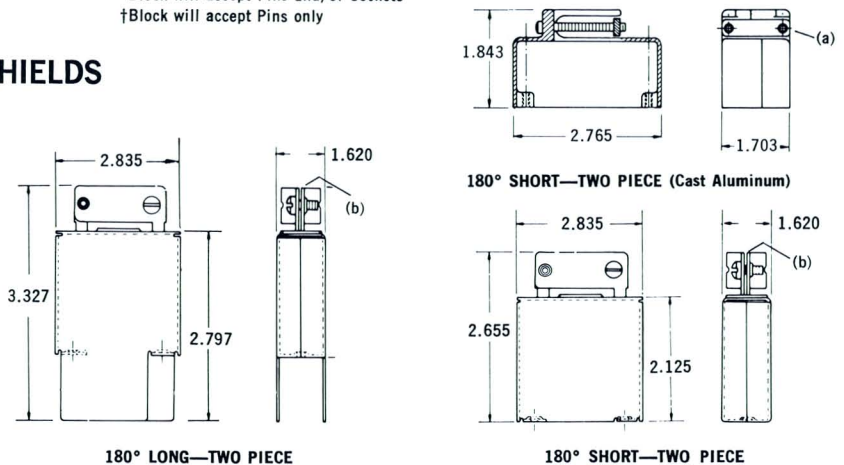
104

POSITION

CONFIGURATION	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
	Pin Block	Socket Block	Pin Block	Socket Block	
Shallow	201036-1†	201037-1	201036-2†	201037-2	TYPE II Size 20, TYPE II Size 16 (Standard), TYPE III(+) Size 18 or 20, Subminiature COAXICON Contact (Short).
Deep	201345-1*	201037-1*	201037-2*	201345-2*	TYPE II Size 16 (Long), TYPE III(+) Size 16, TYPE VI Size 16 and Subminiature COAXICON Contact (Long).

*Block will accept Pins and/or Sockets
 †Block will accept Pins only

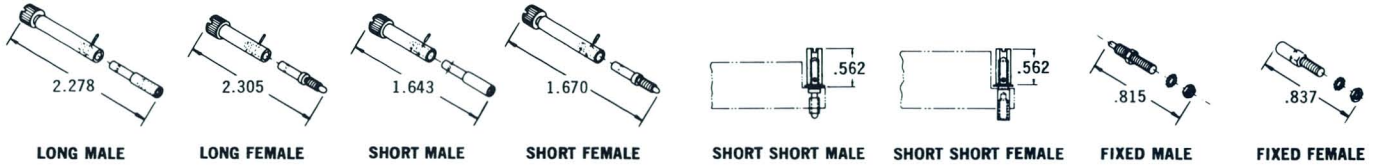
SHIELDS



(a) Cable area — 0-.8596 Sq. In.
 (b) Cable area — .6140-1.1300

90° 2 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Zinc Pl. Cast Al.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
205316-2	205316-1	—	—	—	201131-1	204173-2	204173-1

JACKSCREWS

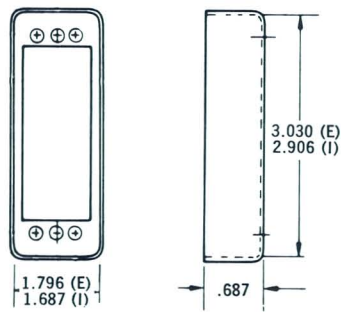


STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS						TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS					
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200874-1	200875-1	200874-2	200875-2	200871-1*	200867-1**	200868-1	200870-1	201388-1	201389-1	200871-2†	200867-2††	200868-2	200870-2	201388-2	201389-2
*or 201911-1 (3.278)		**or 201910-1 (3.305)		†or 201911-2 (3.278)		††or 201910-2 (3.305)		— For use with Shields 204173-1 and -2.							

STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	201046-2	201047-2*	200389-4	200390-4	201046-4	201047-4**

*or 203966-1 — **or 203966-2 for use with Subminiature COAXICON Contacts

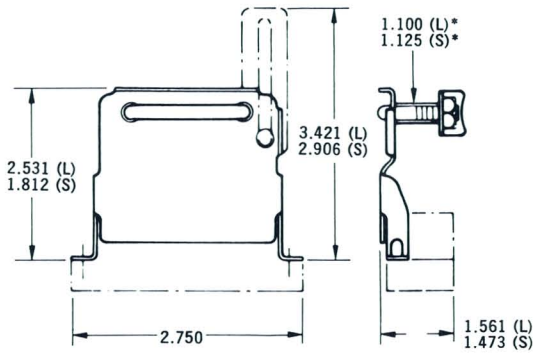
PIN HOODS



INTERNAL & EXTERNAL CLOSED END

EXTERNAL CLOSED END (E)		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END (I)		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
201346-2	201346-4	—	—	—	—	—	—	201364-2	201364-4

STRAIN RELIEF CLAMPS



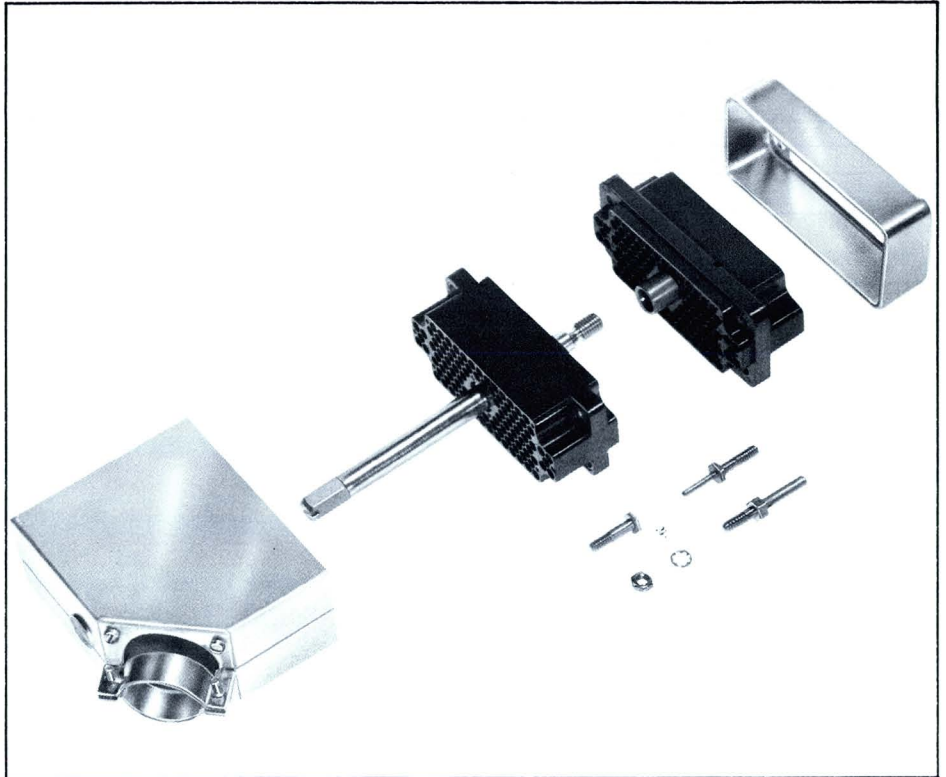
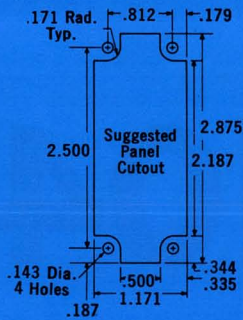
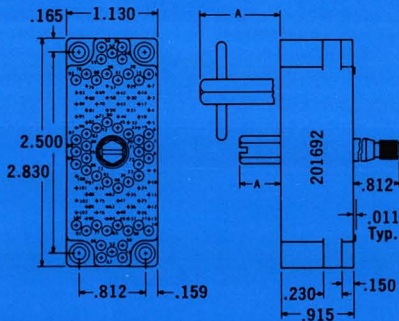
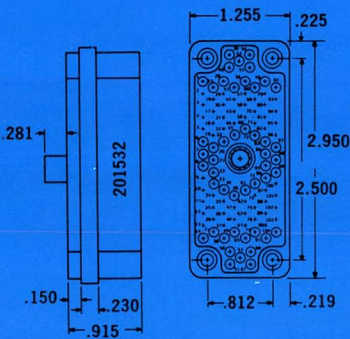
*Sq. In. Max. Cable Area

ZINC PLATED STEEL	
Long (L)	Short (S)
201849-1	201221-1

104

CF

(Center Fastener)



BLOCKS

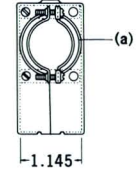
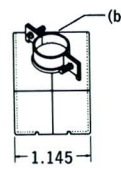
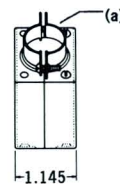
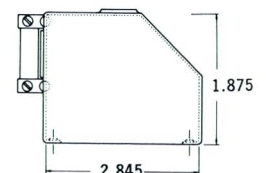
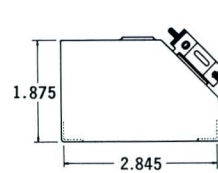
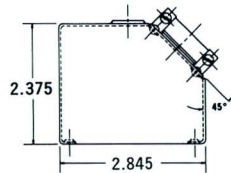
104

CF POSITION

CONFIGURATION Dimension A	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
	Pin	Socket	Pin	Socket	
"T" Handle 2.500	201692-4	201532-4	201692-3	201532-2	TYPE II (Long), TYPE III(+) Size 16, TYPE VI Size 16 and Sub-miniature COAXICON Contact.
Slotted Hex 2.500	201692-6	201532-4	201692-5	201532-2	
Slotted Hex .531	201692-2	201532-4	201692-1	201532-2	

All Blocks will accept Pins and/or Sockets

SHIELDS



45° LONG—TWO PIECE

45° SHORT—TWO PIECE

90° LONG—TWO PIECE

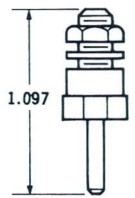
(a) Cable area — .5725-.7895 Sq. In.
(b) Cable area — .2830-.3680 Sq. In.

45° 2 pc.		90° 2 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Al. Anod.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
202169-1	202110-1	202395-1	—	—	—	—	—

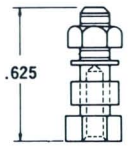
GUIDE PINS AND SOCKETS

STAINLESS STEEL		Stainless Steel Long Pin Male	Zinc Pl. Steel Long Pin Male
Male Assembly	Female Assembly		
202173-1	202174-1*	201540-1	201540-2

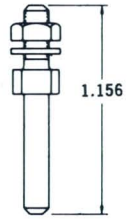
*or 204099-1 (length .713) or 204099-2 (length .838) for use with Subminiature COAXICON Contacts



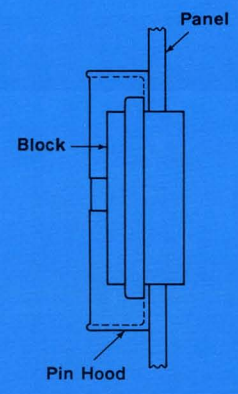
MALE ASSEMBLY



FEMALE ASSEMBLY

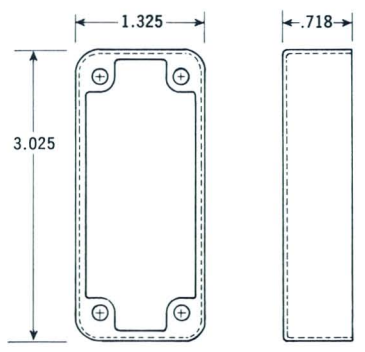


LONG PIN MALE
(Two pins required in diagonal corners. Use without Guide Sockets.)



Recommended Mounting Method

PIN HOODS



EXTERNAL CLOSED END

EXTERNAL CLOSED END		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
—	202119-2	—	—	—	—	—	—	—	—

104

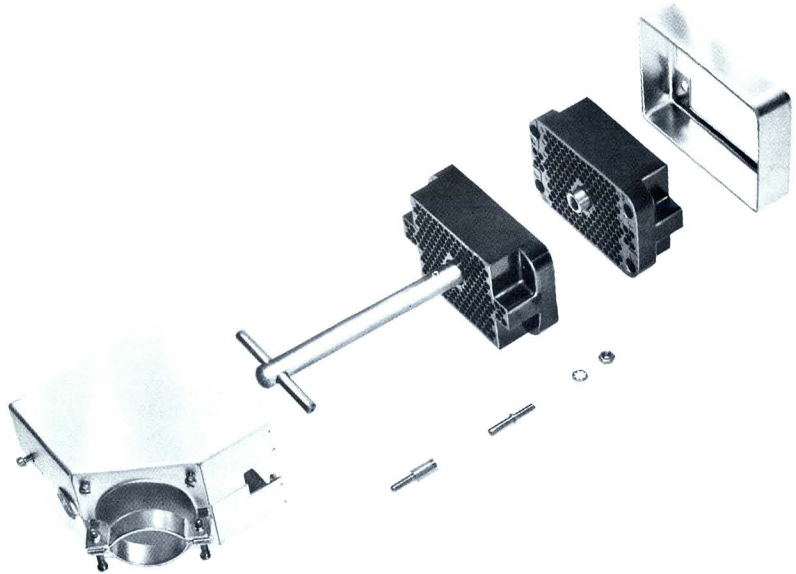
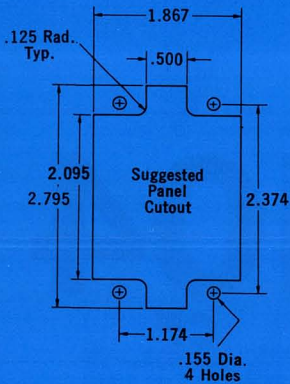
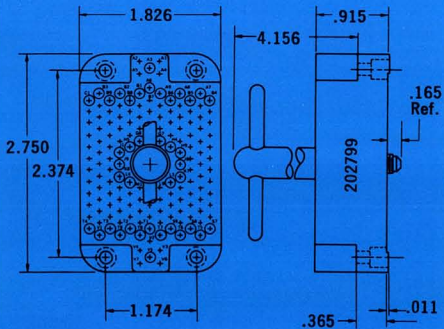
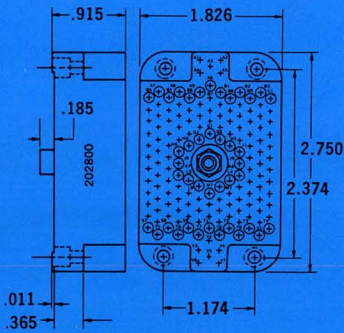
CF

(Center Fastener)

PIN AND SOCKET CONNECTORS

160

CF
(Center Fastener)



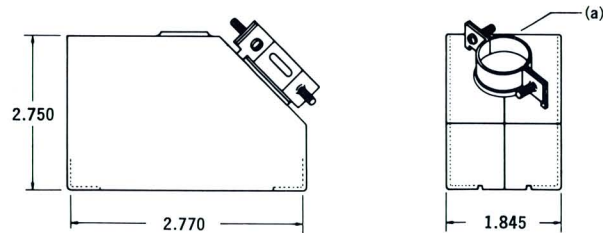
BLOCKS

160
CF POSITION

CONFIGURATION	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
	Pin Block	Socket Block	Pin Block	Socket Block	
"T" Handle	202799-2	202800-2	202799-1	202800-1	TYPE II (Long), TYPE III(+), Size 16, TYPE VI Size 16 and Sub-miniature COAXICON Contact.

All Blocks will accept Pins and/or Sockets

SHIELDS



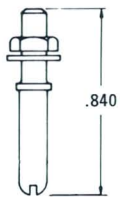
45° SHORT—TWO PIECE

(a) Cable area — 1.130-1.540 Sq. In.

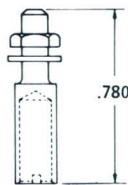
45° 2 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Al. Anod.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
—	202798-1	—	—	—	—	—	—

GUIDE PINS AND SOCKETS

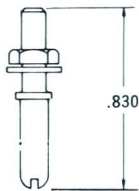
STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
—	—	201046-2	201047-2	—	—	201046-4	201047-4



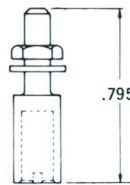
CENTER MALE



CENTER FEMALE

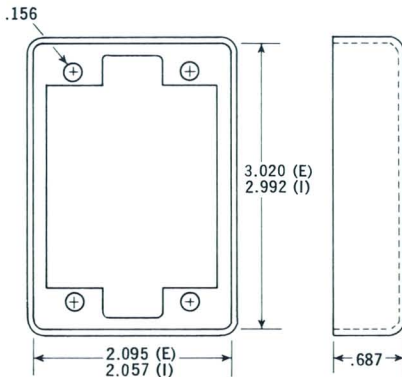


CORNER MALE



CORNER FEMALE

PIN HOODS



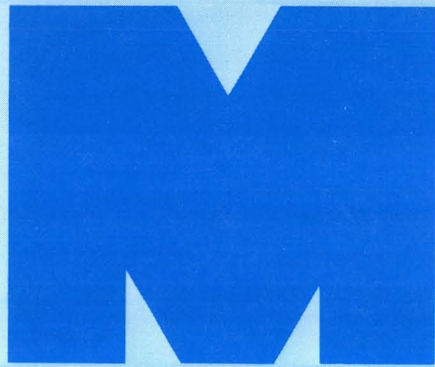
INTERNAL & EXTERNAL CLOSED END

EXTERNAL CLOSED END (E)		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END (I)		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
203744-2	203744-4	—	—	—	—	—	—	203743-2	203743-4

160

CF

(Center Fastener)



Introduction

Now available from AMP, multiple pin and socket connectors that are completely compatible with today's automatic point-to-point wiring techniques. This connector family combines the industry accepted reliability of standard AMP "M" Series connectors with the speed and versatility of automatic back bay wiring to provide high-density circuit terminations at the lowest possible applied cost.

AMP furnishes these connectors partially or fully loaded with size 16 posted pins and sockets that will accept TERMI-POINT clip or wrap-type terminations. The contacts themselves provide high-density connections for a variety of wire ranges with a wide choice of post configurations — .025" sq., .045" sq., .022" x .036" and .031" x .062" — and post heights which accommodate up to 3 terminations per post. They are of a two-piece construction for added economy and feature a built-in, anti-rotation stabilizer with retention tyres that allows the contacts to accept the torque force of the termination tooling without rotating in the housing. All pins and sockets, too, are replaceable with standard service tools and can be furnished with various gold and tin plating thicknesses to satisfy virtually all customer requirements.

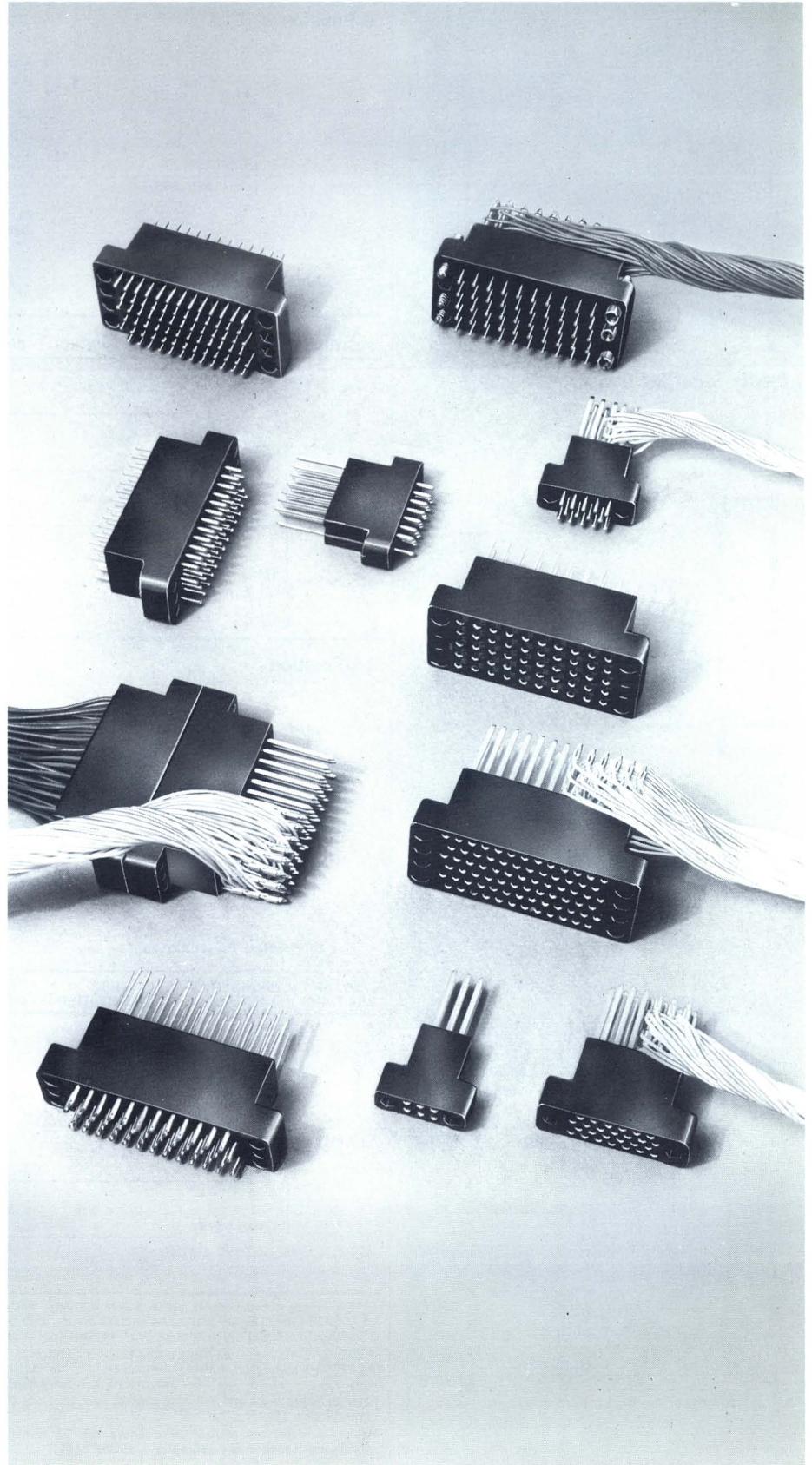
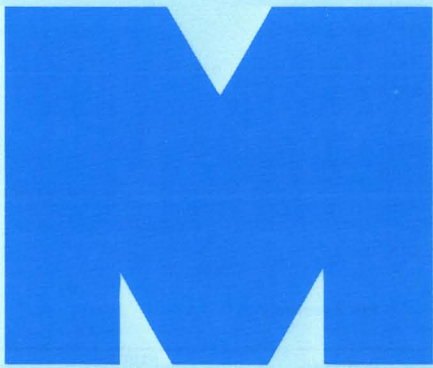
The connectors are available in sizes from 6 to 160 positions and with molded plastic housings of either

general purpose phenolic or of diallyl phthalate for excellent stability under adverse conditions. All sizes are capable of being terminated with hand tools and semi-automatic machines, while the 15-, 36-, 50- and 70-position connectors (with .200" square grid spacing) and the 112-position connector (with .250" staggered grid) are wireable using fully automatic high-speed equipment.

For maximum versatility, posted "M" Series connectors can be intermounted and intermated with any standard AMP "M" Series connector or various other existing connectors that have identical contact arrangements. They also offer the added benefits of accepting a variety of existing hardware — guide pins, jackscrews, strain reliefs, pin hoods, etc.

Ordering Information

All posted "M" Series connectors covered in this publication can be supplied either partially or fully loaded with the appropriate contacts. Both pins and sockets, too, can be furnished separately in loose piece form. Also, the hardware that can be used with these connectors is the same used with AMP's standard "M" Series connectors and is contained in pages 9-128 to 9-141. It is recommended, however, that you consult AMP Engineering regarding your specific application before ordering hardware for posted "M" Series connectors.

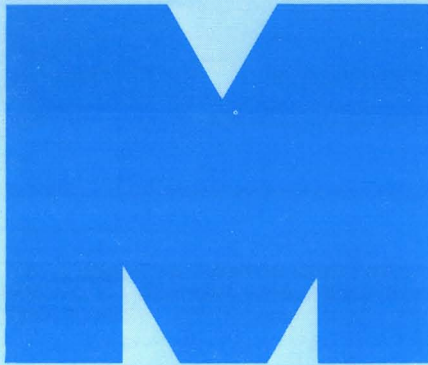


MATERIALS

Housing — Phenolic per MIL-M-14, Type CFG; Color, black (also available in blue diallyl phthalate per MIL-M-14, Type SDG)

Contacts — Brass per MIL-C-50; .000030 gold over .000050 nickel, selective .000030 gold over .000050 nickel or tin plated (gold plating per MIL-G-45204, nickel plating per QQ-N-290, tin plating per MIL-T-10727)

CONNECTORS FOR HAND TOOL AND SEMI-AUTOMATIC MACHINE WIRING ONLY (Fully loaded with contacts)



Cavity Identification

6 Position



Pin



Socket

14 Position

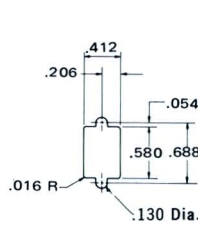


Pin

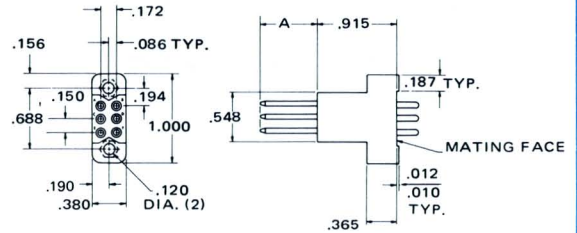


Socket

6-Position



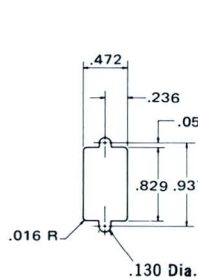
Suggested Panel Cutout



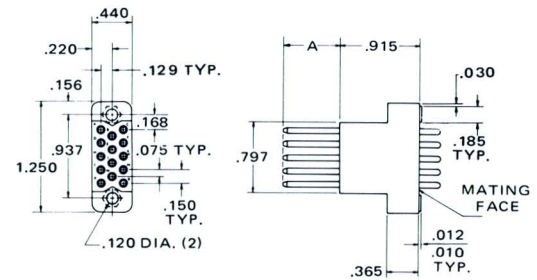
Pin Assembly

NO. OF POSITIONS	TERMINATION METHOD	POST CONFIGURATION	A DIM.†	CONTACT FINISH	PART NO.	
					PIN ASS'Y ^Δ	SOCKET ASS'Y [◊]
6	Wrap-Type	.025 Sq.	.659	Sel. Gold/Nickel*	205507-1	205506-1
				Gold/Nickel**	205507-2	205506-2
				Tin	205507-3	205506-3
		.045 Sq.	.810	Sel. Gold/Nickel*	205507-4	205506-4
				Gold/Nickel**	205507-5	205506-5
				Tin	205507-6	205506-6
	TERMI-POINT Clip	.031 x .062	.810	Sel. Gold/Nickel*	205507-7	205506-7
				Gold/Nickel**	205507-8	205506-8
		.022 x .036	.659	Tin	205507-9	205506-9
				Sel. Gold/Nickel*	1-205507-0	1-205506-0
				Gold/Nickel**	1-205507-1	1-205506-1
				Tin	1-205507-2	1-205506-2
				Sel. Gold/Nickel*	1-205507-3	1-205506-3
				Gold/Nickel**	1-205507-4	1-205506-4
				Tin	1-205507-5	1-205506-5

14-Position



Suggested Panel Cutout



Pin Assembly

NO. OF POSITIONS	TERMINATION METHOD	POST CONFIGURATION	A DIM.†	CONTACT FINISH	PART NO.	
					PIN ASS'Y ^Δ	SOCKET ASS'Y [◊]
14	Wrap-Type	.025 Sq.	.659	Sel. Gold/Nickel*	205317-1	205508-1
				Gold/Nickel**	205317-2	205508-2
				Tin	205317-3	205508-3
		.045 Sq.	.810	Sel. Gold/Nickel*	205317-4	205508-4
				Gold/Nickel**	205317-5	205508-5
				Tin	205317-6	205508-6
	TERMI-POINT Clip	.031 x .062	.810	Sel. Gold/Nickel*	205317-7	205508-7
				Gold/Nickel**	205317-8	205508-8
		.022 x .036	.659	Tin	205317-9	205508-9
				Sel. Gold/Nickel*	1-205317-0	1-205508-0
				Gold/Nickel**	1-205317-1	1-205508-1
				Tin	1-205317-2	1-205508-2
				Sel. Gold/Nickel*	1-205317-3	1-205508-3
				Gold/Nickel**	1-205317-4	1-205508-4
				Tin	1-205317-5	1-205508-5

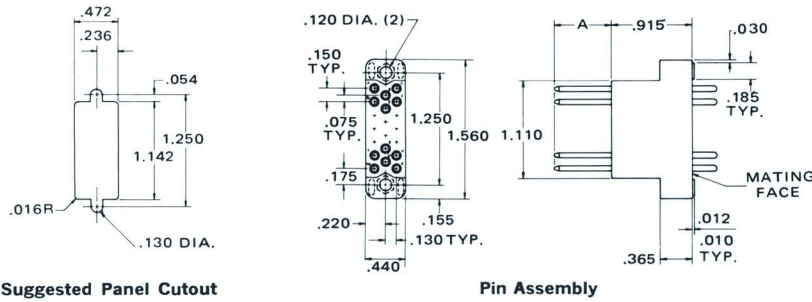
† Post length accommodates up to 3 terminations. Posts accepting a max. of 1 or 2 terminations are also available.
^{*} .000030 selective gold plating on contact mating area only. Remainder of contact is gold flash.
^{**} .000030 gold plating on contact body; contact post is gold flash. **Extraction Tool**—Part No. 305183.
^Δ 202757-1 Mating block using crimp snap-in contacts. ^Δ 201298-1 Mating block using crimp snap-in contacts.
[◊] 202758-1 Mating block using crimp snap-in contacts. [◊] 201355-1 Mating block using crimp snap-in contacts.
 For appropriate accessory hardware refer to pages 9-88 thru 9-91.

Refer to pages 9-82 and 9-83 for contact specifications (Type III(+)) Size 16) and page 9-84 for contact specifications. (Type VI Size 16).

Note: Connector assemblies listed above can be furnished "reverse-loaded" (pins preloaded in a socket block and sockets pre-loaded in the appropriate mating half).

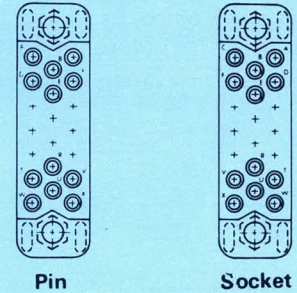
CONNECTORS FOR HAND TOOL AND SEMI-AUTOMATIC MACHINE WIRING ONLY (Fully loaded with contacts)

20-Position



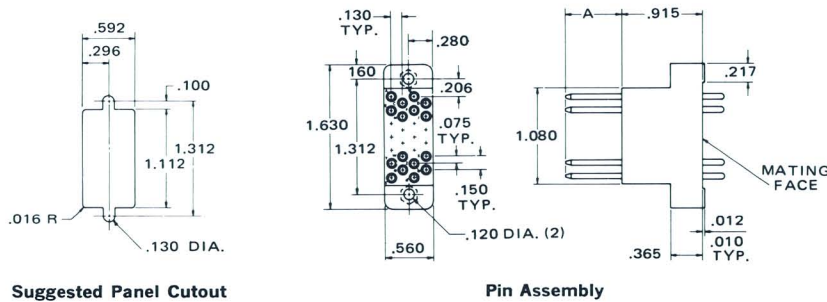
Cavity Identification

20 Position

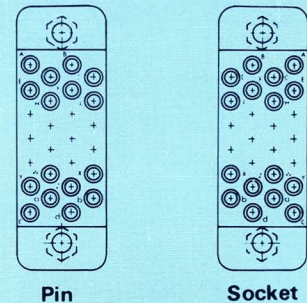


NO. OF POSITIONS	TERMINATION METHOD	POST CONFIGURATION	A DIM.†	CONTACT FINISH	PART NO.	
					PIN ASS'Y [▲]	SOCKET ASS'Y [●]
20	Wrap-Type	.025 Sq.	.659	Sel. Gold/Nickel*	205509-1	205452-1
				Gold/Nickel**	205509-2	205452-2
				Tin	205509-3	205452-3
		.045 Sq.	.810	Sel. Gold/Nickel*	205509-4	205452-4
				Gold/Nickel**	205509-5	205452-5
				Tin	205509-6	205452-6
	TERMI-POINT Clip	.031 x .062	.810	Sel. Gold/Nickel*	205509-7	205452-7
				Gold/Nickel**	205509-8	205452-8
		.022 x .036	.659	Sel. Gold/Nickel*	1-205509-0	1-205452-0
				Gold/Nickel**	1-205509-1	1-205452-1
				Tin	1-205509-2	1-205452-2
				Sel. Gold/Nickel*	1-205509-3	1-205452-3
				Gold/Nickel**	1-205509-4	1-205452-4
				Tin	1-205509-5	1-205452-5

26-Position



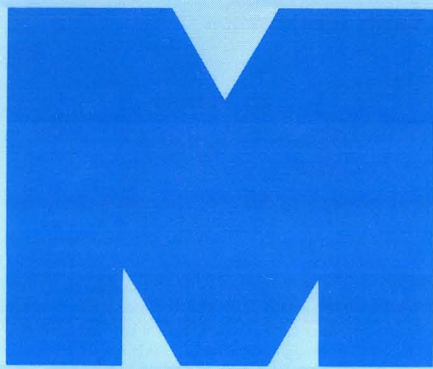
26 Position



NO. OF POSITIONS	TERMINATION METHOD	POST CONFIGURATION	A DIM.†	CONTACT FINISH	PART NO.	
					PIN ASS'Y [▲]	SOCKET ASS'Y [●]
26	Wrap-Type	.025 Sq.	.659	Sel. Gold/Nickel*	205512-1	205511-1
				Gold/Nickel**	205512-2	205511-2
				Tin	205512-3	205511-3
		.045 Sq.	.810	Sel. Gold/Nickel*	205512-4	205511-4
				Gold/Nickel**	205512-5	205511-5
				Tin	205512-6	205511-6
	TERMI-POINT Clip	.031 x .062	.810	Sel. Gold/Nickel*	205512-7	205511-7
				Gold/Nickel**	205512-8	205511-8
		.022 x .036	.659	Tin	205512-9	205511-9
				Sel. Gold/Nickel*	1-205512-0	1-205511-0
		.031 x .062	.810	Gold/Nickel**	1-205512-1	1-205511-1
				Tin	1-205512-2	1-205511-2
				Sel. Gold/Nickel*	1-205512-3	1-205511-3
				Gold/Nickel**	1-205512-4	1-205511-4
				Tin	1-205512-5	1-205511-5

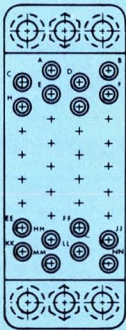
† Post length accommodates up to 3 terminations. Posts accepting a max. of 1 or 2 terminations are also available.
 * .000030 selective gold plating on contact mating area only. Remainder of contact is gold flash.
 ** .000030 gold plating on contact body; contact post is gold flash. Extraction Tool—Part No. 305183.
 ▲ 200346-2 Mating block using crimp snap-in contacts. △ 200512-2 Mating block using crimp snap-in contacts.
 ● 201356-1 Mating block using crimp snap-in contacts. ○ 201359-1 Mating block using crimp snap-in contacts.
 For appropriate accessory hardware refer to pages 9-92, 9-93, 9-96 and 9-97.
 Refer to pages 9-82 and 9-83 for contact specifications (Type III(+)) Size 16) and page 9-84 for contact specifications (Type VI Size 16).
Note: Connector assemblies listed above can be furnished "reverse-loaded" (pins preloaded in a socket block and sockets pre-loaded in the appropriate mating half).

CONNECTORS FOR HAND TOOL AND SEMI-AUTOMATIC MACHINE WIRING ONLY (Fully loaded with contacts)



Cavity Identification

34 Position

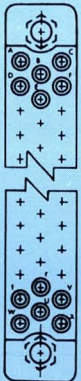


Pin

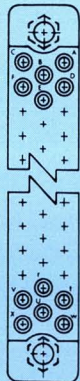


Socket

41 Position

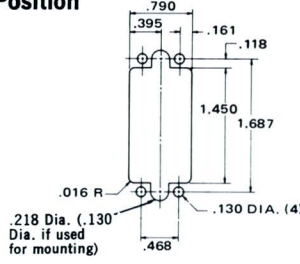


Pin

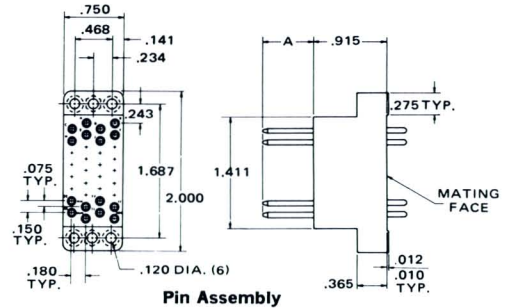


Socket

34-Position



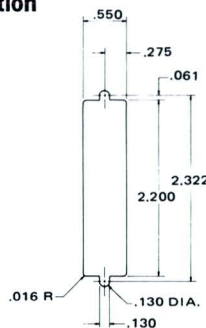
Suggested Panel Cutout



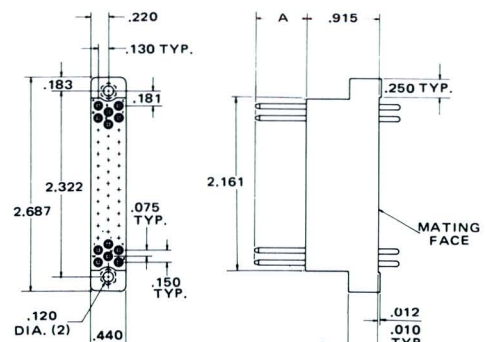
Pin Assembly

NO. OF POSITIONS	TERMINATION METHOD	POST CONFIGURATION	A DIM. †	CONTACT FINISH	PART NO.	
					PIN ASS'Y ^Δ	SOCKET ASS'Y [○]
34	Wrap-Type	.025 Sq.	.659	Sel. Gold/Nickel*	205361-1	205505-1
				Gold/Nickel**	205361-2	205505-2
				Tin	205361-3	205505-3
		.045 Sq.	.810	Sel. Gold/Nickel*	205361-4	205505-4
				Gold/Nickel**	205361-5	205505-5
				Tin	205361-6	205505-6
	TERMI-POINT Clip	.031 x .062	.810	Sel. Gold/Nickel*	205361-7	205505-7
				Gold/Nickel**	205361-8	205505-8
				Tin	205361-9	205505-9
		.022 x .036	.659	Sel. Gold/Nickel*	1-205361-0	1-205505-0
				Gold/Nickel**	1-205361-1	1-205505-1
				Tin	1-205361-2	1-205505-2
.031 x .062	.810	Sel. Gold/Nickel*	1-205361-3	1-205505-3		
		Gold/Nickel**	1-205361-4	1-205505-4		
		Tin	1-205361-5	1-205505-5		

41-Position



Suggested Panel Cutout



Pin Assembly

NO. OF POSITIONS	TERMINATION METHOD	POST CONFIGURATION	A DIM. †	CONTACT FINISH	PART NO.	
					PIN ASS'Y ^Δ	SOCKET ASS'Y [○]
41	Wrap-Type	.025 Sq.	.659	Sel. Gold/Nickel*	205510-1	205513-1
				Gold/Nickel**	205510-2	205513-2
				Tin	205510-3	205513-3
		.045 Sq.	.810	Sel. Gold/Nickel*	205510-4	205513-4
				Gold/Nickel**	205510-5	205513-5
				Tin	205510-6	205513-6
	TERMI-POINT Clip	.031 x .062	.810	Sel. Gold/Nickel*	205510-7	205513-7
				Gold/Nickel**	205510-8	205513-8
				Tin	205510-9	205513-9
		.022 x .036	.659	Sel. Gold/Nickel*	1-205510-0	1-205513-0
				Gold/Nickel**	1-205510-1	1-205513-1
				Tin	1-205510-2	1-205513-2
		.031 x .062	.810	Sel. Gold/Nickel*	1-205510-3	1-205513-3
				Gold/Nickel**	1-205510-4	1-205513-4
				Tin	1-205510-5	1-205513-5

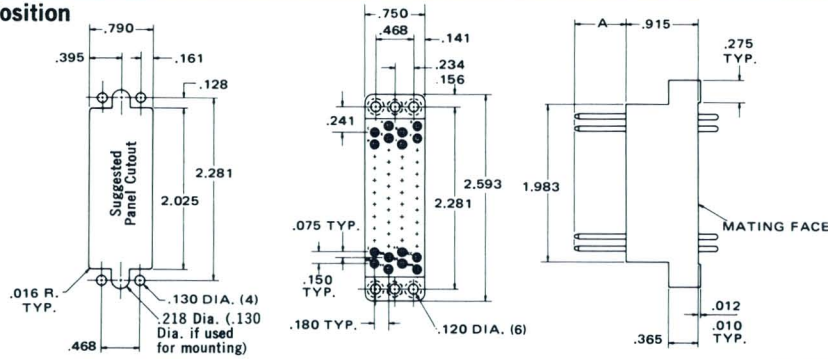
† Post length accommodates up to 3 terminations. Posts accepting a max. of 1 or 2 terminations are also available.
 * .000030 selective gold plating on contact mating area only. Remainder of contact is gold flash.
 ** .000030 gold plating on contact body; contact post is gold flash. **Extraction Tool**—Part No. 305183.
^Δ 200838-2 Mating block using crimp snap-in contacts. ^Δ 201302-1 Mating block using crimp snap-in contacts.
[○] 201357-1 Mating block using crimp snap-in contacts. [○] 202135-2 Mating block using crimp snap-in contacts.
 For appropriate accessory hardware refer to pages 9-98 thru 9-101.

Refer to pages 9-82 and 9-83 for contact specifications (Type III(+)) Size 16 and page 9-84 for contact specifications. (Type VI size 16)

Note: Connector assemblies listed above can be furnished "reverse-loaded" (pins preloaded in a socket block and sockets pre-loaded in the appropriate mating half).

CONNECTORS FOR HAND TOOL AND SEMI-AUTOMATIC MACHINE WIRING ONLY (Fully loaded with contacts)

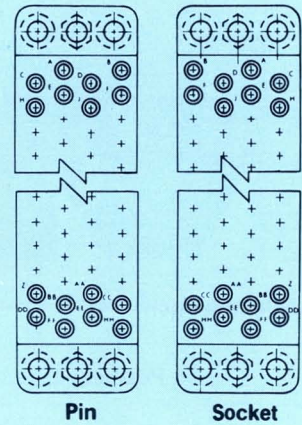
50-Position



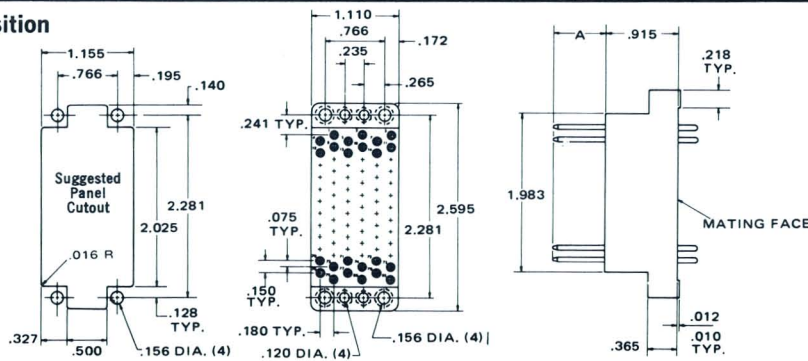
NO. OF POSITIONS	TERMINATION METHOD	POST CONFIGURATION	A DIM. †	CONTACT FINISH	PART NO.	
					PIN ASS'Y ^Δ	SOCKET ASS'Y [○]
50	Wrap-Type	.025 Sq.	.659	Sel. Gold/Nickel*	205156-1	205514-1
				Gold/Nickel**	205156-2	205514-2
				Tin	205156-3	205514-3
		.045 Sq.	.810	Sel. Gold/Nickel*	205156-4	205514-4
				Gold/Nickel**	205156-5	205514-5
				Tin	205156-6	205514-6
		.031 x .062	.810	Sel. Gold/Nickel*	205156-7	205514-7
				Gold/Nickel**	205156-8	205514-8
				Tin	205156-9	205514-9
	TERMI-POINT Clip	.022 x .036	.659	Sel. Gold/Nickel*	1-205156-0	1-205514-0
				Gold/Nickel**	1-205156-1	1-205514-1
				Tin	1-205156-2	1-205514-2
		.031 x .062	.810	Sel. Gold/Nickel*	1-205156-3	1-205514-3
				Gold/Nickel**	1-205156-4	1-205514-4
				Tin	1-205156-5	1-205514-5

Cavity Identification

50 Position

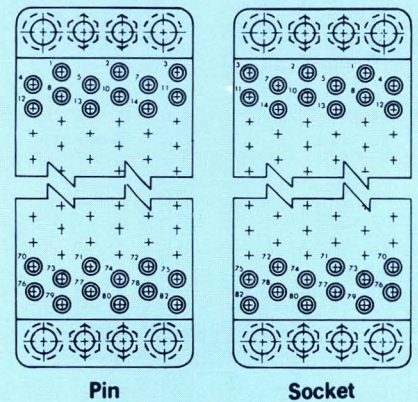


75-Position

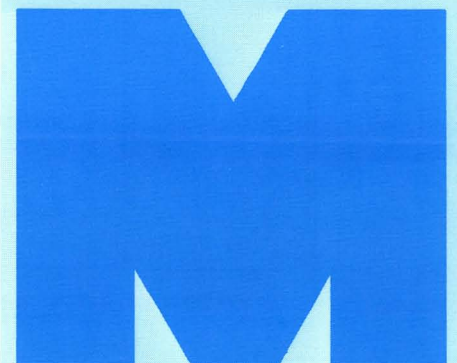


NO. OF POSITIONS	TERMINATION METHOD	POST CONFIGURATION	A DIM. †	CONTACT FINISH	PART NO.	
					PIN ASS'Y ^Δ	SOCKET ASS'Y [○]
75	Wrap-Type	.025 Sq.	.659	Sel. Gold/Nickel*	205157-1	205515-1
				Gold/Nickel**	205157-2	205515-2
				Tin	205157-3	205515-3
		.045 Sq.	.810	Sel. Gold/Nickel*	205157-4	205515-4
				Gold/Nickel**	205157-5	205515-5
				Tin	205157-6	205515-6
		.031 x .062	.810	Sel. Gold/Nickel*	205157-7	205515-7
				Gold/Nickel**	205157-8	205515-8
				Tin	205157-9	205515-9
	TERMI-POINT Clip	.022 x .036	.659	Sel. Gold/Nickel*	1-205157-0	1-205515-0
				Gold/Nickel**	1-205157-1	1-205515-1
				Tin	1-205157-2	1-205515-2
		.031 x .062	.810	Sel. Gold/Nickel*	1-205157-3	1-205515-3
				Gold/Nickel**	1-205157-4	1-205515-4
				Tin	1-205157-5	1-205515-5

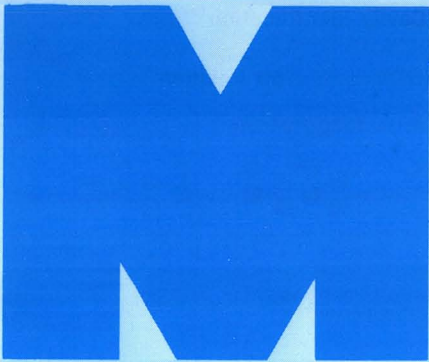
75 Position



† Post length accommodates up to 3 terminations. Posts accepting a max. of 1 or 2 terminations are also available.
 * .000030 selective gold plating on contact mating area only. Remainder of contact is gold flash.
 ** .000030 gold plating on contact body; contact post is gold flash. Extraction Tool—Part No. 305183.
^Δ 200277-2 Mating block using crimp snap-in contacts. ^Δ 201311-1 Mating block using crimp snap-in contacts.
[○] 201358-1 Mating block using crimp snap-in contacts. [○] 201310-1 Mating block using crimp snap-in contacts.
 For appropriate accessory hardware refer to pages 9-102 thru 9-105.
 Refer to pages 9-82 and 9-83 for contact specifications (Type III(+)) Size 16) and page 9-84 for contact specifications (Type VI Size 16).
Note: Connector assemblies listed above can be furnished "reverse-loaded" (pins preloaded in a socket block and sockets pre-loaded in the appropriate mating half).

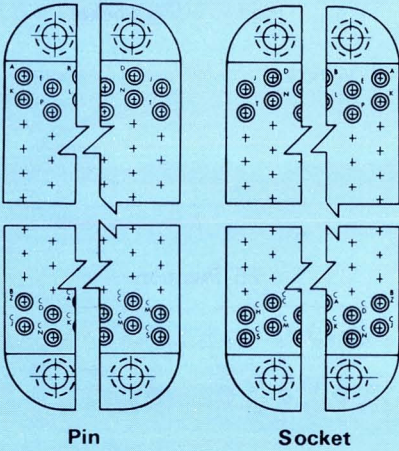


CONNECTORS FOR HAND TOOL AND SEMI-AUTOMATIC MACHINE WIRING ONLY (Fully loaded with contacts)



Cavity Identification

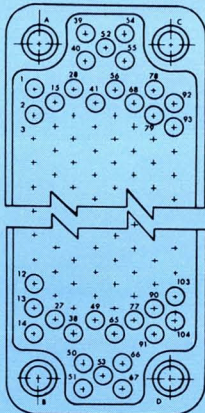
104 Position



Pin

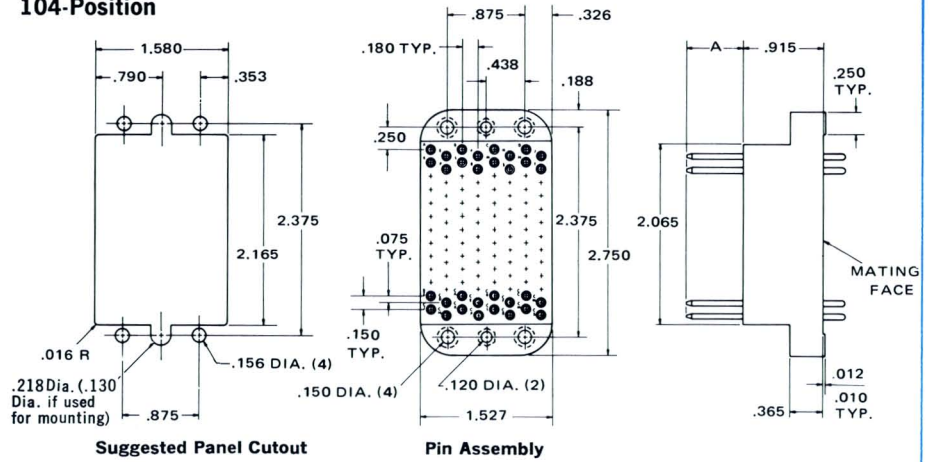
Socket

104 With Center Fastener



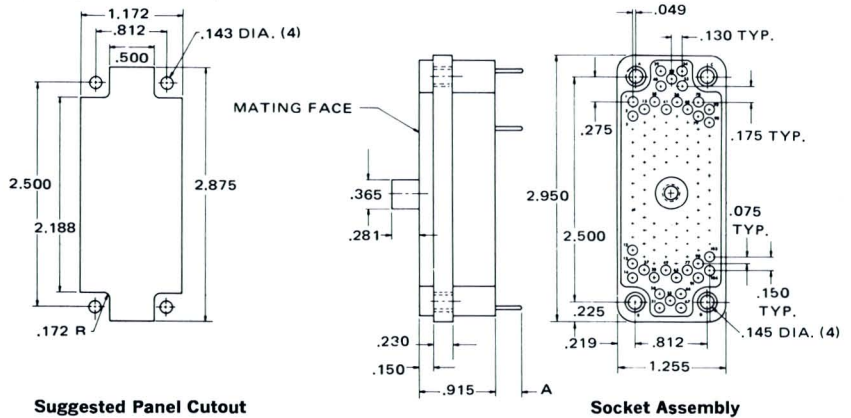
Socket

104-Position



NO. OF POSITIONS	TERMINATION METHOD	POST CONFIGURATION	A DIM. †	CONTACT FINISH	PART NO.	
					PIN ASS'Y ^A	SOCKET ASS'Y [•]
104	Wrap-Type	.025 Sq.	.659	Sel. Gold/Nickel*	205158-1	205359-1
				Gold/Nickel**	205158-2	205359-2
				Tin	205158-3	205359-3
		.045 Sq.	Sel. Gold/Nickel*	205158-4	205359-4	
			Gold/Nickel**	205158-5	205359-5	
			Tin	205158-6	205359-6	
	TERMI-POINT Clip	.031 x .062	.810	Sel. Gold/Nickel*	205-58-7	205359-7
				Gold/Nickel**	205158-8	205359-8
				Tin	205158-9	205359-9
		.022 x .036	.659	Sel. Gold/Nickel*	1-205158-0	1-205359-0
				Gold/Nickel**	1-205158-1	1-205359-1
				Tin	1-205158-2	1-205359-2
.031 x .062	.810	Sel. Gold/Nickel*	1-205258-3	1-205359-3		
		Gold/Nickel**	1-205158-4	1-205359-4		
		Tin	1-205158-5	1-205359-5		

104-Position with Center Fastener (mates with pin assembly containing crimp snap-in contacts)



NO. OF POSITIONS	TERMINATION METHOD	POST CONFIGURATION	A DIM. †	CONTACT FINISH	PART NO.	
					PIN ASS'Y	SOCKET ASS'Y [•]
104 (with Center Fastener)	Wrap-Type	.025 Sq.	.659	Sel. Gold/Nickel*	—	205720-2

† Post length accommodates up to 3 terminations. Posts accepting a max. of 1 or 2 terminations are also available.
* .00030 selective gold plating on contact mating area only. Remainder of contact is gold flash.
** .00030 gold plating on contact body; contact post is gold flash. Extraction Tool—Part No. 305183.

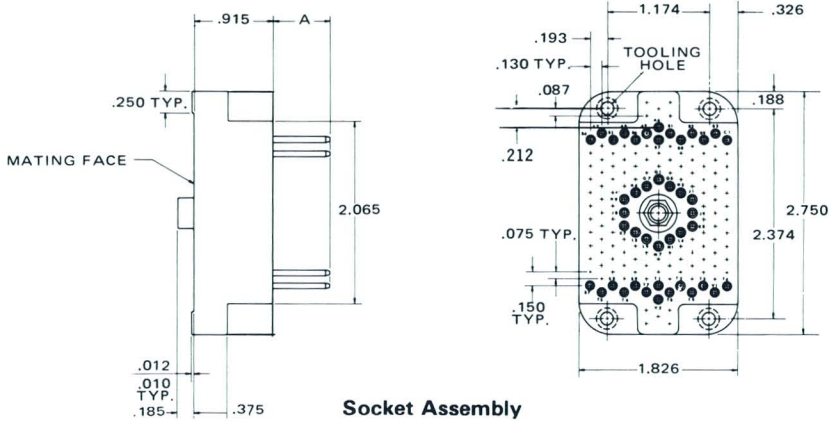
▲ 201037-1 Mating block for crimp snap-in contacts. ○ 201692-2 Mating block for crimp snap-in contacts.

● 201345-1 Mating block for crimp snap-in contacts. For appropriate accessory hardware refer to pages 9-106 thru 9-109.
Refer to pages 9-82 and 9-83 for contact specifications (Type III(+)) Size 16) and page 9-84 for contact specifications (Type VI Size 16).

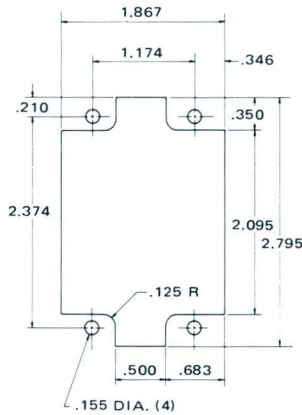
Note: Connector assemblies listed above can be furnished "reverse-loaded" (pins preloaded in a socket block and sockets pre-loaded in the appropriate mating half).

CONNECTORS FOR HAND TOOL AND SEMI-AUTOMATIC MACHINE WIRING ONLY (Fully loaded with contacts)

160-Position with Center Fastener (mates with pin assembly containing crimp snap-in contacts)



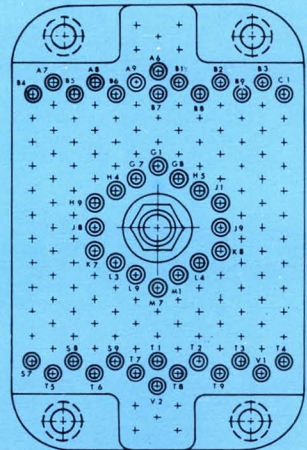
Socket Assembly



Suggested Panel Cutout

Cavity Identification

160 Position



Socket

NO. OF POSITIONS	TERMINATION METHOD	POST CONFIGURATION	A DIM. †	CONTACT FINISH	PART NO.	
					PIN ASS'Y	SOCKET ASS'Y •
160	Wrap-Type	.025 Sq.	.659	Sel. Gold/Nickel*	—	205516-1
				Gold/Nickel**	—	205516-2
				Tin	—	205516-3
		.045 Sq.	.810	Sel. Gold/Nickel*	—	205516-4
				Gold/Nickel**	—	205516-5
				Tin	—	205516-6
	TERMI-POINT Clip	.031 x .062	.810	Sel. Gold/Nickel*	—	205516-7
				Gold/Nickel**	—	205516-8
				Tin	—	205516-9
		.022 x .036	.659	Sel. Gold/Nickel*	—	1-205516-0
				Gold/Nickel**	—	1-205516-1
				Tin	—	1-205516-2
.031 x .062	.810	Sel. Gold/Nickel*	—	1-205516-3		
		Gold/Nickel**	—	1-205516-4		
		Tin	—	1-205516-5		

† Post length accommodates up to 3 terminations. Posts accepting a max. of 1 or 2 terminations are also available.

* .000030 selective gold plating on contact mating area only. Remainder of contact is gold flash.

** .000030 gold plating on contact body; contact post is gold flash. Extraction Tool—Part No. 305183.

• 202799-2 Mating block for crimp snap-in contacts.

For appropriate accessory hardware refer to pages 9-110 and 9-111.

Refer to pages 9-82 and 9-83 for contact specifications (Type III(+)) Size 16) and page 9-84 for contact specifications (Type VI Size 16).

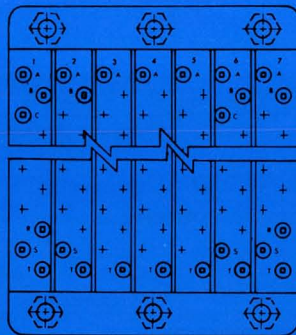
Note: Connector assemblies listed above can be furnished "reverse-loaded" (pins preloaded in a socket block and sockets pre-loaded in the appropriate mating half).

CONNECTORS WIRABLE WITH FULLY AUTOMATIC MACHINES (Fully loaded with contacts)



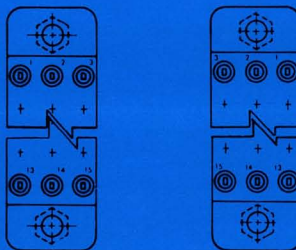
Cavity Identification

112 Position



Socket

15 Position



Pin

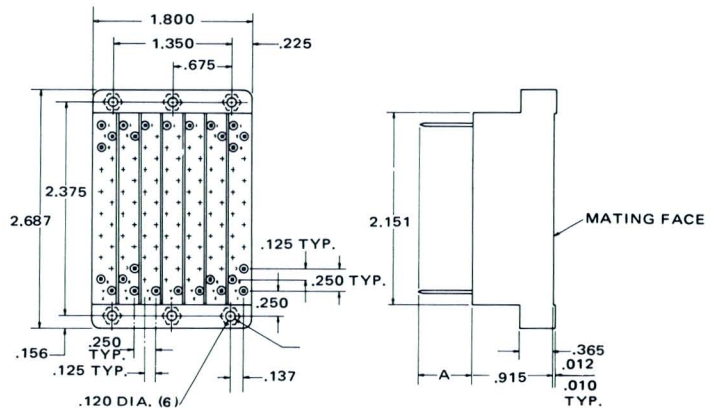
Socket

Materials:

HOUSING— Phenolic per MIL-M-14, Type CFG; Color, black

CONTACTS—Brass per MIL-C-50; Selective .000030 gold over .000050 nickel plated (gold plating per MIL-G-45204, nickel plating per QQ-N-290). Other finishes and plating thicknesses available upon request.

112-Position (.250 staggered grid, mates with pin assembly containing crimp snap-in contacts).



NO. OF POSITIONS	TERMINATION METHOD	POST CONFIGURATION	A Dim.†	CONTACT FINISH	PART NO.	
					PIN ASS'Y	SOCKET ASS'Y
112	Wrap-Type	.025 Sq.	.659	Sel. Gold/Nickel*	—	206456-1 •
15	TERMI-POINT Clip	.031 x .062	.810	Sel. Gold/Nickel*	205628-1△	205698-1 ◦

†Post length will accommodate up to 3 terminations. Posts accepting a maximum of 1 or 2 terminations are also available.

*.000030 selective gold plating on contact mating area only. Remainder of contact is gold flash.

Extraction Tool—Part No. 305183

• 206199-2 Mating block using crimp snap-in contacts:

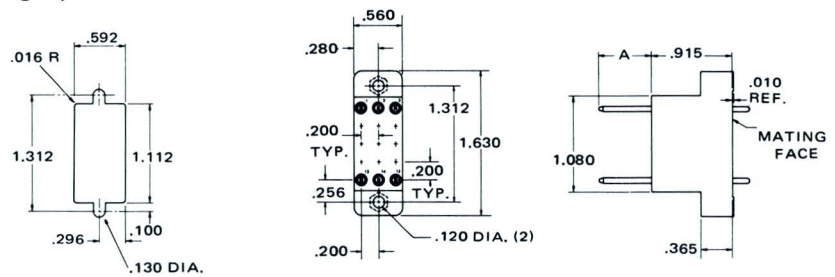
Refer to pages 9-82 and 9-83 for contact specifications (Type III(+)) Size 16) and page 9-84 for contact specifications. (Type VI Size 16).

△205606-3 Mating block using crimp snap-in contacts.

◦205607-2 Mating block using crimp snap-in contacts.

Refer to pages 9-82 and 9-83 for contact specifications (Type III(+)) Size 16) and page 9-84 for contact specifications. (Type VI Size 16). For appropriate accessory hardware refer to pages 9-96 and 9-97 (26 positions).

15-Position (.200 grid)



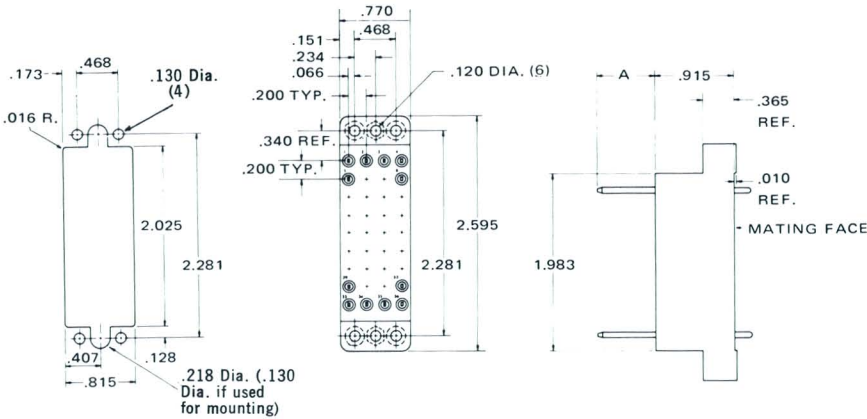
Suggested Panel Cutout

Pin Assembly

Note: All connectors listed above can be supplied with posted pins and sockets to accept .022" x .036" TERMI-POINT clips or wrap-type terminations using .025" sq., .045" sq. and .031" x .062" wiring techniques — Connector assemblies listed above can also be furnished "reverse-loaded" (pins preloaded in a socket block and sockets preloaded in the appropriate mating half).

CONNECTORS WIRABLE WITH FULLY AUTOMATIC MACHINES (Fully loaded with contacts)

36-Position (.200 grid)



Suggested Panel Cutout

Pin Assembly

NO. OF POSITIONS	TERMINATION METHOD	POST CONFIGURATION	A DIM.†	CONTACT FINISH	PART NO.	
					PIN ASS'Y	SOCKET ASS'Y
36	TERMI-POINT Clip	.031 x .062	.810	Sel. Gold/Nickel*	205629-1▲	205609-1•
50	TERMI-POINT Clip	.031 x .062	.810	Sel. Gold/Nickel*	205630-1▲	205608-1◦

†Post length will accommodate up to 3 terminations. Posts accepting a maximum of 1 or 2 terminations are also available.

*.000030 selective gold plating on contact mating area only. Remainder of contact is gold flash.

Extraction Tool—Part No. 305183

▲203956-2 Mating block using crimp snap-in contacts.

•205076-2 Mating block using crimp snap-in contacts.

For appropriate accessory hardware refer to pages 9-102 and 9-103 (50 positions).

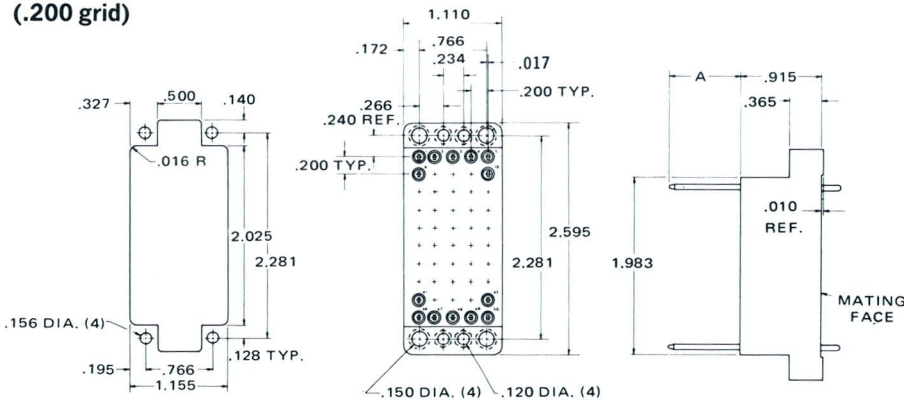
△203622-2 Mating block using crimp snap-in contacts.

◊205058-2 Mating block using crimp snap-in contacts.

For appropriate accessory hardware refer to pages 9-104 and 9-105 (75 positions).

Refer to pages 9-82 and 9-83 for contact specifications (Type III(+)) Size 16) and page 9-84 for contact specifications. (Type VI Size 16).

50-Position (.200 grid)



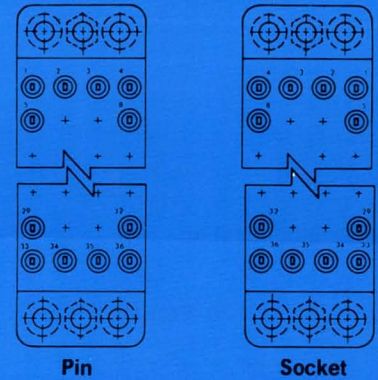
Suggested Panel Cutout

Pin Assembly

Note: All connectors listed above can be supplied with posted pins and sockets to accept .022" x .036" TERMI-POINT clips or wrap-type terminations using .025" sq., .045" sq. and .031" x .062" wiring techniques — Connector assemblies listed above can also be furnished "reverse-loaded" (pins preloaded in a socket block and sockets preloaded in the appropriate mating half).

Cavity Identification

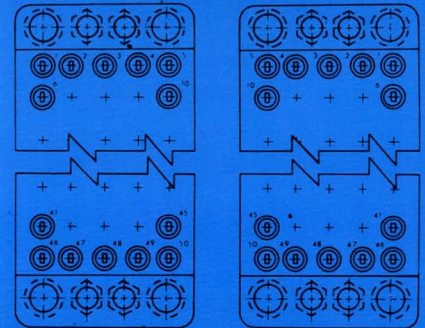
36 Position



Pin

Socket

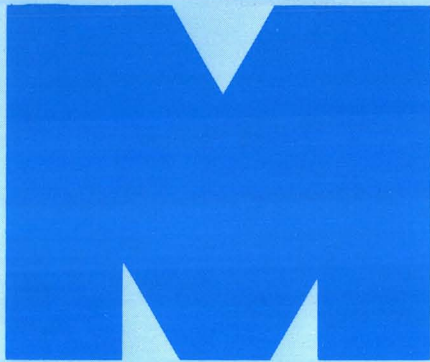
50 Position



Pin

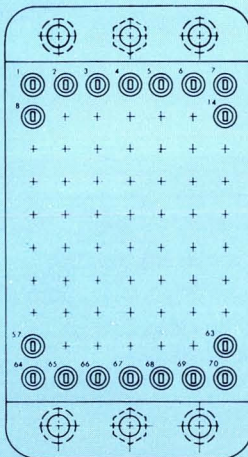
Socket

CONNECTORS WIRABLE WITH FULLY AUTOMATIC MACHINES (Fully loaded with contacts)

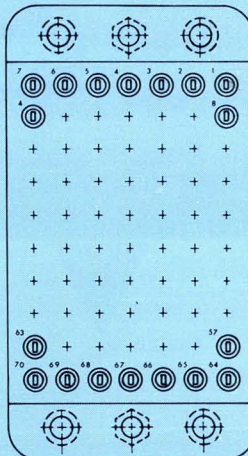


Cavity Identification

70 Position

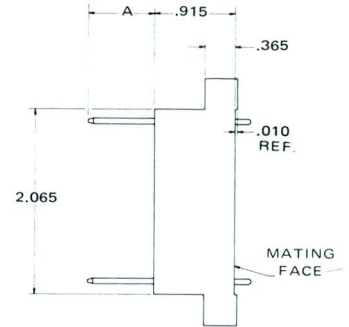
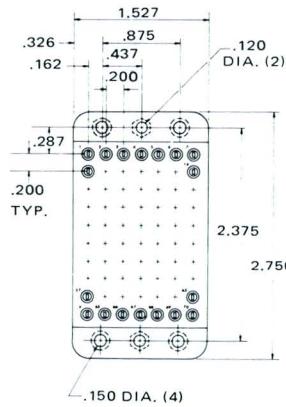


Pin

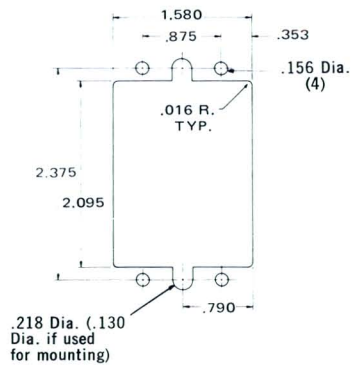


Socket

70-Position
(.200 grid)



Pin Assembly



Suggested Panel Cutout

NO. OF POSITIONS	TERMINATION METHOD	POST CONFIGURATION	A DIM.†	CONTACT FINISH	PART NO.	
					PIN ASS'Y	SOCKET ASS'Y
70	TERMI-POINT Clip	.031 x .062	.810	Sel. Gold/Nickel*	205631-1▲	205697-1•

†Post length will accommodate up to 3 terminations. Posts accepting a maximum of 1 or 2 terminations are also available.

*.000030 selective gold plating on contact mating area only. Remainder of contact is gold flash.

Extraction Tool—Part No. 305183

▲205603-2 Mating blocks using crimp snap-in contacts.

•205604-3 Mating blocks using crimp snap-in contacts.

Refer to pages 9-82 and 9-83 for contact specifications (Type III(+)) Size 16) and page 9-84 for contact specifications (Type VI Size 16).

For appropriate accessory hardware refer to pages 9-106 and 9-107 (104 positions).

Note: All connectors listed above can be supplied with posted pins and sockets to accept .022" x .036" TERMI-POINT clips or wrap-type terminations using .025" sq., .045" sq. and .031" x .062" wiring techniques — Connector assemblies listed above can also be furnished "reverse-loaded" (pins preloaded in a socket block and sockets preloaded in the appropriate mating half).

POSTED CONTACTS (For replacement only)

Contact Size 16 — Pin Diameter .062

(Test Current — 13 Amperes)‡

Available loose piece only

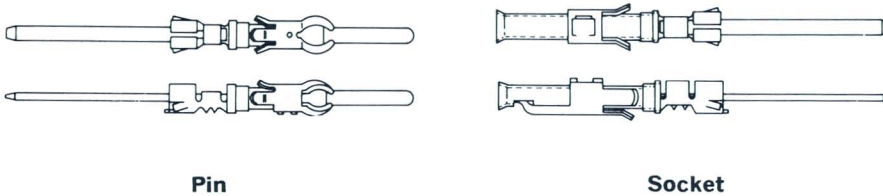
Materials:

Contact Body and Post — Brass per MIL-C-50;

Retention Spring — Stainless steel per QQ-S-766

Contact Specifications

The contacts listed below are acceptable for all applicable connectors that are wirable with hand tools and semi-automatic and fully automatic machines.



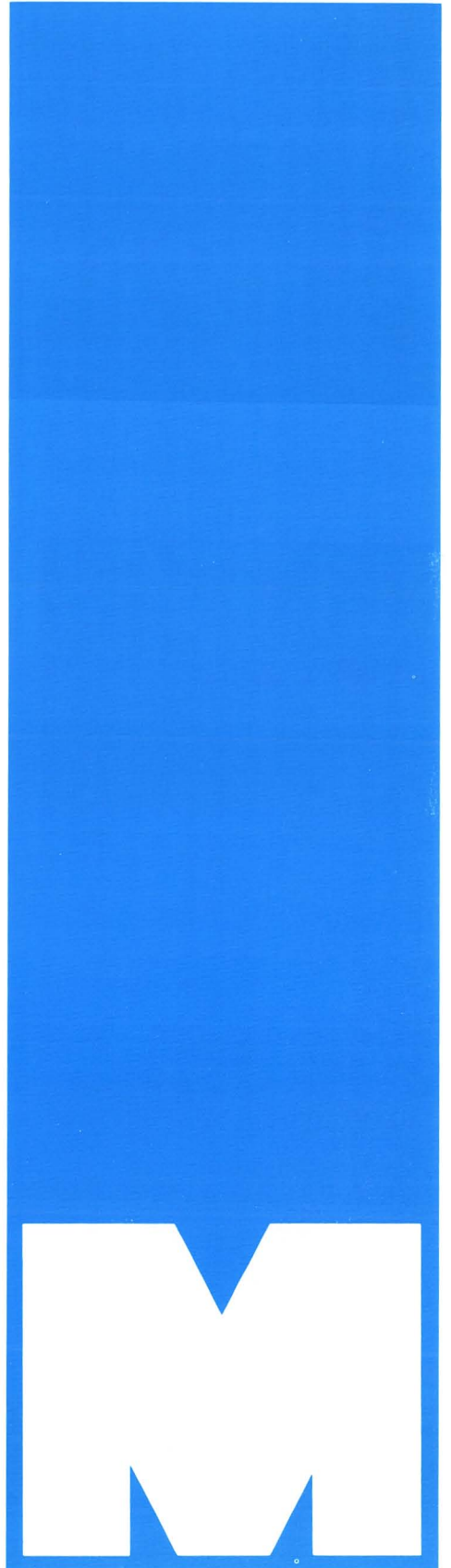
TERMINATION METHOD	POST CONFIGURATION	ACCEPTED WIRE SIZES	CONTACT FINISH	PART NO.†	
				PIN	SOCKET
Wrap-Type	.025 Sq.	#32 AWG (Solid)	Sel. Gold/Nickel*	66460-9	66461-9
			Gold/Nickel**	66460-6	66461-6
			Tin	66460-3	66461-3
	.045 Sq.	#24 AWG Max. (Solid)	Sel. Gold/Nickel*	66471-9	66473-9
			Gold/Nickel**	66471-6	66473-6
			Tin	66471-3	66473-3
.031 x .062	#24 AWG Max. (Solid)	Sel. Gold/Nickel*	66470-9	66472-9	
		Gold/Nickel**	66470-6	66472-6	
		Tin	66470-3	66472-3	
TERMI-POINT Clip	.022 x .036	#30-28 AWG (Solid & Stranded)	Sel. Gold/Nickel*	66469-9	66474-9
			Gold/Nickel**	66469-6	66474-6
			Tin	66469-3	66474-3
	.031 x .062	#28-24 AWG (Solid & Stranded)	Sel. Gold/Nickel*	66468-9	66459-9
			Gold/Nickel**	66468-6	66459-6
			Tin	66468-3	66459-3

†Post length will accommodate up to 3 terminations. Posts accepting a maximum of 1 or 2 terminations are also available.

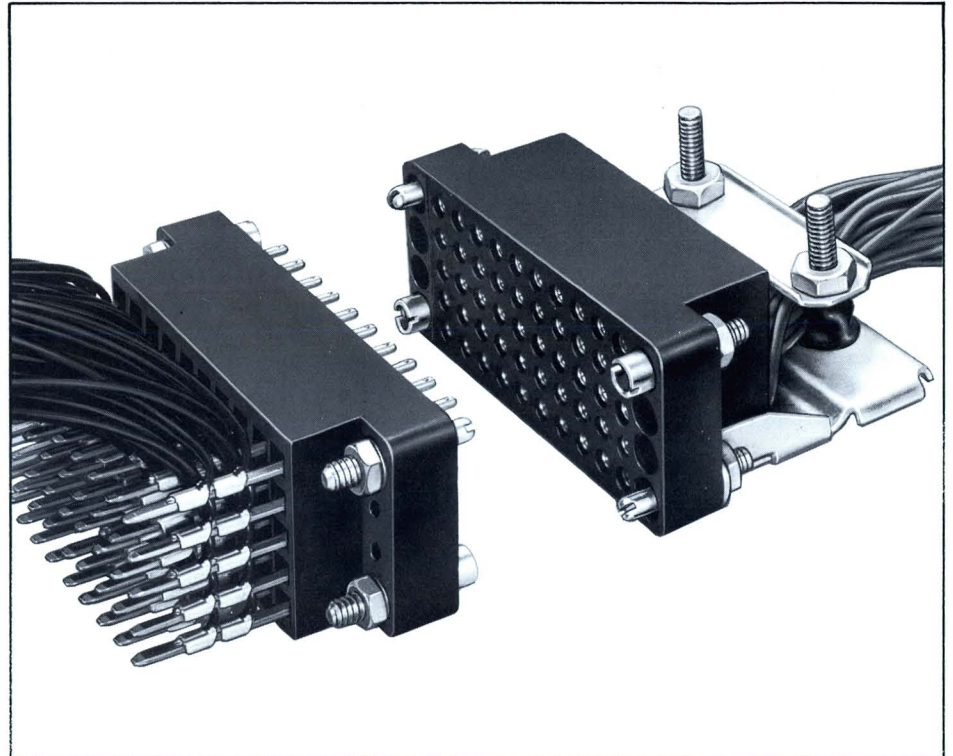
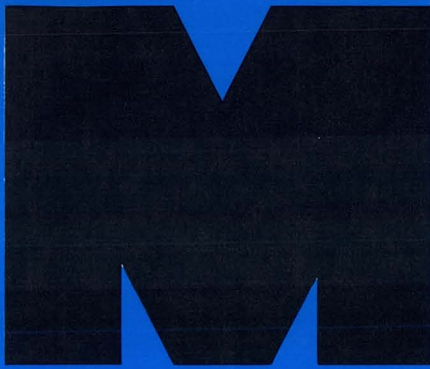
*.000030 selective gold plating on contact mating area only. Remainder of contact is gold flash.

** .000030 gold plating on contact body; contact post is gold flash.

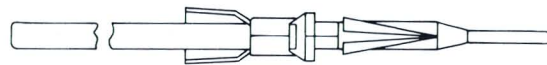
‡Single contact free air test current only. Not to be construed as contact rating current, use only for testing.



**PRE-LOADED CONNECTORS
FOR AUTOMATIC WIRING**



REPLACEMENT CONTACT SPECIFICATIONS (For connector configurations shown on pages 57 and 58)
(For Socket Contacts see type III(+) — Pages 13-15)



Automatic Wiring Pin Contact



CONTACT SIZE 16 — PIN DIAMETER .062 (Test Current — 13 Amperes)‡
Available in loose piece only

FINISH	MAX. TERMINATIONS PER POST	PART NO. FOR TERMI-POINT CLIP TERMINATION	PART NO. FOR WRAP-TYPE TERMINATION
Selective .000030 Gold over .000050 Nickel	1	203627-4	203620-7
	2	203627-5	203620-8
	3	203627-6	203620-9
Tin MIL-T-10727	1	203627-1	203620-1
	2	203627-2	203620-2
	3	203627-3	203620-3

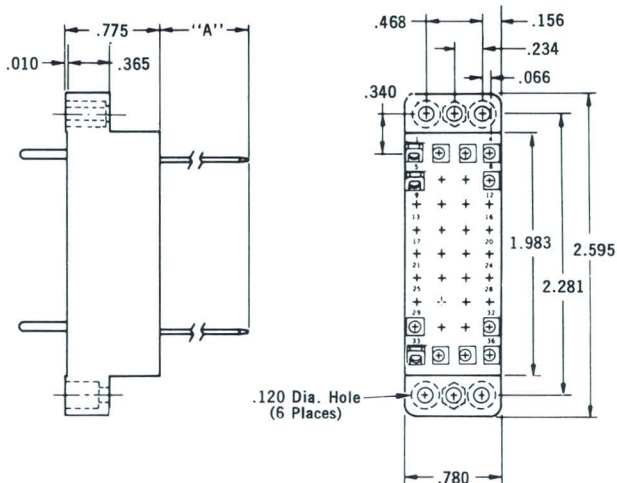
Material: Brass per MIL-C-50.

‡Single Contact Free Air Test Currents only.
Not to be construed as Contact Rating Current, use only for testing.

**PRE-LOADED CONNECTORS
FOR AUTOMATIC WIRING**

Housing Material: Phenolic, per MIL-M-14, Type CFG, Black

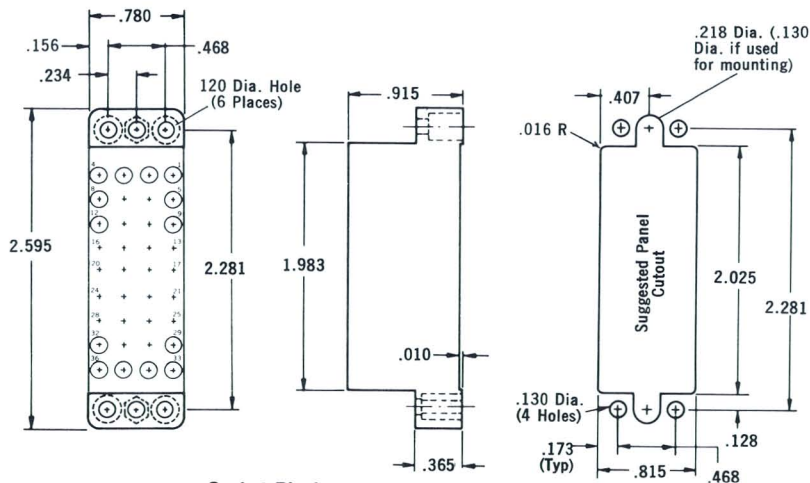
36 Position



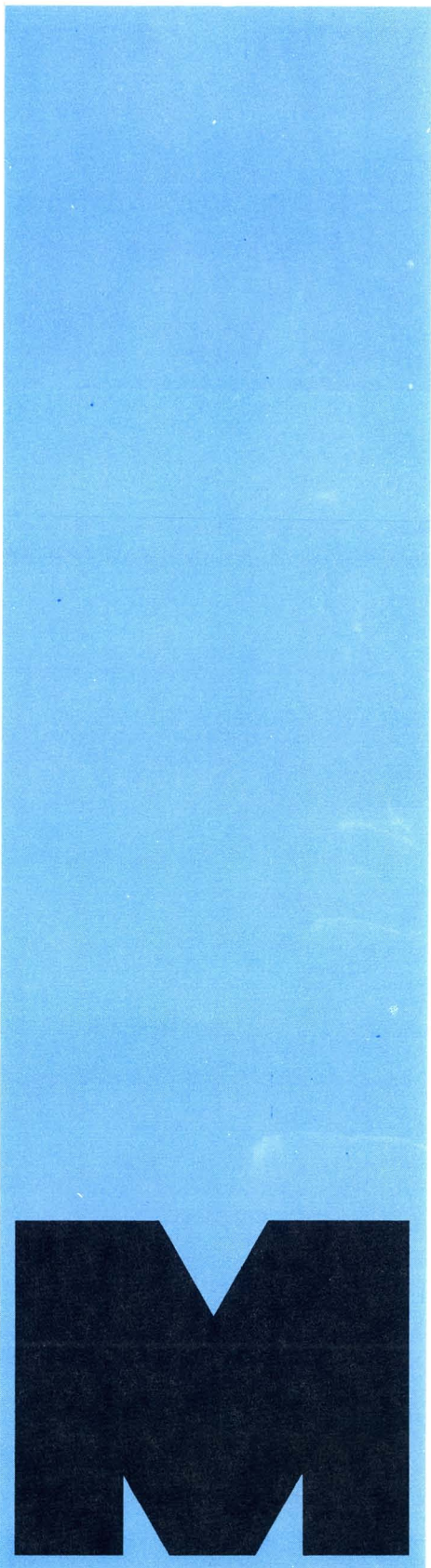
Standard Pin Block

NO. OF CONTACTS	TERMINATION METHOD	POST CONFIGURATION	PIN CONTACT FINISH	MAX. TERMINATIONS PER POST	A DIM.	STANDARD BLOCK NO.
36	TERMI-POINT Clip	.031 x .062	Selective .000030 Gold over .000050 Nickel	3	.810	1-203957-2
			Nickel	2	.555	1-203957-1
			Tin	1	.340	1-203957-0
				3	.810	203957-9
				2	.555	203957-8
	Wrap-Type	.031 x .062	Selective .000030 Gold over .000050 Nickel	3†	.810	203967-9
			Tin per MIL-T-10727	3†	.810	203967-3

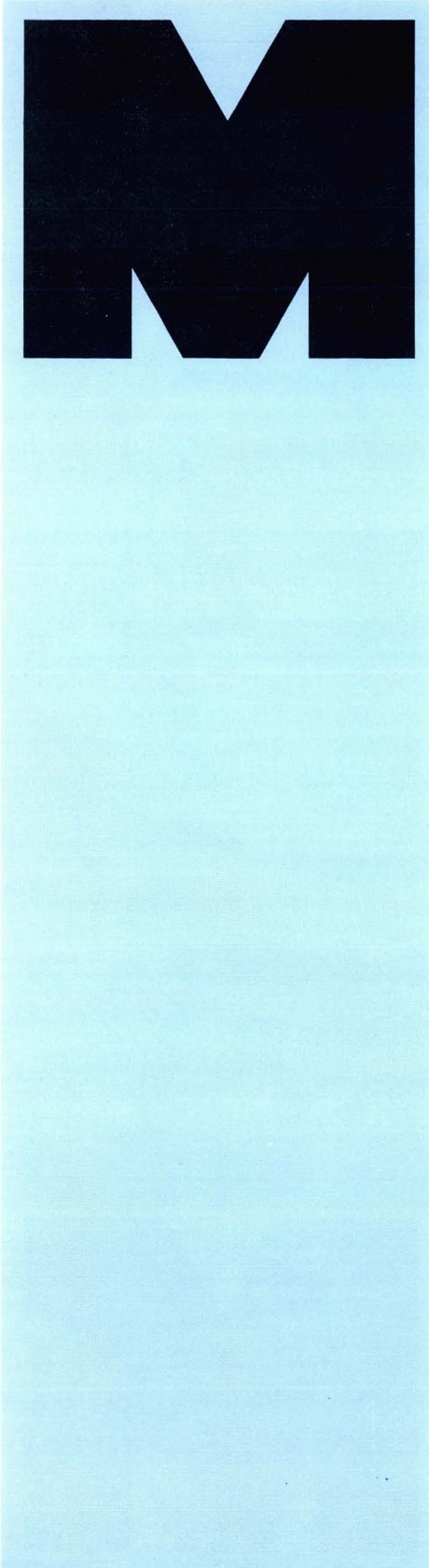
†Post length will accommodate up to 3 terminations. Posts accepting a maximum of 1 or 2 terminations are also available.
 *Refer to pages 9-82 and 9-83 for contact specifications (Type III(+)) Size 16) and page 9-84 for contact specifications (Type VI Size 16).
 For appropriate accessory hardware refer to pages 9-102 and 9-103 (50 positions).



**Socket Block
Part No. 203956-2***

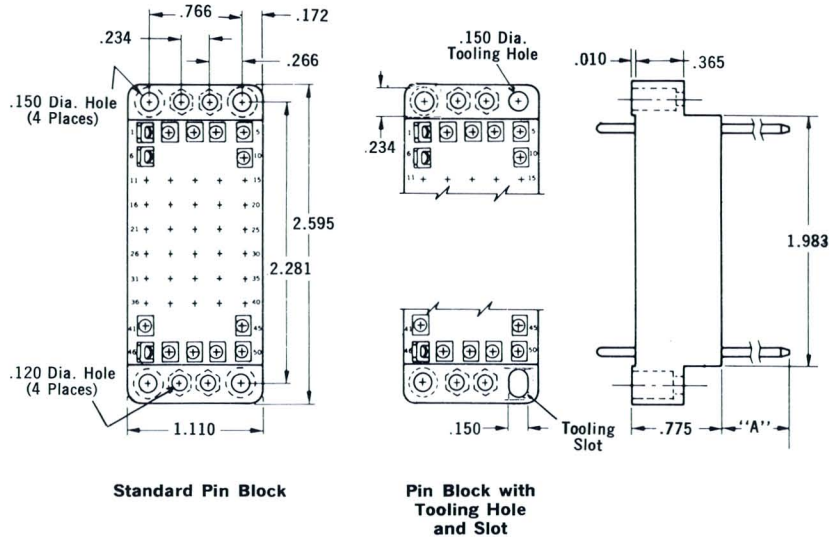


PRE-LOADED CONNECTORS FOR AUTOMATIC WIRING



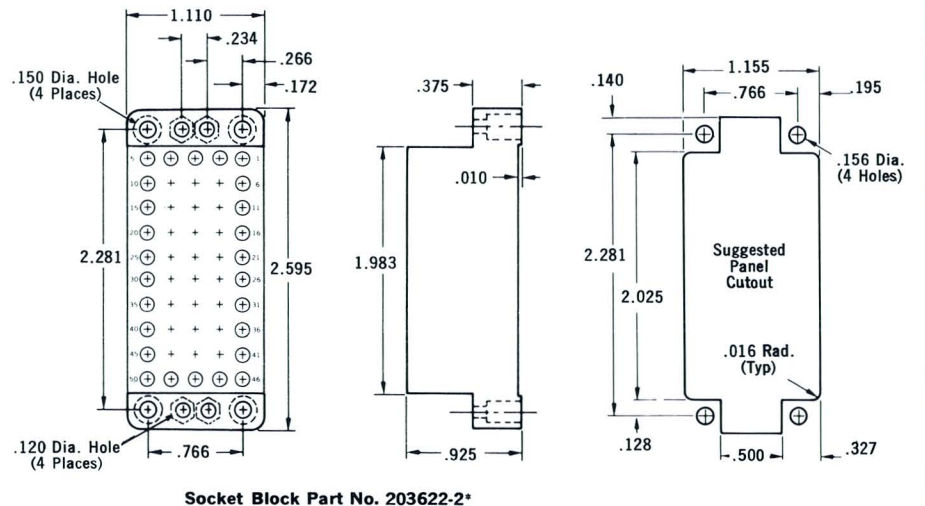
Housing Material: Phenolic, per MIL-M-14, Type CFG, Black

50 Position



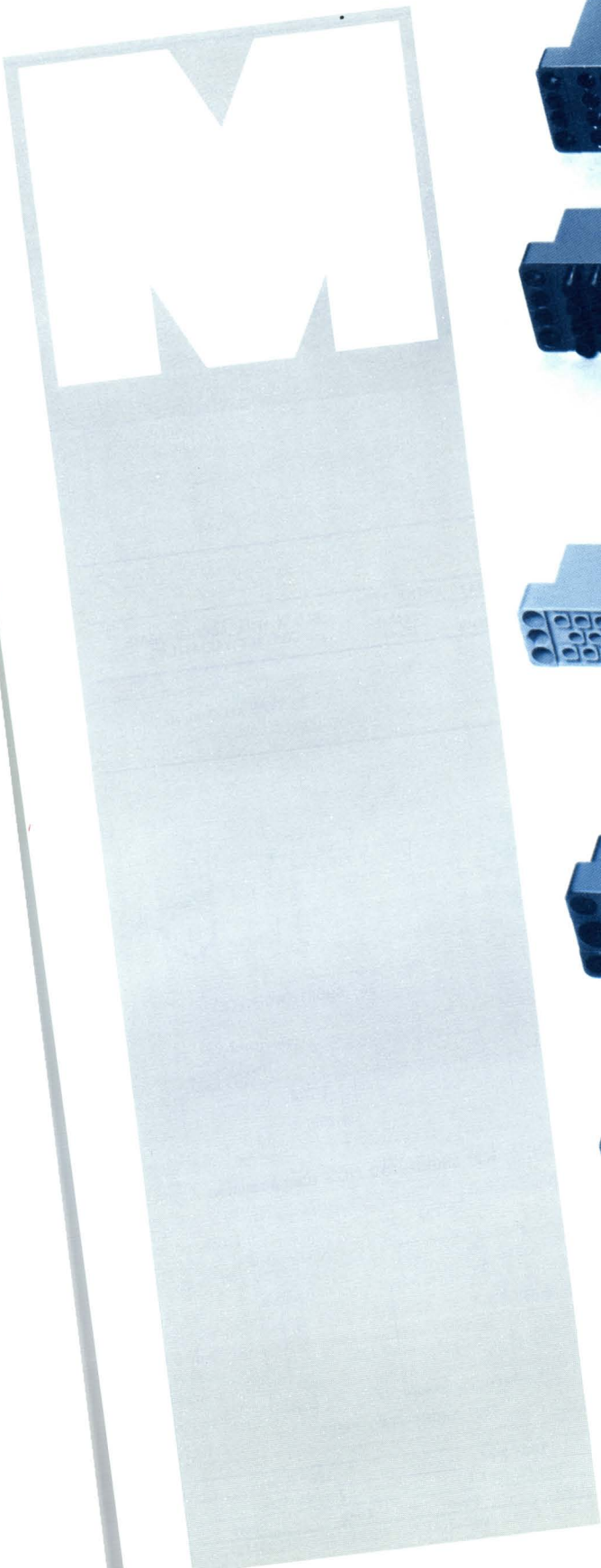
NO. OF CONTACTS	TERMINATION METHOD	POST CONFIGURATION	PIN CONTACT FINISH	MAX. TERMINATIONS PER POST	A DIM.	STANDARD PIN BLOCK	STANDARD PIN BLOCK WITH TOOLING HOLE & SLOT	
50	TERMI-POINT Clip	.031 x .062	Tin	1	.340	203628-1	203629-1	
				2	.555	203628-2	203629-2	
				3	.810	203628-3	203629-3	
			Selective .000030 Gold over .000030 Nickel	1	.340	203628-4	203629-4	
				2	.555	203628-5	203629-5	
				3	.810	203628-6	203629-6	
	Wrap-Type	.031 x .062	Selective .000030 Gold over .000030 Nickel	3†	.810	203623-9	203624-9	
				Tin per MIL-T-10727	3†	.810	203623-3	203624-3

†Post length will accommodate up to 3 terminations. Posts accepting a maximum of 1 or 2 terminations are also available.
 * Refer to pages 9-82 and 9-83 for contact specifications (Type III(+)) Size 16) and page 9-84 for contact specifications (Type VI Size 16).
 For appropriate accessory hardware refer to pages 9-104 and 9-105 (75 positions).

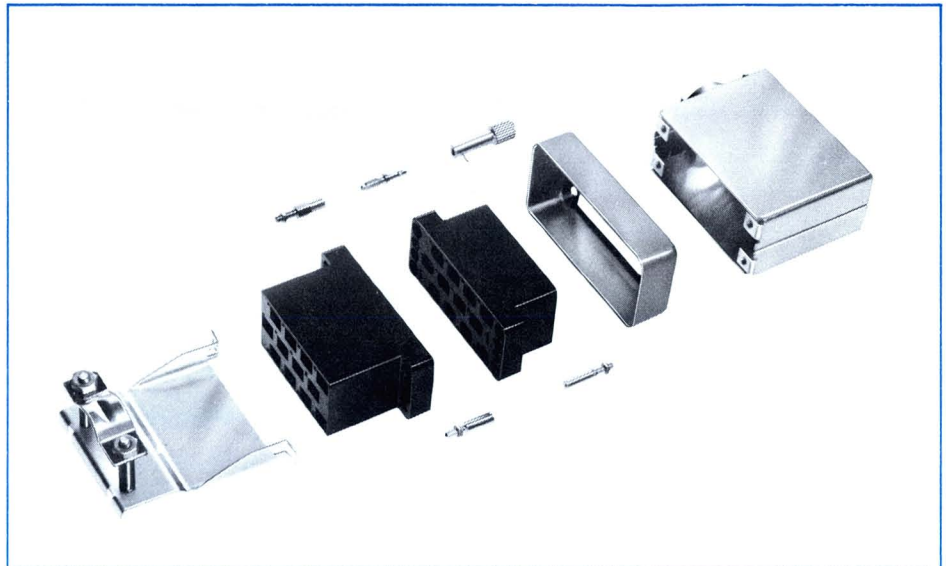


Socket Block Part No. 203622-2*

PIN AND SOCKET CONNECTORS FOR SPECIAL APPLICATIONS



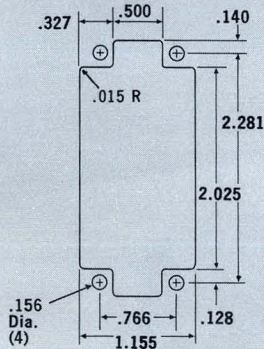
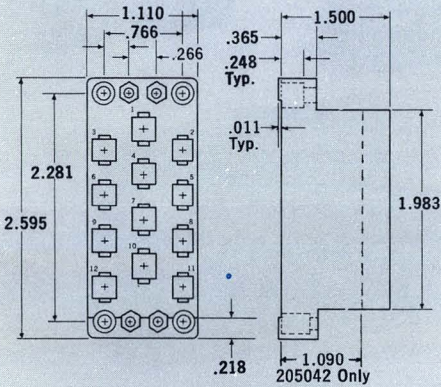
12
TYPE XII



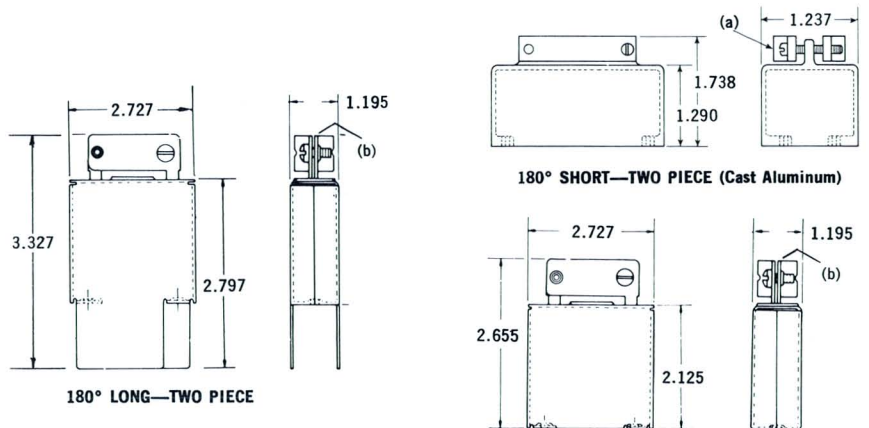
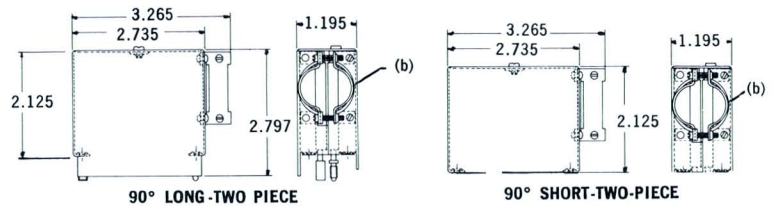
BLOCKS

12
POSITION
TYPE XII

CONFIGURATION	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
	Pin Block	Socket Block	Pin Block	Socket Block	
—	205042-1	205043-1	—	—	12 TYPE XII Contacts



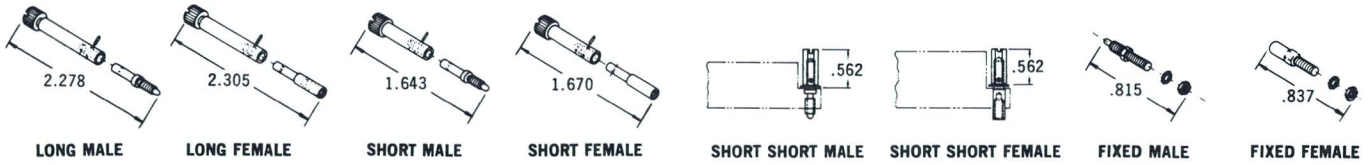
SHIELDS



(a) Cable area — .3773-.6809 Sq. In.
(b) Cable area — .4007-.6707 Sq. In.

90° 2 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Zinc Pl. Cast Al.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
202711-3	202711-1	—	—	—	204209-1	202713-2	202713-1

JACKSCREWS



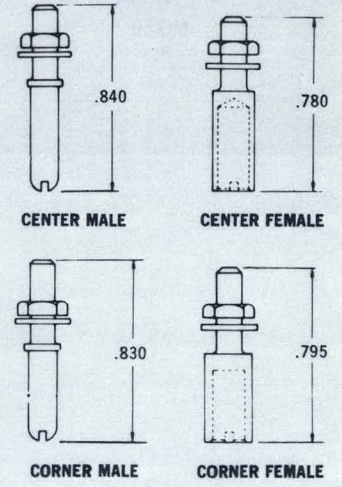
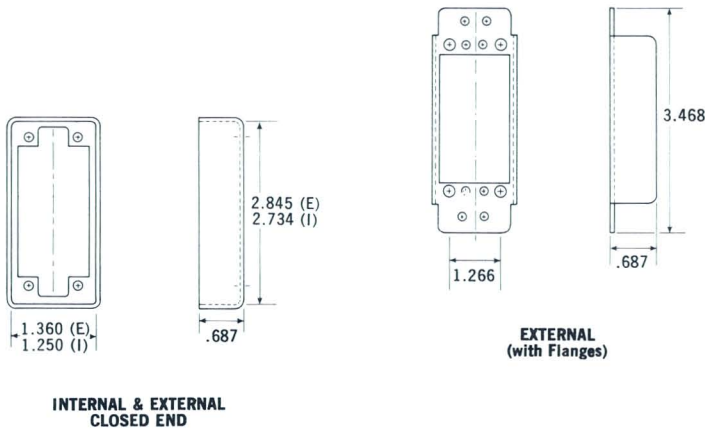
STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS						TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS					
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200874-1	200875-1	200874-2	200875-2	200871-1*	200867-1**	200868-1	200870-1	201388-1	201389-1	200871-2†	200867-2††	200868-2	200870-2	201388-2	201389-2
or 201911-1 (3.278)		**or 201910-1 (3.305)		for 201911-2 (3.278)		††or 201910-2 (3.305)		— For use with Shields 202713-1 and -2, 202711-1 and -3.							

GUIDE PINS AND SOCKETS

STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	201046-2	201047-2*	200389-4	200390-4	201046-4	201047-4**

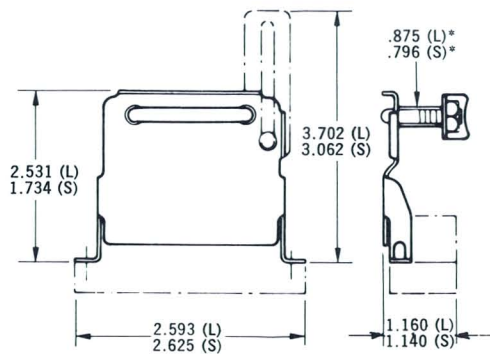
*or 203966-1 — **or 203966-2 for use with Subminiature COAXICON Contacts

PIN HOODS



EXTERNAL CLOSED END (E)		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END (I)		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
201368-2	201368-4	202097-2	202097-5	—	—	—	—	201369-2	201369-4

STRAIN RELIEF CLAMPS

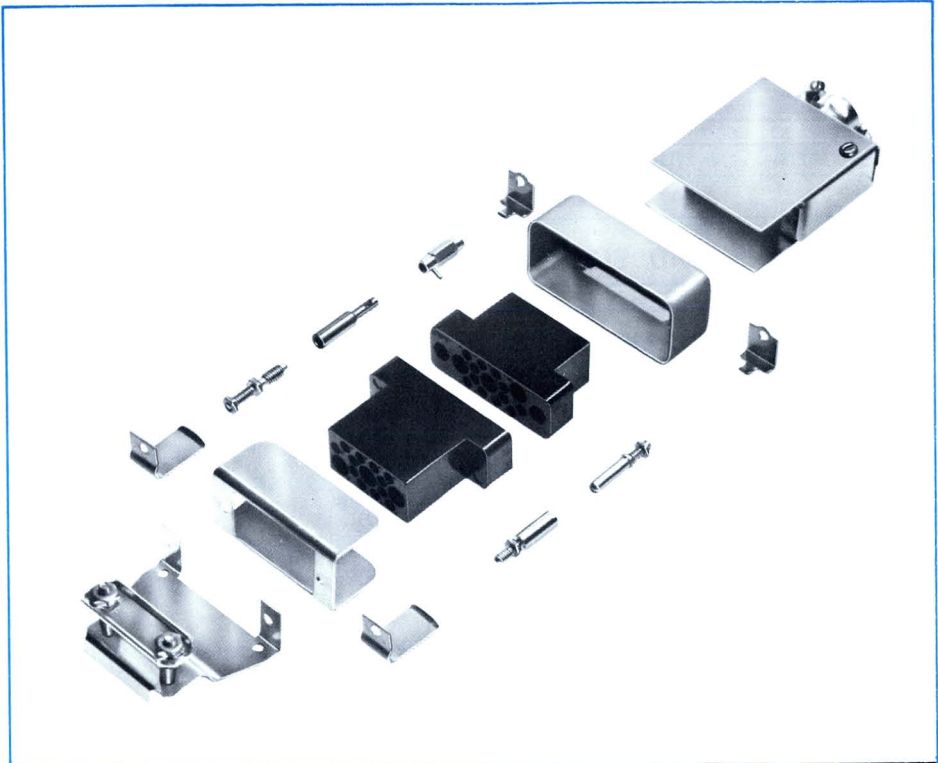


*Sq. In. Max. Cable Area

ZINC PLATED STEEL	
Long (L)	Short (S)
201848-1	200730-1

PIN AND SOCKET CONNECTORS

15
MIXED

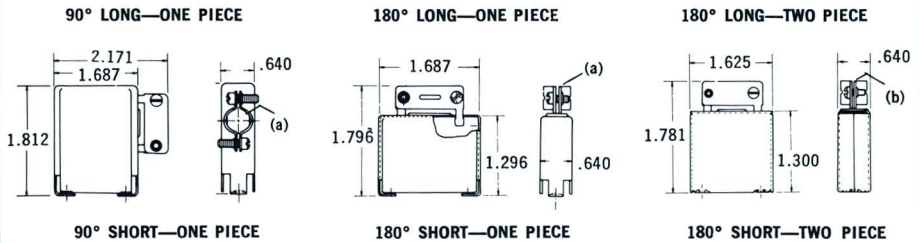
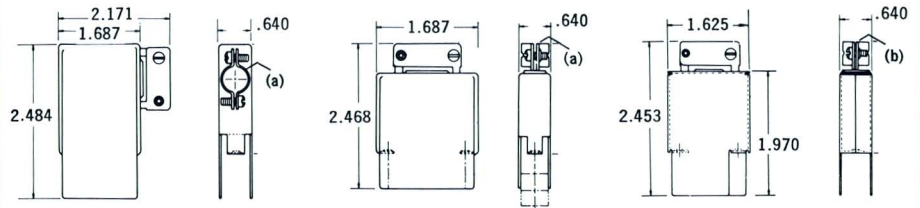
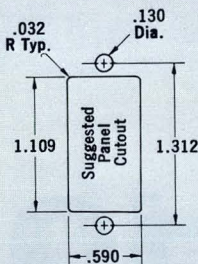
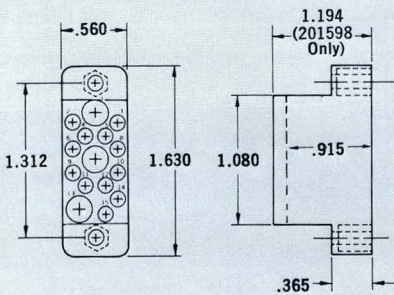


BLOCKS

15
POSITION
MIXED

CONFIGURATION	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
	Pin Block	Socket Block	Pin Block	Socket Block	
—	201597-1	201598-1	201597-3	201598-3	12 TYPE II (Long), III(+) Size 16 (Standard), VI Size 16 or Subminiature COAXICON Contacts and 3 Miniature COAXICON Contacts.

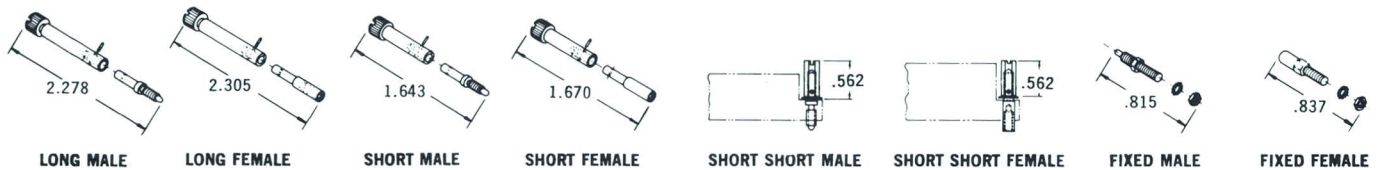
SHIELDS



(a) Cable area — .1176-.1923 Sq. In.
(b) Cable area — .0956-.1896 Sq. In.

90° 1 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Al. Anod.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
200488-2	201468-2	201382-2	201169-2	201576-1	200514-1	201576-2	200514-2

JACKSCREWS

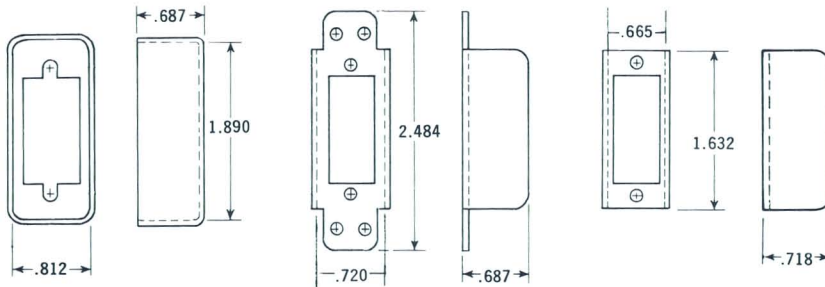


STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS						TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS					
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200874-1	200875-1	200874-2	200875-2	200871-1	200867-1	200868-1	200870-1	201388-1	201389-1	200871-2	200867-2	200868-2	200870-2	201388-2	201389-2

GUIDE PINS AND SOCKETS

STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	—	—	200389-4	200390-4	—	—

PIN HOODS



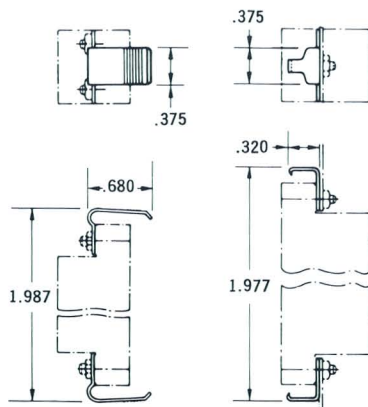
EXTERNAL CLOSED END

EXTERNAL (with Flanges)

INTERNAL OPEN END

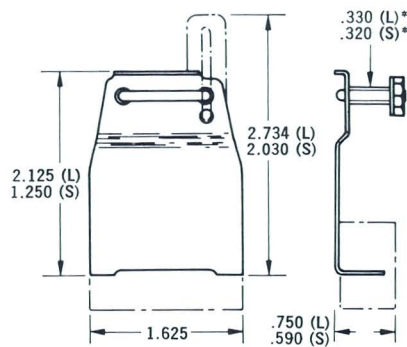
EXTERNAL CLOSED END		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
201349-2	—	202118-2	202118-5	201785-2	—	201785-4	—	—	—

LOCKING SPRING SETS



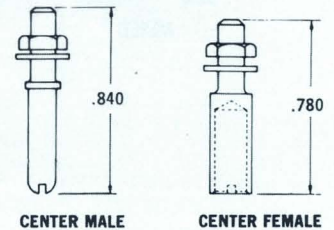
NICKEL PLATED SPRING STEEL — Male	STAINLESS STEEL Female
201923-1	201924-1

STRAIN RELIEF CLAMPS



*Sq. In. Max. Cable Area

ZINC PLATED STEEL	
Long	Short
201845-1	201229-1



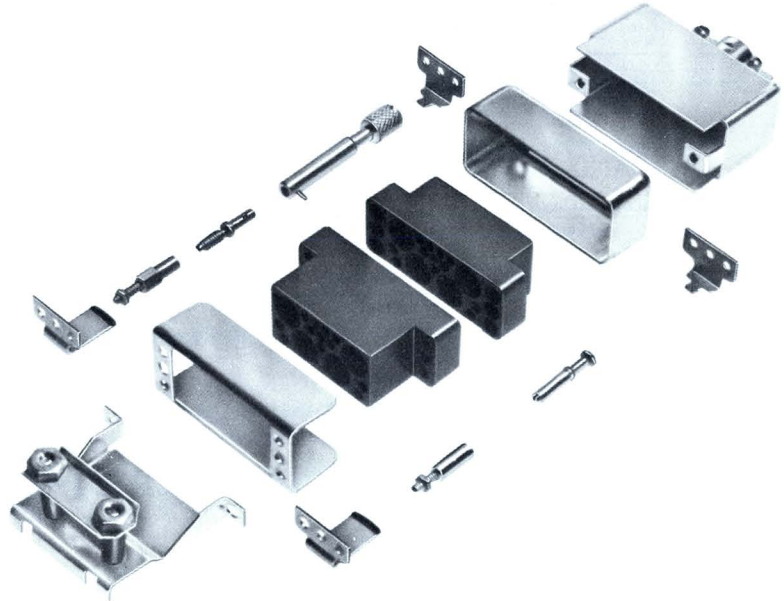
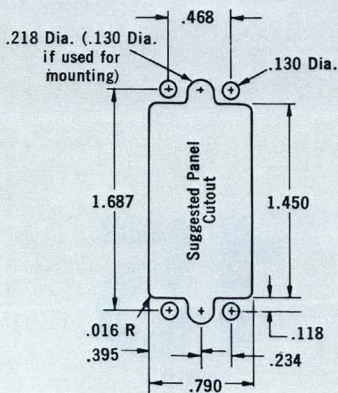
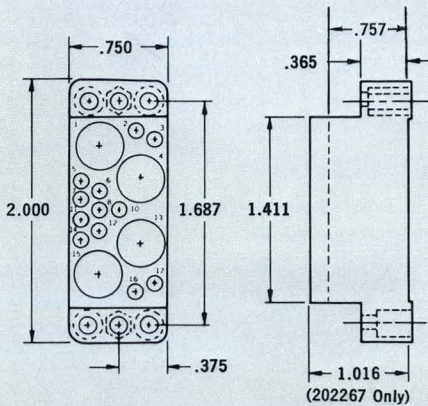
CENTER MALE

CENTER FEMALE

15
MIXED

16

MIXED

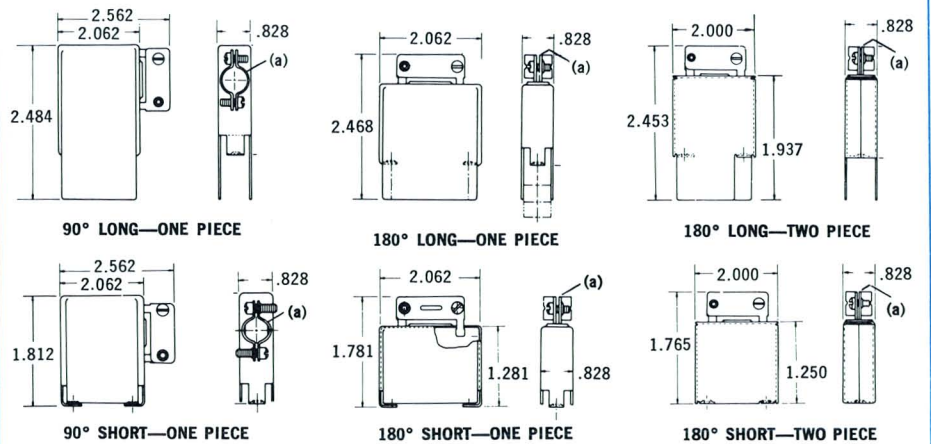


BLOCKS

16 POSITION MIXED

CONFIGURATION	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
	Pin Block	Socket Block	Pin Block	Socket Block	
—	202268-2	202267-2	202268-4	202267-4	12 TYPE II (Long), III (+) Size 16 (Standard), VI Size 16 or Subminiature COAXICON and 4 Twin Standard COAXICON Contacts.

SHIELDS

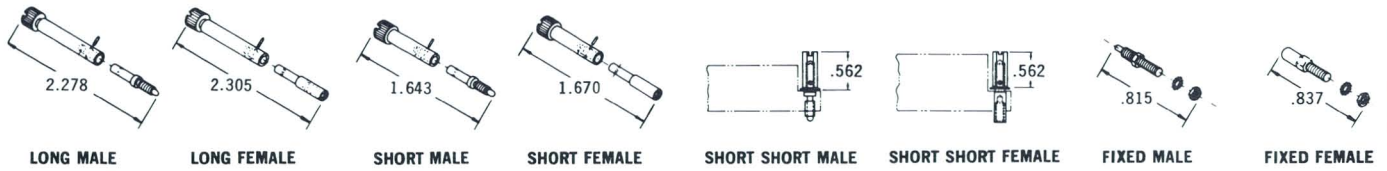


(a) Cable area — .1491-.2336 Sq. In.

90° 1 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Al. Anod.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
200490-2	201469-2	201384-2	201165-2	201571-1	200517-1	201571-2	200517-2*

*or 202774-1 (Larger Cable area — .1965-.2590 Sq. In.)

JACKSCREWS



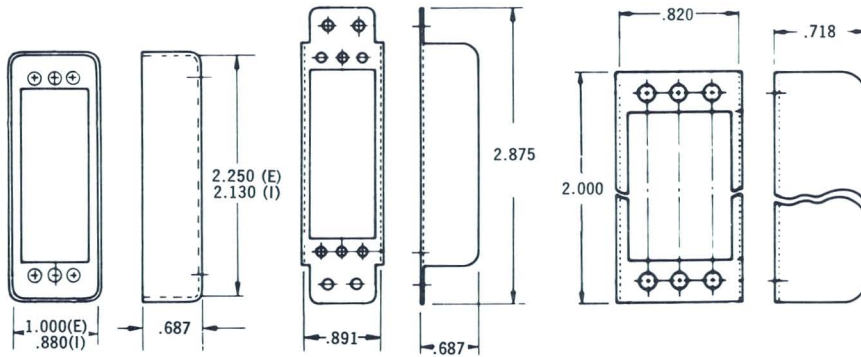
STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS						TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS					
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200389-1	200875-1	200874-2	200875-2	200871-1	200867-1	200868-1	200870-1	201388-1	201389-1	200871-2	200867-2	200868-2	200870-2	201388-2	201389-2

GUIDE PINS AND SOCKETS

STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	200833-2	200835-2*	200389-4	200390-4	200833-4	200835-4**

*or 203964-1 — **or 203964-2 for use with Subminiature COAXICON Contacts

PIN HOODS



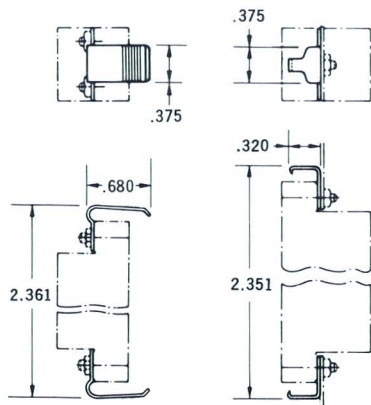
INTERNAL & EXTERNAL CLOSED END

EXTERNAL (with Flanges)

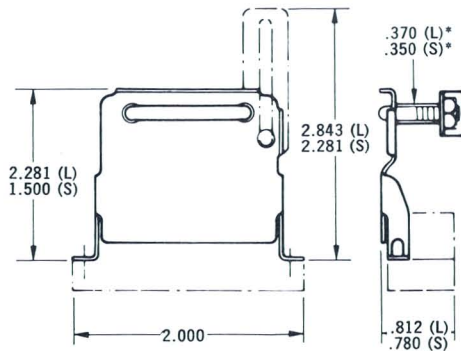
INTERNAL OPEN END

EXTERNAL CLOSED END (E)		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END (I)		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
201350-2	—	202095-2	202095-5	201786-2	—	201786-4	—	202434-2	202434-4

LOCKING SPRING SETS



STRAIN RELIEF CLAMPS



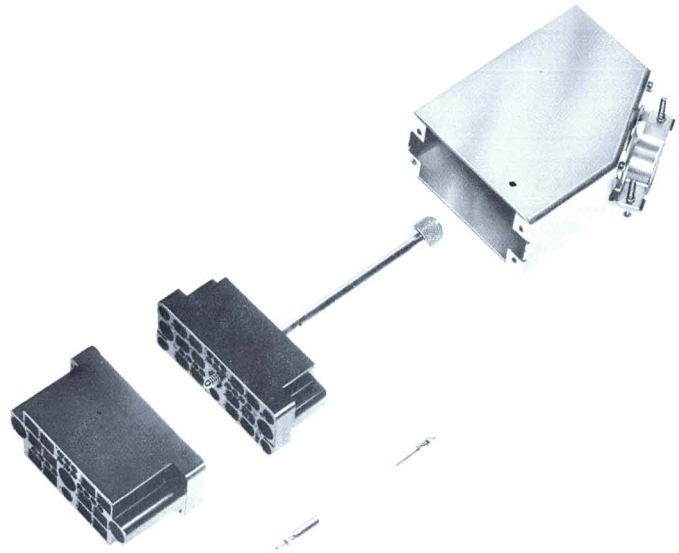
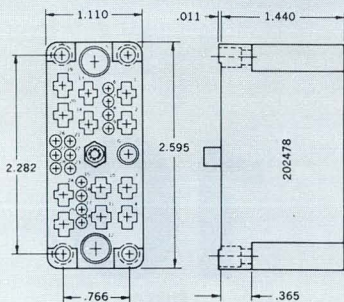
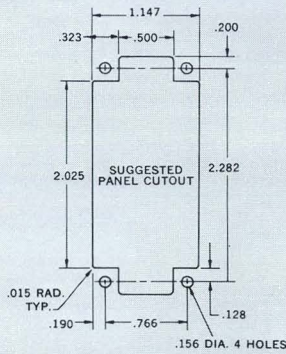
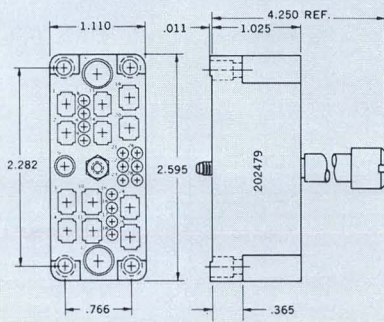
*Sq. In. Max. Cable Area

NICKEL PLATED SPRING STEEL — Male		STAINLESS STEEL Female		ZINC PLATED STEEL	
				Long	Short
201925-1		201926-1		201846-1	201224-1

16 MIXED

29

MIXED

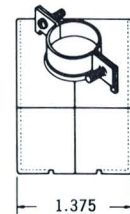
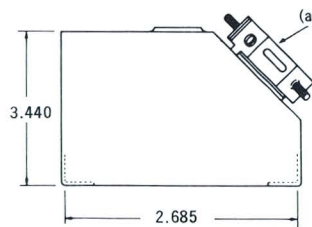


BLOCKS

29
POSITION
MIXED

CONFIGURATION	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
	Pin Block	Socket Block	Pin Block	Socket Block	
—	202479-2	202478-2	202479-4	202478-4	14 TYPE II (Long), III (+) Size 16 (Standard), VI Size 16 or Subminiature COAXICON Contacts, 12 TYPE XII Contacts, 2 Standard COAXICON Contacts and 1 TYPE I SIZE 12 Contact or 1 Miniature COAXICON Contact.

SHIELDS



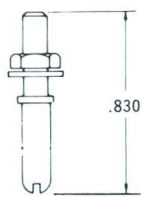
45° SHORT-TWO PIECE

(a) Cable area — .5040-1.350 Sq. In.

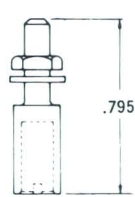
45° 2 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Al. Anod.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
—	202483-1	—	—	—	—	—	—

GUIDE PINS AND SOCKETS

STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
—	—	201046-2	201047-2	—	—	201046-4	201047-4

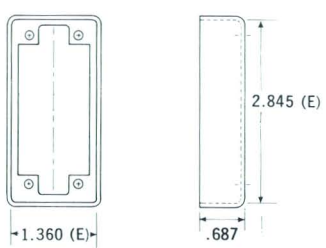


CORNER MALE



CORNER FEMALE

PIN HOODS



EXTERNAL CLOSED END

EXTERNAL CLOSED END (E)		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END (I)		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anad.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anad.	Aluminum Iridite	Zinc Pl. Steel
—	206161-3	—	—	—	—	—	—	—	—

29
MIXED

PIN AND SOCKET CONNECTORS

42

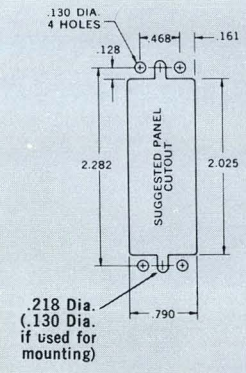
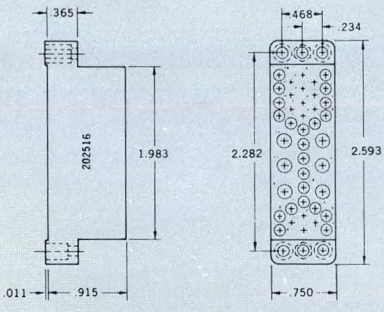
MIXED



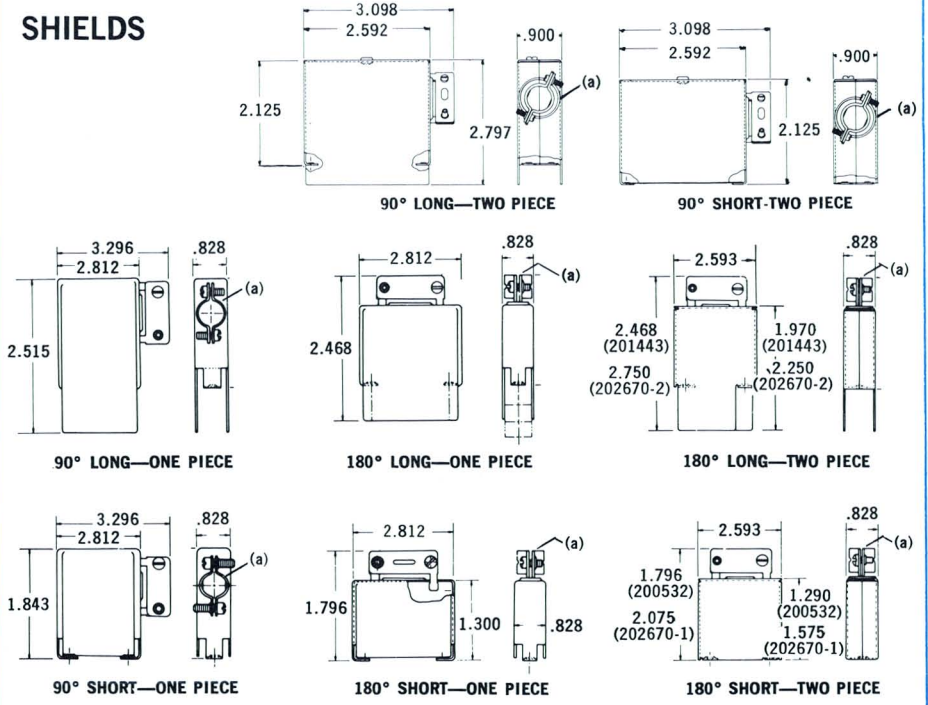
BLOCKS

42
POSITION
MIXED

CONFIGURATION	PHENOLIC		DIALYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
	Pin Block	Socket Block	Pin Block	Socket Block	
—	202515-1	202516-1	202515-3	202516-3	36 TYPE II (Long), III (+) Size 16 (Standard), VI Size 16 or Subminiature COAXICON Contacts and 6 Miniature COAXICON Contacts or 6 TYPE I Size 12 Contacts.



SHIELDS

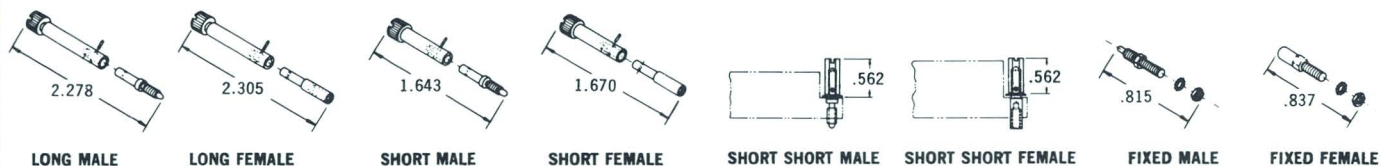


(a) Cable area — .1965- .2590 Sq. In.

90° 1 pc.		90° 2 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Zinc Pl. Steel		Al. Anod.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short	Long	Short
200492-2	201470-2	203975-2	203975-1	201386-2	201173-2	201443-1	200532-1	201443-2*	200532-2**

*or 202670-2 (Cable Area = .2590 Max., .1965 Min. Sq. In.) **or 202670-1 (Cable Area = .2590 Max., .1965 Min. Sq. In.). Use only with Jackscrews 202672-1 and 202673-1 in either case (Special not listed in Jackscrew table).

JACKSCREWS



STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS						TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS					
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200874-1	200875-1	200874-2	200875-2	200871-1*	200867-1**	200868-1	200870-1	201388-1	201389-1	200871-2†	200867-2††	200868-2	200870-2	201388-2	201389-2

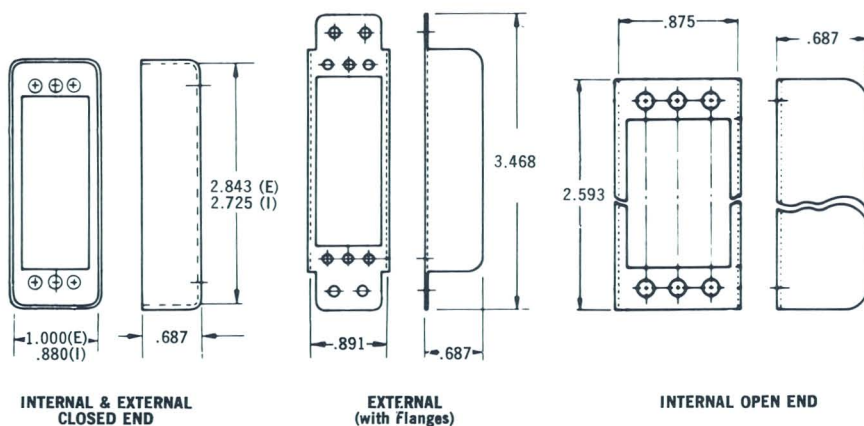
*or 201911-1 (3.278) **or 201910-1 (3.305) †or 201911-2 (3.278) ††or 201910-2 (3.305) — For use with Shields 203975-1 and -2.

GUIDE PINS AND SOCKETS

STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	200833-2	200835-2*	200389-4	200390-4	200833-4	200835-4**

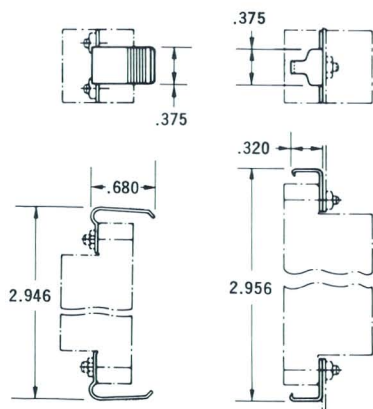
*or 203964-1 **or 203964-2 for use with Subminiature COAXICON Contacts

PIN HOODS

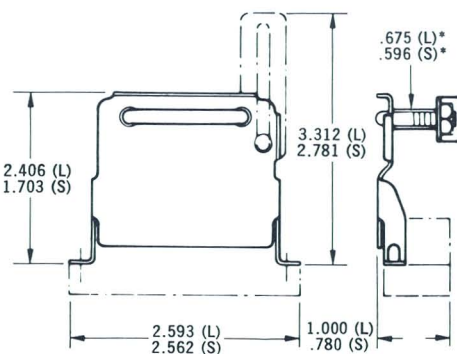


EXTERNAL CLOSED END (E)		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END (I)		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
201390-2	201390-5	202096-2	202096-5	—	201317-2	201317-4	202394-5	202394-1	202394-2

LOCKING SPRING SETS



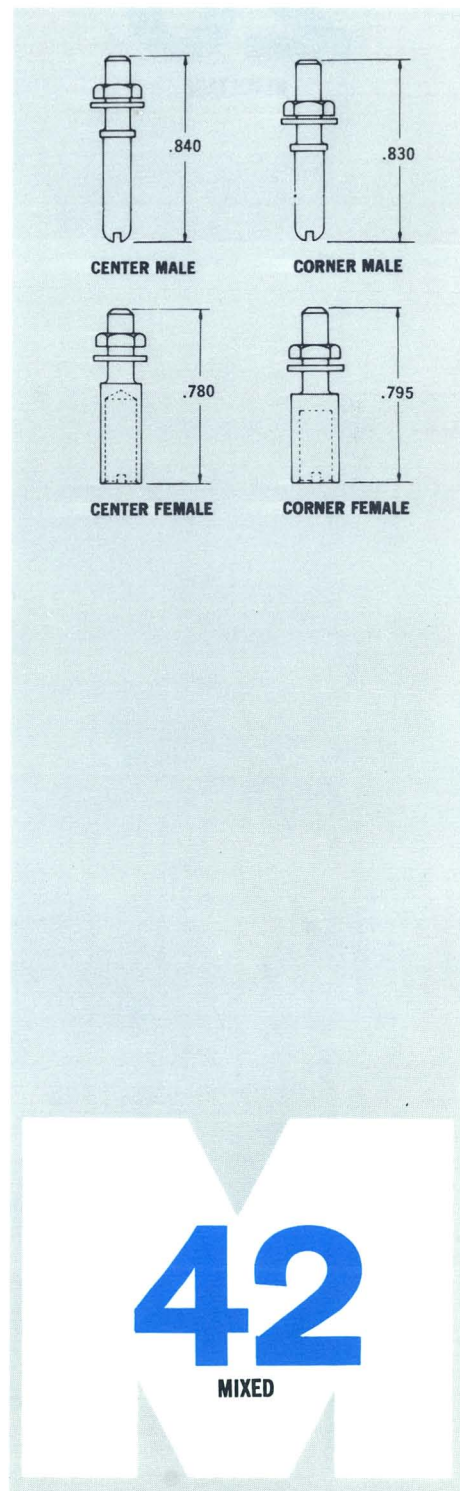
STRAIN RELIEF CLAMPS



*Sq. In. Max. Cable Area

NICKEL PLATED SPRING STEEL — Male	STAINLESS STEEL Female
201925-1	201926-1

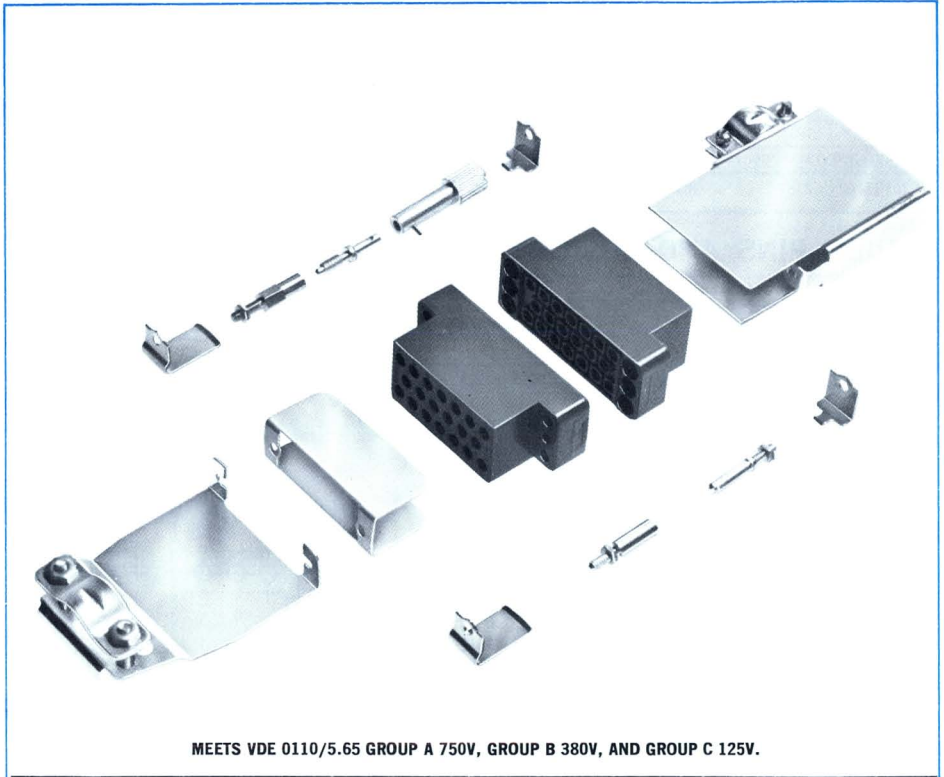
ZINC PLATED STEEL	
Long	Short
201847-1	201182-1



PIN AND SOCKET CONNECTORS

20

HI-VOLTAGE



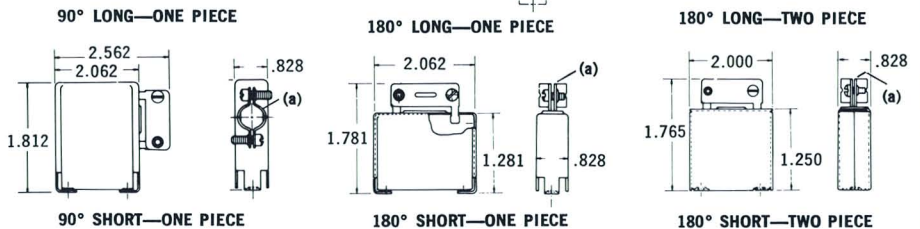
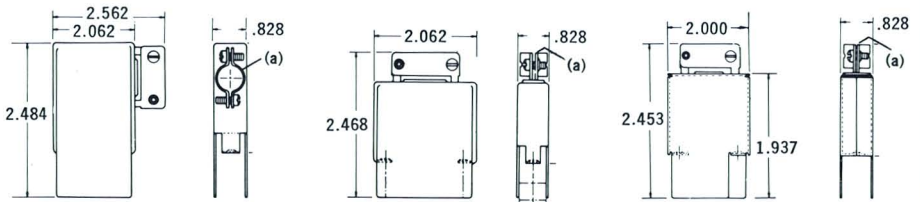
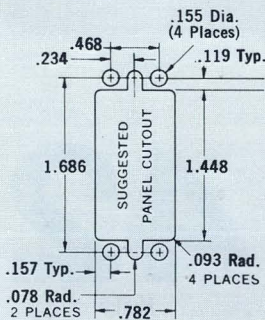
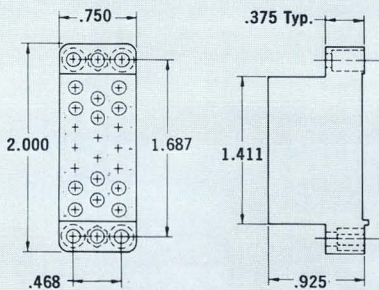
MEETS VDE 0110/5.65 GROUP A 750V, GROUP B 380V, AND GROUP C 125V.

BLOCKS

20
POSITION
HI-VOLTAGE

CONFIGURATION	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
	Pin Block	Socket Block	Pin Block	Socket Block	
—	—	—	203908-2	203909-1	20 TYPE II (Long), III (+) Size 16, VI Size 16 or Subminiature COAXICON Contacts (Long).

SHIELDS

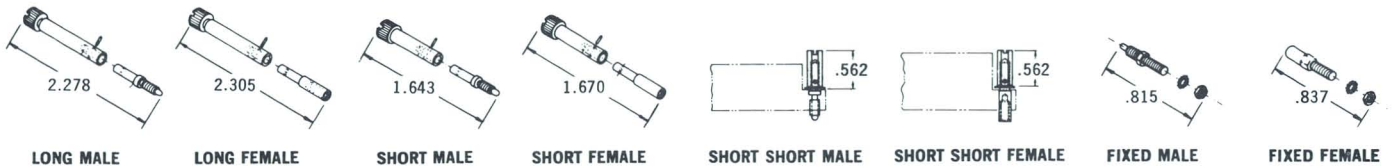


(a) Cable area — .1491-.2336 Sq. In.

90° 1 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Al. Anod.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
200490-2	201469-2	201384-2	201165-2	201571-1	200517-1	201571-2	200517-2*

*or 202774-1 (Larger Cable area — .1965-.2590 Sq. In.)

JACKSCREWS



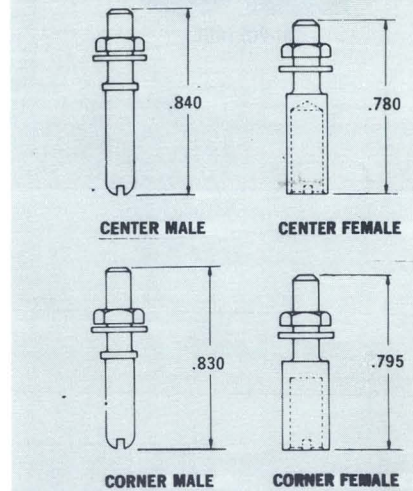
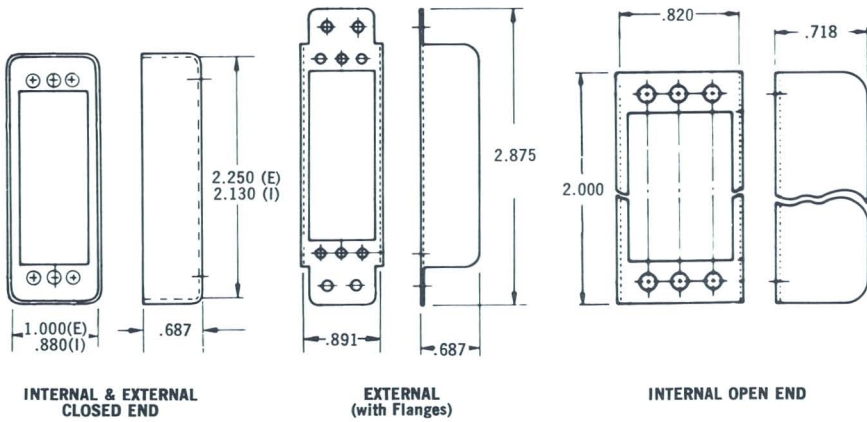
STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS						TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS					
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200874-1	200875-1	200874-2	200875-2	200871-1	200867-1	200868-1	200870-1	201388-1	201389-1	200871-2	200867-2	200868-2	200870-2	201388-2	201389-2

GUIDE PINS AND SOCKETS

STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	200833-2	200835-2*	200389-4	200390-4	200833-4	200835-4**

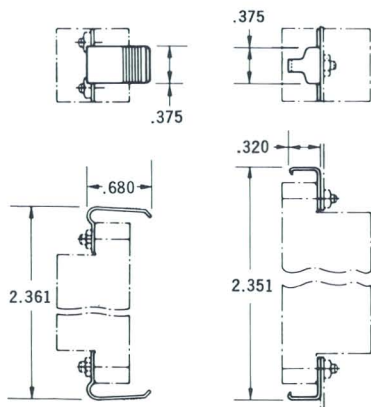
*or 203964-1 — **or 203964-2 for use with Subminiature COAXICON Contacts

PIN HOODS

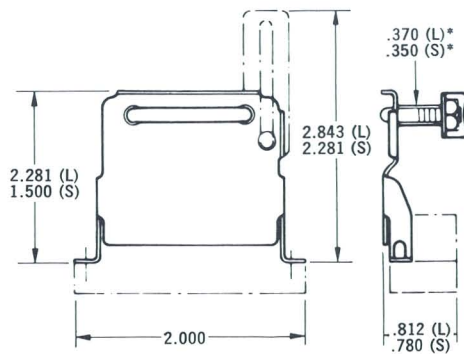


EXTERNAL CLOSED END (E)		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END (I)		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
201350-2	—	202095-2	202095-5	201786-2	—	201786-4	—	202434-2	202434-4

LOCKING SPRING SETS



STRAIN RELIEF CLAMPS



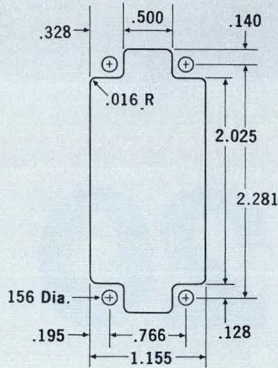
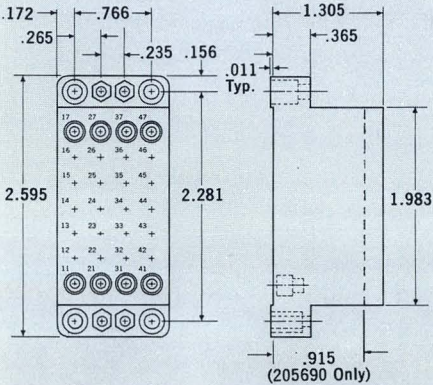
*Sq. In. Max. Cable Area

NICKEL PLATED SPRING STEEL — Male	STAINLESS STEEL Female
201925-1	201926-1

ZINC PLATED STEEL	
Long	Short
201846-1	201224-1

28

HI-VOLTAGE

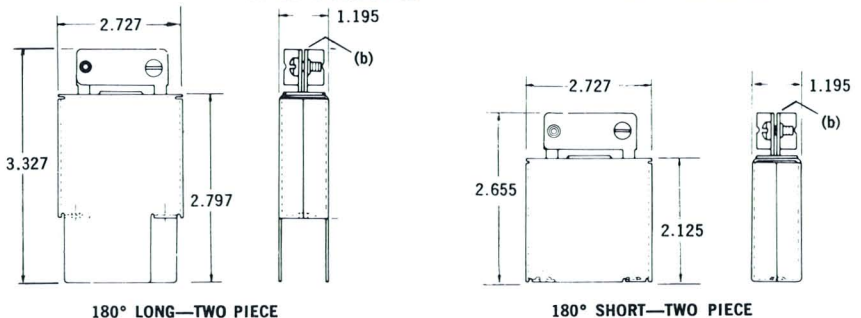
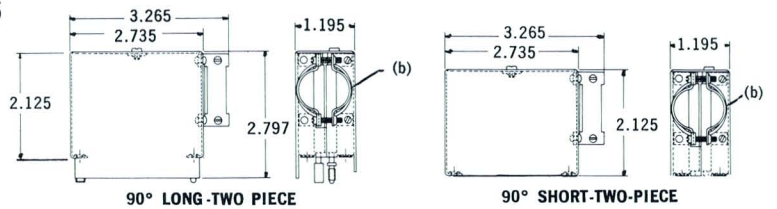


BLOCKS

28 POSITION HI-VOLTAGE

CONFIGURATION	PHENOLIC		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
	Pin Block	Socket Block	Pin Block	Socket Block	
—	205689-2	205690-2	—	—	28 TYPE II, III(+) Size 16 or VI Size 16 Contacts.

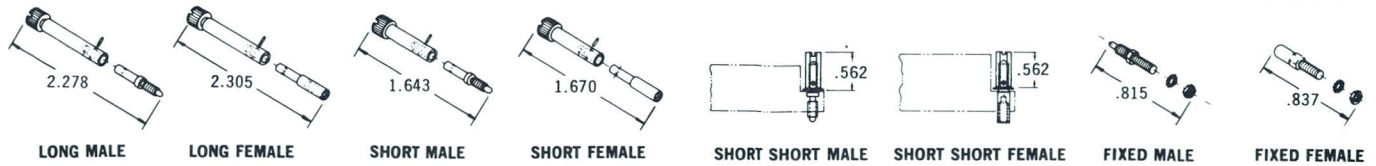
SHIELDS



(b) Cable area — .4007-.6707 Sq. In.

90° 2 pc.		180° 1 pc.		180° 2 pc.		180° 2 pc.	
Zinc Pl. Steel		Zinc Pl. Steel		Zinc Pl. Cast Al.		Zinc Pl. Steel	
Long	Short	Long	Short	Long	Short	Long	Short
202711-3	202711-1	—	—	—	—	202713-2	202713-1

JACKSCREWS



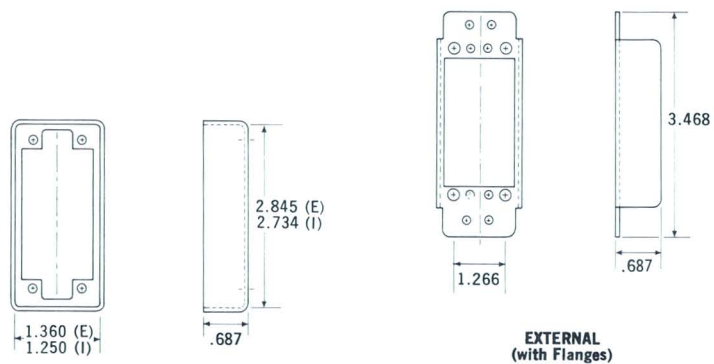
STAINLESS STEEL		ZINC PLATED STEEL		TIP STAINLESS STEEL BODY ZINC PLATED BRASS						TIP ZINC PLATED STEEL BODY ZINC PLATED BRASS					
Fixed Male	Fixed Female	Fixed Male	Fixed Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female	Long Male	Long Female	Short Male	Short Female	Short Short Male	Short Short Female
200874-1	200875-1	200874-2	200875-2	200871-1*	200867-1**	200868-1	200870-1	201388-1	201389-1	200871-2†	200867-2††	200868-2	200870-2	201388-2	201389-2
or 201911-1 (3.278)		**or 201910-1 (3.305)		†or 201911-2 (3.278)		††or 201910-2 (3.305)		— For use with Shields 202713-1 and -2, 202711-1 and -3.							

GUIDE PINS AND SOCKETS

STAINLESS STEEL				ZINC PLATED BRASS			
Center Male	Center Female	Corner Male	Corner Female	Center Male	Center Female	Corner Male	Corner Female
200389-2	200390-2	201046-2	201047-2*	200389-4	200390-4	201046-4	201047-4**

*or 203966-1 — **or 203966-2 for use with Subminiature COAXICON Contacts

PIN HOODS

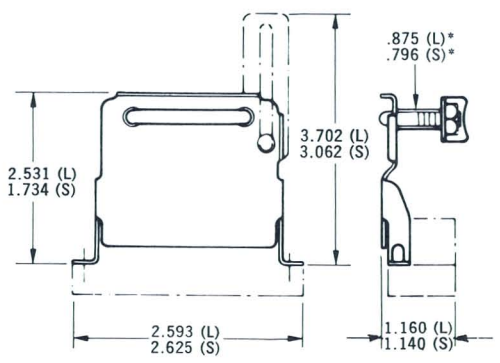


INTERNAL & EXTERNAL CLOSED END

EXTERNAL (with Flanges)

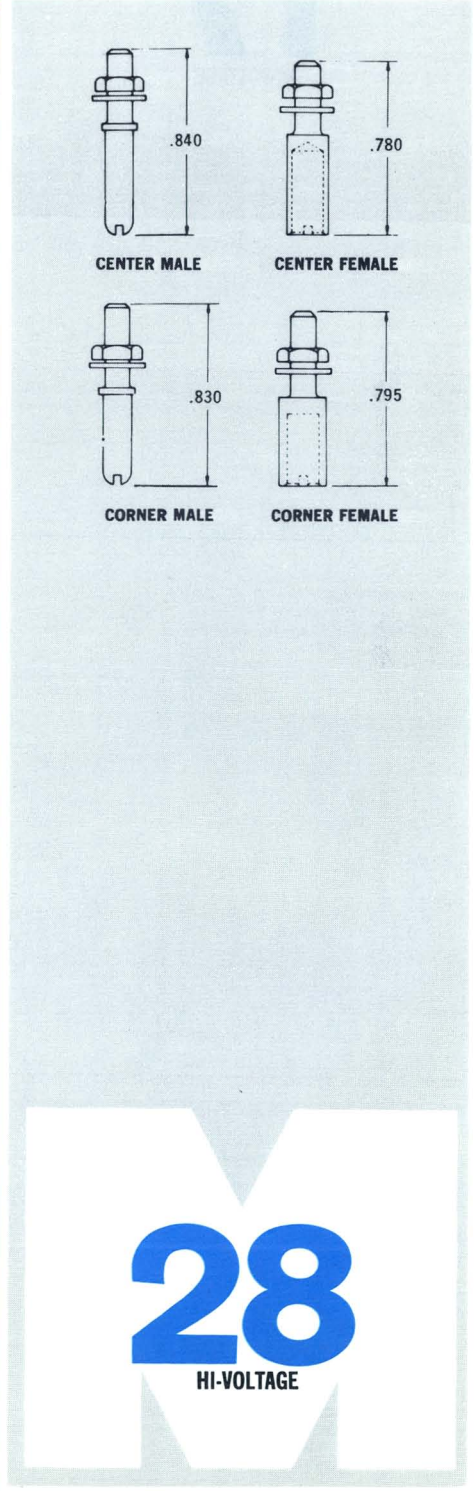
EXTERNAL CLOSED END (E)		EXTERNAL W/FLANGE		INTERNAL OPEN END			INTERNAL CLOSED END (I)		
Aluminum Iridite	Zinc Pl. Steel	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel	Aluminum Anod.	Aluminum Iridite	Zinc Pl. Steel
201368-2	201368-4	202097-2	202097-5	—	—	—	—	201369-2	201369-4

STRAIN RELIEF CLAMPS



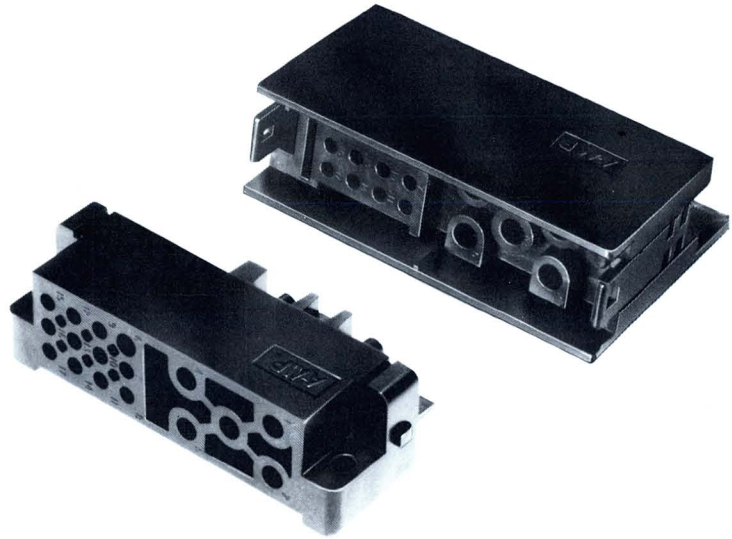
*Sq. In. Max. Cable Area

ZINC PLATED STEEL	
Long (L)	Short (S)
201848-1	200730-1



PIN AND SOCKET CONNECTORS

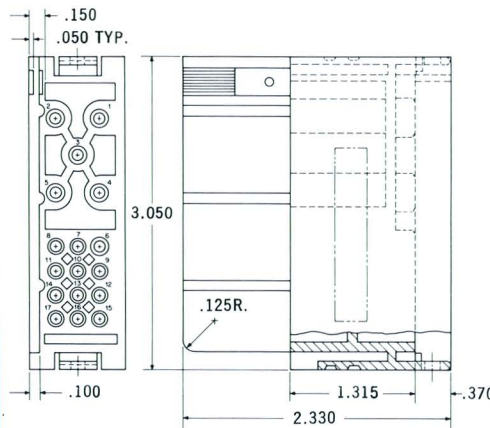
17
HI-VOLTAGE



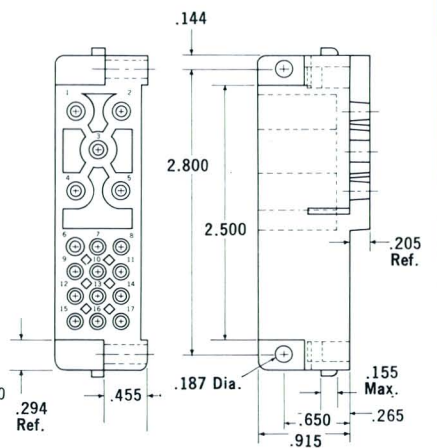
BLOCKS

17
POSITION
HI-VOLTAGE

CONFIGURATION	NORYL		DIALLYL PHTHALATE		BLOCK WILL ACCOMMODATE CONTACT VARIATIONS
	Pin Block	Socket Block	Pin Block	Socket Block	
—	205626-1	205627-1	—	—	17 TYPE II, III(+), Size 16, VI Size 16 or Subminiature COAXICON Contacts.

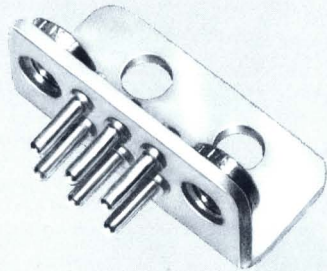


PIN BLOCK

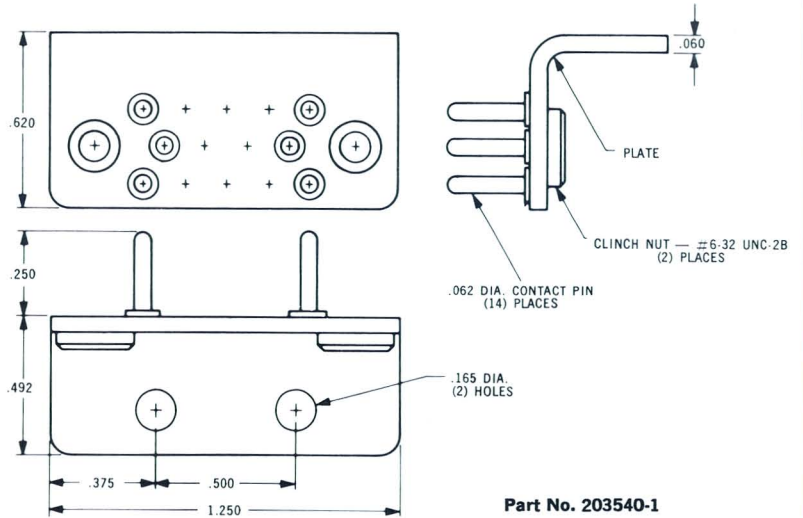
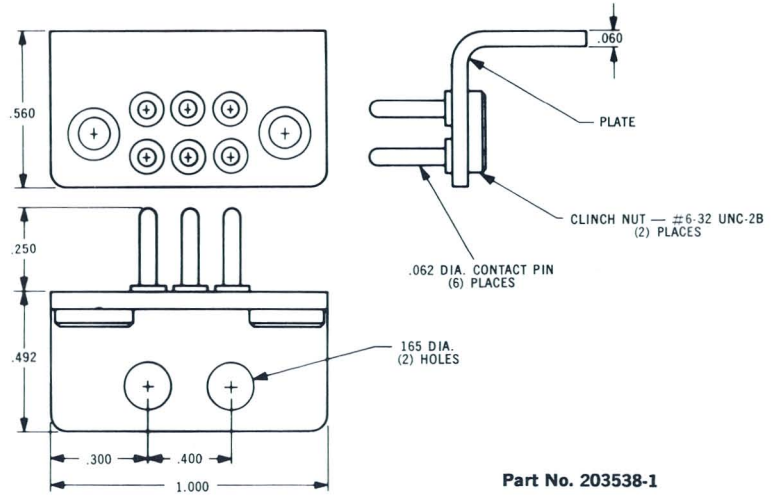
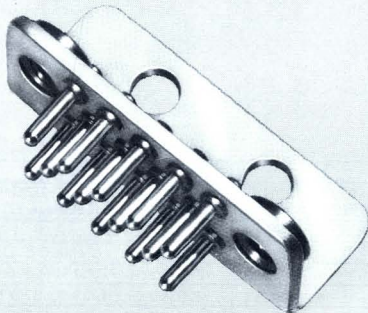


SOCKET BLOCK

**6 Position
Grounding Block**



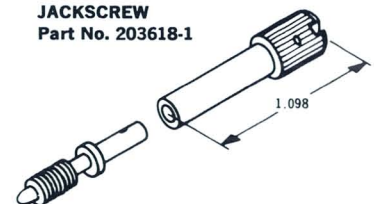
**14 Position
Grounding Block**



**SHORT-SHORT
JACKSCREW
Part No. 203535-1**

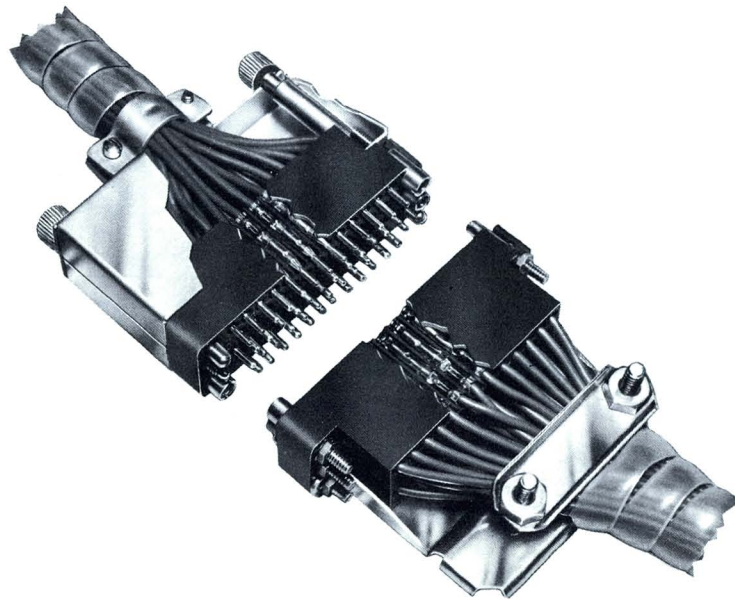


**SHORT
JACKSCREW
Part No. 203618-1**



MILITARY CROSS REFERENCE LISTING

MIL-C-28748 TYPE Formerly MIL-C-8384 and MIL-C-22857 TYPES)

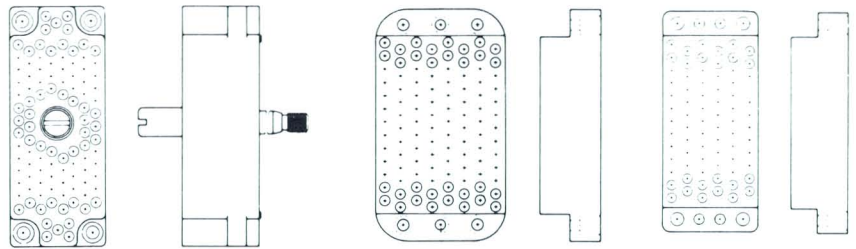
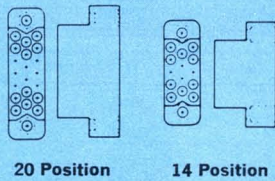


MILITARY DRAWING	NO. OF POSITIONS	SIZE	INSERT (HOUSING)	AMP PARTS		
				GUIDE PIN	GUIDE SOCKET	CONTACTS (See Page ??)
MS 24009	14	20 or 16 Contact Socket	201298	200389	200390	Table A, B, & E
MS 24010	14	20 Contact Pin	201297	200389	200390	Table C & E
MS 24010	14	16 Contact Pin	201355	200389	200390	Table D & E
MS 24013	20	20 or 16 Contact Socket	200346	200389	200390	Table A, B, & E
MS 24014	20	20 Contact Pin	200345	200389	200390	Table C & E
MS 24014	20	16 Contact Pin	201356	200389	200390	Table D & E
MS 24019	26	20 or 16 Contact Socket	200512	200389	200390	Table A, B, & E
MS 24020	26	20 Contact Pin	200513	200389	200390	Table C & E
MS 24020	26	16 Contact Pin	201359	200389	200390	Table D & E
MS 24021	34	20 or 16 Contact Socket	200838	200389	200390	Table A, B, & E
MS 24022	34	20 Contact Pin	200837	200389	200390	Table C & E
MS 24022	34	16 Contact Pin	201357	200389	200390	Table D & E
MS 24025	50	20 or 16 Contact Socket	200277	200389	200390	Table A & E
MS 24026	50	16 Contact Pin	201358	200389	200390	Table D & E
MS 24026	50	20 Contact Pin	200276	200389	200390	Table C & E

The above information reflects individual part numbers for inserts, contacts, guide pins and guide sockets. For complete connector assembly kits, contact the AMP Sales Engineer. These connector inserts will also accept a .056 diameter contact pin or socket.
NOTE: Mating connectors are determined by contact size and by number of pin positions.

MILITARY CROSS REFERENCE LISTING

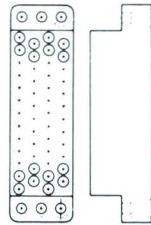
MIL-C-28748 TYPE
Formerly MIL-C-8384
and
MIL-C-22857 TYPES)



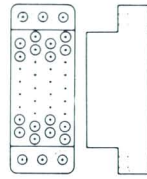
104 Center Fastener

104 Position

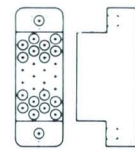
75 Position



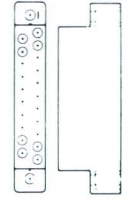
50 Position



34 Position



26 Position



21 Position

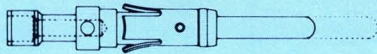
MILITARY NUMBER BASIC NO.	INSERT	NO. OF POSITIONS	CONTACT SIZE	TYPE	INSERT (Housing)	GUIDE PIN	GUIDE SOCKET	CONTACTS (See Page 79)
M28748/1	B-MS18240	14	16	Pin/Socket	201355-3	200389-2	200390-2	Table D & E
*M28748/3	C-MS18174	14	16	Pin/Socket	201355-3	200389-2	200390-2	Table D & E
M28748/2	B-MS18241	14	16	Socket/Pin	201298-3	200389-2	200390-2	Table B & E
*M28748/4	C-MS18175	14	16	Socket/Pin	201298-3	200389-2	200390-2	Table B & E
M28748/1	C-MS18242	20	16	Pin/Socket	201356-4	200389-2	200390-2	Table D & E
*M28748/3	D-MS18176	20	16	Pin/Socket	201356-4	200389-2	200390-2	Table D & E
M28748/2	C-MS18243	20	16	Socket/Pin	200346-4	200389-2	200390-2	Table B & E
*M28748/4	D-MS18177	20	16	Socket/Pin	200346-4	200389-2	200390-2	Table B & E
M28748/1	D-MS18244	34	16	Pin/Socket	201357-3	200833-2	200835-2	Table D & E
*M28748/3	F-MS18178	34	16	Pin/Socket	201357-3	200833-2	200835-2	Table D & E
M28748/2	D-MS18245	34	16	Socket/Pin	200838-3	200833-2	200835-2	Table B & E
*M28748/4	F-MS18179	34	16	Socket/Pin	200838-3	200833-2	200835-2	Table B & E
M28748/1	F-MS18248	50	16	Pin/Socket	201358-3	200833-2	200835-2	Table D & E
*M28748/3	H-MS18182	50	16	Pin/Socket	201358-3	200833-2	200835-2	Table D & E
M28748/2	F-MS18249	50	16	Socket/Pin	200277-4	200833-2	200835-2	Table B & E
*M28748/4	H-MS18183	50	16	Socket/Pin	200277-4	200833-2	200835-2	Table B & E
M28748/1	H-MS18252	75	16	Pin/Socket	201310-3	201046-2	201047-2	Table D & E
*M28748/3	K-MS18187	75	16	Pin/Socket	201310-3	201046-2	201047-2	Table D & E
M28748/2	H-MS18253	75	16	Socket/Pin	201311-3	201046-2	201047-2	Table B & E
*M28748/4	K-MS18188	75	16	Socket/Pin	201311-3	201046-2	201047-2	Table B & E
M28748/1	J-MS18254	104	16	Pin/Socket	201345-2	201046-2	201047-2	Table D & E
*M28748/3	L-MS18189	104	16	Pin/Socket	201345-2	201046-2	201047-2	Table D & E
M28748/2	J-MS18255	104	16	Socket/Pin	201037-2	201046-2	201047-2	Table B & E
*M28748/4	L-MS18190	104	16	Socket/Pin	201037-2	201046-2	201047-2	Table B & E
*M28748/5	C-MS24010	14	20	Pin	201297-3	200389-2	200390-2	Table C & E
*M28748/6	C-MS24009	14	20	Socket	201298-3	200389-2	200390-2	Table A & E
*M28748/5	D-MS24014	20	20	Pin	200345-4	200389-2	200390-2	Table C & E
*M28748/6	D-MS24013	20	20	Socket	200346-4	200389-2	200390-2	Table A & E
*M28748/5	E-MS24020	26	20	Pin	200513-3	200389-2	200390-2	Table C & E
*M28748/6	E-MS24019	26	20	Socket	200512-3	200389-2	200390-2	Table A & E
*M28748/5	F-MS24022	34	20	Pin	200837-3	200833-2	200835-2	Table C & E
*M28748/6	F-MS24021	34	20	Socket	200838-3	200833-2	200835-2	Table A & E
*M28748/5	H-MS24026	50	20	Pin	200276-4	200833-2	200835-2	Table C & E
*M28748/6	H-MS24025	50	20	Socket	200277-4	200833-2	200835-2	Table A & E
*M28748/5	J-MS18261	75	20	Pin	201622-3	201046-2	201047-2	Table C & E
*M28748/6	J-MS18259	75	20	Socket	201311-3	201046-2	201047-2	Table A & E
*M28748/5	K-MS18263	104	20	Pin	201036-2	201046-2	201047-2	Table C & E
*M28748/6	K-MS18262	104	20	Socket	201037-2	201046-2	201047-2	Table A & E

*Formerly MIL-C-8384 Type.

MIL-C-28748 TYPE

Formerly MIL-C-8384
and
MIL-C-22857 TYPES)

Contacts



TYPE II



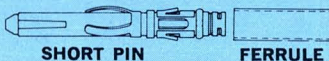
TYPE III (+)



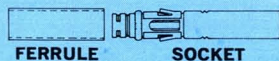
**Subminiature
COAXICON
Contacts**



MULTI-MATE PIN FERRULE



SHORT PIN FERRULE



FERRULE SOCKET

Table (A) — #20 Contact Socket			Table (C) — #20 Contact Pin		
WIRE SIZE RANGE	TYPE II	TYPE III (+)	WIRE SIZE RANGE	TYPE II	TYPE III (+)
32-30	201627	—	32-30	201625	—
28-26	202591	—	28-26	202590	—
28-24	*201353	—	28-24	202189	—
28-24	*201509	—	28-24	*201607	—
28-24	202190	—	28-24	*201354	—
26-24	—	66295	26-24	—	66294
24-20	*200331	—	24-20	*201582	—
24-20	*201524	—	24-20	*200334	—
22-20	—	66297	22-20	—	66296
18-16	*201589	66299	18-16	*201591	66298

Table (B) — #16 Contact Socket			Table (D) — #16 Contact Pin		
WIRE SIZE RANGE	TYPE II	TYPE III (+)	WIRE SIZE RANGE	TYPE II	TYPE III (+)
32-30	201554	—	32-30	201555	—
28-24	202411	—	28-24	202410	—
28-24	*201613	—	28-24	201649	—
28-24	*201332	—	28-24	*201611	—
26-24	—	66108	28-24	*201334	—
24-20	*201580	—	26-24	—	66106
24-20	*201328	—	24-20	*201647	—
22-20	—	66104	24-20	*201578	—
18-16	*200333	—	24-20	*200679	—
18-16	*202508	66100	24-20	*201330	—
Two 18	*202726	—	22-20	—	66102
14	*201568	—	18-16	*200681	—
—	—	—	18-16	*202507	—
—	—	—	18-16	*200336	66098
—	—	—	Two 18	*202725	—
—	—	—	14	*201570	—

*Contacts available either in loose piece or tape mounted.

Table (E)

CABLE SIZE	CONTACT FORM	MULTI-MATE PIN NUMBER		SHORT PIN NUMBER		SOCKET NUMBER		FERRULE NUMBER
		.000030 GOLD PLATED CONTACTS	.000050 GOLD PLATED CONTACTS	.000030 GOLD PLATED CONTACTS	.000050 GOLD PLATED CONTACTS	.000030 GOLD PLATED CONTACTS	.000050 GOLD PLATED CONTACTS	
RG-178, 196	Strip	226533-2	226533-5	51562-2*	51562-5*	51564-2*	51564-5*	1-332057-0
	Loose Piece	226537-2	226537-5	51563-2*	51563-5*	51565-2*	51565-5*	
RG-196 Double Braid	Strip	226533-2	226533-5	51562-2*	51562-5*	51564-2*	51564-5*	225088-1 ^Δ
	Loose Piece	226537-2	226537-5	51563-2*	51563-5*	51565-2*	51565-5*	
RG-174, 188, 316	Strip	226533-1	226533-4	51562-1	51562-4	51564-1	51564-4	1-332056-0
	Loose Piece	226537-1	226537-4	51563-1	51563-4	51565-1	51565-4	
RG-174 Double Braid	Strip	226533-1	226533-4	51562-1	51562-4	51564-1	51564-4	225088-3
	Loose Piece	226537-1	226537-4	51563-1	51563-4	51565-1	51565-4	
RG-179, 187	Strip	226533-1	226533-4	51562-1	51562-4	51564-1	51564-4	1-332056-0
	Loose Piece	226537-1	226537-4	51563-1	51563-4	51565-1	51565-4	
RG-187 Double Braid	Strip	226533-1	226533-4	51562-1	51562-4	51564-1	51564-4	225088-1 ^Δ
	Loose Piece	226537-1	226537-4	51563-1	51563-4	51565-1	51565-4	
RG-161	Strip	226533-1	226533-4	51562-1	51562-4	51564-1	51564-4	1-332056-0
	Loose Piece	226537-1	226537-4	51563-1	51563-4	51565-1	51565-4	
26 AWG Shielded, .075 Max. O.D.	Strip	226533-1	226533-4	51562-1	51562-4	51564-1	51564-4	1-332057-0
	Loose Piece	226537-1	226537-4	51563-1	51563-4	51565-1	51565-4	
26 AWG Tw. Pr. Solid or Stranded (7 Str.), .0063 Dia.	Loose Piece	226537-3	226537-6	51563-3	51563-6	51565-3	51565-6	1-332057-0
28 AWG Tw. Pr., Solid	Loose Piece	226537-3	226537-6	51563-3	51563-6	51565-3	51565-6	1-332057-0
28 AWG Tw. Pr., Stranded (7 Str.), .005 Dia.	Loose Piece	226537-3	226537-6	51563-3	51563-6	51565-3	51565-6	1-332057-0
30 AWG Tw. Pr., Solid	Loose Piece	226537-3	226537-6	51563-3	51563-6	51565-3	51565-6	1-332057-0

*These contacts have insulating liner inside support sleeve.

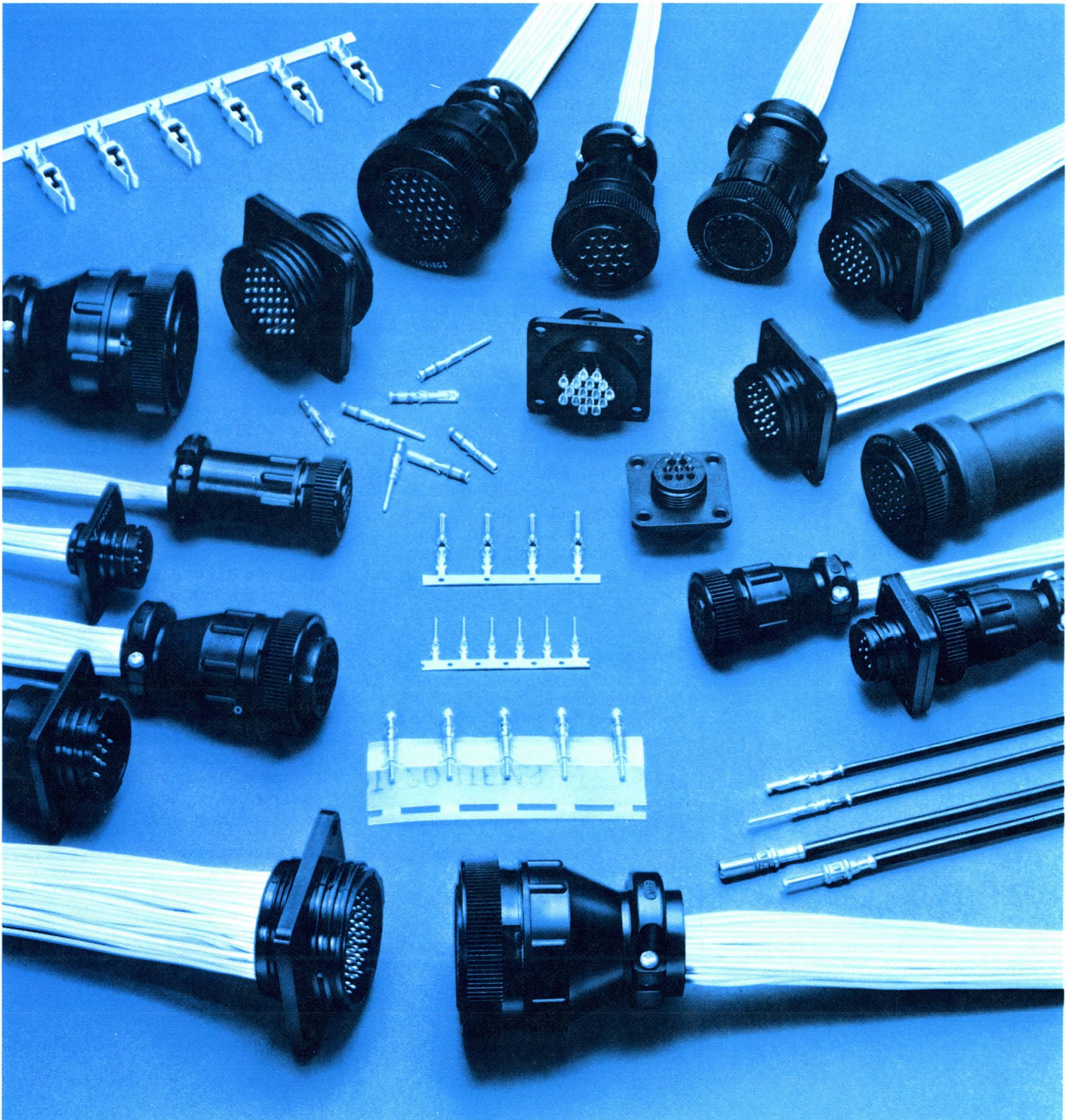
^ΔBraid end of this ferrule is elliptical in shape.

EFFECTIVE CABLE
BUNDLE AREAS
SQUARE INCHES

INSULATION DIAMETER												
NUMBER OF WIRES	0.010	0.015	0.020	0.025	0.030	0.035	0.040	0.045	0.050	0.055	0.060	0.065
6	0.00051	0.00118	0.00213	0.00336	0.00492	0.00681	0.00905	0.01164	0.01461	0.01796	0.02171	0.02568
10	0.00086	0.00196	0.00355	0.00560	0.00820	0.01135	0.01508	0.01940	0.02435	0.02994	0.03619	0.04281
14	0.00120	0.00275	0.00497	0.00783	0.01148	0.01589	0.02111	0.02716	0.03409	0.04191	0.05067	0.05993
17	0.00146	0.00333	0.00603	0.00951	0.01394	0.01930	0.02564	0.03299	0.04139	0.05089	0.06152	0.07277
20	0.00171	0.00392	0.00710	0.01119	0.01640	0.02271	0.03016	0.03881	0.04869	0.05987	0.07238	0.08561
21	0.00180	0.00412	0.00745	0.01175	0.01722	0.02384	0.03167	0.04075	0.05113	0.06286	0.07600	0.08989
23	0.00197	0.00451	0.00816	0.01287	0.01883	0.02611	0.03468	0.04463	0.05600	0.06885	0.08324	0.09845
26	0.00223	0.00510	0.00923	0.01455	0.02132	0.02952	0.03921	0.05045	0.06330	0.07783	0.09410	0.11130
30	0.00257	0.00588	0.01065	0.01679	0.02460	0.03406	0.04524	0.05821	0.07304	0.08981	0.10857	0.12842
34	0.00291	0.00667	0.01207	0.01903	0.02788	0.03860	0.05127	0.06597	0.08278	0.10178	0.12305	0.14554
38	0.00325	0.00745	0.01349	0.02126	0.03116	0.04314	0.05730	0.07373	0.09252	0.11375	0.13753	0.16266
41	0.00351	0.00804	0.01455	0.02294	0.03362	0.04655	0.06183	0.07955	0.09982	0.12274	0.14838	0.17551
46	0.00394	0.00902	0.01633	0.02574	0.03772	0.05222	0.06937	0.08925	0.11200	0.13770	0.16648	0.19691
50	0.00428	0.00981	0.01775	0.02798	0.04100	0.05676	0.07540	0.09702	0.12174	0.14968	0.18096	0.21403
55	0.00471	0.01079	0.01952	0.03078	0.04510	0.06244	0.08294	0.10672	0.13391	0.16464	0.19905	0.23543
63	0.00539	0.01236	0.02236	0.03525	0.05166	0.07152	0.09500	0.12224	0.15339	0.18859	0.22800	0.26968
75	0.00642	0.01471	0.02662	0.04197	0.06150	0.08515	0.11310	0.14552	0.18260	0.22452	0.27143	0.32405
89	0.00762	0.01746	0.03159	0.04980	0.07298	0.10104	0.13421	0.17269	0.21669	0.26643	0.32210	0.38097
104	0.00890	0.02040	0.03692	0.05820	0.08528	0.11807	0.15683	0.20179	0.25321	0.31133	0.37639	0.44518
111	0.00950	0.02177	0.03940	0.06212	0.09102	0.12602	0.16738	0.21538	0.27026	0.33228	0.40172	0.47515
132	0.01130	0.02589	0.04686	0.07387	0.10823	0.14986	0.19905	0.25612	0.32138	0.39515	0.47772	0.56504
160	0.01370	0.03138	0.05680	0.08954	0.13119	0.18165	0.24127	0.31045	0.38956	0.47897	0.57906	0.68490

INSULATION DIAMETER													
NUMBER OF WIRES	0.070	0.075	0.080	0.085	0.090	0.095	0.100	0.105	0.110	0.115	0.120	0.125	0.130
6	0.03025	0.03525	0.04072	0.04664	0.05306	0.05997	0.06739	0.07533	0.08382	0.09286	0.10179	0.11192	0.12264
10	0.05041	0.05876	0.06786	0.07774	0.08843	0.09994	0.11231	0.12556	0.13970	0.15476	0.16965	0.18653	0.20441
14	0.07058	0.08226	0.09500	0.10884	0.12380	0.13992	0.15724	0.17578	0.19558	0.21667	0.23750	0.26114	0.28617
17	0.08570	0.09989	0.11536	0.13216	0.15033	0.16990	0.19093	0.21344	0.23749	0.26310	0.28840	0.31710	0.34749
20	0.10083	0.11752	0.13572	0.15548	0.17686	0.19989	0.22462	0.25111	0.27940	0.30953	0.33929	0.37205	0.40882
21	0.10587	0.12339	0.14250	0.16326	0.18570	0.20988	0.23585	0.26367	0.29337	0.32501	0.35626	0.39172	0.42926
23	0.11595	0.13514	0.15607	0.17880	0.20338	0.22987	0.25832	0.28878	0.32131	0.35596	0.39019	0.42902	0.47014
26	0.13108	0.15277	0.17643	0.20213	0.22991	0.25985	0.29201	0.32644	0.36322	0.40239	0.44108	0.48298	0.53146
30	0.15124	0.17627	0.20358	0.23322	0.26528	0.29983	0.33694	0.37667	0.41910	0.46429	0.50894	0.55960	0.61322
34	0.17141	0.19978	0.23072	0.26432	0.30065	0.33981	0.38186	0.42689	0.47498	0.52620	0.57680	0.63421	0.69499
38	0.19158	0.22328	0.25786	0.29541	0.33603	0.37979	0.42678	0.47711	0.53085	0.58811	0.64465	0.70882	0.77675
41	0.20670	0.24091	0.27822	0.31874	0.36255	0.40977	0.46048	0.51478	0.57276	0.63453	0.69555	0.76478	0.83807
46	0.23191	0.27028	0.31215	0.35761	0.40677	0.45974	0.51663	0.57756	0.64261	0.71192	0.78037	0.85805	0.94027
50	0.25207	0.29379	0.33929	0.38870	0.44214	0.49972	0.56156	0.62778	0.69849	0.77382	0.84823	0.93266	1.02204
55	0.27728	0.32317	0.37322	0.42757	0.48635	0.54969	0.61772	0.69056	0.76834	0.85120	0.93305	1.02593	1.12424
63	0.31761	0.37017	0.42751	0.48977	0.55710	0.62965	0.70756	0.79100	0.88010	0.97502	1.06877	1.17515	1.28777
75	0.37811	0.44068	0.50894	0.58305	0.66321	0.74958	0.84234	0.94167	1.04774	1.16073	1.27234	1.39899	1.53306
89	0.44869	0.52294	0.60394	0.69189	0.78701	0.88950	0.99958	1.11744	1.24332	1.37740	1.50985	1.66013	1.81923
104	0.52431	0.61108	0.70573	0.80850	0.91965	1.03942	1.16804	1.30578	1.45287	1.60955	1.76432	1.93993	2.12584
111	0.55960	0.65221	0.75323	0.86292	0.98155	1.10938	1.24666	1.39367	1.55066	1.71789	1.88307	2.07050	2.26892
132	0.66547	0.77560	0.89573	1.02618	1.16725	1.31976	1.48252	1.65733	1.84402	2.04289	2.23933	2.46222	2.69818
160	0.80663	0.94012	1.08573	1.24385	1.41485	1.59910	1.79699	2.00889	2.23518	2.47623	2.71433	2.98451	3.27052

AMP Circular Plastic Connectors (A Multi-Mate Product)



Dimensioning:

Values in brackets are metric equivalents.

Introduction

AMP Circular Plastic Connectors are molded plugs and receptacles that house pin and socket contacts. These versatile connectors provide substantial savings in both weight and cost through the use of plastic shells and a wide variety of hand and machine terminated contacts. Circular plastic connectors are available in a wide range of shell sizes, densities, and configurations, and offer many options to extend their

usefulness. All connectors are supplied unloaded, except for the Class F feed-through receptacle and the solder cup and posted contact connectors in which contacts are furnished preloaded. Many connectors are available in both standard sex (receptacles that accept pins and plugs that accept sockets) and reverse sex (receptacles that accept sockets and plugs that accept pins).

Three Series of circular plastic connectors are available

■ **Series 1** circular plastic connectors are standard density connectors. These connectors use size 16 contacts, are available in four shell sizes, 11, 13, 17, 23, and are supplied as Class A for normal unsealed applications, and as Class F for pressure bulkhead feed-through applications. AMP supplies four contact types in size 16 for the circular plastic connector, including screw-machined and precision formed contacts. Subminiature coaxial contacts, solder tab contacts and a wide range of posted contacts are available. Many connector arrangements are available in reverse sex configurations.

■ **Series 2** circular plastic connectors are high density connectors. These connectors use size 20 contacts, are available in three shell sizes, 11, 17, 23, and are supplied as Class A for normal unsealed applications, and as Class F

for pressure bulkhead feed-through applications. AMP supplies two contact types in size 20 for the Series 2 circular plastic connector, including screw-machined contacts, precision formed contacts with and without insulation support, snap-in solder cup contacts and a posted version for point-to-point wiring. Many connector arrangements are available in reverse sex configurations.

■ **Series 3** circular plastic connectors are power density connectors. These connectors use Type XII contacts which can carry up to 35 amperes, and are available in two shell sizes, 17 and 23. Type XII contacts accept wire from #16 through 8 AWG [1.25 through 8 mm²], and like most other AMP contacts are available in loose piece, and in strip form for automatic machine application. Reverse sex connector arrangements are available.

Specifications subject to change. Consult AMP Incorporated for latest design specifications.


Dimensioning:

Values in brackets are metric equivalents.

Housing Features

AMP circular plastic connectors are designed for use in commercial applications such as automotive, aircraft, instrumentation, computer,

■ All plastic construction . . . up to 50% lighter than comparable metal cylindrical connectors.

■ Recognized under  Component Program of Underwriters' Laboratories, Inc. for 250-volt service—made of U.L. recognized, high grade thermoplastic.

■ CSA certified. 

■ Quick connect/disconnect capability with thread assist, positive detent coupling.

■ Built-in pin and socket protection.

■ 5-key polarization for proper mating of connector halves.

■ Three connector series to handle different interconnection needs:

- Series 1 for standard density applications
- Series 2 for high density applications
- Series 3 for power density applications

■ Wide choice of contacts:

Series 1 (size 16 contacts)

Type II (screw-machined)
#32-14 AWG [0.03 — 2 mm²]
Type III + (precision formed)
#30-14 AWG [0.05 — 2 mm²]
Solder and Posted versions
Type VI (precision formed)
#28-14 AWG [0.08 — 2 mm²]
Posted version

Subminiature COAXICON contacts (precision formed)
For coaxial cable, shielded, double braid and twisted pair leads

Series 2 (size 20 contacts)

Type 20 DF (precision formed)

and peripheral equipment. These connectors offer many advanced design features which assure their high performance characteristics.

■ Shell sizes 11, 13, 17, and 23.

■ Available in panel or chassis mounting versions, and in free hanging versions.

■ Special connector configurations are available to cover applications in which different density contacts are mixed, and for applications in which coaxial cable is mixed with other type contacts. Contact your local Sales Engineer or AMP Incorporated for more information.

■ Optional cable clamps available in standard and large versions for all connector series.

■ Optional keying plugs available for all connector series.

■ Optional rubber boots, peripheral seals, cable entry seals and discrete wire seals available for Series 1 and Series 3 connectors to provide splashproof protection.

■ Optional sealing caps available for Series 1 and Series 2 receptacles (shell size 11).

#28-20 AWG [0.08 — 0.6 mm²]
(with and without insulation support)

Solder and Posted versions
Type 20 DM (screw-machined)
#24-20 AWG [0.2 — 0.6 mm²]

Series 3 (power contacts)

Type XII (precision formed)
#16-8 AWG [1.25 — 8 mm²]

■ Precision formed contacts are made from high conductivity brass or copper stock, with gold or tin plating.

■ Machine applied terminations for volume production with uniform reliability and lowest applied cost.

Contact Features

Performance Characteristics

For detailed information on the performance of circular plastic connectors and contacts, request:

AMP Product Specification No. 108-10024 (Circular Plastic Connectors)

AMP Product Specification No. 108-10028 (Contacts)

Test Description	Procedure	Requirements
Maintenance Aging	Contacts removed and reinserted 10 times using applicable tools	No damage
Contact Retention	Axial load applied to contact to displace to the rear of the connector	Contacts remain in place
Dielectric Withstanding Voltage (MIL-STD-1344, Method 3001)	Connectors subjected to 1200 volts rms at sea level	No breakdown or flashover
Thermal Shock	Unmated connectors subjected to five cycles of temperature change (-55°C & $+105^{\circ}\text{C}$)	No damage
Vibration (MIL-STD-202, Method 204, Test Condition B)	Connectors vibrated (wired and mated). Contacts wired in series with 100 milliamperes flowing during the test	No damage or loosening of parts. No interruption of electrical continuity longer than 10 microseconds
Physical Shock (MIL-STD-202, Method 213A, Test Condition A)	Connectors shocked 50 G (wired and mated). Contacts wired in series with 100 milliamperes flowing during the test	No damage or loosening of parts. No interruption of electrical continuity longer than 10 microseconds
Durability	Connectors mated and unmated 200 times	No damage
Corrosion (Salt Spray) (MIL-STD-202, Method 101, Test Condition B)	Mated connectors subjected to 5% salt spray for 48 hours	No damage
Temperature Life	Mated connectors subjected to a temperature of $+105^{\circ}\text{C}$ for 200 hours	No damage
Insulation Resistance (MIL-STD-202, Method 302, Test Condition B)	Measurement made between adjacent contacts with connector unmated	5000 megohms at 25°C minimum
Humidity (MIL-STD-202, Method 103, Test Condition B)	Mated connectors subjected to 10 days moisture test	Minimum insulation resistance of 100 megohms

This section provides a quick reference to this catalog in order to help you locate one particular connector/contact combination from the broad selection currently available. Part numbers of the various connector components are looked-up after components have been selected.

To assure proper selection and ordering of components, customers should consider the following factors regarding their particular application.

1. Determine number of wires and wire size necessary for your application.

2. Determine the connector series. Based on required packaging density and current carrying requirements: choose Series 1 for normal packaging density, Series 2 for high density, and Series 3 for higher currents. Posted contacts are available for Series 1 and Series 2 connectors only.

3. Determine the connector class. If application requires pressure bulkhead connection, choose class F. Otherwise, choose class A.

4. Determine arrangement number. Available contact arrangements are shown in the Contact Arrangement

Section under the appropriate Series heading.

5. Determine the contact type.

This decision will be based on the reliability and cost requirements of your application, the availability of contact types and sizes, and your existing in-plant capabilities. Posted contacts are available for Series 1 and Series 2 connectors only.

6. Determine shell style and sex.

Available styles are shown on the appropriate Component Dimension pages, and part numbers are shown in the Part Number Guide. Except for the pressure bulkhead feed-through receptacles, each style can be obtained to accept either sockets or pins in either plug or receptacle half. Normally the line side of the circuit requires the "enclosed" socket contact.

7. Select applicable accessories.

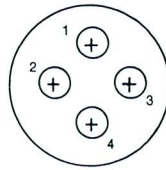
Part numbers for cable clamps, rubber boots with seals, and sealing caps are listed in the Part Number Guide. Part numbers for keying plugs are listed in the Contact Specifications under the appropriate Series heading.

8. Determine part numbers.

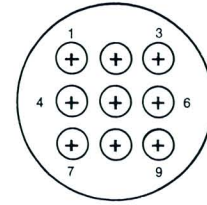
Contacts are listed by series number and contact type. Housings and accessories are listed in the Part Number Guide.

Series 1 Contact Arrangements

Shell sizes 11 and 13

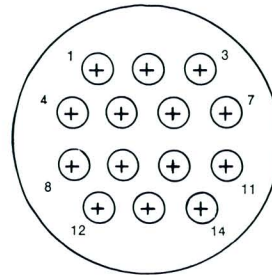


Arrangement 11-4

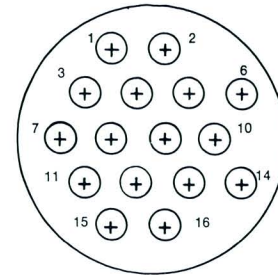


Arrangement 13-9

Shell size 17

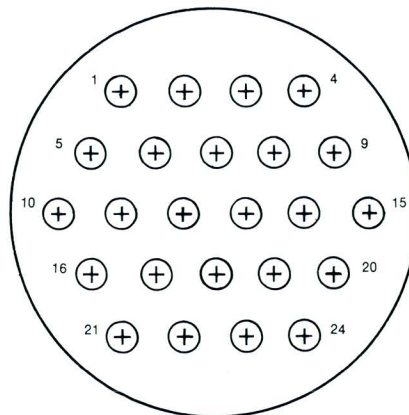


Arrangement 17-14

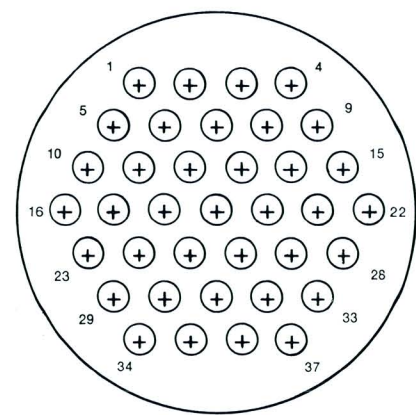


Arrangement 17-16

Shell size 23



Arrangement 23-24

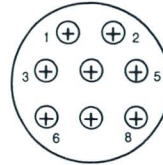


Arrangement 23-37

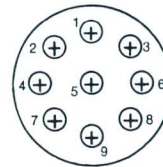
Note: Pin face of contact arrangement shown.
Socket face is mirror image.

Series 2 Contact Arrangements

Shell size 11

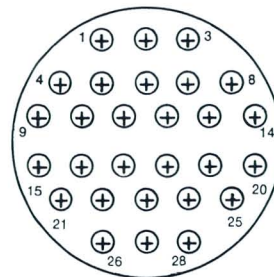


Arrangement 11-8



Arrangement 11-9

Shell size 17

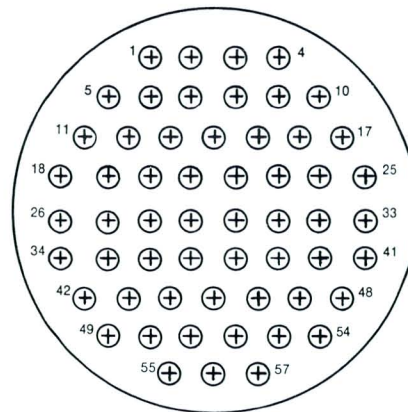


Arrangement 17-28

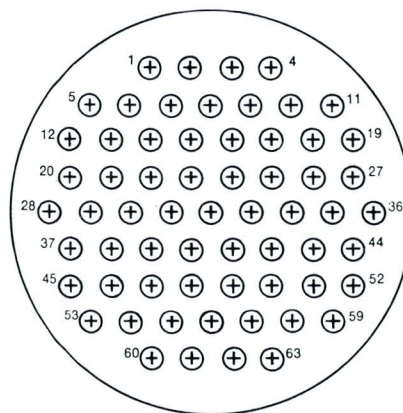
Note: Pin face of contact arrangement shown.
Socket face is mirror image.

Series 2 Contact Arrangements (Continued)

Shell size 23

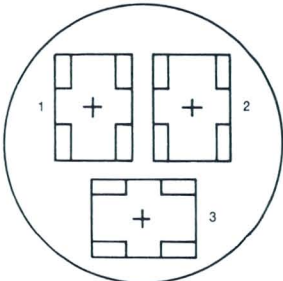
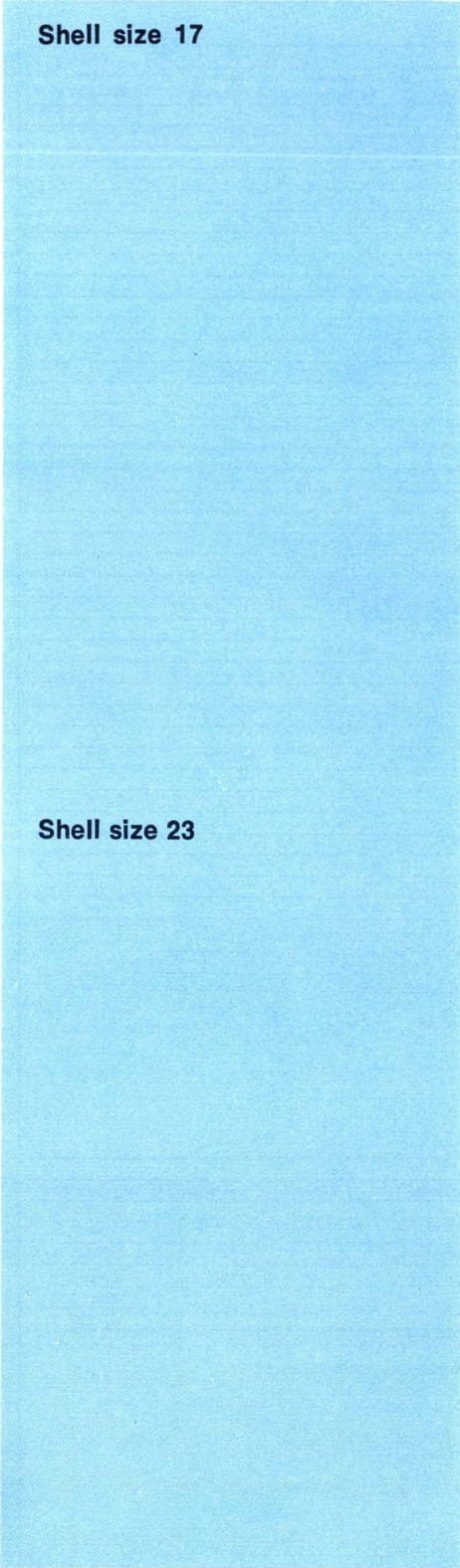


Arrangement 23-57

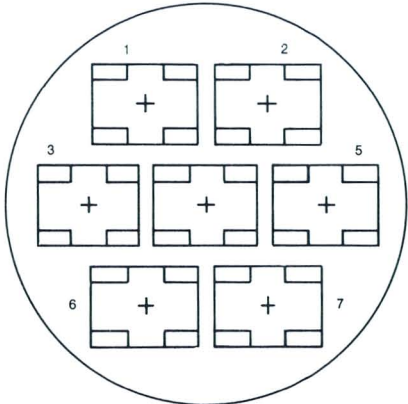


Arrangement 23-63

Note: Pin face of contact arrangement shown.
Socket face is mirror image.



Arrangement 17-3



Arrangement 23-7

Note: Pin face of contact arrangement shown.
Socket face is mirror image.

Part Number Guide

Connectors

Material: U.L. recognized, 94V-1 rated, heat stabilized, fire resistant, self extinguishing thermoplastic; Color, black

Series Class	Arrangement No.	Sex	Receptacles		Plugs		Feed-Thru Receptacle	
			Square Flanged	Free Hanging	Standard Lettering	Reverse Lettering		
1-A	11-4	Std.	206061-1	206153-1	206060-1	—	—	
		Rev.	206430-1	206430-2	206429-1	—	—	
	13-9	Std.	206705-1	206705-2	206708-1	—	—	
		Rev.	—	—	—	—	—	
	17-14	Std.	—	—	—	—	—	
		Rev.	206043-1	206043-3	206044-1	—	—	
	17-16	Std.	206036-1	206036-3	206037-1	—	—	
		Rev.	—	—	—	—	—	
	23-24	Std.	206838-1	—	206837-1	—	—	
		Rev.	—	—	—	—	—	
	23-37	Std.	206151-1	206151-2	206150-1	—	—	
		Rev.	206306-1	206306-2	206305-1	—	—	
1-F	11-4	Std.	—	—	206517-1	206516-1	206518-2	
		Rev.	—	—	—	—	—	
	17-16	Std.	—	—	206553-1	206554-1	206552-1	
		Rev.	—	—	—	—	—	
	23-37	Std.	—	—	206369-1	206370-1	206368-1	
		Rev.	—	—	—	—	—	
2-A	11-8	Std.	205841-1	205841-2	205838-1	—	—	
		Rev.	206433-1	206433-2	206434-1	—	—	
	11-9	Std.	206486-1	206486-2	206485-1	—	—	
		Rev.	—	—	—	—	—	
	17-28	Std.	205840-3	206152-1	205839-3	—	—	
		Rev.	206038-1	206038-2	206039-1	—	—	
	23-57	Std.	—	—	—	—	—	
		Rev.	206438-1	206438-2	206437-1	—	—	
	23-63	Std.	205843-1	205843-2	205842-1	—	—	
		Rev.	—	—	—	—	—	
	2-F	11-8	Std.	—	—	206459-1	206460-1	206458-1
			Rev.	—	—	—	—	—
17-28		Std.	—	—	206125-1	206126-1	206127-1	
		Rev.	—	—	—	—	—	
23-63		Std.	—	—	206377-1	206378-1	206376-1	
		Rev.	—	—	—	—	—	
3-A	17-3	Std.	206036-2	206207-1	206037-2	—	—	
		Rev.	206425-1	206425-2	206426-1	—	—	
	23-7	Std.	206137-1	206137-2	206136-1	—	—	
		Rev.	206227-1	206227-2	206226-1	—	—	

- Notes:**
- Standard sex: pin contacts in receptacle housings, socket contacts in plug housings.
Reverse sex: socket contacts in receptacle housings, pin contacts in plug housings.
 - A complete feed-thru assembly requires:
 - One plug with normally marked cavity identification
 - One feed-thru receptacle
 - One plug with reverse-marked cavity identification

Accessories

Shell Size	Cable Clamps		Seals				
	Standard	Large	Boot	Peripheral	Cap	Cable Entry	Discrete Wire
11	206062-1	206358-1	206304-1	206403-1	206903-1	54010-1	207030-2 207030-3
13	206966-1	207008-1	—	206403-4	—	54123-1	207041-3
17	206070-1	206322-1	206398-1	206403-2	—	54011-1	207042-1 207043-1
23	206138-1	206512-1	—	206403-3	—	54012-1	207038-3

- Notes:**
- Part numbers for keying plugs are listed with contact information in the appropriate Series heading.
 - Rubber sealing boots are for use on Series 1 and Series 3 connectors only.
 - Discrete wire seals are for the following contact arrangements:
 - 11-4—207030-2, 207030-3
 - 13-9—207041-3
 - 17-3—207042-1
 - 23-22M—207043-1
 - 23-37—207038-3

Series 1 Contact Specifications

Dimensioning:

All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

Current Carrying Capability

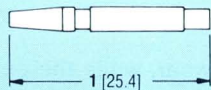
The total current capacity of each contact is dependent upon the heat rise resulting from the combination of electrical loads on all the contacts in the connector arrangement and the maximum ambient temperature in which the connector will be operating. Caution must be taken to assure that these combinations of conditions do not cause the internal temperature of the connector to exceed the maximum operating temperature of the housing material. There are several variables which must be considered when determining this maximum current capability for your application.

These variables are:

- Wire Size — Larger wire will carry more current since it has less internal resistance to current flow and thus it generates less heat. The wire also conducts heat away from the connector.
- Connector Size — In general, the more circuits in a connector, the less current per contact can be carried.
- Ambient Temperature — The higher the ambient temperature, the less current can be carried.

Introduction

Type II Contacts



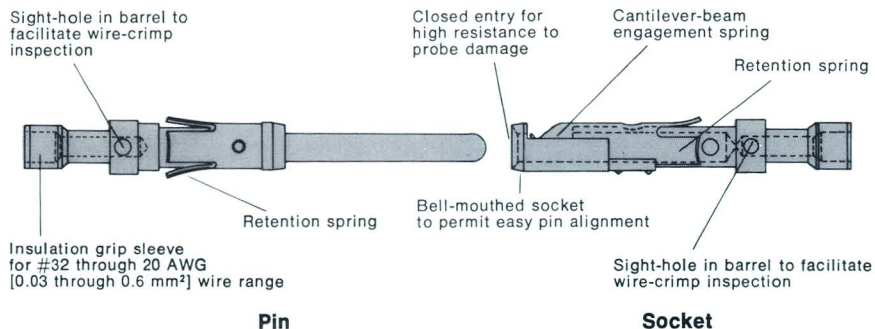
Series I Keying Plug
(for Type II, III + and VI Contacts)

For use in socket cavities only.
Plug is installed taper-end first into front of connector.

Part No. — 200821-1

AMP supplies three contact types in size 16 for the Series 1 circular plastic connector, covering the full range of contacts, including screw-machined contacts (Type II) and

precision formed contacts (Type III + and Type VI). Solder tab contacts and a wide range of posted contacts are also available.



Contact size — 16
Pin diameter — .062" [1.57 mm]
Test current — 13 amperes*
Finish — .000030" [0.0008 mm] gold
over .000030" [0.0008 mm] nickel
Spring material — stainless steel

* Refer to contact current carrying capability information above.

The Type II contact is a crimp snap-in, screw-machine processed contact. It is a highly versatile and reliable contact. External retention spring provides quick assembly and firm seating in the connector block. Cantilever-beam engagement spring provides controlled contact pressures for maximum conductivity with minimum surface wear.

Pre-assembly plating of all parts insures resistance to corrosion. Type II contacts are available in a wire range of #32 through 14 AWG [0.03 through 2 mm²]. They can be supplied in loose piece form for use with portable power crimping tools or tape-mounted for high-speed application with auto-machines.

Series 1 Contact Specifications (Continued)

Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Type II Contacts (Continued)

Wire Size Range		Wire Strip Length ¹	Ins. Dia. Range ²	Contact Part Numbers				Color Code	Tooling Part Numbers			
				Tape Mounted ^{3,4}		Loose Piece			Tape Mounted		Loose Piece	
AWG	[mm ²]			Pin	Socket	Pin	Socket		Dies for AMP-TAPEMATIC Machine (69118-1)	Dies for AMP-TAPETRONIC Machine (69875)	Hand Tool	Dies for Air Tool 69365
32-30	0.03-0.05		.030-.048	—	—	201555-1	201554-1	White/Red	90103		45099	90230-1
			0.76-1.22									
28-24	0.08-0.2	.203 5.16	.035-.055	201611-4	201613-4	201611-1	201613-1	Red/Red		90249-2	90093	90111
			0.89-1.4									
			.048-.065									
24-20	0.2-0.6		1.22-1.65	201334-3	201332-3	201334-1	201332-1	Red/Red	90301		45099	90230-1
			2.41-2.79									
			.040-.062									
22-18	0.3-0.9		1.02-1.57	201578-4	201580-4	201578-1	201580-1	Yellow/Red	90080-2		45098	90231-2
			.055-.085									
Two 18's	Two 0.8-0.9		No Ins. Support	—	—	—	201751-1	Green/Blue	90207-1	90250-1	90136-1	—
			No Ins. Support	202725-2	202726-2	202725-1	202726-1	Blue				
18-16	0.8-1.4	.250 6.35	.080-.105	202507-2**	202508-2**	202507-1**	202508-1**	—	90080-2		45098	90231-2
			2.03-2.67									
			No Ins. Support	200336-6	200333-8	200336-1	200333-1	Blue/Blue				
14	2		No Ins. Support	—	—	204219-1	—	—	90080-2	90250-1	90231-1	90231-2
			No Ins. Support	201570-2	201568-3	201570-1	201568-1	Violet/Blue				

**For use in connector configuration 23-22M only.

¹Wire strip length — .156" [3.96 mm] (all wire sizes).

²Overall insulation crimp diameter, including crimp barrel, must not exceed .125" [3.18 mm].

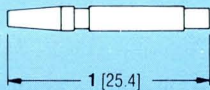
³For AMP-TAPEMATIC Machine, order contacts by tape number plus packaging code "1M BOX" (1000 parts to a box).

⁴For AMP-TAPETRONIC Machine, order contacts by tape number plus packaging code "1M REEL" (1000 parts to a reel) or "5M REEL" (5000 parts to a reel).

Insertion Tool Part No. — 200893-2 (for insulation diameters .070" [1.78 mm] or less)

Extraction Tool Part No. — 305183

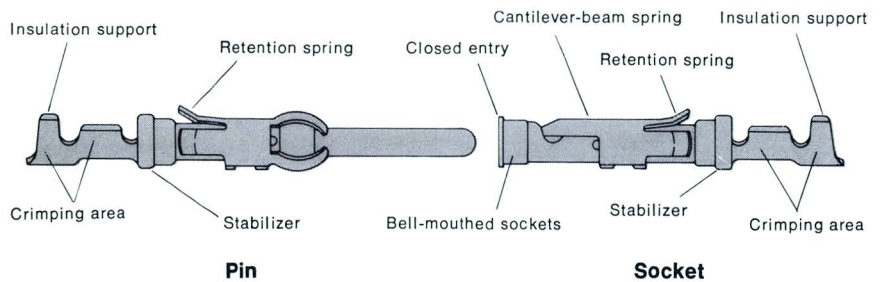
Type III+ Contacts



Series I Keying Plug (for Type II, III+ and VI Contacts)

For use in socket cavities only. Plug is installed taper-end first into front of connector.

Part No. — 200821-1



Contact size — 16
Pin diameter — .062" [1.57 mm]
Test current — 13 amperes*
Spring material — stainless steel

*Refer to contact current carrying capability information (page 10).

The TYPE III+ contact is a crimp snap-in, precision formed contact for high-volume low cost application. TYPE III+ contacts feature: bell-mouthed sockets and closed entry for correct pin alignment and insulation support for greater mechanical strength. The cantilever-beam engagement spring insures controlled contact pressures for maximum conductivity with minimum

surface wear, while the external retention spring provides quick and firm seating in the connector block. The TYPE III+ contact is available in a wire range of #30 through 14 AWG [0.05 through 2 mm²] and in posted versions. Contacts are supplied in strip form for high-speed application with automatic machines and in loose piece form for use with hand tools.

Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Series 1 Contact Specifications (Continued)

Type III + Contacts (Continued)

AWG	Wire Size Range ¹ [mm ²]	Ins. Dia. Range	Contact Finish	Contacts reeled for AMP-O-MATIC Machine		Contacts reeled for AMP Min. Applicator		Loose Piece		Hand Tool Part Number
				Pin	Socket	Pin	Socket	Pin	Socket	
30-26	0.05-0.15	.070-.100 1.78-2.54	Gold/Nickel ²	66477-1	66479-1	—	—	—	66483-1	90277-1 or 90282-1
			Gold/Nickel ²	66425-1	66424-1	66425-5	66424-5	66429-1	66428-1	90277-1 or 90066
			Tin	66425-2	66424-2	66425-6	66424-6	66429-2	66428-2	
			Gold/Nickel ³	66425-3	66424-3	66425-7	66424-7	66429-3	66428-3	
			Sel. Gold/Nickel ⁴	66425-4	66424-4	66425-8	66424-8	66429-4	66428-4	
			Gold/Nickel ²	66393-1	66394-1	66393-5	66394-5	66406-1	66405-1	
		Tin	66393-2	66394-2	66393-6	66394-6	66406-2	66405-2		
		.014-.030 0.36-0.76	Gold/Nickel ³	66393-3	66394-3	66393-7	66394-7	66406-3	66405-3	90277-1 or 90225-2
			Sel. Gold/Nickel ⁴	66393-4	66394-4	66393-8	66394-8	66406-4	66405-4	
			Gold/Nickel ²	66106-1	66108-1	66106-5	66108-5	66107-1	66109-1	90277-1 or 90066
			Tin	66106-2	66108-2	66106-6	66108-6	66107-2	66109-2	
			Gold/Nickel ³	66106-3	66108-3	66106-7	66108-7	66107-3	66109-3	
Sel. Gold/Nickel ⁴	66106-4		66108-4	66106-8	66108-8	66107-4	66109-4			
Gold/Nickel ²	66102-1	66104-1	66102-6	66104-6	66103-1	66105-1	90277-1, 90066 or 90067			
Tin	66102-2	66104-2	66102-7	66104-7	66103-2	66105-2				
Gold/Nickel ³	66102-3	66104-3	66102-8	66104-8	66103-3	66105-3				
Sel. Gold/Nickel ⁴	66102-4	66104-4	66102-9	66104-9	66103-4	66105-4				
Tin	66332-1	66331-1	66332-5	66331-5	66400-1	66399-1		90277-1, 90067-2 or 90225-2		
Gold/Nickel ²	66332-2	66331-2	66332-6	66331-6	66400-2	66399-2				
Gold/Nickel ³	66332-3	66331-3	66332-7	66331-7	66400-3	66399-3				
Sel. Gold/Nickel ⁴	66332-4	66331-4	66332-8	66331-8	66400-4	66399-4				
Gold/Nickel ²	66564-1	66563-1	66564-5	66563-5	66566-1	66565-1	90331-1			
Tin	66564-2	66563-2	66564-6	66563-6	66566-2	66565-2				
Gold/Nickel ³	66564-3	66563-3	66564-7	66563-7	66566-3	66565-3				
Sel. Gold/Nickel ⁴	66564-4	66563-4	66564-8	66563-8	66566-4	66565-4				
Gold/Nickel ²	66098-1	66100-1	66098-6	66100-6	66099-1	66101-1		90277-1, 90067, 90208-1 or 90067-2		
Tin	66098-2	66100-2	66098-7	66100-7	66099-2	66101-2				
Gold/Nickel ³	66098-3	66100-3	66098-8	66100-8	66099-3	66101-3				
Sel. Gold/Nickel ⁴	66098-4	66100-4	66098-9	66100-9	66099-4	66101-4				
Tin	—	—	66597-1	66598-1	66602-1	66601-1	90310-1			
Sel. Gold/Nickel ⁴	—	—	66597-2	66598-2	66602-2	66601-2				
Gold/Nickel ²	66359-1	66358-1	66359-5	66358-5	66361-1	66360-1		90208-1		
Tin	66359-2	66358-2	66359-6	66358-6	66361-2	66360-2				
Gold/Nickel ³	66359-3	66358-3	66359-9	66358-9	66361-3	66360-3				
Sel. Gold/Nickel ⁴	66359-4	66358-4	1-66359-0	1-66358-0	66361-4	66360-4				

¹Wire strip length — .156" [3.96 mm] (all wire sizes).

².000030" [0.0008 mm] gold over .000050" [0.0013 mm] nickel.

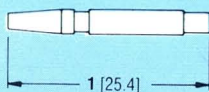
³.000015" [0.00038 mm] gold over .000050" [0.0013 mm] nickel.

⁴Gold flash over .000050" [0.0013 mm] nickel on entire contact, with .000030" [0.0008 mm] selective gold plating on contact area.

Insertion Tool Part No. — 91002-1 (for insulation diameters .070" [1.78 mm] or less).

Extraction Tool Part No. — 305183

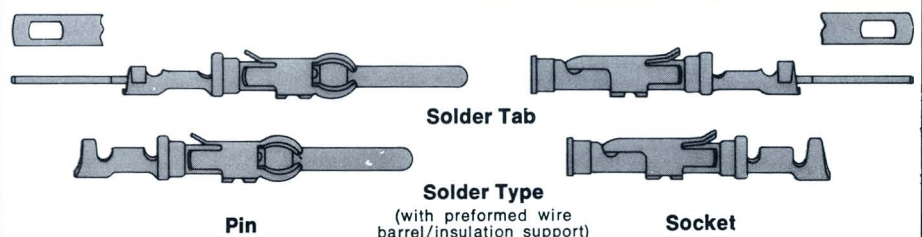
Type III + Contacts, Solder Version



Series I Keying Plug (for Type II, III + and VI Contacts)

For use in socket cavities only. Plug is installed taper-end first into front of connector.

Part No. — 200821-1



Contact size — 16
Pin diameter — .062" [1.57 mm]

Test current — 13 amperes*
Spring material — stainless steel

*Refer to contact current carrying capability information (page 10).

AWG	Wire Size Range ¹ [mm ²]	Contact Finish	Loose Piece Contact Part Number	
			Pin	Socket
26-20	0.12-0.6	Gold/Nickel ²	66182-1	66183-1
18-16	0.8-1.4		66180-1	66181-1
Solder Tab	—	Tin	202236-1	202237-1
			202236-2	202237-2

¹Wire strip length — .156" [3.96 mm] (all wire sizes).

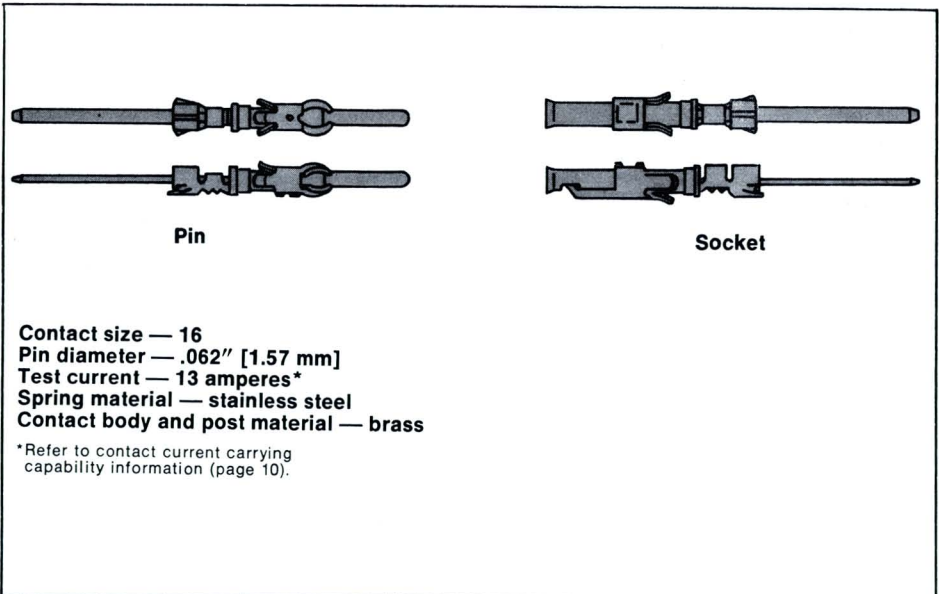
².000030" [0.0008 mm] gold over .000050" [0.0013 mm] nickel.

Series 1 Contact Specifications (Continued)

Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Charts contain dimensions in inches over millimetres.

Type III + Contacts, Posted Version (Solid Post)



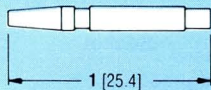
Contact size — 16
Pin diameter — .062" [1.57 mm]
Test current — 13 amperes*
Spring material — stainless steel
Contact body and post material — brass

*Refer to contact current carrying capability information (page 10).

Termination Method	Post Configuration	Accepted Wire Sizes		Contact Finish	Loose Piece Contact Part No.	
		AWG	[mm ²]		Pin	Socket
Wrap-Type	<u>.025 x .025</u> 0.64 x 0.64	32	0.03 (Solid)	Sel. Gold/Nickel ¹	66460-9	66461-9
				Gold/Nickel ²	66460-6	66461-6
				Tin	66460-3	66461-3
	<u>.045 x .045</u> 1.14 x 1.14	24 Max.	0.2 Max. (Solid)	Sel. Gold/Nickel ¹	66471-9	66473-9
				Gold/Nickel ²	66471-6	66473-6
				Tin	66471-3	66473-3
<u>.031 x .062</u> 0.79 x 1.57	24 Max.	0.2 Max. (Solid)	Sel. Gold/Nickel ¹	66470-9	66472-9	
			Gold/Nickel ²	66470-6	66472-6	
			Tin	66470-3	66472-3	
TERMI-POINT Clip	<u>.022 x .036</u> 0.56 x 0.91	30-28	0.05-0.09 (Solid & Stranded)	Sel. Gold/Nickel ¹	66469-9	66474-9
				Gold/Nickel ²	66469-6	66474-6
				Tin	66469-3	66474-3
	<u>.031 x .062</u> 0.79 x 1.57	28-24	0.08-0.2 (Solid & Stranded)	Sel. Gold/Nickel ¹	66468-9	66459-9
				Gold/Nickel ²	66468-6	66459-6
				Tin	66468-3	66459-3

¹Gold flash over .000050" [0.0013 mm] nickel on entire contact, with .000030" [0.0008 mm] selective gold plating on contact area.

²Gold flash over .000050" [0.0013 mm] nickel on post and .000030" [0.0008 mm] gold over .000050" [0.0013 mm] nickel on contact body.



Series I Keying Plug (for Type II, III + and VI Contacts)

For use in socket cavities only. Plug is installed taper-end first into front of connector.

Part No. — 200821-1

Note: The following dimensions indicate projection of post from rear face of Series 1 connectors. These dimensions *do not* apply to connectors with *mixed or coaxial cable* arrangements.

Post Configuration	Projection ±.016 [±0.41]
<u>.031 x .062</u> 0.79 x 1.57	<u>.717</u> 18.21
<u>.045 x .045</u> 1.14 x 1.14	<u>.717</u> 18.21
<u>.022 x .036</u> 0.56 x 0.91	<u>.576</u> 14.63
<u>.025 x .025</u> 0.64 x 0.64	<u>.576</u> 14.63

Post lengths to accept up to 3 terminations are also available.

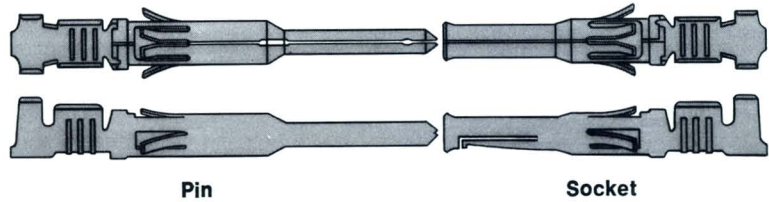
Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Series 1 Contact Specifications (Continued)

Type VI Contacts

Type VI contacts are one of the most versatile of the circular plastic connector line. These contacts are available for four wire ranges, covering #28-14 AWG [0.08-2mm²] wire sizes. They feature a single-piece design with built-in insulation support, retention tines and a cantilever spring on the socket. Contacts for wire sizes #18-16 AWG [0.8-1.4 mm²] and #14 AWG [2 mm²] can be installed into connector housings without an insertion tool. Where smaller wires are involved, it may be necessary to use a simple insertion tool. All contacts are removed from the mating face of the connector by use of an extraction tool.



Contact size — 16
Pin diameter — .062" [1.57 mm]
Test current — 13 amperes*
Material — copper alloy

*Refer to contact current carrying capability information (page 10).

Wire Size Range ¹		Ins. Dia. Range	Finish	Contact Part Numbers						Hand Tool No.
AWG	[mm ²]			Contacts reeled for AMP-0-MATIC Machine		Contacts reeled for AMP Min. Applicator		Loose Piece		
				Pin	Socket	Pin	Socket	Pin	Socket	
28-26	0.08-0.15	.035-.055 0.89-1.4	Tin	66585-1	66586-1	66585-2	66586-2	66595-1	66596-1	90277-1
			Sel. Gold/Nickel ²	66585-3	66586-3	66585-4	66586-4	66595-2	66596-2	
24-20	0.2-0.6	.040-.080 1.02-2.03	Tin	66583-1	66584-1	66583-2	66584-2	66593-1	66594-1	90277-1
			Sel. Gold/Nickel ²	66583-3	66584-3	66583-4	66584-4	66593-2	66594-2	
22-18	0.3-0.9	.055-.110 1.4-2.79	Tin	66581-1	66582-1	66581-2	66582-2	66591-1	66592-1	90277-1
			Sel. Gold/Nickel ²	66581-3	66582-3	66581-4	66582-4	66591-2	66592-2	
18-16	0.8-1.4	.080-.100 2.03-2.54	Tin	66579-1	66580-1	66579-2	66580-2	66589-1	66590-1	90277-1
			Sel. Gold/Nickel ²	66579-3	66580-3	66579-4	66580-4	66589-2	66590-2	
14	2	.080-.135 2.03-3.43	Tin	66577-1	66578-1	66577-2	66578-2	66587-1	66588-1	90310-1
			Sel. Gold/Nickel ²	66577-3	66578-3	66577-4	66578-4	66587-2	66588-2	

**For use in connector configuration 23-22 M only.

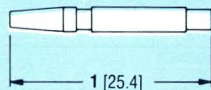
¹Wire strip length — .156" [3.96 mm] (all wire sizes).

²Gold flash over .000050" [0.0013 mm] nickel on entire contact, with .000030" [0.0008 mm] selective gold plating on contact area.

Insertion Tool Part No. — 91002-1 (for insulation diameters .070" [1.78 mm] or less).

Extraction Tool Part No. — 305183

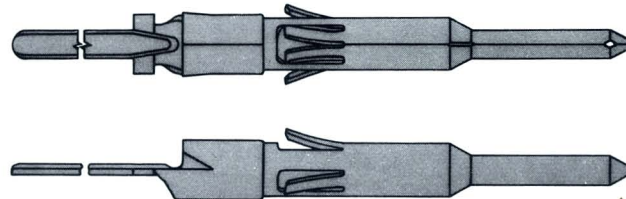
Type VI Contacts, Posted Version (Precision Formed Post)



Series I Keying Plug (for Type II, III + and VI Contacts)

For use in socket cavities only. Plug is installed taper-end first into front of connector.

Part No. — 200821-1



Pin

Contact size — 16
Pin diameter — .062" [1.57 mm]
Test current — 13 amperes*
Material — copper alloy
Finish — gold flash over .000050" [0.0013 mm] nickel on entire contact with .000030" [0.0008 mm] selective gold plating on contact area.
Post configuration — wrap-type, .024" x .060" [0.61 mm x 1.52 mm]
Part Number 66484-3 — loose piece

*Refer to contact current carrying capability information (page 10).

- Notes:**
1. A dimension of .363, ±.016 [9.22, ±0.41] indicates projection of post from rear face of Series 1 connectors. This dimension does not apply to connectors with mixed or coaxial cable arrangements.
 2. Post lengths to accept up to 3 terminations are also available.

Series 1 Contact Specifications (Continued)

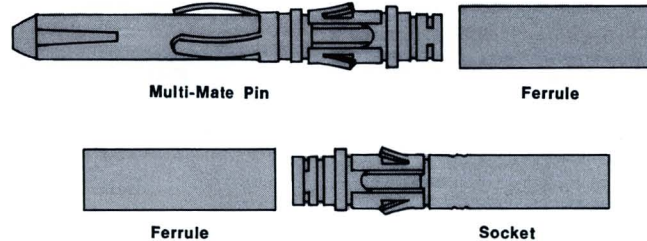
Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Subminiature COAXICON Contacts

AMP's subminiature COAXICON contact is a crimp, snap-in contact, designed for high density, multiple circuit connector application. These subminiature coaxial contacts feature the exclusive one-crimp termination of inner conductor, outer braid and cable support. The design includes complete contact assembly with built in retention spring and a separate ferrule. They are ideal for mixing coaxial and pin and socket contacts in the same connector.

Subminiature coaxial contacts fit into any connector cavity that will accept an AMP Type II, III+ or VI pin or socket contact. This means you can bring power and shielded signal circuits through the same connector . . . and in any combination. No longer is it necessary to have special housings with specific positions for coaxial contacts. You can select from a variety of connector configurations in a number of positions, with a choice of housing materials and hardware.



Material: Center contacts — beryllium copper per QQ-C-530
 Inner dielectric — polypropylene
 Outer shells — brass per MIL-C-50
 Retention springs — passivated stainless steel
 Ferrule — copper

Finish: Center contacts, outer shells — .000030" [0.0008 mm] gold over .000050" [0.0013 mm] nickel; gold plated per MIL-G-45204, nickel plated per QQ-N-290
 Ferrule — tin plated per MIL-T-10727

Cable Size		Strip Form Contact No.		Loose Piece Contact No.		Ferrule No.	Hand Tool No.	Die Insert Nos. for Hand Tool 69710-1, or Pneumatic Tool 69365† and 69365-2
RG or AWG	[mm ²]	Pin	Socket	Pin	Socket			
RG-178, 196	—	226533-2	51564-2*	226537-2	51565-2*	1-332057-0	69656-2, Mod. E	69690-2
RG-196 Double Braid	—	226533-2	51564-2*	226537-2	51565-2*	225088-1	69656-9, Mod. A	—
RG-174, 188, 316	—	226533-1	51564-1	226537-1	51565-1	1-332056-0	69656, Mod. E	69690, Mod. D
RG-174 Double Braid	—	226533-1	51564-1	226537-1	51565-1	225088-3	69656-7, Mod. E	—
RG-179, 187	—	226533-1	51564-1	226537-1	51565-1	1-332056-0	69656-1, Mod. E	69690-1, Mod. D
RG-187 Double Braid	—	226533-1	51564-1	226537-1	51565-1	225088-1	69656-8, Mod. E	—
RG-161	—	226533-1	51564-1	226537-1	51565-1	1-332056-0	69656-5, Mod. D	—
26 AWG Shielded, .075 [1.91] Max. O.D.	0.12-0.15	226533-1	51564-1	226537-1	51565-1	1-332057-0	69656-3, Mod. E	69690, Mod. D
26 AWG Twisted Pair, Solid or Stranded (7 str.), .0063 [0.16] Dia.	0.12-0.15	—	—	226537-3	51565-3	1-332057-0	69656-3, Mod. E	69690, Mod. D
28 AWG Twisted Pair, Solid	0.08-0.09	—	—	226537-3	51565-3	1-332057-0	69656, Mod. E	69690, Mod. D
28 AWG Twisted Pair, Stranded (7 str.), .005 [0.13] Dia.	0.08-0.09	—	—	226537-3	51565-3	1-332057-0	69656-1, Mod. E or 69656-2, Mod. E	69690-1, Mod. D or 69690-2
30 AWG Twisted Pair, Solid	0.05	—	—	226537-3	51565-3	1-332057-0	69656-2, Mod. E	69690-2

*These contacts have insulating liner inside support sleeve.

†This pneumatic tool requires **Manual Take-Up Attachment No. 69689**.

Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Series 2 Contact Specifications

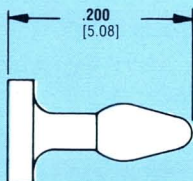
Introduction

AMP supplies two contact types in size 20 for the Series 2 circular plastic connector: Type 20 DM (screw-machined); and Type 20 DF (precision formed), with and without insulation support, a solder version, and a posted version for point-to-point wiring.

Type 20 Contacts

Type 20 contacts are designed for applications that require high density circuit packaging. These miniature contacts are available for terminating wire sizes #28-24 AWG [0.08-0.2 mm²] and #24-20 AWG [0.2-0.6 mm²]. They feature an economical single-piece design and can be terminated to wire using either hand crimping tools or automatic machines.

Both pins and sockets can be installed in connector housings and removed with one simple insertion/extraction tool. Because the contacts employ the rear release system for loading and retention, insertion and extraction of contacts is accomplished from the rear of connector housings.

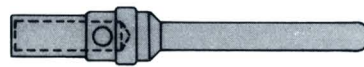


Series 2 Keying Plug
(for Type 20 DM and 20 DF contacts)

For use in socket cavities only. Plug is installed taper-end first into front of connector.

Part No. — 206509-1

Type 20 DM Contacts (Screw-Machined)



Pin
(M24308/11-1)



Socket
(M24308/10-1)

Contact size — 20
Pin diameter — .040" [1.02 mm]
Test current — 7.5 amperes*
Material: Pin — copper alloy per QQ-B-626
Socket — beryllium copper per QQ-C-530
Socket sleeve — passivated stainless steel
Finish — .000050" [0.0013 mm] gold over .000100" [0.003 mm] copper; gold plated per MIL-G-45204, copper plated per MIL-C-14550

*Refer to contact current carrying capability information (page 10).

Wire Size Range ¹	Ins. Dia. Range (Max.)	Tape Mounted Contact No. ²		Loose Piece Contact No.		Hand Crimping Tool	
		Pin	Socket	Pin	Socket	Tool No.	Positioner No.
24-20 [0.2-0.6 mm ²]	.068 [1.73 mm]	205089-2	205090-2	205089-1	205090-1	M22520/2-01	M22520/2-08

¹Wire strip length — .156" [3.96 mm] (all wire sizes).

²Contacts reeled for use in AMP-TAPEMATIC Stripper/Crimper Machine.

Notes: 1. All Type 20 DM contacts conform to Military Specification MIL-C-24308.

2. Insertion/Extraction Tool Part No. 91067-2 (MS 18278-1) is used to install and remove both pins and sockets.

Type 20 DF Contacts, Snap-In Solder Cup Version (Stamped and Formed)



Pin



Socket

Contact size — 20
Pin diameter — .040" [1.02 mm]
Test current — 7.5 amperes*
Material: Pin — brass per MIL-C-50
Socket — phosphor bronze per QQ-B-750
Finish: Pin — gold flash over .000050" [0.0013 mm] nickel on entire contact, with .000030" [0.0008 mm] selective gold plating on mating end for length of .175"/.150" [4.45 mm/3.81 mm].
Socket — gold flash over .000050" [0.0013 mm] nickel on entire contact, with .000030" [0.0008 mm] selective gold plating for length of .150"/.100 [3.81 mm/2.54 mm] from mating end (gold plated per MIL-G-45204, nickel plated per QQ-N-290)
Wire size — 18 AWG [0.8-0.9 mm²] max.
Part Numbers: Pin — 66570-3 (loose piece)
Socket — 66569-3 (loose piece)

*Refer to contact current carrying capability information (page 10).

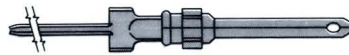
Note: Insertion/Extraction Tool Part No. 91067-2 is used to install and remove both pins and sockets.

Series 2 Contact Specifications (Continued)

Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Type 20 DF Contacts, Posted Version (Precision Formed)

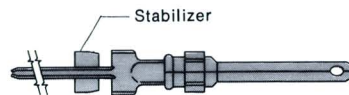


Pin

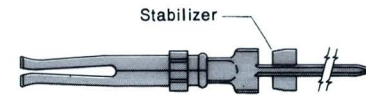


Socket

Stabilizer on .425" [10.8 mm] and .651" [16.54 mm] post lengths only.



Pin



Socket

Contact size — 20

Pin diameter — .040" [1.02 mm]

Test current — 7.5 amperes*

Material: Pin—brass per MIL-C-50

Socket — phosphor bronze per QQ-B-750

Finish — gold flash over nickel or selective gold over nickel

(gold plated per MIL-G-45204, nickel plated per QQ-N-290)

Post configuration — wrap-type, .025" x .025" [0.64 mm x 0.64 mm]

*Refer to contact current carrying capability information (page 10).

Finish	Loose Piece Contact Part No.							
	.125 [3.18] Post Length		.188 [4.78] Post Length		.425 [10.8] Post Length		.651 [16.54] Post Length	
	Pin	Socket	Pin	Socket	Pin	Socket	Pin	Socket
Selective Gold/ Nickel ¹	1-66481-7	1-66482-7	3-66481-5	3-66482-5	1-66481-9	1-66482-9	2-66481-1	2-66482-1
Gold Flash/ Nickel ²	1-66481-6	1-66482-6	3-66481-4	3-66482-4	1-66481-8	1-66482-8	2-66481-0	2-66482-0

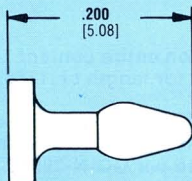
¹Gold flash over .000030" [0.0008 mm] nickel on entire contact, with .000030" [0.0008 mm] selective gold plating on mating end for length of .150"/.100" [3.81 mm/2.54 mm].

²Gold flash over .000030" [0.0008 mm] nickel.

- Notes:** 1. Insertion/Extraction Tool Part No. 91083-2 is used to install and remove all posted contacts.
 2. The following dimensions indicate projection of post from rear face of various shell sizes of Series 2 connectors. These dimensions *do not* apply to connectors with *mixed* or *coaxial cable* arrangements.

Connector Shell Size	Projection ±.020 [±0.51]			
	.125 [3.18] Post Length	.188 [4.78] Post Length	.425 [10.8] Post Length	.651 [16.54] Post Length
11 & 17	.075 1.91	.141 3.58	.375 9.53	.600 15.24
23	—	—	.250 6.35	.475 12.07

Post lengths to accept up to 3 terminations are also available.



Series 2 Keying Plug (for Type 20 DM and 20 DF contacts)

For use in socket cavities only. Plug is installed taper-end first into front of connector.

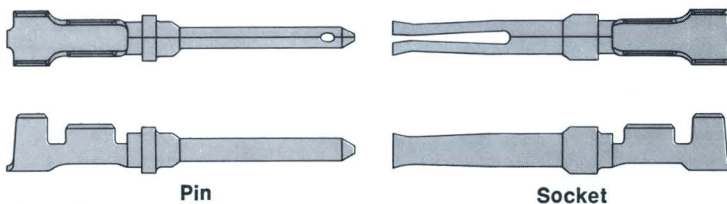
Part No. — 206509-1

Series 2 Contact Specifications (Continued)

Dimensioning:

- All dimensions in inches and millimetres. Values in brackets are metric equivalents.
- Charts contain dimensions in inches over millimetres.

Type 20 DF Contacts with Insulation Support (Precision Formed)



Contact size — 20
Pin diameter — .040 [1.02 mm]
Test current — 7.5 amperes*
Material: Pin — brass per MIL-C-50
Socket — phosphor bronze per QQ-B-750
Finish — gold over copper, selective gold over nickel or gold flash over nickel (gold plated per MIL-G-45204, copper plated per MIL-C-14550, nickel plated per QQ-N-290)

* Refer to contact current carrying capability information (page 10).

Wire Size Range ¹	Ins. Dia. (Max.)	Finish	Contact Part Numbers						Hand Tool No.
			Contacts reeled for AMP-O-MATIC Machine		Contacts reeled for AMP Min. Applicator		Loose Piece		
AWG	[mm ²]		Pin	Socket	Pin	Socket	Pin	Socket	
28-24	0.08-0.2	Gold/Copper ²	1-66507-1	1-66505-1	66507-2	66505-2	66507-8	66505-8	90302-1
		Sel. Gold/Nickel ³	1-66507-2	1-66505-2	66507-3	66505-3	66507-9	66505-9	
		Gold Flash/Nickel ⁴	1-66507-3	1-66505-3	66507-4	66505-4	1-66507-0	1-66505-0	
24-20	0.2-0.6	Gold/Copper ²	1-66506-1	1-66504-1	66506-2	66504-2	66506-8	66504-8	90302-1
		Sel. Gold/Nickel ³	1-66506-2	1-66504-2	66506-3	66504-3	66506-9	66504-9	
		Gold Flash/Nickel ⁴	1-66506-3	1-66504-3	66506-4	66504-4	1-66506-0	1-66504-0	

¹Wire and strip length — .110" [2.8 mm] (all wire sizes).

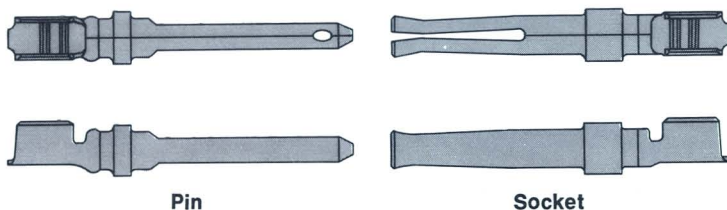
².000050" [0.0013 mm] gold over .000100" [0.003 mm] copper.

³Gold flash over .000050" [0.0013 mm] nickel on entire contact, with .000030" [0.0008 mm] selective gold plating on mating end for length of .150" [3.81 mm] max.

⁴Gold flash over .000030" [0.0008 mm] nickel.

Note: Insertion/Extraction Tool Part No. 91067-2 is used to install and remove all crimp-type contacts.

Type 20 DF Contacts without Insulation Support (Precision Formed)



Contact size — 20
Pin diameter — .040" [1.02 mm]
Test current — 7.5 amperes*
Material: Pin — brass per MIL-C-50
Socket — phosphor bronze per QQ-B-750
Finish — selective gold over nickel or gold flash over nickel (gold plated per MIL-G-45204, nickel plated per QQ-N-290)

* Refer to contact current carrying capability information (page 10).

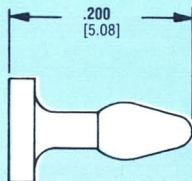
Wire Size Range ¹	Ins. Dia. (Max.)	Finish	Contact Part Numbers						Hand Tool No.
			Contacts reeled for AMP-O-MATIC Machine		Contacts reeled for AMP Min. Applicator		Loose Piece		
AWG	[mm ²]		Pin	Socket	Pin	Socket	Pin	Socket	
28-24	0.08-0.2	Sel. Gold/Nickel ²	1-205310-2	1-205311-3	205310-2	205311-3	205310-8	205311-9	90265-1
		Gold Flash/Nickel ³	1-205310-4	1-205311-4	205310-4	205311-4	1-205310-0	1-205311-0	
24-20	0.2-0.6	Sel. Gold/Nickel ²	1-205202-1	1-205201-2	205202-2	205201-3	205202-4	205201-5	90265-1
		Gold Flash/Nickel ³	1-205202-3	1-205201-3	205202-6	205201-6	205202-7	205201-7	

¹Wire strip length — .110" [2.8 mm] (all wire sizes).

²Gold flash over .000030" [0.0008 mm] nickel on entire contact, with .000030" [0.0008 mm] selective gold plating on mating end for length of .275"/.250" [6.99 mm/6.35 mm].

³Gold flash over .000030" [0.0008 mm] nickel.

Note: Insertion/Extraction Tool Part No. 91067-2 is used to install and remove all crimp-type contacts.



Series 2 Keying Plug (for Type 20 DM and 20 DF contacts)

For use in socket cavities only. Plug is installed taper-end first into front of connector.

Part No. — 206509-1

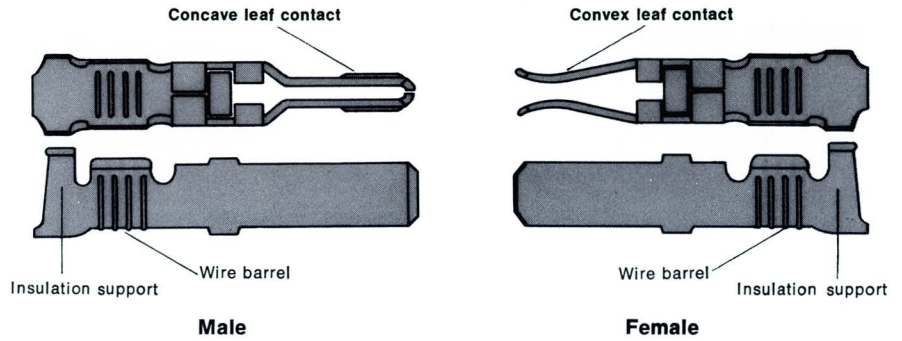
Series 3 Contact Specifications

Dimensioning:
 1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
 2. Chart contains dimensions in inches over millimetres.

Introduction

AMP supplies one contact type (Type XII) for use in the Series 3 circular plastic connector.

Type XII Contacts



Test current — 35 amperes*
Material — copper
Finish — tin or gold over nickel

*Refer to contact current carrying capability information (page 10).

The Type XII contact is a crimp snap-in, power contact available in loose piece for hand tool application or in reel-fed strip form for high speed automatic machine application. The contact design includes male and female contact assemblies which consist of two heavy duty spring members. This heavy duty spring action assures proper electrical contact and withdrawal forces. The

contact provides positive insulation support and has an integral nylon latch for contact retention within the connector housing. Type XII contacts are available for wire size ranges #16-12 AWG [1.25-3 mm²] and #10-8 AWG [5-8 mm²]. Contacts are made of high conductivity copper and have gold over nickel plating or tin plating.

Wire Size Range ¹		Ins. Dia. Range	Finish	Strip Form Contact No. ⁴		Loose Piece Contact No.		Die Insert Nos. for Hand Tool 69710-1 or Pneumatic Tool 69365
AWG	[mm ²]			Male	Female	Male	Female	
16 and 14-12	1.25-1.4 and 2-3	.135-.160 3.43-4.06	Tin	66255-1	66252-1	66261-1	66258-1	90145-1** and 90145-2**
			Gold/Nickel ²	66255-2	66252-2	66261-2	66258-2	
			Gold/Nickel ³	66255-3	66252-3	66261-3	66258-3	
10-8	5-8	.190-.220 4.83-5.59	Tin	66253-1	66251-1	66259-1	66257-1	90140-1
			Gold/Nickel ²	66253-2	66251-2	66259-2	66257-2	
			Gold/Nickel ³	66253-3	66251-3	66259-3	66257-3	

**Die Insert No. 90145-1 is for crimping #14-12 AWG [2-3 mm²] wire, and Die Insert No. 90145-2 is for crimping #16 AWG [1.25-1.4 mm²] wire.

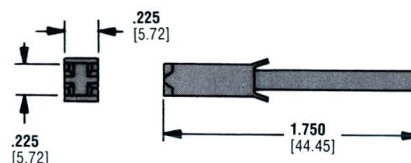
¹Wire strip length — .281" [7.14 mm]

².000030" [0.0008 mm] gold over .000050" [0.0013 mm] nickel

³.000015" [0.00038 mm] gold over .000050" [0.0013 mm] nickel

⁴Contacts reeled for machines using the AMP Standard Applicator

Extraction Tool Part No. — 91019-3



Part No. — 206508-1

Series 3 Keying Plug

Series 1 Component Dimensions

Dimensioning:

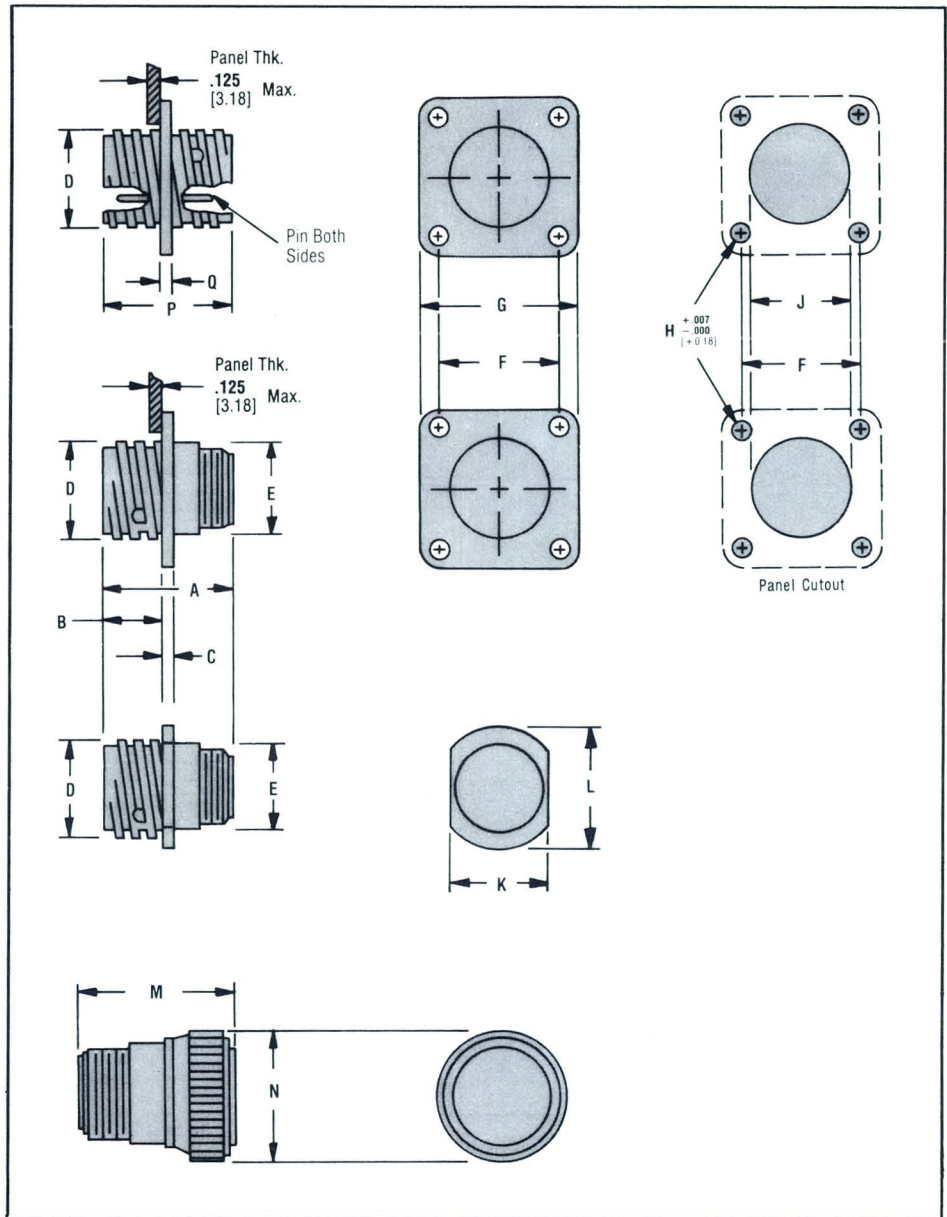
1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Feed-thru Receptacle (Class F)

Square Flange Receptacle (Class A)

Free Hanging Receptacle (Class A)

Plug (Class A and F)



Arrangement No.	Sex	Dimensions														
		A Max.	B ±.015 / ±0.38	C ±.005 / ±0.13	D ±.010 / ±0.25	E Max.	F ±.010 / ±0.25	G ±.015 / ±0.38	H	J	K Max.	L Max.	M Max.	N Max.	P Max.	Q ±.005 / ±0.13
11-4	Rev.	1.094 / 27.79	.420	.094	.688	.750	.844	1.125	.125	.850	.812	.930	1.365 / 34.68	.938	—	—
	Std.	1.355 / 34.42	10.67	2.39	3.96	19.05	21.44	28.58	3.18	21.59	20.62	23.63	1.094 / 27.79	23.83	1.209 / 30.71	.094 / 2.39
13-9	Std.	1.355 / 34.42	10.67	2.39	20.81	21.82	24.61	31.01	3.18	23.09	21.82	26.98	1.094 / 27.79	27.06	—	—
17-14	Rev.	1.094 / 27.79	.420	.094	1.050	1.110	1.125	1.435	.150	1.156	1.156	1.305	1.365 / 34.68	1.310	—	—
	Std.	1.355 / 34.42	10.67	2.39	26.67	28.2	28.58	36.45	3.81	29.36	29.37	33.15	1.094 / 27.79	33.28	1.040 / 26.42	.188 / 4.78
23-24 *	Std.	1.355 / 34.42	13.21	3.96	36.53	38.36	36.53	44.45	3.81	40.89	38.1	44.02	1.094 / 27.79	44.33	1.209 / 30.71	.154 / 3.91
23-37	Rev.	1.094 / 27.79	.520	.156	1.438	1.510	1.438	1.750	.150	1.610	1.500	1.733	1.365 / 34.68	1.745	—	—
	Std.	1.355 / 34.42	13.21	3.96	36.53	38.36	36.53	44.45	3.81	40.89	38.1	44.02	1.094 / 27.79	44.33	1.209 / 30.71	.154 / 3.91

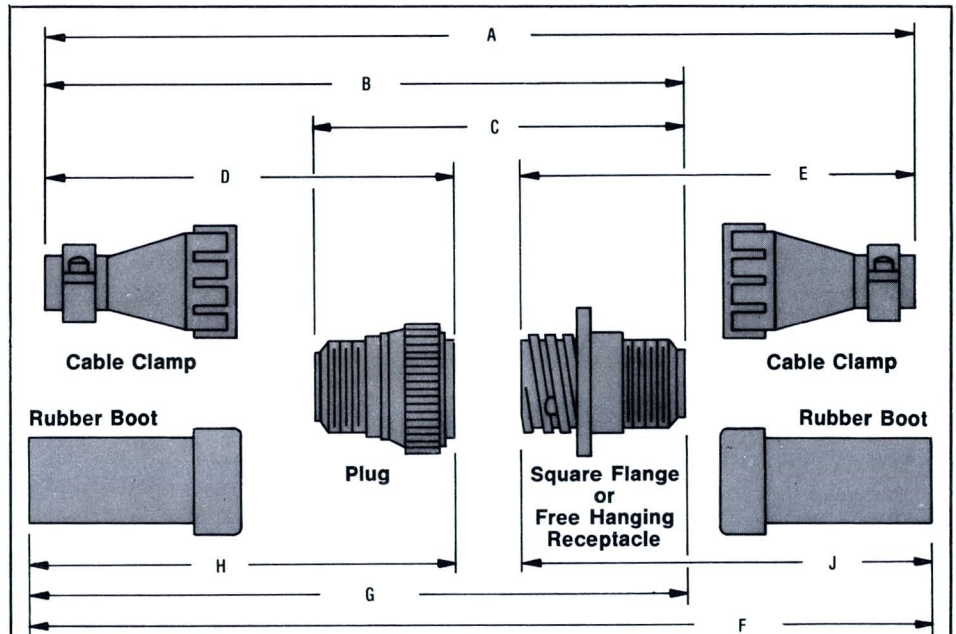
* Plug and receptacle accept Type II, III + or VI contacts for insulation diameters up to .140" [3.57 mm].

Series 1 Mated Dimensions

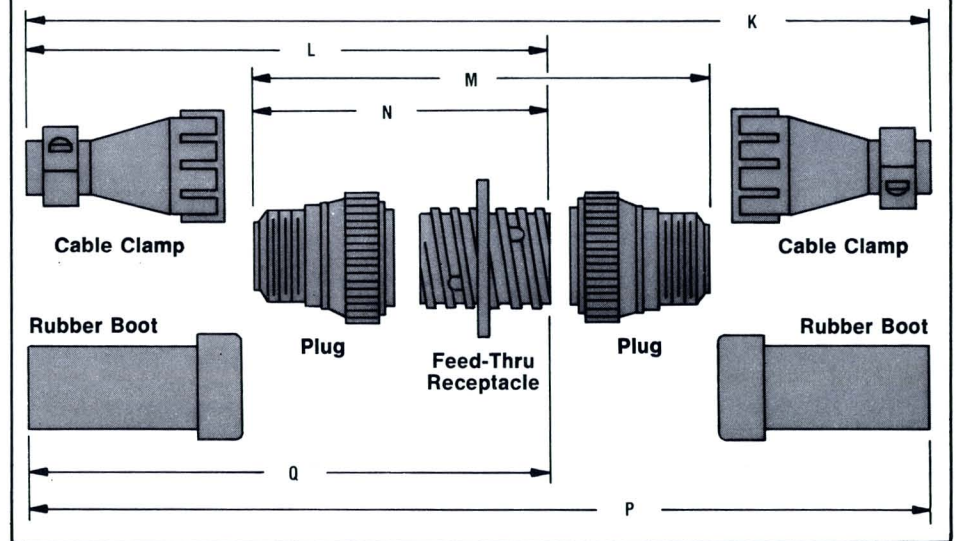
Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Class A Connectors



Class F Connectors



Arrangement No.	Sex	Dimensions														
		A Max.	B Max.	C Max.	D Max.	E Max.	F Max.	G Max.	H Max.	J Max.	K Max.	L Max.	M Max.	N Max.	P Max.	Q Max.
11-4	Rev.	4.340	3.170	2.000	2.531	2.281	4.860	3.430	2.795	2.539	—	—	—	—	—	—
	Std.	110.24	80.52	50.8	64.29	57.94	123.45	87.13	71	64.5	—	—	—	—	—	—
13-9	Std.	—	—	2.000 50.8	—	—	—	—	—	—	—	—	—	—	—	—
17-14	Rev.	4.750	3.375	2.000	2.750	2.484	4.860	3.430	3.785	2.539	—	—	—	—	—	
	Std.	120.65	85.73	50.8	69.85	63.1	123.45	87.13	96.14	64.5	—	—	—	—	—	
17-16	Std.	4.750	3.375	2.000	2.484	2.750	4.860	3.430	2.524	2.785	4.775	3.000	2.475	1.850	5.225	3.300
	Std.	120.65	85.73	50.8	63.1	69.85	123.45	87.13	64.11	70.74	121.29	76.2	62.87	46.99	132.72	83.82
23-24*	Std.	4.750	3.375	2.000	2.484	2.750	—	—	—	—	—	—	—	—	—	—
	Std.	120.65	85.73	50.8	63.1	69.85	—	—	—	—	—	—	—	—	—	—
23-37	Rev.	4.750	3.375	2.000	2.750	2.484	—	—	—	—	5.075	3.150	2.475	1.850	—	—
	Std.	120.65	85.73	50.8	69.85	63.1	—	—	—	—	128.91	80.01	62.87	46.99	—	—
					63.1	69.85										

*Plug and receptacle accept Type II, III + or VI contacts for insulation diameters up to .140" [3.57 mm].
Note: Dimensions A, B, D, E, K and L apply to "large size" cable clamps (page 26).

Series 2 Component Dimensions

Dimensioning:

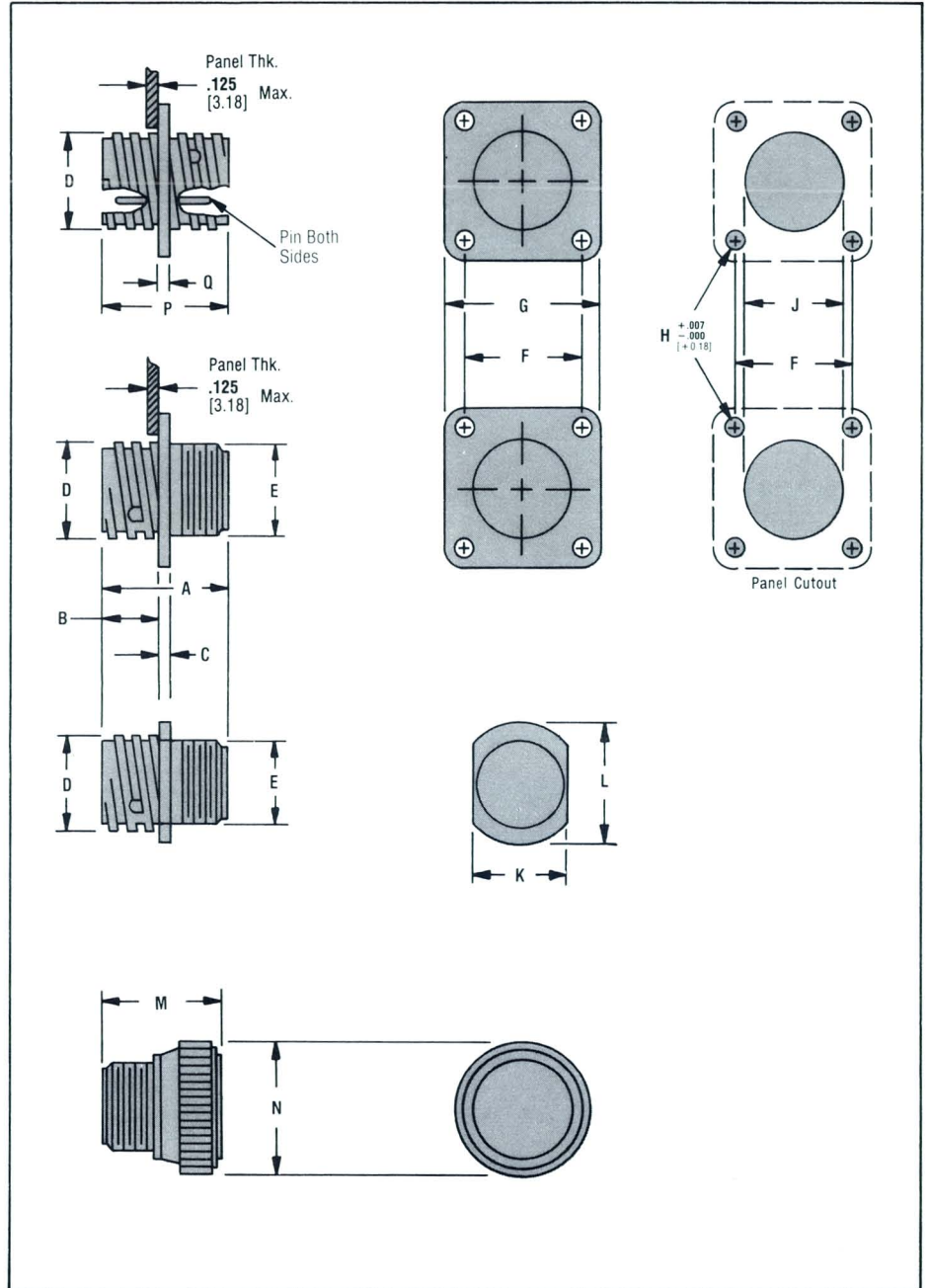
1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Feed-Thru Receptacle (Class F)

Square Flange Receptacle (Class A)

Free Hanging Receptacle (Class A)

Plug (Class A and F)



Arrangement No.	Dimensions*														
	A Max.	B $\pm .015$ ± 0.38	C $\pm .005$ ± 0.13	D $\pm .010$ ± 0.25	E	F $\pm .010$ ± 0.25	G $\pm .015$ ± 0.38	H	J	K Max.	L Max.	M Max.	N Max.	P Max.	Q $\pm .015$ ± 0.38
11-8, 11-9	.800	.420	.094	.688	—	.844	1.125	.125	.850	.812	.928	.800	.940	1.047	.188
	20.32	10.67	2.39	17.48	—	21.44	28.58	3.18	21.59	20.63	23.58	20.32	23.88	26.6	4.78
17-28	.800	.420	.094	1.050	—	1.125	1.435	.150	1.156	1.156	1.305	.800	1.310	1.047	.188
	20.32	10.67	2.39	26.67	—	28.58	36.45	3.81	29.36	29.37	33.15	20.32	33.28	26.6	4.78
23-57, 23-63	.920	.420	.156	1.438	—	1.438	1.750	.150	1.610	1.495	1.728	.910	1.745	1.047	.188
	23.37	10.67	3.96	36.53	—	36.53	44.45	3.81	40.89	37.98	43.9	23.12	44.33	26.6	4.78

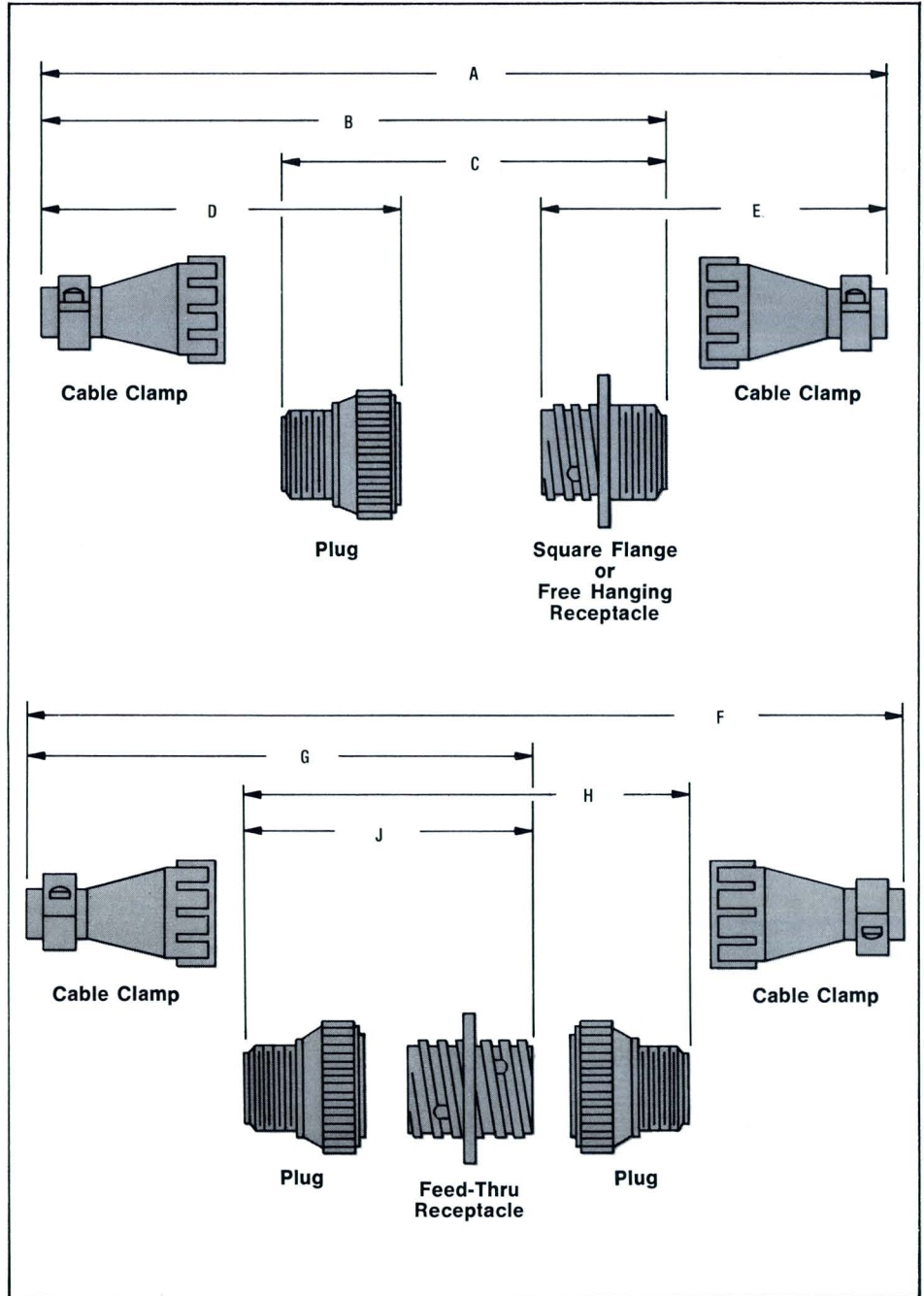
*All dimensions apply to both standard and reverse sex for class A connectors. Class F connectors in reverse sex are not available.

Series 2 Mated Dimensions

Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Class A Connectors



Class F Connectors

Arrangement No.	Dimensions*									
	A Max.	B Max.	C Max.	D Max.	E Max.	F Max.	G Max.	H Max.	J Max.	
11-8, 11-9	3.672 93.27	2.484 63.1	1.300 33.02	1.984 50.4	1.984 50.4	3.966 100.74	2.538 64.47	1.978 50.25	1.516 38.51	
17-28	4.094 103.99	2.688 68.28	1.300 33.02	2.188 55.58	2.188 55.58	4.266 108.36	2.688 68.28	1.978 50.25	1.516 38.51	
23-57, 23-63	4.328 109.94	2.938 74.63	1.531 38.89	2.320 58.93	2.320 58.93	4.796 121.82	2.953 75.01	2.198 55.83	1.626 41.3	

*All dimensions apply to both standard and reverse sex for Class A connectors. Class F connectors in reverse sex are not available.

Note: Dimensions A, B, D, E, F and G apply to "large size" cable clamps (page 26).

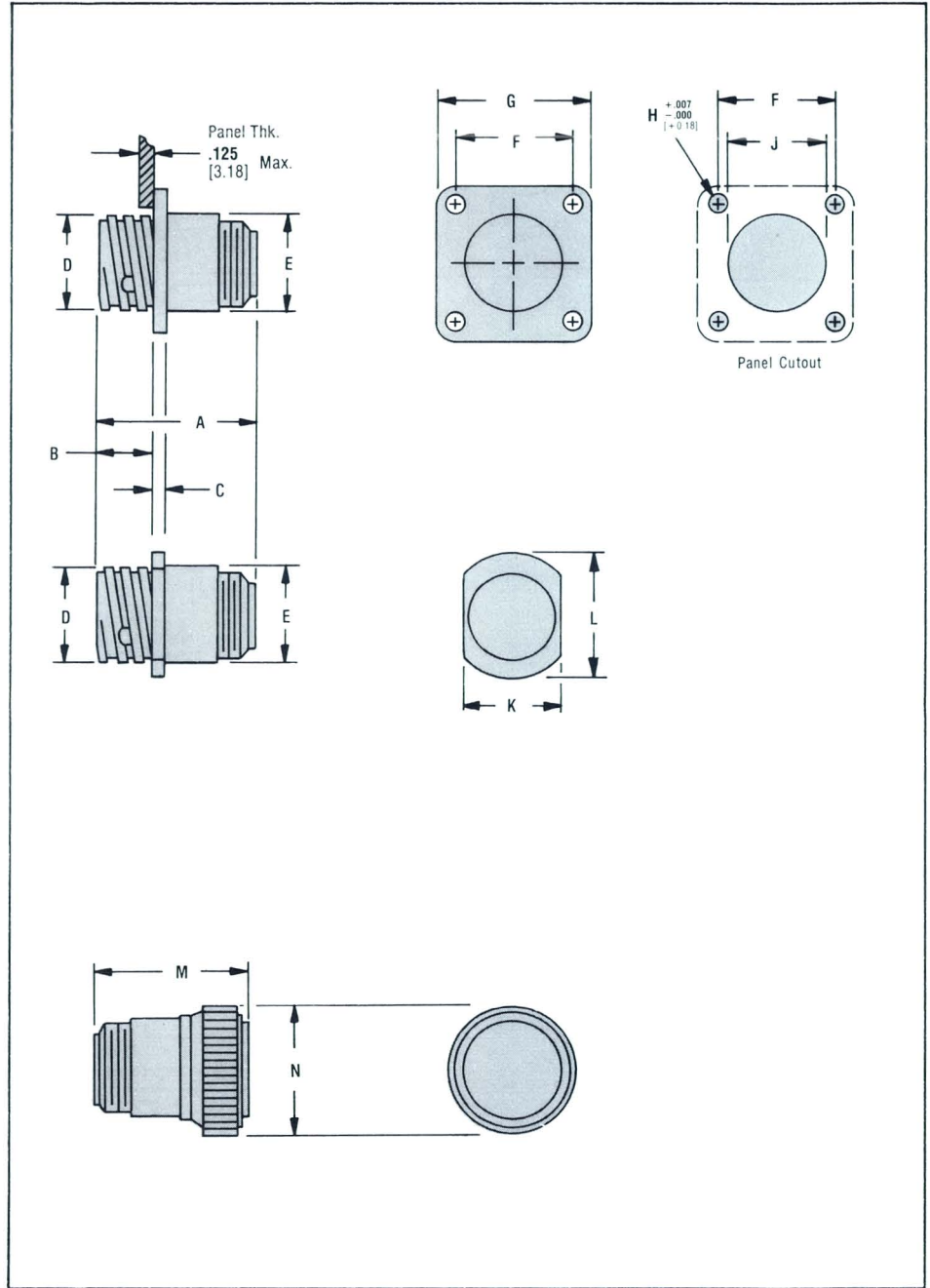
Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Square Flange Receptacle
(Class A)

Free Hanging Receptacle
(Class A)

Plug (Class A)



Arrangement No.	Dimensions*													
	A Max.	B $\pm .015$ / ± 0.38	C $\pm .005$ / ± 0.13	D $\pm .010$ / ± 0.25	E Max.	F $\pm .010$ / ± 0.25	G $\pm .015$ / ± 0.38	H	J	K Max.	L Max.	M Max.	N Max.	
17-3	1.645	.420	.094	1.050	1.110	1.125	1.435	.150	1.156	1.156	1.305	1.655	1.310	
	41.79	10.67	2.39	26.67	28.2	28.58	36.45	3.81	29.36	29.37	33.15	42.04	33.28	
23-7	1.645	.520	.156	1.438	1.510	1.438	1.750	.150	1.610	1.500	1.733	1.655	1.745	
	41.79	13.21	3.96	36.53	38.35	36.53	44.45	3.81	40.89	38.1	44.02	42.04	44.33	

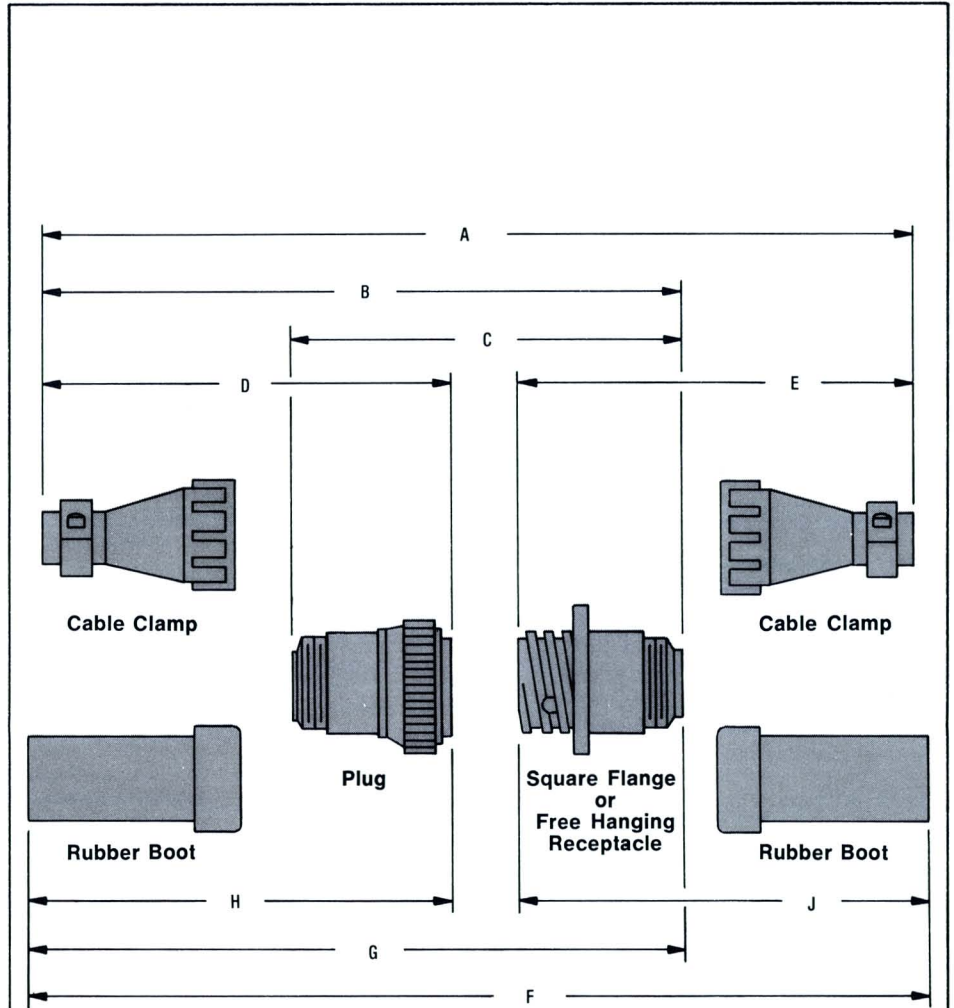
*All dimensions apply to both standard and reverse sex.

**Series 3
Mated Dimensions**

Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Class A Connectors



Arrangement No.	Dimensions*								
	A Max.	B Max.	C Max.	D Max.	E Max.	F Max.	G Max.	H Max.	J Max.
17-3	5.578	4.188	2.820	3.030	3.020	5.680	4.250	3.125	3.075
	141.69	106.38	71.63	76.97	76.71	144.28	107.95	79.38	78.11
23-7	5.578	4.188	2.820	3.030	3.020	—	—	—	—
	141.69	106.38	71.63	76.97	76.71	—	—	—	—

*All dimensions apply to both standard and reverse sex.

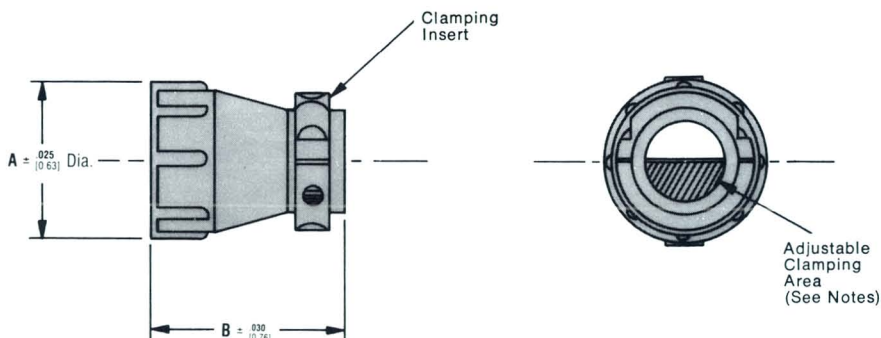
Note: Dimensions A, B, D and E apply to "large size" cable clamps (page 26).

Accessory Dimensions

Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Charts contain dimensions in inches over millimetres.

Cable Clamp

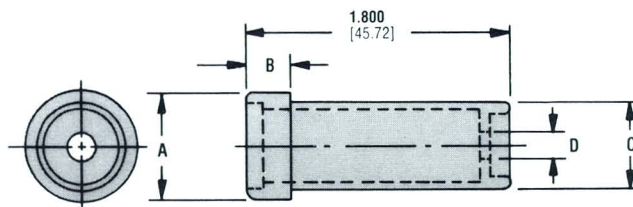


Material: U.L. listed, 94V-1 rated, heat stabilized, fire resistant, self-extinguishing thermoplastic; Color, black

Shell Size	Standard Size					Large Size				
	A	B	Cable O.D. (Max.)	Adjustment Range (Sq. In.)	Part Number	A	B	Cable O.D. (Max.)	Adjustment Range (Sq. In.)	Part Number
11	.825 20.96	1.250 31.75	.329 8.33	.004-.055 2.58-35.48	206062-1	.825 20.96	1.450 36.83	.453 11.51	.010-.161 6.45-103.87	206358-1
13	.966 24.54	1.400 35.56	.453 11.51	.010-.161 6.45-103.87	206966-1	1.131 28.73	1.655 42.04	.703 17.86	.083-.390 53.55-251.61	207008-1
17	1.131 28.73	1.400 35.56	4.53 11.51	.010-.161 6.45-103.87	206070-1	1.131 28.73	1.655 42.04	.703 17.86	.083-.390 53.55-251.61	206322-1
23	1.600 40.64	1.555 39.5	.703 17.86	.083-.390 53.55-251.61	206138-1	1.600 40.64	1.655 42.04	1.125 28.58	.261-.571 168.39-368.39	206512-1

- Notes:**
1. Clamping area is adjustable by changing clamping inserts. For size 11 cable clamps (standard size), 3 inserts are supplied with each assembly and for all other cable clamps, 4 are supplied with each assembly.
 2. Components for all cable clamps are packaged unassembled. This includes the cable clamp, two screws and the clamping inserts.

Rubber Boot



Material: Neoprene rubber; Color, black

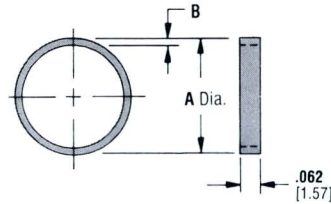
Shell Size	Cable Dia. Sealing Range	Dimensions				Part Number
		A	B	C	D	
11	.219-.438 5.56-11.13	.750 19.05	.300 7.62	.600 15.24	.170 4.32	206304-1
17	.297-.516 7.54-13.11	1.200 30.48	.409 10.39	.900 22.86	.250 6.35	206398-1

Note: For detailed performance data on the Rubber Boot, refer to AMP Product Specification No. 108-10024.

Accessory Dimensions (Continued)

Dimensioning:
 1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
 2. Charts contain dimensions in inches over millimetres.

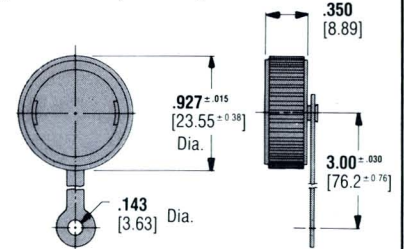
Peripheral Seal (for Receptacle)



Material: Neoprene rubber; Color, black

Shell Size	Dimensions		Part Number
	A	B	
11	<u>.516</u>	<u>.041</u>	206403-1
	13.11	1.04	
13	<u>.646</u>	<u>.046</u>	206403-4
	16.41	1.17	
17	<u>.875</u>	<u>.048</u>	206403-2
	22.23	1.22	
23	<u>1.234</u>	<u>.045</u>	206403-3
	31.34	1.14	

Sealing Cap (for Receptacle)

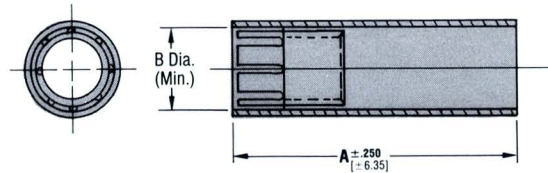


Material: Cap — U.L. recognized, 94V-1 rated, heat stabilized, fire resistant, self-extinguishing thermoplastic; Color, black

Sealing Gasket — Neoprene rubber; Color, black

Part Number 206903-1 — for shell size 11 only

Cable Entry Seal

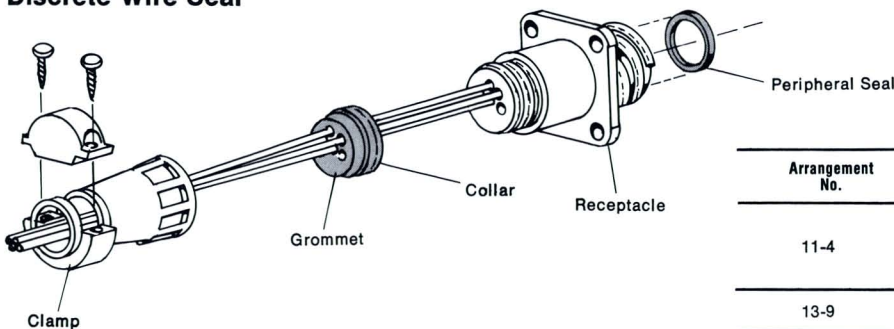


Material: Internal Sleeve — Nylon; Color black
 Outer Tubing — Polyolefin; Color black

Shell Size	Dimensions		Sealing Range (Dia.)	Part Number
	A	B		
11	<u>2.250</u>	<u>.625</u>	<u>.260-.600</u>	54010-1
	57.15	15.88		
13	<u>2.500</u>	<u>.775</u>	<u>.300-.725</u>	54123-1
	63.5	19.69		
17	<u>2.250</u>	<u>.975</u>	<u>.400-.875</u>	54011-1
	57.15	24.77		
23	<u>3.250</u>	<u>1.250</u>	<u>.550-1.100</u>	54012-1
	82.55	31.75		

Note: For detailed performance data on the Peripheral Seal, refer to AMP Product Specification No. 108-10024.

Discrete Wire Seal



Material: Peripheral Seal — Polyolefin; Color, black
 Collar — Aluminum
 Grommet — Polyolefin; Color, black

Note: Each discrete wire seal kit is comprised of:
 1 peripheral seal
 1 collar (provides bearing surface for clamp)
 1 grommet

Arrangement No.	Sealing Range (Dia.)	Kit Number
11-4	<u>.056-.078</u>	207030-2
	1.42-1.98	
	<u>.078-.100</u>	
13-9	1.98-2.54	207030-3
	<u>.078-.100</u>	
17-3	1.98-2.54	207041-3
	<u>.135-.220</u>	
23-22M	3.43-5.59	207042-1
	<u>.100-.135*</u>	
	2.54-3.43	
23-22M	<u>.135-.220**</u>	207043-1
	3.43-5.59	
	<u>.078-.100</u>	
23-37	1.98-2.54	207038-3
	<u>.078-.100</u>	

*Sealing range for 20 Type II, III + or VI contacts.

**Sealing range for 2 Type XII contacts.

Dimensioning:

All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

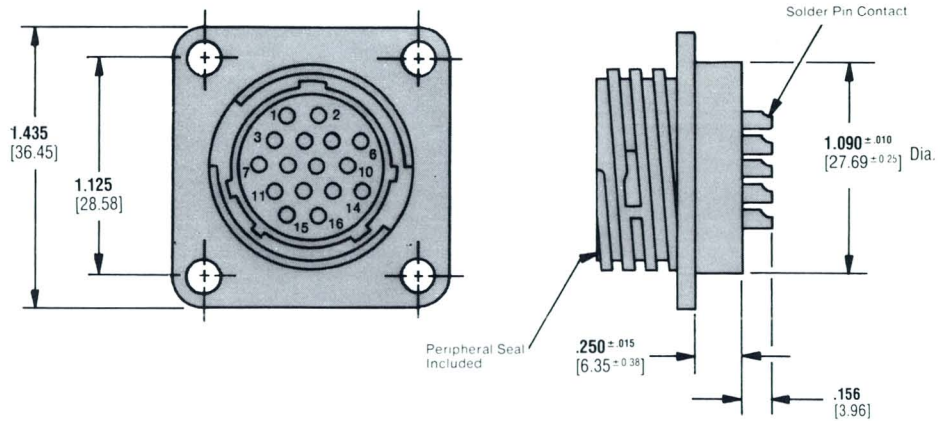
Notes: 1. All connectors are standard sex.

2. Material for all connectors is: U.L. recognized, 94V-1 rated, heat stabilized, fire resistant, self-extinguishing thermoplastic; Color, black

Series 1, Arrangement 17-16

Supplied preloaded

Part No. 206404-2 Tin plated contacts
206404-1 Gold plated contacts



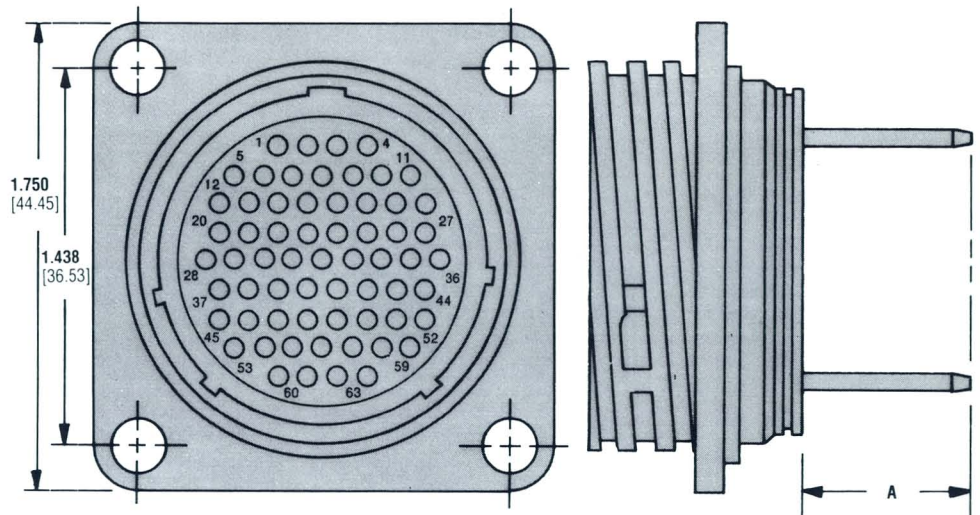
Solder Contact Square Flange Receptacle, Class F

Series 2, Arrangement 23-63

Contacts: .025" [0.64 mm] square, size 20 DF posted (with precision formed posts)

Supplied preloaded with gold plated contacts

Part No. 206455-1 (Dim. A = .479" [12.17 mm])
206455-2 (Dim. A = .235" [5.97 mm])

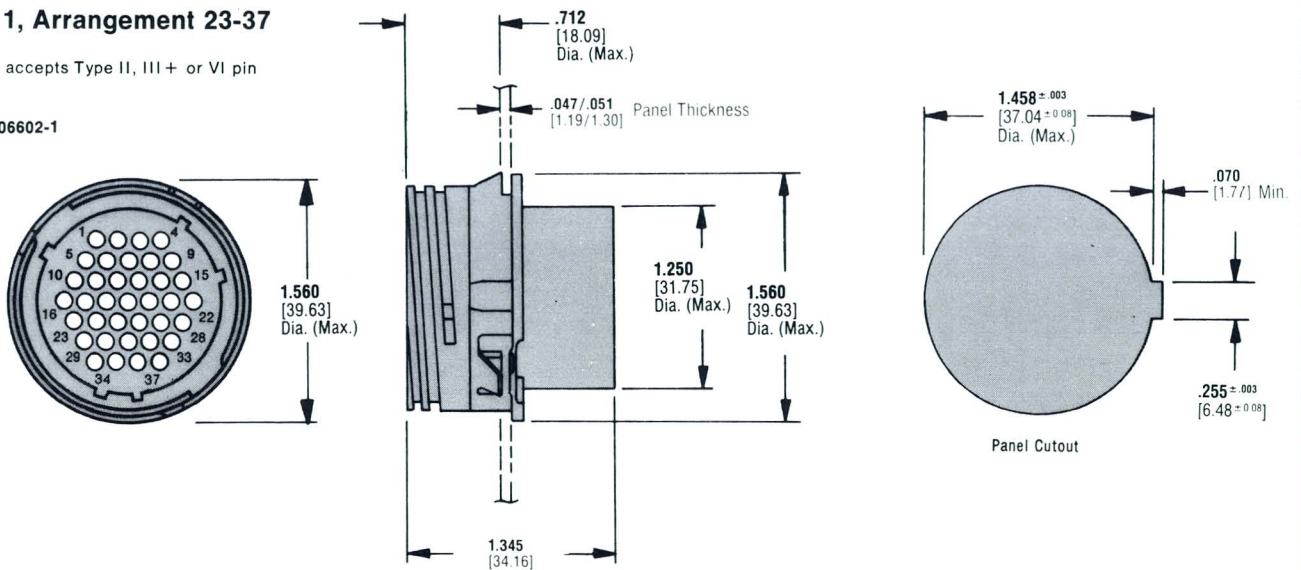


Preloaded Posted Square Flange Receptacle

Series 1, Arrangement 23-37

Connector accepts Type II, III + or VI pin contacts

Part No. 206602-1



Snap-in Flangeless Receptacle

Special Connectors (Continued)

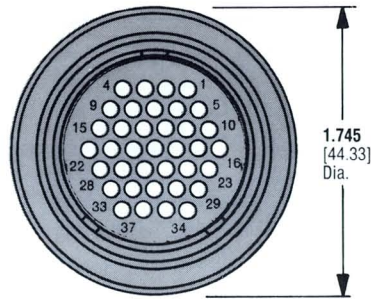
Dimensioning:

All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

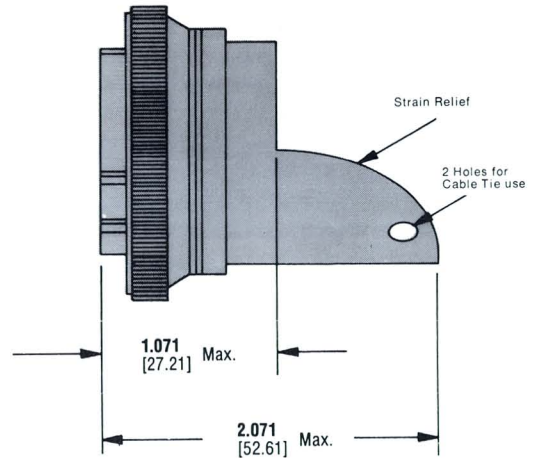
Series 1, Arrangements 23-37

Connector accepts Types II, III + or VI socket contacts

Part No. 206601-1

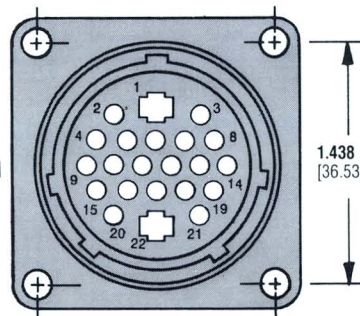
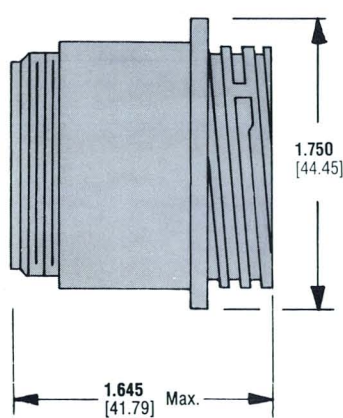


1.745
[44.33]
Dia.



Cable Tie Strain Relief Plug

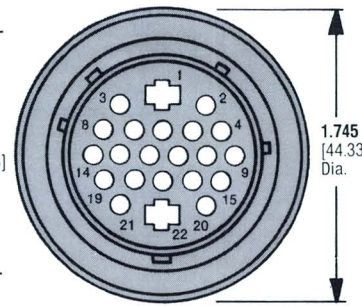
Mixed Configuration, Arrangement 23-22M



1.438
[36.53]

Part No. 206613-1

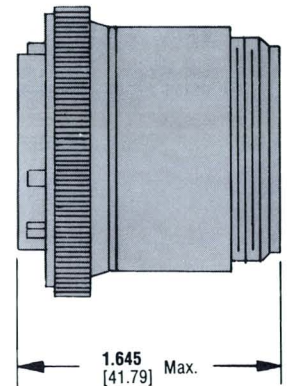
Receptacle accepts 20 Type II, III + or VI pin contacts for insulation diameters up to .140" [3.57 mm] and 2 Type XII male contacts.



1.745
[44.33]
Dia.

Part No. 206612-1

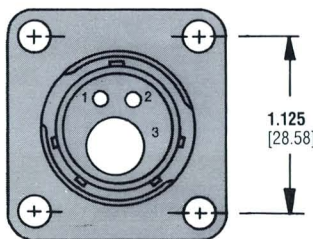
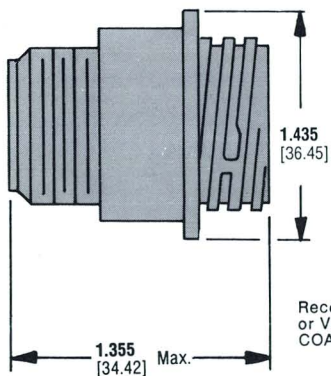
Plug accepts 20 Type II, III + or VI socket contacts for insulation diameters up to .140" [3.57 mm] and 2 Type XII female contacts.



Mixed Contact Square Flange Receptacle

Mixed Contact Plug

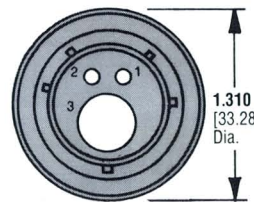
Series 1, Arrangement 17-3C



1.125
[28.58]

Part No. 206549-1

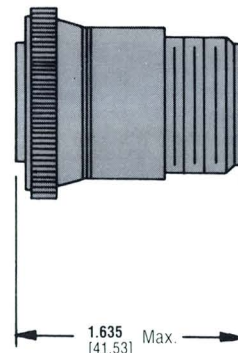
Receptacle accepts 2 Type II, III + or VI pin contacts and 1 Twin Standard COAXICON pin contact.



1.310
[33.28]
Dia.

Part No. 206548-1

Plug accepts 2 Type II, III + or VI socket contacts and 1 Twin Standard COAXICON socket contact.

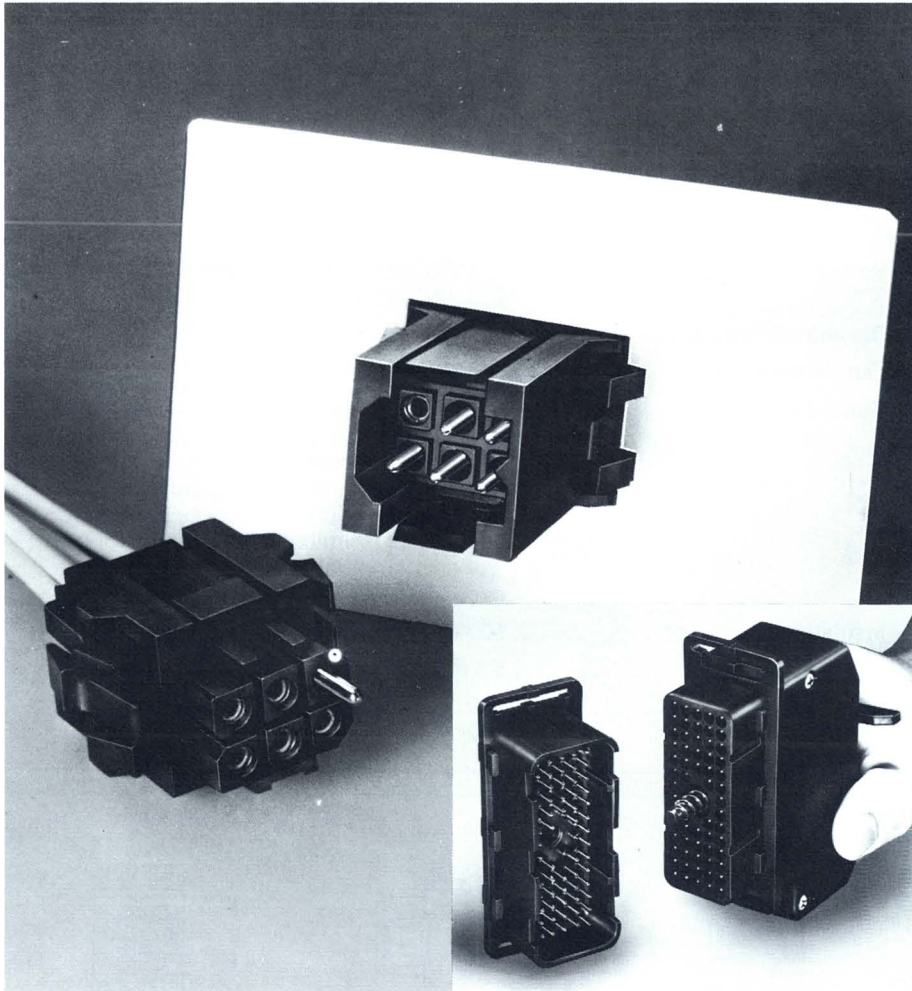


Mixed Contact Square Flange Receptacle

Mixed Contact Plug

Note: Refer to AMP Data Sheet No. 914-A for data on Twin Standard COAXICON contacts.

Pin and Socket Connectors



AMP's MI Series Connectors are true metric specification connectors designed for rack and panel application. These connectors are ideally suited for equipment manufacturers engaged in both national and international markets. This versatile pin and socket connector line is designed to meet the general requirements of various testing and approval groups including UL, IEC, CSA and VDE.

Presently available in 4, 6, 12, 36 and 62 position configurations, the MI Series connector line offers high electrical performance and maximum economy. All configurations with the exception of the 62 position version, are available with pin headers for economical printed circuit board mounting.

For panel mount applications, the connector is designed to allow either the plug or the receptacle half to be mounted without the need for accessory hardware. The 4 thru 36 position connector configurations can be mounted into the panel from either side and removed from the opposite or same side. Either plug or receptacle will accept pin or socket contacts.

Housings are made from UL rated 94 V-0 thermoplastic and are designed to accept AMP precision formed one-piece Type VI or two-piece Type III+ contacts as well as screw machine Type II contacts. In addition, these housings will accept AMP subminiature coaxial contacts.

MI Series Connectors (A Multimate Product)

Features

- Designed to meet VDE (380 VAC, 450 VDC), UL (600 VAC), IEC (440V) and CSA (250 VAC) requirements
- True metric dimensions — contacts on 5 mm [0.197"] centers
- Self-mounting — no hardware required
- Polarized housings
- 4 thru 36 position configurations can be mounted and removed from either front or rear
- 4 thru 36 positions will accept pins or sockets in both plug and receptacle
- Housings made from UL 94V-0 rated thermoplastic
- Housings accept power, signal and coaxial contacts
- 62 position configuration has 3/4 turn center fastener for quick connect/disconnect and has visual position indicator on strain relief assembly
- Strain relief for 62 position connector can be used on plug or receptacle — can be oriented in either of two positions, 180° apart — allows 90°, 135°, or 180° cable exit — has one set of cable gates for wire size range 0.08 mm² thru 2 mm² [28 AWG thru 14 AWG]

Dimensioning:

All dimensions in millimetres and inches. Values in brackets are equivalent U.S. Customary Units.

Specifications subject to change. Consult AMP Incorporated for latest design specifications.

Specifications

Dimensioning:
 1. All dimensions in millimetres.
 Values in brackets are equivalent
 U.S. Customary Units.
 2. Chart contains dimensions in millimetres
 over inches.

**Design
Characteristics**

Air gap exceeds 3.2 mm [.125"]
Creep distance exceeds 4.0 mm [.157"]
Mounting distance exceeds 6 mm [.237"]
 (live contact to panel)
Acceptable panel thickness Small sizes: 0.8 mm – 2.3 mm [0.030 – 0.090"]
 62 Position: 0.8 mm – 2.0 mm [0.030 – 0.078"]

Material

Housings and strain reliefs thermoplastic, black, glass filled, 94V-0

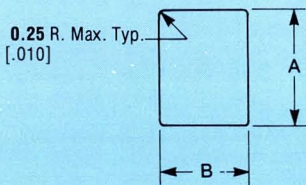
**Performance
Characteristics**

Voltage rating 380 VAC, 450 VDC (VDE); 600 VAC (UL);
 250 VAC (CSA); 440V (IEC)
Dielectric strength 1500 volts rms at sea level
Temperature –55°C to +125°C
Current rating Signal and Power Contacts: 13A maximum
 current carried in any one contact is
 determined by wire size, number of positions
 operating and ambient temperature. The
 combination of these variables in any given
 application is limited by the connector block
 working temperature, which should not be
 exceeded.
Insulation resistance 5000 megohms, min.
Contact resistance 5.5 milliohms, max.
Durability 250 cycles, tin-plated contacts;
 500 cycles, gold-plated contacts.

**Plug and
Receptacle
Housings**

**4 and 6
Circuit**

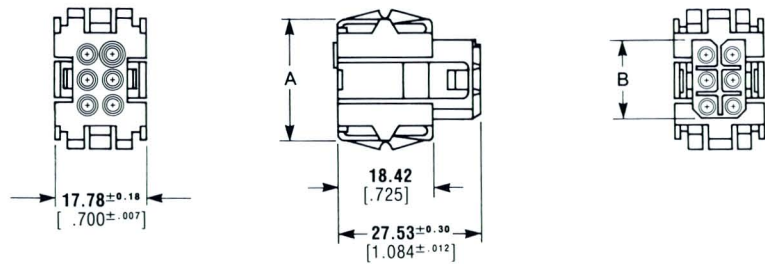
Panel edges sharp to
.010 max. radius



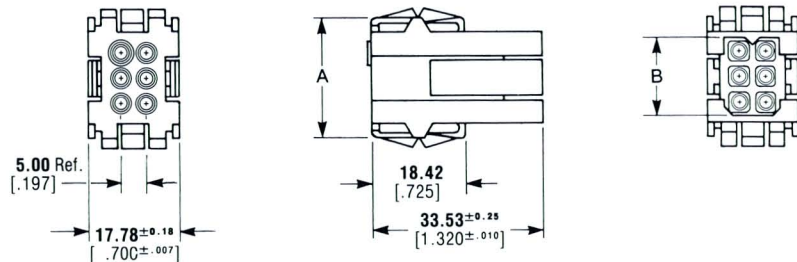
Panel Cutout

No. of Positions	Dimensions	
	A	B
4	20.40 .804	18.10 .712
6	25.43 1.001	18.10 .712

Plug



Receptacle



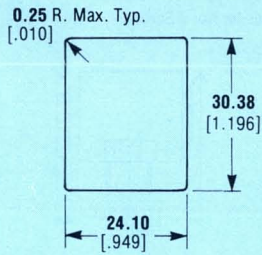
No. of Positions	Plug Part No.	Dimensions		Receptacle Part No.	Dimensions	
		A	B		A	B
4	207015-1	18.62 .733	10.52 .414	207016-1	18.62 .733	10.67 .420
6	207152-1	23.7 .933	15.50 .610	207153-1	23.7 .933	15.65 .616

Dimensioning:
All dimensions in millimetres.
Values in brackets are equivalent U.S.
Customary Units.

Specifications

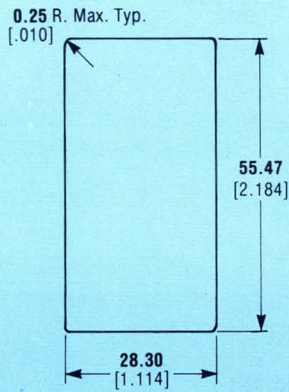
Plug and
Receptacle
Housings

12 Circuit



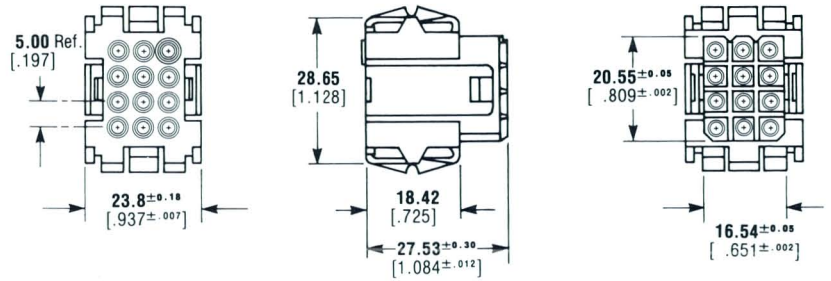
Panel Cutout

36 Circuit

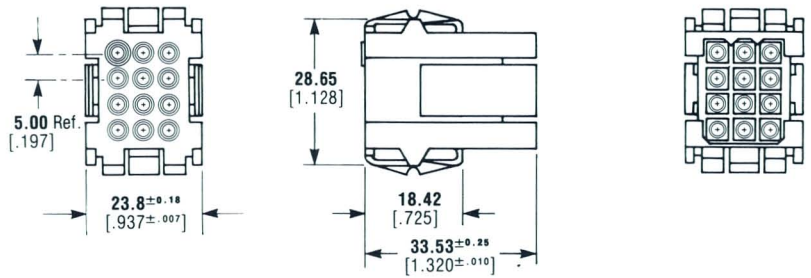


Panel Cutout

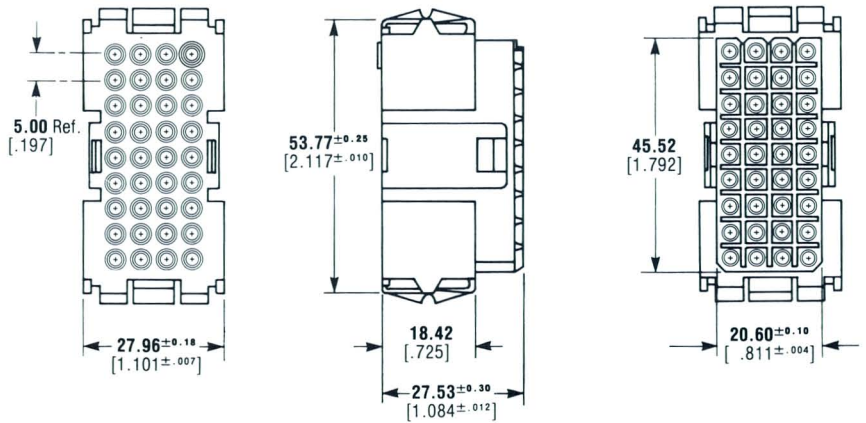
Plug
Part Number: 207018-1



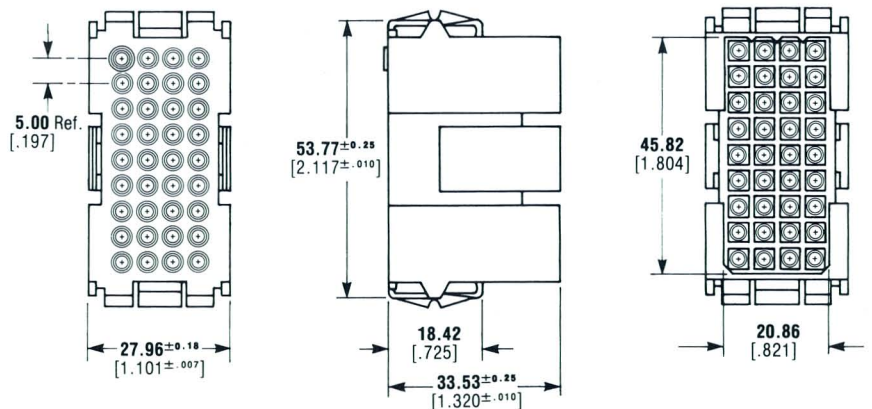
Receptacle
Part Number: 207017-1



Plug
Part Number: 207020-1



Receptacle
Part Number: 207019-1



Specifications

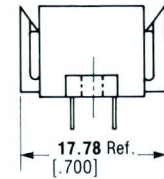
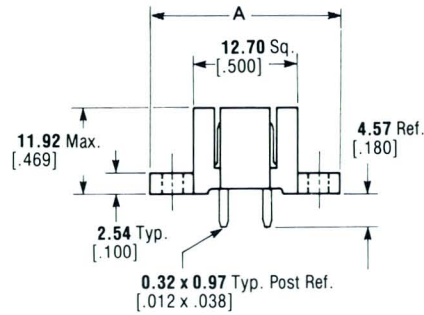
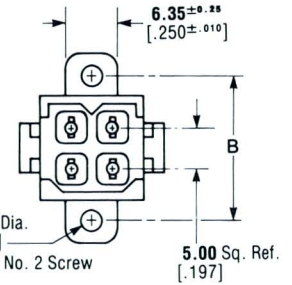
Dimensioning:
 1. All dimensions in millimetres.
 Values in brackets are equivalent
 U.S. Customary Units.
 2. Chart contains dimensions in millimetres
 over inches.

Pin
 Headers

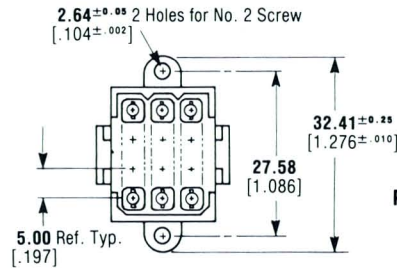
4 and 6
 Circuit

No. of Positions	Part No.	Dimensions	
		A	B
4	207119-1	22.61	17.53
	207119-2*	.890	.690
6	207158-1	27.69	22.61
	207158-2*	1.090	.890

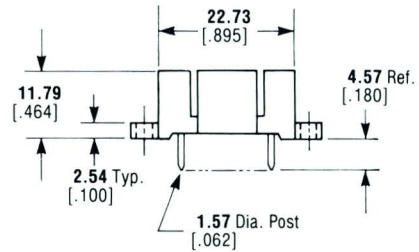
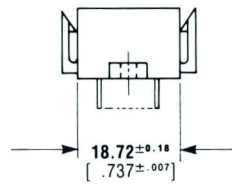
*-2 part numbers — without mounting ears



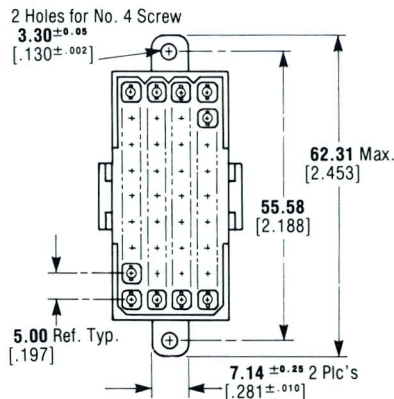
12 Circuit



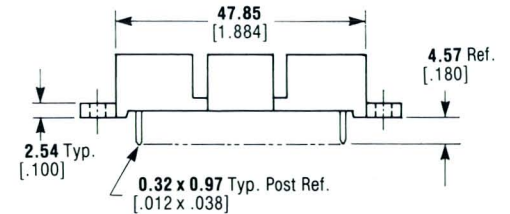
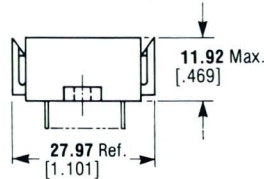
Part Number: 207120-1
 207120-2 (without mounting ears)



36 Circuit



Part Number: 207121-1
 207121-2 (without mounting ears)

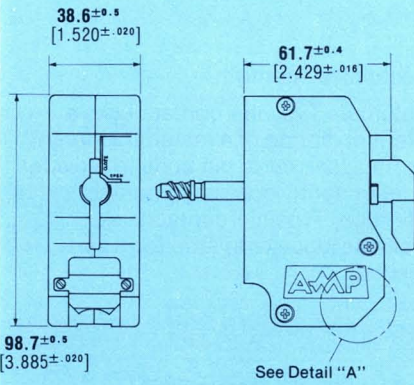


- Dimensioning:
 1. All dimensions in millimetres and inches.
 Values in brackets are equivalent
 U.S. Customary Units.
 2. Chart contains dimensions in millimetres
 over inches.

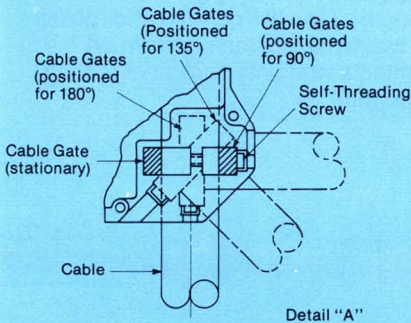
Specifications

Plug and Receptacle Housings

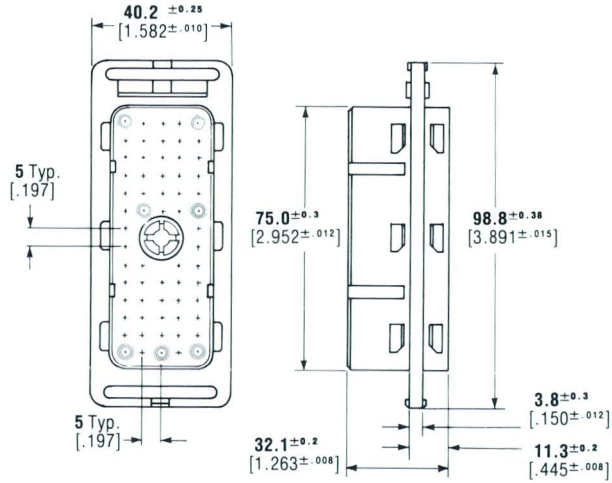
62 Circuit



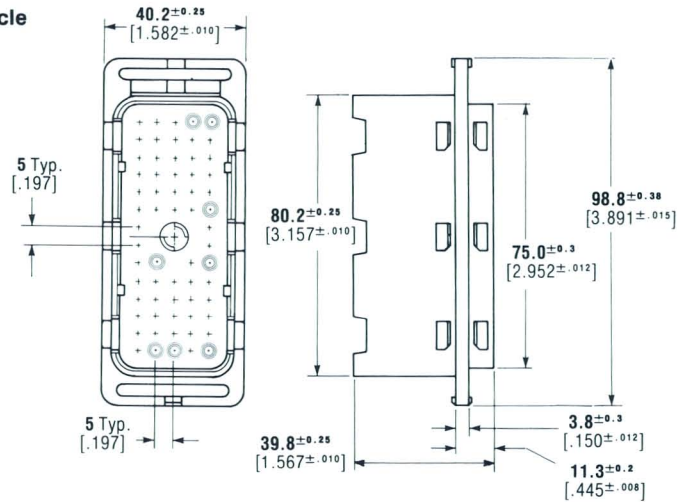
Strain Relief Kit
 Part Number: 206749-1
 (for use with plug or receptacle)



Plug



Receptacle



Mating Half	With Retainer for Jackscrew	With Female Jackscrew Threads
Plug	206755-1	206756-1
Receptacle	206753-1	206754-1

NOTE: Housings shown with jackscrew retainer in plug and female jackscrew threads in receptacle. Either half can be equipped with female jackscrew threads or jackscrew retainer, as necessary.

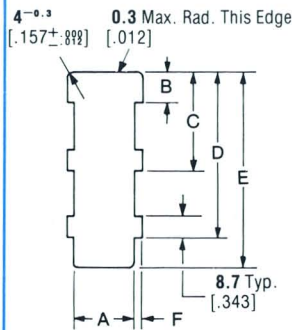
Panel Cutout for Front & Rear Mounted Plug and Rear Mounted Receptacle

Panel Thickness	Dimensions*					
	A	B	C	D	E	F
0.8 - 1.4 .031 - .055	29.9 1.177	13.3 .524	41.7 1.642	68.0 2.677	82.7 3.256	2.6 .102
1.4 - 2 .055 - .078	32.2 1.268	13.3 .524	41.7 1.642	68.0 2.677	82.7 3.256	1.6 .063

Panel Cutout for Front Mounted Receptacle

Panel Thickness	Dimensions*					
	A	B	C	D	E	F
0.8 - 1.4 .031 - .055	35.4 1.394	15.9 .626	44.3 1.744	70.2 2.764	85.4 3.362	2.6 .102
1.4 - 2 .055 - .078	37.7 1.484	15.9 .626	44.3 1.744	70.2 2.764	85.4 3.362	1.6 .063

*All dimensional tolerances listed are +0.3 [+0.012, -.000].



Panel Cutout

AMP Multimate Connectors . . . Put It All Together With Contacts

Introduction

AMP Multimate assemblies are a timely AMP innovation which allows you to condense your contact-connector design and production into three simple steps. Multimate assemblies are AMP's carefully considered answer to the proliferation of contact types and styles which have been the cause of much confusion and needless expense in the past. Development of a Multimate assembly is straightforward and follows these three basic steps:

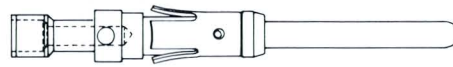
1. Designer chooses among three size 16 Multimate pin and socket type contacts which can be intermixed as needed. He can specify 1- or 2-piece precision formed contacts as well as a screw machine contact, and all provide for necessary signals and power requirements. Also Multimate subminiature coaxial contact capacity is available.

2. He determines the AMP Multimate connector best suited for his design from CPC, M Series, AMP Metric Series, "G" Series, "D" and "DD" Series, and "W" and "WW" Series. All Multimate connectors provide for subminiature coaxial cable contacts.

3. Prototyping and production follow readily because of the tooling flexibility with Multimate contacts. Only one set of tooling is required for any Multimate assembly when using precision formed contacts, and you can choose the tools you need to match the output requirements of your production line.

The standard plating used by AMP for Multimate contacts is gold over nickel. The AMP contact with standard plating is extremely low in electrical resistance, and possesses high resistance to oxidation, humidity and corrosion.

Gold is required for "dry circuits," signal circuits and other types of sensitive circuits. Other platings are available for applications in non-critical environments.



Multimate Type II Screw Machine Solid Contacts

The Multimate Type II contact is a crimp snap-in contact, with a confined "C" crimp to assure minimum distortion and high conductivity. Type II is a versatile and reliable member of the Multimate family. Offering quick

assembly and firm seating, these Multimate contacts are available loose piece or on tape for machine application. Socket contacts are closed entry, with a cantilever beam engagement spring.

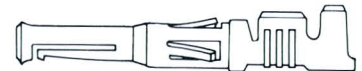
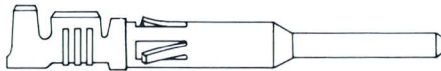


Multimate Type III+ Precision Formed Contacts

Type III+ contacts work well in AMP Multimate assemblies because these precision formed 2-piece contacts assure maximum reliability in your contact design. A cantilever beam engagement spring provides controlled contact pressures for optimum conductivity, and minimum surface wear. Bell-mouthed sockets give closed entry and increased

mechanical strength.

Multimate Type III+ contact uses a retention spring of a material different from the socket or pin body to provide independently controlled contact retention. Type III+ contacts are available loose or in strip form as needed.



Multimate Type VI Precision Formed Contacts

Type VI contacts are 1-piece precision formed for maximum economy. Type VI Multimate contacts feature the same insulation support as the Type III+ contacts, and also have the bell-mouth entry, with cantilever spring contact designed into the socket contact.

Type VI is exceedingly versatile, and with the Type III+ permits intermixing of two types of precision formed contacts with only one set of tooling required.



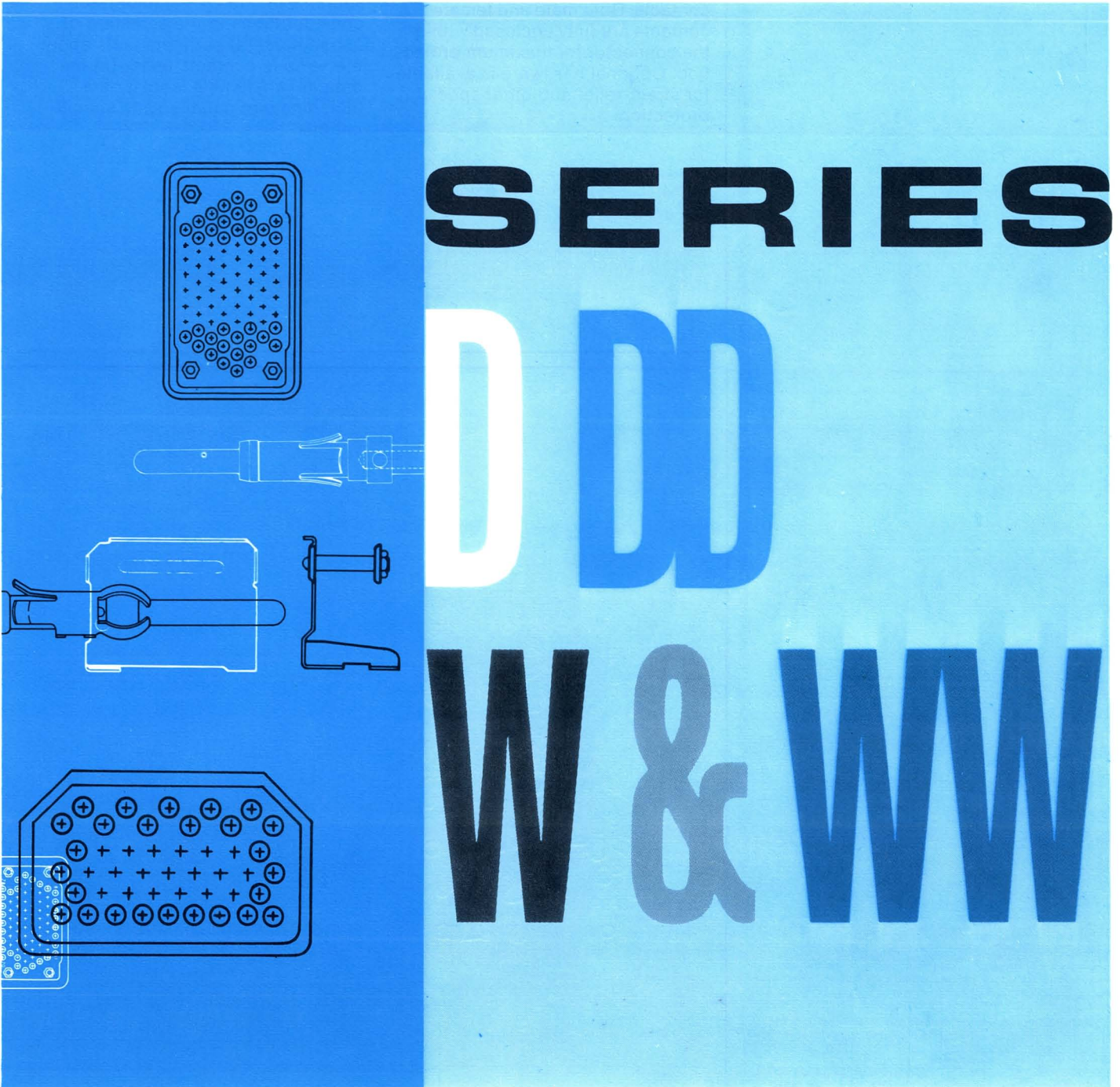
Multimate Subminiature Coaxial Contacts

All Multimate connectors offer identical coaxial contacts. This special AMP Multimate assembly feature permits a designer to use matched impedance cables or shielded conductors mixed with standard signal or power circuits.

The AMP Subminiature COAXICON

contact is a crimp, snap-in contact, designed for high density and multiple circuit connector applications. A single crimp terminates inner conductor, outer braid, and the cable support. Design includes complete contact assembly, with built-in retention spring and separate ferrule.

Pin and Socket Connectors (A Multi-Mate Product)



Introduction

The "D," "DD," "W" and "WW" Series connectors described in the following pages consist primarily of diallyl phthalate inserts in a zinc plated metal shell. They are generally rack and panel or bulkhead mounted. All connectors utilize one or more of several types of gold-over-nickel plated pin and socket contacts. Both male and female contacts are fully enclosed within the connector for maximum protection. Optional hardware is available for strain relief and other special protection.

Double connector configurations in this series are indicated by paired letters, such as "DD" and "WW." For referencing convenience, this catalog includes a breakdown of all components for each connector type.

This catalog is divided into various sections including: (1) important considerations in the selection of connectors; (2) pertinent facts about the various contacts used; (3) test data; (4) applicable tabular data including part numbers and specifications.

Dimensioning:
All dimensions in inches unless specified otherwise.

Note: Dimensions shown on all drawings are for reference ONLY. Do not use as production prints!

Specifications subject to change. Consult AMP Incorporated for latest design specifications.

Important Considerations in the Selection of Connectors

A connector should be considered as an extension of the wires it connects and, for all practical purposes, it should equal the reliability of the conductor itself.

By the same token, it should fully meet but not extravagantly exceed the performance requirements for a given application. This is vital not just to insure proper function, but also to the economics of the equipment for which it was designed.

Careful consideration should be given in order to avoid over-specifying.

The Series "D," "DD," "W" and "WW" Connectors offer a selection of sizes and contact configurations, as well as hardware and accessories. The Series "D," "DD," "W" and "WW" Connectors are available with shields, strain relief clamps, and other protective devices when this type hardware is needed.

The other extreme is to under-specify. This may consist in the selection of a less costly connector with performance characteristics not fully suited to the rigors of the environments for which it is intended; or in choosing the right type of connector without specifying supplementary shield, seals, strain relief clamp or any other accessory that may be essential for satisfactory performance.

A third oversight might be classified as overindulgence in quality! When this happens it may, as an example, result in the specification of more costly solid, screw-machine type contacts for applications where formed, mass-produced contacts, designed for high-speed automatic application, would satisfy performance requirements.

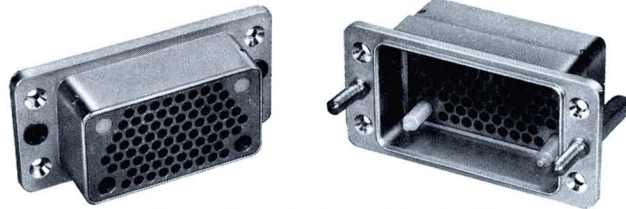
Perhaps the most serious omission in design planning is to delay the selection of a type or types of connectors until equipment design has been frozen or is very close to that stage. The tendency to do so, in some cases, is generally traceable to the fact that some design engineers tend to look upon a connector as an appendage to, rather than an integral part of, the equipment. This forces costly and time-consuming revisions of design or, in some cases, makes some compromise in the selection of the appropriate connector necessary.

Special assembly problems — the use of too tight a harness or the presence of other unfavorable assembly conditions, for example — represent another variable. The use of untrained personnel might also be a source of difficulty.

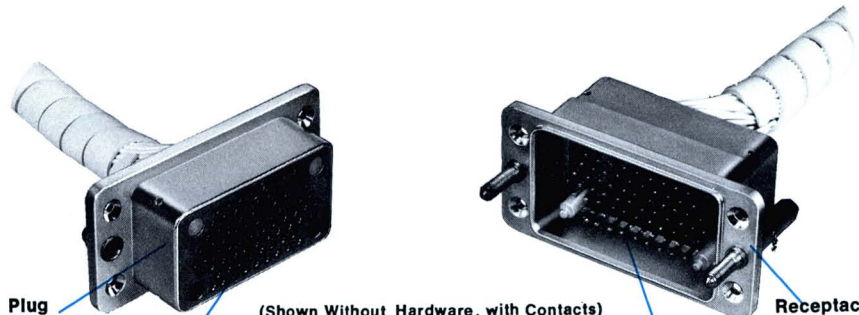
Finally, inadequate connector testing facilities in most manufacturing plants coupled with too little knowledge of correct test procedures, produce results that are often damaging to both buyers and sellers. With AMP, in this particular area, every component is thoroughly tested in the AMP Testing Laboratory to insure reliable performance under recommended operating conditions.

All these variables in the selection and use of pin and socket connectors can be controlled by consulting AMP within a reasonable time before equipment designs are frozen. This is the best procedure for obtaining the right type of connector in the required size or sizes and configurations for any specific project.

Series "D" Connector



(Shown Without Hardware and Contacts)



Plug
Half

Socket
Contacts

(Shown Without Hardware, with Contacts)

Pin
Contacts

Receptacle
Half

Series "DD" Connector



(Shown Without Hardware and Contacts)

90° Shield
and Cable Clamp

Plug
Half

Socket
Contacts

(Shown With Hardware and Contacts)

Pin
Contacts

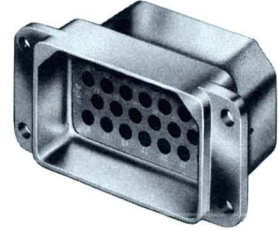
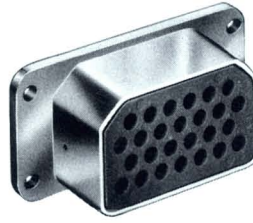
DZUS or AMP
Fastener

Strain
Relief
Clamp

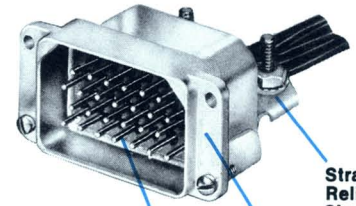
Receptacle
Half

Typical Connectors

Series "W" Connector



(Shown Without Hardware and Contacts)



180° Shield and Cable Clamp

(Shown With Hardware and Contacts)

Plug Half

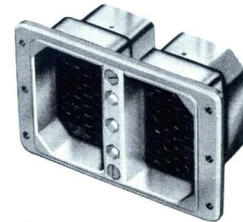
Socket Contacts

Strain Relief Clamp

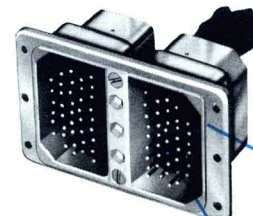
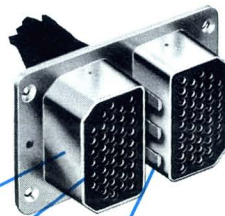
Pin Contacts

Receptacle Half

Series "WW" Connector



(Shown Without Hardware and Contacts)



Plug Half

(Shown Without Hardware , with Contacts)

Socket Contacts

Polarizing Posts

Receptacle Half

Pin Contacts

**Solid
Contacts**

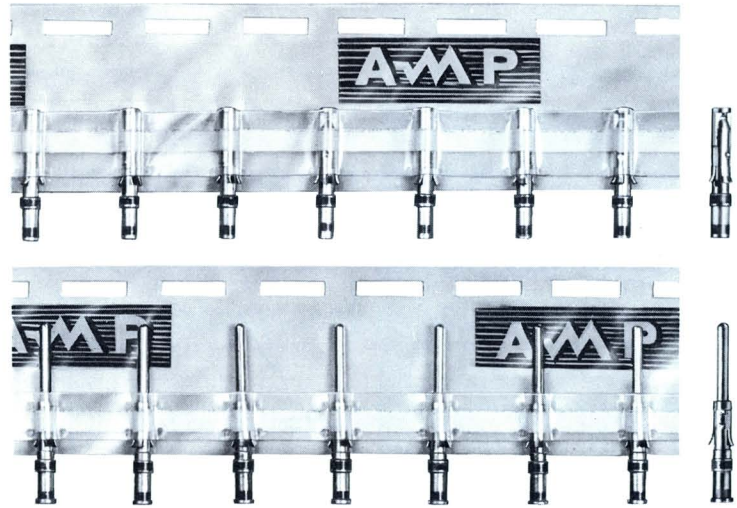
The Confined "C" Crimp — This crimp configuration (illustrated in the macro-photograph below) is used for crimping all screw-machined contacts. While confined to an oval, with minimum distortion, the electromechanical properties remain excellent, with resultant high conductivity and all-round reliability.



14 times enlargement of crimp cross section.

The screw-machine method is used in producing Type II contacts. The precisely controlled AMP crimp prevents distortion and/or over-stressing when contacts are termi-

nated. They are available in loose-piece form for use with hand crimping tools, or mounted on tape for use with bench mounted or portable power-crimping tools.

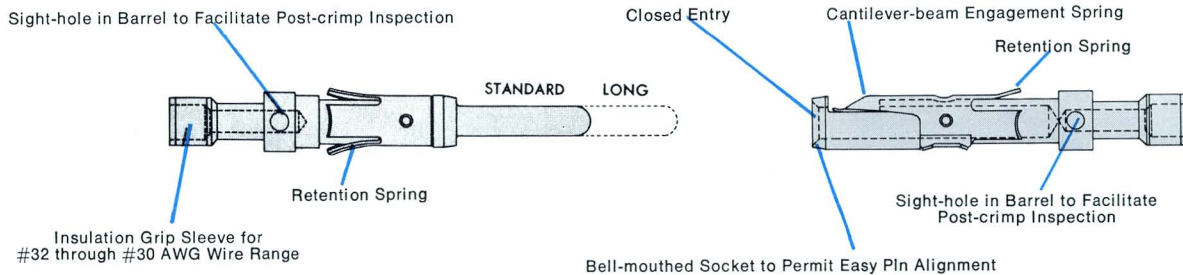


Available Tape Mounted and Loose Piece

Type II

The Type II snap-in contact has a three-legged retention spring which provides firm seating in the connector block. A cantilever-beam contact spring provides controlled contact pressures for maximum conductivity with minimum surface wear.

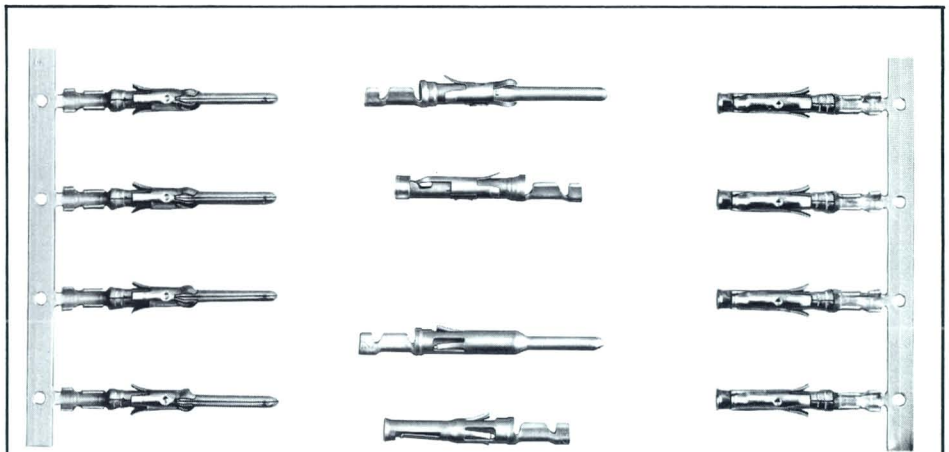
Pre-assembly plating of all parts provides optimum resistance to oxidation and corrosion. Available in contact sizes 20 and 16 for wire ranges of #32 through #14 AWG.



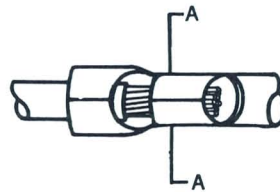
Precision Formed Contacts

AMP's depth of experience in the development of precision formed parts has created in Type III(+) and Type VI contacts a precisely engineered product which offers the advantage of lower initial cost. Both types perform reliably in all applications utilizing Series "D," "DD," "W" and "WW" connectors.

The "F" Crimp — The "F" Crimp is best suited for use on formed contacts. It produces high conductivity and high tensile strength on both Type III(+) and VI contacts. The pre-calibrated stroke of the crimping jaws of AMP automatic tools exert the exact pressure needed to produce an optimum crimp. This virtually eliminates corrosion-inducing voids. (See macro-photograph at right.)



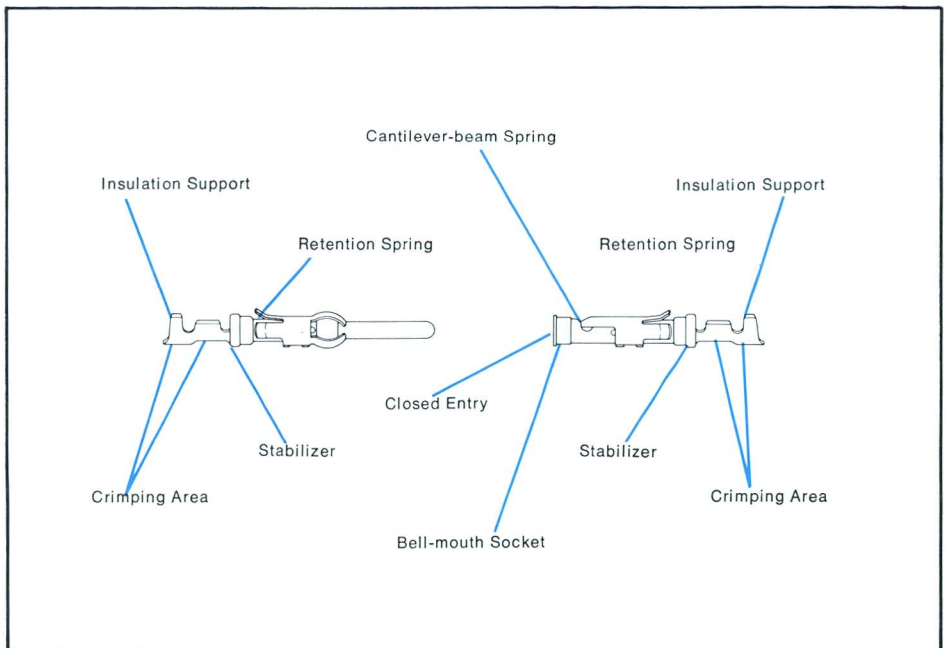
Types III(+) and VI Available in Strip Form and Loose Piece



SECTION A-A

Type III(+)

Type III(+) is another high-volume formed, crimp, snap-in contact for low-cost application. It is available in contact size 16 for use with a wire range of #30 through #14 AWG. Bell-mouthed design and closed entry adds mechanical strength. Cantilever-beam contact spring insures maximum-controlled contact pressure for optimum conductivity and minimum surface wear. Additionally, the retention spring allows quick assembly and solid seating in the connector block. Type III(+) contacts also come in loose-piece form for use with hand-crimping tools.

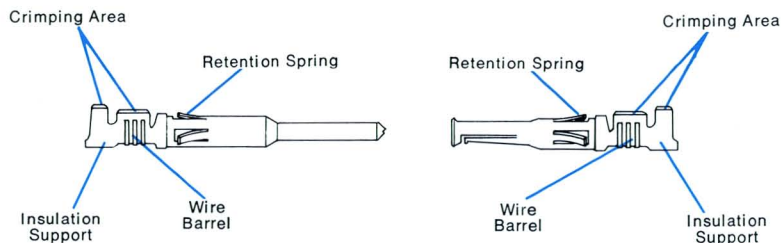


Contact Information
(continued)

Type VI

Type VI contacts are economical, one-piece contacts and are available for four wire ranges, covering #28 through #14 AWG wire sizes. They feature a single-piece design with built-in insulation support, retention tines and a cantilever spring on the

socket. Contacts for wire sizes #18-16 AWG and #14 AWG can be installed into connector housings without an insertion tool. Where smaller wires are involved, it may be necessary to use a simple insertion tool.



Subminiature COAXICON Contact

AMP's subminiature COAXICON contact is a crimp, snap-in contact, designed for high density, multiple circuit connector application. These subminiature coaxial contacts feature the exclusive one-crimp termination of inner conductor, outer braid and cable support. The design includes complete contact assembly with built in retention spring and a separate ferrule. They are ideal for mixing coaxial and pin and socket contacts in the same connector.

To assemble your connector here's all that you need to do:

1. Choose any pin and socket connector housing which accepts #16 contacts Type II, III (+) or VI.
2. Crimp and snap in the subminiature COAXICON contacts.
3. If you are mixing your power and shielded signal circuits, crimp and snap in the pin and socket contacts.

Subminiature coaxial contacts fit any connector cavity that will accept an AMP pin or socket contact. This means you can now bring power and shielded signal circuits through the same connector . . . and in any combination. No longer is it necessary to have special housings with specific positions for coaxial contacts. Now you can select from a variety of connector configurations in a number of positions, with a choice of housing materials and hardware.

Whether you mix or match the contacts in the connector, you not only get quick, easy assembly, but a uniform reliability that eliminates rejects.

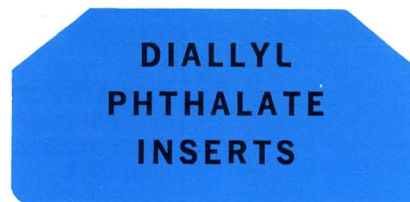


Shell and Insert Materials

Series "D," "DD," "W" and "WW" connectors consist of preassembled die-cast aluminum shells with plastic inserts. The die-cast aluminum shells come in a variety of finishes including clear zinc plate, olive drab zinc plate, and iridite.

The plastic inserts are available in diallyl phthalate (which conforms to MIL-M-14F, Type SDG-F).

Shell and insert materials chosen for these connectors have been extensively tested for electrical and mechanical performance.



Diallyl phthalate reinforced by glass fiber conforms to the military specifications for connectors. It has all the mechanical and electrical properties needed to provide maximum protection for components and/or resistance to most hostile environments. Among its numerous attributes, glass-filled diallyl phthalate has extremely high arc resistance and, conversely, very low dielectric loss. Excellent mechanical properties

constitute another characteristic that makes it ideal for use in the Series "D", "DD", "W", and "WW" connector blocks. This material maintains all these properties under high temperature and humidity conditions. In addition, it has extremely low post-mold shrinkage which makes it first choice for close tolerance applications. Chemically, diallyl phthalate is unaffected by most acids and alkalis.



**Test Data for
Shells, Inserts
and Contacts**

STANDARDS

The following specifications and standards form a part of these specifications to the extent specified herein:

- MIL-C-21617 — Connectors, Plug and Receptacle — Electrical Rectangular, Polarized Shell, Miniature Type
- MIL-M-14F — Molding Plastics and Molded Plastic Parts, Thermosetting
- MIL-T-10727A — Tin Plating; Electro Deposited
- MIL-STD-202C — Test Methods for Electronic and Electrical Component Parts
- QQ-A-591B — Aluminum Alloy Castings
- QQ-S-763B — Steel, Corrosion Resistant
- AMP E.S. 8-5-1 — Type II Contacts

CONSTRUCTION

NON-MAGNETIC MATERIALS — All parts are made of materials considered to be non-magnetic.

SHELLS — The connector shells are made from a high grade aluminum alloy material conforming to composition numbers A380 of QQ-A-591.

INSERT MATERIAL — The insert materials conform to type SDG or SDG-F or MIL-M-14.

DISSIMILAR METALS — Where dissimilar metals are used in intimate contact with each other, protection against electrolysis and corrosion is provided.

FINISH — All metal exposed parts other than electric contacts are made of corrosion-resistant material or zinc plated in accordance with Type I, Class 3 of QQ-Z-325, or tin plated in accordance with MIL-T-10727, Type I, except that a preliminary plating of other metals is permissible. The resultant finish is electrically conductive.

ELECTRICAL CHARACTERISTICS

— The contacts have a current rating as shown in Table I unless otherwise restricted by the wire.

**TABLE I
MAXIMUM CURRENT RATING**

CONTACT SIZE	AMPERES
20	7.5
16	13.0

**DESIGN AND CONSTRUCTION
(Connector with Contacts)**

CONNECTOR DESIGN — Connectors are of the design, construction, and physical dimensions specified on the applicable product drawing.

CONTACT MATERIAL — Contacts are made from copper alloy material and are gold over nickel plated unless otherwise stated.

CONTACT IDENTIFICATION — Contact positions are identified on both the mating and wire entry side of the insert. Identification is permanent for the life of the product.

MATING — Plugs and receptacles are capable of being mated and unmated by hand without the aid of special tools within the temperature range for these connectors.

OPERATING TEMPERATURE — Connectors have a maximum operating temperature of +150° C and a minimum of -65° C.

PERFORMANCE

(Connector with Contacts)

INSULATION RESISTANCE — The initial insulation resistance is not less than 5,000 megohms between the adjacent contacts and between the shell and the contact closest to the shell.

HIGH POTENTIAL — The connectors show no evidence of flashover when the voltages of Table II are applied between adjacent contacts and between the shell and the contact closest to the shell.

TABLE II TEST VOLTAGES

ALTITUDE	VOLTAGE AC RMS
Sea Level	1,500
25,000 Ft.	1,000
50,000 Ft.	500

CONTACT RESISTANCE — The resistance of material parts of pins and sockets is such that the potential at the specified test current will not be greater than the potential drop listed in Table III.

**TABLE III CONTACT RESISTANCE
(Maximum Potential Drop
in Millivolts)**

CONTACT	WIRE SIZE	TEST CURRENT (Amperes)	POTENTIAL DROP ACROSS Y-Y AT 25°C	POTENTIAL DROP ACROSS Y-Y AFTER CORROSION
20	20	7.5	20	25
16	16	13.0	20	25

CONTACT ENGAGING AND SEPARATING FORCES — The force required to insert or withdraw a steel pin of minimum size meets the values listed below.

**TABLE IV
CONTACT ENGAGING AND
SEPARATING FORCES
Steel Pin**

CONTACT SIZE	MINIMUM	MAXIMUM
20	1 oz.	16 oz.
16	3.0 oz.	20 oz.

TEMPERATURE CYCLING — When tested in accordance with MIL-STD-202, Method 102, the connectors are capable of being mated and detached. No measurements are required after initial conditioning nor voltages applied to connector during exposures. After final conditioning, the connectors meet the requirements stated under INSULATION RESISTANCE and HIGH POTENTIAL.

DURABILITY — The connector assemblies were subjected to 500 cycles of insertion and withdrawal at a rate of 400 to 600 cycles per hour. Upon completion of testing, the contacts met the requirements of Table IV.

SALT SPRAY (CORROSION) — When tested according to MIL-STD-202, Method 101, Condition B, the salt laden atmosphere did not cause sufficient corrosion to interfere with the mating and detaching of the connector assembly.

VIBRATION — Mated connector assemblies were vibrated in accordance with Method 204, Test Condition A of MIL-STD-202. The contacts did not show loss of continuity greater than 10 microseconds.

SHOCK — Mated connector assemblies show no evidence of mechanical failure of metallic or dielectric materials when tested in accordance to Method 202 of MIL-STD-202.

INSERT RETENTION — Connector inserts withstand a uniformly distributed axial load of 60 pounds in either direction without being dislocated from their normal position in the connector shell. The load was increased at a rate of approximately 1 pound per second.

CONTACT RETENTION — The contact retention is a minimum of ten pounds. Fifteen contacts selected at random were extracted and reinserted nine times using the applicable extraction tool. Upon completion, these contacts, and 15 additional contacts, that had not been extracted, were tested for contact retention. The rate of load was approximately one pound per second.

**Procedure
for Selecting
a Connector**

Contacts

The AMP Series "D," "DD," "W" and "WW" Pin and Socket Connectors have metal shells and plastic inserts (rectangular blocks into which male and female contact members are inserted). The contacts and shell and insert units are

As mentioned previously throughout this catalog, there are four contact types available — Type II, Type III(+), Type VI and Subminiature COAXICON Contact. Tabular data for these contacts is categorized by contact size — by wire size, amperage rating — by wire size, plating and wire insulation diameter. In some cases #18 or #16 contacts are chosen for mechanical strength, while #20 will handle the current and provide no greater density.

basic; strain relief and other protective devices are optional. Selection of components for the connectors described in this catalog should be made in the following order:



Type II



Type III(+)



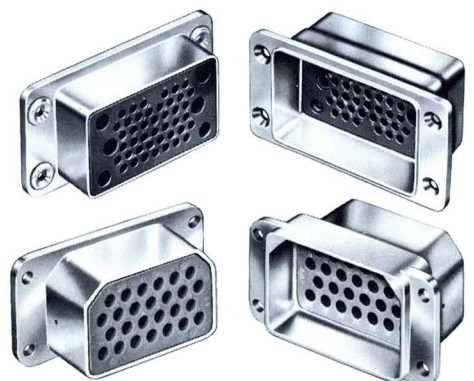
Type VI



Subminiature COAXICON Contact

**Housings
(Shell and Insert)**

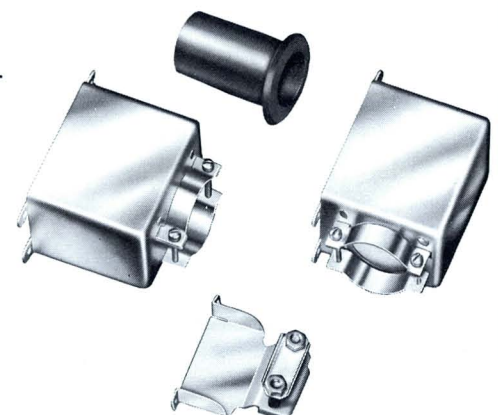
The housings are categorized by number of contact positions. The tabular data for the housings immediately follows the tabular data for the contacts.



**Accessory
Hardware**

Strain Relief Clamps. Basic lead-grouping devices of plated or stainless steel which aid in resisting vibration.

Shields and Cable Clamps. Zinc plated steel cable supports in four types to accommodate 90° and 180° connector entries and outlets.



Contact Specifications

Type II Contacts



CONTACT SIZE 20—PIN DIAMETER .040 (Test Current 7.5 Amperes)‡

WIRE SIZE RANGE	PIN LENGTH	TAPE MOUNTED CONTACT ASSEMBLY NUMBER		LOOSE PIECE CONTACT ASSEMBLY NUMBER		BODY FINISH	INS. DIA. RANGE	COLOR CODE	WIRE STRIP LENGTH	CRIMPING TOOL	
		PIN	SOCKET	PIN	SOCKET					HAND TOOL	69365 AIR GUN DIES
32-30		—	—	201625-1	201627-1		.030-.048	White/Red			
28-26		—	—	202590-1	202591-1		.025-.040	Brown/Red			
28-24	Standard	201607-4	201609-4	201607-1	201609-1	.000030 Gold over .000030 Nickel	.035-.055	Red/Red	13/64	45099	90230-1
		201354-2	201353-2	201354-1	201353-1		.048-.065	Red/Red			
		—	—	202189-1	202190-1		.095-.110	Green			
24-20		201582-5	201584-5	201582-1	201584-1		.040-.062	Yellow/Red		90093	90111
		200334-8	200331-8	200334-1	200331-1		.055-.075	Yellow/Red		45099	90230-1
18-16		201591-4	201589-4	201591-1	201589-1		No Insulation Support	Blue/Blue	1/4	45098	90231-1

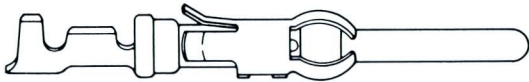
Spring Material — Stainless Steel.
 Insertion Tool—Part No. 200893-2 for .070 Ins. Dia. or greater. Extraction Tool—Part No. 305183.
 Insertion Tool—Part No. 91002-1 for .070 Ins. Dia. or less. Extraction Tool—Part No. 305183.
 ‡Single Contact Free Air Test Currents only. Not to be construed as Contact Rating Current, use only for testing.

CONTACT SIZE 16—PIN DIAMETER .062 (Test Current 13.0 Amperes)‡

WIRE SIZE RANGE	PIN LENGTH	TAPE MOUNTED CONTACT ASSEMBLY NUMBER		LOOSE PIECE CONTACT ASSEMBLY NUMBER		BODY FINISH	INS. DIA. RANGE	COLOR CODE	WIRE STRIP LENGTH	CRIMPING TOOL	
		PIN	SOCKET	PIN	SOCKET					HAND TOOL	69365 AIR GUN DIES
32-30	Long	—	—	201555-1	201554-1		.030-.048	White/Red			
	Standard	—	201613-4	201649-1	201613-1		.035-.055	Red/Red			
28-24	Long	201611-4	201613-4	201611-1	201613-1	.000030 Gold over .000030 Nickel	.035-.055	Red/Red	13/64	45099	90230-1
		201334-3	201332-3	201334-1	201332-1		.048-.065	Red/Red			
	Standard	—	—	202410-1	202411-1		.095-.110	Green			
		201647-2	201580-4	201647-1	201580-1		.040-.062	Yellow/Red			
24-20	Long	201578-4	201580-4	201578-1	201580-1		.040-.062	Yellow/Red		45099	90230-1
		Standard	200679-5	201328-9	200679-1	201328-1	.055-.085	Yellow/Red			
	Long	201330-6	201328-9	201330-1	201328-1	.055-.085	Yellow/Red				
22-18	—	—	—	—	201751-1		No Insulation Support	Green/Blue		45098	90231-1
2-#18	Long	202725-2	202726-2	202725-1	202726-1		No Insulation Support	Blue	1/4	45098	90231-2
	Standard	200681-3	200333-8	200681-1	200333-1		No Insulation Support	Blue/Blue		45098	90231-1
18-16	Long	202507-2	202508-2	202507-1	202508-1		.080-.105	—	1/4	90136-1	None
	Long	200336-6	200333-8	200336-1	200333-1		No Insulation Support	Blue/Blue		45098	90231-1
14	Standard	201645-2	201568-3	201645-1	201568-1		No Insulation Support	Violet/Blue	1/4	45098	90231-2
	Long	201570-2	201568-3	201570-1	201568-1		No Insulation Support	Violet/Blue			

Spring Material — Stainless Steel.
 Insertion Tool—Part No. 200893-2 for .070 Ins. Dia. or greater. Extraction Tool—Part No. 305183.
 Insertion Tool—Part No. 91002-1 for .070 Ins. Dia. or less. Extraction Tool—Part No. 305183.
 ‡Single Contact Free Air Test Currents only. Not to be construed as Contact Rating Current, use only for testing.

Type III(+) Contacts



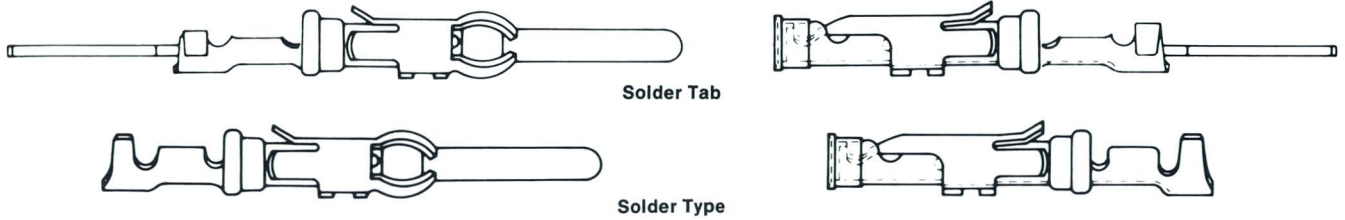
CONTACT SIZE 16—PIN DIAMETER .062 (Test Current 13 Amperes)†

WIRE SIZE RANGE	STRIP CONTACT ASSEMBLY NUMBER*		LOOSE PIECE CONTACT ASSEMBLY NUMBER		REVERSE REELED CONTACT ASSEMBLY NUMBER**		BODY FINISH	INS. DIA. RANGE	CRIMPING TOOL	
	PIN	SOCKET	PIN	SOCKET	PIN	SOCKET			HAND	AUTO- MACHINE
	66477-1	66479-1	—	66483-1	—	—	.000030 Gold over .000050 Nickel	.070-.100		90277-1 or 90282-1
	66425-1	66424-1	66429-1	66428-1	66425-5	66424-5	.000030 Gold over .000050 Nickel	.040-.060		90277-1 or 90066
	66425-2	66424-2	66429-2	66428-2	66425-6	66424-6	Tin			
	66425-3	66424-3	66429-3	66428-3	66425-7	66424-7	.000015 Gold over .000050 Nickel			
30-26	66425-4	66424-4	66429-4	66428-4	66425-8	66424-8	.000030 Gold over .000050 Nickel†			
	66393-1	66394-1	66406-1	66405-1	66393-5	66394-5	.000030 Gold over .000050 Nickel	.014-.030		90277-1 or 90225-2
	66393-2	66394-2	66406-2	66405-2	66393-6	66394-6	Tin			
	66393-3	66394-3	66406-3	66405-3	66393-7	66394-7	.000015 Gold over .000050 Nickel			
	66393-4	66394-4	66406-4	66405-4	66393-8	66394-8	.000030 Gold over .000050 Nickel†			
	66106-1	66108-1	66107-1	66109-1	66106-5	66108-5	.000030 Gold over .000050 Nickel	.035-.055		90277-1 or 90066
	66106-2	66108-2	66107-2	66109-2	66106-6	66108-6	Tin			
	66106-3	66108-3	66107-3	66109-3	66106-7	66108-7	.000015 Gold over .000050 Nickel			
26-24	66106-4	66108-4	66107-4	66109-4	66106-8	66108-8	.000030 Gold over .000050 Nickel†			
	66102-1	66104-1	66103-1	66105-1	66102-6	66104-6	.000030 Gold over .000050 Nickel	.040-.080		90277-1, 90066 or 90067
	66102-2	66104-2	66103-2	66105-2	66102-7	66104-7	Tin			
	66102-3	66104-3	66103-3	66105-3	66102-8	66104-8	.000015 Gold over .000050 Nickel			
	66102-4	66104-4	66103-4	66105-4	66102-9	66104-9	.000030 Gold over .000050 Nickel†			
24-20	66332-1	66331-1	66400-1	66399-1	66332-5	66331-5	Tin	.080-.100		90277-1, 90067-2 or 90225-2
	66332-2	66331-2	66400-2	66399-2	66332-6	66331-6	.000030 Gold over .000050 Nickel			
	66332-3	66331-3	66400-3	66399-3	66332-7	66331-7	.000015 Gold over .000050 Nickel			
	66332-4	66331-4	66400-4	66399-4	66332-8	66331-8	.000030 Gold over .000050 Nickel†			
	66098-1	66100-1	66099-1	66101-1	66098-6	66100-6	.000030 Gold over .000050 Nickel	.080-.100		90277-1, 90067, 90208-1 or 90067-2
	66098-2	66100-2	66099-2	66101-2	66098-7	66100-7	Tin			
	66098-3	66100-3	66099-3	66101-3	66098-8	66100-8	.000015 Gold over .000050 Nickel			
18-16	66098-4	66100-4	66099-4	66101-4	66098-9	66100-9	.000030 Gold over .000050 Nickel†			
	66359-1	66358-1	66361-1	66360-1	66359-5	66358-5	.000030 Gold over .000050 Nickel	.080-.100		90208-1
	66359-2	66358-2	66361-2	66360-2	66359-6	66358-6	Tin			
	66359-3	66358-3	66361-3	66360-3	66359-9	66358-9	.000015 Gold over .000050 Nickel			
14	66359-4	66358-4	66361-4	66360-4	1-66359-0	1-66358-0	.000030 Gold over .000050 Nickel†			

Electric
Press with
Air Feed

Spring Material — Stainless Steel.
 *For use on Standard Applicator and AMP-O-MATIC Stripper/Crimper.
 **For use on Miniature Applicator.
 †Selective Plating on Contact Area only. Remainder of Contact to have Gold Flash.
 ‡Single Contact Free Air Test Currents only. Not to be construed as Contact Rating Current, use only for testing.
 Insertion Tool — Part No. 91002-1 for .070 Ins. Dia. or less.
 Extraction Tool — Part No. 305183.
 Wire Strip Length — 3/2.

Type III(+) Contacts (Cont'd)

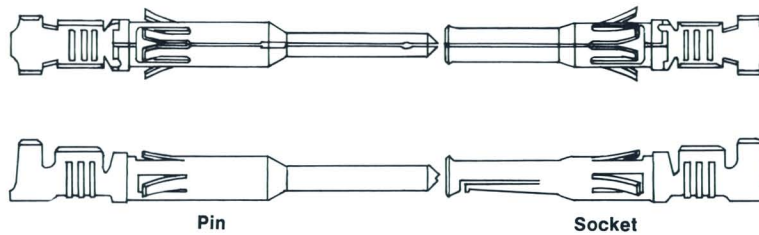


TYPE III(+) SOLDER-TYPE CONTACTS

WIRE SIZE	LOOSE PIECE CONTACT ASSEMBLY		FINISH	CONTACT SIZE	PIN DIAMETER
	PIN NO.	SOCKET NO.			
26-20	66182-1	66183-1	.000030 Gold over .000050 Nickel	16	.062
18-16	66180-1	66181-1			
Solder Tab	202236-1	202237-1	Tin		
	202236-2	202237-2			

Spring Material — Stainless Steel.

Type VI Contacts



CONTACT SIZE 16—PIN DIAMETER .062 (Test Current 13 Amperes)†

WIRE SIZE RANGE	INS. DIA. RANGE	CONTACT FINISH	STRIP CONTACT PART NUMBER*		REVERSE REELED CONTACT PART NUMBER**		LOOSE PIECE CONTACT PART NUMBER		HAND TOOL PART NUMBER
			PIN	SOCKET	PIN	SOCKET	PIN	SOCKET	
28-26	.035-.055	Tin	66585-1	66586-1	66585-2	66586-2	66595-1	66596-1	90277-1
		.000030 Gold over .000050 Nickel†	665853	66586-3	66585-4	66585-4	66595-2	66596-2	
24-20	.040-.080	Tin	66583-1	66584-1	66583-2	66584-2	66593-1	66594-1	90277-1
		.000030 Gold over .000050 Nickel†	66583-3	66584-3	66583-4	66584-4	66593-2	66594-2	
22-18	.055-.110	Tin	66581-1	66582-1	66581-2	66582-2	66591-1	66592-1	90277-1
		.000030 Gold over .000050 Nickel†	66581-3	66582-3	66581-4	66582-4	66591-2	66592-2	
18-16	.080-.100	Tin	66579-1	66580-1	66579-2	66580-2	66589-1	66590-1	90277-1
		.000030 Gold over .000050 Nickel†	66579-3	66580-3	66579-4	66580-4	66589-2	66590-2	
14	.080-.135	Tin	66577-1	66578-1	66577-2	66578-2	66587-1	66588-1	90310-1
		.000030 Gold over .000050 Nickel†	66577-3	66578-3	66577-4	66578-4	66587-2	66588-2	

*For use on Standard Applicator and AMP-O-MATIC Stripper/Crimper.

**For use on Miniature Applicator.

†Selective Plating on Contact Area only. Remainder of Contact to have Gold Flash.

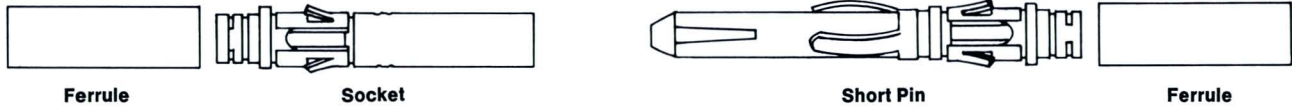
‡Single Contact Free Air Test Currents only. Not to be construed as Contact Rating Current, use only for testing.

Insertion Tool — Part No. 91002-1 for .070 Ins. Dia. or less.

Extraction Tool — Part No. 305183.

Wire Strip Length — 3/32.

Subminiature COAXICON Contacts



CABLE SIZE	CONTACT FORM	SHORT PIN NUMBER		SOCKET NUMBER		FERRULE NUMBER	HAND CRIMPING TOOL NUMBER	DIE INSERT NOS. FOR HAND 69710, PNEU. 69365† & 69365-2 TOOLS	PRESS & APPLICATOR
		.000030 GOLD PLATED CONTACTS	.000050 GOLD PLATED CONTACTS	.000030 GOLD PLATED CONTACTS	.000050 GOLD PLATED CONTACTS				
RG-178, 196	Strip	51562-2*	51562-5*	51564-2*	51564-5*	1-332057-0	—	—	220014-2
	Loose Piece	51563-2*	51563-5*	51565-2*	51565-5*		69656-2, Mod. E	69690-2	—
RG-196 Double Braid	Strip	51562-2*	51562-5*	51564-2*	51564-5*	225088-1	—	—	—
	Loose Piece	51563-2*	51563-5*	51565-2*	51565-5*		69656-9, Mod. A	—	—
RG-174, 188, 316	Strip	51562-1	51562-4	51564-1	51564-4	1-332056-0	—	—	220014-1
	Loose Piece	51563-1	51563-4	51565-1	51565-4		69656, Mod. E	69690, Mod. D	—
RG-174 Double Braid	Strip	51562-1	51562-4	51564-1	51564-4	225088-0	—	—	—
	Loose Piece	51563-1	51563-4	51565-1	51565-4		69656-7, Mod. E	—	—
RG-179, 187	Strip	51562-1	51562-4	51564-1	51564-4	1-332056-0	—	—	220014-3
	Loose Piece	51563-1	51563-4	51565-1	51565-4		69656-1, Mod. E	69690-1, Mod. D	—
RG-187 Double Braid	Strip	51562-1	51562-4	51564-1	51564-4	225088-1	—	—	—
	Loose Piece	51563-1	51563-4	51565-1	51565-4		69656-8, Mod. E	—	—
RG-161	Strip	51562-1	51562-4	51564-1	51564-4	1-332056-0	—	—	—
	Loose Piece	51563-1	51563-4	51565-1	51565-4		69656-5, Mod. D	—	—
26 AWG Shielded, .075 Max. O.D.	Strip	51562-1	51562-4	51564-1	51564-4	1-332057-0	—	—	220014-4
	Loose Piece	51563-1	51563-4	51565-1	51565-4		69656-3, Mod. E	69690, Mod. D	—
26 AWG Tw. Pr. Solid or Stranded (7 Str.), .0063 Dia.	Loose Piece	51563-3	51563-6	51565-3	51565-6	1-332057-0	69656, Mod. E	69690, Mod. D	—
	28 AWG Tw. Pr., Solid	Loose Piece	51563-3	51563-6	51565-3	51565-6	1-332057-0	69656, Mod. E	69690, Mod. D
28 AWG Tw. Pr. Stranded (7 Str.), .005 Dia.	Loose Piece	51563-3	51563-6	51565-3	51565-6	1-332057-0	69656-1, Mod. E or 69656-2, Mod. E	69690-1, Mod. D or 69690-2	—
	30 AWG Tw. Pr., Solid	Loose Piece	51563-3	51563-6	51565-3	51565-6	1-332057-0	69656-2, Mod. E	69690-2

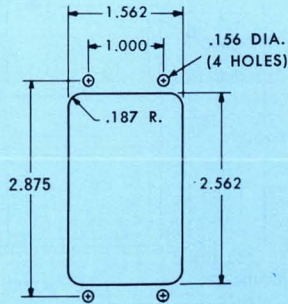
*These contacts have insulating liner inside support sleeve.

†Requires Manual Take-Up Attachment No. 69689.

Extraction Tool — Part No. 305183.

"D" Series
Connector Specifications
 Complete Connector (Less Contacts)

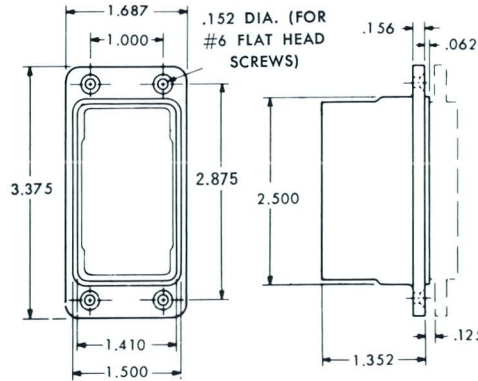
Shell Dimensions



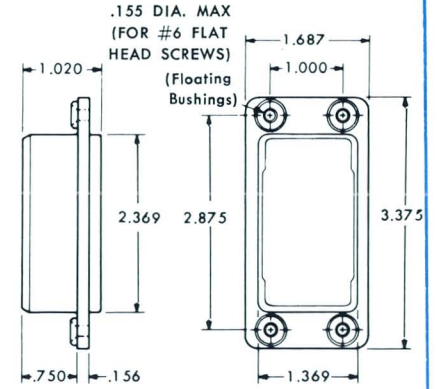
Recommended Panel Cutout

Shell Inserts

Receptacle Unit

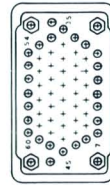
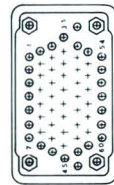


Plug Unit



Receptacle

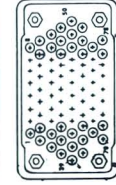
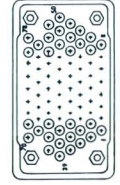
Plug



60-Position

Receptacle

Plug



78-Position

Wiring Side Shown

NO. OF CONTACTS	BLOCK WILL ACCOMMODATE THESE VARIATIONS OF CONTACTS	RECEPT. UNIT (PINS ONLY)	PLUG UNIT (SOCKET ONLY)	SHELL FINISH	CONTACT BLOCK NUMBERING
60	Type II Size 16, 20 or Type III(+) Size 16 or Type VI Size 16 or Subminiature COAXICON Contacts (Short)	203404-1	203403-1	Zinc Plate	White Numbers
		203404-2	203403-2	Olive Drab Zinc Plate	
NO. OF CONTACTS	BLOCK WILL ACCOMMODATE THESE VARIATIONS OF CONTACTS	RECEPT. UNIT (PINS ONLY)	PLUG UNIT (SOCKET ONLY)	SHELL FINISH	CONTACT BLOCK NUMBERING
78	Type II Size 16, 20 or Type III(+) Size 16 or Type VI Size 16 or Subminiature COAXICON Contacts (Short)	200383-1	200363-1	Clear Zinc Plate	Raised Numbers
		200383-2	200363-2	Olive Drab Zinc Plate	
		202027-1*	202028-1**	Clear Zinc Plate	
		205939-1**	205940-1*	Clear Zinc Plate	

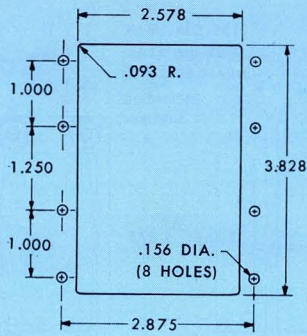
*Turntable Male Jackscrews Included.

**Fixed Female Jackscrews Included.

Note: Shell Material: Die Cast Aluminum • Contact Block Material: Glass-Filled Diallyl Phthalate per MIL-M-14F, Type SDG. • Max. Operating Temp. 300° F.

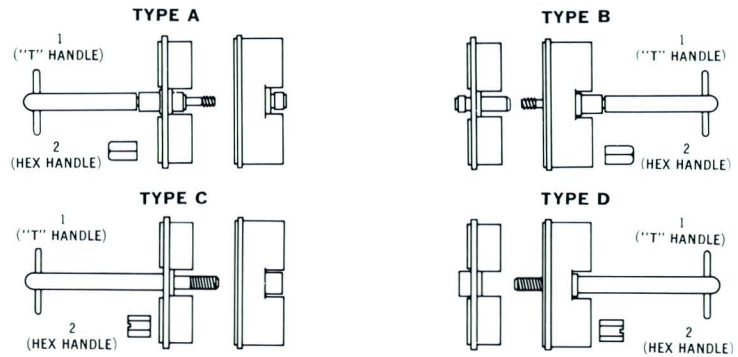
"DD" Series
Connector Specifications
Complete Connector (Less Contacts)

Shell Dimensions

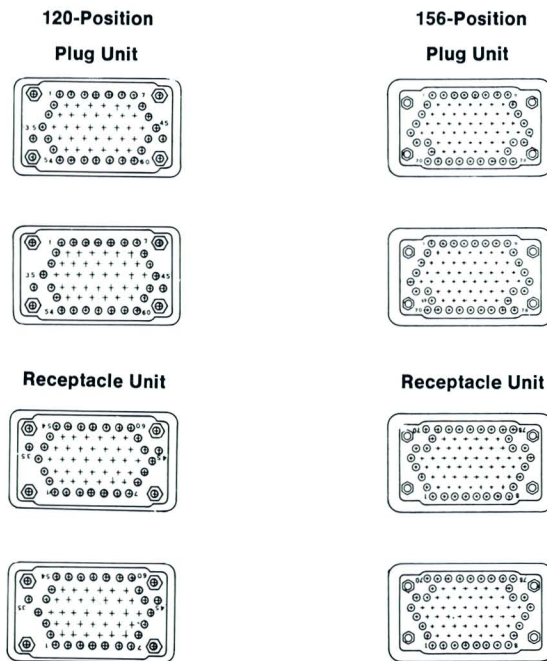


Recommended Panel Cut-Out

Fastener Type



Shell Inserts



Wiring Side Shown

Note: Shell Material: Die Cast Aluminum • Contact Block Material: Glass-Filled Diallyl Phthalate per MIL-M-14F, Type SDG. • Max. Operating Temp. 300° F.

**120
DZUS Fasteners**

TYPE	CONTACT BLOCK NUMBERING	SHELL FINISH	PLUG UNIT (FOR SOCKETS)	RECEPT. UNIT (FOR PINS)
A-1	White Numbers	Zinc Plate	203406-1	203407-1
		Olive Drab Zinc Plate	203406-2	203407-2
A-2	White Numbers	Zinc Plate	203405-1	203407-1
		Olive Drab Zinc Plate	203405-2	203407-2
B-1	White Numbers	Zinc Plate	203408-1	203409-1
		Olive Drab Zinc Plate	203408-2	203409-2
B-2	White Numbers	Zinc Plate	203408-1	203410-1
		Olive Drab Zinc Plate	203408-2	203410-2

**120
AMP Fasteners**

TYPE	CONTACT BLOCK NUMBERING	SHELL FINISH	PLUG UNIT (FOR SOCKETS)	RECEPT. UNIT (FOR PINS)
C-1	White Numbers	Zinc Plate	203412-1	203413-1
			203418-1*	203419-1*
		Olive Drab Zinc Plate	203412-2	203413-2
C-2	White Numbers	Zinc Plate	203418-2*	203419-2*
			203411-1	203413-1
		Olive Drab Zinc Plate	203417-1*	203419-1*
D-1	White Numbers	Zinc Plate	203411-2	203413-2
			203417-2*	203419-2*
		Olive Drab Zinc Plate	203414-1	203415-1
D-2	White Numbers	Zinc Plate	203420-1*	203421-1*
			203414-2	203415-2
		Olive Drab Zinc Plate	203420-2*	203421-2*
D-2	White Numbers	Zinc Plate	203414-1	203416-1
			203420-1*	203422-1*
		Olive Drab Zinc Plate	203414-2	203416-2
			203420-2*	203422-2*

*Fastener has double lead thread.

No. of Contacts

Type II Size 16, 20 or Type III(+)
Size 16 or Type VI Size 16 or Sub-miniature COAXICON Contacts (Short).

**156
DZUS Fasteners**

TYPE	CONTACT BLOCK NUMBERING	SHELL FINISH	PLUG UNIT (FOR SOCKETS)	RECEPT. ONLY (FOR PINS)	"L" MAX.
A-1	Raised Numbers	Zinc Plate	200891-1	200892-1	3.967
		Olive Drab Zinc Plate	200891-2	200892-2	
	White Numbers	Zinc Plate	200891-5	200892-3	
A-2	Raised Numbers	Olive Drab Zinc Plate	200891-6	200892-4	1.406
		Zinc Plate	200891-3	200892-1	
	White Numbers	Zinc Plate	200891-4	200892-2	
B-1	Raised Numbers	Olive Drab Zinc Plate	200891-7	200892-3	3.625
		Zinc Plate	200891-8	200892-4	
	White Numbers	Zinc Plate	201283-1	201282-1	
B-2	Raised Numbers	Olive Drab Zinc Plate	201283-2	201282-2	1.094
		Zinc Plate	201283-3	201282-5	
	White Numbers	Olive Drab Zinc Plate	201283-4	201282-6	
B-2	Raised Numbers	Zinc Plate	201283-1	201282-3	1.094
		Olive Drab Zinc Plate	201283-2	201282-4	
	White Numbers	Zinc Plate	201283-3	201282-7	
		Olive Drab Zinc Plate	201283-4	201282-8	

**156
AMP Fasteners**

TYPE	CONTACT BLOCK NUMBERING	SHELL FINISH	PLUG UNIT (FOR SOCKETS)	RECEPT. ONLY (FOR PINS)	"L" MAX.
C-1	Raised Numbers	Zinc Plate	200585-1	200586-1	3.484
		Olive Drab Zinc Plate	200585-2	200586-2	
	White Numbers	Zinc Plate	200585-5	200586-3	
C-2	Raised Numbers	Olive Drab Zinc Plate	200585-6	200586-4	.922
		Zinc Plate	200585-3	200586-1	
	White Numbers	Zinc Plate	200585-4	200586-2	
D-1	Raised Numbers	Olive Drab Zinc Plate	200585-7	200586-3	3.141
		Zinc Plate	200585-8	200586-4	
	White Numbers	Zinc Plate	201563-1	201564-1	
D-2	Raised Numbers	Olive Drab Zinc Plate	201563-2	201564-2	.578
		Zinc Plate	201563-3	201564-5	
	White Numbers	Olive Drab Zinc Plate	201563-4	201564-6	
D-2	Raised Numbers	Zinc Plate	201563-1	201564-3	.578
		Olive Drab Zinc Plate	201563-2	201564-4	
	White Numbers	Zinc Plate	201563-3	201564-7	
		Olive Drab Zinc Plate	201563-4	201564-8	

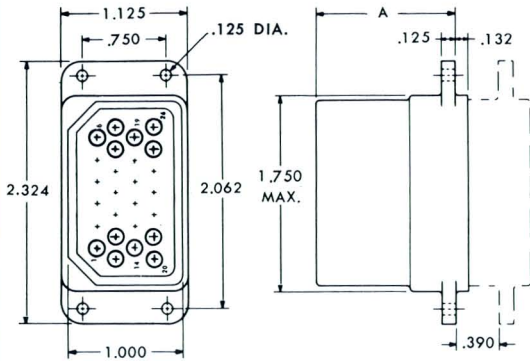
No. of Contacts

Type II Size 16, 20 or Type III(+)
Size 16 or Type VI Size 16 or Sub-miniature COAXICON Contacts (Short).

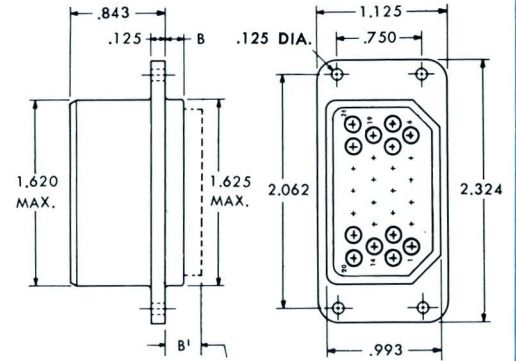
"W" Series
Connector Specifications
Complete Connector (Less Contacts)

26 Contacts

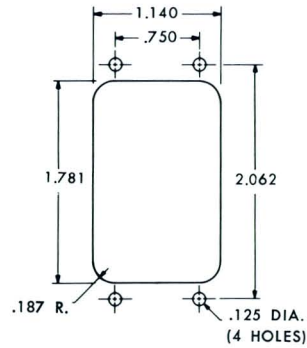
Receptacle Unit



Plug Unit

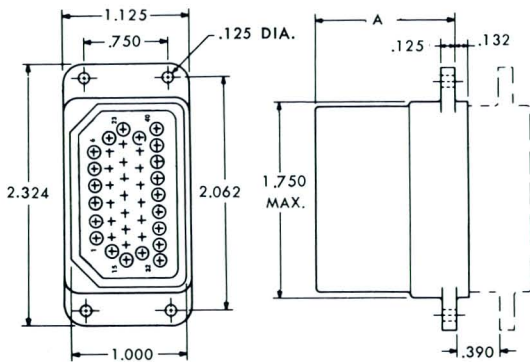


Recommended Panel Cut-Out

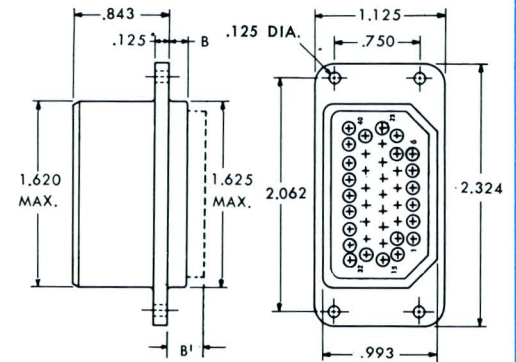


40 Contacts

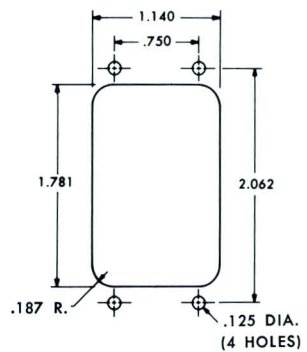
Receptacle Unit



Plug Unit

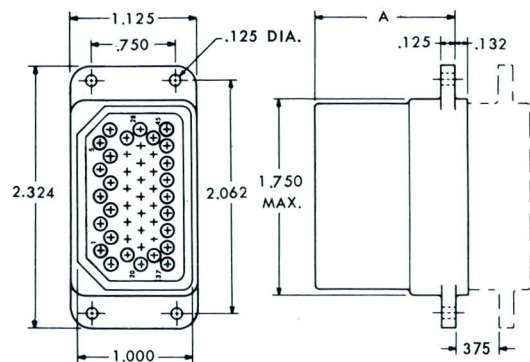


Recommended Panel Cut-Out

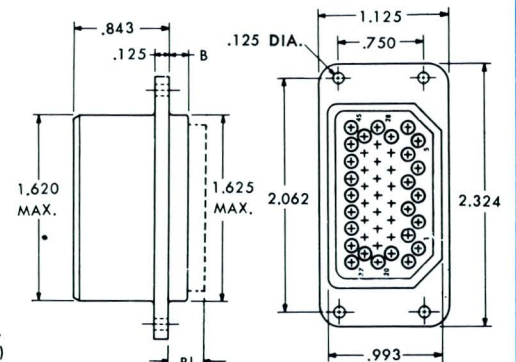


45 Contacts

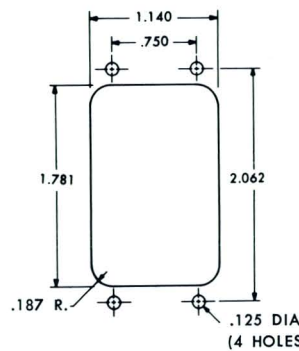
Receptacle Unit



Plug Unit



Recommended Panel Cut-Out



NO. OF CONTACTS	RECEPT. UNIT (For Pins)	A	PLUG UNIT (For Sockets)	B	RECEPT. UNIT (For Sockets)	A	PLUG UNIT (For Pins)	B ¹	SHELL FINISH
26 Type II, Sizes 16 and 20; Type III(+), Size 16; Type VI, Size 16 or Subminiature COAXICON Contacts (Short)	200482-1	1.125	200470-1	.127	201545-1	.783	201546-1	.327	Clear Zinc Plate
	200482-2	1.125	200470-2	.127	201545-2	.783	201546-2	.327	Olive Drab Zinc Plate
	202822-1**	1.125	202949-1*	.127	—	—	—	—	Clear Zinc Plate

*Turntable Male Jackscrews Included.

**Fixed Female Jackscrews Included.

NO. OF CONTACTS	RECEPT. UNIT (For Pins)	A	PLUG UNIT (For Sockets)	B	RECEPT. UNIT (For Sockets)	A	PLUG UNIT (For Pins)	B ¹	SHELL FINISH
40 Type II, Sizes 16 and 20; Type III(+), Size 16; Type VI, Size 16 or Subminiature COAXICON Contacts (Short)	200486-1	1.125	200474-1	.127	201439-1	.783	201438-1	.327	Clear Zinc Plate
	200486-2	1.125	200474-2	.127	—	—	—	—	Olive Drab Zinc Plate
	202542-1**	1.125	202950-1*	.127	—	—	—	—	Clear Zinc Plate

NO. OF CONTACTS	RECEPT. UNIT (For Pins)	A	PLUG UNIT (For Sockets)	B	RECEPT. UNIT (For Sockets)	A	PLUG UNIT (For Pins)	B ¹	SHELL FINISH
45 Type II, Sizes 16 and 20; Type III(+), Size 16; Type VI, Size 16 or Subminiature COAXICON Contacts (Short)	201745-1	1.125	201755-1	.127	201746-1	.783	201754-1	.360	Clear Zinc Plate
	201745-2	1.125	201755-2	.127	201746-2	.783	201754-2	.360	Olive Drab Zinc Plate
	202716-1**	1.125	202951-1*	.127	—	—	—	—	Clear Zinc Plate

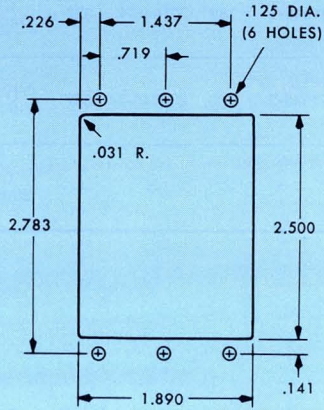
*Turntable Male Jackscrews Included.

**Fixed Female Jackscrews Included.

Note: Shell Material: Die Cast Aluminum • Contact Block Material: Glass-Filled Diallyl Phthalate per MIL-M-14F, Type SDG-F.

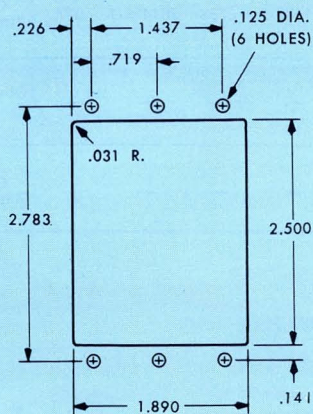
"WW" Series
Connector Specifications
Complete Connector (Less Contacts)

52 Contacts



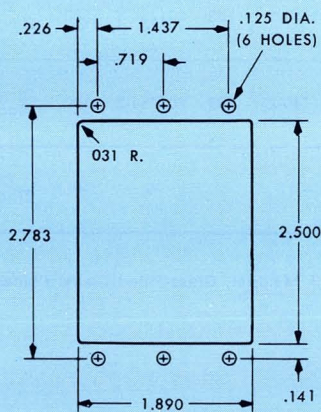
Recommended Panel Cutout

80 Contacts

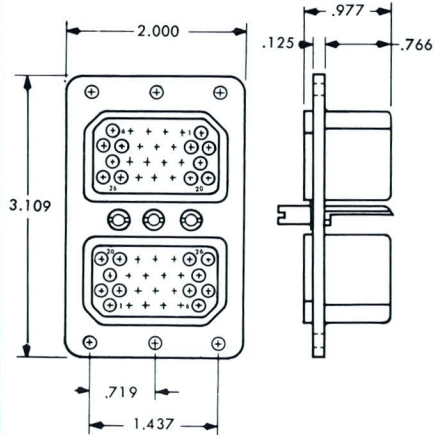


Recommended Panel Cutout

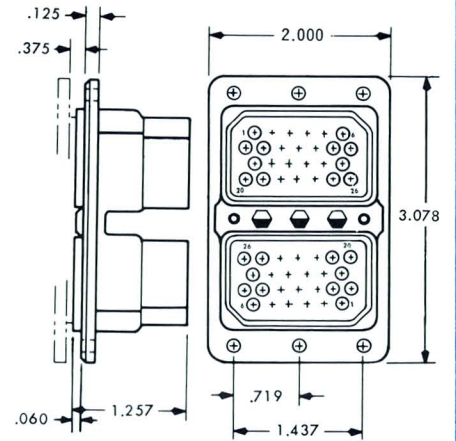
90 Contacts



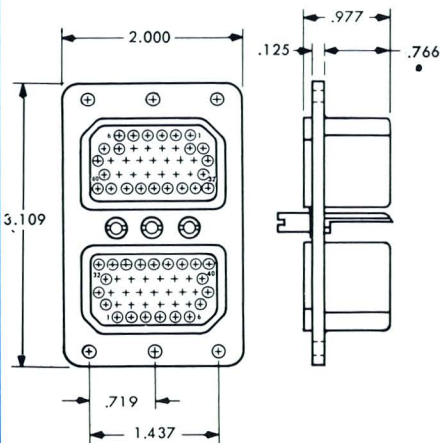
Plug Unit



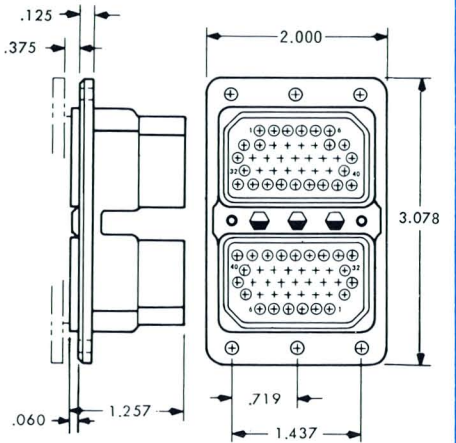
Receptacle Unit



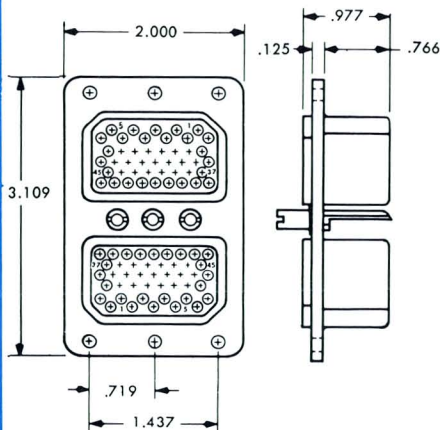
Plug Unit



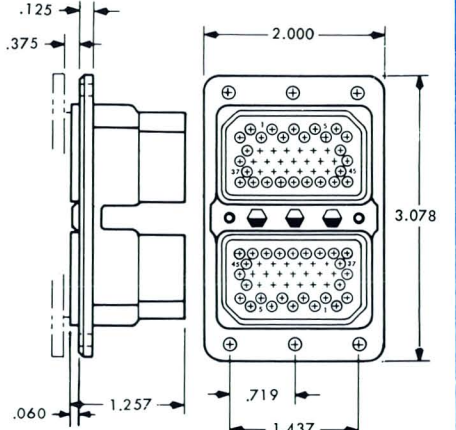
Receptacle Unit



Plug Unit



Receptacle Unit

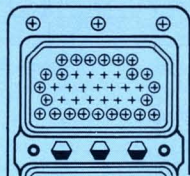


Polarizing Key

Darkened portion indicates the location of the posts.

When ordering indicate desired position of posts.

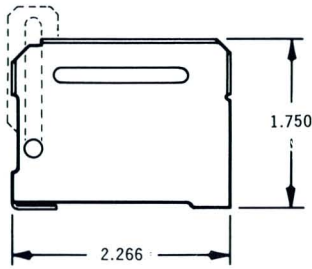
Ex: part number 202171-1, polarizing left 1 center 2 right 5



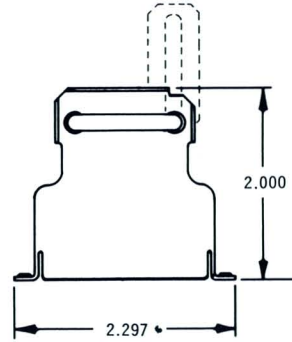
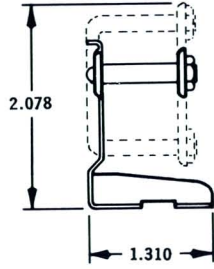
NO. OF CONTACTS	PLUG UNITS (For Sockets)	RECEPTACLE UNITS (For Pins)	SHELL FINISH
52 Type II, Sizes 16 and 20; Type III(+), Size 16; Type VI, Size 16 or Subminiature COAXICON Contacts (Short)	202583-1	202584-1	Clear Zinc Plate
	202583-2	202584-2	Olive Drab Zinc Plate
Note: Shell Material: Die Cast Aluminum • Insert Material: Diallyl Phthalate per MIL-M-14, Type SDG-F.			
NO. OF CONTACTS	PLUG UNITS (For Sockets)	RECEPTACLE UNITS (For Pins)	SHELL FINISH
80 Type II, Sizes 16 and 20; Type III(+), Size 16; Type VI, Size 16 or Subminiature COAXICON Contacts (Short)	202172-1	202171-1	Clear Zinc Plate
	202172-2	202171-2	Olive Drab Zinc Plate
Note: Shell Material: Die Cast Aluminum • Insert Material: Diallyl Phthalate per MIL-M-14, Type SDG-F.			
NO. OF CONTACTS	PLUG UNITS (For Sockets)	RECEPTACLE UNITS (For Pins)	SHELL FINISH
90 Type II, Sizes 16 and 20; Type III(+), Size 16; Type VI, Size 16 or Subminiature COAXICON Contacts (Short)	202585-1	202586-1	Clear Zinc Plate
	202585-2	202586-2	Olive Drab Zinc Plate
Note: Shell Material: Die Cast Aluminum • Insert Material: Glass-Filled Diallyl Phthalate per MIL-M-14, Type SDG-F.			

Strain Relief Clamps
Material and Finish:
Steel, Zinc Plated

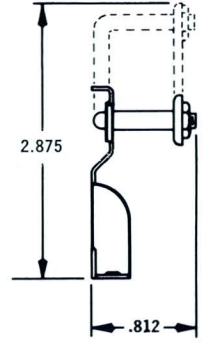
TYPE	CABLE OUTLET	PART NUMBERS
D & DD (Plug & Receptacle)	90° or 180°	201738-1
W (Plug & Receptacle)	90° or 180°	201557-1



D and DD Strain Relief Clamp 90°
201738



W Strain Relief Clamp 90°
201557

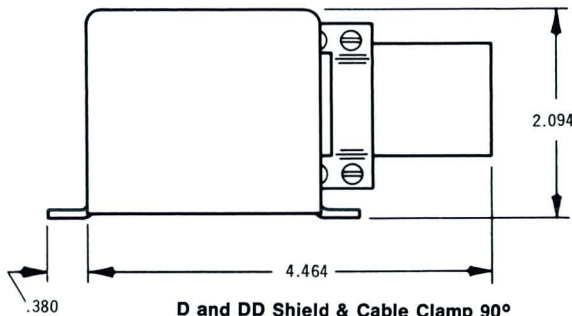


Shield and Cable Clamps Drawn
Material and Finish:
Steel, Zinc Plated

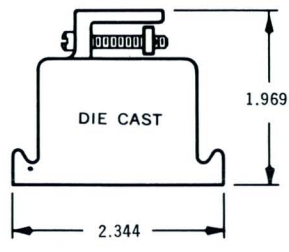
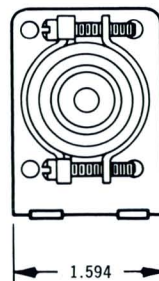
TYPE	CABLE BUSHINGS	CABLE OUTLET	PART NUMBERS	
			FOUR MOUNTING HOLES, .145 DIA.	FOUR EXTRUDED AND TAPPED MOUNTING HOLES FOR #6-32UNC-2B
D & DD (Plug)	Four-Neoprene For Cable Dias. 1/4, 5/8, 3/4 & 15/16	180°	202154-1	202152-2
		90°	202155-1	202155-2
	None	180°	202156-1	202156-2
		90°	202157-1	202157-2
		40°	—	204422-1
		40°	—	204422-2
D (Receptacle)	Four-Neoprene For Cable Dias. 1/4, 5/8, 3/4 & 15/16	180°	202132-1	202132-2
		90°	202133-1	202133-2
	None	180°	202152-1	202152-2
		90°	202153-1	202153-2
DD (Receptacle)	Four-Neoprene For Cable Dias. 1/4, 5/8, 3/4 & 15/16	180°	202334-1	—
		90°	202336-1	—
	None	180°	202349-1	—
		90°	202350-1	—
		40°	—	204422-3

Shield and Cable Clamps Die Cast
Material: Aluminum Alloy

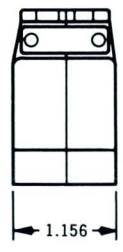
TYPE	CABLE OUTLET	FINISH	PART NUMBERS
W (Plug)	180°	Zinc Plate	201753-1
		Olive Drab	201753-2
		Zinc Plate	201753-2

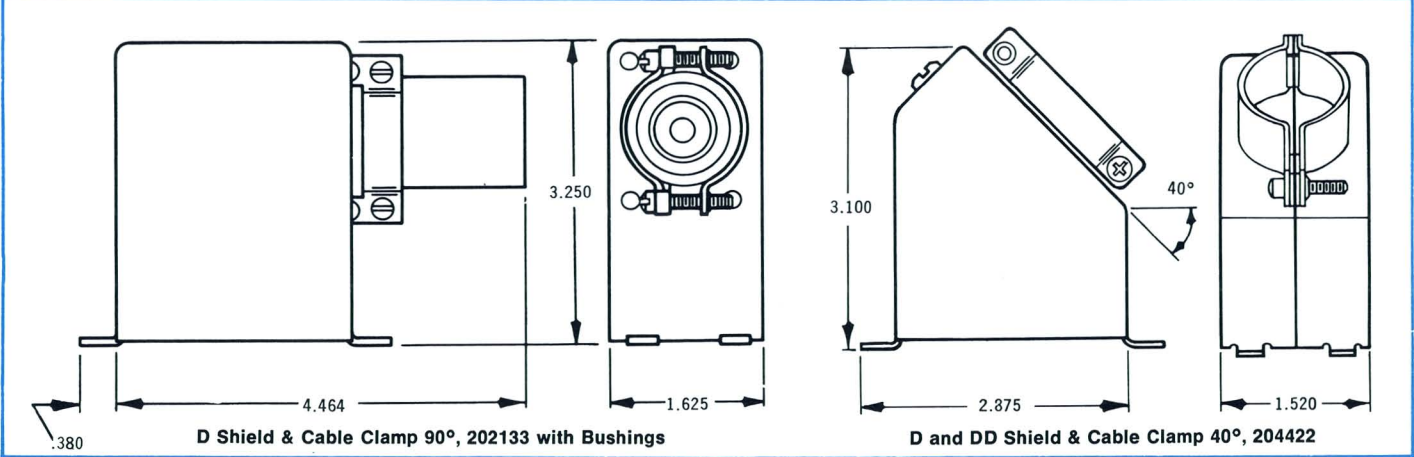
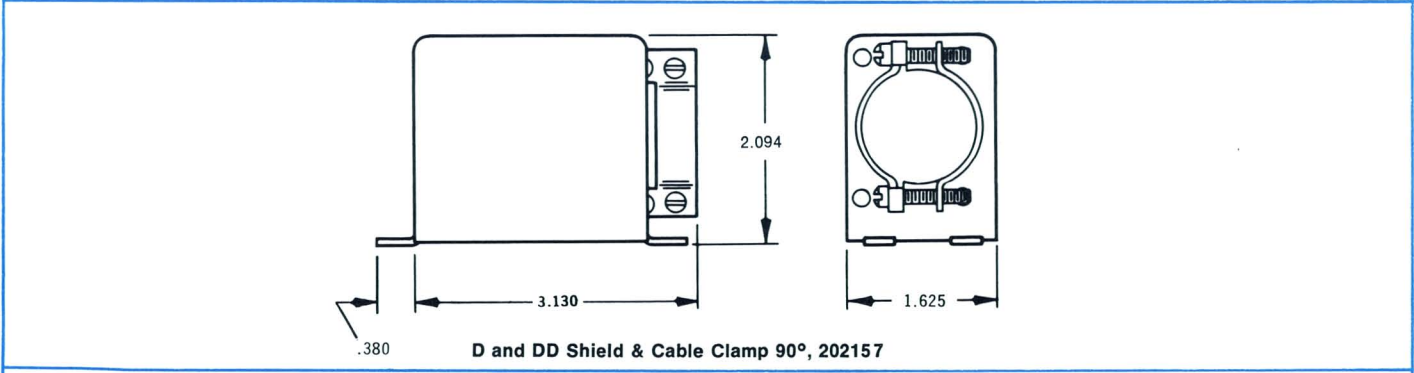
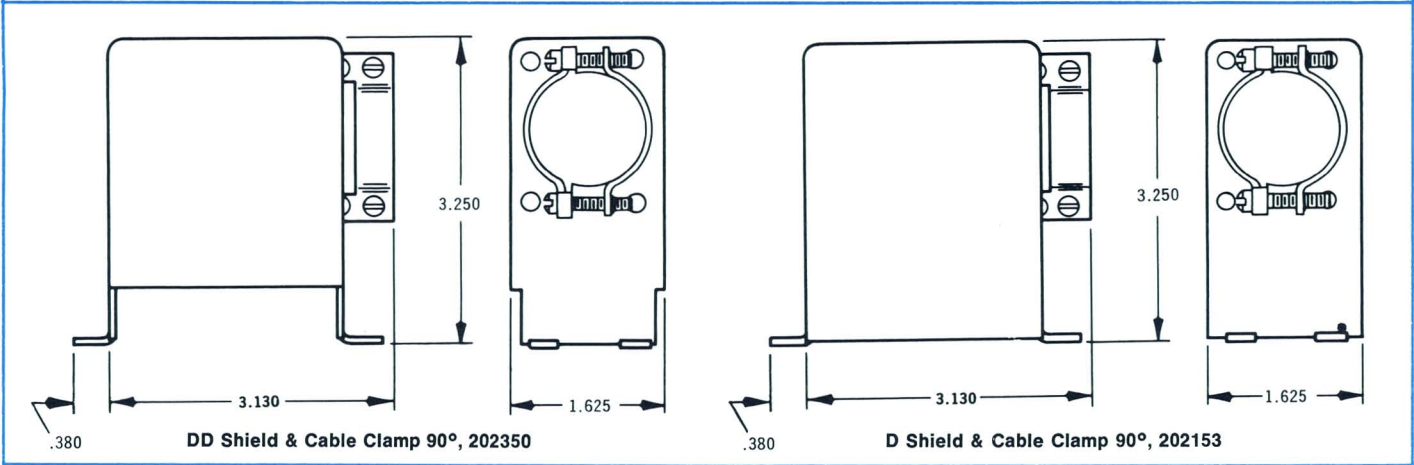
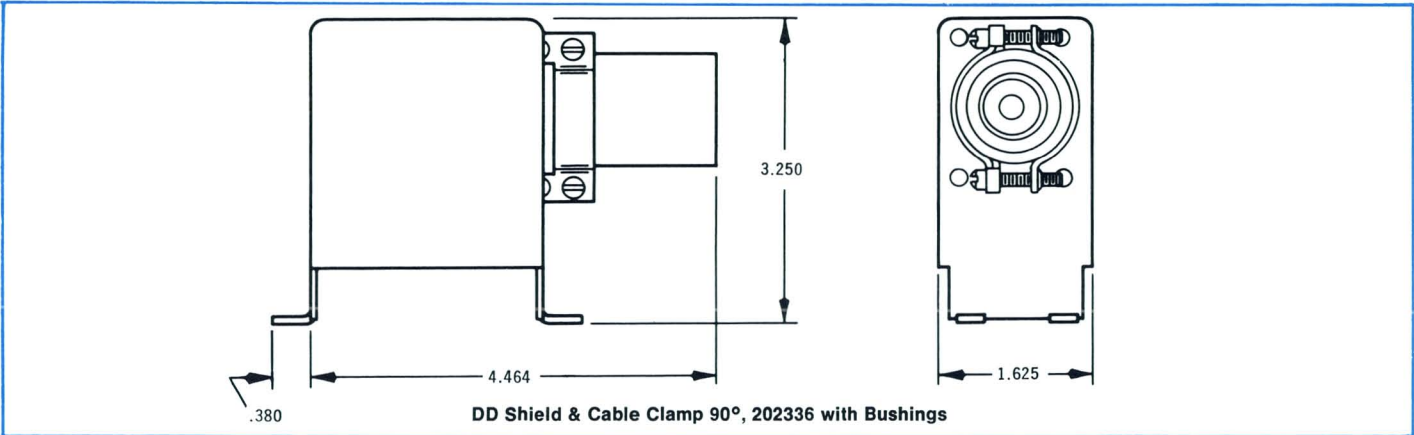


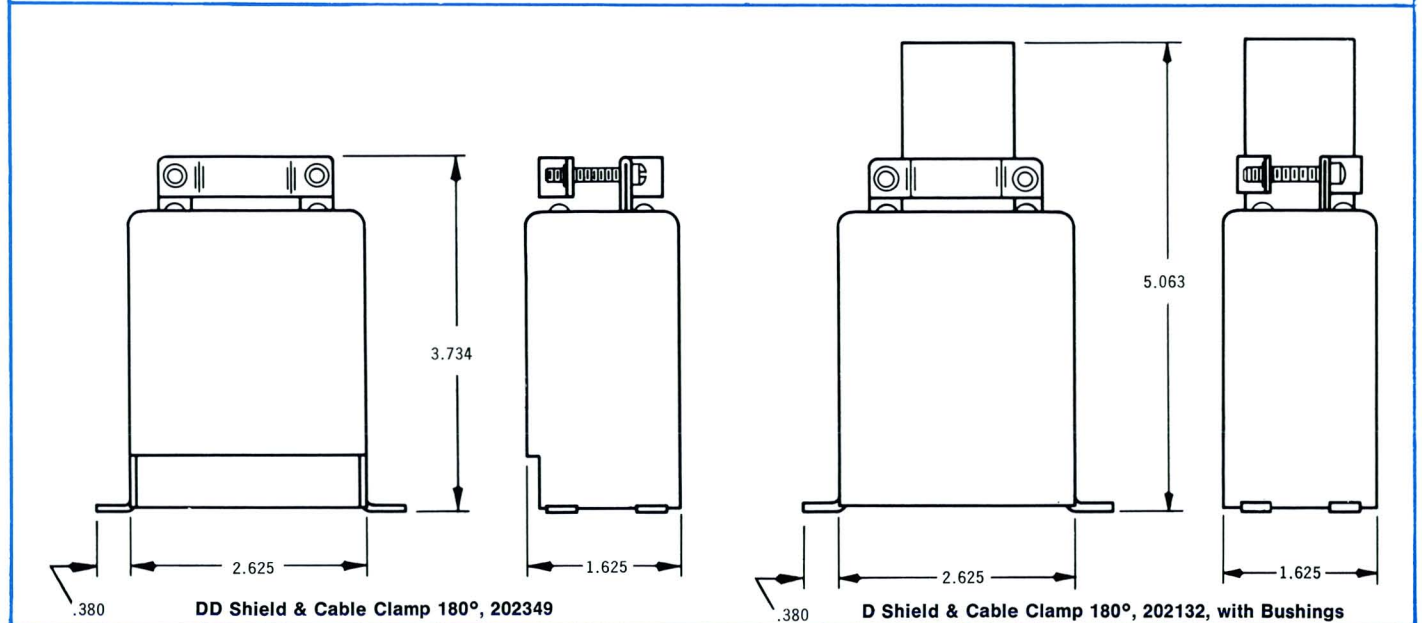
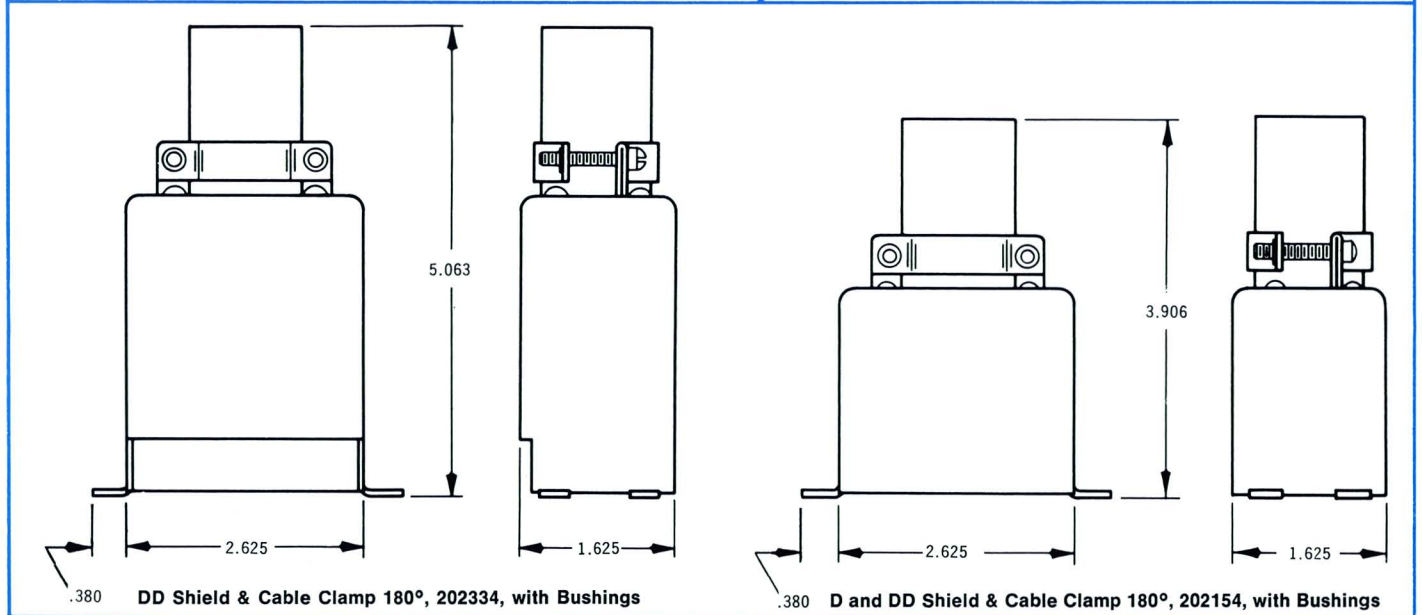
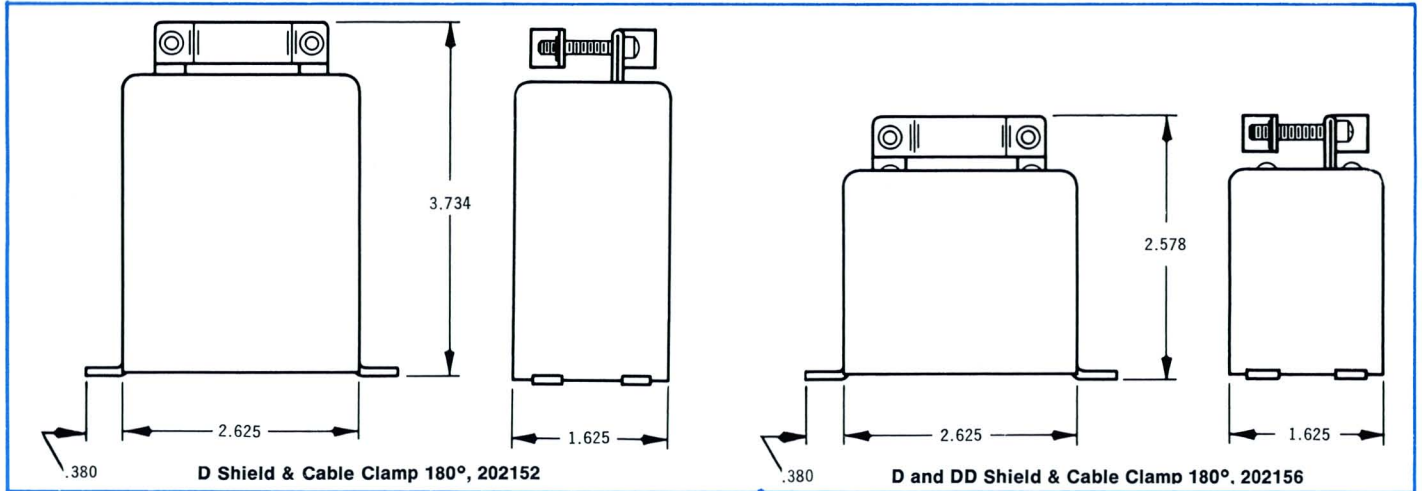
D and DD Shield & Cable Clamp 90°
202155 with Bushings



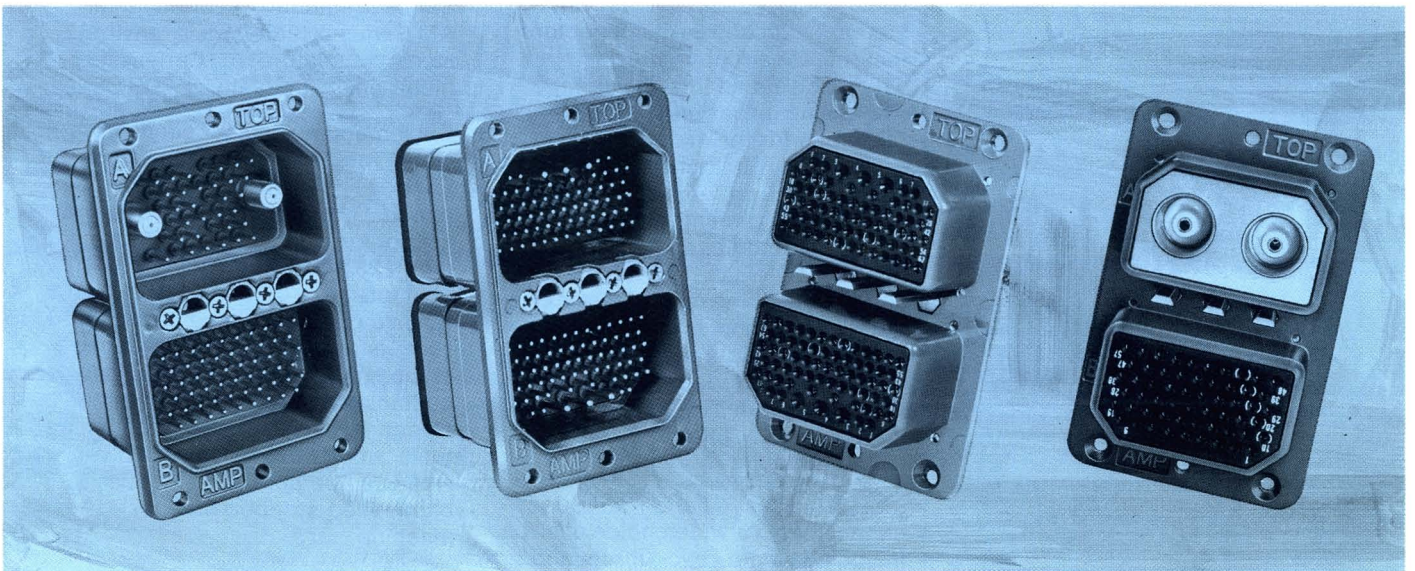
W Shield & Cable Clamp 180°
201753







Rack and Panel Connectors per ARINC Spec. 404 and MIL-C-81659



The Inside Story is the Difference in AMP's Connectors

Introduction

The highly versatile line of AMP-INCERT rack and panel connectors per ARINC Specification 404 and MIL-C-81659 is divided into two distinct families. Included are connectors that employ the rear release system for contact loading and retention, and those which provide positive contact retention through the use of the front release system.

This catalog contains all pertinent information regarding these two connector families: performance specifications; customer ordering data; and available shell configurations, mounting methods, insert arrangements, contact sizes and "matched" application tooling to meet your exact production needs . . . reliably and economically.

Rear Release Connectors

Rear release connectors are available in four basic versions: a standard RM Series, an environmentally sealed RME Series, a miniature RA Series and an environmentally sealed miniature RE Series. Also, special connectors are available for applications requiring connection to flexible flat cable and to conventional wire using wrap-type and solder termination techniques. All connectors incorporate a rubber interfacing which acts as an interfacial barrier against environmental contaminants for the mated connectors. The RME and RE Series connectors also feature a resilient wire sealing grommet to provide full environmental contact protection — FRONT and REAR. For added versatility, connectors having identical contact arrangements and shell configurations within the RM and RME Series, as well as those within the RA and RE Series, are completely intermateable and intermountable.

AMP furnishes RM and RME Series connectors in a wide choice of sizes, including single-, two-, three- and four-insert shell configurations. The

inserts are available in various contact arrangements to accommodate size 22, 20, 16 and 12 contacts for terminating a wire size range of No. 30 to 12 AWG. Inserts also will accept size 1, 3, 5, 7, 9 and 15 COAXICON contacts, providing termination capabilities for a broad range of coaxial cable. The pin and socket contacts are of the crimp snap-in type and are top quality, precision screw-machined parts. They are supplied loose piece for 8-indent crimping in standard M22520 hand tools or tape-mounted for high-speed application using our AMP-TAPEMATIC Stripper/Crimper machine.

Front Release Connectors

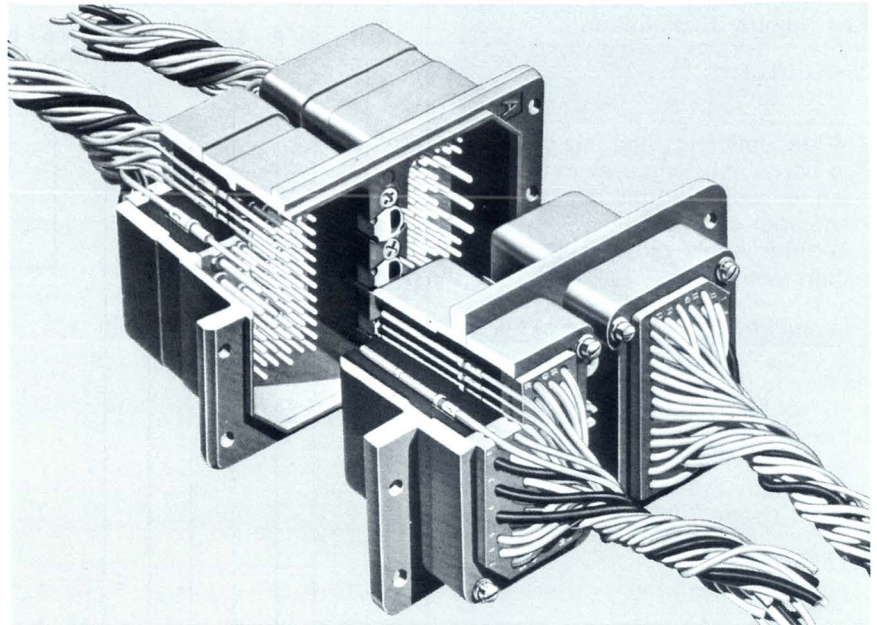
Front release connectors offer many of the features found in their "rear release" counterparts, including assured environmental integrity through the use of a rubber interfacial insert and a resilient wire sealing grommet for full contact protection, FRONT and REAR; plus complete intermateability and intermountability of standard versions with other connectors for ARINC Specification 404 having identical contact arrangements and shell configurations. Available versions within this connector family are: an environmental (miniature) AA Series, a standard environmental AM Series, a high-density environmental (miniature) AD Series and a high-density (miniature) ADS Series.

Customers may select connectors with either a single-, two-, three-, four- or six-insert shell configuration and contact arrangements that accept pin and socket contacts (sizes 20 and 16), or COAXICON contacts (size 0). As with the rear release contacts, these pins and sockets also are screw-machined crimp snap-in types. Loose piece contacts can be terminated in standard M22520 hand crimping tools, while the tape-mounted versions can be applied using the high-speed stripper/crimper machine.

All dimensions in inches unless indicated otherwise.

NOTE: Specifications subject to change. Consult AMP Incorporated for latest design specifications.

TEFLON—Trademark of E. I. duPont, Inc.
ALUMEL, CHROMEL — Trademarks of
Hoskins Manufacturing Co.



Material Specifications

Shell: Die cast aluminum alloy per QQ-A-591; cadmium plated with yellow chromate conversion, or electroless nickel plated per QQ-P-416

Insert Retention Plate:

(RM Series Connector) Aluminum alloy, blue anodized per MIL-A-8625

(RME Series Connector) Aluminum alloy, powder coat, blue epoxy

(RA and RE Series Connectors) Stainless steel, passivated

Screws and Washers: Stainless steel, passivated

Dielectric, Hard: Epoxy per MIL-M-24325

Dielectric, Interfacial Seal (Receptacle Only) and Wire Sealing Grommets: Silicone rubber

Keying Posts and Nuts (Plug Only): Stainless steel, passivated

Keying Inserts (Receptacle Only): Aluminum

Performance Specifications

Environmentally sealed RME Series Connectors are designed per Military Specification MIL-C-81659 and all pin and socket contacts per MIL-C-39029. AMP's RM Series Connectors have been designed to meet the requirements of AMP Specification 108-10,019. Parameters of this performance specification include:

Insulation Resistance 5000 megohms

Dielectric Withstanding Voltage (Sea Level):

Test (contact arrangements 33C4, 67 & 106) 1200 volts rms

(all other contact arrangements, except C2 & C3) 1500 volts rms

Operate (contact arrangements 33C4, 67 & 106) 400 volts rms

(all other contact arrangements, except C2 & C3) 500 volts rms

Temperature Range -55°C to +125°C

Contact Current Rating:

Size 22 (#22 AWG Wire) 5.0 amps

Size 20 (#20 AWG Wire) 7.5 amps

Size 16 (#16 AWG Wire) 13.0 amps

Size 12 (#12 AWG Wire) 23.0 amps

Contact Retention:

Size 22 15 lb. (min.)

Size 20 20 lb. (min.)

Size 16 25 lb. (min.)

Size 12 30 lb. (min.)

Durability (Mating and Unmating) 200 cycles

Salt Spray MIL-STD-1344, Method 1001, Condition B

Vibration MIL-STD-1344, Method 2005, Condition IV

Ordering Information

Part Number Explanation

(FOR RM, RME, RA AND RE SERIES CONNECTORS)

AMP recommends that this simplified part numbering system be used to insure that the rear release, rack and panel connector you order meets your exacting requirements.

The numbering system shown on this page is to be used for all rear release connectors, except the .025 x .025 posted contact receptacles. These special application connectors must be ordered by the appropriate AMP part number specified on page 9-230

- Notes:**
1. For contact arrangement layout, see page 9-222.
 2. Connectors can be supplied to accept pins or sockets in either half. Consult AMP engineering regarding your specific application.

RME 2 P 57 S 57 S — 00 01 (20)

Customer Ordering Code
(See Page 9-215)

Polarization Code
(See Pages 9-216 and 9-217)
01 thru 99 Keying Positions

Modification Code:
(See Page 9-221)

- 00 — Standard Housing
- 01 — Clinch Nuts (4)
- 02 — Attaching Tabs
- 03 — Mounting Holes, C'Sunk (4)
- 04 — Mounting Holes, C'Sunk; Attaching Tabs
- 08 — Mounting Holes, C'Sunk (4)
- 12 — Mounting Slots (4) (Receptacle Only)
- 13 — Mounting Slots (4) (Receptacle Only)
- 17 — Clinch Nuts (4); Attaching Tabs (Receptacle Only)
- 18 — Clinch Nuts (6)
- 19 — Clinch Nuts (6); Attaching Tabs
- 20 — Mounting Holes (6)
- 22 — Floating Bushings (4); Attaching Tabs
- 23 — Floating Bushings (4) (Receptacle Only)
- 25 — Mounting Holes (4) (Receptacle Only)
- 26 — Mounting Holes, C'Sunk (4) (Receptacle Only)
- 29 — Floating Bushings (6)
- 30 — Floating Bushings (6); Attaching Tabs
- 33 — Floating Bushings, Flush Mount (4) (Plug Only)
- 39 — Floating Bushings (4) (Plug Only)
- 42 — Clinch Nuts (8) (Four-Insert Shells Only)
- 46 — Mounting Holes (4)

Contact Type (Module B):
P — Pin
S — Socket
CS — Flexible Flat Cable Socket

Contact Arrangement (Module B):
Quantity of Contacts at Location B

Contact Type (Module A):
P — Pin
S — Socket
CS — Flexible Flat Cable Socket

Contact Arrangement (Module A):
Quantity of Contacts at Location A

Shell Configuration:
P — Plug
R — Receptacle

Number of Inserts, per Shell, 1 thru 4
(Modules A thru D)

Series Designator: -
RM — Standard
RME — Environmentally Sealed
RA — Standard Miniature
RE — Environmentally Sealed, Miniature

Customer Ordering Code

This three-digit code is for customer ordering convenience. Customers may request the establishment of codes other than those listed by contacting AMP Incorporated.

Code No.	Description	Code No.	Description
200	Standard connector kit — shell finish: Cad. plated per QQ-P-416 with yellow chromate conversion.	220	200 customer ordering code with connector kit unassembled.
201	200 customer ordering code without contacts, contacts must be ordered separately by AMP part number.	250	Standard connector kit, except shell and retainer plates plated electroless nickel.
202	201 customer ordering code with assembled connector, keying unassembled and packaged in a separate container, contacts must be ordered separately by AMP part number.	251	250 customer ordering code with assembled connector only, contacts must be ordered separately by AMP part number.
203	201 customer ordering code with inserts and retainer plates unassembled.	254	250 customer ordering code with spare contacts — 3 per cent of contact population per connector per contact size.
204	200 customer ordering code with spare contacts — 3 per cent of contact population per connector per contact size.	255	250 customer ordering code with size #22 contacts having a wire range of 28-30.
205	200 customer ordering code with size #22 contacts having a wire range of 28-30.		
206	200 customer ordering code with keying unassembled and packaged in a separate container.		

Polarization Code

Positions



NOTES:

1. Darkened portion indicates extended part of post in plug; light portion indicates key hole in receptacle.
2. If the two digits indicating the Polarization Code are omitted, the keying is assembled in position "01" by the manufacturer. The keying position is not stamped on the connector.
3. If the Polarization Code is assigned "00", keying is omitted and must be ordered separately. The keying position is not stamped on the connector.
4. Mating face is shown with top up.

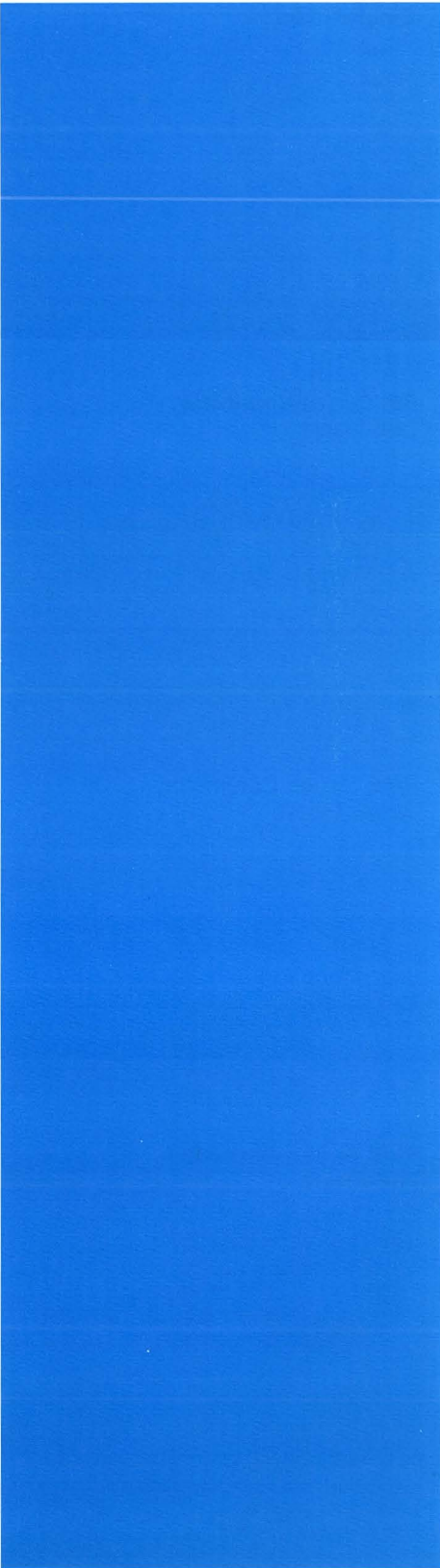
PLUG

Position	Left Post	Center Post	Right Post
00	—	—	—
01	1	1	1
02	2	1	1
03	3	1	1
04	4	1	1
05	5	1	1
06	6	1	1
07	1	1	6
08	2	1	6
09	3	1	6
10	4	1	6
11	5	1	6
12	6	1	6
13	1	1	5
14	2	1	5
15	3	1	5
16	4	1	5
17	5	1	5
18	6	1	5
19	1	1	4
20	2	1	4
21	3	1	4
22	4	1	4
23	5	1	4
24	6	1	4
25	1	1	3
26	2	1	3
27	3	1	3
28	4	1	3
29	5	1	3
30	6	1	3
31	1	1	2
32	2	1	2
33	3	1	2
34	4	1	2
35	5	1	2
36	6	1	2
37	1	2	1
38	2	2	1
39	3	2	1
40	4	2	1
41	5	2	1
42	6	2	1
43	1	2	6
44	2	2	6
45	3	2	6
46	4	2	6
47	5	2	6
48	6	2	6
49	1	2	5

RECEPTACLE

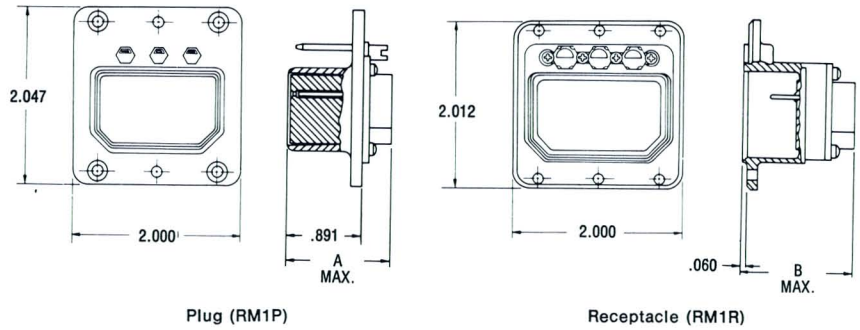
Position	Left Key	Center Key	Right Key
00	—	—	—
01	4	4	4
02	4	4	3
03	4	4	2
04	4	4	1
05	4	4	6
06	4	4	5
07	5	4	4
08	5	4	3
09	5	4	2
10	5	4	1
11	5	4	6
12	5	4	5
13	6	4	4
14	6	4	3
15	6	4	2
16	6	4	1
17	6	4	6
18	6	4	5
19	1	4	4
20	1	4	3
21	1	4	2
22	1	4	1
23	1	4	6
24	1	4	5
25	2	4	4
26	2	4	3
27	2	4	2
28	2	4	1
29	2	4	6
30	2	4	5
31	3	4	4
32	3	4	3
33	3	4	2
34	3	4	1
35	3	4	6
36	3	4	5
37	4	3	4
38	4	3	3
39	4	3	2
40	4	3	1
41	4	3	6
42	4	3	5
43	5	3	4
44	5	3	3
45	5	3	2
46	5	3	1
47	5	3	6
48	5	3	5
49	6	3	4

PLUG				RECEPTACLE			
Position	Left Post	Center Post	Right Post	Position	Left Key	Center Key	Right Key
50	2	2	5	50	6	3	3
51	3	2	5	51	6	3	2
52	4	2	5	52	6	3	1
53	5	2	5	53	6	3	6
54	6	2	5	54	6	3	5
55	1	2	4	55	1	3	4
56	2	2	4	56	1	3	3
57	3	2	4	57	1	3	2
58	4	2	4	58	1	3	1
59	5	2	4	59	1	3	6
60	6	2	4	60	1	3	5
61	1	2	3	61	2	3	4
62	2	2	3	62	2	3	3
63	3	2	3	63	2	3	2
64	4	2	3	64	2	3	1
65	5	2	3	65	2	3	6
66	6	2	3	66	2	3	5
67	1	2	2	67	3	3	4
68	2	2	2	68	3	3	3
69	3	2	2	69	3	3	2
70	4	2	2	70	3	3	1
71	5	2	2	71	3	3	6
72	6	2	2	72	3	3	5
73	1	3	1	73	4	2	4
74	2	3	1	74	4	2	3
75	3	3	1	75	4	2	2
76	4	3	1	76	4	2	1
77	5	3	1	77	4	2	6
78	6	3	1	78	4	2	5
79	1	3	6	79	5	2	4
80	2	3	6	80	5	2	3
81	3	3	6	81	5	2	2
82	4	3	6	82	5	2	1
83	5	3	6	83	5	2	6
84	6	3	6	84	5	2	5
85	1	3	5	85	5	2	4
86	2	3	5	86	5	2	3
87	3	3	5	87	6	2	2
88	4	3	5	88	6	2	1
89	5	3	5	89	6	2	6
90	6	3	5	90	6	2	5
91	1	3	4	91	1	2	4
92	2	3	4	92	1	2	3
93	3	3	4	93	1	2	2
94	4	3	4	94	1	2	1
95	5	3	4	95	1	2	6
96	6	3	4	96	1	2	5
97	1	3	3	97	2	2	4
98	2	3	3	98	2	2	3
99	3	3	3	99	2	2	2

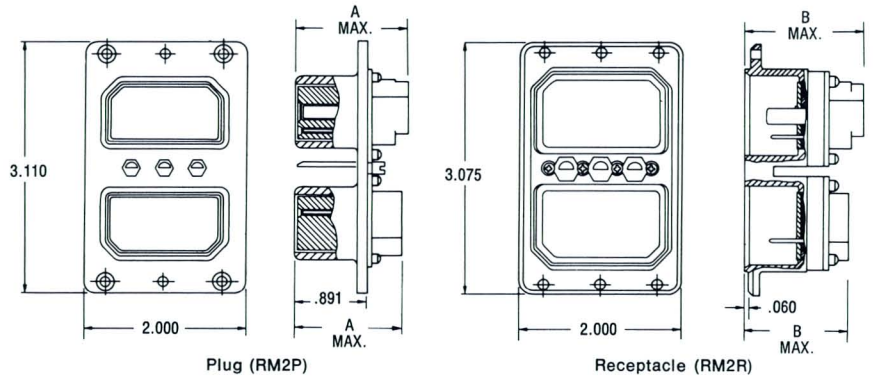


Shell Specifications

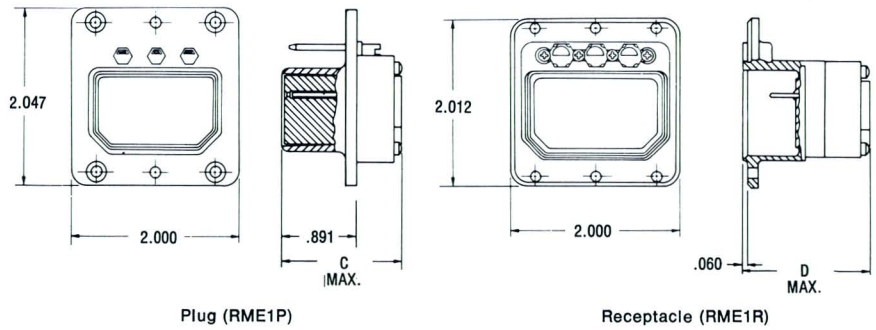
RM Series Connector, Single-Insert



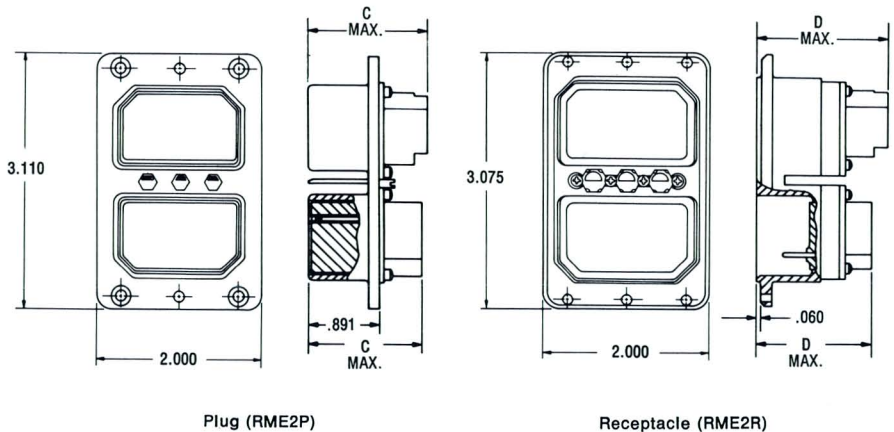
RM Series Connector, Two-Insert



RME Series Connector, Single-Insert



RME Series Connector, Two-Insert



NOTE: Contacts are shown installed for illustration purposes only.

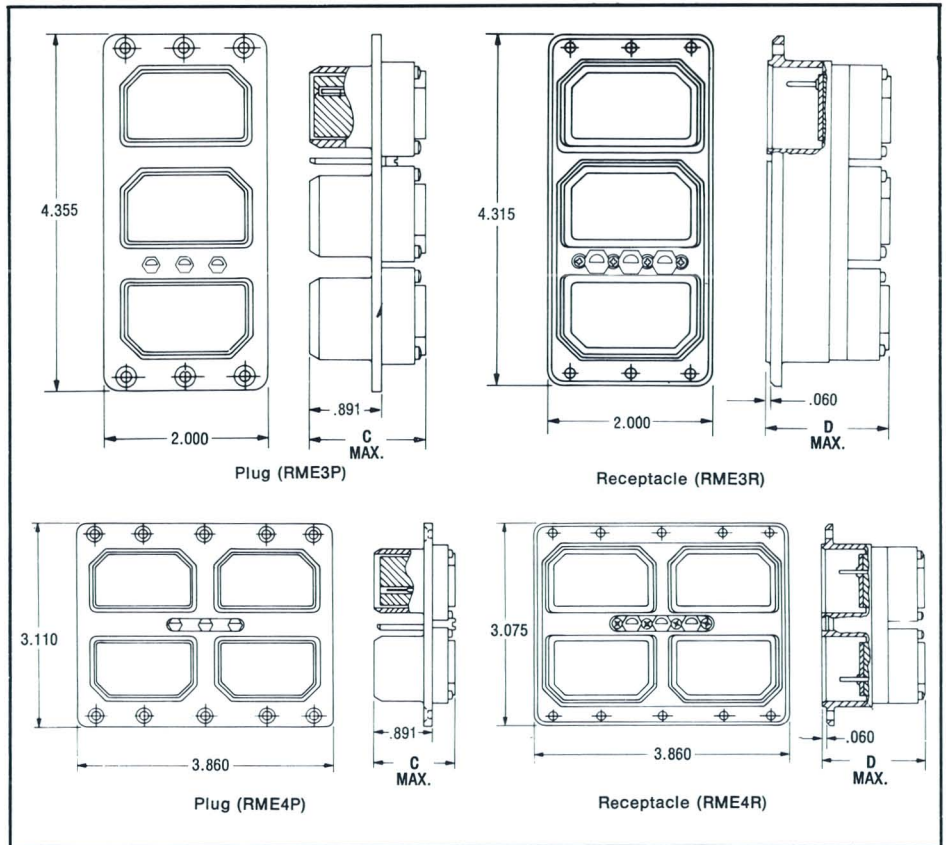
**RME Series Connector,
Three-Insert**

**RME Series Connector,
Four-Insert**

**RA Series Connector,
Single-Insert**

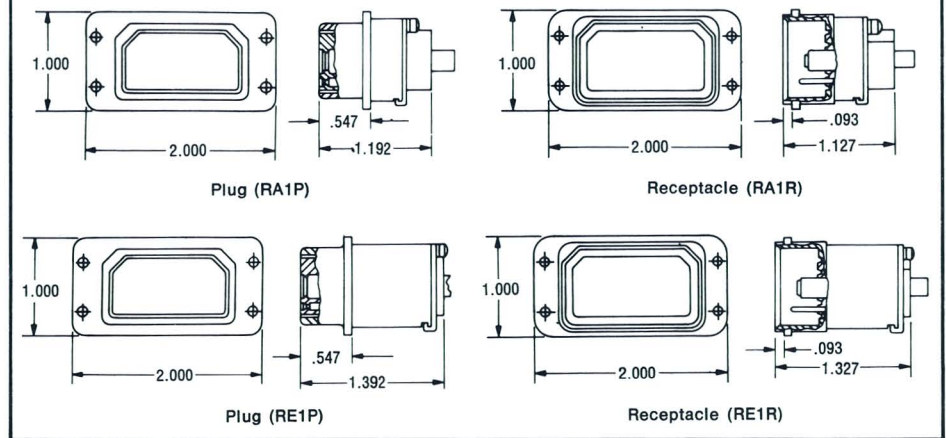
**RE Series Connector,
Single-Insert**

NOTE: Contacts are shown installed for illustration purposes only.



Contact Arrangement*	Dimensions			
	A (RM Plug)	B (RM Recept.)	C (RME Plug)	D (RME Recept.)
C2	.966	1.076	.966	1.076
C3	.966	1.076	.966	1.076
8	1.205	1.313	1.425	1.525
C8	1.403	1.512	1.403	1.512
D8	1.205	1.313	1.425	1.525
26	1.205	1.313	1.425	1.525
32C2	1.420	1.525	1.625	1.725
33C4	1.420	1.525	1.625	1.725
40	1.205	1.313	1.425	1.525
40C1	1.420	1.525	1.625	1.725
45	1.205	1.313	1.425	1.525
57	1.205	1.313	1.425	1.525
67	1.205	1.313	1.425	1.525
106	.966	1.076	1.170	1.279

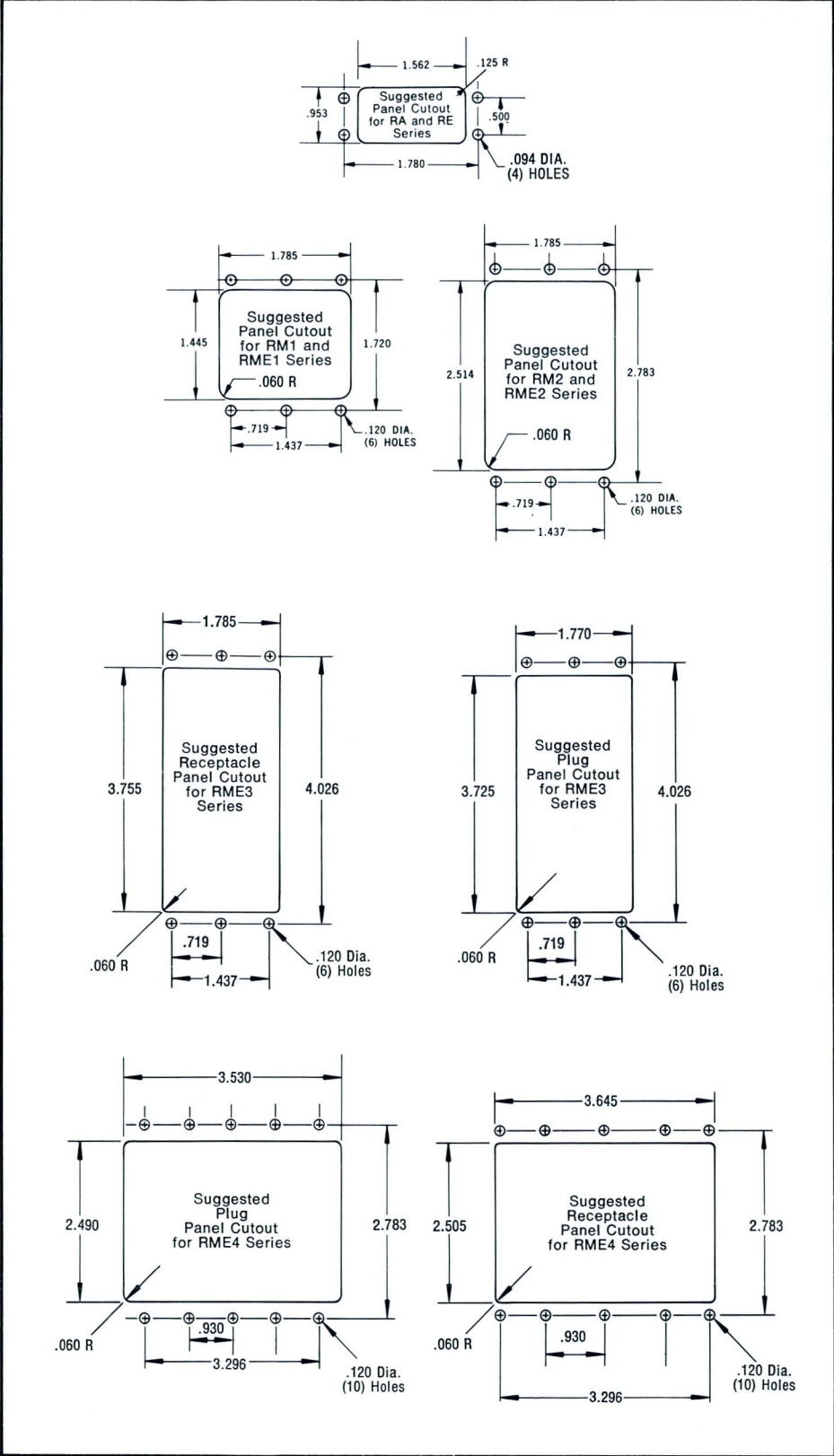
*See page 9-222.

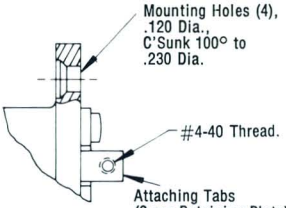
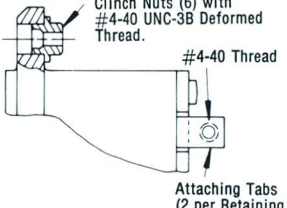

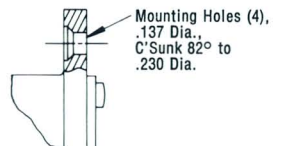

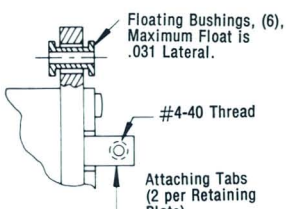
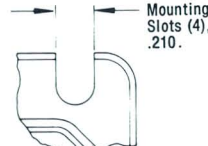
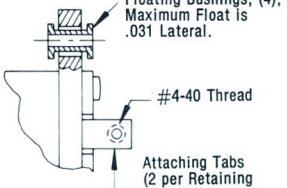
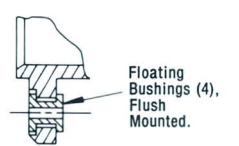
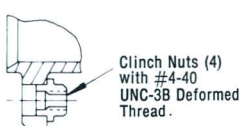
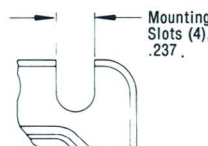


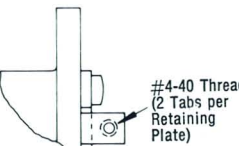
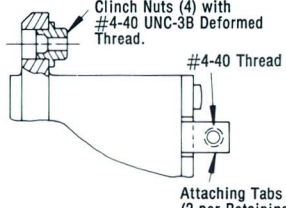


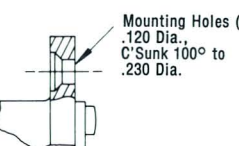

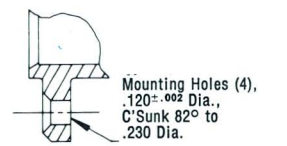
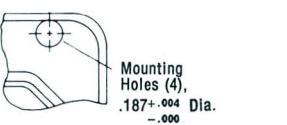


Mounting Specifications

Panel Cutouts

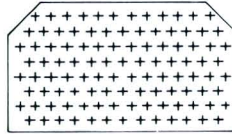
Normally the connector plug is front-mounted to a rack and the receptacle is back-mounted to a panel. The panel thickness should not exceed 1/8 inch. For additional information concerning your specific application, contact AMP Incorporated.



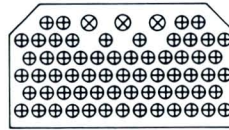
<p>Modification Code</p> <p>The modifications shown on this page apply to both plug and receptacle, unless otherwise specified.</p>	 <p>Mounting Holes (4), .120 Dia., C'Sunk 100° to .230 Dia.</p> <p>#4-40 Thread.</p> <p>Attaching Tabs (2 per Retaining Plate)</p> <p>MODIFICATION 04</p>	 <p>Clinch Nuts (6) with #4-40 UNC-3B Deformed Thread.</p> <p>#4-40 Thread</p> <p>Attaching Tabs (2 per Retaining Plate)</p> <p>MODIFICATION 19</p>	 <p>Floating Bushings (6), Maximum Float is .031 Lateral.</p> <p>MODIFICATION 29</p>
	 <p>Mounting Holes (4), .137 Dia., C'Sunk 82° to .230 Dia.</p> <p>MODIFICATION 08</p>	 <p>Mounting Holes (6), .156^{±.001} Dia.</p> <p>MODIFICATION 20</p>	 <p>Floating Bushings (6), Maximum Float is .031 Lateral.</p> <p>#4-40 Thread</p> <p>Attaching Tabs (2 per Retaining Plate)</p> <p>MODIFICATION 30</p>
<p>DESCRIBES STANDARD CONNECTOR HOUSING</p> <p>MODIFICATION 00</p>	 <p>Mounting Slots (4), .210.</p> <p>MODIFICATION 12 (Receptacle)</p>	 <p>Floating Bushings (4), Maximum Float is .031 Lateral.</p> <p>#4-40 Thread</p> <p>Attaching Tabs (2 per Retaining Plate)</p> <p>MODIFICATION 22</p>	 <p>Floating Bushings (4), Flush Mounted.</p> <p>MODIFICATION 33</p>
 <p>Clinch Nuts (4) with #4-40 UNC-3B Deformed Thread.</p> <p>MODIFICATION 01</p>	 <p>Mounting Slots (4), .237.</p> <p>MODIFICATION 13 (Receptacle)</p>	 <p>Floating Bushings (4), Maximum Float is .031 Lateral.</p> <p>MODIFICATION 23 (Receptacle)</p>	 <p>Floating Bushings (4), Maximum Float is .031 Lateral.</p> <p>MODIFICATION 39 (Plug)</p>
 <p>#4-40 Thread (2 Tabs per Retaining Plate)</p> <p>MODIFICATION 02 (Attaching Tabs)</p>	 <p>Clinch Nuts (4) with #4-40 UNC-3B Deformed Thread.</p> <p>#4-40 Thread</p> <p>Attaching Tabs (2 per Retaining Plate)</p> <p>MODIFICATION 17 (Receptacle)</p>	 <p>Mounting Holes (4), .156^{±.001} Dia.</p> <p>MODIFICATION 25 (Receptacle)</p>	 <p>Clinch Nuts (8) with #4-40 UNC-3B Deformed Thread.</p> <p>MODIFICATION 42 (Four-Insert Shell)</p>
 <p>Mounting Holes (4), .120 Dia., C'Sunk 100° to .230 Dia.</p> <p>MODIFICATION 03</p>	 <p>Clinch Nuts (6) with #4-40 UNC-3B Deformed Thread.</p> <p>MODIFICATION 18</p>	 <p>Mounting Holes (4), .120^{±.002} Dia., C'Sunk 82° to .230 Dia.</p> <p>MODIFICATION 26 (Receptacle)</p>	 <p>Mounting Holes (4), .187^{±.004} Dia. _{-.000}</p> <p>MODIFICATION 46</p>

Contact Arrangements

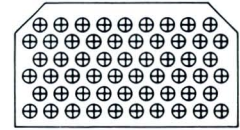
RM and RME Series Connectors



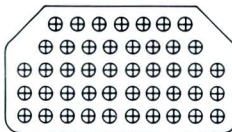
Arrangement 106
106 Size 22 Contacts



Arrangement 67
64 Size 20 Contacts,
3 Size 16 Contacts or
3 Size 15 COAXICON Contacts



Arrangement 57
57 Size 20 Contacts



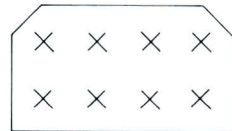
Arrangement 45
45 Size 20 Contacts



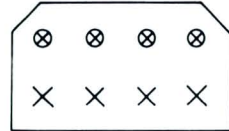
Arrangement 40
40 Size 20 Contacts



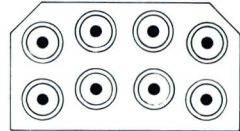
Arrangement 26
26 Size 16 Contacts or
26 Size 15 COAXICON Contacts



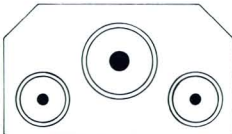
Arrangement 8
8 Size 12 Contacts



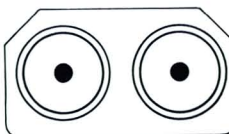
Arrangement D8
4 Size 12 Contacts,
4 Size 16 Contacts or
4 Size 15 COAXICON Contacts



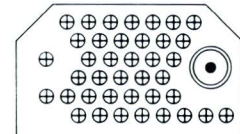
Arrangement C8
8 Size 9 COAXICON Contacts



Arrangement C3
1 Size 3 COAXICON Contact,
2 Size 7 COAXICON Contacts



Arrangement C2
2 Size 1 COAXICON Contacts



Arrangement 40C1
39 Size 20 Contacts,
1 Size 5 COAXICON Contact

⊕ SIZE 22 CONTACT CAVITIES

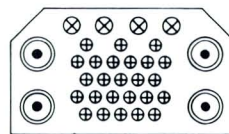
⊕ SIZE 20 CONTACT CAVITIES

⊗ SIZE 16 CONTACT CAVITIES

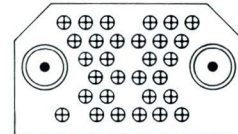
⊗ SIZE 12 CONTACT CAVITIES

⊙ COAXIAL CONTACT CAVITIES

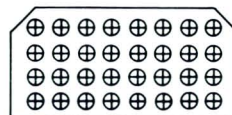
NOTE: Mating face of pin insert shown.
Socket face is mirror image.



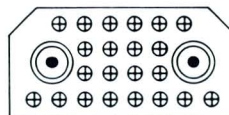
Arrangement 33C4
25 Size 20 Contacts,
4 Size 16 Contacts,
4 Size 5 COAXICON Contacts



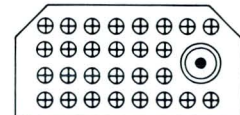
Arrangement 32C2
30 Size 20 Contacts,
2 Size 5 COAXICON Contacts



Arrangement 32
32 Size 20 Contacts



Arrangement 24C2
22 Size 20 Contacts,
2 Size 5 COAXICON Contacts



Arrangement 29C1
28 Size 20 Contacts,
1 Size 5 COAXICON Contact

RA and RE Series Connectors

Size 22 Contacts (Standard)



Pin
M39029/11-22

Socket
M39029/12-22

Pin Diameter — .030
 Pin and Socket Body: Material, copper alloy; Finish, gold over copper
 Socket Sleeve: Material, passivated stainless steel

Contact Type	Wire Size Range (AWG)	Ins. Dia. (Max.)	Tape Mounted Contact No.		Loose Piece Contact No.		Hand Crimping Tool		AMP-TAPEMATIC Stripper/Crimper	
			Pin	Socket	Pin	Socket	Tool No.	Position No.	Machine No.	Funnel No.
MIL-C-39029	26-22	.054	204873-3	205103-2	204873-4	205103-3	M22520/2-01*	M22520/2-23**	599406-6	1-125905-2
Type XVII	30-28	.025	205962-4	205904-2	205962-3	205904-1	M22520/2-01*	M22520/2-23**	—	—

*Equivalent AMP Part No. 601966-1
 **Equivalent AMP Part No. 601966-8

Size 22 Contacts (Special)



Round Solder Post Pin
 Part No. 205753-2 (Loose Piece)



Round Solder Post Socket
 Part No. 205544-1 (Loose Piece)

Pin Diameter — .030
 Solder Post Diameter — .031
 Pin and Socket Body: Material, copper alloy; Finish, gold over nickel
 Socket Sleeve: Material, passivated stainless steel

NOTE: Round solder post contacts can be supplied for use in all RM series connectors. Customers must order connectors and contacts separately, using connector numbering system (page 2) and contact numbers shown above.



Flexible Flat Cable Socket
 Part No. 205917-1 (Strip Form)
 Part No. 205917-2 (Loose Piece)

Socket Body: Material, AMP No. 100-221 (Temper #4);
 Finish, gold over nickel
 Socket Sleeve: Material, passivated stainless steel

Insertion/Extraction Tool
 All size 22 contacts: MS3156-22
 (AMP Part No. 91066-1)

Contact Specifications (Continued)

Size 20 Contacts (Standard)



Pin
M39029/11-20

Socket
M39029/12-20

Pin Diameter — .040
Pin and Socket Body: Material, copper alloy; Finish, gold over copper
Socket Sleeve: Material, passivated stainless steel

Contact Type	Wire Size Range (AWG)	Ins. Dia. (Max.)	Tape Mounted Contact No.		Loose Piece Contact No.		Hand Crimping Tool		AMP-TAPEMATIC Stripper/Crimper	
			Pin	Socket	Pin	Socket	Tool No.	Positioner No.	Machine No.	Funnel No.
MIL-C-39029	24-20	.071	204938-4	205116-2	204938-3	205116-1	M22520/2-01*	M22520/2-08**	599406-6	125905-1
Type XVII	30-26	.071	205791-4	206887-2	205791-2	206887-1	M22520/2-01*	M22520/2-08**	599406-6	2-125905-4

*Equivalent AMP Part No. 601966-1
**Equivalent AMP Part No. 601966-5

Size 20 Contacts (Special)



Pin
(Thermocouple)

Socket
(Thermocouple)

Pin Diameter — .040
Pin and Socket Body: Material, CHROMEEL or ALUMEL; Finish, unplated
Socket Sleeve: Material, passivated stainless steel

Contact Type	Wire Size Range (AWG)	Ins. Dia. (Max.)	Loose Piece Contact No.		Hand Crimping Tool	
			Pin	Socket	Tool No.	Positioner No.
CHROMEEL	24-20	.071	206250-1	206242-1	M22520/2-01*	M22520/2-08**
ALUMEL	24-20	.071	206247-1	206243-1	M22520/2-01*	M22520/2-08**

*Equivalent AMP Part No. 601966-1
**Equivalent AMP Part No. 601966-5



Round Solder Post Pin
Part No. 205547-2 (Loose Piece)

Pin Diameter — .040
Solder Post Diameter — .031
Material, copper alloy; Finish, gold over nickel

NOTE: CHROMEEL, ALUMEL and round solder post contacts can be supplied for use in all RM series connectors. Customers must order connectors and contacts separately, using connector numbering system (page 2) and contact numbers shown above.



Posted Pin
Wrap-Type†
Part No. 206210-2

Pin Diameter — .040
Post — .025 x .025
Material, copper alloy; Finish, gold over nickel

†These contacts are preloaded in special application receptacle connectors. See page 18 for details.

Insertion/Extraction Tool
All size 20 contacts: MS3156-20
(AMP No. 91066-2)

**Size 16 Contacts
(Standard)**

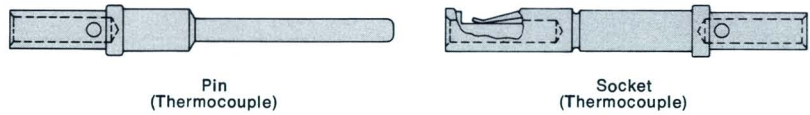


Pin Diameter — .062
 Pin and Socket Body: Material, copper alloy; Finish, gold over copper
 Socket Sleeve: Material, passivated stainless steel

Contact Type	Wire Size Range (AWG)	Ins. Dia. (Max.)	Tape Mounted Contact No.		Loose Piece Contact No.		Hand Crimping Tool		AMP-TAPEMATIC Stripper/Crimper	
			Pin	Socket	Pin	Socket	Tool No.	Positioner No.	Machine No.	Funnel No.
MIL-C-39029	20-16	.103	204978-4	205117-2	204978-3	205117-1	M22520/1-01*	M22520/1-02**	599406-5	125905-6

*Equivalent AMP Part No. 601967-1
 **Equivalent AMP Part No. 601967-2

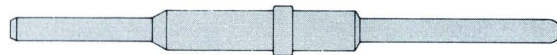
**Size 16 Contacts
(Special)**



Pin Diameter — .062
 Pin and Socket Body: Material, CHROMEL or ALUMEL; Finish, unplated
 Socket Sleeve: Material, passivated stainless steel

Contact Type	Wire Size Range (AWG)	Ins. Dia. (Max.)	Loose Piece Contact No.		Hand Crimping Tool	
			Pin	Socket	Tool No.	Positioner No.
CHROMEL	18-16	.103	206249-1	206245-1	M22520/1-01*	M22520/1-02**
ALUMEL	18-16	.103	206246-1	206244-1	M22520/1-01*	M22520/1-02**

*Equivalent AMP Part No. 601967-1
 **Equivalent AMP Part No. 601967-2



Round Solder Post Pin
 Part No. 205548-2 (Loose Piece)

Pin Diameter — .062
 Solder Post Diameter — .062
 Material: copper alloy; Finish, gold over nickel

NOTE: CHROMEL, ALUMEL and round solder post contacts can be supplied for use in all RM Series connectors. Customers must order connectors and contacts separately, using contact numbering system (page 2) and contact numbers shown above.



Solder Cup Pin
 Part No. 206211-2†

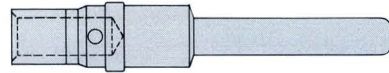
Pin Diameter — .062
 Material: copper alloy; Finish, gold over nickel

†These contacts are preloaded in special application receptacle connectors. See page 18 for details.

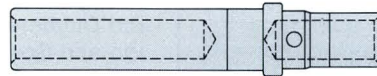
Insertion/Extraction Tool
 All size 16 contacts: MS3156-16
 (AMP No. 91066-3)

Contact Specifications (Continued)

Size 12 Contacts (Standard)



Pin
M39029/11-12



Socket
M39029/12-12

Pin Diameter — .094

Pin and Socket Body: Material, copper alloy; Finish, gold over copper

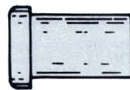
Socket Sleeve: Material, passivated stainless steel

Contact Type	Wire Size Range (AWG)	Ins. Dia. (Max.)	Loose Piece Contact No.		Hand Crimping Tool	
			Pin	Socket	Tool No.	Positioner No.
MIL-C-39029	14-12	.190	205763-3	205851-2	M22520/1-01*	M22520/1-11**

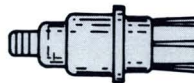
*Equivalent AMP Part No. 601967-1

**Equivalent AMP Part No. 601967-9

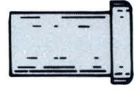
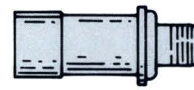
Size 1 COAXICON Contact



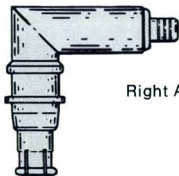
Pin Assembly MS3168



Socket Assembly MS3169



Size 3 COAXICON Contact



Right Angle Pin Assembly
MS3170



Socket Assembly
MS3171



Straight Pin Assembly



Pin and Socket Body Components: Materials, brass and beryllium copper; Finish, gold

Ferrule: Material, annealed copper; Finish, gold

Contact Size	RG/U Cable	AMP Part No.		Center Contact Crimping Tool		Ferrule Crimping Tool No.
		Pin	Socket	Tool No.	Positioner No.	
1 (Straight Exit)	.141 Semi-Rigid	225837-1	—	M22520/2-01*	1-601966-9	220066-1
	214	—	225831-1	220015-1	—	220015-1
	213	—	225831-2	220015-1	—	220015-1
3 (Straight Exit)	214	—	225792-1	220015-1	—	220015-1
	213	—	225792-2	220015-1	—	220015-1
3 (90° Exit)	58C, 141A	226053-1	225792-3	M22520/2-01*	1-601966-8	220066-1
	223, 142B	225803-1	—	M22520/2-01*	1-601966-8	220066-1

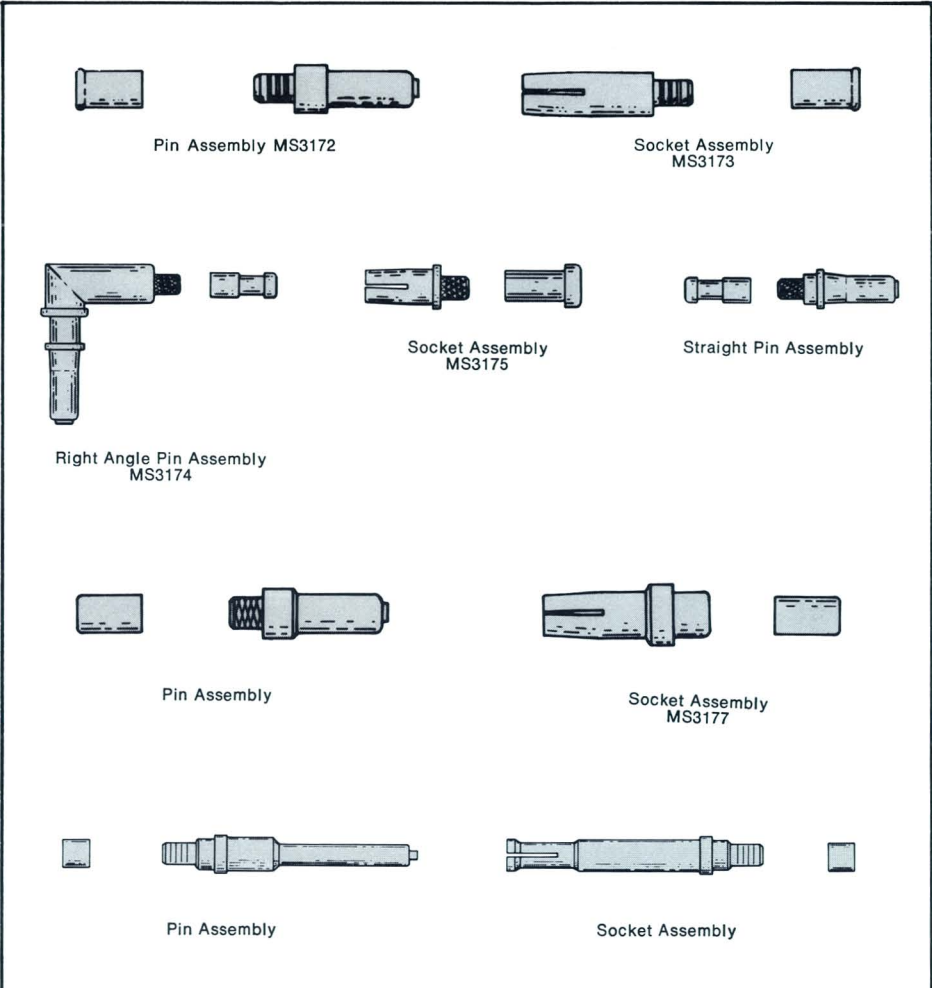
*Equivalent AMP Part No. 601966-1

Size 5 COAXICON Contact

Size 7 COAXICON Contact

Size 9 COAXICON Contact

Size 15 COAXICON Contact



Pin and Socket Body Components: Materials, brass and beryllium copper; Finish, gold
 Ferrule: Material, annealed copper; Finish, gold

Contact Size	RG/U Cable	AMP Part No.		Center Contact Crimping Tool		Ferrule Crimping Tool No.
		Pin	Socket	Tool No.	Positioner No.	
5 (Straight Exit)	58C, 141A	225790-1	225791-1	M22520/2-01*	1-601966-6	220066-1
	223, 142B	225790-2	225791-2	M22520/2-01*	1-601966-6	220066-1
	.141 Semi-Rigid	225790-3	—	M22520/2-01*	1-601966-6	220066-1
	180, 195	225790-4	—	M22520/2-01*	1-601966-6	220066-1
	174, 188, 316	225790-5	225791-3	M22520/2-01*	1-601966-6	220066-1
	179, 187	225790-6	225791-4	M22520/2-01*	1-601966-6	220066-1
7 (Straight Exit)	58C, 141A	—	225796-1	M22520/2-01*	1-601966-7	220066-1
	223, 142B	—	225796-2	M22520/2-01*	1-601966-7	220066-1
	174, 188, 316	226052-1	225796-3	M22520/2-01*	1-601966-7	220066-1
7 (90° Exit)	174, 188, 316	225814-1	—	M22520/2-01*	2-601966-6	220066-1
9 (Straight Exit)	58C, 141	225935-1	225936-2	M22520/2-01*	1-601966-6	220066-1
	.141 Semi-Rigid	—	225936-1	M22520/2-01*	1-601966-6	220066-1
	174, 188, 316	—	225936-3	M22520/2-01*	1-601966-6	220066-1
15 (Straight Exit)	316	225955-1	225950-1	M22520/2-01*	2-601966-8	M22520/4-01**
	179, 187	225955-2	225950-2	M22520/2-01*	2-601966-8	M22520/4-01**

*Equivalent AMP Part No. 601966-1
 **Use Positioner Number 601963-2





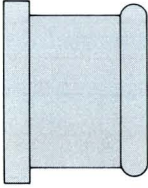
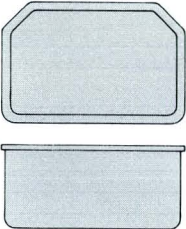
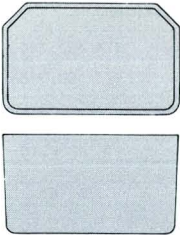
Extraction Tool
 Size 5 and 9 COAXICON Contacts: MS3178-001
 (AMP No. 91074-1)

Sealing Plugs, Boots and Dust Caps

Sealing Plugs

Coaxial Sealing Plug and Boot

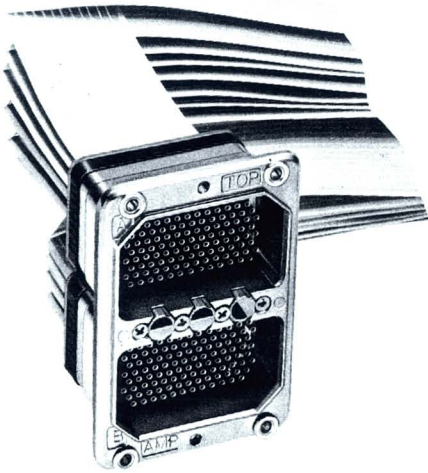
Dust Caps (For RM and RME Series Only)

Size 22	
	<p>Material: TEFLON; Color, white Part No. 204760-1 (MS27187-3)</p>
Size 20	
	<p>Material: Thermoplastic; Color, red Part No. 203839-1 (MS27488-20)</p>
Size 16	
	<p>Material: Thermoplastic; Color, blue Part No. 203839-2 (MS27187-1)</p>
Size 12	
	<p>Material: Thermoplastic; Color, yellow Part No. 205574-1 (MS27187-2)</p>
Size 5	
	<p>Material: Silicone rubber Plug Part No. 205975-1 Boot Part No. 205402-1 (for RG-223 Cable) Boot Part No. 205402-2 (for RG-58C Cable)</p>
	<div style="text-align: center;">  <p>Plug Cap Part No. 205282-1</p> </div> <div style="text-align: center;">  <p>Receptacle Cap Part No. 205283-1</p> </div>
	<p>Material: Transparent Vinyl</p>

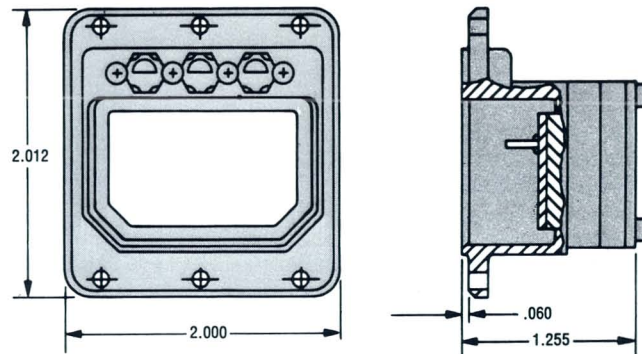
Rear Release Connectors for Special Applications

Flexible Flat Cable Receptacle, 106-Contact Arrangement

These single- and two-insert connectors with 106-contact arrangements are designed to accept 12-, 13- and 14-conductor cables having .060/.065" wide x .002/.004" thick conductors on .100" centers. Cables may be of any desired length and can be machine terminated using AMP's high performance insulation displacement technique. This technique eliminates cable preparation, stripping and conductor plating as well as heat damage inherent with solder and weld methods. The connector end of the cable is terminated with snap-in socket contacts which mate with screw-machined pin contacts, while the other end may be optionally terminated with various AMP contacts to satisfy specific requirements.



Single-Insert



RM1R

Material and Finish

Shell: Die cast aluminum alloy per QQ-A-591

Grommet Protector (RM1R only): aluminum alloy, powder coated, blue epoxy

Insert Retention Plate (RM2R only): aluminum alloy, blue anodized per MIL-A-8625

Screws and Washers: Stainless Steel, Passivated

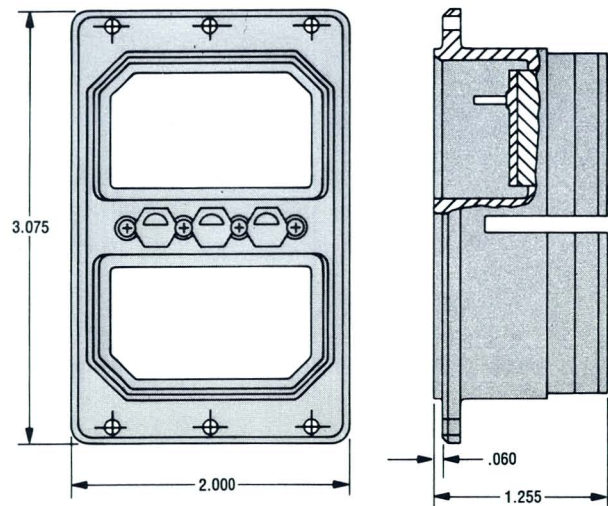
Dielectric, Hard: Epoxy per MIL-M-24325

Dielectric, Interfacial Seal: Silicone rubber

Keying Inserts: Aluminum

NOTE: These receptacles use size 22 flexible flat cable sockets (page 11) in a 106-contact arrangement. They will mate with any standard RM and RME series plug having the same contact arrangement and number of inserts. Customers must order the Flexible Flat Cable receptacles using the connector numbering system (page 2) and "CS" designation for contact type.

Two-Insert



RM2R

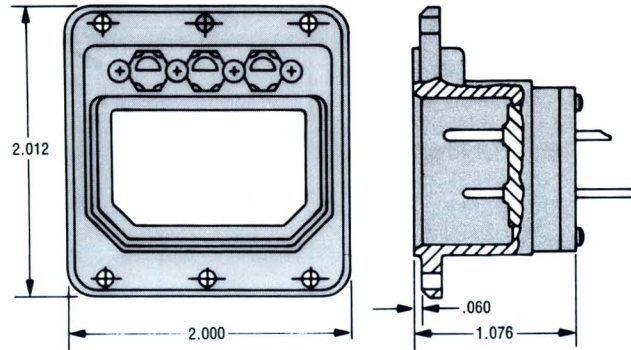
**Rear Release
Connectors for
Special Applications
(Continued)**

**.025 x .025 Posted
Contact Receptacle,
67-Contact Arrangement**

These single- and two-insert connectors are designed to provide wire connections using miniature wrap-type and solder terminating techniques. They are furnished with contacts preloaded in a 67-contact arrangement. This particular configuration comprises 64 size 20 pins with .025" sq. posts (page 12) and 3 size 16 solder cup pins (page 13). The posted pins are equipped with .425^{±.025}" long posts and will accept up to 2 terminations per post for high-density connections, while the solder cup pins feature AMP's "solderable" gold plating for optimum solderability. These special application receptacles will mate with any standard RM and RME series plug having an identical contact arrangement and number of inserts.



Single-Insert



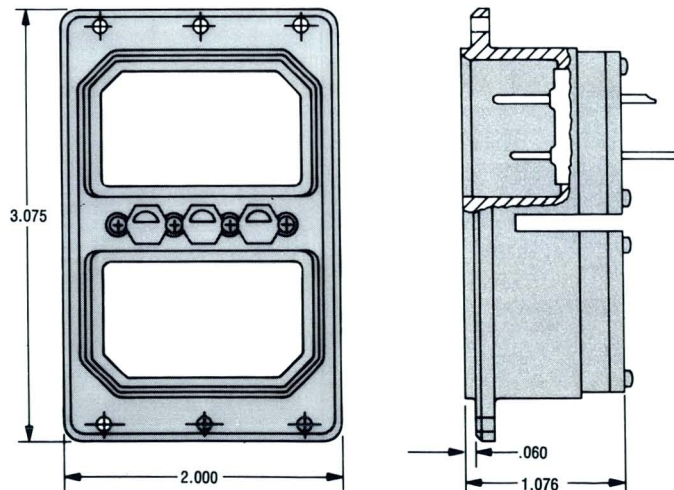
Part No. 206629

Material and Finish

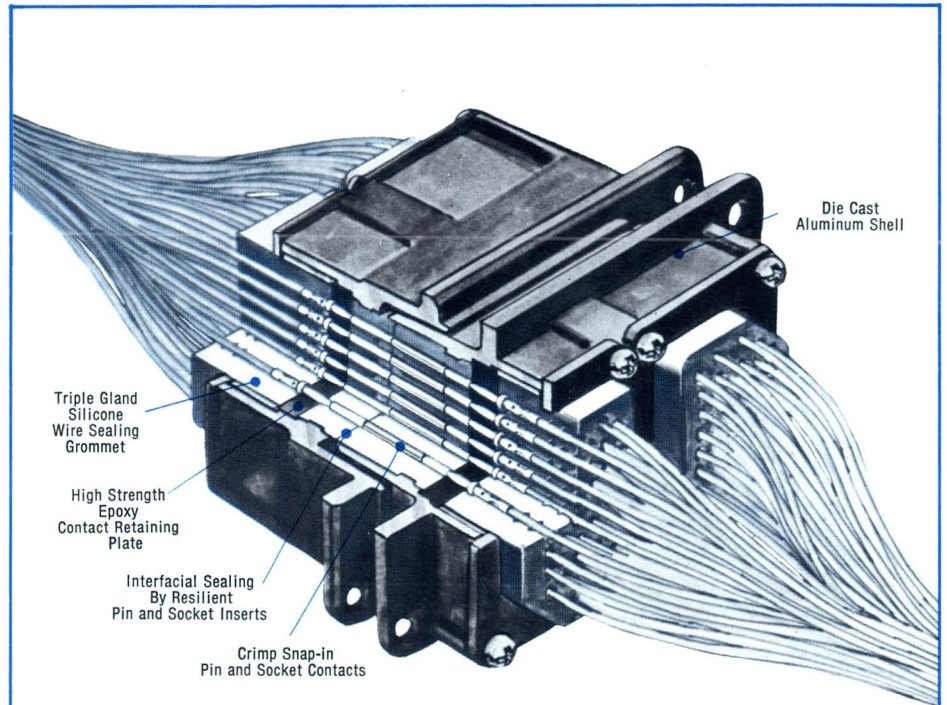
- Shell: Die cast aluminum alloy per QQ-A-591, cadmium plated with yellow chromate conversion per QQ-P-416
- Insert Retention Plate: Aluminum alloy, blue anodized per MIL-A-8625
- Dielectric, Hard: Epoxy per MIL-M-24325
- Dielectric, Interfacial Seal: Silicone rubber
- Screws and Washers: Stainless steel, passivated
- Keying Inserts: Aluminum

NOTE: These receptacles are supplied preloaded only with a 67-contact arrangement (64 size 20 pins with .025" sq. posts and 3 size 16 solder cup pins). Customers must order the .025" x .025" Posted Contact receptacles using the AMP part numbers shown.

Two-Insert



Part No. 206624



Material Specifications

Shell: Aluminum alloy, black anodized per QQ-P-416

Insert Retention Plate: Aluminum alloy, cadmium plated per MIL-A-8625

Dielectric, Hard: Epoxy fibrous
Dielectric, Interfacial Seal: Silicone rubber

Keying Inserts and Posts: Stainless steel

Performance Specifications (per AMP Specification 108-10, 017)

Tests were conducted on an AM Series Connector with a 57-position insert containing size 20 contacts on #20 AWG wire.

Insulation Resistance (Initial):
5,000 megohms

Insulation Resistance (High Temp):
2,000 megohms

Insulation Resistance (After Moisture): 1,000 megohms

Maintenance Aging: 10 contact insertions — extractions

Termination Resistance:
5 milliohms (max.)

Dielectric Strength (Sea Level):
2,000 volts, ac (test voltage)

Temperature Rating:
-65° C to + 125° C

Current Rating:
Size 20 (#20 AWG Wire), 7.5 amps
Size 16 (#16 AWG Wire), 13.0 amps

Contact Retention: 20 lbs.

Connector Mating Force:
35 lbs. (max.) per insert

Contact Engagement Force:
12 oz. (max.)

Contact Separation Force:
0.75 oz. (min.)

Thermal Shock: MIL-STD-202, Method 107, Condition B

Vibration: MIL-STD-202, Method 204, Condition B

Physical Shock: MIL-STD-202, Method 205, Condition C

Moisture Resistance:
MIL-STD-202, Method 106

Altitude Moisture Injection:
Reduced Pressure (50,000 ft.) followed by a return to Atmospheric Pressure by introducing air at 99% Humidity, 5 cycles.

Durability:
500 cycles of mating — unmating

Salt Spray: MIL-STD-202, Method 101, Condition B

Ordering Information

Part Number Explanation (For AM, AD & ADS Series)

AMP recommends that this numbering system be used to insure that the front release, rack and panel connector you order meets your exacting requirements.

NOTE: For contact arrangement Layout, see page 9-242.

AD 3 P 124 S 124 S 124 S — 80 01 (001)

Customer Ordering Code
(See Page 9-233)

Polarization Code
(See Pages 9-234 and 9-235)
01 thru 99 Keying Positions

Modification Code
(See Page 9-231)
50 — Same as Modification 80, except shell plating cadmium with yellow chromate treatment.
80 — Standard connector housing for 20 contacts in insert arrangements which normally specify size 20 contacts.
81 — Mounting slots—.237 wide.
83 — Mounting holes .120 dia. C'Sunk 100° to .230 dia.
85 — Mounting holes .156 dia.
88 — Brass bushing clearance hole for #4 screw (4).
89 — Clinch nuts, deformed thread.

Contact Type (Module C)
P—Pin
S—Socket

Contact Arrangement (Module C)
Quantity of Contacts at Location C

Contact Type (Module B)
P—Pin
S—Socket

Contact Arrangement (Module B)
Quantity of Contacts at Location B

Contact Type (Module A)
P—Pin
S—Socket

Contact Arrangement (Module A)
Quantity of Contacts at Location A

Shell Configuration
P—Plug
R—Receptacle

Number of Inserts per Shell, 1 thru 6
(Modules A thru F)

Series Designator
AM—Standard Environmental
AD—High Density Environmental (Miniature)
ADS—High Density (Miniature)

AA P 32 S — 88 (001)

Customer Order Code
(See Page 9-233)

Modification Code
(See Page 9-241)
88 — Brass bushing, clearance hole for #2 screw (4).

Contact Type
P—Pin
S—Socket

Contact Arrangement

Shell Configuration
P—Plug
R—Receptacle

Series Designator
AA—Environmental (Miniature)

(For AA Series)

Customer Ordering Code

This three-digit code is for customer ordering convenience. If used, it is to be added in parentheses to the end of the part number. Customers may request the establishment of codes other than those listed by contacting AMP Incorporated.

Code No.	Description
None	Assembled connector contacts (population + 10%) and sealing plugs (15% of population) are included in a separate container within the connector package.
001	Assembled connector only. Contacts and sealing plugs must be ordered separately by AMP part number.
002	Basic connector assembled. Necessary keying hardware not assembled but is included in a separate container within the connector package. Contacts and sealing plugs must be ordered separately by AMP part number.
003	Applies to coaxial connectors only. Signal contacts (+ 10%) and sealing plugs (15%) are included. Coaxial contacts must be ordered separately.
100	Same as "none" except: shell and retainer plate finish is cadmium plating olive drab.
101	Same as 001 except: shell and retainer plate finish is cadmium plating olive drab.
102	Same as 002 except: shell and retainer plate finish is cadmium plating olive drab.
103	Same as 003 except: shell and retainer plate finish is cadmium plating olive drab.

Polarization Code

Positions



NOTES:

1. Darkened portion indicates extended part of post in plug; light portion indicates key hole in receptacle.
2. If the two digits indicating the Polarization Code are omitted, the keying is assembled in position "01" by the manufacturer. The keying position is not stamped on the connector.
3. If the Polarization Code is assigned "00", keying is omitted and must be ordered separately. The keying position is not stamped on the connector.
4. Mating face is shown with top up.

PLUG

Position	Left Post	Center Post	Right Post
00	—	—	—
01	1	1	1
02	2	1	1
03	3	1	1
04	4	1	1
05	5	1	1
06	6	1	1
07	1	1	6
08	2	1	6
09	3	1	6
10	4	1	6
11	5	1	6
12	6	1	6
13	1	1	5
14	2	1	5
15	3	1	5
16	4	1	5
17	5	1	5
18	6	1	5
19	1	1	4
20	2	1	4
21	3	1	4
22	4	1	4
23	5	1	4
24	6	1	4
25	1	1	3
26	2	1	3
27	3	1	3
28	4	1	3
29	5	1	3
30	6	1	3
31	1	1	2
32	2	1	2
33	3	1	2
34	4	1	2
35	5	1	2
36	6	1	2
37	1	2	1
38	2	2	1
39	3	2	1
40	4	2	1
41	5	2	1
42	6	2	1
43	1	2	6
44	2	2	6
45	3	2	6
46	4	2	6
47	5	2	6
48	6	2	6
49	1	2	5

RECEPTACLE

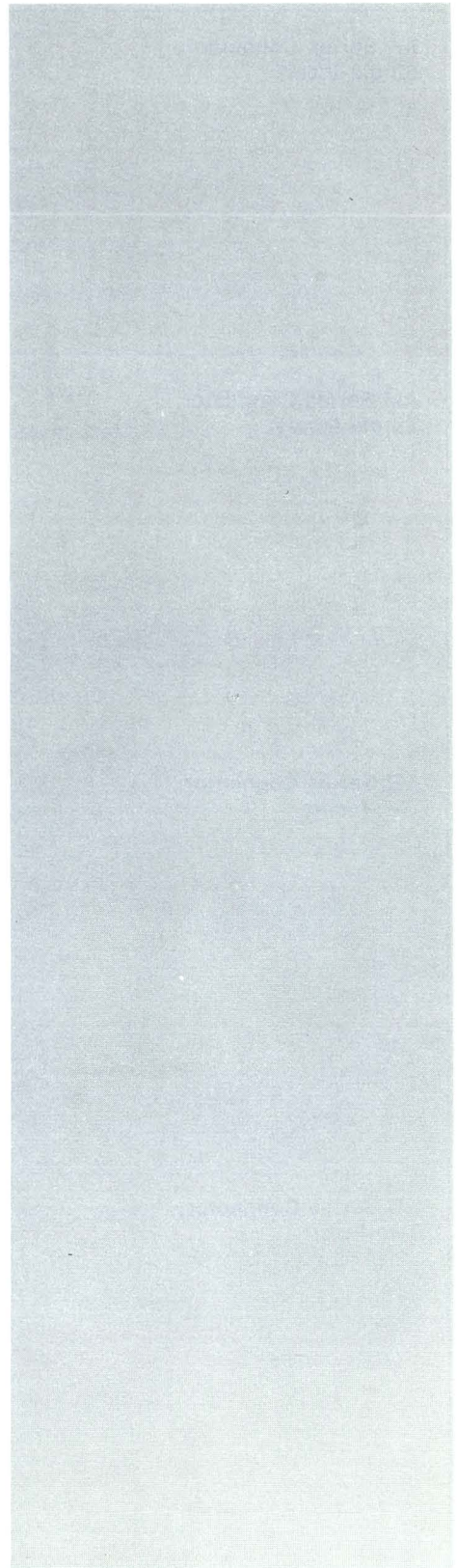
Position	Left Key	Center Key	Right Key
00	—	—	—
01	4	4	4
02	4	4	3
03	4	4	2
04	4	4	1
05	4	4	6
06	4	4	5
07	5	4	4
08	5	4	3
09	5	4	2
10	5	4	1
11	5	4	6
12	5	4	5
13	6	4	4
14	6	4	3
15	6	4	2
16	6	4	1
17	6	4	6
18	6	4	5
19	1	4	4
20	1	4	3
21	1	4	2
22	1	4	1
23	1	4	6
24	1	4	5
25	2	4	4
26	2	4	3
27	2	4	2
28	2	4	1
29	2	4	6
30	2	4	5
31	3	4	4
32	3	4	3
33	3	4	2
34	3	4	1
35	3	4	6
36	3	4	5
37	4	3	4
38	4	3	3
39	4	3	2
40	4	3	1
41	4	3	6
42	4	3	5
43	5	3	4
44	5	3	3
45	5	3	2
46	5	3	1
47	5	3	6
48	5	3	5
49	6	3	4

PLUG

Position	Left Post	Center Post	Right Post
50	2	2	5
51	3	2	5
52	4	2	5
53	5	2	5
54	6	2	5
55	1	2	4
56	2	2	4
57	3	2	4
58	4	2	4
59	5	2	4
60	6	2	4
61	1	2	3
62	2	2	3
63	3	2	3
64	4	2	3
65	5	2	3
66	6	2	3
67	1	2	2
68	2	2	2
69	3	2	2
70	4	2	2
71	5	2	2
72	6	2	2
73	1	3	1
74	2	3	1
75	3	3	1
76	4	3	1
77	5	3	1
78	6	3	1
79	1	3	6
80	2	3	6
81	3	3	6
82	4	3	6
83	5	3	6
84	6	3	6
85	1	3	5
86	2	3	5
87	3	3	5
88	4	3	5
89	5	3	5
90	6	3	5
91	1	3	4
92	2	3	4
93	3	3	4
94	4	3	4
95	5	3	4
96	6	3	4
97	1	3	3
98	2	3	3
99	3	3	3

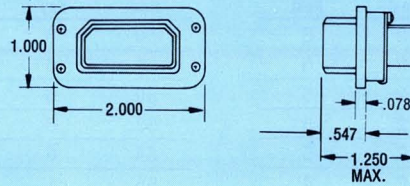
RECEPTACLE

Position	Left Key	Center Key	Right Key
50	6	3	3
51	6	3	2
52	6	3	1
53	6	3	6
54	6	3	5
55	1	3	4
56	1	3	3
57	1	3	2
58	1	3	1
59	1	3	6
60	1	3	5
61	2	3	4
62	2	3	3
63	2	3	2
64	2	3	1
65	2	3	6
66	2	3	5
67	3	3	4
68	3	3	3
69	3	3	2
70	3	3	1
71	3	3	6
72	3	3	5
73	4	2	4
74	4	2	3
75	4	2	2
76	4	2	1
77	4	2	6
78	4	2	5
79	5	2	4
80	5	2	3
81	5	2	2
82	5	2	1
83	5	2	6
84	5	2	5
85	5	2	4
86	5	2	3
87	6	2	2
88	6	2	1
89	6	2	6
90	6	2	5
91	1	2	4
92	1	2	3
93	1	2	2
94	1	2	1
95	1	2	6
96	1	2	5
97	2	2	4
98	2	2	3
99	2	2	2



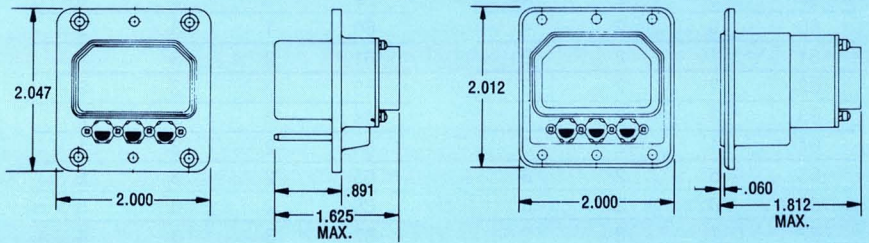
Shell Specifications

AA Series Connector, Single-Insert



Plug (AAP)

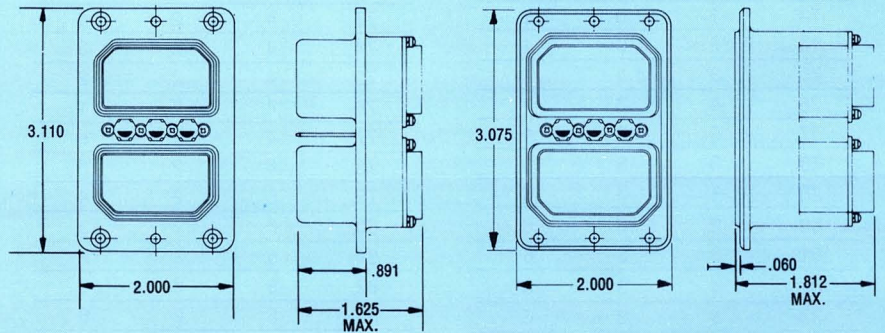
AM Series Connector, Single-Insert



Plug (AM1P)

Receptacle (AM1R)

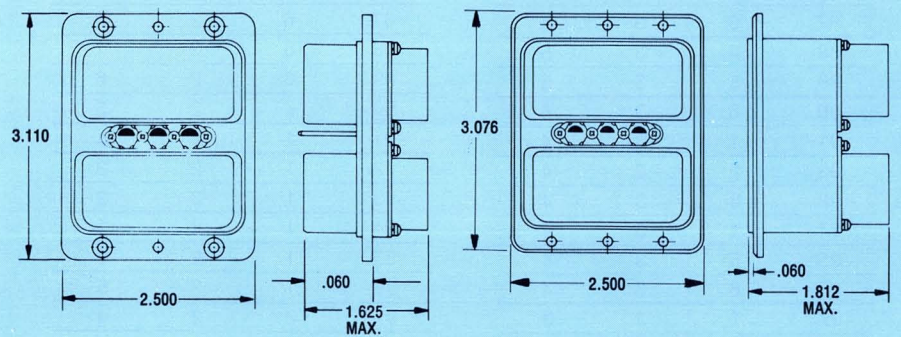
AM Series Connector, Two-Insert



Plug (AM2P)

Receptacle (AM2R)

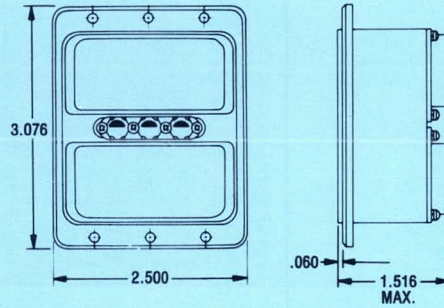
AD Series Connector, Two-Insert



Plug (AD2P)

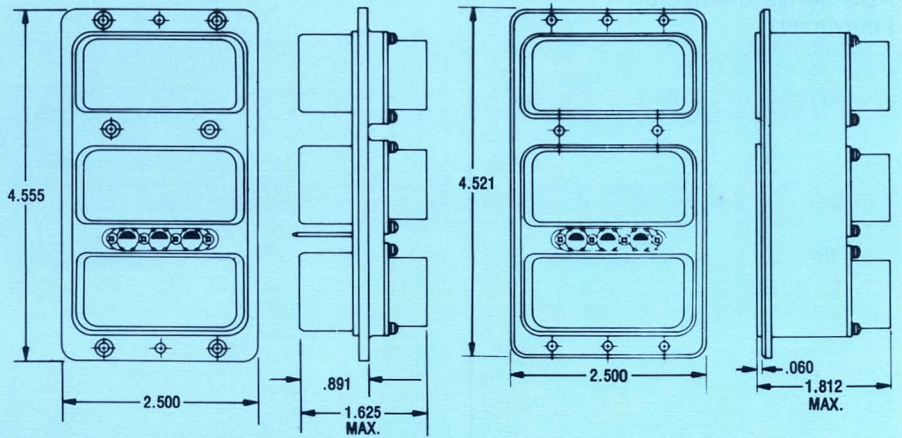
Receptacle (AD2R)

**ADS Series Connector,
Two-Insert**



Receptacle (ADS2R)

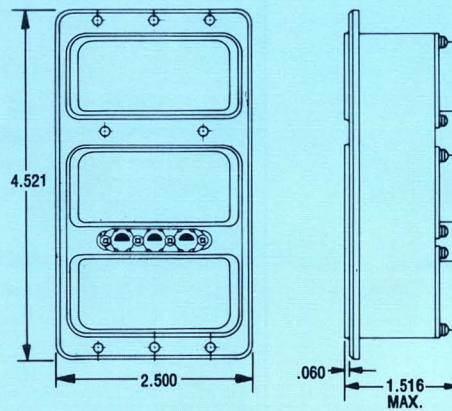
**AD Series Connector,
Three-Insert**



Plug (AD3P)

Receptacle (AD3R)

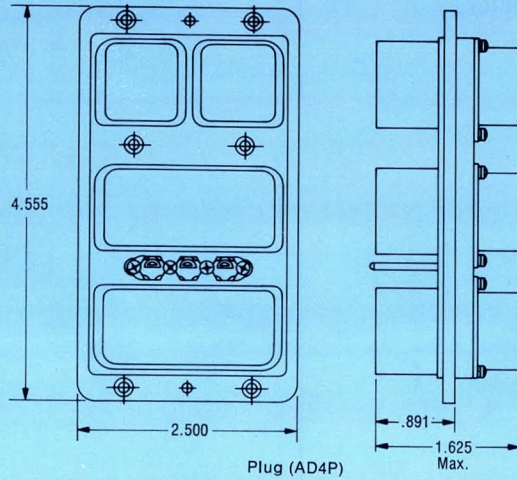
**ADS Series Connector,
Three-Insert**



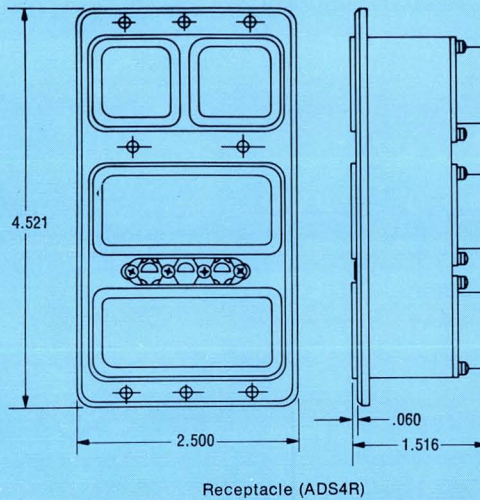
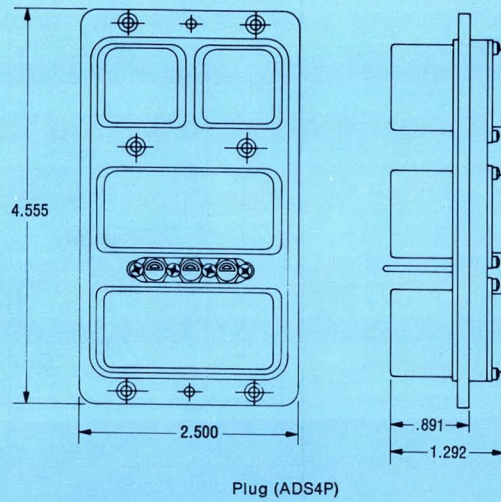
Receptacle (ADS3R)

Shell Specifications
(Continued)

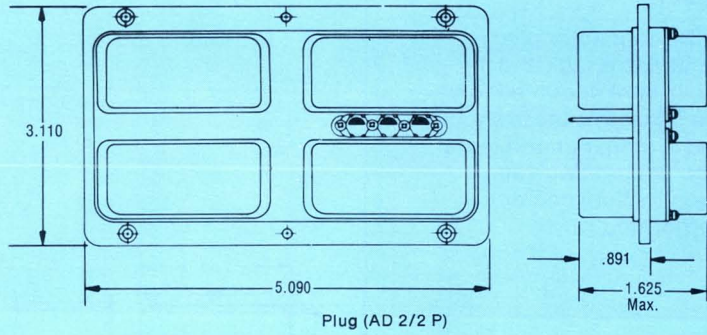
AD Series Connector,
Four-Insert



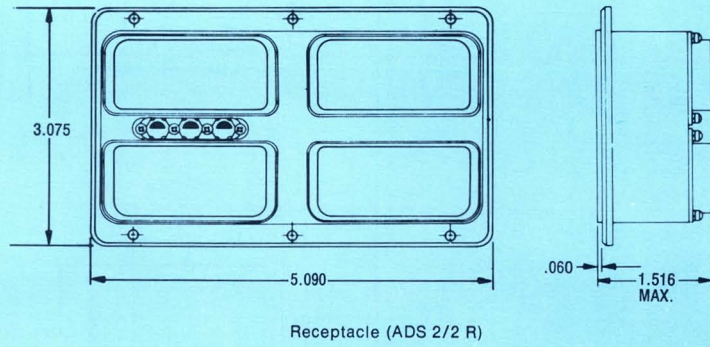
ADS Series Connector,
Four-Insert



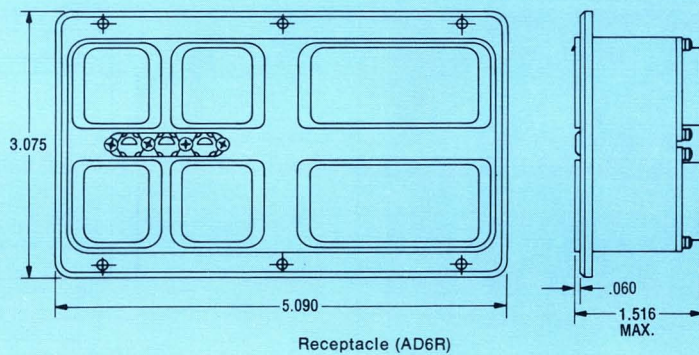
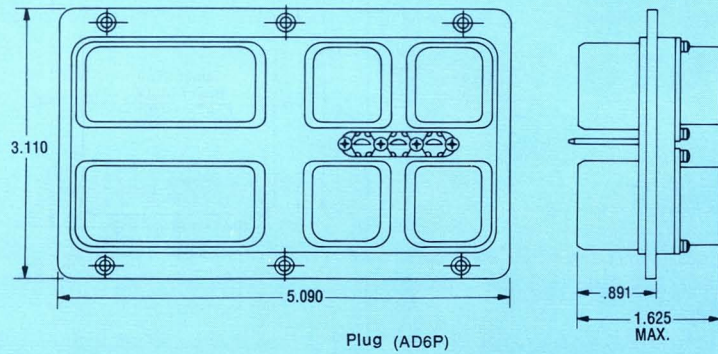
**AD Series Connector,
2/2 Insert**



**ADS Series Connector,
2/2-Insert**



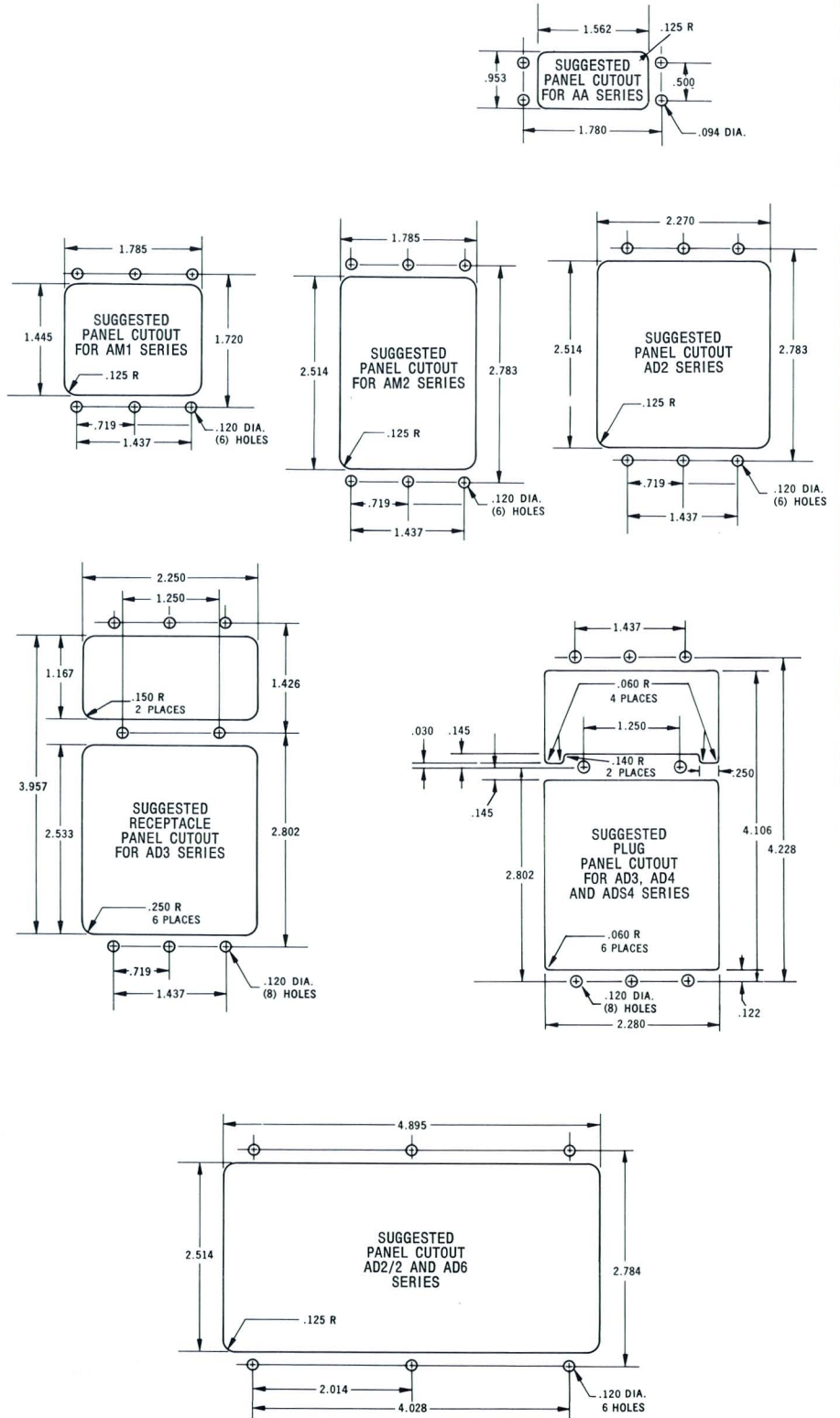
**AD Series Connector,
Six-Insert**



Mounting Specifications

Panel Cutouts

Normally the connector plug is front-mounted to a rack and the receptacle is back-mounted to a panel. The panel thickness should not exceed $\frac{1}{8}$ inch. For additional information concerning your specific application, contact AMP Incorporated.



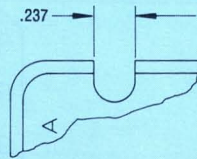
**Modification Code
(For AM, AD & ADS Series)**

Same as Modification 80
Except: Shell Plating,
Cadmium with Yellow
Chromate Treatment.
Plating per QQ-P-416.

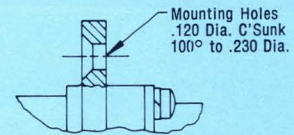
MODIFICATION 50

Standard Connector
Housing for Insert
Arrangements Which Normally
Specify Size 20 Contacts.

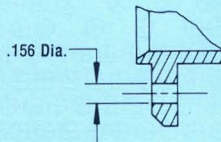
MODIFICATION 80



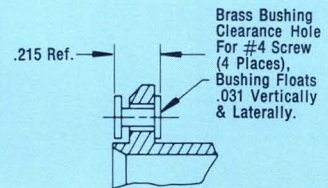
MODIFICATION 81



MODIFICATION 83



MODIFICATION 85

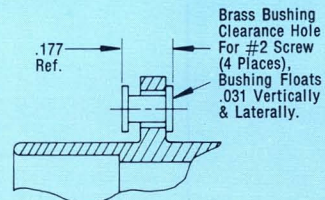


MODIFICATION 88
Floating Bushing



MODIFICATION 89

**Modification Code
(For AA Series)**



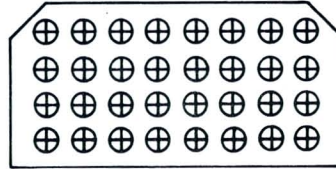
MODIFICATION 88
Floating Bushing

Contact Arrangements

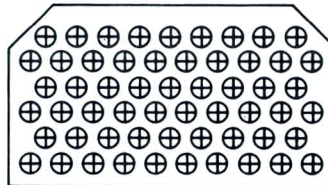
AA Series Connectors

AM Series Connectors

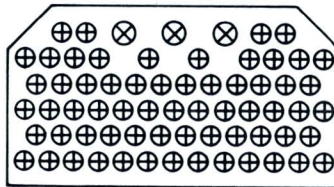
AD and ADS Series Connectors



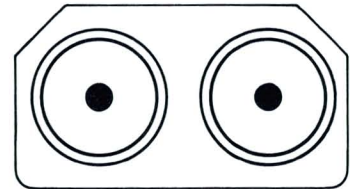
Arrangement 32
32 Size 20 Contacts



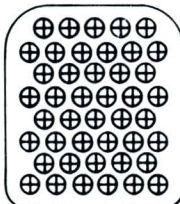
Arrangement 57
57 Size 20 Contacts



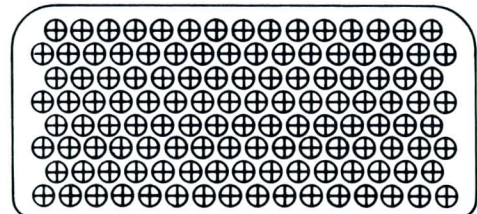
Arrangement 67
64 Size 20 Contacts
3 Size 16 Contacts



Arrangement C2
2 Size 0 COAXICON Contacts



Arrangement 44
44 Size 20 Contacts



Arrangement 124
124 Size 20 Contacts

⊕ Size 20 Contact Cavities

⊗ Size 16 Contact Cavities

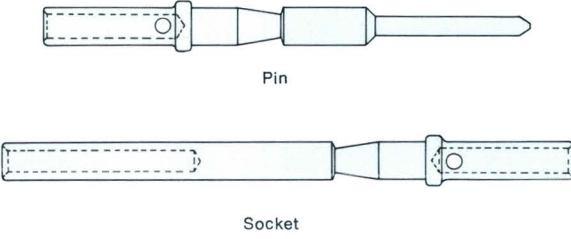
⊙ Coaxial Contact Cavities

NOTE: Mating face on pin insert shown. Socket face is mirror image.

Size 20 Contacts

Insertion Tool
All Size 20 Contacts:
AMP No. 91039-1

Extraction Tool
All Size 20 Contacts:
AMP No. 91040-1



Pin

Socket

Pin Diameter — .040
Pin and Socket Body: Material, copper alloy; Finish, gold
Socket Sleeve: Material, passivated stainless steel

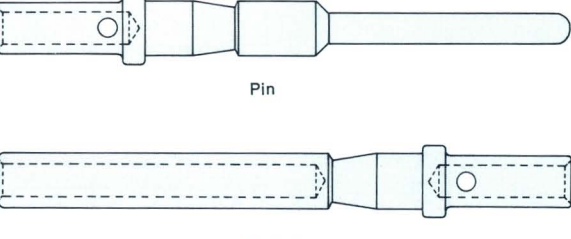
Wire Size Range (AWG)	Ins. Dia. (Max.)	Tape Mounted Contact No.		Loose Piece Contact No.		Hand Crimping Tool		AMP-TAPEMATIC Stripper/Crimper	
		Pin	Socket	Pin	Socket	Tool No.	Positioner No.	Machine No.	Funnel No.
24-20	.072	203840-3	203841-2	203840-2	203841-1	M22520/2-01*	601966-9	599406-6	125905-8

*Equivalent AMP Part No. 601966-1

Size 16 Contacts

Insertion Tool
All Size 16 Contacts:
AMP No. 91039-3

Extraction Tool
All Size 16 Contacts:
AMP No. 91040-3



Pin

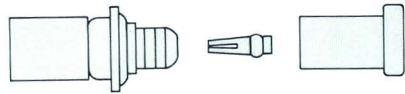
Socket

Pin Diameter — .062
Pin and Socket Body: Material, copper alloy; Finish, gold
Socket Sleeve: Material, passivated stainless steel

Wire Size Range (AWG)	Ins. Dia. (Max.)	Tape Mounted Contact No.		Loose Piece Contact No.		Hand Crimping Tool		AMP-TAPEMATIC Stripper/Crimper	
		Pin	Socket	Pin	Socket	Tool No.	Positioner No.	Machine No.	Funnel No.
20-16	.103	—	—	203884-2	203885-1	M22520/1-01*	M22520/1-02**	599406-5	125905-6

*Equivalent AMP Part No. 601967-1
**Equivalent AMP Part No. 601967-2

Size 0 COAXICON Contact




Socket Assembly

Socket Body Components: Material, brass and beryllium copper; Finish, gold
Ferrule: Material, annealed copper; Finish, gold

Cable Size	Socket Assembly Part No.	Hand Crimping Tool No.	Extraction Tool No.
RG-214/U	51781-1	69646	91040-7
MI-5224	51781-2	69646	91059-8

Sealing Plugs



Size 20
Material: Nylon; Color, Red
Part No. 26522-1

Size 16
Material: Nylon; Color, Blue
Part No. 26523-1

Application Tooling

Insertion and Extraction Tools

For Rear Release Connector Contacts



Insertion/Extraction Tool
MS3156 (AMP No. 90166)

AMP recommends this standard military-type service tool for proper contact replacement. Made of highly durable plastic, it is designed for removing and installing both pins and sockets without a need for separate tool tips.

Contact Size	Insertion/Extraction Tool No.	Handle Colors	
		Insertion End	Extraction End
22	91066-1	Black	White
20	91066-2	Light Green	White
16	91066-3	Blue	White

For Front Release Connector Contacts



Insertion Tool
(AMP No. 91039)



Extraction Tool
(AMP No. 91040)

For proper replacement of front release pin and socket contacts, AMP recommends the following tools:

Contact Size	Insertion Tool No.	Insertion Tool Tip No.	Extraction Tool No.	Extraction Tool Tip No.
20	91039-1	126117-1	91040-1	126118-1
16	91039-3	126117-3	91040-3	126118-3

NOTE: Tips may be ordered separately since the life expectancy of the tool is the greater.

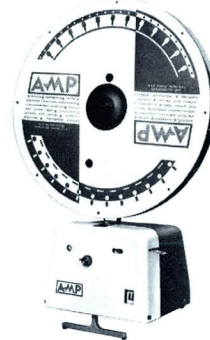
Hand Crimping Tools



Hand Tools M22520/1
and M22520/2

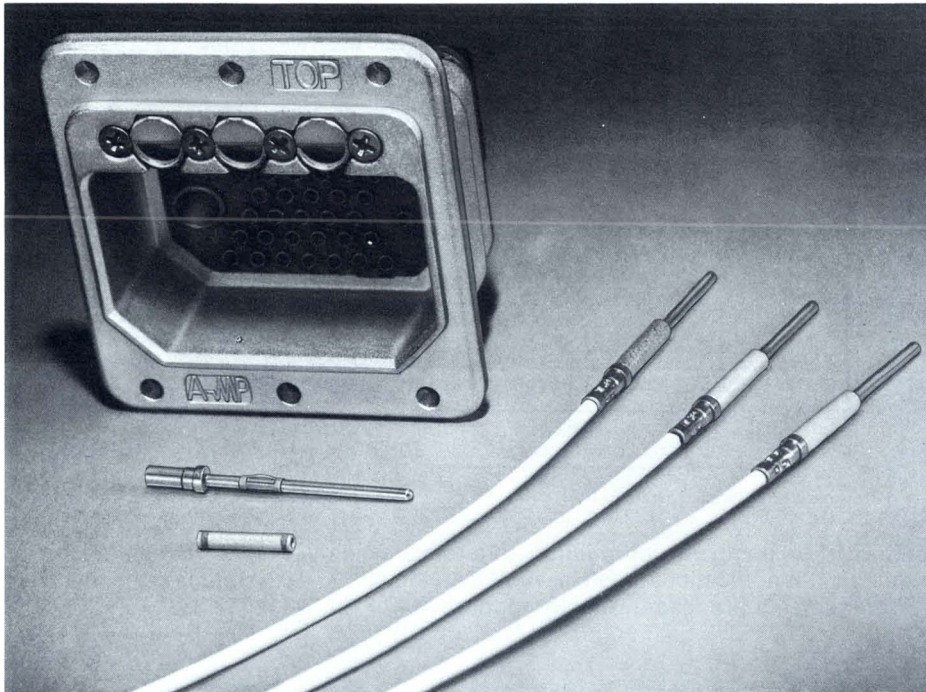
These standard hand crimping tools are used to terminate pins and sockets to wire with the M22520/1-01 and M22520/2-01 crimps. They are ideally suited for small production, prototype and field maintenance applications.

AMP-TAPEMATIC Stripper/Crimper Machine



Stripper/Crimper Machine
(AMP No. 599406)

This electrically powered, portable machine strips wire and applies an 8-indent crimp termination per MIL-C-22520. It strips solid and stranded wire and terminates screw-machined pins and sockets which are tape mounted and reel fed. It offers production rates of up to 1200 finished leads per hour, provides overall lower applied costs and maintains the highest degree of termination reliability.



Now available with circuit filtering is the 40C1 AMP RM and RME Series Connectors that provide high-density circuit connections as well as a reliable and economic means of suppressing electromagnetic interference (EMI) in today's compact, highly sophisticated systems. These rack and panel connectors, in both standard (RM) and fully sealed (RME) versions, offer the benefits of reduced weight, lower applied cost and increased serviceability through the use of AMP's crimp snap-in contacts and the Rear Release System for contact loading and retention.

Each insert contains two beryllium copper ground planes that provide a low impedance path between the filters and the connector's metallic shell. This double ground plane design also assures redundant protection against shock and vibration, which is extremely vital in airborne equipment. When pins are installed in the connector, continuity is established through a contact spring located on the pins. Shell mounting then completes the circuit path to the equipment.

The filters themselves are of a distributed feed-thru type featuring a ferrite-titanate composition and one-piece construction. Their design not only assures greater physical strength for a given size than other types, but also superior performance independent of system impedance. The filters are removed and installed through the connector front face with a simple hand tool, while pins are loaded and unloaded through the rear. This allows the filters and pins to be replaced independently and without a need to dismantle the connector. It also minimizes the possibility of filter damage since only the pins are handled during hand or machine termination to leads.

For added flexibility, AMP also furnishes insulators and conductive ground sleeves for applications in which only partial filtering is desired or where it is required to ground at the connector. These components are replaceable in the same manner as the filters and with the same tooling.

AMP Filtered Connectors

Features

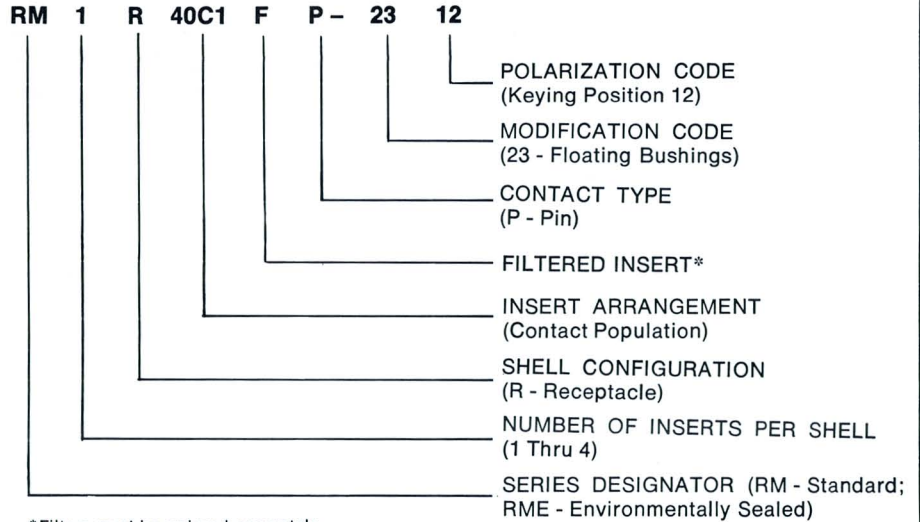
- One-piece filter construction assures added strength and superior performance independent of system impedance.
- Filters, insulators and ground sleeves easily replaced through connector mating face.
- Simple hand tool is used for both insertion and removal.
- Filters and pins are removed and installed separately for easy servicing.
- Inserts equipped with double ground plane for excellent protection against shock and vibration and optimum attenuation (superior to single plane or conductive rubber).
- Unrestricted placement of filters, insulators and ground sleeves within inserts.
- Filtering capability available for RM and RME Series connectors and insert arrangement accommodating size 20 pins.
- Interfacial sealing provides moisture barrier for mated connectors.
- Rear Release System permits use of standard military-type tooling for servicing pins.
- Pins can be furnished tape-mounted for high-speed machine termination.

Specifications subject to change.
Consult AMP Incorporated for the latest design specifications.

Ordering Data

AMP recommends that the following part numbering system be used when ordering connectors with the filtering capability. It is similar to

the one used for connectors with conventional inserts, except for the added letter "F".



*Filters must be ordered separately.

NOTE: For complete information regarding available keying combinations and shell modifications, request AMP Catalog No. 73-162. Details of all insert arrangements are also available, request AMP Print No. 205101.

Typical Performance Characteristics

Filtered Pin

Voltage Rating (to + 125°C): 200 VDC; 125 VAC (rms), 60 - 400 Hz

Current Rating: 0.50 A (RF current); DC current determined by connector pin rating

Dielectric Withstanding Voltage: 500 VDC for 5 sec capacitance 4000 pf min. @ 1 KHz (RMS) @ 25°C

Minimum: No load

Insertion Loss per MIL-STD-220 (Size No. 20 Contact):

Minimum	Typical
3 db @ 4 MHz	3 db @ 2 MHz
10 db @ 10 MHz	13 db @ 10 MHz
50 db @ 100 MHz	60 db @ 100 MHz
Greater than 60 db @ 250 MHz to 10 GHz	70 db @ 250 MHz

Insulation Resistance (@ + 25°C): @ 100 VDC

Minimum	Typical
Greater than 5×10^8 ohms	2×10^9 ohms

Filtered Connector

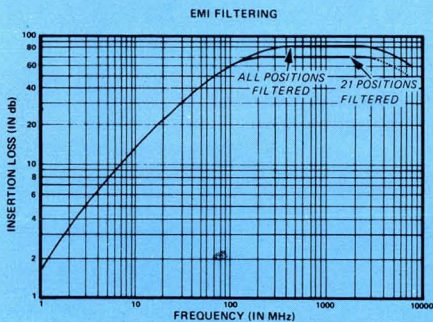
Voltage Rating (to + 125°C): 200 VDC; 125 VAC (rms), 60 - 400 Hz

Current Rating: 0.25 A (RF current); DC current determined by connector pin rating

Insertion Loss per MIL-STD-220: See graphs.

Environmental Testing (MIL-STD-220): Moisture Resistance per Method 106B; Vibration per Method 204B, Test Cond. B*; Shock per Method 213, Test Cond. J*; Thermal Shock per Method 107, Test Cond. B; Maintenance Aging (5 cycles in Ground Plane, 10 cycles with Pin in Filter)

*Insertion Loss @ 10 MHz, monitored with interruptions greater than 1 Msec during testing.



Connector

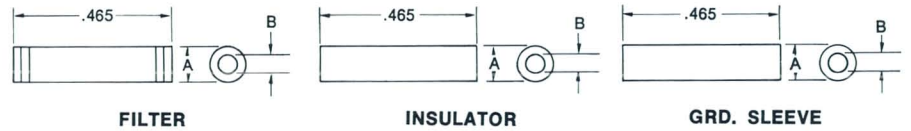
Filter, Insulator, Ground Sleeve

Insert Arrangements

Filtered Pins

Materials:

- Shell — Die cast aluminum alloy; cadmium plated
- Insert Retention Plate — Aluminum alloy; blue anodized
- Contact Retention Springs — Stainless steel
- Dielectric, Hard — Glass-filled epoxy
- Dielectric, Soft — Silicone rubber
- Double Ground Plane — Beryllium copper; silver plated
- Spacer — Glass-filled epoxy
- Screws and Washers — Steel; cadmium plated
- Keying Inserts and Screws — Stainless steel, passivated



Materials:

- Filter — Ferrite-titanate composition; .000015 (min.) gold over .000030 (min.) nickel over electroless copper plated
- Insulator — Nylon
- Ground Sleeve — Brass; .000100 (min.) silver plated

Component	Contact Size	A (Dia.)	B (Dia.)	Part No.	Insertion/Extraction Tool No.
Filter	20	.096 / .083	.052 / .043	205808-1	91075-1
Insulator	20	.091 / .083	.047 / .043	205810-1	91075-1
Grd. Sleeve	20	.091 / .083	.048 / .043	205812-1	91075-1

Insert Arrangement	Contact Population (per Insert)*
40C1	39 Pins, Size 20 1 Coaxial Contact, Size 5

*Inserts are available for all RM and RME Series receptacles with single, dual, triple and quadruple shell configurations.

NOTE: For shipment, connectors do not have contacts installed: pins are included in a separate container within the connector package. Also, filters, insulators, ground sleeves and coaxial contacts are not included in the package: they must be ordered separately.



Size 20 — Pin Diameter .040

Materials: Leaded copper; gold plated

Contact Size	Wire Size Range (AWG)	Ins. Dia. (Max.)	Loose Piece Contact No.	Tape-Mounted Contact No.	Insertion Extraction Tool No.	Crimping Tool	
						Tool No.	Positioner No.
20	24-20	.071	205719-1	205719-2	91066-2	M22520/2-01	M22520/2-08



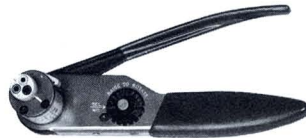
**Filter
Insertion/Extraction Tool,
AMP No. 91075**

This simple, inexpensive hand tool is designed for removing and installing filters, insulators and ground sleeves. Only one tool is required to replace all filter components within a given size.



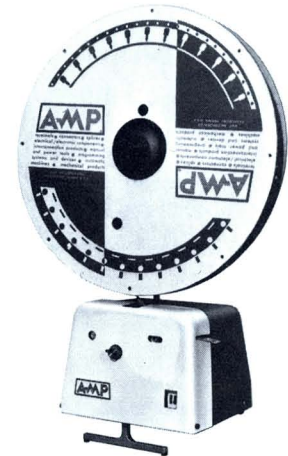
**Contact
Insertion/Extraction Tool,
AMP No. 91066**

AMP recommends this standard military-type service tool for proper contact replacement. It is designed for removing and installing both pins and sockets without a need for separate tools.



Hand Crimping Tools

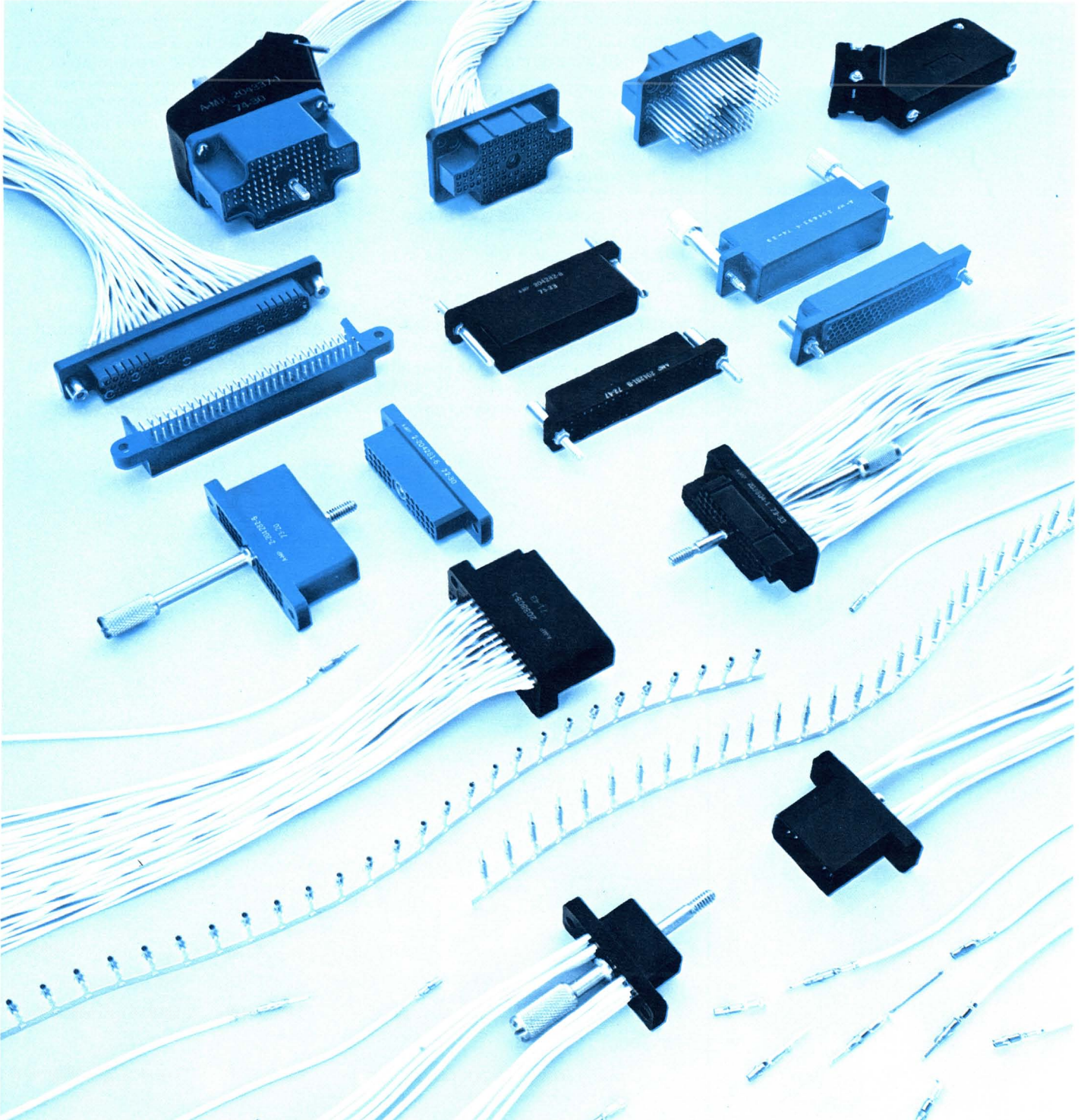
These standard hand crimping tools are used to terminate pins and sockets to wire with either the M22520/1-01 or M22520/2-01 crimp. They are ideally suited for small production, prototype and field maintenance applications.



AMP-TAPEMATIC Stripper/Crimper Machine

This electrically powered, portable machine strips wire and applies an 8-indent crimp termination per MIL-C-22520. It strips solid and stranded wire and terminates screw-machined pins and sockets which are tape-mounted and reel fed. It offers production rates of up to 1200 finished leads per hour, provides overall lower applied costs and maintains the highest degree of termination reliability.

HIGH DENSITY RECTANGULAR CONNECTORS



High Density Rectangular Connectors

Dimensioning:

All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

Introduction



Recognized Under the
Component Recognition
Program of Underwriters'
Laboratories, Inc.
Electrical File E28476

High Density Rectangular (HDR) connectors are designed in response to ever-increasing demands for miniaturization. The grid spacing of .100" x .100" [2.54 mm x 2.54 mm] provides the greatest density on the market for a connector accommodating a 20 thru 30 AWG [0.6 thru 0.05 mm²] wire range.

A variety of contact configurations and platings permits great design flexibility. Machine terminated, crimp snap-in contacts are available for the entire wire range. Also available are .022" x .036" [0.56 mm x 0.91 mm] posts on the socket contact for TERMI-POINT automatic machine wiring and .025" [0.64 mm] square posts on pin and socket contacts suitable for wrap-type wiring.

This unique connector is available in 12, 24, 36, 48, 54 and 106 positions in a rectangular housing. A special 95-position connector rounds out this group of rack and panel configured connectors.

A two piece, 80-position connector has been developed for printed circuit boards.

Versatility is designed into this family of connectors. Housings are available with or without center fasteners. The 12-, 24-, 36-, and 48-position connectors are available without center fastener holes. Housing material for most connectors is diallyl phthalate or phenolic. When mounting connectors with jackscrews, the receptacle half should be mounted to the chassis or panel. The turnable jackscrews should be positioned on the plug half containing the cable assembly.

Tooling for terminating leads is also available to meet every production requirement. For limited production or prototype applications, the CERTI-CRIMP hand tool is ideal. Automatic machines are designed to fit various in-plant production needs.

Dimensioning:

All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

Applicable Specifications

The following specifications and standards form a part of these specifications as noted herein.

Military Specifications:

MIL-W-16878 Wire, Electrical, Insulated, High Temperature

AMP Specifications:

108-10204 Type XI Contact Crimping Specification

Military Standards:

MIL-STD-105 Sampling Procedures and Tables for Inspection by Attributes

MIL-STD-202 Test Methods for Electronic and Electrical Component Parts

MIL-STD-1344 Test Methods for Electrical Connectors

Construction

Plug and Receptacle Connectors — Connectors are molded plastic blocks categorized by the number of contact positions and type of material.

Pin Assembly — The pin body is fabricated from brass and conforms to MIL-C-50 or ASTM-B-36. The plating is gold per MIL-G-45204 over nickel per QQ-N-290. The retention spring sleeve is fabricated from stainless steel and conforms to QQ-S-766.

Socket Assembly — The socket body is made of brass per MIL-C-50 or ASTM-B-36. Plating is gold per MIL-G-45204 over nickel per QQ-N-290. The stainless steel retention spring sleeve conforms to QQ-S-766.

Shields and Cable Clamps — Shields and cable clamps are molded polysulfone components conforming to MIL-P-46120.

Keying Pins and Sockets — Brass keying pins and sockets conform to QQ-B-626 or ASTM-B-16, with cadmium plating per QQ-P-416 or stainless steel per QQ-S-763.

Jackscrews and Hardware — Locking rings, washers, bushings, retaining rings, nuts and screws are stainless steel conforming to QQ-S-763 or QQ-S-766.

Quality Assurance Provisions

Connector assemblies are qualified in the following sequence: product examination, mating/unmating force, insulation resistance, dielectric strength, low-level contact resistance, contact resistance, contact engagement/separation force, thermal shock, vibration, contact resistance, physical shock, durability, moisture resistance, low-level contact resistance, contact retention, crimp tensile strength, product examination. Requalification is done after 18 months or whenever a change is made that would affect product performance.

Lot Acceptance Inspection — Piece parts, subassemblies and assemblies are inspected and tested for conformance to the Performance and Environmental Requirements above.

Connector Qualification Samples — Each sample connector assembly is wired with a full complement of contacts which have been crimped to wires; connectors are of the largest insert density.

Samples are selected to include diallyl phthalate and phenolic materials with contacts (gold-plated), and with 20-30 AWG [0.6-0.05 mm²] wire.

Contact Qualification Samples — Twenty pairs of contact pins and sockets for each wire size are qualified as described below.

Qualification Test Conformance — Test results must statistically establish that 99% of the products remain within specification, with a 95% confidence level.

Test Sample Disposition — After testing, each plug and receptacle and each test sample of contacts is separately packaged and includes unit identification and all test results.

Test Environments and Conditions — Unless otherwise stated, all tests are conducted under the following conditions: 20° to 30°C, 30% to 80% relative humidity, and 24 to 31 in. [81 to 104 kPa] barometric pressure.

Dimensioning:

1. All dimensions in inches over millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Quality Assurance Provisions (Cont'd)

Examination of Product — Connector components are visually examined before, during and after testing. Changes in physical characteristics beyond drawing and/or specification allowance are considered a test failure.

Contact Engagement and Separation — Twenty socket contacts are tested. The force to engage the maximum steel gage pin must not exceed 10 oz. [2.8 N]; engagement is limited to a depth of .180" ± .010" [4.57 mm ± 0.25 mm]. Separation force must not be less than .75 oz. [0.2 N].

Connector Mating and Unmating Force — With center fasteners removed, the force required to mate or unmate any pair of connectors shall not exceed 15 oz. [4.2 N] per contact for gold plated contacts.

Low Level Contact Resistance — When 20 mated pairs of contacts are tested per Method 3002 (MIL-STD-1344), the low level contact resistance of each mated pair shall not exceed 10 milliohms.

Termination Resistance — Twenty mated pairs of size 20 contacts are tested per Method 307 (MIL-STD-202). With the test currents listed below, maximum resistance values must not exceed the values tabulated.

TERMINATION RESISTANCE			
Wire Size		Test Current (AC Amperes)	Max. Resistance (Milliohms)
AWG	mm ²		
20	0.5-0.6	7.5	11.0
22	0.3-0.4	5.0	11.5
24	0.2	3.0	12.0
26	0.12-0.15	2.0	14.0
28	0.08-0.09	1.5	16.0
30	0.05	1.0	19.0
.025 × .025		2.0	14.0
0.64 × 0.64	Post		
.022 × .036		2.0	14.0
0.56 × 0.91	Post		

Insulation Resistance — Connector assemblies are tested per Method 3003 (MIL-STD-1344). Twenty measurements are taken between adjacent contacts for each connector housing material and centerline spacing being tested. Insulation resistance in megohms must not be less than the values listed below.

INSULATION RESISTANCE		
Material	Initial	Final
Phenolic	5,000	100
Diallyl Phthalate	50,000	5,000

Dielectric Strength — Unmated connector assemblies are tested per Method 3001 (MIL-STD-1344) at the voltage and simulated altitudes shown below. All connectors are wired so that the voltage is applied between all adjacent contacts and between the hardware and closest contacts. The test voltage is applied at a rate not exceeding 500 volts per second until the applicable voltage shown below is reached.

DIELECTRIC STRENGTH (VOLTAGE AC RMS)		
Altitude		Voltage
Feet	Metres	
Sea Level	—	1,000
25,000	7 620	600
50,000	15 240	300

Thermal Shock — There must be no damage detrimental to operation when unmated connectors are tested per MIL-STD-202, Method 107. Diallyl phthalate connectors are subjected to Test Condition F, while phenolic connectors are tested per Test Condition B, except the low temperature is -55°C.

Durability — Connector assemblies with gold contacts must withstand 500 cycles of mating/unmating without damage. This cycling simulates service at a rate not exceeding 300 cycles per hour.

Vibration — When mated connector assemblies are vibrated per MIL-STD-202, Method 204, Condition A, they must show no evidence of cracking, loosening, or loss of continuity for more than 1 microsecond. Continuity checks are

made with 0.1 ampere flowing through contacts.

Physical Shock — Mated connectors must withstand shocks tests described in MIL-STD-202, Method 213, Condition H, without physical damage or loss of continuity (continuity checks described under "Vibration").

Moisture Resistance — When unmated connectors are tested per MIL-STD-202, Method 106 (excluding step 7B), the insulation resistance shall not be less than 5000 megohms (minimum) for diallyl phthalate and 100 megohms (minimum) for phenolic.

Contact Retention — Each contact to be tested is inserted and removed 10 times. After this, the force to dislodge contacts from the plug or receptacle housing must not be less than 7.5 pounds [33 N] in phenolic or 5 pounds [22 N] in diallyl phthalate. The force is applied at approximately 1 pound [4.5 N] per second.

Contact Crimp Strength — When 20 pin and socket contacts crimped to each wire size are tested per Method 2003 (MIL-STD-1344), the strength of the wire crimp must not be less than the values listed.

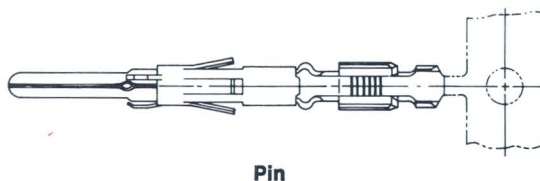
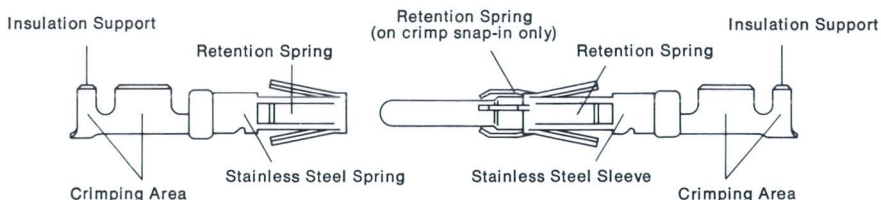
CONTACT CRIMP STRENGTH			
Wire Size		Tensile	
AWG	mm ²	Lb.	N
20	0.5-0.6	20.0	89
22	0.3-0.4	12.0	53
24	0.2	8.0	36
26	0.12-0.15	5.0	22
28	0.08-0.09	3.0	13
30	0.05	1.5	7

Industrial Gas — Unmated contacts which have not been crimped to wire are placed in a closed plastic or glass chamber containing 2 cubic feet [46.61 l] (maximum) of a 10% solution of potassium sulfide in distilled water. Contacts are not immersed, but are exposed to the sulfide vapor for 100 hours. They then must pass the qualification tests listed under "Quality Assurance Provisions."

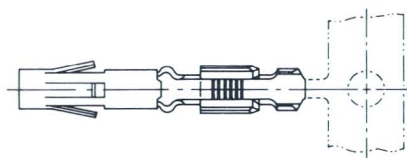
Dimensioning:

1. All dimensions in inches over millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Crimp Snap-in Contacts



Pin



Socket



Part No. 90260-1



**Part No. 90223-5
CERTI-CRIMP Hand Tools**



**Insertion Tool
Part No. 91042-1**

Materials: Pin and Socket Body—brass
Contact Sleeve—stainless steel

Finish: Gold/Nickel—.000030" [0.00076 mm] gold over .000050" [0.00127 mm] nickel
Sel. Gold/Nickel—Gold flash over .000050" [0.00127 mm] nickel with .000030" [0.00076 mm] gold on contact area

CONTACT SIZE 20, PIN DIAMETER .040" [1.02 mm]
(Current Rating—7.5 amperes with 20 AWG [0.5-0.6 mm²] wire)

Wire Size Range		Ins. Dia. Max.	Contact Finish	Strip Form		Loose Piece		Hand Tool No.
AWG	mm ²			Pin	Socket	Pin	Socket	
20-24	0.6-0.2	.062 1.57	Gold/Nickel	203816-1	203802-1	203816-3	203802-3	90260-1
			Sel. Gold/Nickel	203816-2	203802-2	203816-4	203802-4	
26-30	0.15-0.05	.048 1.22	Gold/Nickel	203874-1	203875-1	203874-3	203875-3	90223-5
			Sel. Gold/Nickel	203874-2	203875-2	203874-4	203875-4	

Dimensioning:

1. All dimensions in inches over millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

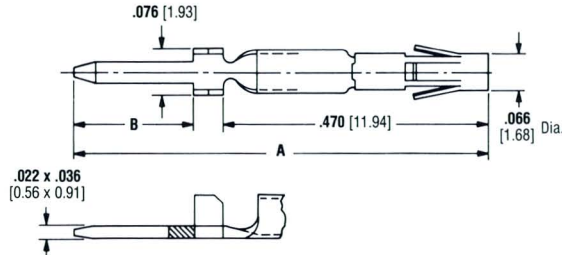
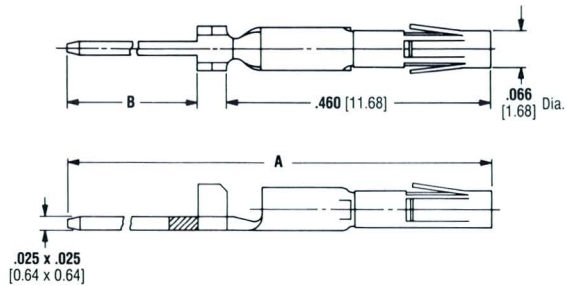
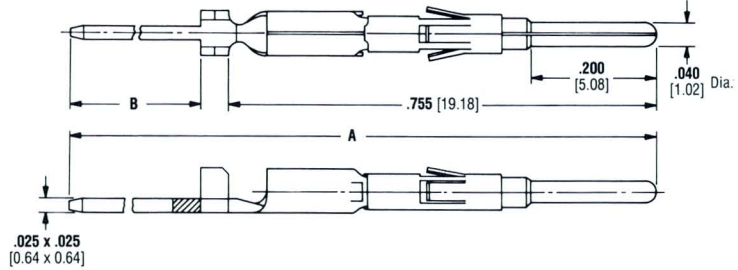
**Pin Contact,
Wrap-type,
.025" [0.64 mm]
Square Post**

**Socket Contact,
Wrap-type,
.025" [0.64 mm]
Square Post**

**Socket Contact,
TERMI-POINT Clip or
Wrap type, .022" x .036"
[0.56 mm x 0.91 mm] Post**



**Extraction Tool
Part No. 91038-3**



Materials: Pin and Socket Body—brass
Contact Sleeve—stainless steel

Finish: Gold/Nickel—.000030" [0.00076 mm] gold over .000050" [0.00127 mm] nickel
Sel. Gold/Nickel—Gold flash over .000030" [0.00076 mm] nickel with .000030" [0.00076 mm] gold on contact area

CONTACT SIZE 20, PIN DIAMETER .040" [1.02 mm]
(Current Rating—7.5 amperes with 20 AWG [0.5-0.6 mm²] wire)

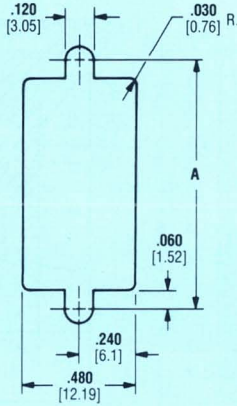
Contact Type XI (Size 20)	Max. Terminations per Post	Dimensions		Contact Part Numbers*	
		A	B	Gold/Nickel	Sel. Gold/Nickel
Pin Contact, Wrap-Type, .025 x .025 [0.64 x 0.64] Post	1	1.022 25.96	.257 6.53	1-205171-0	205171-7
	2	1.236 31.39	.471 11.96	1-205171-1	205171-8
	3	1.450 36.83	.685 17.4	1-205171-2	205171-9
Socket Contact, Wrap-Type .025 x .025 [0.64 x 0.64] Post	1	.767 19.48	.257 6.53	1-205172-0	205172-7
	2	.981 24.92	.471 11.96	1-205172-1	205172-8
	3	1.195 30.35	.685 17.4	1-205172-2	205172-9
Socket Contact, TERMI-POINT Clip or Wrap-Type, .022 x .036 [0.56 x 0.91] Post	1	.755 19.18	.235 5.97	205391-1	205391-7
	2	.905 22.99	.385 9.78	205391-2	205391-8
	3	1.055 26.8	.535 13.59	205391-3	205391-9

*Loose piece contacts for maintenance and repair only. Part number indicates 100 pieces per bag.

Unloaded Connector Blocks

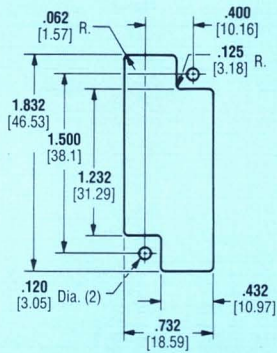
Dimensioning:
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

12, 24, 36 & 48 Positions

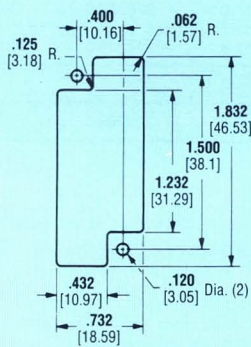


Recommended Panel Cut-Out

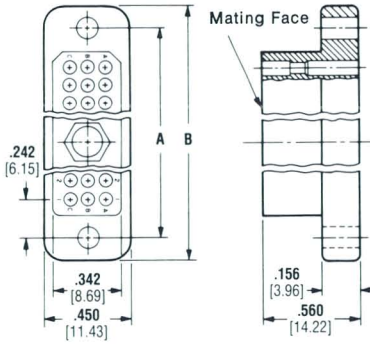
54 Position



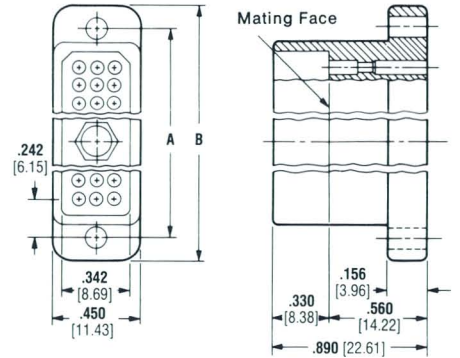
Recommended Panel Cut-out for plug



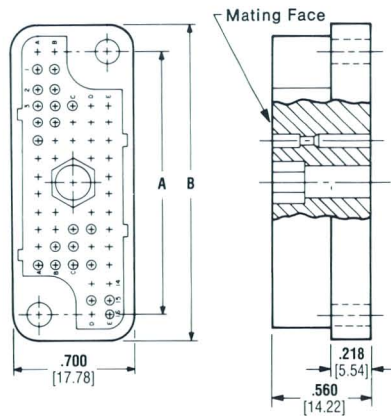
Recommended Panel Cut-Out for Receptacle



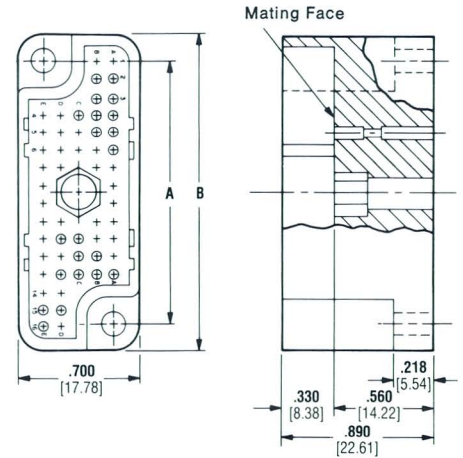
Plug Assembly



Receptacle Assembly



Plug Assembly

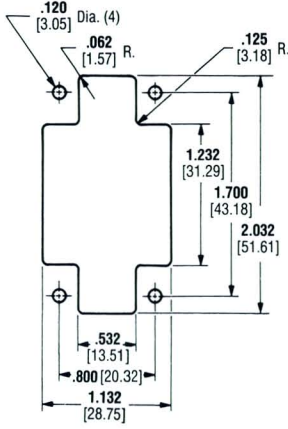


Receptacle Assembly

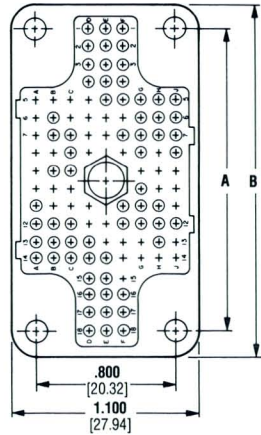
Dimensioning:

1. All dimensions in inches over millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

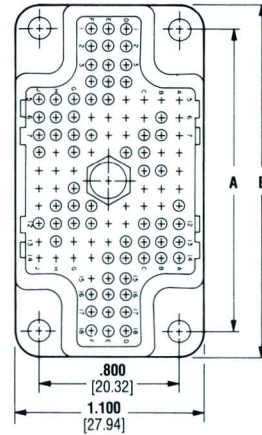
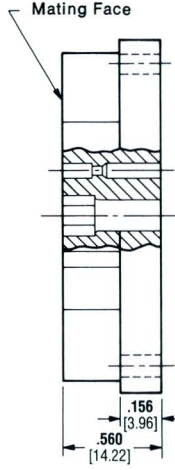
106 Position



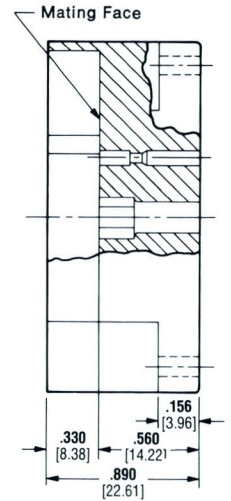
Recommended Panel Cut-Out



Plug Assembly



Receptacle Assembly



Center Fastener	No. of Positions	Dimensions		Center Fastener Type	Plug Half		Receptacle Half	
		A	B		Phenolic	Diallyl Phthalate	Phenolic	Diallyl Phthalate
Assembled	12	1.084 24.43	1.334 33.88	Fixed Female	204727-1	204727-2	204728-1	204728-2
				Long Male Turnable	204739-1	204739-2	204740-1	204740-2
				Short Male Turnable	204739-3	204739-4	204740-3	204740-4
	24	1.484 37.69	1.734 44.04	Fixed Female	204729-1	204729-2	204730-1	204730-2
				Long Male Turnable	204741-1	204741-2	204742-1	204742-2
				Short Male Turnable	204741-3	204741-4	204742-3	204742-4
	36	1.884 47.85	2.134 54.2	Fixed Female	204731-1	204731-2	204732-1	204732-2
				Long Male Turnable	204743-1	204743-2	204744-1	204744-2
				Short Male Turnable	204743-3	204743-4	204744-3	204744-4
	48	2.284 58.01	2.534 64.36	Fixed Female	204733-1	204733-2	204734-1	204734-2
				Long Male Turnable	204745-1	204745-2	204746-1	204746-2
				Short Male Turnable	204745-3	204745-4	204746-3	204746-4
	54	1.500 38.1	1.800 45.72	Fixed Female	204735-1	204735-2	204736-1	204736-2
				Long Male Turnable	204747-1	204747-2	204748-1	204748-2
				Short Male Turnable	204747-3	204747-4	204748-3	204748-4
	106	1.700 43.18	2.000 50.8	Fixed Female	204737-1	204737-2	204738-1	204738-2
Long Male Turnable				204749-1	204749-2	204750-1	204750-2	
Short Male Turnable				204749-3	204749-4	204750-3	204750-4	
Unassembled	12	1.084 24.43	1.334 33.88	—*	204281-2	2-204281-2	204282-2	2-204282-2
	24	1.484 37.69	1.734 44.04	—*	204281-4	2-204281-4	204282-4	2-204282-4
	36	1.884 47.85	2.134 54.2	—*	204281-6	2-204281-6	204282-6	2-204282-6
	48	2.284 58.01	2.534 64.36	—*	204281-8	2-204281-8	204282-8	2-204282-8
	54	1.500 38.1	1.800 45.72	—*	203804-1	203804-2	203803-1	204803-2
	106	1.700 43.18	2.000 50.8	—*	204260-1	204260-2	204259-1	204259-2

*See page 14 for jackscrews.

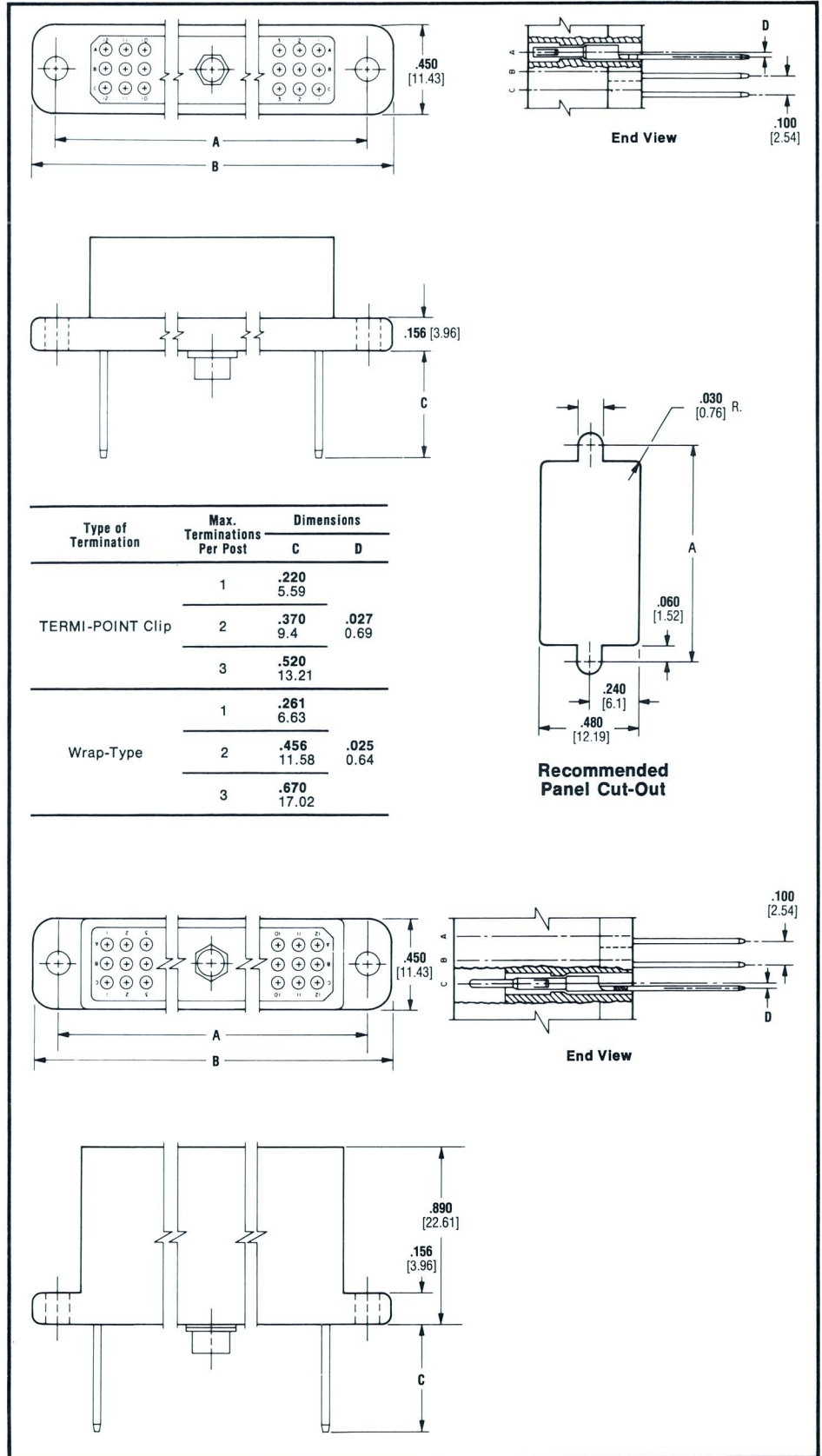
Fully Loaded Posted Contact Connectors for Automatic Wiring

Dimensioning:

1. All dimensions in inches over millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

**12, 24, 36 & 48 Position
Plug Assembly**

(Mates with receptacle assembly utilizing crimp snap-in contacts — see page 6)



**12, 24, 36 & 48 Position
Receptacle Assembly**

(Mates with plug assembly utilizing crimp snap-in contacts — see page 6)

Dimensioning:

1. All dimensions in inches over millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

No. of Positions	Dimensions		Contact Finish*	Max. Terminations Per Post	Plug Assembly				Receptacle Assembly	
	A	B			Socket Contact, TERMI-POINT Clip or Wrap-Type .022 x .036 [0.56 x 0.91] Post		Socket Contact, Wrap-Type .025 x .025 [0.64 x 0.64] Post		Pin Contact, Wrap-Type .025 x .025 [0.64 x 0.64] Post	
					Phenolic	Diallyl Phthalate	Phenolic	Diallyl Phthalate	Phenolic	Diallyl Phthalate
12	1.084 27.43	1.334 33.88	Gold/Nickel	1	3-204681-7	4-204681-6	5-204681-5	6-204681-4	1-204682-9	2-204682-8
				2	3-204681-8	4-204681-7	5-204681-6	6-204681-5	2-204682-0	2-204682-9
				3	3-204681-9	4-204681-8	5-204681-7	6-204681-6	2-204682-1	3-204682-0
			Sel. Gold/Nickel	1	4-204681-3	5-204681-2	6-204681-1	7-204681-0	2-204682-5	3-204682-4
				2	4-204681-4	5-204681-3	6-204681-2	7-204681-1	2-204682-6	3-204682-5
				3	4-204681-5	5-204681-4	6-204681-3	7-204681-2	2-204682-7	3-204682-6
24	1.484 37.69	1.734 44.04	Gold/Nickel	1	3-204683-7	4-204683-6	5-204683-5	6-204683-4	1-204684-9	2-204684-8
				2	3-204683-8	4-204683-7	5-204683-6	6-204683-5	2-204684-0	2-204684-9
				3	3-204683-9	4-204683-8	5-204683-7	6-204683-6	2-204684-1	3-204684-0
			Sel. Gold/Nickel	1	4-204683-3	5-204683-2	6-204683-1	7-204683-0	2-204684-5	3-204684-4
				2	4-204683-4	5-204683-3	6-204683-2	7-204683-1	2-204684-6	3-204684-5
				3	4-204683-5	5-204683-4	6-204683-3	7-204683-2	2-204684-7	3-204684-6
36	1.884 48.85	2.134 54.2	Gold/Nickel	1	3-204685-7	4-204685-6	5-204685-5	6-204685-4	1-204686-9	2-204686-8
				2	3-204685-8	4-204685-7	5-204685-6	6-204685-5	2-204686-0	2-204686-9
				3	3-204685-9	4-204685-8	5-204685-7	6-204685-6	2-204686-1	3-204686-0
			Sel. Gold/Nickel	1	4-204685-3	5-204685-2	6-204685-1	7-204685-0	2-204686-5	3-204686-4
				2	4-204685-4	5-204685-3	6-204685-2	7-204685-1	2-204686-6	3-204686-5
				3	4-204685-5	5-204685-4	6-204685-3	7-204685-2	2-204686-7	3-204686-6
48	2.284 58.01	2.534 64.36	Gold/Nickel	1	3-204687-7	4-204687-6	5-204687-5	6-204687-4	1-204688-9	2-204688-8
				2	3-204687-8	4-204687-7	5-204687-6	6-204687-5	2-204688-0	2-204688-9
				3	3-204687-9	4-204687-8	5-204687-7	6-204687-6	2-204688-1	3-204688-0
			Sel. Gold/Nickel	1	4-204687-3	5-204687-2	6-204687-1	7-204687-0	2-204688-5	3-204688-4
				2	4-204687-4	5-204687-3	6-204687-2	7-204687-1	2-204688-6	3-204688-5
				3	4-204687-5	5-204687-4	6-204687-3	7-204687-2	2-204688-7	3-204688-6

*For specific contact plating thicknesses, see page 5.

Notes: 1. Markings on receptacle assembly are on wiring side only.

2. In addition to combinations listed, all sizes are available with or without female jackscrews. Plugs are available with pins, and receptacles are available with sockets. Consult AMP Engineering for details.

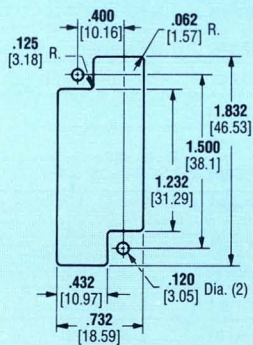
Fully Loaded Posted Contact Connectors for Automatic Wiring (Cont'd.)

Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Charts contain dimensions in inches over millimetres.

54 Position Plug and Receptacle Assembly (Mates with connectors utilizing crimp snap-in contacts — see page 6)

Type of Termination	Max. Terminations Per Post	Dimensions	
		C	D
TERMI-POINT Clip	1	.220 5.59	
	2	.370 9.4	.027 0.69
	3	.520 13.21	
Wrap-Type	1	.261 6.63	
	2	.456 11.58	.025 0.64
	3	.670 17.02	



**Recommended Panel
Cut-Out for Receptacle**

Plug Assembly

End View

Receptacle Assembly

End View

Contact Configurations	Contact Finish*	Max. Terminations Per Post	Plug Assembly (with Socket Contacts)		Receptacle Assembly (with Pin Contacts)	
			Phenolic	Diallyl Phthalate	Phenolic	Diallyl Phthalate
TERMI-POINT Clip or Wrap-Type .022 x .036 [0.56 x 0.91] Post	Gold/Nickel	1	3-204689-7	4-204689-6	—	—
		2	3-204689-8	4-204689-7	—	—
		3	3-204689-9	4-204689-8	—	—
Wrap-Type .025 x .025 [0.64 x 0.64] Post	Sel. Gold/Nickel	1	4-204689-3	5-204689-2	—	—
		2	4-204689-4	5-204689-3	—	—
		3	4-204689-5	5-204689-4	—	—
Wrap-Type .025 x .025 [0.64 x 0.64] Post	Gold/Nickel	1	5-204689-5	6-204689-4	1-204690-9	2-204690-8
		2	5-204689-6	6-204689-5	2-204690-0	2-204690-9
		3	5-204689-7	6-204689-6	2-204690-1	3-204690-0
Wrap-Type .025 x .025 [0.64 x 0.64] Post	Sel. Gold/Nickel	1	6-204689-1	7-204689-0	2-204690-5	3-204690-4
		2	6-204689-2	7-204689-1	2-204690-6	3-204690-5
		3	6-204689-3	7-204689-2	2-204690-7	3-204690-6

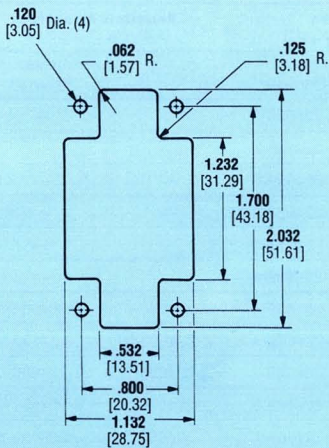
*For specific contact plating thicknesses, see page 5.

Dimensioning:

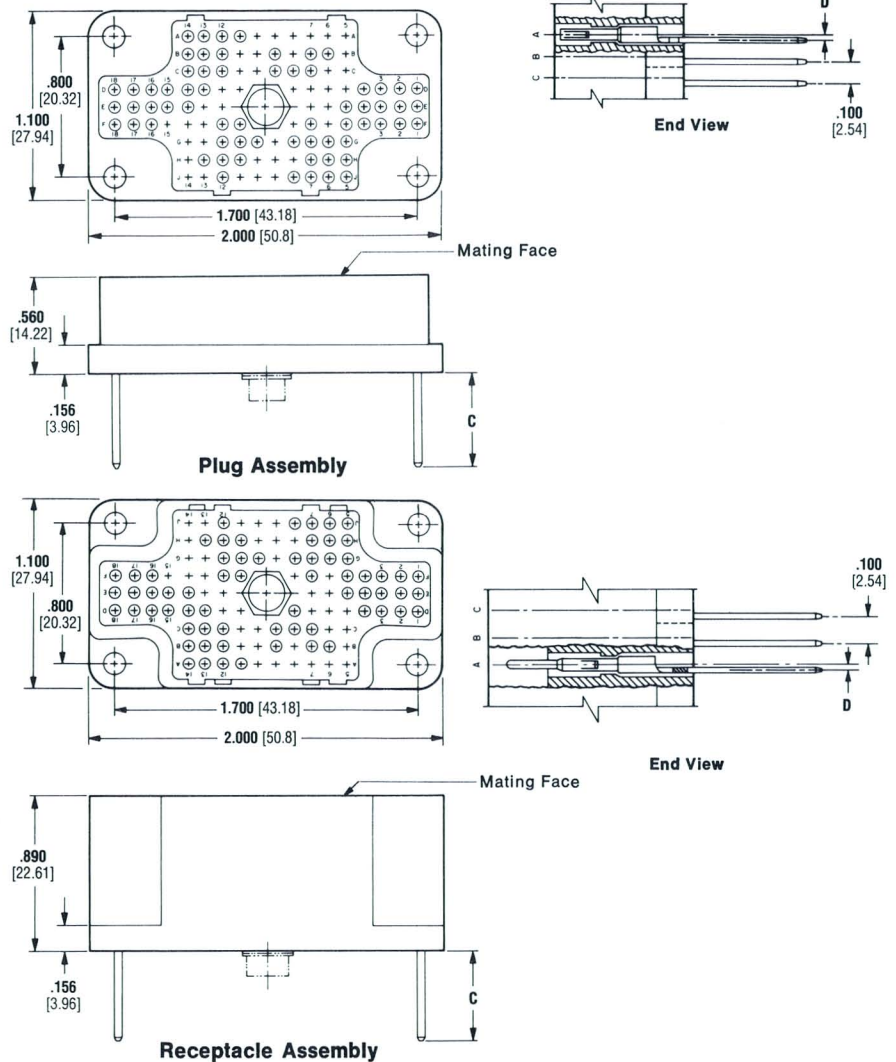
1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Charts contain dimensions in inches over millimetres.

106 Position Plug and Receptacle Assembly
(Mates with connectors utilizing crimp snap-in contacts — see page 7)

Type of Termination	Max. Terminations Per Post	Dimensions	
		C	D
TERMI-POINT Clip	1	.220 5.59	
	2	.370 9.4	.027 0.69
	3	.520 13.21	
Wrap-Type	1	.261 6.63	
	2	.456 11.58	.025 0.64
	3	.670 17.02	



Recommended Panel Cut-Out



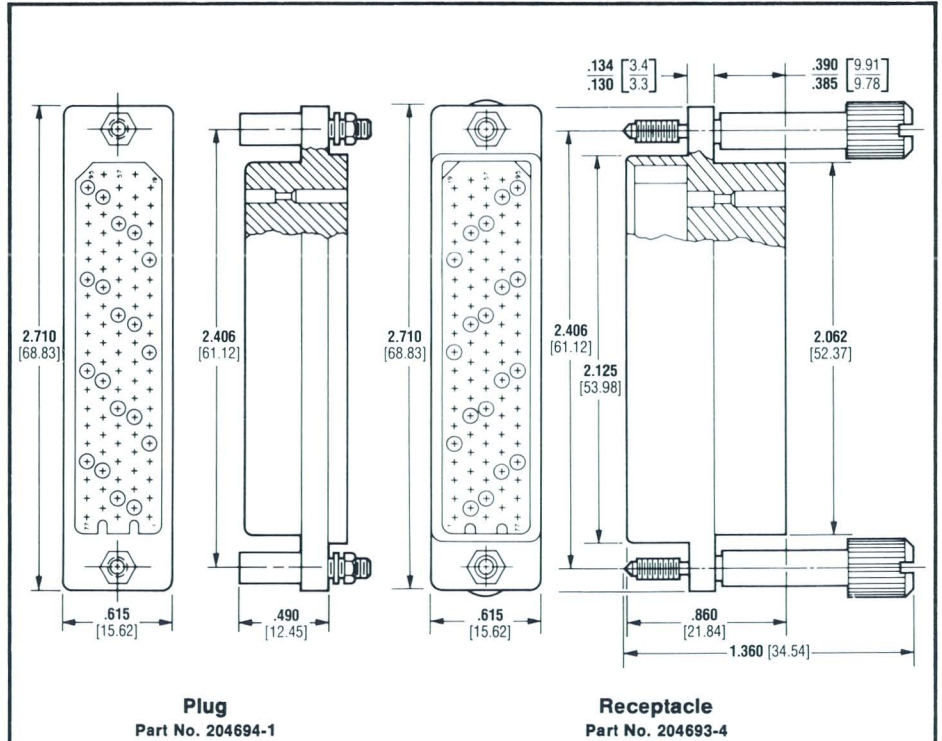
Contact Configurations	Contact Finish*	Max. Terminations Per Post	Plug Assembly (with Socket Contacts)		Receptacle Assembly (with Pin Contacts)	
			Phenolic	Diallyl Phthalate	Phenolic	Diallyl Phthalate
TERMI-POINT Clip or Wrap-Type .022 x .036 [0.56 x 0.91] Post	Gold/Nickel	1	3-204691-7	4-204691-6	—	—
		2	3-204691-8	4-204691-7	—	—
		3	3-204691-9	4-204691-8	—	—
	Sel. Gold/Nickel	1	4-204691-3	5-204691-2	—	—
		2	4-204691-4	5-204691-3	—	—
		3	4-204691-5	5-204691-4	—	—
Wrap-Type .025 x .025 [0.64 x 0.64] Post	Gold/Nickel	1	5-204691-5	6-204691-4	1-204692-9	2-204692-8
		2	5-204691-6	6-204691-5	2-204692-0	2-204692-9
		3	5-204691-7	6-204691-6	2-204692-1	3-204692-0
	Sel. Gold/Nickel	1	6-204691-1	7-204691-0	2-204692-5	3-204692-4
		2	6-204691-2	7-204691-1	2-204692-6	3-204692-5
		3	6-204691-3	7-204691-2	2-204692-7	3-204692-6

*For specific contact plating thicknesses, see page 5.

Dimensioning:

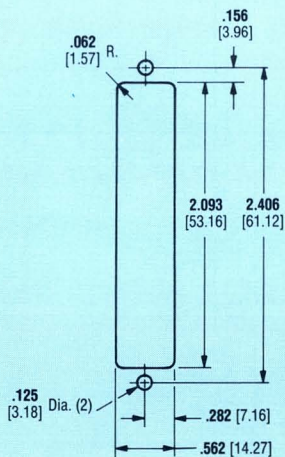
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

**95 Position
Rectangular Connector
with Jackscrews**
(Accepts crimp snap-in
contacts only)

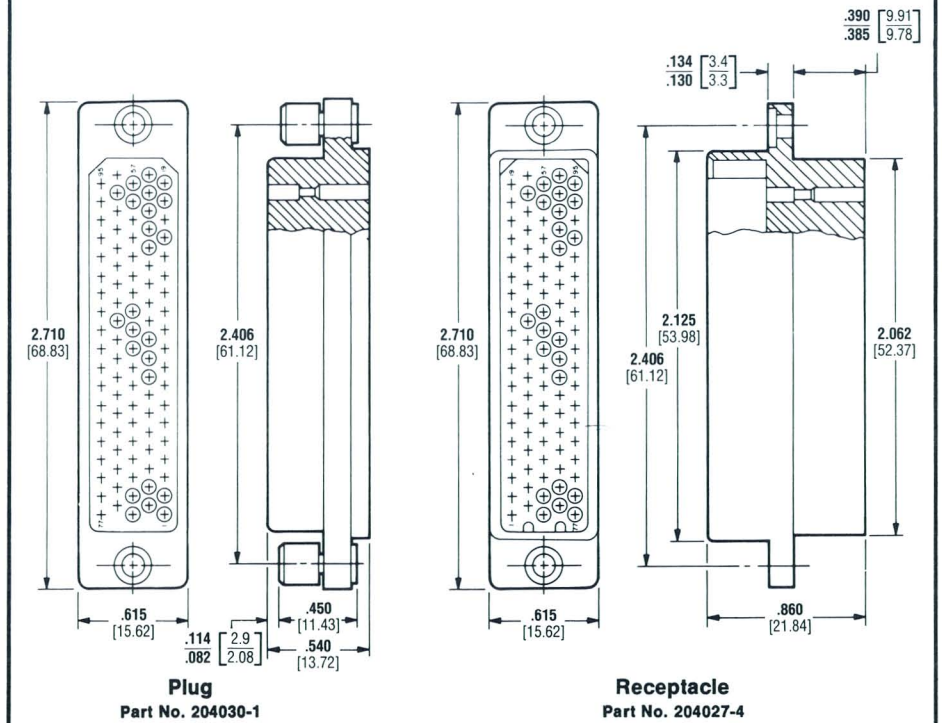


Housing Material: Diallyl Phthalate

**95 Position
Rectangular Connector
with Floating Bushing**
(Accepts crimp snap-in
contacts only)



**Recommended
Panel Cut-Out**



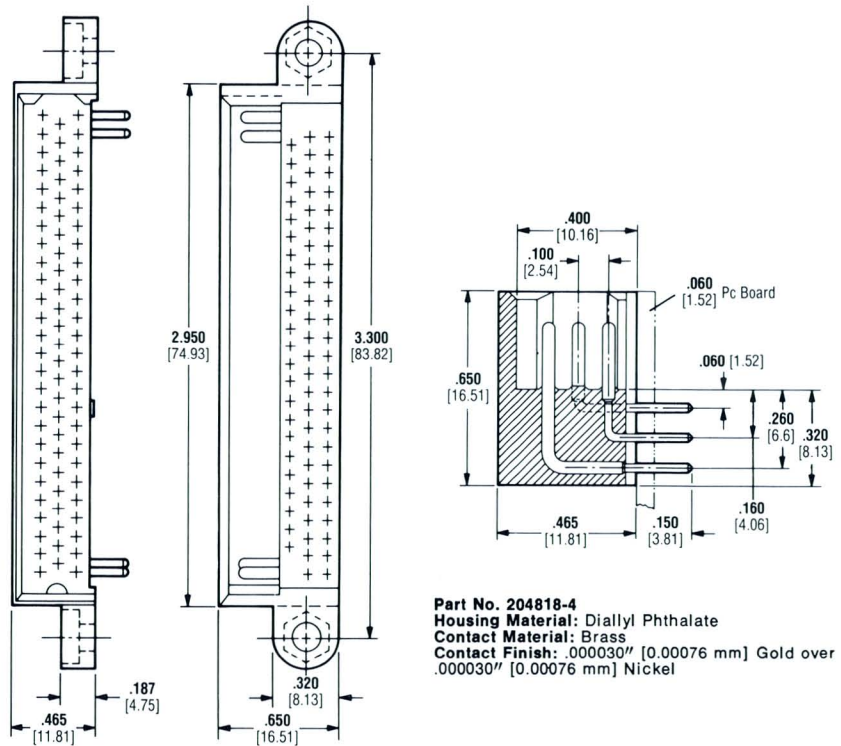
Housing Material: Diallyl Phthalate

- Notes:** 1. Marking on receptacles are on wiring side only.
2. Receptacle housings available with silicone interfacial cushion, Part No. 204031-1.

Dimensioning:

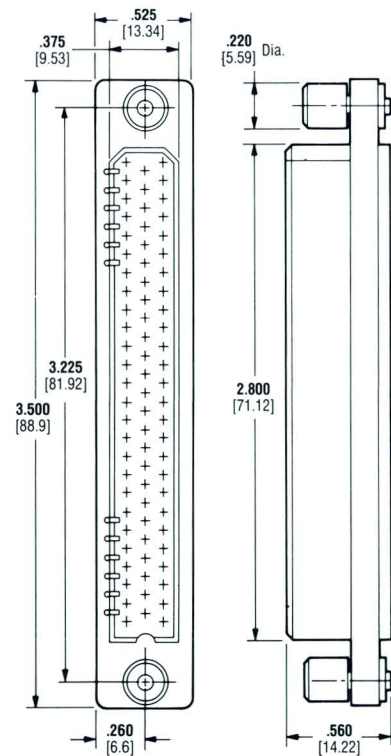
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

**80 Position
Pin Header Assembly
Printed Circuit Connector**



Part No. 204818-4
Housing Material: Diallyl Phthalate
Contact Material: Brass
Contact Finish: .000030" [0.00076 mm] Gold over
 .000030" [0.00076 mm] Nickel

**80 Position
Plug Half
with Floating Bushing
(Accepts crimp
snap-in contacts)**



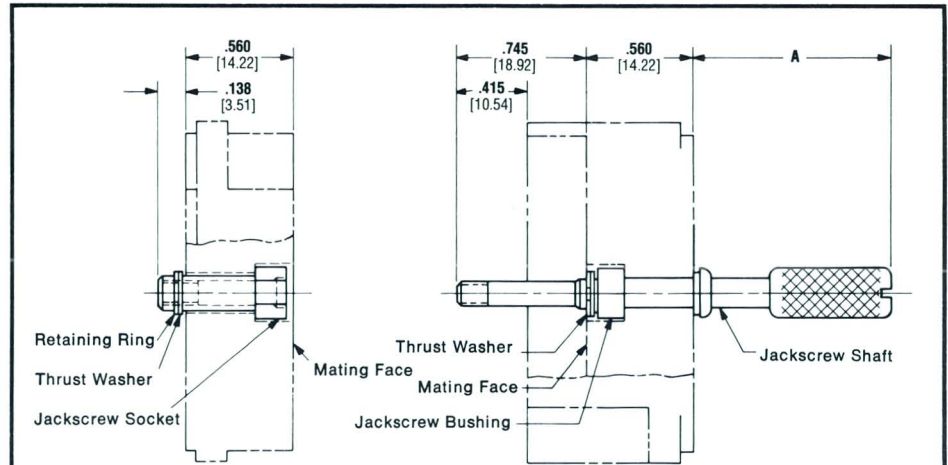
Part No. 204819-1
Housing Material: Diallyl Phthalate

Center Fastener and Keying Accessories

Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Charts contain dimensions in inches over millimetres.

Center Fasteners



Jackscrew, Female Kit

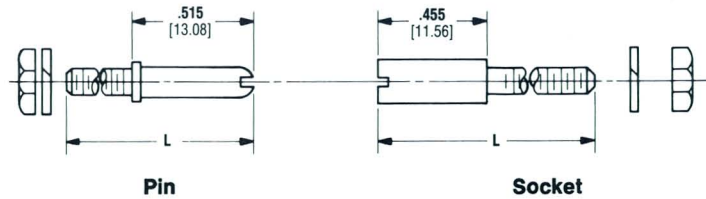
Jackscrew, Male Kit

No. of Positions	Type	A	Part No.
12, 24, 36, 48	Fixed Female	—	204299-1
	Short Male Turnable	1.01 25.65	204298-1
	Long Male Turnable	1.76 44.7	204298-2
54, 106	Fixed Female	—	203879-1
	Short Male Turnable	1.01 25.65	203880-1
	Long Male Turnable	1.76 44.7	203880-2

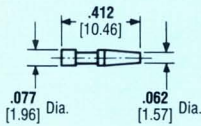
Material: Stainless Steel

Note: Short male jackscrews cannot be used with shield and cable clamp assemblies.

Keying Assemblies

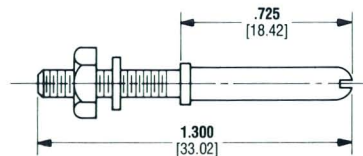


Material	L	Pin Part No.	L	Socket Part No.
Cadmium Plated Brass	1.100 27.94	203881-1	1.045 26.54	203882-1
	1.100 27.94	203881-2	1.045 26.54	203882-2
Cadmium Plated Brass	.870 22.1	203881-3	.810 20.57	203882-3



Keying Plug

Part No. 205120-1
Material: Nylon



Long Guide Pin

Part No. 205694-1
Material: Cadmium Plated Brass

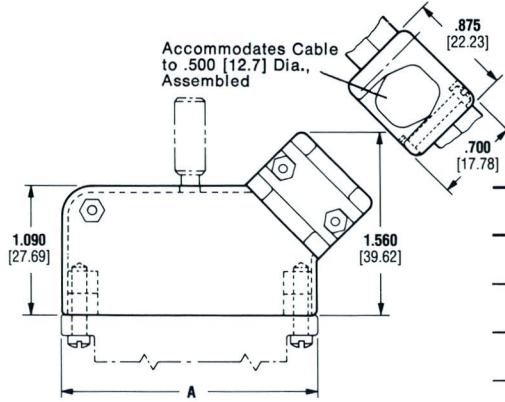
Part No. 205694-2
Material: Stainless Steel

45° Shield and Cable Clamp Assemblies

Dimensioning:

1. All dimensions in inches over millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

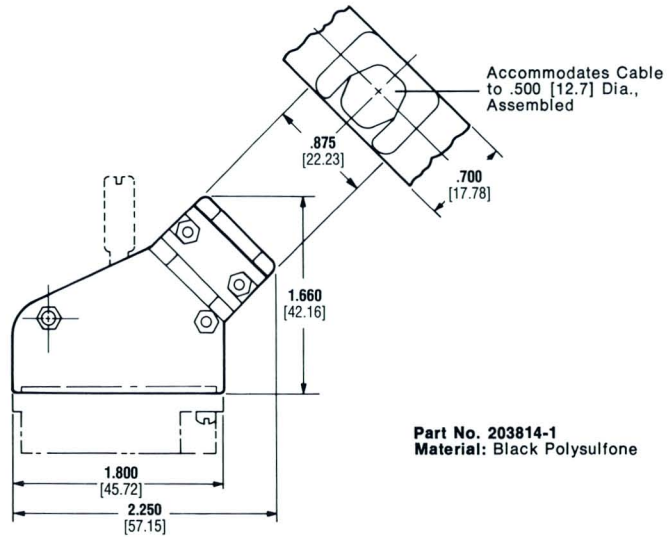
12, 24, 36 & 48 Position



No. of Positions	A	Part No.
12	1.334 33.88	205083-1
24	1.734 44.04	205083-2
36	2.134 54.2	205083-3
48	2.534 64.36	205083-4

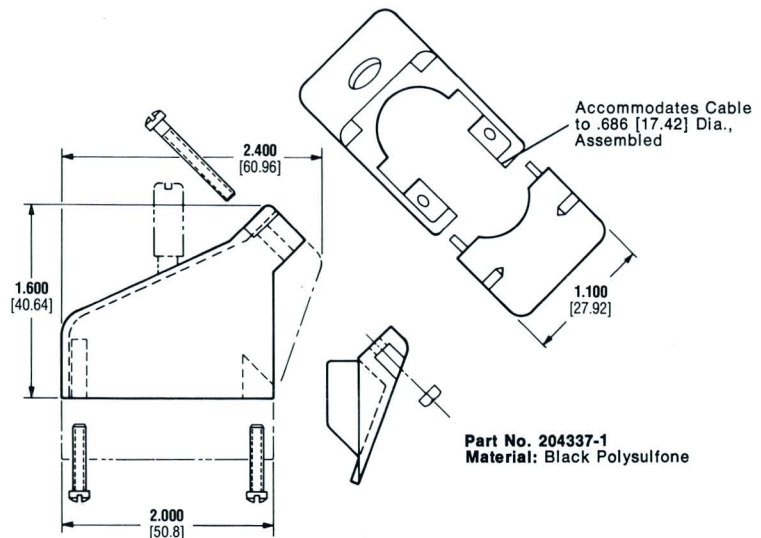
Material: Black Polysulfone

54 Position



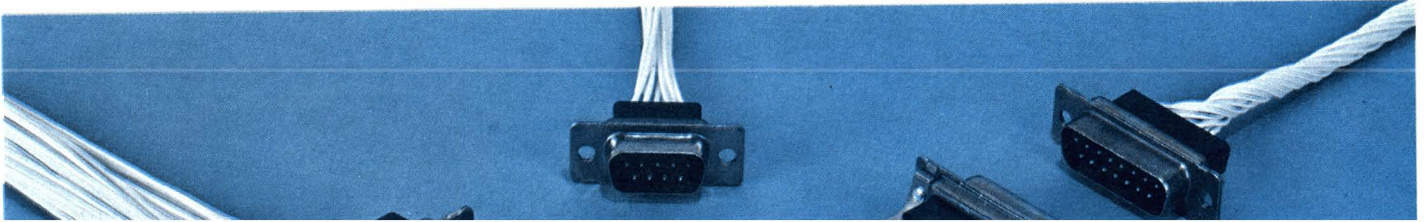
Part No. 203814-1
Material: Black Polysulfone

106 Position



Part No. 204337-1
Material: Black Polysulfone

AMPLIMITE High Density 20 & 22 Pin and Socket Connectors



General Information

Dimensioning:
Values in brackets are metric equivalents.

Introduction

AMPLIMITE High Density 20 and 22 (HD-20 & HD-22) Connectors are compact pin and socket connectors especially designed for state-of-the-art high density packaging. They are ideally suited for such diverse applications as military and ground support, computer peripheral equipment, modems, and industrial control instrumentation. HD-22 Connectors provide even higher density than the HD-20 Connectors.

Each plug and receptacle housing comprises a durable cadmium plated steel shell which houses a one piece plastic insert containing contact retention springs. The design of the insert and captivated springs allow pin and socket contacts to be loaded into the rear of the connector. The incorporation of this Rear Release System permits the use of standard military-type service tools for quick and easy contact placement and, at the same time, assures the electrical and mechanical integrity of the circuit connections.

Connector housings can be furnished in a choice of styles for either standard mounting or mounting with floating bushings. Shield

and cable clamp assemblies are available to permit straight, 45°, or 90° entry of wiring cables. They also have the added advantage of being interchangeable with existing connectors, which allows existing hardware such as hoods, strain reliefs, shields, latches, etc., to be used as required.

AMP furnishes the contacts in continuous strip form for machine termination, and in loose piece form for hand tool crimping. AMP's high speed machines use the versatile quick-change miniature applicator for crimping stamped and formed contacts, both pin and socket, at volume production rates with the lowest possible applied cost. Both pin and socket screw-machined contacts are designed for an 8-indent crimp and are supplied loose piece, for termination in the standard M22520/2-01 hand crimping tool, and tape mounted for high speed application by the AMP-TAPEMATIC Stripper/Crimper machine. This machine, which strips wire and applies contacts in a simple two-step operation, will allow you to produce the largest number of reliable terminations at the lowest installed cost.

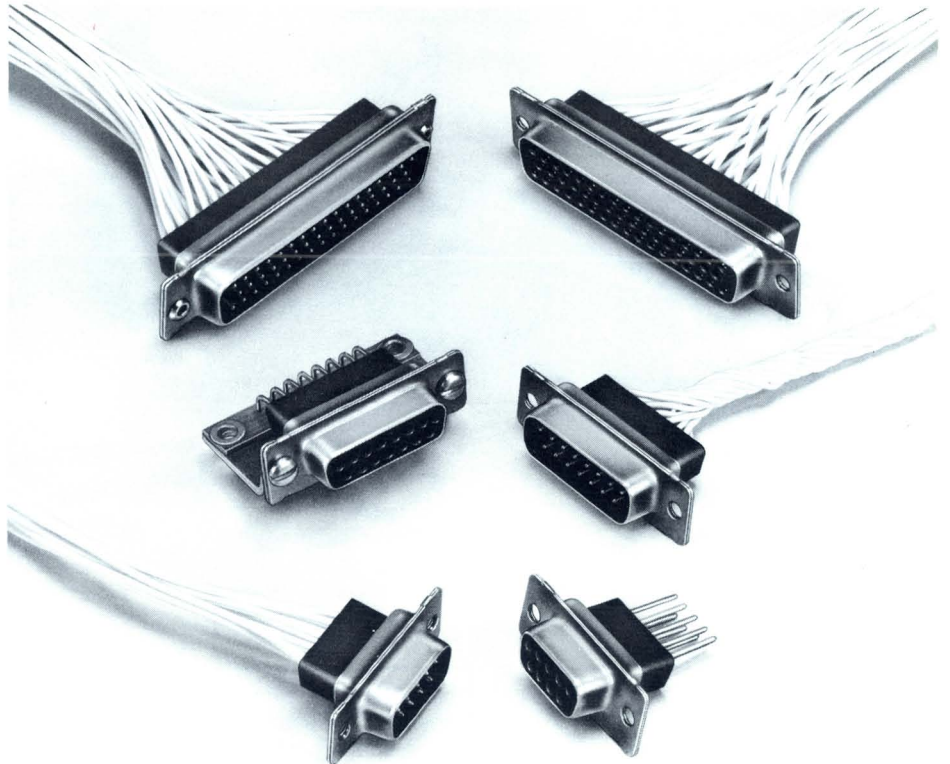
Table of Contents

Specifications subject to change.
Consult AMP Incorporated for latest design specifications.

Dimensioning:
Values in brackets are metric equivalents.

Features (HD-20 Connectors)

- Available in military and economy versions
- Wide choice of sizes—9, 15, 25, 37 and 50 contact positions
- Military version conforms to latest amendments of MIL-C-24308; is intermateable with other existing military type connectors
- Economy version employs integral plastic retention ties to eliminate need for spring clips
- Optional mounting—standard or with floating bushings
- Machine applied terminations of size 20 screw-machined and stamped and formed contacts assure highest production rates and lowest applied cost



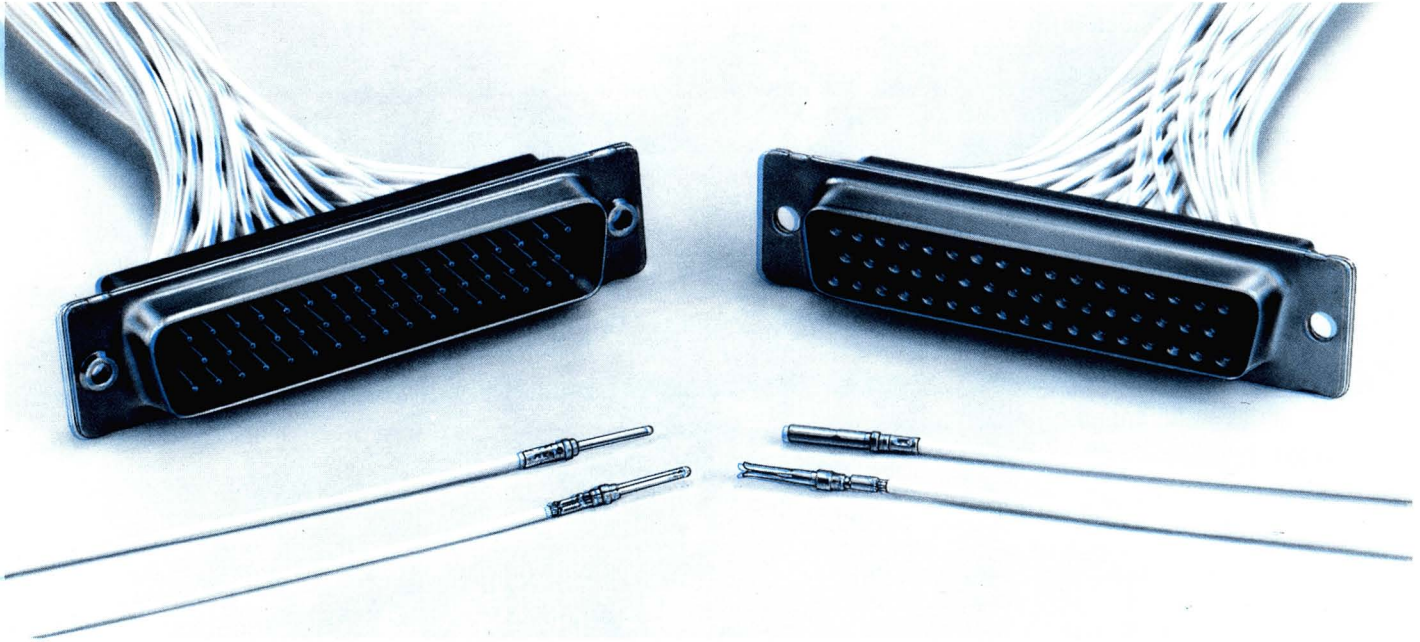
Features (HD-22 Connectors)

- Wide choice of sizes—15, 26, 44, 62, 78 and 104 contact positions
- Connectors conform to latest amendments of MIL-C-24308
- High density connections—contacts spaced as close as .090" [2.29 mm] (in 15, 26 and 44 positions)
- Size 22 contacts available in screw-machined or stamped and formed versions, accommodate No. 28–22 AWG [0.08–0.2 mm²] wire range and insulation diameters to .054" [1.37 mm].
- Cadmium plated steel shells provide stronger housings and thinner mounting flanges
- Machine applied terminations assure highest production rates at lowest applied cost



Introduction to HD-20 Connectors

Dimensioning:
Values in brackets are metric equivalents.



AMPLIMITE High Density 20 Connectors offer a close contact center-line spacing of .109" [2.77 mm] and are available in military and economy versions.

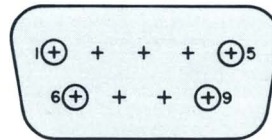
The military version (HDM-20) conforms to the latest amendments of MIL-C-24308 and is intermateable with existing military-type connectors. It uses metal retention clips for retaining size 20 pin and socket contacts. These crimp-type contacts are screw-machined from high conductivity copper alloy and accept a wire range of No. 24-20 AWG [0.2-0.6 mm²] and insulation diameters to .068" [1.73 mm].

The economy connectors (HDP-20) provide the lowest cost in high density connections. Retention tines form an integral part of the insert permitting loaded contacts to be retained without a need for additional spring clips. The connectors accept size 20 stamped and formed contacts for wire size ranges 28 to 24 AWG [0.08 to 0.2 mm²] and 24 to 20 AWG [0.2 to 0.6 mm²], or the same screw-machined contacts as the military version. They can also be supplied preloaded with size 20 posted contacts which have .025" [0.64 mm] square posts for either pc board mounting, or for accepting wrap-type terminations.

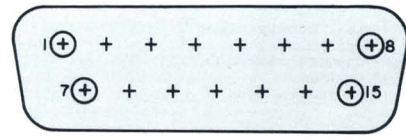
HD-20 Connector Specifications

Dimensioning:
Values in brackets are metric equivalents.

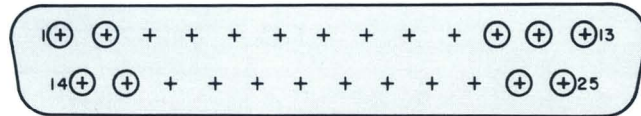
Insert Arrangements



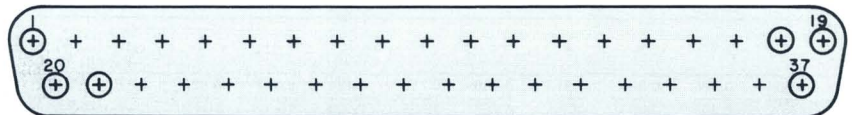
9 Position



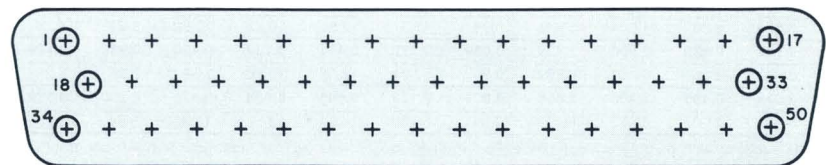
15 Position



25 Position



37 Position



50 Position

Note: Mating face of plug assembly shown.

Performance Specifications

All AMPLIMITE Military-Type Connectors (HDM-20) conform to the latest amendments of military specification MIL-C-24308. The electrical and mechanical performance characteristics of the economy version (HDP-20) are shown below.

Electrical Characteristics

Contact Current Rating (with No. 20 AWG [0.5–0.6 mm²] wire): 7.5 A

Contact Resistance: 7.3 Milliohms (max.)

Dielectric Withstanding Voltage: 1000 V (min.)

Insulation Resistance: 5000 Megohms

Mechanical Characteristics

Contact Engagement Force: 12.0 Oz. [3.4 N] (max.)

Contact Separation Force: 0.75 Oz. [0.2 N] (min.)

Contact Retention: 10 Lb. [44.4 N] (min.)

Tensile Strength (crimp):

With No. 20 AWG [0.5–0.6 mm²] Wire—20 Lb. [88.96 N]

With No. 22 AWG [0.3–0.6 mm²] Wire—12 Lb. [53.376 N]

With No. 24 AWG [0.2 mm²] Wire—8 Lb. [38.584 N]

With No. 26 AWG [0.12–0.15 mm²] Wire—4.5 Lb. [20.016 N]

With No. 28 AWG [0.08–0.09 mm²] Wire—2.7 Lb [12.0096 N]

Connector Mating Force (per contact): 8 Oz. [2.224 N] (max.)

HDM-20 Military Connector

Dimensioning:

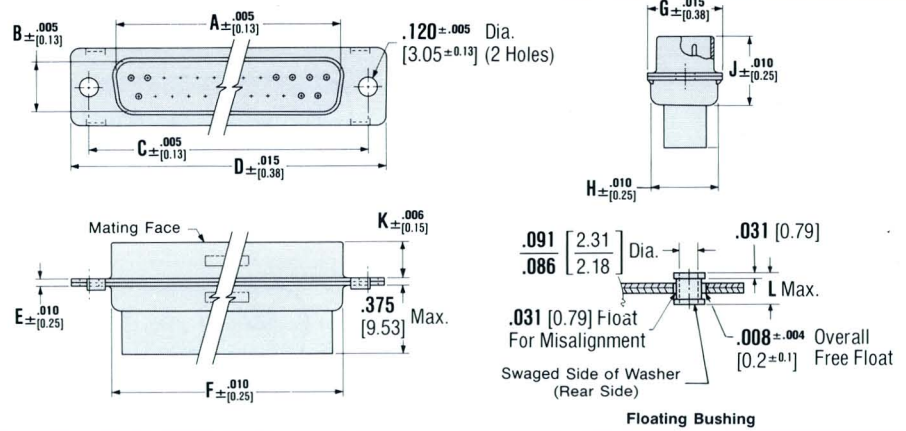
- All dimensions in inches and millimetres. Values in brackets are metric equivalents.
- Charts contain dimensions in inches over millimetres.

Plug Assemblies

Materials:

Shell—Steel, Class G; Cadmium plated per QQ-P-416, Type II, Class 2°
 Insert—Diallyl Phthalate per MIL-M-14, Type SDG-F; Color, Blue
 Retention Springs—Stainless Steel[®]

[®]Shells in non-magnetic brass and retention springs in beryllium copper can be supplied upon request.



No. of Contact Pos.	Dimensions											Standard Mount		Floating Bushing Mount		Description
	A	B	C	D	E	F	G	H	J	K	L	Military Part No. (M24308/)	AMP Part No.	Military Part No. (M24308/)	AMP Part No.	
9	0.666	0.329	0.984	1.213	0.030	0.759	0.494	0.422	0.422	0.235	0.120	4-1	205556-2	—	205486-2	Plug with pins
	16.92	8.36	24.99	30.81	0.76	19.28	12.55	10.72	10.72	5.97	3.05	4-259	205162-1	—	205412-1	Plug only
15	0.994	0.329	1.312	1.541	0.030	1.083	0.494	0.422	0.422	0.235	0.120	4-2	205558-2	—	205409-2	Plug with pins
	25.25	8.36	33.32	39.14	0.76	27.51	12.55	10.72	10.72	5.97	3.05	4-260	205164-1	—	205408-1	Plug only
25	1.534	0.329	1.852	2.088	0.039	1.625	0.494	0.422	0.426	0.230	0.129	4-3	205560-2	—	205487-2	Plug with pins
	38.96	8.36	47.04	53.04	0.99	41.3	12.55	10.72	10.82	5.84	3.28	4-261	205166-1	—	205413-1	Plug only
37	2.182	0.329	2.500	2.729	0.039	2.272	0.494	0.422	0.426	0.230	0.129	4-4	205562-2	—	205488-2	Plug with pins
	55.42	8.36	63.5	69.32	0.99	57.71	12.55	10.72	10.82	5.84	3.28	4-262	205168-1	—	205414-1	Plug only
50	2.079	0.436	2.406	2.635	0.039	2.178	0.605	0.534	0.426	0.230	0.129	4-5	205564-2	—	205431-2	Plug with pins
	52.81	11.07	61.12	66.93	0.99	55.32	15.37	13.56	10.82	5.84	3.28	4-263	205170-1	—	205415-1	Plug only

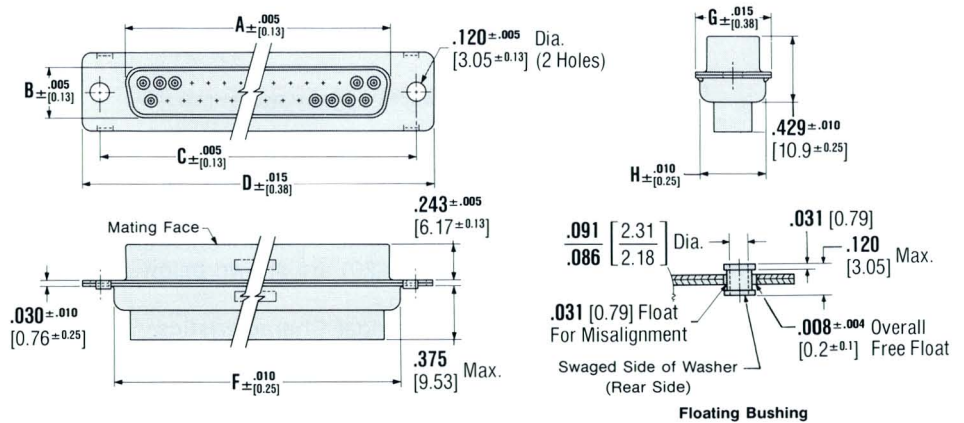
Note: Pins supplied with plugs are loose piece. For ordering loose piece and/or tape-mounted pins separately, refer to Specification Chart for Screw-Machined Contacts, page 11.

Receptacle Assemblies

Materials:

Shell—Steel, Class G; Cadmium plated per QQ-P-416, Type II, Class 2°
 Insert—Diallyl Phthalate per MIL-M-14, Type SDG-F; Color, Blue
 Retention Springs—Stainless Steel[®]

[®]Shells in non-magnetic brass and retention springs in beryllium copper can be supplied upon request.



No. of Contact Pos.	Dimensions								Standard Mount		Floating Bushing Mount		Description
	A	B	C	D	E	F	G	H	Military Part No. (M24308/)	AMP Part No.	Military Part No. (M24308/)	AMP Part No.	
9	0.643	0.311	0.984	1.213	—	0.759	0.494	0.422	2-1	205555-2	2-23	205483-2	Recpt. with sockets
	16.33	7.9	24.99	30.81	—	19.28	12.55	10.72	2-281	205161-1	2-292	205416-1	Recpt. only
15	0.971	0.311	1.312	1.541	—	1.083	0.494	0.422	2-2	205557-2	2-24	205433-2	Recpt. with sockets
	24.66	7.9	33.32	39.14	—	27.51	12.55	10.72	2-282	205163-1	2-293	205417-1	Recpt. only
25	1.511	0.311	1.852	2.088	—	1.625	0.494	0.422	2-3	205559-2	2-25	205484-2	Recpt. with sockets
	38.38	7.9	47.04	53.04	—	41.3	12.55	10.72	2-283	205165-1	2-294	205418-1	Recpt. only
37	2.159	0.311	2.500	2.729	—	2.272	0.494	0.422	2-4	205561-2	2-26	205485-2	Recpt. with sockets
	54.84	7.9	63.5	69.32	—	57.71	12.55	10.72	2-284	205167-1	2-295	205419-1	Recpt. only
50	2.064	0.423	2.406	2.635	—	2.178	0.605	0.534	2-5	205563-2	2-27	205432-2	Recpt. with sockets
	52.43	10.74	61.12	66.93	—	55.32	15.37	13.56	2-285	205169-1	2-296	205420-1	Recpt. only

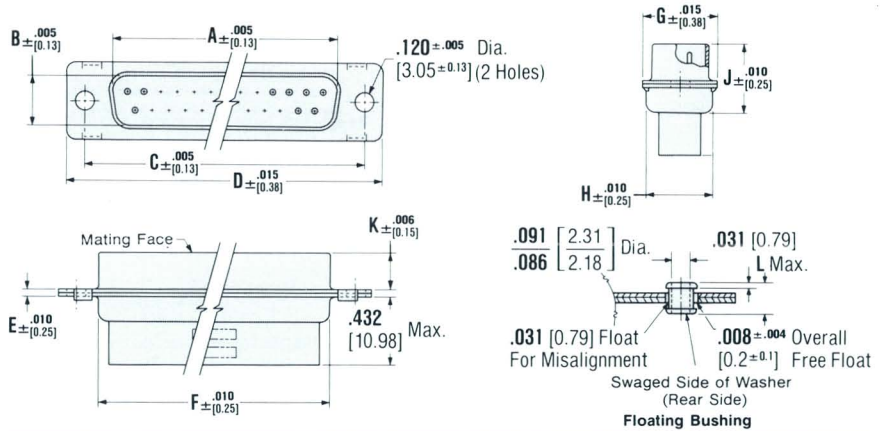
Note: Sockets supplied with receptacles are loose piece. For ordering loose piece and/or tape-mounted sockets separately, refer to Specification Chart for Screw-Machined Contacts, page 11.

HDP-20 Economy Connector (for Crimp-type Contacts)

- Dimensioning:**
- All dimensions in inches and millimetres. Values in brackets are metric equivalents.
 - Charts contain dimensions in inches over millimetres.

Plug Assemblies

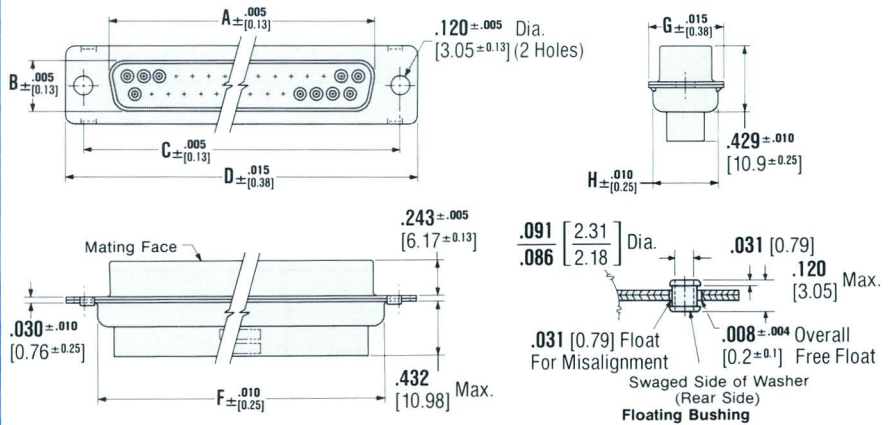
Materials and Finishes:
 Shell—Steel per QQ-S-698;
 Cadmium plated per QQ-P-416,
 Type II, Class 2, gold color;
 Insert—Glass-Filled Nylon,
 94V-0 Grade, self-extinguishing, black color.



No. of Contact Pos.	Dimensions											Part No.	Mounting Method
	A	B	C	D	E	F	G	H	J	K	L		
9	0.666	0.329	0.984	1.213	0.030	0.759	0.494	0.422	0.422	0.235	—	205204-1	Standard
	16.92	8.36	24.99	30.81	0.76	19.28	12.55	10.72	10.72	5.97	0.120 3.05	205434-1	Floating Bushing
15	0.994	0.329	1.312	1.541	0.030	1.083	0.494	0.422	0.422	0.235	—	205206-1	Standard
	25.25	8.36	33.32	39.14	0.76	27.51	12.55	10.72	10.72	5.97	0.120 3.05	205435-1	Floating Bushing
25	1.534	0.329	1.852	2.088	0.039	1.625	0.494	0.422	0.426	0.230	—	205208-1	Standard
	38.96	8.36	47.04	53.04	0.99	41.3	12.55	10.72	10.82	5.84	0.129 3.28	205436-1	Floating Bushing
37	2.182	0.329	2.500	2.729	0.039	2.272	0.494	0.422	0.426	0.230	—	205210-1	Standard
	55.42	8.36	63.5	69.32	0.99	57.71	12.55	10.72	10.82	5.84	0.129 3.28	205437-1	Floating Bushing
50	2.079	0.436	2.406	2.635	0.039	2.178	0.605	0.534	0.426	0.230	—	205212-1	Standard
	52.81	11.07	61.12	66.93	0.99	55.32	15.37	13.56	10.82	5.84	0.129 3.28	205438-1	Floating Bushing

Receptacle Assemblies

Materials and Finishes:
 Shell—Steel per QQ-S-698;
 Cadmium plated per QQ-P-416,
 Type II, Class 2, gold color;
 Insert—Glass-Filled Nylon,
 94V-0 Grade, self-extinguishing, black color.



No. of Contact Pos.	Dimensions											Part No.	Mounting Method
	A	B	C	D	E	F	G	H	J	K	L		
9	0.643	0.311	0.984	1.213	—	0.759	0.494	0.422	—	—	—	205203-1	Standard
	16.33	7.9	24.99	30.81	—	19.28	12.55	10.72	—	—	—	205439-1	Floating Bushing
15	0.971	0.311	1.312	1.541	—	1.083	0.494	0.422	—	—	—	205205-1	Standard
	24.66	7.9	33.32	39.14	—	27.51	12.55	10.72	—	—	—	205440-1	Floating Bushing
25	1.511	0.311	1.852	2.088	—	1.625	0.494	0.422	—	—	—	205207-1	Standard
	38.38	7.9	47.04	53.04	—	41.3	12.55	10.72	—	—	—	205441-1	Floating Bushing
37	2.159	0.311	2.500	2.729	—	2.272	0.494	0.422	—	—	—	205209-1	Standard
	54.84	7.9	63.5	69.32	—	57.71	12.55	10.72	—	—	—	205442-1	Floating Bushing
50	2.064	0.423	2.406	2.635	—	2.178	0.605	0.534	—	—	—	205211-1	Standard
	52.43	10.74	61.12	66.93	—	55.32	15.37	13.56	—	—	—	205443-1	Floating Bushing

Note: Plugs accept all size no. 20 crimp-type pins, and receptacles accept all size no. 20 crimp-type sockets. For ordering loose piece and strip form contacts, refer to Specification Chart for Stamped and Formed (crimp-type) Contacts, page 10.

HDP-20 Economy Connector with .025" [0.64 mm] Square Post Contacts (for Printed Circuit Board Mount or Wrap-type Terminations)

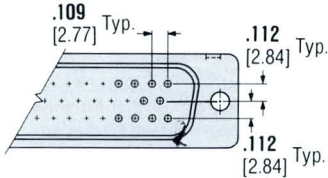
Dimensioning:

1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres, except "L" dimensions which are listed in the illustration.

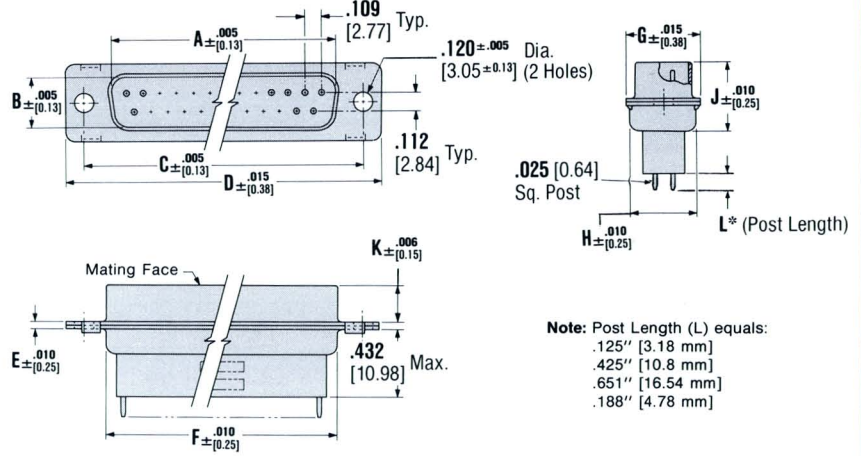
Plug Assemblies

Materials and Finishes:

Shell—Steel per QQ-S-698;
Cadmium plated per QQ-P-416.
Type II, Class 2, gold color;
Insert—Glass-Filled Nylon,
94V-0 Grade, black color;
Pin Contacts—Brass.
Selective Gold over Nickel or
Gold Flash over Nickel plated.



**50 POSITION
PLUG ASSEMBLY**



No. of Contact Pos.	Dimensions										Contact Finish	Part No.		
	A	B	C	D	E	F	G	H	J	K			L*	
9												.125		205733-1
												.425	Sel. Gold/Nickel	205733-3
												.651		205733-5
												.188		205733-7
												.125		205733-2
												.425	Gold Flash/Nickel	205733-4
												.651		205733-6
												.188		205733-8
15												.125		205735-1
												.425	Sel. Gold/Nickel	205735-3
												.651		205735-5
												.188		205735-7
												.125		205735-2
												.425	Gold Flash/Nickel	205735-4
												.651		205735-6
												.188		205735-8
25												.125		205737-1
												.425	Sel. Gold/Nickel	205737-3
												.651		205737-5
												.188		205737-7
												.125		205737-2
												.425	Gold Flash/Nickel	205737-4
												.651		205737-6
												.188		205737-8
37												.125		205714-1
												.425	Sel. Gold/Nickel	205714-3
												.651		205714-5
												.188		205714-7
												.125		205714-2
												.425	Gold Flash/Nickel	205714-4
												.651		205714-6
												.188		205714-8
50												.125		205739-1
												.425	Sel. Gold/Nickel	205739-3
												.651		205739-5
												.188		205739-7
												.125		205739-2
												.425	Gold Flash/Nickel	205739-4
												.651		205739-6
												.188		205739-8

*.125" [3.18 mm] and .188" [4.78 mm] post lengths for PC board application. .425" [10.8 mm] and .651" [16.54 mm] post lengths for wrap-type terminations.

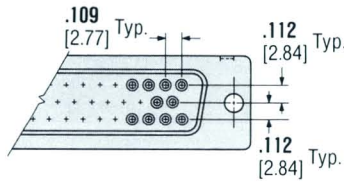
- Notes:** 1. All plugs are preloaded with size no. 20 posted pin contacts. Recommended PC hole size is .047" [1.19 mm]. For details on plating thicknesses and for ordering loose piece pins separately, refer to Specification Chart for Stamped and Formed (Posted) Contacts, page 11.
2. Special loading of contacts can be arranged upon request.

- Dimensioning:**
1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
 2. Chart contains dimensions in inches over millimetres, except "J" dimensions which are listed in the illustration.

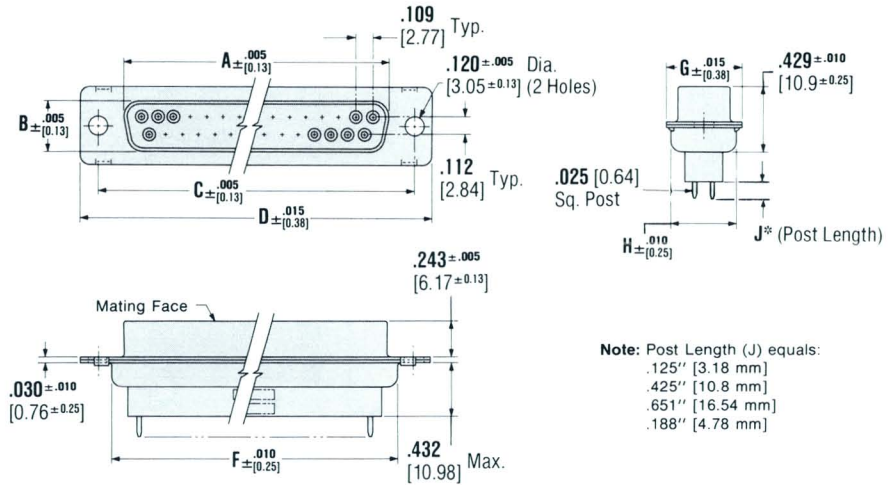
Receptacle Assemblies

Materials and Finishes:

Shell—Steel per QQ-S-698;
 Cadmium plated per QQ-P-416,
 Type II, Class 2, gold color;
 Insert—Glass Filled Nylon,
 94V-0 Grade, black color;
 Socket Contacts—Phosphor Bronze,
 Selective Gold over Nickel or
 Gold Flash over Nickel plated.



50 POSITION RECEPTACLE ASSEMBLY



Note: Post Length (J) equals:
 .125" [3.18 mm]
 .425" [10.8 mm]
 .651" [16.54 mm]
 .188" [4.78 mm]

	Dimensions									Contact Finish	Part No.																		
	A	B	C	D	E	F	G	H	J*																				
9	0.643 16.33	0.311 7.9	0.984 24.99	1.213 30.81	—	0.759 19.28	0.494 12.55	0.422 10.72	.125	Sel. Gold/ Nickel	205734-1																		
									.425		205734-3																		
									.651		205734-5																		
									15	0.971 24.66	0.311 7.9	1.312 33.32	1.541 39.14	—	1.083 27.51	0.494 12.55	0.422 10.72	.188	Sel. Gold/ Nickel	205734-7									
																		.125		205734-2									
																		.425		205734-4									
																		25	1.511 38.38	0.311 7.9	1.852 47.04	2.088 53.04	—	1.625 41.3	0.494 12.55	0.422 10.72	.651	Gold Flash/ Nickel	205734-6
																											.125		205734-8
																											.188		205736-1
37	2.159 54.84	0.311 7.9	2.500 63.5	2.729 69.32	—	2.272 57.71	0.494 12.55	0.422 10.72																			.425	Sel. Gold/ Nickel	205736-3
																											.651		205736-5
																											.188		205736-7
									50	2.064 52.43	0.423 10.74	2.406 61.12	2.635 66.93	—	2.178 55.32	0.605 15.37	0.534 13.56										.125	Sel. Gold/ Nickel	205736-2
																											.425		205736-4
																											.651		205736-6
																											.188	Sel. Gold/ Nickel	205738-1
																											.125		205738-2
																											.425		205738-4
																											.651	Gold Flash/ Nickel	205738-5
																											.125		205738-7
																											.188		205738-8
																											.125	Sel. Gold/ Nickel	205713-1
																											.425		205713-3
																											.651		205713-5
																											.188	Sel. Gold/ Nickel	205713-7
																											.125		205713-2
																											.425		205713-4
																											.651	Gold Flash/ Nickel	205713-6
																											.125		205713-8
																											.188		205740-1
																											.425	Sel. Gold/ Nickel	205740-3
																											.651		205740-5
																											.188		205740-7
																											.125	Gold Flash/ Nickel	205740-2
																											.425		205740-4
																											.651		205740-6
																											.188	Gold Flash/ Nickel	205740-8

*.125" [3.18 mm] and .188" [4.78 mm] post lengths for PC board application, .425" [10.8 mm] and .651" [16.54 mm] post lengths for wrap-type terminations.

- Notes:**
1. All receptacles are preloaded with size no. 20 posted socket contacts. Recommended PC hole size is .047" [1.19 mm]. For details on plating thicknesses and for ordering loose piece sockets separately, refer to Specification Chart for Stamped and Formed (Posted) Contacts, page 11.
 2. Special loading of contacts can be arranged upon request.

HDP-20 Economy Connector with .025" [0.64 mm] Square Right Angle Post Contacts (for Printed Circuit Board Mounting)

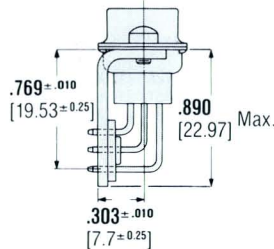
Dimensioning:

- All dimensions in inches and millimetres.
Values in brackets are metric equivalents.
- Charts contain dimensions in inches over millimetres.

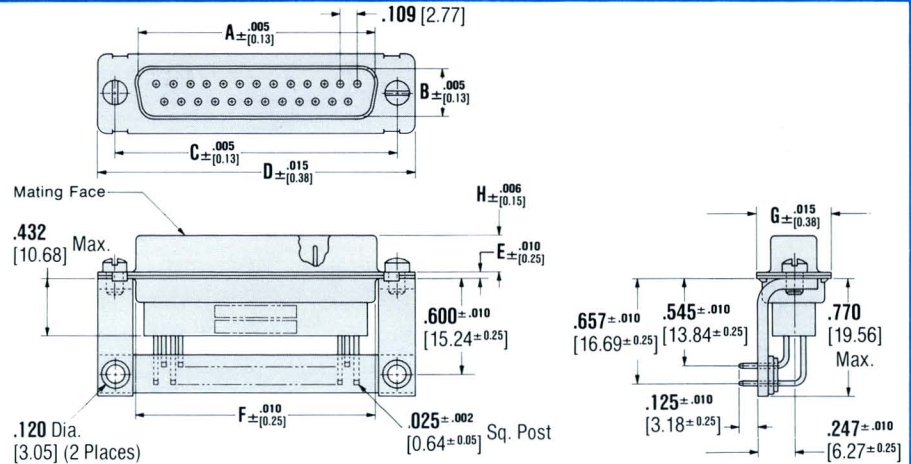
Plug Assemblies

Materials and Finishes:

Shell—Steel per QQ-S-698;
Cadmium plated per QQ-P-416,
Type II, Class 2, gold color;
Insert—Glass-Filled Nylon,
94V-0 Grade, black color;
Pin Contacts—Brass per MIL-C-50;
Selective Gold over Nickel or
Gold Flash over Nickel plated
(See Dash Nos.)



50 POSITION
PLUG ASSEMBLY



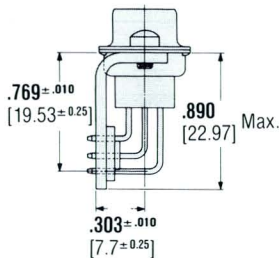
No. of Contact Pos.	Dimensions								Contact Finish	Part No.
	A	B	C	D	E	F	G	H		
9	0.666	0.329	0.984	1.213	0.030	0.759	0.494	0.235	Sel. Gold/Nickel	205865-2
	16.92	8.36	24.99	30.81	0.76	19.28	12.55	5.97	Gold Flash/Nickel	205865-1
15	0.994	0.329	1.312	1.541	0.030	1.083	0.494	0.235	Sel. Gold/Nickel	205867-2
	25.25	8.36	33.32	39.14	0.76	27.51	12.55	5.97	Gold Flash/Nickel	205867-1
25	1.534	0.329	1.852	2.088	0.039	1.625	0.494	0.230	Sel. Gold/Nickel	205857-2
	38.96	8.36	47.04	53.04	0.99	41.3	12.55	5.84	Gold Flash/Nickel	205857-1
37	2.182	0.329	2.500	2.729	0.039	2.272	0.494	0.230	Sel. Gold/Nickel	205859-2
	55.42	8.36	63.5	69.32	0.99	57.71	12.55	5.84	Gold Flash/Nickel	205859-1
50	2.079	0.436	2.406	2.635	0.039	2.178	0.605	0.230	Sel. Gold/Nickel	205869-2
	52.81	11.07	61.12	66.93	0.99	55.32	15.37	5.84	Gold Flash/Nickel	205869-1

Note: All plugs are preloaded with size no. 20 posted pin contacts. Recommended PC hole size is .047" [1.19 mm]. For details on plating thicknesses and for ordering loose pins, separately, refer to Specification Chart for Stamped and Formed (PC Posted) Contacts, page 11.

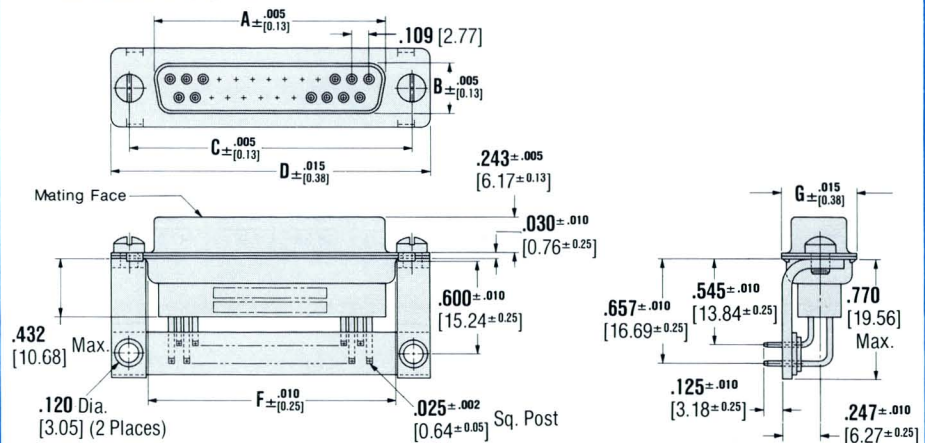
Receptacle Assemblies

Materials and Finishes:

Shell—Steel per QQ-S-698;
Cadmium plated per QQ-P-416,
Type II, Class 2, gold color;
Insert—Glass-Filled Nylon,
94V-0 Grade, black color;
Socket Contacts—Phosphor Bronze per QQ-B-750;
Selective Gold over Nickel or
Gold Flash over Nickel plated
(See Dash Nos.)



50 POSITION
RECEPTACLE ASSEMBLY



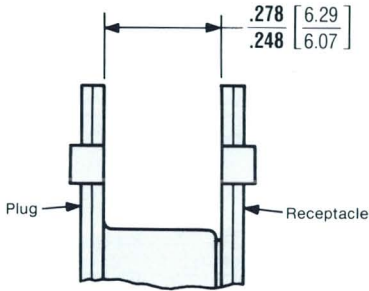
No. of Contact Pos.	Dimensions							Contact Finish	Part No.
	A	B	C	D	E	F	G		
9	0.643	0.311	0.984	1.213	—	0.759	0.494	Sel. Gold/Nickel	205866-2
	16.33	7.9	24.99	30.81	—	19.28	12.55	Gold Flash/Nickel	205866-1
15	0.971	0.311	1.312	1.541	—	1.083	0.494	Sel. Gold/Nickel	205868-2
	24.66	7.9	33.32	39.14	—	27.51	12.55	Gold Flash/Nickel	205868-1
25	1.511	0.311	1.852	2.088	—	1.625	0.494	Sel. Gold/Nickel	205858-2
	38.38	7.9	47.04	53.04	—	41.3	12.55	Gold Flash/Nickel	205858-1
37	2.159	0.311	2.500	2.729	—	2.272	0.494	Sel. Gold/Nickel	205860-2
	54.84	7.9	63.5	69.32	—	57.71	12.55	Gold Flash/Nickel	205860-1
50	2.064	0.423	2.406	2.635	—	2.178	0.605	Sel. Gold/Nickel	205870-2
	52.43	10.74	61.12	66.93	—	55.32	15.37	Gold Flash/Nickel	205870-1

Note: All receptacles are preloaded with size no. 20 posted socket contacts. Recommended PC hole size is .047" [1.19 mm]. For details on plating thicknesses, refer to Specification Chart for Stamped and Formed (PC Posted) Contacts, page 11.

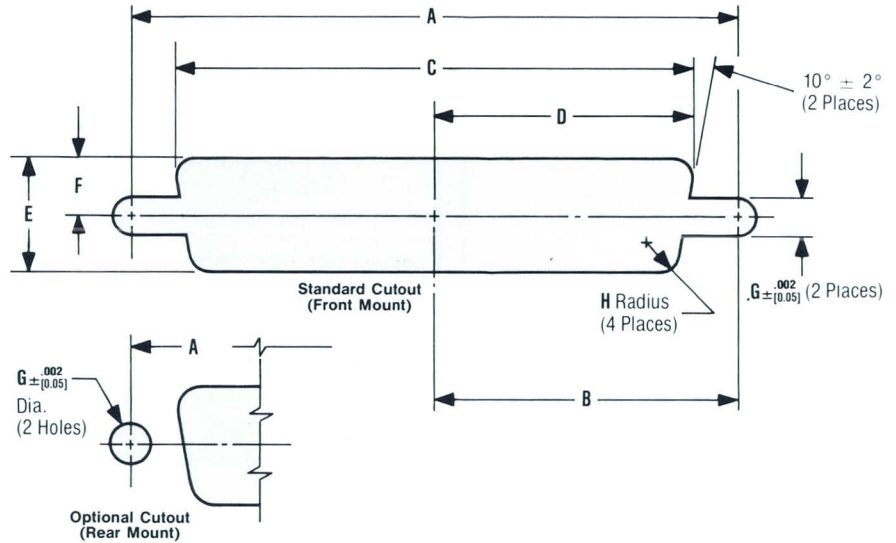
HD-20 Connector Mounting Specifications

- Dimensioning:**
- All dimensions in inches and millimetres. Values in brackets are metric equivalents.
 - Chart contains dimensions in inches over millimetres.

Plug/Receptacle Mating



The $.278$ "/ $.248$ " [6.29 mm/ 6.07 mm] dimension is required to assure full mating of connector halves. This dimension must be taken into consideration when determining the method of mounting, panel thickness, etc.



Shell Size	Mounting Method		Dimensions							
	Front/Rear Panel	With/Without Floating Bushing	A	B	C	D	E	F	G	H
# 1 (9 Position)	Front	With			0.906	0.453	0.545	0.273	0.088	
		Without			23.01	11.51	13.84	6.93	2.24	0.083
	Rear	With	0.984	0.492	0.874	0.437	0.513	0.257	0.120	2.11
		Without	24.89	12.5	22.2	11.1	13.03	6.53	3.05	
	Rear	With			0.838	0.419	0.481	0.241	0.088	
		Without			21.29	10.64	12.22	6.12	2.24	0.132
# 2 (15 Position)	Front	With			1.234	0.617	0.545	0.273	0.088	
		Without			31.34	15.67	13.84	6.93	2.24	0.083
	Rear	With	1.312	0.656	1.202	0.601	0.513	0.257	0.120	2.11
		Without	33.32	16.66	30.53	15.27	13.03	6.53	3.05	
	Rear	With			1.166	0.583	0.481	0.241	0.088	
		Without			29.62	14.81	12.22	6.12	2.24	0.132
# 3 (25 Position)	Front	With			1.775	0.888	0.545	0.273	0.088	
		Without			45.09	22.56	13.84	6.93	2.24	0.083
	Rear	With	1.852	0.926	1.743	0.872	0.513	0.257	0.120	2.11
		Without	47.04	23.52	44.27	22.15	13.03	6.53	3.05	
	Rear	With			1.706	0.853	0.481	0.241	0.088	
		Without			43.33	21.67	12.22	6.12	2.24	0.132
# 4 (37 Position)	Front	With			2.423	1.212	0.545	0.273	0.088	
		Without			61.77	30.78	13.84	6.93	2.24	0.083
	Rear	With	2.500	1.250	2.391	1.196	0.513	0.257	0.120	2.11
		Without	63.5	31.75	60.73	30.38	13.03	6.53	3.05	
	Rear	With			2.354	1.177	0.481	0.241	0.088	
		Without			59.79	29.9	12.22	6.12	2.24	0.132
# 5 (50 Position)	Front	With			2.329	1.165	0.655	0.328	0.088	
		Without			59.16	29.59	16.64	8.33	2.24	0.083
	Rear	With	2.406	1.203	2.297	1.149	0.623	0.312	0.120	2.11
		Without	61.12	30.56	58.34	29.18	15.82	7.92	3.05	
	Rear	With			2.250	1.125	0.587	0.294	0.088	
		Without			57.15	28.58	14.91	7.47	2.24	0.132
Rear	With			2.218	1.109	0.555	0.278	0.120	3.35	
	Without			56.34	28.17	14.1	7.06	3.05		

HD-20 Connector Contact Specifications

Dimensioning:

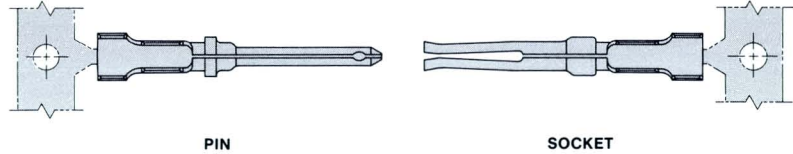
1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Charts contain dimensions in inches over millimetres.

Stamped and Formed Contacts (Crimp-type)



Insertion/Extraction Tool for Crimp-type contacts
Part No. 91067-2
Insertion Replacement Tip Part No. 126195-3
Extraction Replacement Tip Part No. 126195-4

With Insulation Support



CONTACT SIZE 20 DF—PIN DIAMETER .040" [1.02 mm]

Material: Pin—Brass per MIL-C-50; Socket—Phosphor bronze per QQ-B-750

Finish: Gold/Copper—.000050" [0.0013 mm] gold over .000100" [0.0025 mm] copper
 Selective Gold/Nickel—Gold flash over .000050" [0.0013 mm] nickel on entire contact with additional .000030" [0.0008 mm] gold on mating end for length of .175" [4.45 mm] max.
 Gold Flash/Nickel—Gold flash over .000030" [0.0008 mm] nickel. Gold plated per MIL-G-45204; Copper plated per MIL-C-14550; Nickel plated per QQ-N-290

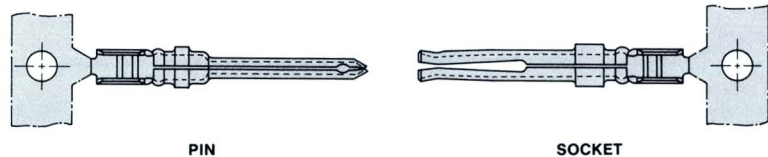
Wire Size Range AWG	mm ²	Ins. Dia. (Max.)	Finish	Strip Form Contact No.		Loose Piece Contact No.		Crimping Tool No.
				Pin	Socket	Pin	Socket	
24-20	0.2-0.6	.060 1.52	Gold/Copper	66506-2 ^o	66504-2 ^o	66506-8	66504-8	90302-1
				1-66506-1 ^{oo}	1-66504-1 ^{oo}			
			Sel. Gold/Nickel	66506-3 ^o	66504-3 ^o	66506-9	66504-9	
				1-66506-2 ^{oo}	1-66504-2 ^{oo}			
Gold Flash/Nickel	66506-4 ^o	66504-4 ^o	1-66506-0	1-66504-0				
	1-66506-3 ^{oo}	1-66504-3 ^{oo}						
28-24	0.08-0.2	.040 1.02	Gold/Copper	66507-2 ^o	66505-2 ^o	66507-8	66505-8	90302-1
				1-66507-1 ^{oo}	1-66505-1 ^{oo}			
			Sel. Gold/Nickel	66507-3 ^o	66505-3 ^o	66507-9	66505-9	
				1-66507-2 ^{oo}	1-66505-2 ^{oo}			
Gold Flash/Nickel	66507-4 ^o	66505-4 ^o	1-66507-0	1-66505-0				
	1-66507-3 ^{oo}	1-66505-3 ^{oo}						

^o Strip form contacts for use in miniature applicator.

^{oo} Strip form contacts for use in AMP-O-MATIC Stripper/Crimper machine or standard applicator.

Note: These contacts may be used in HDM-20 and HDP-20 connectors.

Without Insulation Support



CONTACT SIZE 20 DF—PIN DIAMETER .040" [1.02 mm]

Material: Pin—Brass per MIL-C-50; Socket—Phosphor bronze per QQ-B-750

Finish: Selective Gold/Nickel—Gold flash over .000030" [0.0008 mm] nickel on entire contact with additional .000030" [0.0008 mm] gold on mating end for length of .175" [4.45 mm] max.
 Gold Flash/Nickel—Gold flash over .000030" [0.0008 mm] nickel. Gold plated per MIL-G-45204; Nickel plated per QQ-N-290.

Wire Size Range AWG	mm ²	Ins. Dia. (Max.)	Finish	Strip Form Contact No.		Loose Piece Contact No.		Crimping Tool No.
				Pin	Socket	Pin	Socket	
24-20	0.2-0.6	.068 1.73	Sel. Gold/Nickel	205202-2 ^o	205201-3 ^o	205202-4	205201-5	90265-1
				1-205202-1 ^{oo}	1-205201-2 ^{oo}			
			Gold Flash/Nickel	205202-6 ^o	205201-6 ^o	205202-7	205201-7	
				1-205202-3 ^{oo}	1-205201-3 ^{oo}			
28-24	0.08-0.2	.068 1.73	Sel. Gold/Nickel	205310-2 ^o	205311-3 ^o	205310-8	205311-9	90265-1
				1-205310-1 ^{oo}	1-205311-2 ^{oo}			
			Gold Flash/Nickel	205310-4 ^o	205311-4 ^o	1-205310-0	1-205311-0	
				1-205310-3 ^{oo}	1-205311-3 ^{oo}			

^o Strip form contacts for use in miniature applicator.

^{oo} Strip form contacts for use in AMP-O-MATIC Stripper/Crimper machine or standard applicator.

Note: These contacts may be used in HDM-20 and HDP-20 connectors.

- Dimensioning:**
- All dimensions in inches and millimetres. Values in brackets are metric equivalents.
 - Chart contains dimensions in inches over millimetres.

Screw-Machined Contacts



PIN
M24308/11-1

SOCKET
M24308/10-1

CONTACT SIZE 20 DM—PIN DIAMETER .040" [1.02 mm]

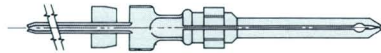
Pin Body: *Material*—Copper alloy per QQ-B-626
Finish—.000050" [0.0013 mm] gold over .000100" [0.0025 mm] copper. Gold plated per MIL-G-45204; Copper plated per MIL-C-14550

Socket Body: *Material*—Beryllium copper per QQ-C-530
Finish—.000050" [0.0013 mm] gold over .000100" [0.0025 mm] copper. Gold plated per MIL-45204; Copper plated per MIL-C-14550

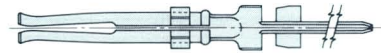
Socket Sleeve: *Material*—Passivated Stainless Steel

Wire Size Range		Ins. Dia. (Max.)	Tape Mounted Contact No.		Loose Piece Contact No.		Crimping Tool	
AWG	mm ²		Pin	Socket	Pin	Socket	Tool No.	Positioner No.
24-20	0.2-0.6	.068 1.73	205089-2	205090-2	205089-1	205090-1	M22520/2-01	M22520/2-08

- Notes:** 1. These contacts may be used in HDM-20 and HDP-20 connectors.
 2. Insertion/Extraction Tool **Part No.** 91067-2 is used to install and remove both pins and sockets.

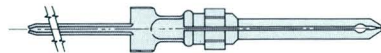


PIN

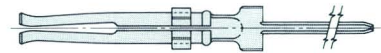


SOCKET

Stabilizer on .425" [10.8 mm] and .651" [16.54 mm] post lengths only.



PIN



SOCKET

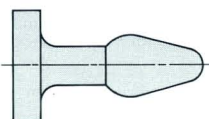
CONTACT SIZE 20 DF—PIN DIAMETER .040" [1.02 mm]

Material: *Pin*—Brass per MIL-C-50; *Socket*—Phosphor bronze per QQ-B-750

Finish: *Selective Gold/Nickel*—Gold flash over .000030" [0.0008 mm] nickel on entire contact with additional .000030" [0.0008 mm] gold on mating end for length of .175" [4.45 mm] max.
Gold Flash/Nickel—Gold flash over .000030" [0.0008 mm] nickel. Gold plated per MIL-G-45204; Nickel plated per QQ-N-290.

Finish	Loose Piece Contact Part No.							
	.125" [3.18 mm] Post Length ^a		.188" [4.78 mm] Post Length ^a		.425" [10.8 mm] Post Length ^a		.651" [16.54 mm] Post Length ^a	
	Pin	Socket	Pin	Socket	Pin	Socket	Pin	Socket
Sel. Gold/Nickel	1-66481-7	1-66482-7	3-66481-5	3-66482-5	1-66481-9	1-66482-9	2-66481-1	2-66482-1
Gold Flash/Nickel	1-66481-6	1-66482-6	3-66481-4	3-66482-4	1-66481-8	1-66482-8	2-66481-0	2-66482-0

- ^a Length of post extending from rear of HDP-20 connector.
Note: Insertion/Extraction Tool **Part No.** 91083-2 is used to install and remove all posted contacts.



Keying Plug for #20 Contacts

Material—natural nylon
Part No.—206509-1

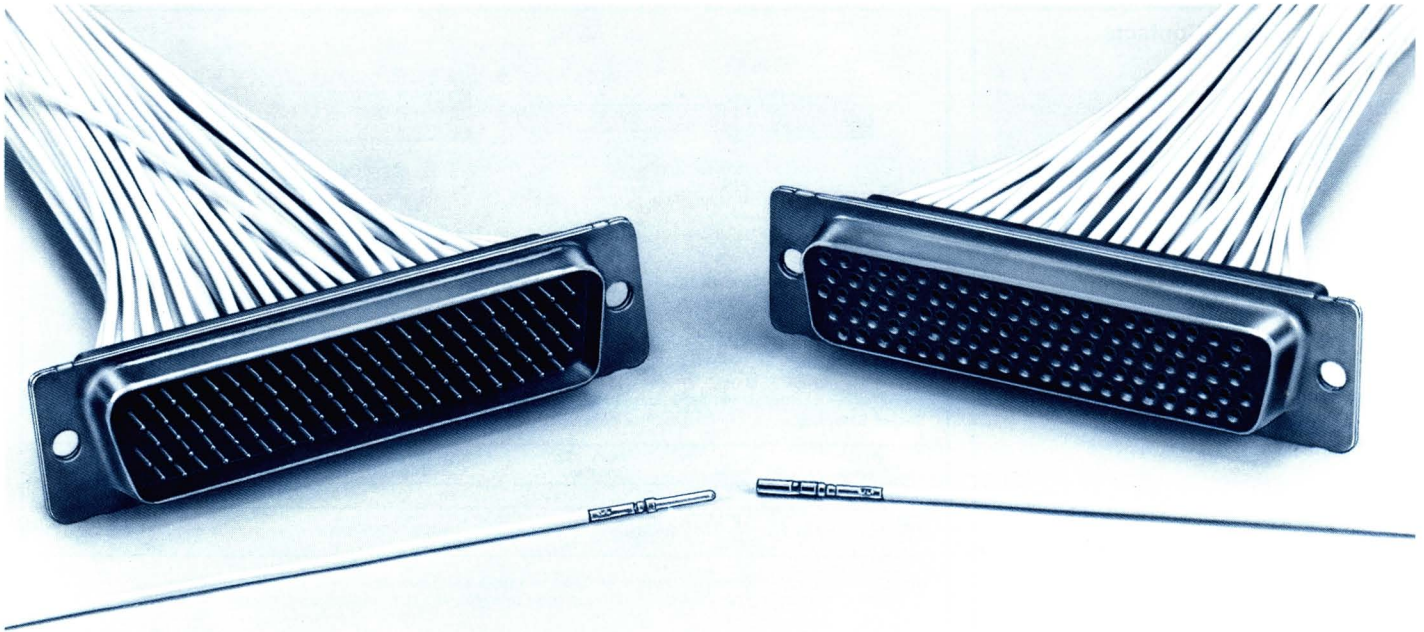
Stamped and Formed Contacts
 (.025" [0.64 mm] square post type)

Note: Snap-in solder cup contacts, size 20 DF, are available.
 Pin **Part No.** 66570-3
 Socket **Part No.** 66569-3

Keying Plug

Introduction to HD-22 Connectors

Dimensioning:
Values in brackets are metric equivalents.



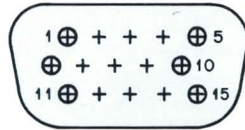
AMPLIMITE High Density 22 connectors offer extremely close contact centerline spacings and are available in a wide choice of sizes—15, 26, 44, 62, 78 and 104 positions. Contact centerline spacing for the 15, 26 and 44 positions is .090" [2.29 mm], and for the 62, 78 and 104 positions is .095" [2.41 mm]. All connector shells, except the 104-position, are adaptable to shield and cable clamp assemblies. With inserts of diallyl phthalate, the entire connector line conforms to the latest amendments of MIL-C-24308. The HD-22 connector line offers higher density connections than any other subminiature rack and panel connector on the market; it is designed to provide optimum miniaturization with maximum reliability.

Both screw-machined and stamped and formed contacts are available for these connectors. The screw-machined contacts are copper alloy with gold over copper plating, and are available with either stainless steel or gold over brass sleeves on the socket contact. These contacts cover wire size ranges of 28 to 22 AWG [0.08 to 0.4 mm²] and 28 to 26 AWG [0.8 to 0.15 mm²] and accept insulation diameters up to .054" [1.37 mm] max. The stamped and formed contacts are copper alloy and are available in a number of platings. Wire size range is 28 to 22 AWG [0.08 to 0.4 mm²] and the maximum insulation diameter accepted is .040" [1.02 mm].

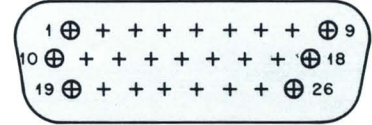
HD-22 Connector Specifications

Dimensioning:
Values in brackets are metric equivalents.

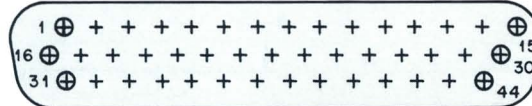
Insert Arrangements



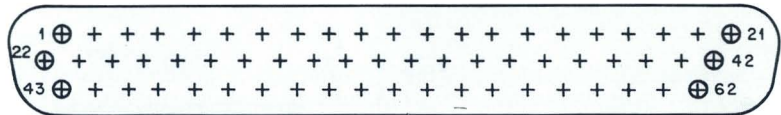
15 Position,
Shell Size 1



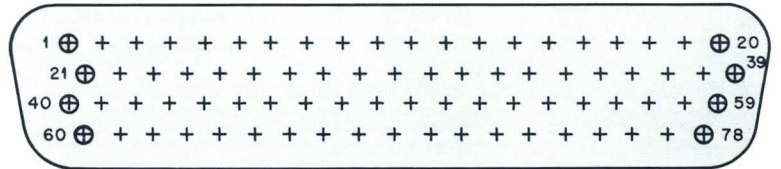
26 Position,
Shell Size 2



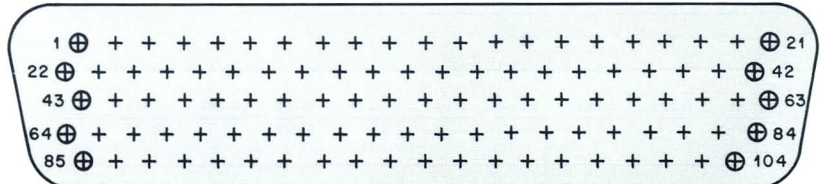
44 Position, Shell Size 3



62 Position, Shell Size 4



78 Position, Shell Size 5



104 Position, Shell Size 6

Contact Mating and Unmating Forces

No. of Contact Pos.	Unmating				Mating (Max.)	
	Min.	N	Max.	N	Lb.	N
15	0.75	3.3	6.01	26.7	10.0	44.5
26	1.00	4.4	10.0	44.5	17.0	75.7
44	1.75	7.7	17.0	75.7	28.0	124.6
62	2.50	11.1	24.0	106.8	39.0	173.5
78	3.25	14.4	30.0	133.5	49.0	218.
104	4.50	20.	39.0	173.5	65.0	289.2

Performance Specifications

Note: Mating face of plug assembly shown.

Electrical and mechanical performance of the HD-22 Connector contacts conform to the latest amendments of MIL-C-24308. Their performance characteristics are shown below.

Electrical Characteristics

Contact Current Rating:

1.5 Amperes (with No. 28 AWG [0.08–0.09 mm²] wire)

5.0 Amperes (with No. 22 AWG [0.3–0.4 mm²] wire)

Contact Resistance: 12 Milliohms (max.)

Mechanical Characteristics

Tensile Strength (Crimp):

3 Lb. (with No. 28 AWG [0.08–0.09 mm²] wire) [13.344 N]

12 Lb. (with No. 22 AWG [0.3–0.4 mm²] wire) [53.376 N]

Contact Engagement Force: 12 Oz. [3.336 N] (max.)

Contact Separation Force: 0.70 Oz. [0.1946 N] (min.)

HD-22 Connector Specifications (Cont'd)

Dimensioning:

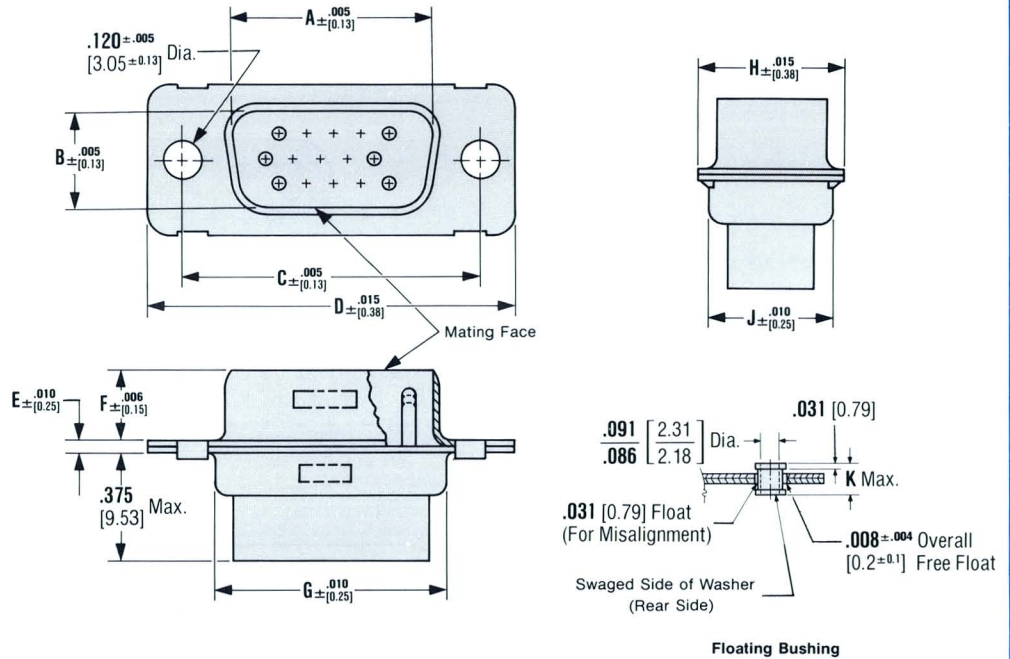
- All dimensions in inches and millimetres. Values in brackets are metric equivalents.
- Chart contains dimensions in inches over millimetres.

Plug Assemblies

Materials:

Shell—Steel, Class G; Cadmium plated per QQ-P-416, Type II, Class 2³
 Insert—Diallyl Phthalate per MIL-M-14, Type SDG-F; Color, Blue
 Retention Springs—Stainless Steel³

³Shells in non-magnetic brass and retention springs in beryllium copper can be supplied upon request.



No. of Contact Positions	Dimensions										Standard Mount		Floating Bushing Mount	Description
	A	B	C	D	E	F	G	H	J	K	Military Part No. [M24308/]	AMP Part No.	AMP Part No.	
15	0.666	0.329	0.984	1.213	0.030	0.235	0.759	0.494	0.422	0.120	4-264	204501-1	204525-1*	Plug only
	16.92	8.36	24.99	30.81	0.76	5.97	19.28	12.55	10.72	3.05	—	204513-1*	204537-1*	Plug with Tool**
											4-11	204513-2	204537-2*	Plug with Pins
											4-17	204513-3	204537-3*	Plug with Pins and Tool**
26	0.994	0.329	1.312	1.541	0.030	0.235	1.083	0.494	0.422	0.120	4-265	204503-1	204527-1*	Plug only
	25.25	8.36	33.32	39.14	0.76	5.97	27.51	12.55	10.72	3.05	—	204515-1*	204539-1*	Plug with Tool**
											4-12	204515-2	204539-2*	Plug with Pins
											4-18	204515-3	204539-3*	Plug with Pins and Tool**
44	1.534	0.329	1.852	2.088	0.039	0.230	1.625	0.494	0.422	0.129	4-266	204505-1	204529-1*	Plug only
	38.96	8.36	47.04	53.04	0.99	5.84	41.3	12.55	10.72	3.28	—	204517-1*	204541-1*	Plug with Tool**
											4-13	204517-2	204541-2*	Plug with Pins
											4-19	204517-3	204541-3*	Plug with Pins and Tool**
62	2.182	0.329	2.500	2.729	0.039	0.230	2.272	0.494	0.422	0.129	4-267	204507-1	204531-1*	Plug only
	55.42	8.36	63.5	69.32	0.99	5.84	57.7	12.55	10.72	3.28	—	204519-1*	204543-1*	Plug with Tool**
											4-14	204519-2	204543-2*	Plug with Pins
											4-20	204519-3	204543-3*	Plug with Pins and Tool**
78	2.079	0.436	2.406	2.635	0.039	0.230	2.178	0.605	0.534	0.129	4-268	204509-1	204533-1*	Plug only
	52.81	11.07	61.12	66.93	0.99	5.84	55.32	15.37	13.56	3.28	—	204521-1*	204545-1*	Plug with Tool**
											4-15	204521-2	204545-2*	Plug with Pins
											4-21	204521-3	204545-3*	Plug with Pins and Tool**
104	2.212	0.503	2.500	2.729	0.039	0.230	2.302	0.668	0.596	0.129	4-269	204511-1	204535-1*	Plug only
	56.18	12.78	63.5	69.32	0.99	5.84	58.47	16.97	15.14	3.28	—	204523-1*	204547-1*	Plug with Tool**
											4-16	204523-2	204547-2*	Plug with Pins
											4-22	204523-3	204547-3*	Plug with Pins and Tool**

* No specific military part no. assigned. May be quoted and/or purchased by equivalent military part no., stating any variation from the military part no., or by AMP part no. only.

** Insertion/Extraction Tool, AMP Part No. 91067-1.

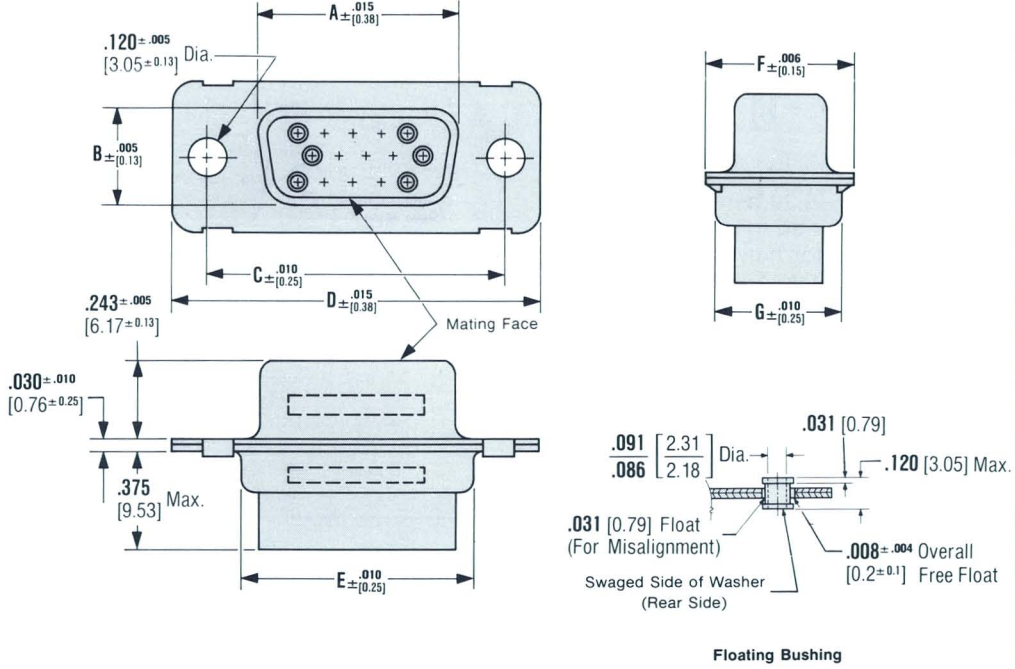
Note: Pins supplied with plugs are loose piece. For ordering loose-piece and/or tape-mounted pins separately, refer to the Contact Specification Chart, page 9-283

Dimensioning:
 1. All dimensions in inches and millimetres.
 Values in brackets are metric equivalents.
 2. Chart contains dimensions in inches over millimetres.

Receptacle Assemblies

Materials:
 Shell-Steel, Class G; Cadmium plated per QQ-P-416, Type II, Class 2^o
 Insert—Diallyl Phthalate per MIL-M-14, Type SDG-F. Color, Blue
 Retention Springs—Stainless Steel^o

^oShells in non-magnetic brass and retention springs in beryllium copper can be supplied upon request.



No. of Contact Pos.	Dimensions							Standard Mount		Floating Bushing Mount		Description
	A	B	C	D	E	F	G	Military Part No. (M24308/)	AMP Part No.	Military Part No. (M24308/)	AMP Part No.	
15	0.643	0.311	0.984	1.213	0.759	0.494	0.422	2-286	204500-1	2-297	204524-1	Receptacle only
	16.33	7.9	24.99	30.81	19.28	12.55	10.72	—	204512-1*	—	204536-1*	Receptacle with Tool**
								2-11	204512-2	2-28	204536-2	Receptacle with Sockets
								2-17	204512-3	2-39	204536-3	Receptacle with Sockets and Tool**
26	0.971	0.311	1.312	1.541	1.083	0.494	0.422	2-287	204502-1	2-298	204526-1	Receptacle only
	24.66	7.9	33.32	39.14	27.51	12.55	10.72	—	204514-1*	—	204538-1*	Receptacle with Tool**
								2-12	204514-2	2-29	204538-2	Receptacle with Sockets
								2-18	204514-3	2-40	204538-3	Receptacle with Tool and Sockets**
44	1.511	0.311	1.852	2.088	1.625	0.494	0.422	2-288	204504-1	2-299	204528-1	Receptacle only
	38.38	7.9	47.04	53.04	41.3	12.55	10.72	—	204516-1*	—	204540-1*	Receptacle with Tool**
								2-13	204516-2	2-30	204540-2	Receptacle with Sockets
								2-19	204516-3	2-41	204540-3	Receptacle with Tool and Sockets**
62	2.159	0.311	2.500	2.729	2.272	0.494	0.422	2-289	204506-1	2-300	204530-1	Receptacle only
	54.84	7.9	63.5	69.32	57.7	12.55	10.72	—	204518-1*	—	204542-1*	Receptacle with Tool**
								2-14	204518-2	2-31	204542-2	Receptacle with Sockets
								2-20	204518-3	2-42	204542-3	Receptacle with Tool and Sockets**
78	2.064	0.423	2.406	2.635	2.178	0.605	0.534	2-290	204508-1	2-301	204532-1	Receptacle only
	52.43	10.74	61.12	66.93	55.32	15.37	13.56	—	204520-1*	—	204544-1*	Receptacle with Tool**
								2-15	204520-2	2-32	204544-2	Receptacle with Sockets
								2-21	204520-3	2-43	204544-3	Receptacle with Tool and Sockets**
104	2.189	0.485	2.500	2.729	2.302	0.668	0.596	2-291	204510-1	2-302	204534-1	Receptacle only
	55.6	12.32	63.5	69.32	58.47	16.97	15.14	—	204522-1*	—	204546-1*	Receptacle with Tool**
								2-16	204522-2	2-33	204546-2	Receptacle with Sockets
							2-22	204522-3	2-44	204546-3	Receptacle with Tool and Sockets**	

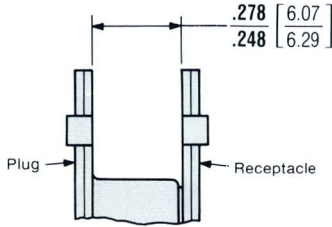
* No specific military part no. assigned. May be quoted and/or purchased by equivalent military part no., stating any variation from the military part no., or by AMP part no. only.
 ** Insertion/Extraction Tool, AMP Part No. 91067-1.
Note: Sockets supplied with receptacles are loose piece. For ordering loose-piece and/or tape-mounted sockets separately, refer to the Contact Specification Chart, page 9-283.

HD-22 Connector Mounting Specifications

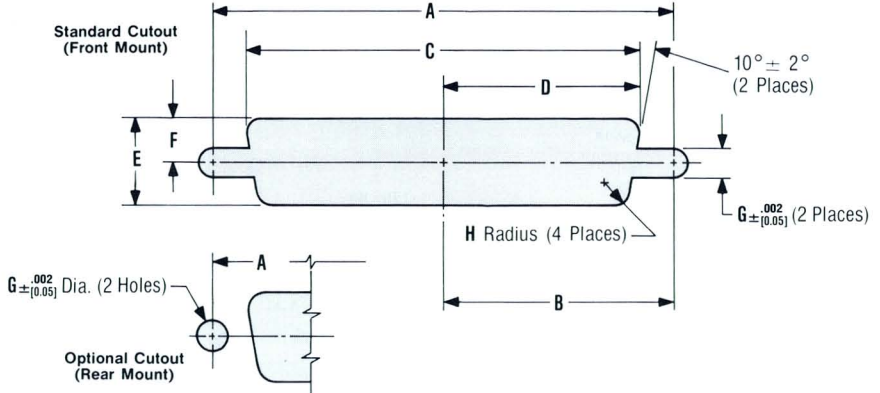
Dimensioning:

- All dimensions in inches and millimetres. Values in brackets are metric equivalents.
- Chart contains dimensions in inches over millimetres.

Plug/Receptacle Mating



The .278"/.248" [6.29 mm/6.07 mm] dimension is required to assure full mating of connector halves. This dimension must be taken into consideration when determining the method of mounting, panel thickness, etc.

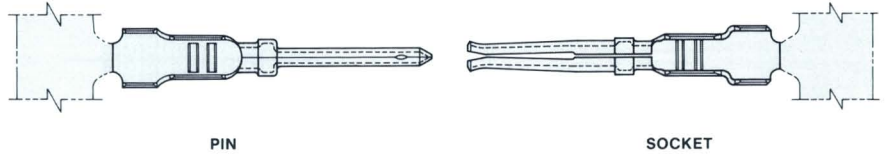


Shell Size	Mounting Method		Dimensions								
	Front/Rear Panel	With/Without Floating Bushing	A	B	C	D	E	F	G	H	
# 1 (15 Position)	Front	With			0.906 23.01	0.453 11.51	0.545 13.84	0.273 6.93	0.088 2.24	0.083 2.11	
		Without	0.984 24.89	0.492 12.5	0.874 22.2	0.437 11.1	0.513 13.03	0.257 6.53	0.120 3.05		
	Rear	With			0.838 21.29	0.419 10.64	0.481 12.22	0.241 6.12	0.088 2.24	0.132 3.35	
		Without			0.806 20.47	0.403 10.24	0.449 11.4	0.225 5.72	0.120 3.05		
	# 2 (26 Position)	Front	With			1.234 31.34	0.617 15.67	0.545 13.84	0.273 6.93	0.088 2.24	0.083 2.11
			Without	1.312 33.32	0.656 16.66	1.202 30.53	0.601 15.27	0.513 13.03	0.257 6.53	0.120 3.05	
Rear		With			1.166 29.62	0.583 14.81	0.481 12.22	0.241 6.12	0.088 2.24	0.132 3.35	
		Without			1.134 28.8	0.567 14.4	0.449 11.4	0.225 5.72	0.120 3.05		
# 3 (44 Position)	Front	With			1.775 45.09	0.888 22.56	0.545 13.84	0.273 6.93	0.088 2.24	0.083 2.11	
		Without	1.852 47.04	0.926 23.52	1.743 44.27	0.872 22.15	0.513 13.03	0.257 6.53	0.120 3.05		
	Rear	With			1.706 43.33	0.853 21.67	0.481 12.22	0.241 6.12	0.088 2.24	0.132 3.35	
		Without			1.674 42.52	0.837 21.26	0.449 11.4	0.225 5.72	0.120 3.05		
	# 4 (62 Position)	Front	With			2.423 61.77	1.212 30.78	0.545 13.84	0.273 6.93	0.088 2.24	0.083 2.11
			Without	2.500 63.5	1.250 31.75	2.391 60.73	1.196 30.38	0.513 13.03	0.257 6.53	0.120 3.05	
Rear		With			2.354 59.79	1.177 29.9	0.481 12.22	0.241 6.12	0.088 2.24	0.132 3.35	
		Without			2.326 59.08	1.163 29.54	0.449 11.4	0.225 5.72	0.120 3.05		
# 5 (78 Position)	Front	With			2.329 59.16	1.165 29.59	0.655 16.64	0.328 8.33	0.088 2.24	0.083 2.11	
		Without	2.406 61.12	1.203 30.56	2.297 58.34	1.149 29.18	0.623 15.82	0.312 7.92	0.120 3.05		
	Rear	With			2.250 57.15	1.125 28.58	0.587 14.91	0.294 7.47	0.088 2.24	0.132 3.35	
		Without			2.218 56.34	1.109 28.17	0.555 14.1	0.278 7.06	0.120 3.05		
	# 6 (104 Position)	Front	With			2.453 62.31	1.226 31.14	0.717 18.21	0.359 9.12	0.088 2.24	0.083 2.11
			Without	2.500 63.5	1.200 30.48	2.421 61.49	1.211 30.76	0.685 17.4	0.343 8.71	0.120 3.05	
Rear		With			2.388 60.66	1.194 30.33	0.654 16.61	0.327 8.31	0.088 2.24	0.132 3.35	
		Without			2.356 59.84	1.178 29.92	0.622 15.8	0.311 7.9	0.120 3.05		

HD-22 Connector Contact Specifications

- Dimensioning:**
 1. All dimensions in inches and millimetres.
 Values in brackets are metric equivalents.
 2. Chart contains dimensions in inches over millimetres.

Stamped and Formed Contacts (Crimp-type)



CONTACT SIZE 22 DF—PIN DIAMETER .030" [0.72 mm]

Material: Pin body—Brass per MIL-C-50; Socket—Phosphor Bronze per QQ-B-750

Finish: Gold/Copper—.000050" [0.0013 mm] gold over .00010" [0.0025 mm] copper
 Selective gold/nickel—Gold flash over .000050" [0.0013 mm] nickel on entire contact with additional .000030" [0.0008 mm] gold on mating end for length of .150" to .100" [3.81 mm to 2.54 mm]
 Gold/Nickel—Gold flash over .000030" [0.0008 mm] nickel. Gold plated per MIL-G-45204; Copper plated per MIL-C-14550; Nickel plated per QQ-N-290

Wire Size Range		Ins. Dia. Range	Finish	Strip Form Contact No.		Loose Piece Contact No.		Hand Tool No.
AWG	mm ²			Pin	Socket	Pin	Socket	
28-22	0.08-0.4	.030-.040 0.77-1.02	Gold/ Copper	66556-2 1-66556-1 ^o	66493-2 1-66493-1 ^o	66556-8	66493-8	90294-1
			Sel. Gold/ Nickel	66556-3 1-66556-2 ^o	66493-3 1-66493-2 ^o	66556-9	66493-9	
Accepts two #28 AWG Wires			Gold/ Nickel	66556-4 1-66556-3 ^o	66493-4 1-66493-3 ^o	1-66556-0	1-66493-0	

^o Contacts reeled for application by AMP-O-MATIC Stripper/Crimper Machine.

Screw-Machined Contacts



CONTACT SIZE 22 DM—PIN DIAMETER .030" [0.72 mm]

Material: Pin and Socket Body—Copper Alloy
 Socket Sleeve—Stainless steel or gold plated brass

Finish: Pin and Socket Body—Gold over copper
 Socket Sleeve (Brass)—Gold. Gold plated per MIL-G-45204; Copper plated per MIL-C-14550

Insulation Diameter .054" [1.38 mm] max.

Wire Size Range		Contact Configuration	Socket Sleeve Material & Finish	Loose Piece		Tape Mounted	Crimping Tool	
AWG	mm ²			Military Part No. (M24308/)	AMP Part No.	AMP Part No.	Tool No. (M22520/)	Positioner No. (M22520/)
28-22	0.08-0.4	Pin	—	13-1	204370-2	204370-5	—	2-09
		Socket	Stainless Steel	12-1	204351-1	204351-2	2-01	2-06
28-26	0.08-0.15	Pin	—	—	206071-1	206071-2	—	2-06
		Socket	Gold/Brass	—	206495-3	206495-4	2-01	2-09
					206496-1	206496-2		2-06



Insertion/Extraction Tool for Crimp-type Contacts
Part No. 91067-1

Insertion Replacement Tip **Part No.** 126237-1
 Extraction Replacement Tip **Part No.** 126195-2

Accessories for HD-20 and HD-22 Connectors

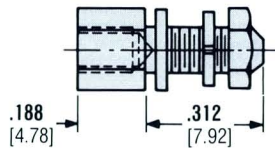
Dimensioning:
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

Male Screw Retainer



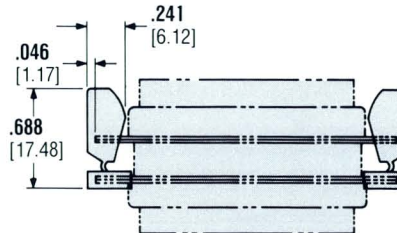
Material: Screw—Cadmium plated steel
Retainer Clip—Aluminum plated steel
Kit Part Number: 205980-1 (packaged two per kit)

Female Screwlock Assembly



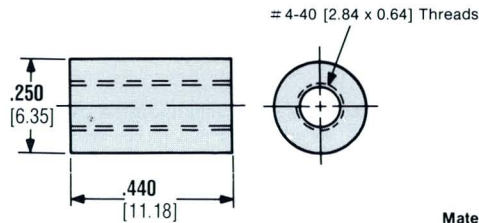
Material: Cadmium Plated Steel
Kit Part Number: 205817-1 (packaged two per kit)

Locking Latch

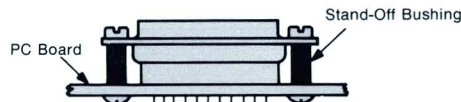


Material: Black Polypropylene
Kit Part Number: 205930-1 For Shell Sizes #1-#4 (packaged two per kit)
205930-2 For Shell Size #5 (packaged two per kit)

Stand-off Bushing



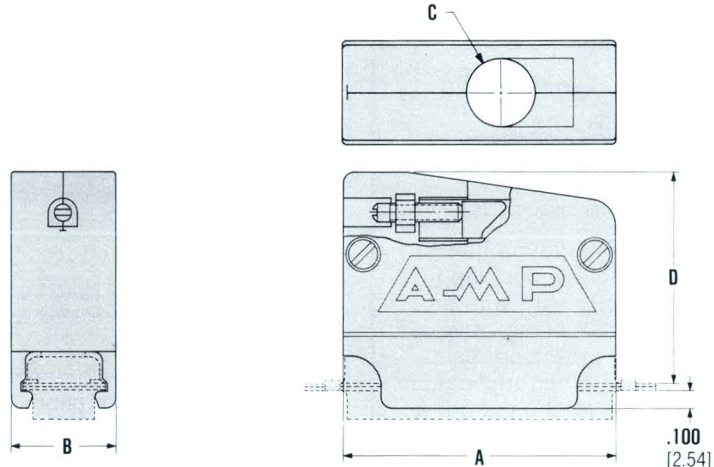
Material: Clear Anodized Aluminum
Kit Part Number: 205933-2 (one per package)
205933-3 (two per package)



Dimensioning:
 1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
 2. Charts contain dimensions in inches over millimetres.

Straight/45° Shield and Cable Clamp Assembly

These versatile Shield and Cable Clamp Assemblies can be used on either plug or receptacle and do not interfere with commonly used spring latch assemblies, screwlock assemblies, or hold-down screws. Hinged construction allows easy assembly to harness. They may be used for either straight or 45° cable entry. The specific angle of cable entry is achieved by merely positioning the Support Gate for the desired angle prior to installing the assembly onto the plug or receptacle. Maximum cable diameters accepted by the Shield and Cable Clamp Assemblies are listed in the chart.



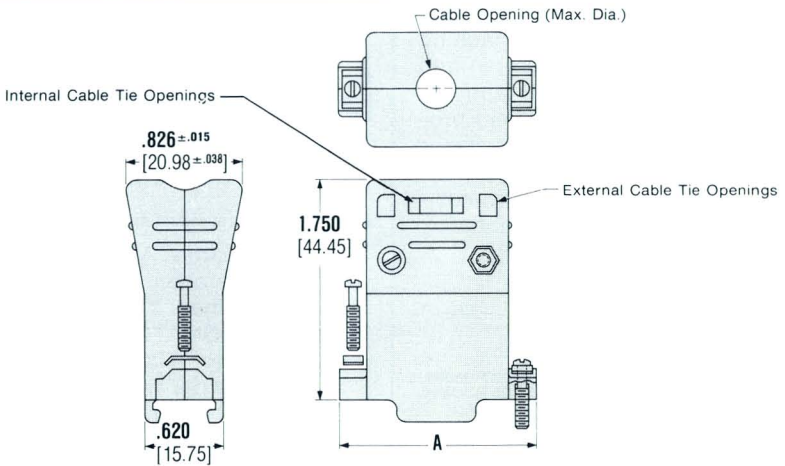
Material: Housing and Support Gate—Flame retardant Polypropylene; Color, Black
 Screws—Cadmium plated Steel.

Shell Size	No. of Positions		Dimensions				Cable Dia. Max.	Clamp Assembly		Retainer Assembly	Kit Part No.
	HD-20	HD-22	A	B	C	D		Short	Standard		
# 1	9	15	.750	.620	.236	1.625	.236	—	205729-1	205980-1	206478-1
			19.05	15.75	5.99	41.28	5.99				
# 2	15	26	1.073	.620	.300	1.625	.300	—	205730-1	205980-1	206478-2
			27.25	15.75	7.62	41.28	7.62				
						1.250	.300	31.75	7.62	206393-1	—
# 3	25	44	1.615	.620	.400	1.625	.400	—	205718-1	205980-1	206478-3
			41.02	15.75	10.16	41.28	10.16				
						1.250	.400	31.75	10.16	206390-1	—
# 4	37	62	2.265	.620	.470	1.625	.470	—	205731-1	205980-1	206478-4
			57.53	15.75	11.94	41.28	11.94				
# 5	50	78	2.168	.730	.580	1.625	.580	—	205732-1	205980-1	206478-5
			55.07	18.54	14.73	41.28	14.73				

Straight/90° Shield and Cable Clamp Assembly

These versatile assemblies may be used on either plug or receptacle, and feature a two piece construction for easy assembly.

By using AMP-TY cable ties to clamp the cable they may be used for either straight or 90° cable entry.



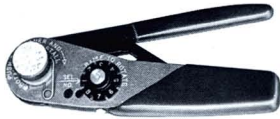
Material: Cable Support Housing—Gray Polypropylene
 Saddle Washer and Screw—Cadmium Plated Steel
 Housing Screw and Nut—Passivated Stainless Steel

Shell Size	No. of Positions		Dim. A	Max. Cable Dia.	Part Number
	HD-20	HD-22			
2	15	26	1.55	.350	206471-1
			39.37	8.9	
3	25	44	2.09	.335	206472-2
			53.08	8.51	

Application Tooling

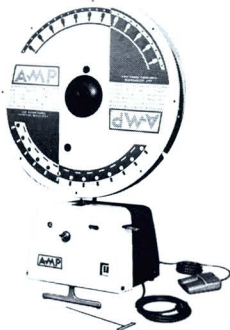
Dimensioning:
Values in brackets are metric equivalents.

Tooling for Screw- Machined Contacts



Hand Crimping Tool Part No. M22520/2-01

This standard military-type hand tool terminates screw-machined pins and sockets to wire with an 8-indent, M22520/2 crimp. It is ideally suited for prototype, field maintenance and other applications where volume production is not a factor.



AMP-TAPEMATIC Stripper/Crimper Machine,
Part No. 599406-6
(Funnel No. 125905-1 for Size 20 Contacts,
Funnel No. 125905-2 for Size 22D Contacts)

The AMP-TAPEMATIC Stripper/Crimper Machine strips wire and applies an 8-indent crimp termination per MIL-C-22520. The machine terminates screw-machined pin and socket contacts which are tape mounted and reel fed. It offers production rates of up to 1200 finished leads per hour, provides overall lower applied costs and maintains the highest degree of termination reliability.



Insertion/Extraction Tool,
Part No. 91067-1 (M24308/18-1) for Size 22D Contacts;
Part No. 91067-2 (M24308/18-2) for Size 20 Contacts;
Part No. 91083-1 for Size 20 Posted Contacts

This military-type service tool is used to insert and extract both pins and sockets. Designed for MIL-C-24308 connectors, it can be used for all AMPLIMITE HDM-20, HDP-20 and HD-22 connectors with crimp-type contacts and features a metal replacement tip. Tools also can be furnished for insertion/extraction of post type contacts.

Tooling for Precision Formed Contacts



CERTI-CRIMP Hand Crimping Tool

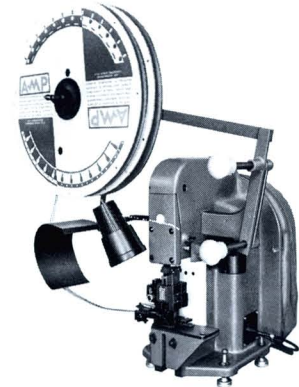
Part No. 90294-1 for Size 20 Contacts;
Part No. 90302-1 for Size 20 Contacts with Ins. Support
Part No. 90265-1 for Size 20 Contacts w/o Ins. Support

AMP's CERTI-CRIMP Hand Tool is ideal for small production, prototype and experimental applications. It terminates precision formed pins and sockets to wire and features a patented ratchet device which assures perfectly formed crimps, time after time.

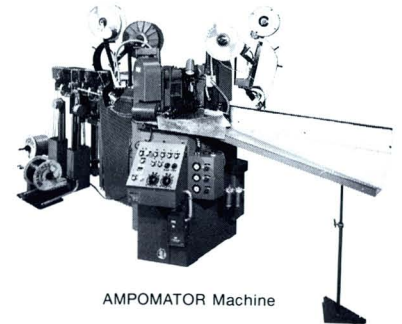


AMP Side-Feed Miniature Applicator

These Miniature Applicators provide flexible operation for a variety of AMP Machines. They can be used in the AMPOMATOR Machine, producing up to 5700 doubly terminated leads per hour, or the AMP-O-LECTRIC Machine which applies contacts to wire at rates up to 4000 terminations an hour. All feature precision dies made of hard-metal alloys to assure identical terminations through countless operations. In addition, all adjustments are made rapidly, with no major interruptions in production. Crimping height on contact barrel for a given wire size is simply "dialed in."



AMP-O-LECTRIC Machine



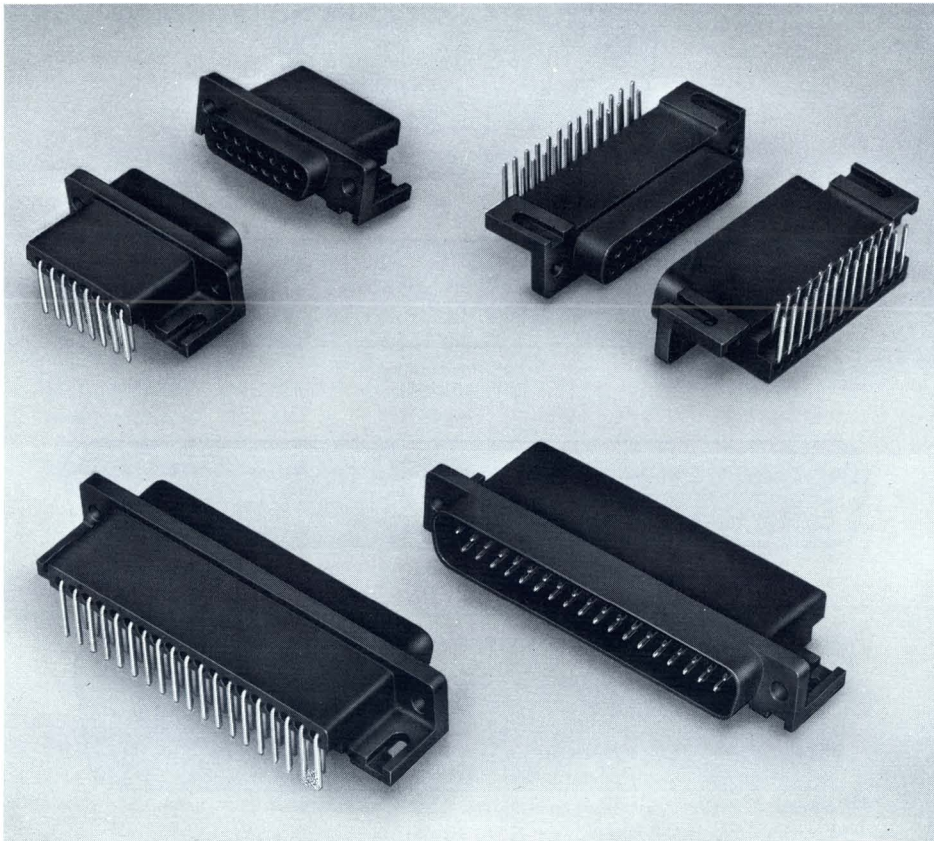
AMPOMATOR Machine



AMP-O-MATIC Stripper/Crimper Machine

This Stripper/Crimper Machine strips wire and attaches an open-barrel contact during each machine cycle. It provides maximum production flexibility by crimping all AMP open-barrel, side-feed strip contacts as well as stripping a wide range of non-metallic insulated wire—sizes No. 28–16 AWG [0.08–1.4 mm²]. This machine is capable of producing up to 1500 terminations an hour.

Pin and Socket Connectors



All-plastic AMPLIMITE HDP-20 right angle connectors provide the lowest cost in high density connections for printed circuit applications. These miniature pin and socket connectors offer a close centerline spacing of .109" [2.77 mm], and for economy, use stamped and formed contacts which are preloaded with the posts bent to a 90° angle. These contacts are available with a choice of either a gold flash or selective gold finish.

Both plug and receptacle housings are made of 94V-0 rated thermoplastic material. This all-plastic construction eliminates the right angle brackets and metal shells used on current "HD" series type connectors. In turn, it allows circuit paths to be located under the connector without a need for

insulating brackets to prevent shorting of the printed circuit pattern. The housings also feature a stand-off relief. This permits cleaning fluids to be washed off the board, preventing possible contamination or corrosion.

All-plastic AMPLIMITE HDP-20 right angle connectors are available in 15-, 25-, 37- and 50-position sizes. For optimum versatility, they will intermate with all current connectors of the same size and similar design, as well as any of AMP's standard 15-, 25-, 37- and 50-position HDM-20 (military) or HDP-20 (economy) connectors. For more information on the complete line of AMPLIMITE connectors, refer to AMP Catalog Number 73-161.

AMPLIMITE High Density Plastic 20 (HDP-20) Right Angle Connectors

Features

- Available in popular 15-, 25-, 37- and 50-position sizes
- Stamped and formed contacts, preloaded with posts bent 90°
- Choice of gold flash or selective gold finished contacts
- U.L. recognized, 94V-0 rated thermoplastic housings
- All-plastic construction eliminates shorting of printed circuit paths
- Housings with built-in stand-off relief
- Intermateable with other similar connectors utilizing metal shells

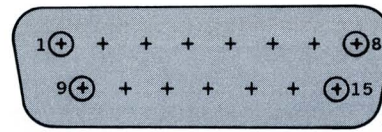
Dimensioning:

All dimensions in inches and millimetres. Values in brackets are metric equivalents.

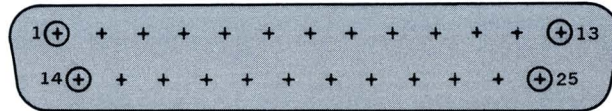
Specifications subject to change. Consult AMP Incorporated for latest design specifications.

Dimensioning:
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

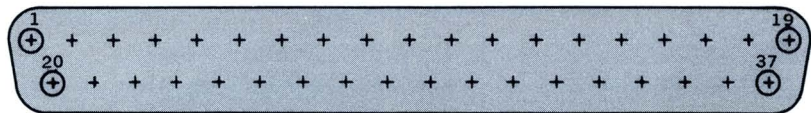
Insert Arrangements



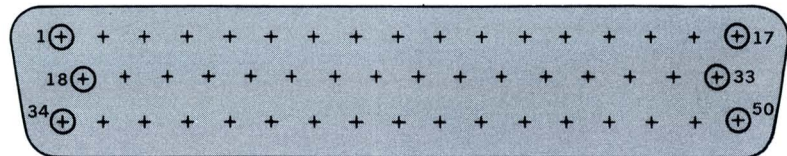
15-Position
(Shell Size 2)



25-Position
(Shell Size 3)



37-Position
(Shell Size 4)



50-Position
(Shell Size 5)

Note: Mating face of plug assembly shown. Receptacle mating face is mirror image.

Performance Specifications

All-plastic AMPLIMITE HDP-20 right angle connectors comply with AMP Specification No. 108-10,020, where applicable. The electrical and mechanical performance characteristics of these connectors are presented below.

Electrical Characteristics

Contact Current Rating (with No. 20 AWG [0.5-0.6 mm²] wire): 7.5 A

Contact Resistance: 5 Milliohms (max.)

Dielectric Withstanding Voltage: 1000 V (min.)

Insulation Resistance: 5000 Megohms

Mechanical Characteristics

Contact Engagement Force: 12.0 Oz. [3.34 N] (max.)

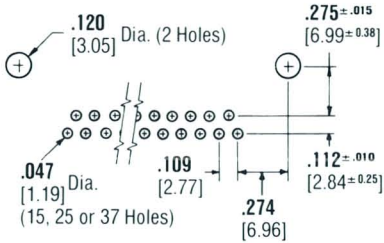
Contact Separation Force: 0.75 Oz. [0.208 N] (min.)

Connector Mating Force (per contact): 8 Oz. [2.22 N] (max.)

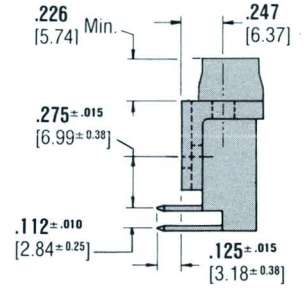
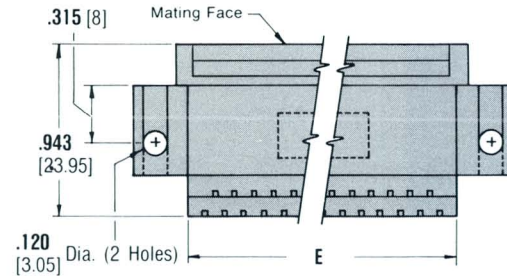
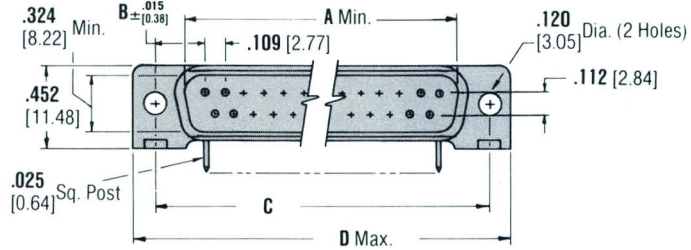
Dimensioning:

- All dimensions in inches and millimetres. Values in brackets are metric equivalents.
- Charts contain dimensions in inches over millimetres.

**Plug Assemblies,
15-, 25- and 37-Positions**



PC Board Mounting Dimensions
(for Plug and Receptacle)



No. of Contact Pos.	Dimensions					Contact Finish	Connector Part No.
	A	B	C	D	E		
15	0.989	0.278	1.312	1.556	0.942	Gold Flash Nickel	206913-1
	25.12	7.06	33.32	39.53	23.93	Sel. Gold Nickel	206913-2
25	1.530	0.274	1.852	2.095	1.490	Gold Flash Nickel	206604-1
	38.86	6.96	47.04	53.22	37.85	Sel. Gold Nickel	206604-2
37	2.177	0.272	2.500	2.742	2.142	Gold Flash Nickel	206816-1
	55.29	6.91	63.5	69.65	54.41	Sel. Gold Nickel	206816-2

Notes:

- All plugs are preloaded with size 20 DF posted pin contacts; post size is .025" [0.64 mm] sq.
- Recommended pc board hole size is .047" [1.19 mm] dia. and max. board thickness is .093" [2.37 mm].

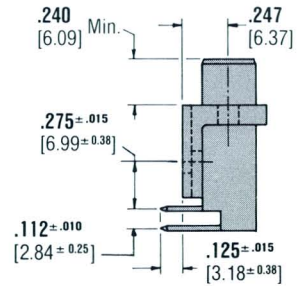
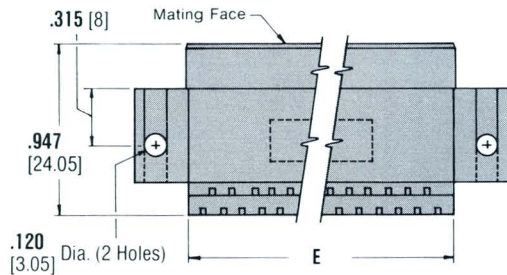
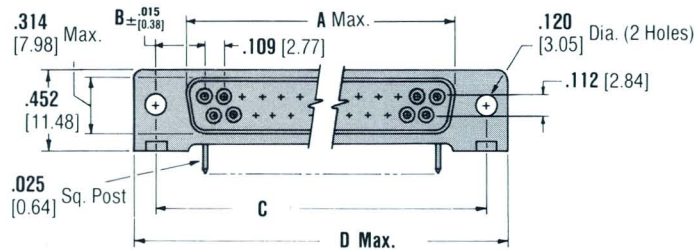
**Receptacle Assemblies,
15-, 25- and 37-Positions**

Materials and Finishes
(for Plug and Receptacle)

Housing Material:
Black thermoplastic, U.L. recognized, 94V-0 rated

Contact Material:
Pin—Brass per MIL-C-50
Socket—Phosphor bronze per QQ-B-750

Contact Finishes:
Gold Flash/Nickel—Gold flash over .000030" [0.0008 mm] nickel on entire contact. Gold plated per MIL-G-45204, nickel plated per QQ-N-290.
Selective Gold/Nickel—Gold flash over .000030" [0.0008 mm] nickel on entire contact with additional .000030" [10.0008 mm] gold on mating end for length of .175" [4.45 mm] max. Gold plated per MIL-G-45204, nickel plated per QQ-N-290.



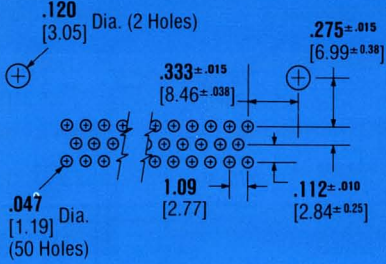
No. of Contact Pos.	Dimensions					Contact Finish	Connector Part No.
	A	B	C	D	E		
15	0.976	0.278	1.312	1.556	0.942	Gold Flash Nickel	206914-1
	24.8	7.06	33.32	39.53	23.93	Sel. Gold Nickel	206914-2
25	1.514	0.274	1.852	2.095	1.490	Gold Flash Nickel	206584-1
	38.46	6.96	47.04	53.22	37.85	Sel. Gold Nickel	206584-2
37	2.162	0.272	2.500	2.742	2.142	Gold Flash Nickel	206817-1
	54.92	6.91	63.5	69.65	54.41	Sel. Gold Nickel	206817-2

Notes:

- All receptacles are preloaded with size 20 DF posted socket contacts; post size is .025" [0.64 mm] sq.
- Recommended pc board hole size is .047" [1.19 mm] dia. and max. board thickness is .093" [2.37 mm].

Dimensioning:
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

**Plug Assembly,
50-Position**



PC Board Mounting Dimensions
(for Plug and Receptacle)

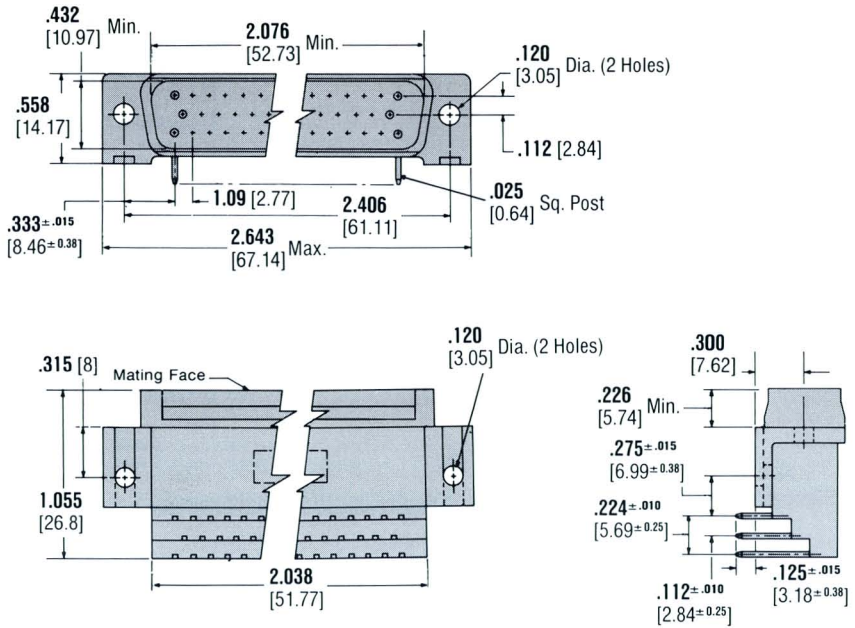
**Receptacle Assembly,
50-Position**

**Materials and Finishes
(for Plug and Receptacle)**

Housing Material:
Black thermoplastic, U.L. recognized,
94V-0 rated

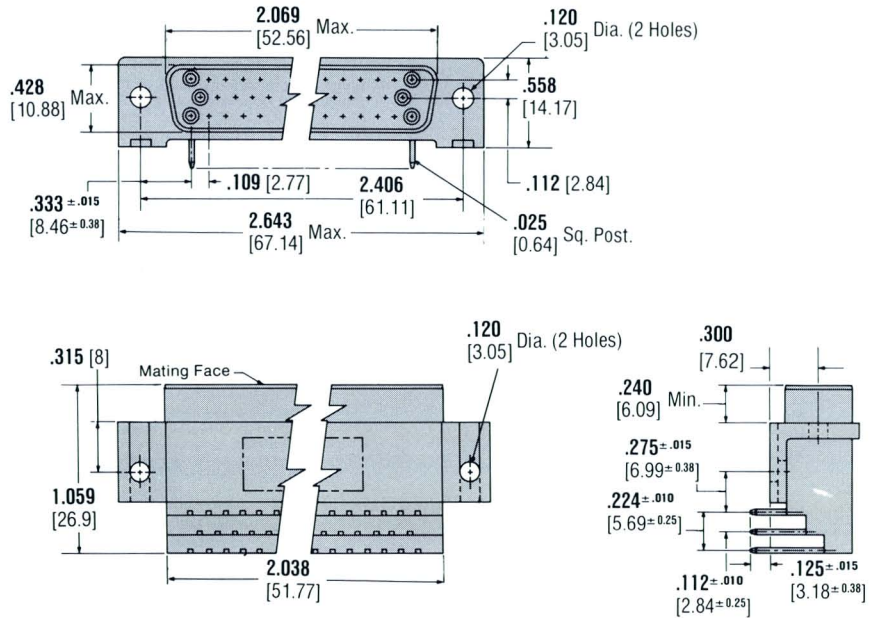
Contact Material:
Pin—Brass per MIL-C-50
Socket—Phosphor bronze per QQ-B-750

Contact Finishes:
Gold Flash/Nickel—Gold flash over
.000030" [0.0008 mm] nickel on entire
contact. Gold plated per MIL-G-45204,
nickel plated per QQ-N-290.
Selective Gold/Nickel—Gold flash over
.000030" [0.0008 mm] nickel on entire
contact with additional .000030"
[0.0008 mm] gold on mating end for
length of .175" [4.45 mm] max. Gold
plated per MIL-G-45204, nickel
plated per QQ-N-290.



Notes:

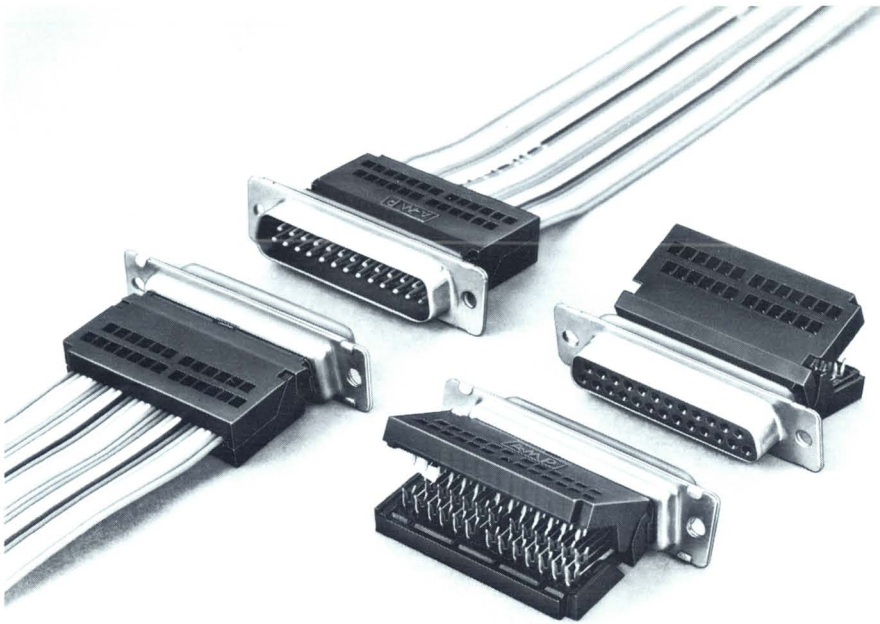
1. Plug is preloaded with size 20 DF posted pin contacts; post size is .025" [0.64 mm] sq.
2. Recommended pc board hole size is .047" [1.19 mm] dia. and max. board thickness is .093" [2.37 mm].



Connector Configuration	Contact Finish	Connector Part No.
Plug	Gold Flash/Nickel	206971-1
	Sel. Gold/Nickel	206971-2
Receptacle	Gold Flash/Nickel	206973-1
	Sel. Gold/Nickel	206973-2

Notes:

1. Receptacle is preloaded with size 20 DF posted socket contacts; post size is .025" [0.64 mm] sq.
2. Recommended pc board hole size is .047" [1.19 mm] dia. and max. board thickness is .093" [2.37 mm].



AMPLIMITE High Density Flexible 20 (HDF-20) Connector, 25-Position

AMPLIMITE HDF-20 connectors provide a fast economical means of mass terminating round-conductor, 26-position flat cable. HDF-20 connectors intermate with the standard HDM-20 (military) and HDP-20 (economy) connectors which provide complete packaging flexibility by offering discrete wire, straight posted, and right-angle posted termination capabilities.

The HDF-20 connector is ideally suited for applications in military equipment, computer peripherals, modems, instrumentation, and industrial control. These miniature connectors offer a close centerline spacing of .109" [2.77 mm] and are fully loaded with contacts which are available with a variety of platings. The connectors are made with plastic inserts having metallic shells and plastic backshell housings.

AMPLIMITE HDF-20 connectors utilize a displacement technique for mass terminating round conductor flat cable on .050" [1.27 mm] centerlines. The two backshell housings are forced together with

a simple arbor press, terminating all contacts to the cable simultaneously. (See AMP IS Sheet Number 7744 for termination tooling requirements.) No special cable preparation is required other than cutting the end of the cable square. The backshell housings have an integrated cable strain relief that grasps the cable firmly to prevent strain on the terminations when the backshell housings are fully closed and latched.

The contact for the HDF-20 connector has two forks that penetrate the cable from opposite directions, interlocking and trapping the conductor. The two forks provide redundant contact areas for greater reliability, and latch with the backshell housing when fully closed. Contacts are accessible through holes in the housings to provide a convenient method of testing circuits when the connector is in place.

For information on other AMPLIMITE connectors, refer to AMP Catalog Number 73-161.

Features

- Available in popular 25 position size
- For use with solid or stranded 28 AWG [0.08-0.09 mm²] round-conductor, 26-position flat cable—conductors on .050" [1.27 mm] centerlines
- Intermateable with other existing 25-position receptacle housings
- Mass termination technique with simple press assures highest production rates and lowest applied cost
- No cable preparation
- Convenient circuit testing with connector in place
- Redundant contact areas for high reliability

Dimensioning:

All dimensions in inches and millimetres. Values in brackets are metric equivalents.

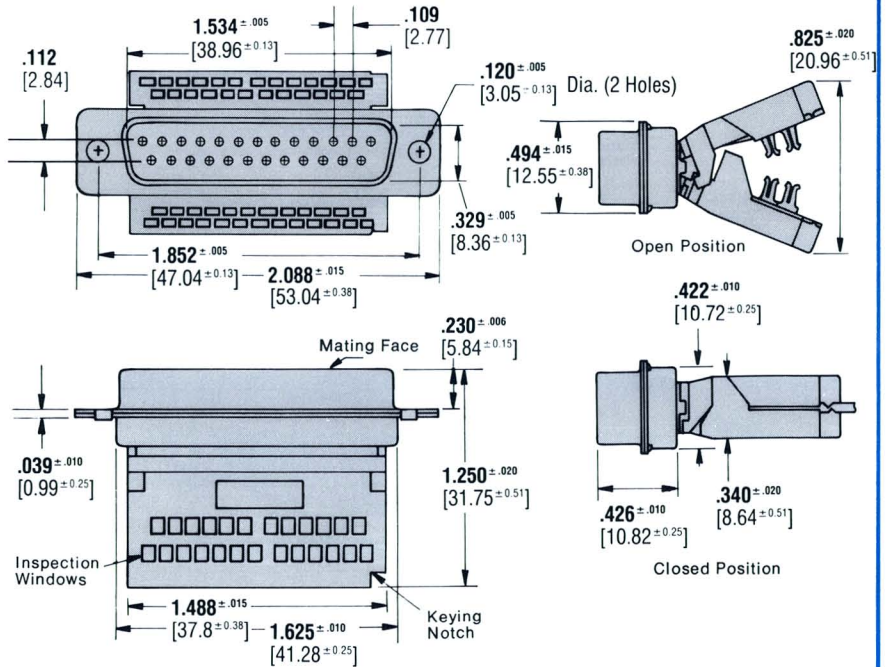
Specifications subject to change. Consult AMP Incorporated for the latest design specifications.

Dimensioning:
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

Plug Assembly

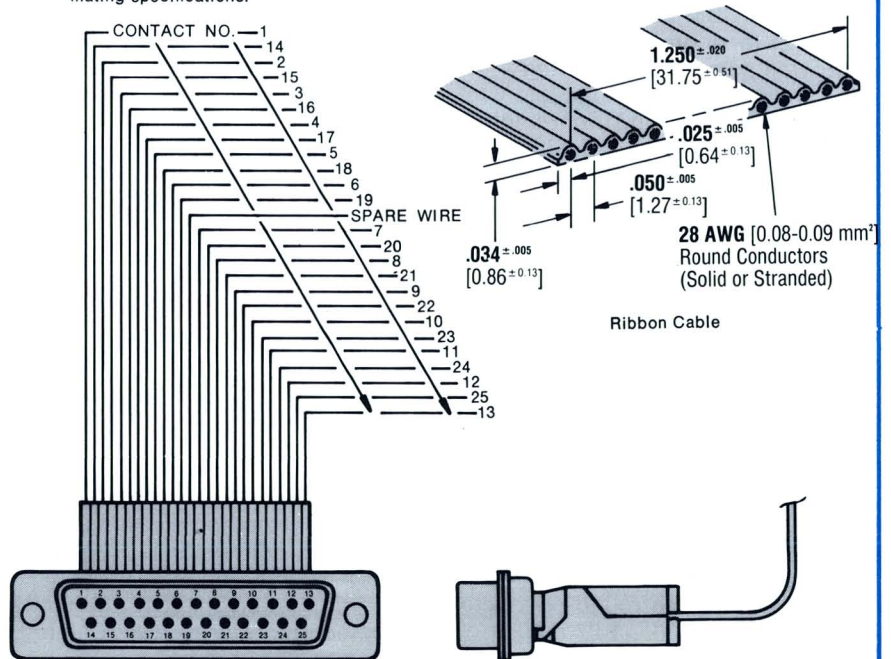
Materials and Finishes

Shell — Steel per QQ-S-698;
Zinc plated per QQ-Z-325,
Type II, Class 3
Insert — Glass-Filled Thermoplastic,
94V-0 Rated, Self-Extinguishing;
Color, Black
Pin Contacts — Brass with Selective Gold per
MIL-G-45204 over Nickel per QQ-N-290 Plating.
Other Finishes Available.



Part Number: 206646-1

- Notes:**
1. Plug is preloaded with size 20 pin contacts; will accept 26-position round-conductor flat cable with conductors on .050" [1.27 mm] centers (see below).
 2. For complete requirements on the termination tooling, request AMP IS Sheet Number 7744.
 3. Plug mates with HDF-20 receptacle (following page) and with AMP's standard 25-position HDM-20 (military) and HDP-20 (economy) receptacle connectors. See back page for plug/receptacle mating specifications.



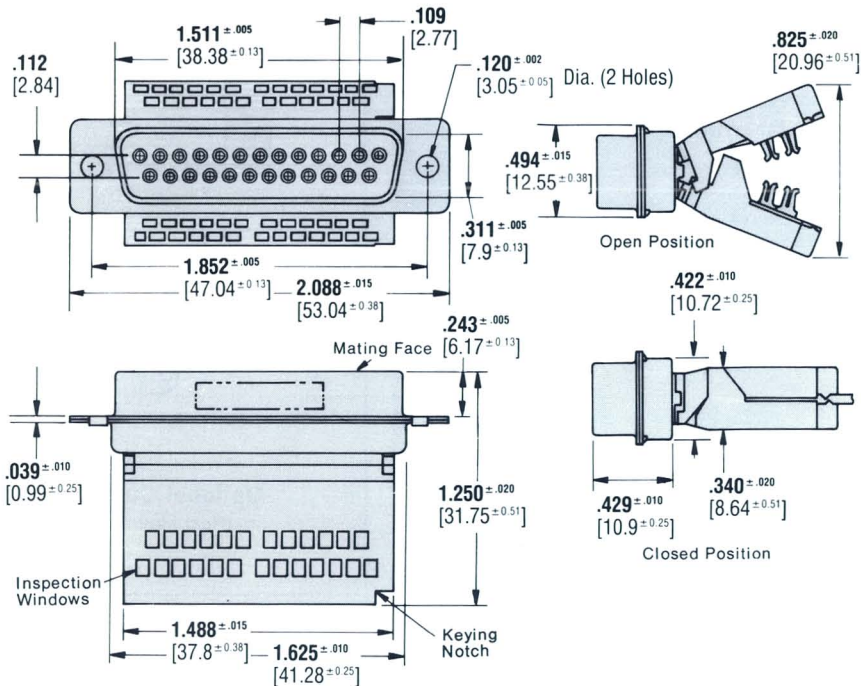
Pin Contact/Cable Conductor Identification

Dimensioning:
All dimensions in inches and millimetres.
Values in brackets are metric equivalents.

Receptacle Assembly

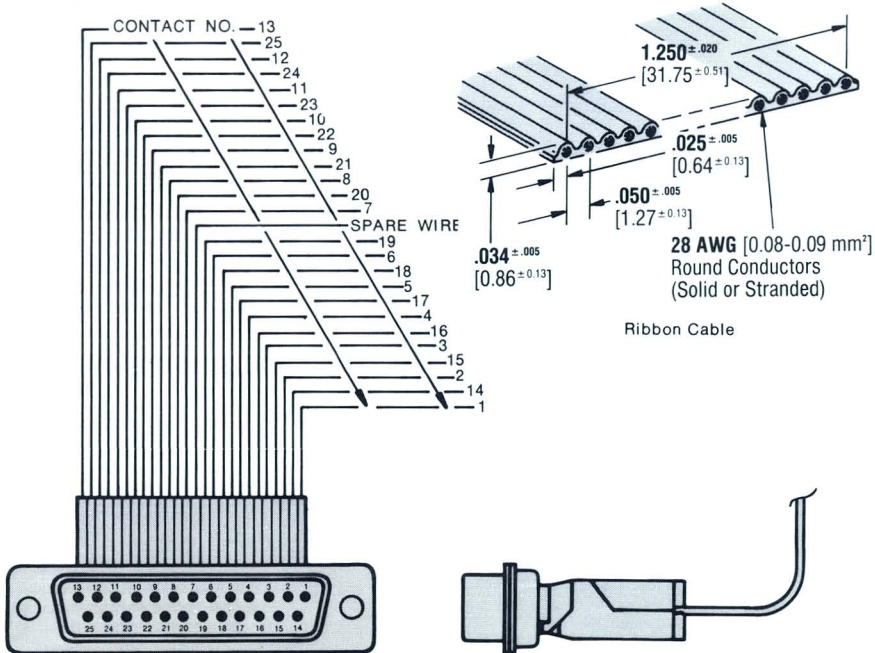
Materials and Finishes

Shell — Steel per QQ-S-698;
Zinc plated per QQ-Z-325,
Type II, Class 3
Insert — Glass-Filled Thermoplastic,
94V-0 Rated, Self-Extinguishing;
Color, Black
Socket Contacts — Brass with Selective Gold
per MIL-G-45204 over Nickel per QQ-N-290
Plating. Other Finishes Available.



Part Number: 206653-1

- Notes:**
1. Receptacle is preloaded with size 20 socket contacts; will accept 26-position round-conductor flat cable with conductors on .050" [1.27 mm] centers (see below).
 2. For complete requirements on the termination tooling, request AMP IS Sheet Number 7744.
 3. Receptacle mates with HDF-20 plug (previous page) and with AMP's standard 25-position HDM-20 (military) and HDP-20 (economy) plug connectors. See back page for plug/receptacle mating specifications.

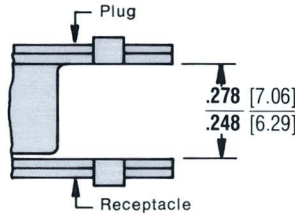


Socket Contact/Cable Conductor Identification

Dimensioning:

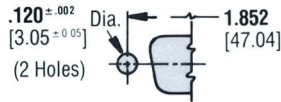
1. All dimensions in inches and millimetres. Values in brackets are metric equivalents.
2. Chart contains dimensions in inches over millimetres.

Plug/Receptacle Mating

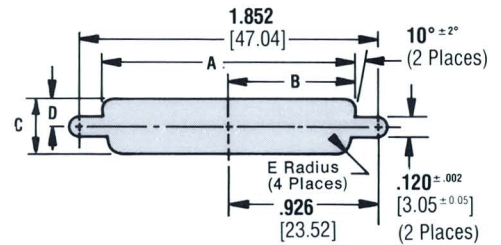


Note: The $.278$ "/ $.248$ " [7.06 mm/6.29 mm] dimension is required to assure full mating of connector halves. This dimension must be taken into consideration when determining the method of mounting, panel thickness, etc.

Panel Cutout Dimensions



Optional Cutout
(Rear Mount)



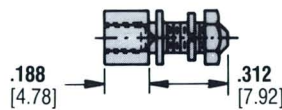
Standard Cutout
(Front Mount)

Panel Mounting (Front/Rear)	Dimensions				
	A	B	C	D	E
Front	<u>1.743</u> 44.27	<u>0.872</u> 22.15	<u>0.513</u> 13.03	<u>0.257</u> 6.53	<u>0.083</u> 2.11
Rear	<u>1.674</u> 42.52	<u>0.837</u> 21.26	<u>0.449</u> 11.4	<u>0.225</u> 5.72	<u>0.132</u> 3.35

Accessories

A lock assembly is designed to hold connector halves together in both panel mount and free-hanging applications. The components (female screwlock assembly and

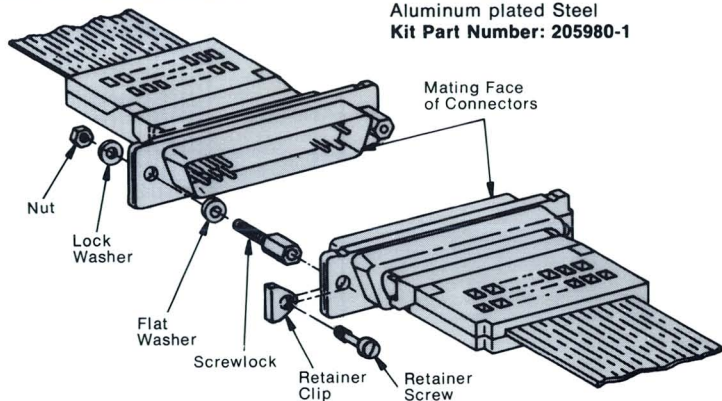
male screw retainer) are supplied in kit form. Both assemblies must be used when securing the connector halves. A typical plug/receptacle mating application is presented below.

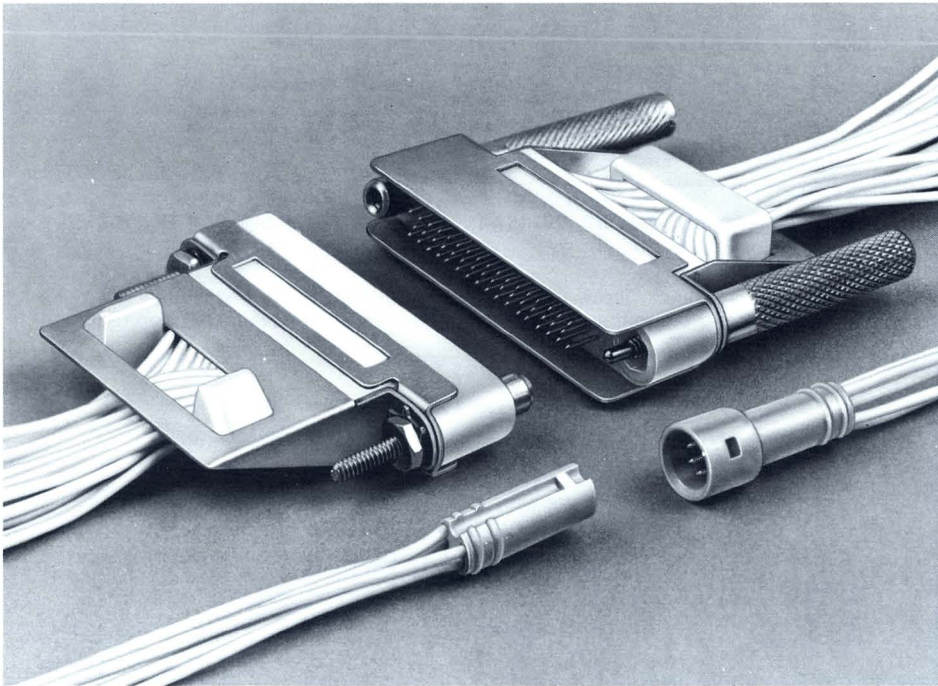


Female Screwlock Assembly
(packaged 2 per kit)
Material: Cadmium plated Steel
Kit Part Number: 205817-1



Male Screw Retainer
(packaged 2 per kit)
Material:
Screw — Cadmium plated Steel
Retainer Clip — Aluminum plated Steel
Kit Part Number: 205980-1





AMP Subminiature Rectangular and Circular Connectors are designed to meet today's high density packaging needs. Both feature the AMP subminiature type VII pin and socket contact that accepts wire size ranges 32-26 AWG [0.03-0.15 mm²] and 30-24 AWG [0.05-0.2 mm²] using screw-machined contacts and wire size ranges 30-28 AWG [0.05-0.09 mm²] and 26-24 AWG [0.12-0.2 mm²] using precision formed contacts. These connectors are extremely compact in size and incorporate many unique design characteristics for higher reliability and lower installed cost.

Presently available in four connector configurations — 3 and 50 position rectangular and 5 and 10 position circular — the housings are molded from resilient polyurethane. The 50-position rectangular connector lends itself to panel mount applications since it comes

complete with durable stainless steel shields and jackscrews. The other three configurations are used in a variety of free-hanging applications.

Choice of screw-machined or precision formed contacts is provided. The screw-machined contacts are high conductivity bronze with a choice of gold-over-nickel platings. The size 28 contacts can be applied to wire with a standard M22520 hand crimping tool or the 4/8 Indent Stripper Crimper.

The precision formed contacts are brass per MIL-C-50 with gold-over-nickel plating. These contacts are supplied on reels for high speed automatic machine application where production requirements are high. Loose piece versions of these precision formed contacts are also available for prototype or maintenance and repair.

Subminiature Rectangular and Circular Connectors for Type VII Contacts

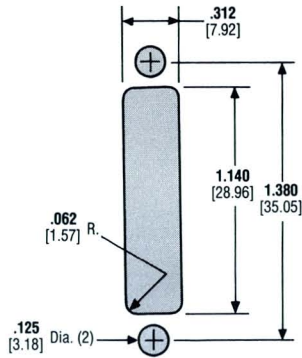
Features

- High density connections
- Screw-machined contacts for wire size range 32 to 24 AWG [0.03-0.2 mm²]
- Precision formed reel-fed contacts for wire size range 30 to 24 AWG [0.05-0.2 mm²]
- Choice of gold over nickel platings
- Polarized housings
- Same insertion and extraction tool for pins and sockets

Specifications

Dimensioning:
All dimensions in inches and millimeters.
Values in brackets are metric equivalents.

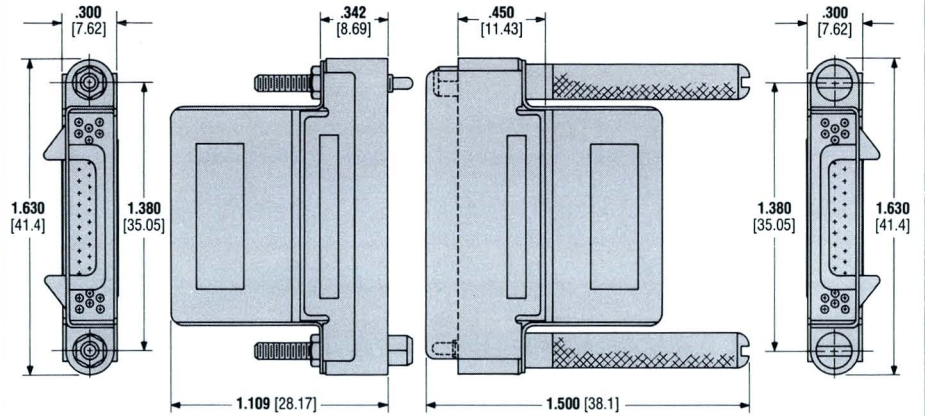
**50-Position
Rectangular Connector**



Recommended Panel Cutout
(Panel Thicknesses up to 1/4" [6.35 mm])

**3-Position
Rectangular Connector**

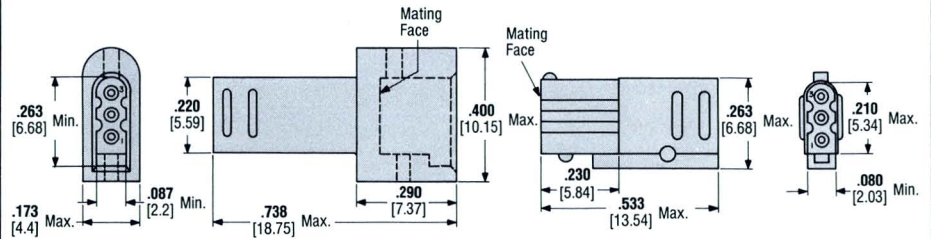
**10-Position
Circular Connector**



Receptacle Assembly, **Part No. 202151-1**
(for Sockets only)

Plug Assembly, **Part No. 202150-1**
(for Pins only)

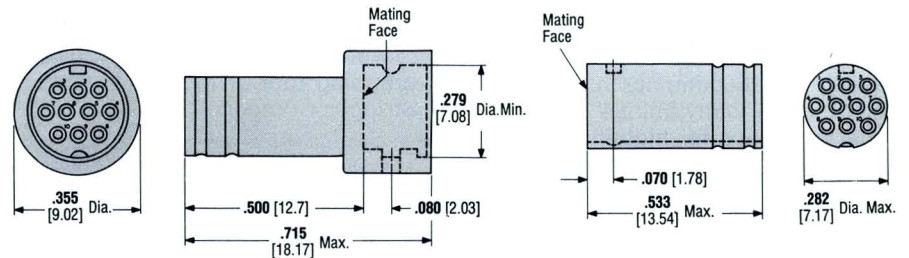
Materials: Shell and Jack Screw Assemblies — Stainless Steel, Passivated
Block — Polyurethane, Natural Color (other colors available upon request)



Receptacle (Pin Block),
Part No. 206908-1

Plug (Socket Block),
Part No. 206909-1

Material: Polyurethane, Natural Color (other colors available upon request)



Receptacle (Pin Block),
Part No. 206850-1

Plug (Socket Block),
Part No. 206851-1

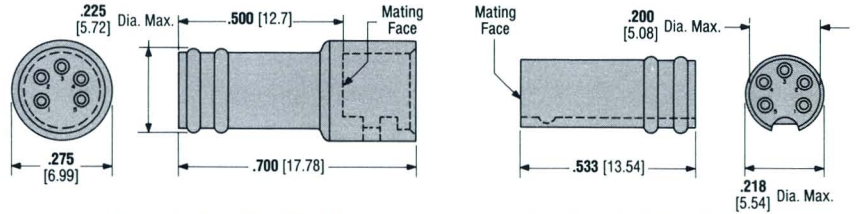
Material: Polyurethane, Natural Color (other colors available upon request)

Dimensioning:

1. All dimensions in inches and millimeters. Values in brackets are metric equivalents.
2. Charts contain dimensions in inches over millimeters.

Specifications (Cont'd.)

5-Position Circular Connector

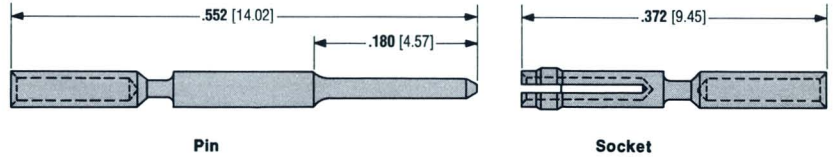


Receptacle (Pin Block),
Part No. 204272-1

Plug (Socket Block),
Part No. 204271-1

Material: Polyurethane Rubber, Natural Color (other colors available upon request)

**Type VII Contacts
Size 28, Pin Diameter .021 [0.53]
(Ampere Rating 3)**



Pin

Socket

Material: Bronze, Gold-over-Nickel Plated

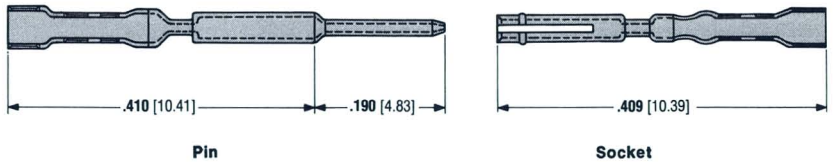
Wire Size Range		Contact Finish	Contact No.		Crimping Tool	
AWG	[mm ²]		Pin	Socket	Tool No.	Positioner No.
32-26	0.03-0.15	Gold/Nickel ¹	202123-2	202124-2	M22520/ 2-01	1-601966-0
		Gold Flash/Nickel ²	202123-3	202124-3		
30-24	0.05-0.2	Gold/Nickel ¹	202092-2	—		
		Gold Flash/Nickel ²	204092-3	—		

¹.000030 [0.00076] Gold over .000030 [0.00076] Nickel

²Gold Flash over .000030 [0.00076] Nickel

Insertion Tool No. 91005-2
Extraction Tool No. 91004-2

**Type VII Contacts
(Precision Formed) Size 28,
Pin Diameter .023 [0.58]
(Ampere Rating 3)**



Pin

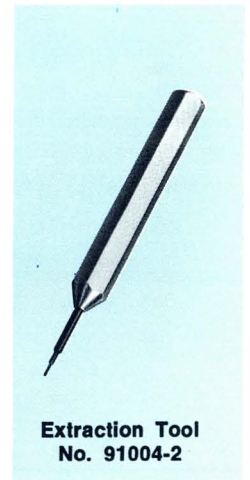
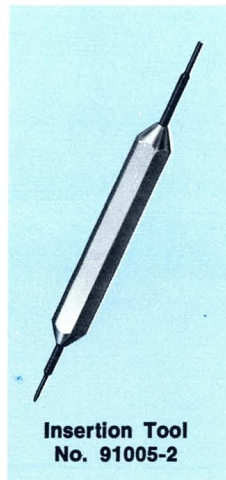
Socket

Material: Bronze, Gold-over-Nickel Plated

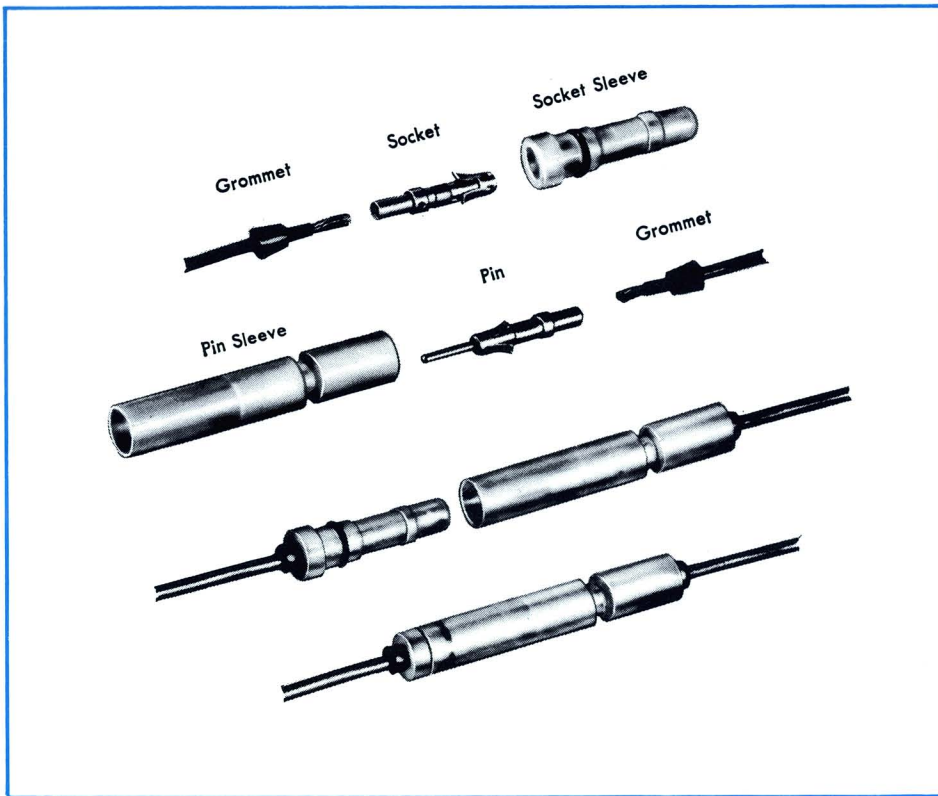
Wire Size Range		Ins. Dia. Range Max.	Contact Finish	Strip Form Contact Numbers		Loose Piece Contact Numbers	
AWG	[mm ²]			Pin	Socket	Pin	Socket
30-28	0.05-0.09	.050 1.27	Gold Flash/Nickel	66540-2	66541-2	66540-3	66541-3
26-24	0.12-0.2			66540-5	66541-5	66540-6	66541-6

Insertion Tool No. 91023-1
Extraction Tool No. 91004-2

Application Tooling



Pin and Socket Connectors



Breakaway Splices

Splice Features

- Moisture and sealing protection is effected by special "O" ring on sleeve of socket assembly and rubber grommets which are inserted over the conductor at the entry ports.
- wire range: sealed, #20; unsealed, #26-20.
- high mechanical and dielectric strength.
- small size—overall length of connection $1\frac{5}{8}$ ths inch.
- coupled unit is corrosion and vibration resistant.

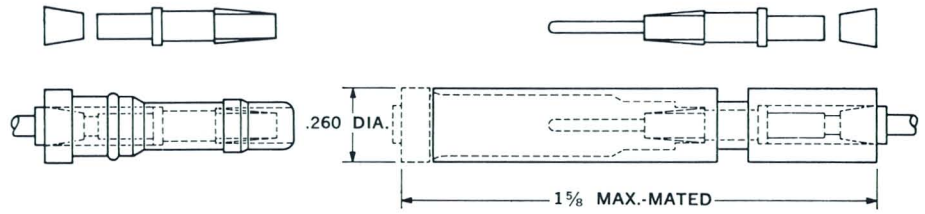
Contact Features

- low resistance—no more than 25 millivolts at 7.5 amps.
- cantilever-beam contact retention spring assures maximum conductivity and longer insertion/extraction life.
- pre-assembly plating of both pin and socket.
- bell-mouthed sockets to permit easy pin alignment.
- compression-crimp application assures "dry circuit" quality and provides a time-saving, cost-cutting assembly method.

All the reliability features of a permanent splice are combined with quick connect/disconnect versatility in this single circuit pin and socket splice. Designed for all high-reliability circuits in military, commercial, aircraft and missile applications, breakaway splices are fully pre-insulated, sealed or unsealed. Two breakaway splice versions are available: the 5/15, with pullaway forces of 5 pounds

minimum and 15 pounds maximum; and a lighter model, the 5/20, with pullaway forces of 5 ounces minimum, 20 ounces maximum. Both types utilize the same size crimp, snap-in contacts and the same size nylon housing sleeves. The higher pullaway forces in the 5/15 are achieved through a raised tab on the contact pin housing and a corresponding locking ridge in the socket housing member.

Specifications



Socket Assembly

Pin Assembly

Assemblies with Nylon Insulation Housings and Neoprene Sealing Components

Kit Number	Description	Sleeve Color
200877-1	5/15 Lbs. Breakaway Socket Kit—Sealed	Green
200877-2	5/15 Lbs. Breakaway Socket Kit—Unsealed	Green
200878-1	5/15 Lbs. Breakaway Pin Kit—Sealed	Green
200878-2	5/15 Lbs. Breakaway Pin Kit—Unsealed	Green
201885-1	5/20 Ozs. Breakaway Socket Kit—Sealed	White

Kit Number	Description	Sleeve Color
201886-1	5/20 Ozs. Breakaway Pin Kit—Sealed	White
327734-1	5/20 Ozs. Breakaway Socket Kit—Sealed	Clear
327734-2	5/20 Ozs. Breakaway Socket Kit—Unsealed	Clear
327736-1	5/20 Ozs. Breakaway Pin Kit—Sealed	Clear
327736-2	5/20 Ozs. Breakaway Pin Kit—Unsealed	Clear

Contact Plating

STANDARD AMP CONTACT
 PLATING—.00005
 Gold over .00003 nickel
 Special Platings Available Upon Request

Test Data

Nylon Insulation—Temperature Rating: 221 °F to -40 °F
 Teflon† Insulation—Temperature Rating: 392 °F to -85 °F
 Contact Retention in sleeves: 15 pounds minimum
 Test Current: 7.5 amps

†Registered trademark of the E. I. du Pont Co.

PIN AND SOCKET EXTRACTION TOOL
 305183-2



GROMMET INSERTION TOOL—304366



HAND CRIMPING TOOL
 26/24 AWG—46791
 22/20 AWG—46576

