$34 Million inventory of connectors and accessories

Our multi-million dollar inventory means you don't need "special-order" components - they're already in stock!

Quality assurance & electronic tracking

We inspect each and every order repeatedly throughout the production process to ensure that you receive our highest quality standards that meet all of your performance specifications. Our computerized tracking systems means we know the status of your order anytime...we're just a phone call away.

JIT delivery, drop shipping & kitting

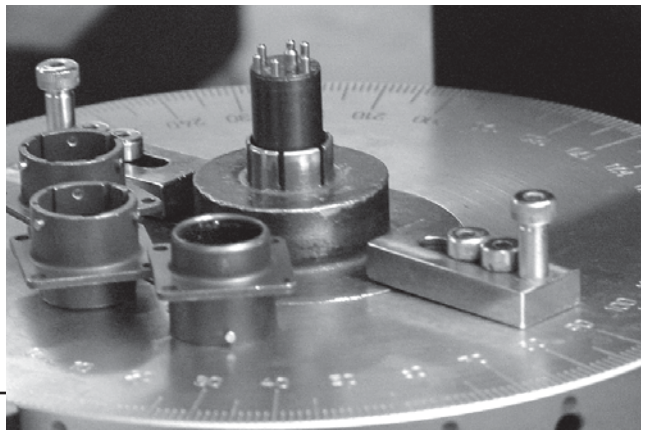
We can shrink-wrap every component individually, gang an entire order, or assemble kits. And we package it all in bar-coded containers that meet your protection and inventory requirements.

Search Our Inventory On-line

- Part number search utility for product availability.
- An interactive Amphenol Series Selector Guide takes you through a step-by-step process to help you find the connector that meets your specifications.
- Submit an RFQ (request for quote). We guarantee a response within 24 hours.

Engineering and design support

We can analyze an existing application or advise you during your design phase, making recommendations that may result in cost reductions. We can also pre-build your order, electronically protect it in stock for your exclusive use, and release delivery throughout the year to meet your production schedule.



More Amphenol On-line

Not shown in this catalog but available are:

- Tuchel series
- Star-Line, Star-Line EX
- D-Subminiatures
- Filter connectors
- RF
- Filter terminal blocks
- Alden Products
- Various series from Amphenol Ltd.

RoHS

See Index pages 274-280 for RoHS compliant parts

Getting the most from our Amphenol Connector Solutions Guide

Not just another catalog, PEI-Genesis has created this Amphenol Connector Solutions Guide. You expect dimensional drawings, specifications, and photos from a traditional catalog, but we take it a step further, helping you find solutions.

- On page 3 we start with a brief description of each connector series in this catalog.
- On pages 4 and 5 you will see a Comparison Chart that allows you to compare each series' specifications to select the right connector for your application.

Create your part number

Each connector series has an easy-to-follow pictorial chart that takes you step-by-step through each available option to create your part number . . . then you can review specific details for each option you selected on the referenced pages.

Accessories

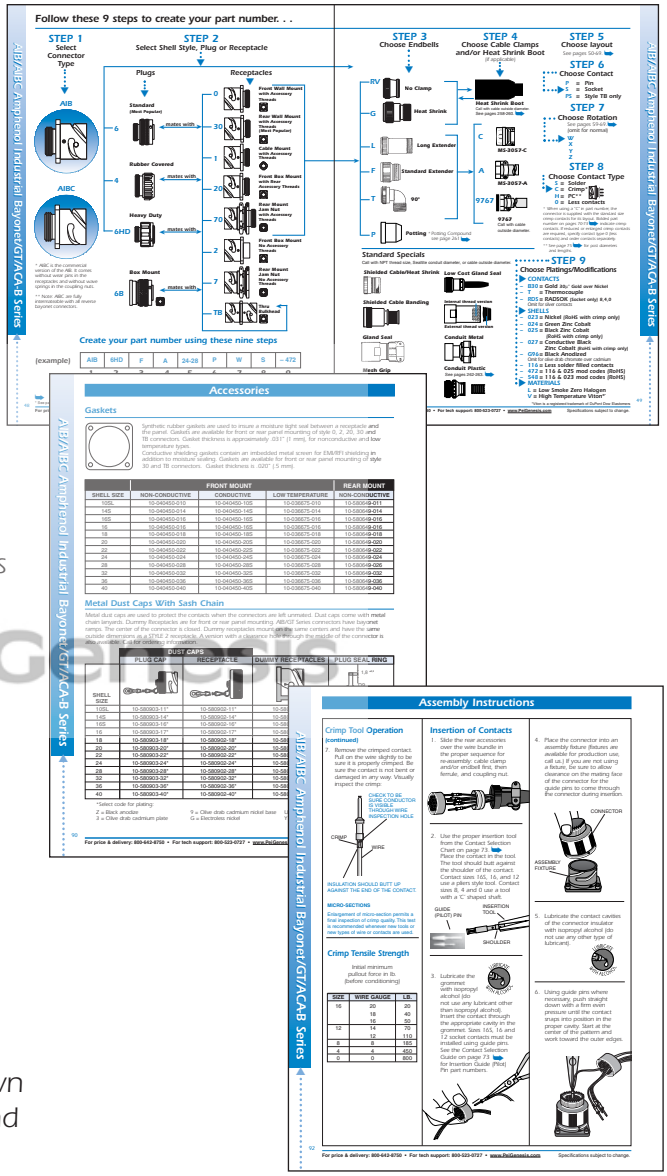
Every section shows accessories specific to each connector series. On pages 257-264 you'll find accessories and assembly tools for general applications.

Assembly Instructions

Specific wire crimping, wire stripping, insertion and extraction tools are highlighted for each connector type. Instructions are found at the end of each series giving step-by-step details for assembly.

Know your part number?

Use our Part Number Index to find the correct pages where specific details and information for that part will be found.



For your reference:

Glossary of Terms

Over the years, connectors have developed their own language. We've put together hundreds of terms and defined them in language you can understand.

Conversion Charts

In the appendix you'll find convenient conversion charts from fractions to decimals to millimeters, area measurements to diameter measurement for contacts, centigrade to Fahrenheit, pressure conversion, torque measurements, and electrical resistance.

Warranty & Product Safety Information

An overview of the relevant information for product safety. A must read before anything is specified.

Selecting the Series to Meet Your Needs

Amphenol® 97 Series
General duty, standard, medium to heavy weight, cylindrical connector.

The Amphenol Industrial 97 series connector is a MIL-DTL-5015 (MIL-C-5015) style. This durable and field proven design is intermateable and intermountable with existing 97 Series and MIL-DTL-5015 connectors.
Features include: Low cost ▪ Solder termination ▪ Wide selection of shell styles and insert patterns ▪ Solid or split shell construction.

AIT/MS Series
Low cost, threaded connector for harsh environments.

AIT/MS Series connectors share the same shell dimensions, contact layouts, contacts, and performance characteristics as the MIL-DTL-5015 threaded connectors. Over 180 contact layouts are available from 1 to 65 circuits and up to 245 amps per contact.
Features include: Broad temperature range from -67°F to +257°F (-55°C to +125°C) under extremely harsh conditions.
▪ Rugged aluminum alloy shell ▪ Solder, crimp, PC, Coax and thermocouple contacts available.

AIB/GT Series
Rugged reverse bayonet connector for demanding applications.

The AIB/GT Series replaces the threaded coupling used in the MIL-DTL-5015 with a positive, quick mating, 3-point reverse bayonet lock. These connectors are sealed to withstand moisture, condensation, vibration and flashover across a wide range of wire diameters. This series shares the same shell dimensions, contact layouts and performance characteristics as MIL-DTL-5015 threaded connectors.
Features include: Simple and fast mating and unmating.
▪ Shock and vibration resistant ▪ Proven reliability
▪ Lightweight yet highly resistant to damage.

P-lok® Series
Quick mating, multi-pin connectors for use in a variety applications.

The P-lok connector series features a quick mating coupling system similar to the coupling system used on pneumatic hose connections.
Features include: Rapid spring loaded, push-pull coupling system
▪ Audible & tactile confirmation of positive locking connection
▪ Insert arrangements available in 1 to 26 conductor arrangements.

PT MIL-DTL-26482 Series I
Rugged, lightweight and reliable under harsh conditions.

The Amphenol PT Series offer high density contact arrangements in a miniature, circular metal shell. The connectors are environmentally sealed and come in three versions: a solder contact version (PT), a high performance crimp contact version (PT-SE) and a commercial crimp version (PT-CE).
Features include: Rugged shell ▪ Environmentally sealed
▪ Resistant to military environments ▪ Wide range of wire gauges and current carrying capability.

62GB Series
Superior strength and adaptability.

Built to British Standard Specification BS 9522 F00 17 which is similar to US military specification MIL-DTL-26482, 62GB Series connectors are machined from solid aluminum bar stock for superior strength and adaptability.
Features include: Rugged, machined connector shell
▪ Environmentally sealed ▪ Resistant to harsh environments
▪ Wide variety of endbell styles.

MB MIL-DTL-26482 Series II
Designed for use in demanding, high-reliability environments.

Utilizing a quick-mating, three point bayonet coupling system, Amphenol's MB Connector Series contact retention system and high-quality silicone seals, these connectors work in the harshest of conditions. MBs are intermateable with all MIL-DTL-26482 Series I connectors such as Amphenol's PT Series of connectors.
Features include: High-quality, Little Caesar contact system ▪ Wide range of cable accessories (including military standard) ▪ Broad operating temperatures ▪ Rear contact insertion and release system ▪ Cork-in-a-bottle-interfacial seal system

LJT MIL-DTL-38999 Series I
High density contact arrangements in a miniature shell.

LJT MIL-DTL-38999 Series I connectors offer high density contact arrangements in a miniature circular shell. Originally designed for the especially demanding requirements of today's high performance military and commercial aircraft, these connectors are finding their way into applications needing extremely reliable interconnections.
Features include: Total environmental sealing ▪ Wide operating temperature range (-65°C to 200°C) ▪ Quick mating, three point bayonet coupling ▪100% scoop proof shell design ▪ EMI-RFI shielding, ▪ Available in a rugged 500 hour salt spray plating.

JT MIL-DTL-38999 Series II
High-density contact arrangements in a low-profile, miniature circular shell.

JT MIL-DTL-38999 Series II connectors offer high density contact arrangements in a low profile miniature circular shell. JT's were designed for use in military vehicles where more and more electronics systems are being packed in to the same physical space leaving less available for interconnect devices.
Features include: Very small area for mating the connectors
▪ Total environmental sealing ▪ Wide operating temperature range (-65°C to 200°C) ▪ Extremely light weight connector design
▪ Quick mating three point bayonet coupling ▪ Wide range of receptacle styles ▪ Available in a rugged 500 hour salt spray plating.

TV-CTV MIL-DTL-38999 Series III
High-density contact arrangements in a miniature circular shell.

TV MIL-DTL-38999 Series III connectors offer high density contact arrangements in a miniature circular shell. Originally designed for the especially demanding requirements of today's high performance military and commercial aircraft, these connectors are finding their way into applications needing extremely reliable interconnections.
Features include: Total environmental sealing ▪ Wide operating temperature range (-65°C to 200°C) ▪ quick mating, triple lead threaded, self-locking coupling ▪100% scoop proof shell design ▪ EMI-RFI shielding, ▪ Available in a rugged 500 hour salt spray plating or 1000 hour salt spray material.

SJT Series
High density contact arrangements in a miniature shell.

SJT connectors offer high density contact arrangements in a miniature circular shell. It is one of a family of internationally accepted NATO standard connectors based on the MIL-DTL-38999 designs.Originally designed for the demanding requirements of today's high performance military and commercial aircraft, these connectors are now finding there way into applications needing extremely reliable interconnections. These connectors are built to and meet the requirements of JAN1003 and VG96912.
Features include: Total environmental sealing ▪ Wide operating temperature range (-65°C to 200°C) ▪ quick mating, three point bayonet coupling ▪ Scoop proof shell design ▪ EMI-RFI shielding available ▪ Available in a rugged 500 hour salt spray plating.

RJ Field Series
Harsh environment ethernet connection

RJ Field connector system is a simple, elegant solution for connecting RJ45 style Cat 5/5E connectors in a rugged, sealed, and vibration resistant package. RJ Field connectors meet or exceed all of the 10 BaseT, 100 BaseTX, and 1000 BaseT network requirements. The RJ Field system is a one step mating system that needs absolutely no tooling to assemble, unlike competing products that require special tooling and time consuming cable preparations and termination procedures.
Features include: Full environmental sealing ▪ Easy to assemble ▪ Vibration resistant mating system

DEDICATION

This catalog was made possible by the hard work and dedicated service of many people. Here are a few: The Walsh Group, Daniel Borges, Doug Mercer, Kent Carlson, Amphenol-Industrial & Military Product Managers, Publications, Sales, Customer Service and Engineering Staff. And to all the employees of PEI-Genesis who have assisted and patiently endured the catalog creation process. Lastly, to Steven Fisher, Russ Dorwart, and Steve Willing who had the vision, resolution and stamina to allow me in seeing this project through.

This book is for you!

Mark Baptista

Connector Series Comparison Chart

Generally speaking the connector series on the left side of the chart are less expensive than those on the right.

Review the basic types

- Industrial/Commercial connectors generally do not need to operate in extreme conditions
- Harsh environment connectors are generally used in harsh or outdoor applications.
- If you are looking for Military specs, then take note of the connector series that meet these requirements.

Start with these four variables:

1. Wire Gauge Range
Gives an indication of the size of the connector needed

2. Number of Circuits
Some connectors have limits to the number of circuits. Generally, the more circuits, the larger and more expensive the connector.

3. Sealing Against Water Jets
Choices here include submersible, individual wire sealing, and cable jacket sealing.

4. EMI-RFI Shielding
Separates economical connectors from mid-range cost.

By answering these questions, and using the information on this chart, you should get down to the series that will fit your needs.

Next, scan through the other specifications to further define the series that are most likely to fit your application.

Please visit our Web site for an interactive comparison and selection guide featuring our entire line of Amphenol connectors.
www.PeiGenesis.com

	97	AIT/MS	AIB/GT	P-lok	PT/PTSE
					
Page Number	7-18	19-42	43-96	97-114	115-138
Industrial/ Commercial	X	X	X	X	X
Harsh Environment		X	X	X	X
Military		X			X
Wire Gauge Range AWG	26 to 0	26 to 0	26 to 0	26 to 0	24 to 12
Number of Circuits	1 to 52	1 to 85	1 to 85	1 to 65	1 to 61
Sealed Against Water Jets	No	Yes	Yes	Yes	Yes
EMI/RFI Shielding	Yes	Yes	Yes	No	Yes
Style	Circular	Circular	Circular	Circular	Circular
Operating Voltage/ DWV	1,750 Vac	3,000 Vac	3,000 Vac	1,750 Vac	1,000 Vac/5kv
Current Rating (Amps)	150	150/245	150/245	150/245	23
Power & Signal in Same Layout	Yes	Yes	Yes	Yes	Yes
Operating Temperature	-67°F to 257°F -55°C to 125°C	-67°F to 257°F -55°C to 125°C	-67°F to 257°F -55°C to 125°C	-67°F to 257°F -55°C to 125°C	-67°F to 257°F -55°C to 125°C
Submersible	No	Yes	Yes	Yes	Yes
Individual Wire Sealing	No	Yes	Yes	Yes	Yes
Cable Jacket Sealing	Yes	Yes	Yes	Yes	Yes
Type of Coupling	Threaded	Threaded	Reverse Bayonet	Push-Pull	Bayonet
Life in Mating Cycles (min.)	100	100	500/2,000	100	500
Shock Test (g's)	50	50	50	50	50
Vibration Test (grms)	15	15	15	15	15
Susceptibility to Damage	Very low	Very low	Very low	Very low	Very low
Shell Material	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy
Shell Plating	Cadmium, Anodized, Electroless Nickel, or Zinc	Cadmium, Anodized, Electroless Nickel, or Zinc Cobalt	Cadmium, Anodized, Electroless Nickel, or Zinc Cobalt	Anodized	Cadmium, Anodized, Electroless Nickel, or Zinc Cobalt
Shell Color	Olive Drab, Silver, or Black	Olive Drab, Silver, or Black	Olive Drab, Silver, or Black	Black	Olive Drab, Silver, or Black
Positive Shell Polarization	Yes	Yes	Yes	Yes	Yes
Insert Polarization Options	Yes	Yes	Yes	Yes	Yes
User Polarization	Yes	No	No	No	No
Standards/Associated Specs.	MIL-DTL-5015 UL #E115497 CSA LR 69183	MIL-DTL-5015	MIL-DTL-5015 UL #E115497	MIL-DTL-5015 UL #E109316	MIL-DTL-26482 Series I UL #E115497
Contact Plating	Silver or Gold	Silver or Gold	Silver or Gold	Silver or Gold	Gold
Contact Styles					
Crimp		X	X	X	X
Solder	X	X	X	X	X
Printed Circuit Solder		X	X	X	X
Printed Circuit Press Fit					
Thermocouple		X	X	X	X
Wire Wrap					
Co-Ax		X	X	X	X
Insulation Displacement					
Pre Terminated					
Fiber Optic					
High Voltage	X	X	X	X	X
First-Mate Last-Break		X (DL)	X		

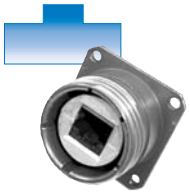
62GB	MB	LJT	JT	TV-CTV	SJT	RJ Field
						
139-156	157-168	169-186	187-206	207-228	229-248	249-256
X						X
X	X	X	X	X	X	X
	X	X	X	X	X	
24 to 8	24 to 12	28 to 12	28 to 12	28 to 12	28 to 12	CAT5/5E
2 to 61	3 to 61	3 to 128	3 to 128	3 to 128	3 to 128	8
Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes
Circular	Circular	Circular	Circular	Circular	Circular	Circular
1,500 Vac	2300 Vac	2300 Vac	2300 Vac	2300 Vac	2300 Vac	
22	23	1.5 to 23	1.5 to 23	1.5 to 23	1.5 to 23	
Yes	Yes	Yes	Yes	Yes	Yes	No
-67°F to 257°F -55°C to 125°C	-67°F to 392°F -55°C to 200°C	-85°F to 392°F -65°C to 200°C	-85°F to 392°F -65°C to 200°C	-85°F to 392°F -65°C to 200°C	-85°F to 392°F -65°C to 200°C	-40°F to 185°F -40°C to 85°C
Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	No
Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bayonet	Bayonet	Bayonet	Bayonet	Threaded	Bayonet	Push-Pull/Bayonet/ Triple Lead Threaded
500	500	500	500	500	500	500
100	150	300	300	300	300	
10	20	49.5	43.7	60	49.5	10/20
Very low	Extra low	Extra low	Extra low	Extra low	Extra low	Very low
Aluminum Alloy	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy, Stainless Steel, or Composite	Aluminum Alloy	Thermoplastic/Aluminum
Cadmium, Anodized, Electroless Nickel, or Zinc Cobalt	Cadmium, or Electroless Nickel	Cadmium, Electroless Nickel, or Anodized	Cadmium, Electroless Nickel, or Anodized	Cadmium, Electroless Nickel, or Marine Nickel Aluminum Bronze	Cadmium, Electroless Nickel, or Anodized	Anodized, Electroless Nickel, Cadmium
Olive Drab, Silver, or Black	Olive Drab or Silver	Olive Drab, Silver, or Bronze	Olive Drab, Silver, or Bronze	Olive Drab, Silver, or Bronze	Olive Drab, Silver, or Bronze	Olive Drab, Silver, or Black
Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes
No	No	No	No	No	No	Yes
MIL-DTL-26482 Series I BS9522 B00 17	MIL-DTL-26482 Series II	MIL-DTL-38999 Series I	MIL-DTL-38999 Series II	MIL-DTL-38999 Series III		
Gold	Gold	Gold	Gold	Gold	Gold	Gold
	X	X	X	X	X	
X						
X	X	X	X	X	X	
	X	X	X	X	X	
	X	X	X	X	X	
	X	X	X	X	X	

Table of Contents

97 Series

The Amphenol Industrial 97 series connector is a MIL-DTL-5015 (MIL-C-5015) style, general duty, standard, medium to heavy weight, cylindrical connector. It is widely used for robotics, machine tools and welding applications as well as numerous industrial, commercial and medical applications. This durable and field proven design is intermateable and intermountable with all threaded MIL-DTL-5015 connectors.

The shell components are fabricated from high-grade aluminum alloy for strength and environmental protection. This series of connectors is available in nine shell styles, a variety of sizes, contacts and layouts. Connectors are available in 128 contact arrangements, from 1 to 52 circuits. Contacts are silver plated with pre-tinned solder cups with optional gold over silver plating.

Applications

Industrial, commercial and medical applications where low cost, general duty connectors are required.

- Communications systems
- Conveyors
- Factory automation
- Industrial machinery
- Medical instrumentation
- Motors
- Mobile equipment
- Sensors
- Ships
- Trucks
- Trailers

Features

- Low cost
- Solder termination
- UL recognized and CSA certified
- Wide selection of shell styles and insert patterns
- Wide variety of connector finishes
- Threaded coupling, hard dielectric inserts
- Solid or split shell construction

Technical Specifications

MATERIALS & FINISHES

Shell	Aluminum alloy
Plating	Olive drab chromate or clear chromate coating over cadmium plating to QQ-P-416; Black zinc cobalt; electroless nickel; or green zinc
Contacts	Brass or Copper alloy
Platings	Silver plating to QQ-S-365 (Solder contacts have tinned solder pot) Gold plating to MIL-G-45204
Insulator	Diallyl phthalate

Technical Specifications

ELECTRICAL DATA

Operating Voltage/Test Voltage

SERVICE RATING*	TEST VOLTAGE (RMS 60 cps)	SUGGESTED* OPERATING VOLTAGE		AIR SPACING NOM. (INCHES)	CREEPAGE DISTANCE NOM. (INCHES)
		DC	AC (rms)		
I	1,000	250	200	-	1/16
A	2,000	700	500	1/16	1/8
D	2,800	1,250	900	1/8	3/16
E	3,500	1,750	1,250	3/16	1/4
B	4,500	2,450	1,750	1/4	5/16

*Each insulator has a specific service rating. These should be used by the designer only as a guide. The Service Ratings for each layout are listed on pages 50-69.

97 Series connectors show no evidence of breakdown when the test voltages given are applied between the two closest contacts and between the shell and the contacts closest to the shell for a period of one minute per MIL-STD-1344 Method 3001.

Current Rating & Contact Resistance

CONTACT SIZE	TEST CURRENT (AMPS)	POTENTIAL DROP (MILLIVOLTS)
16	13	49
12	23	42
8	46	26
4	80	23
0	150	21

Maximum total current to be carried per connector in wire bundles as specified in MIL-W-5088. Contact resistance when tested to MIL-C-39029 will not exceed voltage drops listed in above table.

MECHANICAL

Wire Range Sizes	24 to 0 AWG
Contact Resistance	(See table above)
Insulation Resistance	>5000 megohms at 77°F (25°C) per MIL-DTL-5015, 3.18
Mating Life	100 cycles minimum. To MIL-DTL-5015, 3.16
Salt Spray	MIL-STD-1344 Method 1001 Condition B minimum (Cadmium) 48 hour
Heat	+257˚F (+125˚C) for 60 hours, +185˚F (+85˚C) for 1000 hours per MIL-DTL-5015, 4.6.14, minimum
Chemical Resistance	20 hour full immersion unmated in hydraulic fluid and lubricating oil per MIL-DTL-5015 minimum
Vibration	10 to 2,000Hz (15g's) 10 microseconds maximum discontinuity to MIL-STD-1344 Method 2005 per MIL-DTL-5015
Shock	50g 11millisecond duration, three major axes. 10 microseconds maximum discontinuity To MIL-DTL-5015, 3.13
Contact Type	Solder (hard silver or gold plating)
Number of Circuits	1 to 52 (See pages 50-69)

Technical Specifications

Contact retention and separation forces. To MIL-DTL-5015, 4.6.6 & 3.26 minimum.

CONTACT SIZE	RETENTION AXIAL LOAD		SEPARATION FORCE MINIMUM	
	NEWTONS	(LB)	NEWTONS	(LB)
16	44	(10)	1	(0.25)
12	67	(15)	2	(0.50)
8	89	(20)	3	(0.75)
4	89	(20)	4	(1.00)
0	111	(25)	9	(2.00)

Polarization	Integral key and keyway plus optional rotational polarization. See pages 59-69 for valid rotations
Approvals/Agency listing	UL# EII5497; CSA LR69183 for 97 Series

Components

	Plugs	Receptacles
Barrel/Shell		
Coupling Nut/Spring		
Insert Assembly		
Insert Retainer Spring		
Endbell		

Follow these 5 steps to create your part number...

STEP 1

Select Shell Style, Plug or Receptacle

Receptacles

97-3100A
Wall Mount with Accessory Threads, Solid Endbell

97-3101A
Cable Mount with Accessory Threads, Solid Endbell

97-3102A
Box Mount with no Accessory Threads

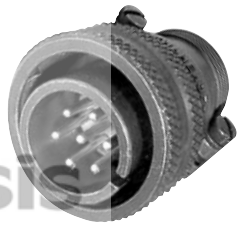
Mates with

Plugs

97-3106A
Straight with Accessory Threads, Solid Endbell

97-3106B
Straight with Accessory Threads, Split Endbell

97-3107A
Friction Fit Straight with Accessory Threads, Solid Endbell



97-3107B
Friction Fit Straight with Accessory Threads, Split Endbell

97-3108A
Right Angle with Accessory Threads, Solid Endbell

97-3108B
Right Angle with Accessory Threads, Split Endbell

STEP 2

Choose Layout

See pages 50-69 for more information

8S-1	18-3	20-25	24-22
10SL-3*	18-4	20-27	24-24
10SL-4*	18-5	20-29	24-25
12-5	18-8	20-30	24-26
12S-1	18-9	20-32	24-27
12S-2	18-10	20-33	24-28
12S-3	18-11	22-1	28-1
12-SL-844	18-12	22-2	28-2
12-5	18-13	22-4	28-3
14S-1	18-16	22-5	28-6
14S-2	18-17	22-8	28-8
14S-4	18-18	22-9	28-9
14S-5	18-19	22-10	28-10
14S-6	18-20	22-11	28-11
14S-7	18-22	22-12	28-12
14S-9	18-23	22-13	28-13
14S-10	18-24	22-14	28-15
14S-11	18-25	22-15	28-16
14S-10	18-26	22-16	28-17
14S-13	18-27	22-18	28-18
14S-14	18-28	22-19	28-19
16S-1	18-29	22-20	28-20
16S-4	18-30	22-22	28-21
16S-5	18-31	22-23	32-5
16S-6	18-420	22-27	32-6
16S-8	20A16	22-28	32-7
16S-14	20A37	22-30	32-8
16S-15	20-3	22-31	32-17
16S-16	20-4	22-32	32-414
16S-17	20-6	22-34	36-1
16SA18	20-7	24-2	36-5
16SA19	20-8	24-5	36-6
16SA20	20-11	24-6	36-7
16SA21	20-14	24-7	36-8
16-7	20-15	24-9	36-9
16-9	20-16	24-10	36-10
16-10	20-17	24-11	36-11
16-11	20-18	24-12	36-12
16-12	20-19	24-16	36-15
16-13	20-21	24-19	36-403
18A31	20-23	24-20	
18-1	20-24	24-21	

STEP 3

Choose Contact

P = Pin

S = Socket

STEP 4

Choose Rotation

See pages 59-69.
(omit for normal)

W, X, Y, Z

STEP 5

Choose Plating

CONTACTS

(omit for standard silver plating)

426 = Gold over Silver

431 = Less Pre-filled Solder Cups

SHELLS

604 = Gray Anodized

608 = Black Anodized

621 = Black Zinc Alloy

624 = Olive Drab Zinc Alloy

639 = Clear Chromate over Cadmium

689 = Electroless Nickel

Omit for olive drab chromate over cadmium

OTHER MODIFIERS

417 = Plug Seal O-Ring

438 = Plug Seal O-Ring and Potting Cup

946 = 431 + 621 Mod Codes Combined (RoHS)

947 = 431 + 689 Mod Codes Combined (RoHS)

Create your part number using these five steps

(example)

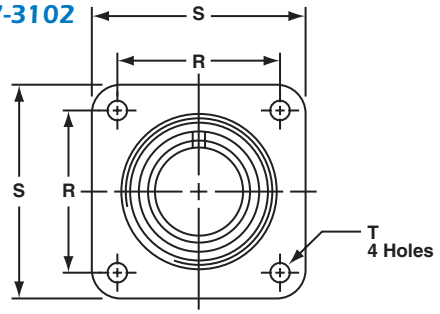
97-3106A	18-1	P		- 946
1 Shell Style	**2** Layout	**3** Contact	**4** Rotation	**5** Plating

* Socket for Plug only. Pin for Receptacle only.

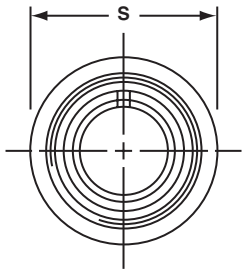
Dimensions

Receptacle Styles

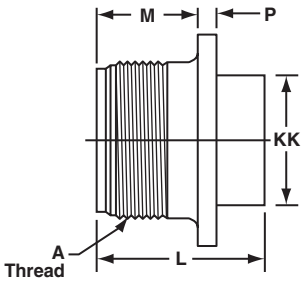
97-3100/97-3102



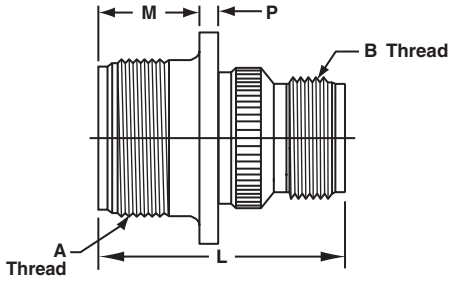
97-3101



97-3102



97-3100



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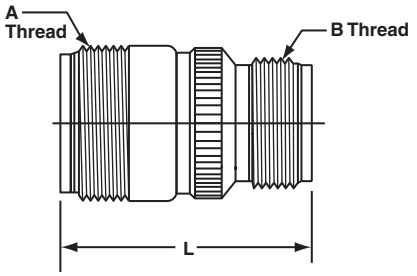
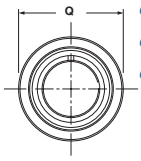


SHELL SIZE	97-3100A/97-3102A					A THREAD	97-3102A		97-3100A	97-3101A		97-3100A/97-3101A
	M	P	R	S	T	2A	L	KK	L	S	L	B THREAD 2A
8S	0.56 (14.3)	0.078 (2.0)	0.59 (15.1)	0.88 (22.2)	0.120 (3.0)	1/2-28 UNEF	0.859 (21.8)	0.438 (11.1)	1.25 (31.8)	0.88 (22.2)	1.25 (31.8)	.5000-28 UNEF
10S	0.56 (14.3)	0.078 (2.0)	0.72 (18.3)	1.00 (25.4)	0.120 (3.0)	5/8-24 NEF	0.859 (21.8)	0.500 (12.7)	1.313 (33.3)	1.00 (25.4)	1.313 (33.3)	.5000-28 UNEF
10SL	0.55 (13.9)	0.078 (2.0)	0.72 (18.3)	1.00 (25.4)	0.120 (3.0)	5/8-24 NEF	0.953 (24.2)	0.688 (17.5)	1.281 (32.5)	1.00 (25.4)	1.281 (32.5)	.6250-24 NEF
12S	0.56 (14.3)	0.078 (2.0)	0.81 (20.6)	1.09 (27.8)	0.120 (3.0)	3/4-20 UNEF	0.969 (24.6)	0.688 (17.5)	1.469 (37.3)	1.09 (27.8)	1.469 (37.3)	.6250-24 NEF
12	0.75 (19.1)	0.078 (2.0)	0.81 (20.6)	1.09 (27.8)	0.120 (3.0)	3/4-20 UNEF	1.328 (33.7)	0.688 (17.5)	1.84 (46.8)	1.09 (27.8)	1.84 (46.8)	.6250-24 NEF
12SL	0.55 (13.9)	0.078 (2.0)	0.81 (20.6)	1.09 (27.8)	0.120 (3.0)	3/4-20 UNEF	0.844 (21.4)	0.688 (17.5)	- -	1.09 (27.8)	- -	.7500-20 UNEF
14S	0.56 (14.3)	0.078 (2.0)	0.91 (23.0)	1.112 (28.2)	0.120 (3.0)	7/8-20 UNEF	0.953 (24.2)	0.750 (19.1)	1.469 (37.3)	0.59 (15.1)	1.469 (37.3)	.7500-20 UNEF
14	0.75 (19.1)	0.078 (2.0)	0.91 (23.0)	1.112 (28.2)	0.120 (3.0)	7/8-20 UNEF	1.344 (34.1)	0.750 (19.1)	1.859 (47.2)	0.59 (15.0)	1.859 (47.2)	.7500-20 UNEF
16S	0.56 (14.3)	0.078 (2.0)	0.97 (24.6)	1.28 (32.5)	0.120 (3.0)	1-20 UNEF	0.953 (24.2)	0.875 (22.2)	1.469 (37.3)	1.28 (32.5)	1.469 (37.3)	.8750-20 UNEF
16	0.75 (19.1)	0.125 (3.2)	0.97 (24.6)	1.28 (32.5)	0.120 (3.0)	1-20 UNEF	1.375 (34.9)	0.875 (22.2)	1.891 (48.0)	1.28 (32.5)	1.891 (48.0)	.8750-20 UNEF
18	0.75 (19.1)	0.125 (3.2)	1.06 (27.0)	1.38 (34.9)	0.120 (3.0)	1 1/8-18 NEF	1.375 (34.9)	1.000 (25.4)	1.984 (50.4)	1.38 (34.9)	1.984 (50.4)	1.0000-20 UNEF
20	0.75 (19.1)	0.125 (3.2)	1.16 (29.4)	1.50 (38.1)	0.120 (3.0)	1 1/4-18 NEF	1.375 (34.9)	1.125 (28.6)	1.891 (48.0)	1.50 (38.1)	1.891 (48.0)	1.1875-18 NEF
22	0.75 (19.1)	0.125 (3.2)	1.25 (31.8)	1.63 (41.3)	0.120 (3.0)	1 3/8-18 NEF	1.375 (34.9)	1.250 (31.8)	1.984 (50.4)	1.63 (41.3)	1.984 (50.4)	1.1875-18 NEF
24	0.81 (20.6)	0.125 (3.2)	1.38 (34.9)	1.75 (44.5)	0.147 (3.7)	1 1/2-18 NEF	1.375 (34.9)	1.375 (34.9)	2.25 (57.2)	1.75 (44.5)	2.25 (57.2)	1.4375-18 NEF
28	0.81 (20.6)	0.125 (3.2)	1.56 (39.7)	2.00 (50.8)	0.147 (3.7)	1 3/4-18 NS	1.375 (34.9)	1.625 (41.3)	2.25 (57.2)	2.00 (50.8)	2.25 (57.2)	1.4375-18 NEF
32	0.88 (22.2)	0.125 (3.2)	1.75 (44.5)	2.25 (57.2)	0.173 (4.4)	2-18 NS	1.469 (37.3)	1.906 (48.4)	2.375 (60.3)	2.25 (57.2)	2.375 (60.3)	1.7500-18 NS
36	0.88 (22.2)	0.125 (3.2)	1.94 (49.2)	2.50 (63.5)	0.173 (4.4)	2 1/4-18 UN	1.469 (37.3)	2.125 (54.0)	2.375 (60.3)	2.50 (63.5)	2.375 (60.3)	2.0000-18 NS

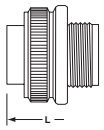
All dimensions in inches (millimeters in parenthesis)

Dimensions

Plug Styles (Barrel Assemblies)



97-3106
97-3107
97-3108



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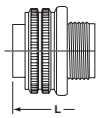
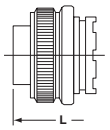


97-3107A



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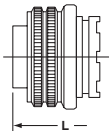
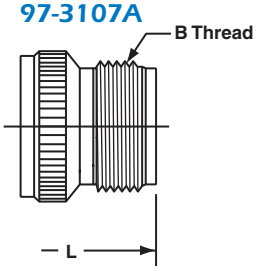


97-3107B

Endbell Styles

97-3106A
97-3107A



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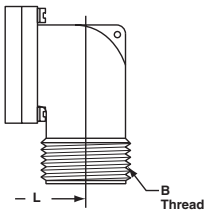

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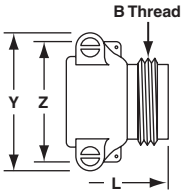

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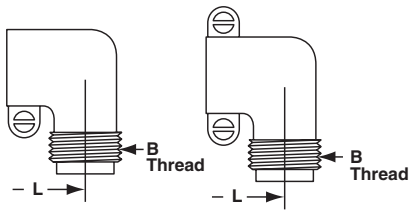


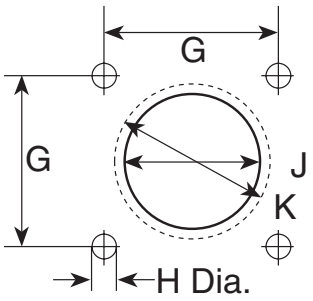
10SL-14S 16S-36

SHELL SIZE	97-3106 97-3107 97-3108 Q	97-3106A 97-3107A L	97-3106B/97-3107B L	97-3106B/97-3107B Y	97-3106B/97-3107B Z	97-3108A L	97-3108B L	B THREAD 2A
8S	0.75 (19.1)	1.25 (31.8)	- -	- -	- -	- -	- -	.5000-28 UNEF
10S	0.88 (22.2)	1.31 (33.3)	- -	- -	- -	1.25 (31.8)	1.38 (34.9)	.5000-28 UNEF
10SL	0.88 (22.2)	1.28 (32.5)	- -	- -	- -	1.31 (33.3)	1.50 (38.1)	.6250-24 NEF
12S	1.00 (25.4)	1.47 (37.3)	- -	- -	- -	1.38 (34.9)	1.56 (39.7)	.6250-24 NEF
12	1.00 (25.4)	1.84 (46.8)	- -	- -	- -	1.22 (31.0)	1.88 (47.6)	.6250-24 NEF
12SL	1.00 (25.4)	- -	- -	- -	- -	1.38 (34.9)	- -	.7500-20 UNEF
14S	1.13 (28.6)	1.47 (37.3)	1.69 (42.9)	1.16 (29.4)	1.13 (28.6)	1.22 (31.0)	1.72 (43.7)	.7500-20 UNEF
14	1.13 (28.6)	1.86 (47.2)	- -	- -	- -	1.81 (46.0)	1.94 (49.2)	.7500-20 UNEF
16S	1.25 (31.8)	1.47 (37.3)	1.69 (42.9)	1.25 (31.8)	1.25 (31.8)	1.50 (38.1)	1.75 (44.5)	.8750-20 UNEF
16	1.25 (31.8)	1.89 (48.0)	- -	- -	- -	1.94 (49.2)	2.13 (54.0)	.8750-20 UNEF
18	1.34 (34.1)	1.98 (50.4)	2.19 (55.6)	1.64 (41.7)	1.34 (34.1)	1.94 (49.2)	2.16 (54.8)	1.0000-20 UNEF
20	1.47 (37.3)	1.89 (48.0)	2.13 (54.0)	1.81 (46.0)	1.47 (37.3)	2.06 (52.4)	2.38 (60.3)	1.1875-18 NEF
22	1.59 (40.5)	1.98 (50.3)	2.13 (54.0)	1.94 (49.2)	1.59 (40.5)	2.06 (52.4)	2.41 (61.1)	1.1875-18 NEF
24	1.72 (43.7)	2.25 (57.2)	2.28 (57.9)	2.19 (55.6)	1.72 (43.7)	2.47 (62.7)	2.63 (66.7)	1.4375-18 NEF
28	1.97 (50.0)	2.25 (57.2)	2.28 (57.9)	2.44 (61.9)	1.97 (50.0)	2.47 (62.7)	2.63 (66.7)	1.4375-18 NEF
32	2.22 (56.4)	2.38 (60.3)	1.31 (33.3)	2.59 (65.9)	2.22 (56.4)	- -	2.81 (71.4)	1.7500-18 NS
36	2.47 (62.7)	2.38 (60.3)	2.34 (59.5)	2.84 (72.2)	2.47 (62.7)	- -	2.84 (72.2)	2.0000-18 NS

All dimensions in inches (millimeters in parenthesis)

Dimensions

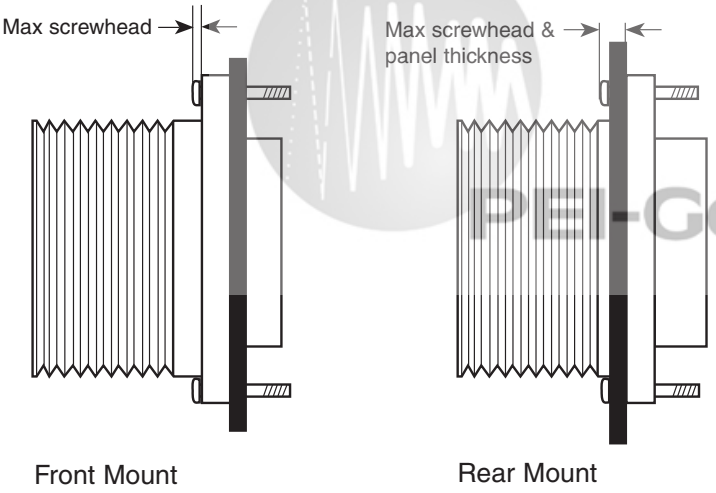
Panel Cutouts



Dimension J is flange in front of panel.
Dimension K is flange at rear of panel.
See sealing screws on page 257.

SHELL SIZE	FLANGE STYLE 0-2-6B			
	G	MOUNTING HOLE DIAMETER H	FRONT MOUNT J	REAR MOUNT K
8S	0.594 (15.1)	0.134 (3.4)	.396 (10.1)	0.603 (15.4)
10S/10SL	0.717 (18.2)	0.134 (3.4)	0.646 (16.4)	0.728 (18.5)
12S/12SL/12	0.811 (20.6)	0.134 (3.4)	0.646 (16.4)	0.854 (21.7)
14S/14	0.906 (23.0)	0.134 (3.4)	0.776 (19.7)	0.980 (24.9)
16S/16	0.969 (24.6)	0.134 (3.4)	0.902 (22.9)	1.091 (27.7)
18	1.063 (27.0)	0.134 (3.4)	1.028 (26.1)	1.224 (31.1)
20	1.157 (29.4)	0.134 (3.4)	1.161 (29.5)	1.358 (34.5)
22	1.252 (31.8)	0.134 (3.4)	1.287 (32.7)	1.488 (37.8)
24	1.374 (34.9)	0.154 (3.9)	1.417 (36.0)	1.626 (41.3)
28	1.563 (39.7)	0.154 (3.9)	1.654 (42.0)	1.854 (47.1)
32	1.752 (44.5)	0.177 (4.5)	1.902 (48.3)	2.118 (53.8)
36	1.937 (49.2)	0.177 (4.5)	2.150 (54.6)	2.362 (60.0)
40	2.185 (55.5)	0.177 (4.5)	2.409 (61.2)	2.610 (66.3)

Panel Thickness



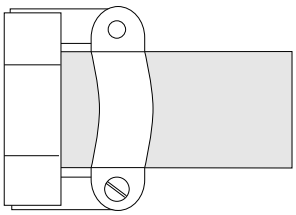
Front Mount

Rear Mount

SHELL SIZE	FRONT MOUNT	REAR MOUNT
8SL	.125 (3.18)	.187 (4.75)
10S		.187 (4.75)
10SL		.187 (4.75)
12S/12SL		.187 (4.75)
12/14		.125 (3.18)
14S		.187 (4.75)
16S		.187 (4.75)
16		.125 (3.18)
18		.125 (3.18)
20		.125 (3.18)
22		.125 (3.18)
24		.187 (4.75)
28		.187 (4.75)
32		.250 (6.35)
36		.250 (6.35)
40		.250 (6.35)

All dimensions in inches (millimeters in parenthesis)

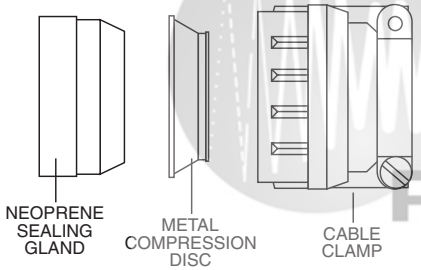
MS3057-A Cable Clamp



Standard MS3057 cable clamps have a dual clamping action to provide a balanced, positive hold on the wires and greatly reduce moisture transmission. This cable clamp accepts MS3420 bushings. MS3420 bushings can be nested to reduce the inside diameter to more closely match the diameter of the cable or wire bundle.

		STANDARD CLAMP				STANDARD CLAMP AND TELESCOPIC BUSHING		
SHELL SIZE	THREAD 2B	LOW COST CAST ZINC	ALUMINUM W/ BRASS SCREWS	ALUMINUM W/ STAINLESS STEEL SCREWS	MAXIMUM CABLE DIAMETER INCH (mm)	LOW COST ZINC WITH BUSHING	BUSHING INCLUDED	BUSHING ID INCH (mm)
8S	1/2-24UNEF	97-3057-1003	MS3057-3A	M85049/41-3A	.220 (5.58)	97-3057-1003-1	MS3420-3	0.130 (3.3)
10S/10SL	5/8-24UNEF	97-3057-1004	MS3057-4A	M85049/41-4A	.312 (7.92)	97-3057-1004-1	MS3420-4	0.220 (5.6)
12/12S/12SL	5/8-24UNEF	97-3057-1004	MS3057-4A	M85049/41-4A	.312 (7.92)	97-3057-1004-1	MS3420-4	0.220 (5.6)
14/14S	3/4-20UNEF	97-3057-1007	MS3057-6A	M85049/41-6A	.438 (11.13)	97-3057-1007-1	MS3420-6	0.312 (7.9)
16/16S	7/8-20UNEF	97-3057-1008	MS3057-8A	M85049/41-8A	.562 (14.27)	97-3057-1008-1	MS3420-8	0.437 (11.1)
18	1-20UNEF	97-3057-1010	MS3057-10A	M85049/41-10A	.625 (15.88)	97-3057-1010-1	MS3420-10	0.562 (14.3)
20/22	1 3/16-18UNEF	97-3057-1012	MS3057-12A	M85049/41-12A	.750 (19.0)	97-3057-1012-1	MS3420-12	0.625 (15.9)
24/28	1 7/16-18UNEF	97-3057-1016	MS3057-16A	M85049/41-16A	.938 (23.83)	97-3057-1016-1	MS3420-16, -12	0.625 (15.9)
32	1 3/4-18UNS	97-3057-1020	MS3057-20A	M85049/41-20A	1.250 (31.75)	97-3057-1020-1	MS3420-20, -16	0.750 (19.0)
36	2-18UNS	97-3057-1024	MS3057-24A	M85049/41-24A	1.375 (34.92)	97-3057-1024-1	MS3420-24, -20	0.937 (23.8)
40	2 1/4UNS-16	-	MS3057-28A	M85049/41-28A	1.625 (41.28)	-	-	- -

MS3057-C Waterproof Cable Clamp

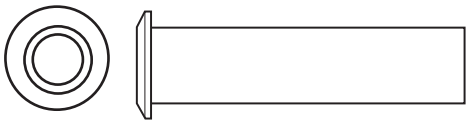


Standard MS3057-C waterproof cable clamp with mechanical strain relief for use with threaded endbells. Internal neoprene gland and compression ring will seal a broad range of round cable diameters as listed below. For reduction of cable diameters, order the appropriate MS3420A bushing in table.

SHELL SIZE	PART NUMBER	WIRE DIAMETER INCHES (mm)		OPTIONAL BUSHINGS	
		MAX.	MIN.	PART NUMBER	MAX. WIRE DIA. (mm)
10SL	MS3057-4C	.312 (7.93)	.188 (4.80)	MS3420-4A	.219 (5.56)
14S	MS3057-6C	.438 (11.12)	.281 (7.10)	MS3420-6A MS3420-4A	.312 (7.93) .219 (5.56)
16/16S	MS3057-8C	.530 (13.48)	.312 (7.90)	MS3420-8A MS3420-6A	.438 (11.10) .312 (7.93)
18	MS3057-10C	.625 (15.87)	.375 (9.50)	MS3420-10A MS3420-6A	.438 (11.10) .312 (7.93)
20/22	MS3057-12C	.750 (19.00)	.500 (12.70)	MS3420-12A MS3420-8A	.540 (13.74) .438 (11.10)
24/28	MS3057-16C	.940 (23.80)	.625 (15.90)	MS3420-16A MS3420-12A MS3420-8A	.750 (19.00) .540 (13.74) .438 (11.10)
32	MS3057-20C	1.25 (31.75)	-	MS3420-20A MS3420-16A MS3420-12A	.938 (23.80) .750 (19.00) .540 (13.74)
36	MS3057-24C	1.38 (35.00)	1.00 (25.40)	MS3420-24A MS3420-18A MS3420-16A	1.12 (28.50) .938 (23.80) .750 (19.00)
40	MS3057-28C	1.62 (41.25)	1.25 (31.80)	MS3420-28A MS3420-20A MS3420-16A	1.25 (31.75) .940 (23.80) .750 (19.00)

All dimensions in inches (millimeters in parenthesis)

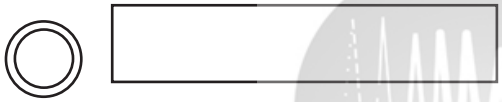
MS3420 Telescoping Bushings



For use with Style A cable clamps and AIT/MS Style E/F endbells to eliminate dust, dirt, and oil from entering the cable clamp. Bushings can be nested, one inside the other, to reduce the inside diameter to better seal against the cable jacket. Each bushing will accept the next smallest bushing.

SHELL SIZE	1ST BUSHING PART NUMBER	INSIDE DIAMETER	2ND NESTED BUSHING	INSIDE DIAMETER	FITS IN CABLE CLAMP
10S/10SL	MS3420-4	.220 (5.59)	NONE	-	MS3057-4A
12/12S	MS3420-4	.220 (5.59)	NONE	-	MS3057-4A
14/14S	MS3420-6	.312 (7.92)	NONE	-	MS3057-6A
16S	MS3420-8	.437 (11.10)	NONE	-	MS3057-8A
16	MS3420-8	.437 (11.10)	NONE	-	MS3057-8A
18	MS3420-10	.562 (14.30)	NONE	-	MS3057-10A
20	MS3420-12	.625 (15.90)	NONE	-	MS3057-12A
22	MS3420-12	.625 (15.90)	NONE	-	MS3057-12A
24	MS3420-16	.750 (19.05)	MS3420-12	.625 (15.90)	MS3057-16A
28	MS3420-16	.750 (19.05)	MS3420-12	.625 (15.90)	MS3057-16A
32	MS3420-20	.937 (23.80)	MS3420-16	.750 (19.05)	MS3057-20A
36	MS3420-24	1.250 (31.75)	MS3420-20	.937 (23.80)	MS3057-24A
40	MS3420-28	1.375 (34.92)	MS3420-24	1.250 (31.75)	SE96-28A4

MS3420-A Reduction Bushings



For use with MS3057-C cable clamps (Style C) to reduce the wire sealing diameter. Bushings can be nested, one inside the other, to progressively reduce the inside diameter of the cable clamp. The column labeled "reduction bushings" shows the acceptable nesting options for each clamp. Call for information.

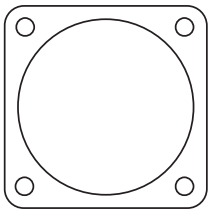
9767 Cable Clamps

9767 waterproof cable clamp with mechanical strain relief. An internal neoprene gland seal bushing and compression washer will seal a broad range of round cable diameters as listed below.

SHELL SIZE	CABLE CLAMP PART NUMBER	MAX. CABLE OUTSIDE DIAMETER		MIN. CABLE OUTSIDE DIAMETER		THREAD CLASS 2B UNEF
		INCHES	(mm)	INCHES	(mm)	
10SL, 12S	9767-12-4	0.219	(5.55)	0.020	(0.51)	5/8-24
14S	9767-14-4	0.219	(5.55)	0.020	(0.51)	3/4-20
14S	9767-14-6	0.344	(8.73)	0.176	(4.47)	3/4-20
16S, 16	9767-16-4	0.219	(5.55)	0.020	(0.51)	7/8-20
16S, 16	9767-16-6	0.344	(8.73)	0.176	(4.47)	7/8-20
16S, 16	9767-16-8	0.438	(11.12)	0.177	(4.50)	7/8-20
18	9767-18-6	0.344	(8.73)	0.176	(4.47)	1-20
18	9767-18-8	0.438	(11.12)	0.177	(4.50)	1-20
18	9767-18-10	0.563	(14.29)	0.292	(7.42)	1-20
20, 22	9767-22-8	0.438	(11.12)	0.177	(4.50)	1-3/16-18
20, 22	9767-22-10	0.563	(14.29)	0.292	(7.42)	1-3/16-18
20, 22	9767-22-12	0.688	(17.46)	0.370	(9.40)	1-3/16-18
24, 28	9767-28-10	0.563	(14.29)	0.292	(7.42)	1-7/16-18
24, 28	9767-28-12	0.688	(17.46)	0.370	(9.40)	1-7/16-18
24, 28	9767-28-16	0.844	(21.43)	0.536	(13.61)	1-7/16-18
32	9767-32-20	1.031	(26.19)	0.590	(14.99)	1-3/4-18
36	9767-36-16	0.844	(21.43)	0.536	(13.61)	2-18

All dimensions in inches (millimeters in parenthesis)

Gaskets



Synthetic rubber gaskets are used to ensure a moisture tight seal between a receptacle and the panel. Gaskets are available for front or rear panel mounting of style 3100 and 3102 connectors. Gasket thickness is approximately .031" (1 mm), for nonconductive and low temperature types.

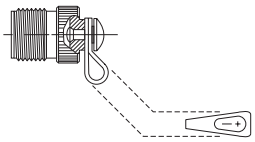
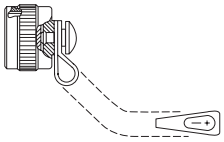
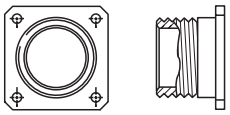
Conductive shielding gaskets contain an imbedded metal screen for EMI/RFI shielding in addition to moisture sealing. Gaskets are available for front or rear panel mounting of connectors. Gasket thickness is .020" (.5 mm).

SHELL SIZE	NON-CONDUCTIVE	CONDUCTIVE	LOW TEMPERATURE
8S	10-040450-008	10-040450-08S	10-036675-008
10S/10SL	10-040450-010	10-040450-10S	10-036675-010
12/12S	10-040450-012	10-040450-12S	10-036675-012
14/14S	10-040450-014	10-040450-14S	10-036675-014
16S	10-040450-016	10-040450-16S	10-036675-016
16	10-040450-016	10-040450-16S	10-036675-016
18	10-040450-018	10-040450-18S	10-036675-018
20	10-040450-020	10-040450-20S	10-036675-020
22	10-040450-022	10-040450-22S	10-036675-022
24	10-040450-024	10-040450-24S	10-036675-024
28	10-040450-028	10-040450-28S	10-036675-028
32	10-040450-032	10-040450-32S	10-036675-032
36	10-040450-036	10-040450-36S	10-036675-036
40	10-040450-040	10-040450-40S	10-036675-040

Metal Dust Caps With Sash Chain & Dummy Receptacles

Metal dust caps are used to protect the contacts when the connectors are left unmated. Dust caps come with metal chain lanyards.

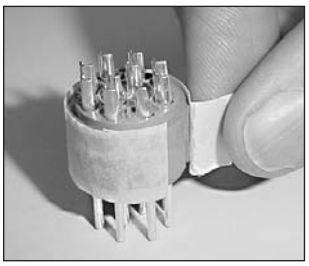
Dummy receptacles are for front or rear panel mounting. The center of the dummy receptacle is closed. Dummy receptacles mount on the same centers and have the same outside dimensions as a 97-3102A receptacle. A version with a clearance hole through the middle of the connector is also available. Call for ordering information.

	DUST CAPS		
	PLUG CAP	RECEPTACLE	DUMMY RECEPTACLES
SHELL SIZE			
8S	MS25042-8DA	MS25043-8DA	MS3105-8
10S/10SL	MS25042-10DA	MS25043-10DA	MS3105-10
12/12S/12SL	MS25042-12DA	MS25043-12DA	MS3105-12
14/14S	MS25042-14DA	MS25043-14DA	MS3105-14
16S	MS25042-16DA	MS25043-16DA	MS3105-16
16	MS25042-17DA	MS25043-17DA	MS3105-17
18	MS25042-18DA	MS25043-18DA	MS3105-18
20	MS25042-20DA	MS25043-20DA	MS3105-20
22	MS25042-22DA	MS25043-22DA	MS3105-22
24	MS25042-24DA	MS25043-24DA	MS3105-24
28	MS25042-28DA	MS25043-28DA	MS3105-28
32	MS25042-32DA	MS25043-32DA	MS3105-32
36	MS25042-36DA	MS25043-36DA	MS3105-36
40	MS25042-40DA	MS25043-40DA	MS3105-40

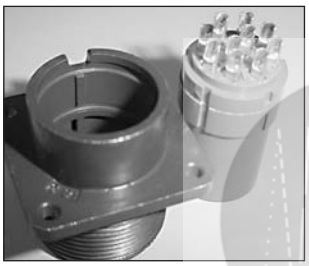
Assembly Instructions

Read and understand these instructions prior to assembly.

1. Open both shell kit and insert kit.



2. Remove yellow tape from insert being careful not to allow front and rear insulators to come apart.

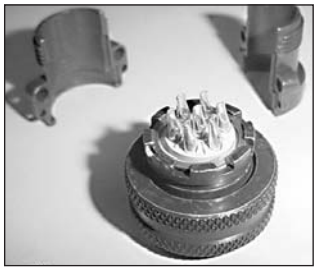


3. Insert insulator assembly into shell or barrel aligning the key and keyway until rear of the insert is positioned just below the retaining spring ring ridge.

4. Insert the retainer spring ring into the ridge by working one end in first then working around the ring until it snaps into place.

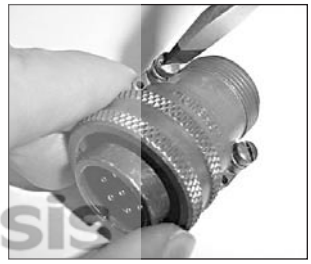
5. For barrels, add coupling nut to barrel and slide rear accessories on to cable.

6. Solder wires onto proper contacts.



7. Thread endbell onto barrel/shell. Slide cable clamp down the cable and thread onto the endbell. Tighten endbell and cable clamp using endbell accessory tools
➥See page 264.

8. Tighten cable clamp screws appropriately for the specific wire/cable in use.



AIT/MS Series

AIT/MS Series is a low cost, MIL-DTL-5015 (MIL-C-5015) threaded connector for use in harsh environmental conditions. This popular, cylindrical connector is particularly well suited to commercial applications where a low cost, yet rugged connector is required. Over 286 contact layouts are available from 1 to 85 circuits and up to 150 amps per contact. The standard MIL-DTL-5015 (MIL-C-5015) layouts allow the mixing of power and signal contacts, power only, or signal only. Contacts are available in solder, crimp, or PC terminations covering wire gauges from size 24 to size 0 AWG. Thermocouple (J, Y, K, T) and coax contacts are also available. These connectors are completely sealed to withstand moisture, condensation, vibration, and flash-over across a broad range of wire diameters. When the two connector halves are mated, the rear-sealing grommet along with a dynamic interfacial seal at the front, create an environmentally sealed assembly.

Applications

Military, Industrial and Commercial environments requiring extreme reliability, high power handling and low cost.

- Power Generators
- Engines
- Sensors
- Motion Control
- Off-road Vehicles
- Earth Moving Equipment
- Ships
- Mobile Equipment
- Industrial Machinery
- Telecommunications

Features

Agency Approvals

MIL-DTL-5015 (MIL-C-5015)

Broad Temperature Range

These connectors will operate in temperatures ranging from -67°F to +257°F (-55°C to +125°C) under extremely harsh conditions.

Environmental

These connectors will perform in the full range of operating conditions as defined in MIL-DTL-5015 and are recommended for conditions where vibration, moisture, pressure and/or temperature are extreme.

Resilient Insulator and Grommet

A resilient neoprene insulator and rear seal grommet provide a liquid-tight assembly.

Rugged Shell

The rugged aluminum alloy shell and hardware are light in weight yet highly resistant to damage and corrosion. Shells are available in 5 different styles and in 19 sizes.

Wide Range of Wire Gauges and Current Carrying Capacity

Up to 150 amps for standard military contacts and up to 255 amps using Radsok contacts. Wire gauges from 24 to size 0 AWG.

Wide Variety of Contacts

Machined contacts with silver or gold plating are available in sizes from 16 through 0. Solder, Crimp, PC, and Thermocouple contacts are available.

Technical Specifications

MATERIALS & FINISHES

Shell	Aluminum alloy
Plating	Olive drab chromate coating over cadmium plating to QQ-P-416; black zinc cobalt, electroless nickel, anodized or green zinc
Contacts	Brass or Copper alloy
Platings	Silver plating to QQ-S-365 (Solder contacts have tinned solder pot) Gold plating to MIL-G-45204
Insulator	Resilient Neoprene®, Viton®, Low Smoke Zero Halogen (LSZH) Viton is a registered trademark of Dupont Dow Elastomers

ELECTRICAL DATA

Operating Voltage/Test Voltage

	NOMINAL DISTANCE		OPERATING VOLTAGE*		STANDARD SEA LEVEL CONDITIONS		PRESSURE ALTITUDE† 50,000 FEET		PRESSURE ALTITUDE† 70,000 Feet	
MS SERVICE RATING	AIRSPACE	CREEPAGE	DC V	AC VRMS	MINIMUM FLASHOVER VOLTAGE AC (RMS)	TEST VOLTAGE AC (RMS)	MINIMUM FLASHOVER VOLTAGE AC (RMS)	TEST VOLTAGE AC (RMS)	MINIMUM FLASHOVER VOLTAGE AC (RMS)	TEST VOLTAGE AC (RMS)
I	1/32	1/16	250	1,000	1,400	1,000	550	400	325	260
A	1/16	1/8	700	500	2,800	2,000	800	600	450	360
D	1/8	3/16	1,250	900	3,600	2,800	900	675	500	400
E	3/16	1/4	1,750	1,250	4,500	3,500	1,000	750	550	440
B	1/4	5/16	2,450	1,750	5,700	4,500	1,100	825	600	480
C	5/16	1	4,200	3,000	8,500	7,000	1,300	975	700	560

* Each insulator has a specific service rating. These should be used by the designer only as a guide. The Service Ratings for each layout are listed on pages 50-69

† Not corrected for change in density resulting from variations in temperature

MS connectors show no evidence of breakdown when the test voltages given are applied between the two closest contacts and between the shell and the contacts closest to the shell for a period of one minute per MIL-STD-1344 Method 3001.

Current Rating & Contact Resistance

CONTACT SIZE	TEST CURRENT (AMPS)	POTENTIAL DROP (MILLIVOLTS)	CONTACT RESISTANCE (MILLIOHM) MAX.
16	13	49	6
12	23	42	3
8	46 (69*)	26 (20*)	1 (0.44*)
4	80 (80*)	23 (18*)	0.5 (0.23*)
0	150 (225*)	21 (27*)	0.2 (0.18*)

*Using non-military crimp Radsok contact

Maximum total current to be carried per connector in wire bundles as specified in MIL-W-5088. Contact resistance when tested to MIL-C-39029 will not exceed voltage drops listed in above table.

MECHANICAL

Wire Range Sizes	24 to 0 AWG (Crimp contacts on pages 24-25)
Insulation Resistance	>5000 megohms at 77°F (25°C) per MIL-DTL-5015, 3.18

Wire Sealing Range

CONTACT SIZE	WIRE SIZE (MIL-W-5086)	INSULATION OUTSIDE DIAMETER LIMIT			
		MIN.	(mm)	MAX.	(mm)
16	16 thru 20	.064	(1.63)	.130	(3.30)
12	12 thru 14	.114	(2.90)	.170	(4.32)
8	8 thru 10	.164	(4.17)	.255	(6.48)
4	4 thru 6	.275	(6.98)	.370	(9.40)
0	0 thru 2	.415	(10.54)	.550	(13.97)

The connector is designed for individual wire sealing. Sealing of an outer cable jacket on multiconductor cables must be accomplished with an appropriate endbell. Sealing is only guaranteed if wires according to MIL-W-5086 or within the listed ranges are used.

Technical Specifications

Insulation Strip Lengths	(➥ see page 24)
Mating Life	100 cycles minimum. To MIL-DTL-5015, 3.16
Salt Spray	MIL-STD-1344 Method 1001 Condition B minimum (Cadmium), 48 hour, Olive drab chromate over cadmium, non-conductive black zinc, conductive black zinc, green zinc, black anodized, electroless nickel
Heat	+257˚F (+125˚C) for 60 hours, +185˚F (+85˚C) for 1000 hours per MIL-DTL-5015, 4.6.14, minimum
Chemical Resistance	20-hour full immersion unmated in hydraulic fluid and lubricating oil per MIL-DTL-5015 minimum
Vibration	10 to 2,000Hz (10g's) 10 microseconds maximum discontinuity to MIL-STD-1344 Method 2005, condition II per MIL-DTL-5015
Shock	50g 11millisecond duration, three major axes. 10 microseconds maximum discontinuity to MIL-DTL-5015 per MIL-STD-1344 method 2004, condition A, 3.13
Contact Type	Solder, Crimp, PC, or Thermocouple (hard silver or gold plating)
Number of Circuits	1 to 85 (➥ See pages 50-69)
Contact Insertion	Insertion from rear with simple hand tool. Removable, 5 cycles minimum. (Solder, PC and coax outer housings are bonded into the insulator.)
Contact Retention and Separation Forces	To MIL-DTL-5015, 4.6.6 & 3.26

CONTACT SIZE	AXIAL LOAD		SEPARATION FORCE MINIMUM	
	NEWTONS	(LBS.)	NEWTONS	(LBS.)
16	44	(10)	1	(0.25)
12	67	(15)	2	(0.50)
8	89	(20)	3	(0.75)
4	89	(20)	4	(1.00)
0	111	(25)	9	(2.00)

Polarization	Integral key and keyway plus optional rotational polarization. ➥See pages 59-69 for valid rotations
Approvals	MIL-DTL-5015

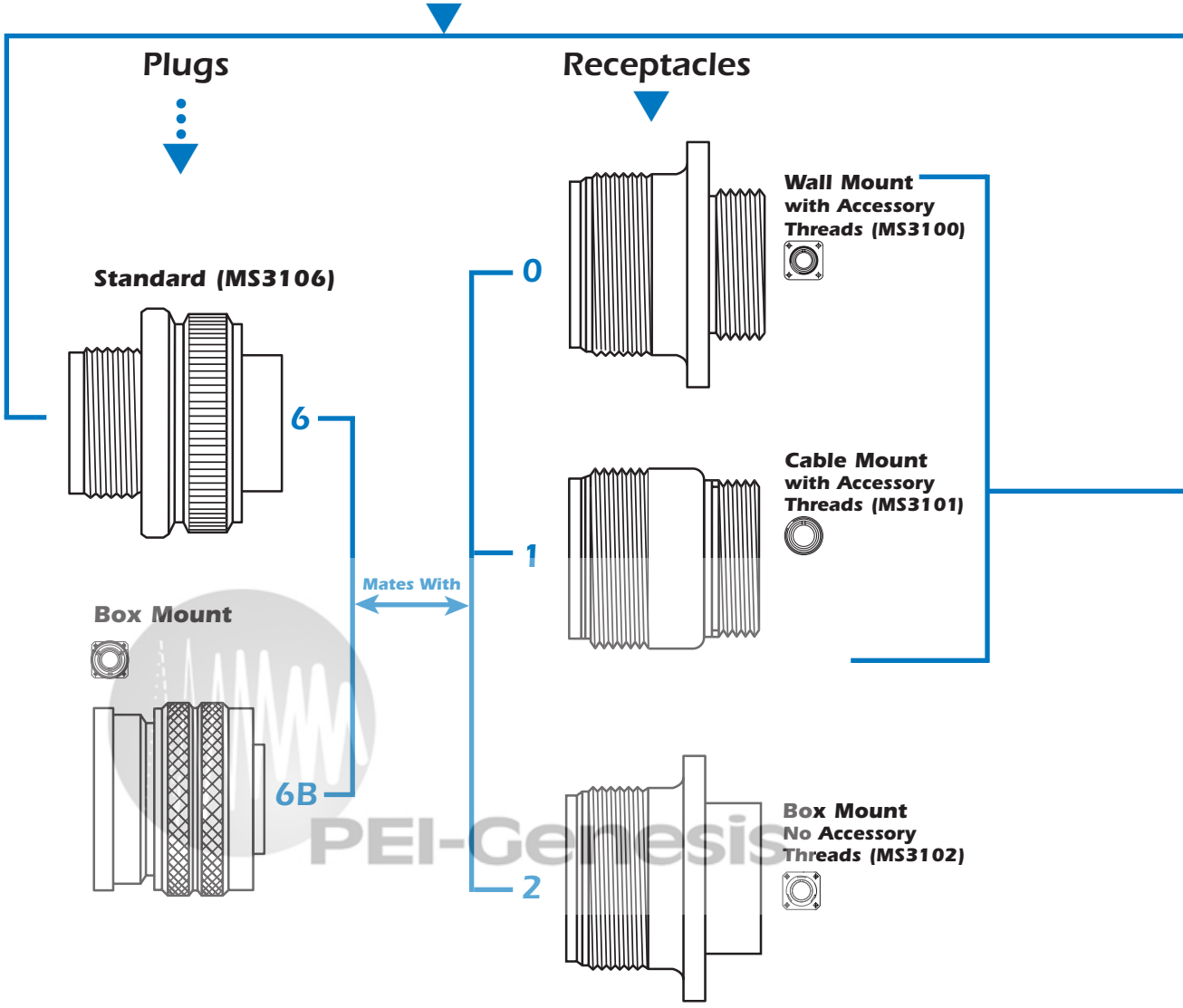
AIT/MS Series How to Order

There are four versions of MIL-DTL-5015 connectors included in this catalog. Construct your part number from the How-To-Order presentation on ➥ pages 22-23.

Follow these 8 steps to create your part number. . .

STEP 1

Select Shell Style, Plug or Receptacle



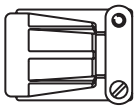
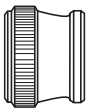
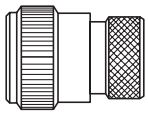
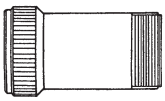
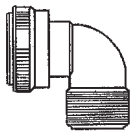
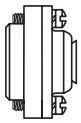
Create your part number using these eight steps

(example)

AIT	6	A	A	24-21	S		S	-472
Series Prefix	1 Shell Style	2 End Bells (if omitting endbell, enter - (dash))	3 Cable Clamp/ Boot (if needed)	4 Layout	5 Contact	6 Rotation	7 Contact Type	8 Plating/ Modifications

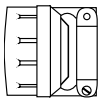
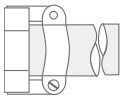
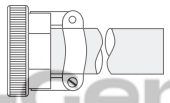
* See pages 41-42 for Amphenol order codes.

STEP 2
Choose Endbell

- **E** —  **MS Style (E/F) Standard Clamp**
- **RV** —  **No Clamp**
- **G** —  **Heat Shrink**
- **L** —  **Long Extender**
- **A** —  **Standard Extender**
- **T** —  **MS Style (MS3108) 90°**
- **R** —  **MS Style Low Profile**
- **P** —  **Potting** * Potting Compound see page 261.

STEP 3
Choose Cable Clamp or Heat Shrink Boot
(if applicable)

Heat Shrink Boot
See pages 258-260.

- **C** —  **MS3057-C**
- **A** —  **MS3057-A**
- **9767-** —  **9767-**

STEP 4
Choose Layout
See pages 50-69.

STEP 5
Choose Contact
- **P** = Pin
- **S** = Socket

STEP 6
Choose Rotation
See pages 59-69.
(omit for normal)
- **W, X, Y, Z**

STEP 7
Choose Contact Type
- **S** = Solder
- **C** = Crimp*
- **H** = PC**
- **0** = Less contacts

* When using a "C" in part number, the connector is supplied with the standard size crimp contacts for its layout. Bolded part numbers on page 24 indicate crimp contact. If reduced or enlarged crimp contacts are required, specify connector 0 (less contacts) and order contacts separately.

** See page 32 for post diameters and lengths.

STEP 8
Choose Plating/ Modifications

CONTACTS
- **B30** = Gold 50µ Gold over Nickel
  Omit for silver contacts
- **T** = Thermocouple
- **RDS** = RADSOK (Socket only) 8,4,0

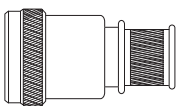
SHELLS
- **023** = Electroless Nickel (RoHS with crimp only)
- **024** = Green Zinc Cobalt
- **025** = Black Zinc Cobalt (RoHS with crimp only)
- **027** = Conductive Black Zinc Cobalt
- **G96** = Black Anodized
  Omit for olive drab chromate over cadmium (MS Style)
- **116** = Less Pre-tinned Solder Cups
- **472** = 116&025 mod codes (RoHS)
- **548** = 116&023 mod codes (RoHS)

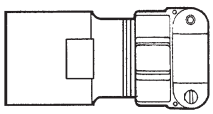
MATERIALS
- **L** = Low Smoke Zero Halogen
- **V** = High Temperature Viton®
  Omit for standard Neoprene

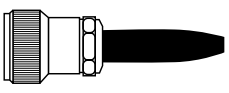
Viton is a registered trademark of DuPont Dow Elastomers

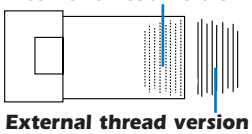
Standard Specials —
Call with NPT thread size, Sealtite conduit diameter, or cable outside diameter.

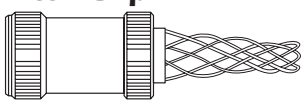
Shielded Cable

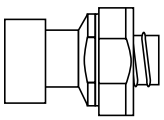

Shielded Cable


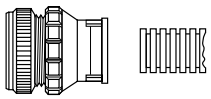
Gland Seal


Low Cost Gland Seal


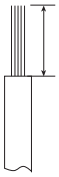
Internal thread version

External thread version

Mesh Grip


Conduit Metal


Conduit Plastic
See pages 262-263.


Pin & Socket Crimp Contacts

PIN CONTACT	SOCKET CONTACT	WIRE STRIP LENGTH	WIRE RANGE
			

CONTACT SIZE	WIRE SIZE	PART NUMBER					WIRE STRIP LENGTHS INCHES (mm)	WIRE SEALING RANGE INCHES (mm)
		PIN CONTACT		SOCKET CONTACT				
		SILVER	GOLD	SILVER	GOLD			
16S	16-18-20	**AIC16S-16P**	**AIC16S-16PG**	**AIC16S-16S**	**AIC16S-16SG**		.312 (7.9)	.090-.118 (2.3-3.0)
	12-14	AIC16S-12P	AIC16S-12PG	AIC16S-12S	AIC16S-12SG	C4		
	14-16	AIC16S-14P	AIC16S-14PG	AIC16S-14S	AIC16S-14SG	C3		
	18-20	AIC16S-20P	AIC16S-20PG	AIC16S-20S	AIC16S-20SG	C13		
	20-22	AIC16S-22P	AIC16S-22PG	AIC16S-22S	AIC16S-22SG	C14		
	22-24	AIC16S-24P	AIC16S-24PG	AIC16S-24S	AIC16S-24SG	C2		
16	16-18-20	**AIC16-16P**	**AIC16-16PG**	**AIC16-16S**	**AIC16-16SG**			
	12-14	AIC16-12P	AIC16-12PG	AIC16-12S	AIC16-12SG	C4		
	14-16	AIC16-14P	AIC16-14PG	AIC16-14S	AIC16-14SG	C3		
	18-20	AIC16-18P	AIC16-18PG	AIC16-18S	AIC16-18SG	C13		
	20-22	AIC16-20P	AIC16-20PG	AIC16-20S	AIC16-20SG	C14		
	20-24	AIC16-2024P	AIC16-2024PG	AIC16-2024S	AIC16-2024SG	C36		
	22-24	AIC16-22P	AIC16-22PG	AIC16-22S	AIC16-22SG	C2		
12	12-14	**AIC12-12P**	**AIC12-12PG**	**AIC12-12S**	**AIC12-12SG**		.312 (7.9)	.126-.177 (3.2-4.5)
	8-10	AIC12-8P	AIC12-8PG	AIC12-8S	AIC12-8SG	C5		
	10-12	AIC12-10P	AIC12-10PG	AIC12-10S	AIC12-10SG	C8		
	14-16	AIC12-14P	AIC12-14PG	AIC12-14S	AIC12-14SG	C9		
	16-18	AIC12-16P	AIC12-16PG	AIC12-16S	AIC12-16SG	C7		
	18-20	AIC12-18P	AIC12-18PG	AIC12-18S	AIC12-18SG	C6		
	20-22	AIC12-20P	AIC12-20PG	AIC12-20S	AIC12-20SG	C40		
8	8	**AIC8-8P**	**AIC8-8PG**	**AIC8-8S**	**AIC8-8SG**		.563 (14.3)	.150-.256 (3.8-6.5)
	8 High Power	-	-	AIC8-8SRAD	-			
	10-12	AIC8-10P	AIC8-10PG	AIC8-10S	AIC8-10SG	C10		
	12-14	AIC8-12P	AIC8-12PG	AIC8-12S	AIC8-12SG	C38		
4	4	**AIC4-4P**	**AIC4-4PG**	**AIC4-4S**	**AIC4-4SG**		.500 (12.7)	.279-.366 (7.1-9.3)
	4 High Power	-	-	AIC4-4SRAD	-			
	8	AIC4-8P	AIC4-8PG	AIC4-8S	AIC4-8SG	C15		
0	0	**AIC0-0P**	**AIC0-0PG**	**AIC0-0S**	**AIC0-0SG**		.750 (19.0)	394-.539 (10.0-13.7)
	0 High Power	-	-	AIC0-0SRAD	-			
	0-2	AIC0-2P	AIC0-2PG	AIC0-2S	AIC0-2SG	C11		
	4	AIC0-4P	AIC0-4PG	AIC0-4S	AIC0-4SG	C12		

Bolded items are standard crimp contacts

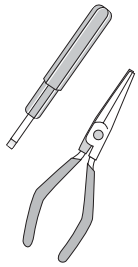
SOLDER THERMOCOUPLE CONTACTS			
	TYPE	PINS	SOCKETS
16S	Alumel	10-040799-02P*	10-040799-02S*
	Chromel	10-040799-01P*	10-040799-01S*
	Iron	10-040799-03P*	10-040799-03S*
	Constantan	10-040799-04P*	10-040799-24S*
16	Alumel	10-040799-12P*	10-040799-12S*
	Chromel	10-040799-11P*	10-040799-11S*
	Iron	10-040799-13P*	10-040799-13S*
	Constantan	10-040799-14P*	10-040799-14S*

SOLDER THERMOCOUPLE CONTACTS			
	TYPE	PINS	SOCKETS
12	Alumel	10-040799-42P*	10-040799-42S*
	Chromel	10-040799-41P*	10-040799-41S*
	Iron	10-040799-43P*	10-040799-43S*
	Constantan	10-040799-44P*	10-040799-44S*

Thermocouple Types: J = Iron-Constantan K = Alumel-Chromel
T = Copper-Constantan E = Chromel-Constantan

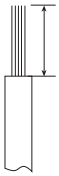
*Call for availability

† 16S contacts are used in 8S, 10S, 10SL, 12S, 14S and 16S connector sizes only.

ACCESSORIES	TOOLS					
						
WIRE HOLE FILLER COLOR	**CRIMP TOOLS**	**CRIMP LOCATOR & DIE SETS**	**LOCATOR COLOR**	**PILOT PIN/INSERTION GUIDE FOR SOCKETS**	**INSERTION TOOL**	**EXTRACTION TOOL**
MS27488-16-1 (Blue)	AF8-(hand) WA27F-(pneumatic) ††	TH29-1	Red	10-242758-016	DAK168-16	DRK59 Kit with Multiple Tips
			Pin-Blue Socket-Green			
MS27488-12-1 (Yellow)			Green	10-242758-012	DAK168-12	
MS27488-8-1 (White)	400BHD	**Locator** 414DA-8N **Die Set** 4025-Pin 4026-Socket	-	10-242758-008	DAK282	
MS27488-4-1 (Blue)		**Locator** 414DA-4N **Die Set** 4043	-	-	AIC4INS	AIC4EXT
MS27488-0-1 (Yellow)		**Locator** 414DA-0N **Die Set** 4042	-	-	AIC0INS	AIC0EXT

†† Call for additional tool accessories.

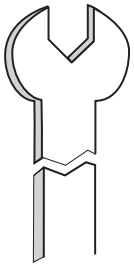
Pin & Socket Coax Contacts

	PIN CONTACT	SOCKET CONTACT	WIRE STRIP LENGTH	WIRE RANGE	ACCESSORIES
					

COAX CONTACT SIZE	COAX WIRE SIZE	PART NUMBER				WIRE STRIP LENGTHS INCHES (mm)	WIRE SEALING RANGE INCHES (mm)		WIRE HOLE FILLER
		PINS		SOCKETS					
		SILVER	GOLD	SILVER	GOLD		MIN.	MAX.	
12	RG161/U RG174A/U RG179B/U RG187A/U RG188A/U RG316/U	21-33034-1	21-33014-21 21-33048-1() 21-33130-1()	21-33033-1	21-33013-21 21-33047-1() 21-33129-1 ()	Call for details	0.126 (3.2 mm)	0.177 (4.5 mm)	Yellow 10-405996-12
	RG178B/U RG196A/U	-	21-33014-22	-	21-33013-22				
8	RG58C/U RG141A/U RG303/U	21-33034-2(1)	21-33014-1(5) 21-33016-5(3) 21-33130-2()	21-33033-2(1) 21-33048-2()	21-33013-1(5) 21-33047-2() 21-33015-5(3) 21-33129-2()	Call for details	0.150 (3.8 mm)	0.256 (6.5 mm)	White 10-405996-8
	RG59B/U RG62A/U RG62B/U RG210/U	31-33034-5(1)	21-33014-5(5) 21-33016-2(3) 21-33130-5() 21-33064-21()	21-33033-3(1)	21-33013-5(5) 21-33015-2(3) 21-33129-3() 21-33063-21()				
	RG161/U RG174A/U RG179B/U RG187A/U RG188A/U RG316/U	21-33034-3(1)	21-33014-3(5) 21-33016-1(3) 21-33130-3 () 21-33064-20()	21-33033-3(1)	21-33013-3(5) 21-33015-1(3) 21-33129-3() 21-33063-20()				
	RG180B/U RG195A/U	21-33034-6	21-33014-6(5) 21-33048-3() 21-33130-6()	21-33033-6	21-33013-(6) 21-33047-3() 21-33129-6()				
	RG140/U RG302/U	21-33034-8	21-33014-8(5) 21-33033-8 21-33130-8()	-	21-33013-8(5) 21-33129-8()				
	RG55B/U RG142A/U RG142B/U RG223/U	21-33034-4	21-33014-5(5) 21-33130-4()	21-33033-4	21-33013-5(5) 21-33129-4()				
4	RG59B/U RG62A/U RG62B/U RG210/U	-	21-33060-10()	-	21-33059-10()	Call for details	0.279 (7.1 mm)	0.366 (9.3 mm)	Blue 10-405996-4
	RG212/U	-	21-33060-11()	-	21-33059-11()				
	RG55B/U RG142A/U RG142B/U RG223/U	-	31-33060-12()	-	21-33059-12()				

( ) Various platings available. Availability of coax contacts varies widely. Call for details.

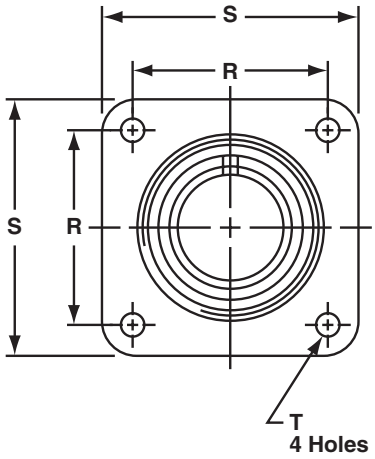
All dimensions in inches (millimeters in parenthesis)

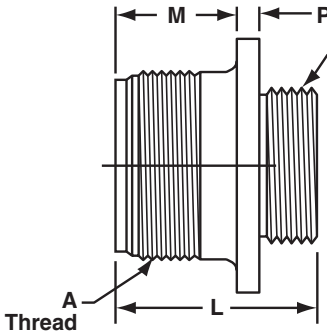
		TOOLS			
		 M22520/10-01	 M22520/5-01	 Crimp Dies	
COAX CONTACT SIZE	**COAX WIRE SIZE**	**HAND CRIMP TOOL**	**HAND TOOL DIE/LOCATOR**	**USE LOCATOR**	**COAX CLAMP NUT WRENCH**
12	RG161/U RG174A/U RG179B/U RG187A/U RG188A/U RG316/U	M22520/10-01	M22520/10-05	A	11-8676-1
	RG178B/U RG196A/U			B	
8	RG58C/U RG141A/U RG303/U	M22520/10-01	M22520/10-07	B	11-8676-2
	RG59B/U RG62A/U RG62B/U RG210/U	M22520/5-01	M22520/5-45	B	11-8676-3
	RG161/U RG174A/U RG179B/U RG187A/U RG188A/U RG316/U	M22520/10-01	M22520/10-05	A	11-8676-2
	RG180B/U RG195A/U		M22520/10-07	B	
	RG140/U RG302/U			A	
	RG55B/U RG142A/U RG142B/U RG223/U				
4	RG59B/U RG62A/U RG62B/U RG210/U	M22520/5-01	M22520/5-45	B	11-8676-4
	RG212/U	M22520/5-01	M22520/5-39	A	
	RG55B/U RG142A/U RG142B/U RG223/U	M22520/10-01	M22520/10-07	A	

Dimensions

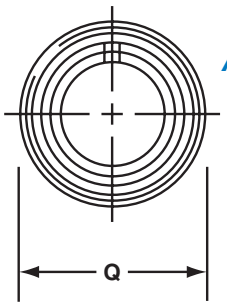
Receptacle Styles

AIT0-MS3100/AIT2-MS3102

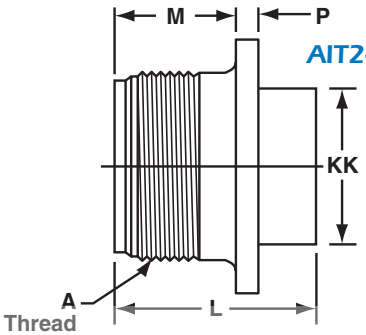




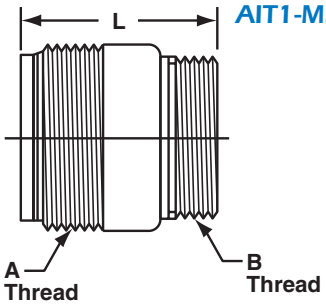
AIT0-MS3100



AIT1-MS3101



AIT2-MS3102



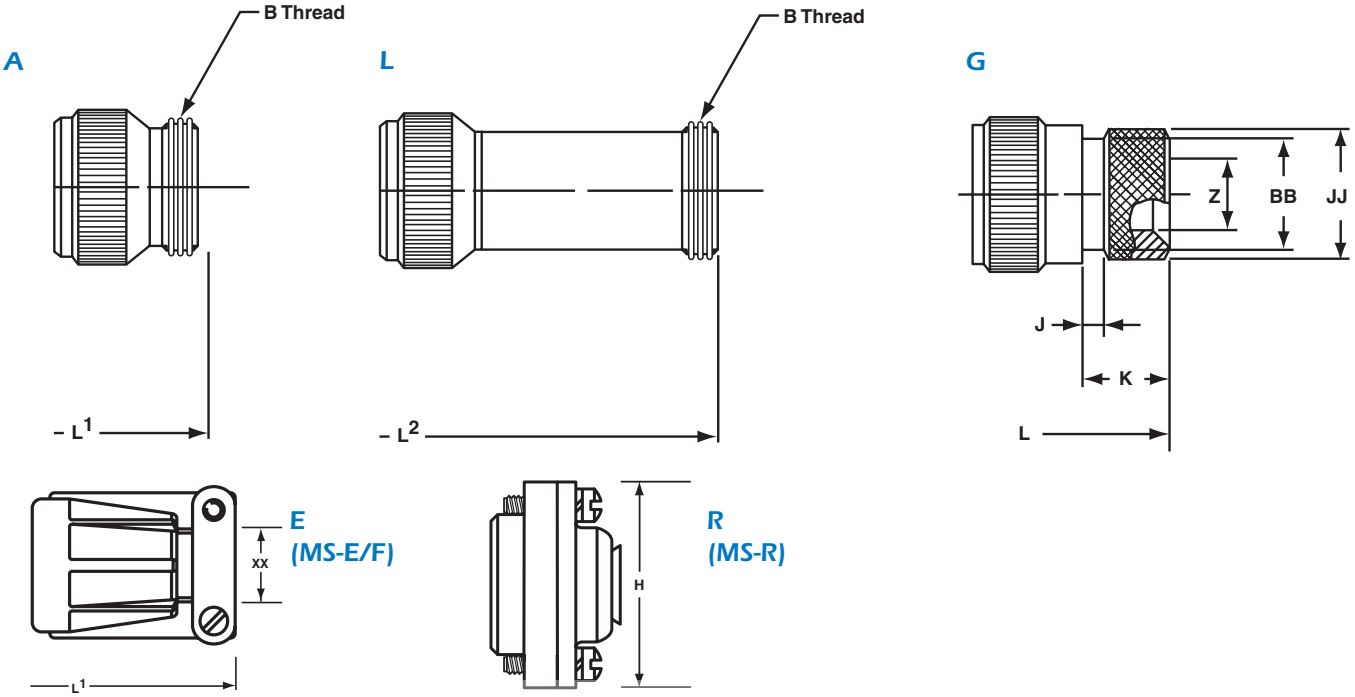
AIT1-MS3101

		AIT0-MS3100/AIT2-MS3102					AIT2-MS3102		AIT0	AIT1	AIT0/AIT1
SHELL SIZE	A THREAD CLASS 2A	M +.010 -.000	P REF.	R +/-.005	S +/-.031	T DIA. +.004 -.002	L REF. LENGTH	KK DIA. +.010 -.000	LENGTH 3100 3101	Q DIA.	B THREAD CLASS 2A
8S	.5000-28UNEF	0.562 (14.3)	0.110 (2.8)	0.594 (15.1)	0.875 (22.2)	0.120 (3.0)	0.969 (24.6)	0.375 (9.5)	1.087 (27.6)	0.532 (13.5)	.5000-28UNEF
10S	.6250-24UNEF	0.562 (0.6)	0.110 (2.8)	0.719 (18.3)	1.000 (25.4)	0.120 (3.0)	0.969 (24.6)	0.500 (12.7)	1.087 (27.6)	0.628 (16.0)	.5000-28UNEF
10SL	.6250-24UNEF	0.562 (0.6)	0.110 (2.8)	0.719 (18.3)	1.000 (25.4)	0.120 (3.0	0.969 (24.6)	0.625 (15.9)	1.087 (27.6)	0.755 (19.2)	.6250-24UNEF
12S	.7500-20UNEF	0.562 (14.3)	0.110 (2.8)	0.812 (20.6)	1.094 (27.8)	0.120 (3.0)	0.969 (24.6)	0.625 (15.9)	1.087 (27.6)	0.755 (19.2)	.6250-24UNEF
12	.7500-20UNEF	0.750 (19.1)	0.110 (2.8)	0.812 (20.6)	1.094 (27.8)	0.120 (3.0)	1.344 (34.1)	0.625 (15.9)	1.334 (33.9)	0.755 (19.2)	.6250-24UNEF
14S	.8750-20UNEF	0.562 (14.3)	0.110 (2.8)	0.906 (23.0)	1.188 (30.2)	0.120 (3.0)	0.969 (24.6)	0.750 (19.1)	1.087 (27.6)	0.882 (22.4)	.7500-20UNEF
14	.8750-20UNEF	0.750 (19.1)	0.110 (2.8)	0.906 (23.0)	1.188 (30.2)	0.120 (3.0)	1.344 (34.1)	0.750 (19.1)	1.334 (33.9)	0.882 (22.4)	.7500-20UNEF
16S	1.0000-20UNEF	0.562 (14.3)	0.110 (2.8)	0.969 (24.6)	1.281 (32.5)	0.120 (3.0)	0.969 (24.6)	0.875 (22.2)	1.087 (27.6)	1.010 (25.7)	.8750-20UNEF
16	1.0000-20UNEF	0.750 (19.1)	0.110 (2.8)	0.969 (24.6)	1.281 (32.5)	0.120 (3.0)	1.344 (34.1)	0.875 (22.2)	1.334 (33.9)	1.010 (25.7)	.8750-20UNEF
18	1.1250-18NEF	0.750 (19.1)	0.141 (3.6)	1.062 (27.0)	1.375 (34.9)	0.120 (3.0)	1.344 (34.1)	1.000 (25.4)	1.334 (33.9)	1.137 (28.9)	1.0000-20UNEF
20	1.1250-18NEF	0.750 (19.1)	0.141 (3.6)	1.156 (29.4)	1.500 (38.1)	0.120 (3.0)	1.344 (34.1)	1.125 (28.6)	1.334 (33.9)	1.264 (32.1)	1.1875-18NEF
22	1.3750-18NEF	0.750 (19.1)	0.141 (3.6)	1.25 (31.8)	1.625 (41.3)	0.120 (3.0)	1.344 (34.1)	1.250 (31.8)	1.334 (33.9)	1.392 (35.4)	1.1875-18NEF
24	1.5000-18NEF	0.812 (20.6)	0.141 (3.6)	1.375 (34.9)	1.750 (44.5)	0.147 (3.7)	1.406 (35.7)	1.375 (34.9)	1.406 (35.7)	1.519 (38.6)	1.4375-18NEF
28	1.7500-18NS	0.812 (20.6)	0.141 (3.6)	1.562 (39.7)	2.000 (50.8)	0.147 (3.7)	1.406 (35.7)	1.625 (41.3)	1.406 (35.7)	1.774 (45.1)	1.4375-18NEF
32	2.0000-18NS	0.875 (22.2)	0.156 (4.0)	1.75 (44.5)	2.250 (57.2)	0.173 (4.4)	1.469 (37.3)	1.875 (47.6)	1.469 (37.3)	1.996 (50.7)	1.7500-18NS
36	2.2500-16UN	0.875 (22.2)	0.156 (4.0)	1.938 (49.2)	2.500 (63.5)	0.173 (4.4)	1.469 (37.3)	2.062 (52.4)	1.469 (37.3)	2.251 (57.2)	2.0000-18NS
40	2.7500-16UN	0.875 (22.2)	0.156 (4.0)	2.188 (55.6)	2.750 (69.9)	0.173 (4.4)	1.469 (37.3)	2.312 (58.7)	1.469 (37.3)	2.506 (63.7)	2.2500-16UN

All dimensions in inches (millimeters in parenthesis)

Dimensions

Endbell Styles



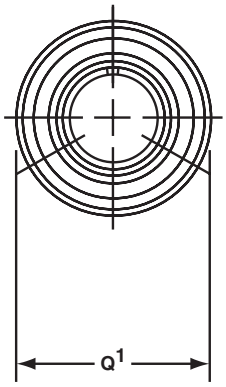
AIT0-MS3100/AIT1-MS3101						
A & L ENDBELL			E ENDBELL		R ENDBELL	
L¹	L²	B THREAD CLASS 2A	L	XX CABLE MAX.	L	H DIA. MAX.
1.390 (35.3)	- -	.5000-28UNEF	- -	- -	1.588 (40.3)	0.959 (24.4)
1.468 (37.3)	- -	.5000-28UNEF	- -	- -	1.588 (40.3)	1.206 (30.6)
1.468 (37.3)	3.684 (93.6)	.6250-24UNEF	2.129 (54.1)	0.281 (7.1)	1.583 (40.3)	1.120 (28.4)
1.468 (37.3)	- -	.6250-24UNEF	2.129 (54.1)	0.281 (7.1)	1.588 (40.3)	1.120 (28.4)
1.843 (46.8)	- -	.6250-24UNEF	- -	- -	1.931 (49.0)	1.120 (28.4)
1.468 (37.3)	3.748 (95.2)	.7500-20UNEF	2.201 (55.9)	0.406 (10.3)	1.588 (40.3)	1.307 (33.2)
1.843 (46.8)	- -	.7500-20UNEF	- -	- -	1.931 (49.0)	1.037 (26.3)
1.468 (37.3)	3.748 (95.2)	.8750-20UNEF	2.201 (55.9)	0.500 (12.7)	1.588 (40.3)	1.432 (36.4)
1.843 (46.8)	3.710 (94.2)	.8750-20UNEF	- -	- -	1.931 (49.0)	1.432 (36.4)
1.938 (49.2)	4.094 (104.0)	1.000-20UNEF	2.596 (65.9)	0.531 (13.5)	1.931 (49.0)	1.557 (39.5)
1.844 (46.8)	4.094 (104.0)	1.1875-18UNEF	2.654 (67.4)	0.656 (16.7)	1.931 (49.0)	1.744 (44.3)
1.938 (49.2)	4.102 (104.2)	1.1875-18UNEF	2.654 (67.4)	0.740 (18.8)	1.931 (49.0)	1.869 (47.5)
1.969 (50.0)	3.950 (100.3)	1.4375-18UNEF	2.885 (73.3)	0.781 (19.8)	2.009 (51.0)	1.994 (50.6)
2.188 (55.6)	4.392 (111.6)	1.4375-18UNEF	2.885 73.3)	0.922 (23.4)	2.009 (51.0)	2.166 (55.0)
2.157 (54.8)	5.038 (128.0)	1.7500-18UNS	2.943 (74.8)	1.156 (29.4)	2.057 (52.2)	2.541 (64.5)
2.219 (56.4)	4.354 (110.6)	2.0000-18UNS	2.943 (74.8)	1.250 (31.8)	2.260 (57.4)	2.729 (69.3)
2.188 (55.6)	4.354 (110.6)	2.2500-16UN	3.068 (77.9)	1.562 (39.7)	2.260 (57.4)	2.979 (75.7)

AIT0/AIT1 G					
L MAX.	J ± .008 (±0.2)	K +.020 (+0.5)	Z MIN.	BB MAX.	JJ +.008 (+0.2)
- -	- -	- -	- -	- -	- -
- -	- -	- -	- -	- -	- -
1.969 (50.0)	0.138 (3.5)	0.461 (11.7)	0.303 (7.7)	0.524 (13.3)	0.61 (15.5)
- -	- -	- -	- -	- -	- -
- -	- -	- -	- -	- -	- -
1.969 (50.0)	0.138 (3.5)	0.461 (11.7)	0.417 (10.6)	0.669 (17.0)	0.752 (19.1)
- -	- -	- -	- -	- -	- -
- -	- -	- -	- -	- -	- -
1.969 (50.0)	0.138 (3.5)	0.461 (11.7)	0.531 (13.5)	0.862 (21.9)	0.941 (23.9)
2.362 (60.0)	0.138 (3.5)	0.453 (11.5)	0.531 (13.5)	0.862 (21.9)	0.941 (23.9)
2.362 (60.0)	0.138 (3.5)	0.453 (11.5)	0.575 (14.5)	0.862 (21.9)	0.941 (23.9)
2.559 (65.0)	0.138 (3.5)	0.500 (12.7)	0.736 (18.7)	1.031 (26.2)	1.165 (29.6)
2.559 (65.0)	0.138 (3.5)	0.500 (12.7)	0.819 (20.8)	1.031 (26.2)	1.165 (29.6)
2.559 (65.0)	0.138 (3.5)	0.500 (12.7)	0.969 (24.6)	1.358 (34.5)	1.488 (37.8)
2.559 (65.0)	0.138 (3.5)	0.500 (12.7)	1.063 (27.0)	1.358 (34.5)	1.488 (37.8)
2.756 (70.0)	0.138 (3.5)	0.598 (15.2)	1.311 (33.3)	1.717 (43.6)	1.882 (47.8)
3.150 (80.0)	0.138 (3.5)	0.598 (15.2)	1.516 (38.5)	1.717 (43.6)	1.882 (47.8)
3.150 (80.0)	0.138 (3.5)	0.610 (15.5)	1.898 (48.2)	2.070 (52.6)	2.276 (57.8)

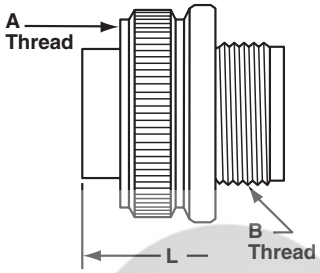
All dimensions in inches (millimeters in parenthesis)

Dimensions

Style 6 Plugs (Barrel Assembly)

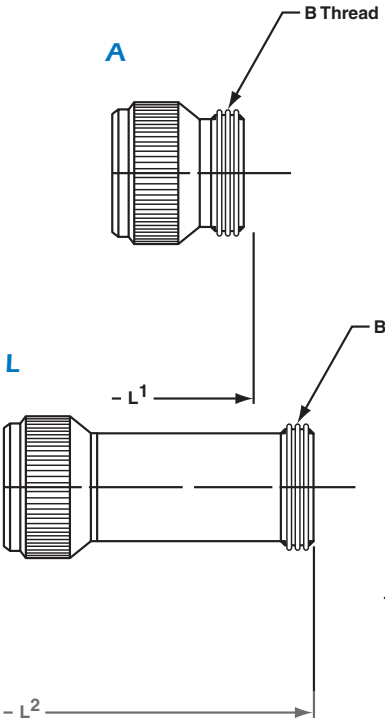


AIT6-MS3106/MS3108



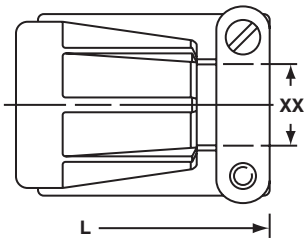
SHELL SIZE	A THREAD CLASS 2B	Q DIA. MAX.	BARREL B THREAD CLASS 2A
8S	.5000-28UNEF	0.741 (18.8)	.5000-28UNEF
10S	.6250-24NEF	0.869 (22.1)	.5000-28UNEF
10SL	.6250-24NEF	0.946 (24.0)	.6250-24UNEF
12S	.7500-20UNEF	0.995 (25.3)	.6250-24UNEF
12	.7500-20UNEF	0.955 (24.3)	.6250-24UNEF
14S	.8750-20UNEF	1.123 (28.5)	.7500-20UNEF
14	.8750-20UNEF	1.123 (28.5)	.7500-20UNEF
16S	1.0000-20UNEF	1.250 (31.8)	.8750-20UNEF
16	1.0000-20UNEF	1.250 (31.8)	.8750-20UNEF
18	1.1250-18NEF	1.333 (33.9)	1.0000-20UNEF
20	1.1250-18NEF	1.461 (37.1)	1.1250-18UNEF
22	1.3750-18NEF	1.588 (40.3)	1.2500-18UNEF
24	1.5000-18NEF	1.715 (43.6)	1.3750-18UNEF
28	1.7500-18NS	1.968 (50.0)	1.6250-18UNEF
32	2.0000-18NS	2.209 (56.1)	1.8750-16UN
36	2.2500-16UN	2.463 (62.6)	2.0625-16UN
40	2.7500-16UN	2.719 (69.1)	2.3125-16UN

Style 6 Endbells



A & L		
L1	L2	B THREAD CLASS 2A
1.390 (35.3)	- -	.5000-28UNEF
1.468 (37.3)	- -	.5000-28UNEF
1.468 (37.3)	3.684 (93.6)	.6250-24NEF
1.468 (37.3)	- -	.6250-24NEF
1.843 (46.8)	- -	.6250-24NEF
1.468 (37.3)	3.748 (95.2)	.7500-20UNEF
1.843 (46.8)	- -	.7500-20UNEF
1.468 (37.3)	3.748 (95.2)	.8750-20UNEF
1.843 (46.8)	3.710 (94.2)	.8750-20UNEF
1.938 (49.2)	4.094 (104.0)	1.0000-20UNEF
1.844 (46.8)	4.094 (104.0)	1.1875-18NEF
1.938 (49.2)	4.102 (104.2)	1.1875-18NEF
1.970 (50.0)	3.950 (100.4)	1.4375-18NEF
2.189 (55.6)	4.392 (111.6)	1.4375-18NEF
2.158 (54.8)	5.038 (128.0)	1.7500-18NS
2.219 (56.4)	4.354 (100.6)	2.0000-18NS
2.188 (55.6)	4.354 (110.6)	2.2500-16UN

E MS3106E/MS3106F

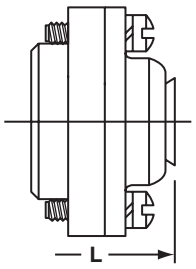


E/MS3106E/MS3106F	
L MAX.	CABLE MAX. XX
--- ---	--- ---
--- ---	--- ---
2.129 (54.1)	0.281 (7.1)
2.129 (54.1)	0.281 (7.1)
2.129 (54.1)	0.281 (7.1)
2.201 (55.9)	0.406 (10.3)
2.524 (64.1)	0.406 (10.3)
2.201 (55.9)	0.500 (12.7)
2.524 (64.1)	0.500 (12.7)
2.596 (65.9)	0.531 (13.5)
2.654 (67.4)	0.656 (16.7)
2.654 (67.4)	0.740 (18.8)
2.885 (73.3)	0.781 (19.8)
2.885 (73.3)	0.922 (23.4)
2.943 (74.8)	1.156 (29.4)
2.943 (74.8)	1.250 (31.8)
3.068 (77.9)	1.562 (39.7)

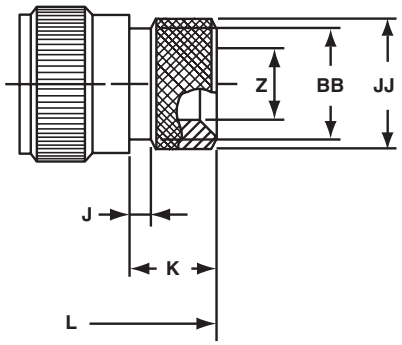
All dimensions in inches (millimeters in parenthesis)

Style 6 Right Angle Endbells

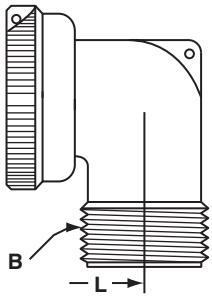
R
MS3106R



G



T
MS3108A
MS3108E

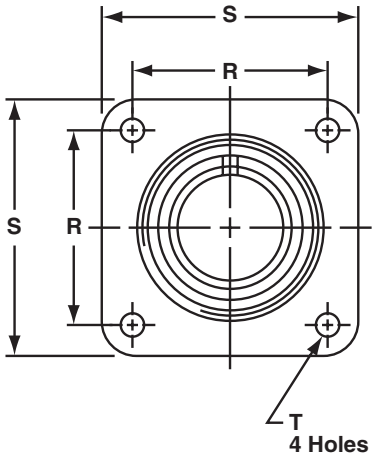


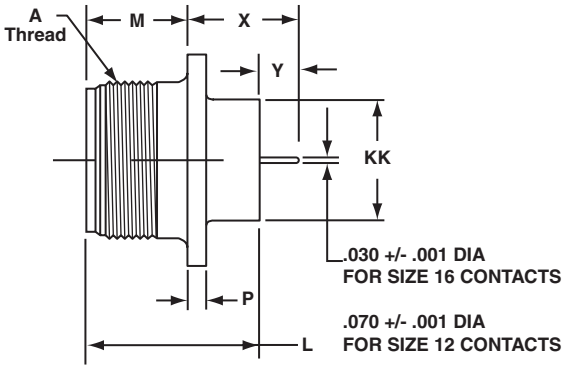
R		G						3108	
L MAX.	H DIA. MAX.	L MAX.	J ± .008 (±0.2)	K +.020 (+0.5)	Z MIN.	BB MAX.	JJ +.008 (+0.2)	L MAX.	B THREAD CLASS 2A
1.588 (40.3)	0.959 (24.4)	- -	- -	- -	- -	- -	- -	0.476 (12.1)	.5000-28UNE
1.588 (40.3)	1.206 (30.6)	- -	- -	- -	- -	- -	- -	0.492 (12.5)	.5000-28UNEF
1.588 (40.3)	1.12 (28.4)	1.969 (50.0)	0.138 (3.5)	0.461 (11.7)	0.303 (7.7)	0.524 (13.3)	0.61 (15.5)	0.505 (12.8)	.6250-24NEF
1.588 (40.3)	1.12 (28.4)	- -	- -	- -	- -	- -	- -	0.508 (12.9)	.6250-24NEF
1.931 (49.0)	1.12 (28.4)	- -	- -	- -	- -	- -	- -	0.822 (20.9)	.6250-24NEF
1.588 (40.3)	1.307 (33.2)	1.969 (50.0)	0.138 (3.5)	0.461 (11.7)	0.417 (10.6)	0.669 (17.0)	0.752 (19.1)	0.595 (15.1)	.7500-20UNEF
1.931 (49.0)	1.037 (26.3)	- -	- -	- -	- -	- -	- -	0.868 (22.0)	.7500-20UNEF
1.588 (40.3)	1.432 (36.4)	1.969 (50.0)	0.138 (3.5)	0.461 (11.7)	0.531 (13.5)	0.862 (21.9)	0.941 (23.9)	0.609 (15.5)	.8750-20UNEF
1.931 (49.0)	1.432 (36.4)	2.362 (60.0)	0.138 (3.5)	0.453 (11.5)	0.531 (13.5)	0.862 (21.9)	0.941 (23.9)	0.958 (24.3)	.8750-20UNEF
1.931 (49.0)	1.557 (39.5)	2.362 (60.0)	0.138 (3.5)	0.453 (11.5)	0.575 (14.5)	0.862 (21.9)	0.941 (23.9)	1.003 (25.5)	1.0000-20UNEF
1.931 (49.0)	1.744 (44.3)	2.559 (65.0)	0.138 (3.5)	0.500 (12.7)	0.736 (18.7)	1.031 (26.2)	1.165 (29.6)	1.183 (30.0)	1.1875-18NEF
1.931 (49.0)	1.869 (47.5)	2.559 (65.0)	0.138 (3.5)	0.500 (12.7)	0.819 (20.8)	1.031 (26.2)	1.165 (29.6)	1.183 (30.0)	1.1875-18NEF
2.009 (51.0)	1.994 (50.6)	2.559 (65.0)	0.138 (3.5)	0.500 (12.7)	0.969 (24.6)	1.358 (34.5)	1.488 (37.8)	1.363 (34.6)	1.4375-18NEF
2.009 (51.0)	2.166 (55.0)	2.559 (65.0)	0.138 (3.5)	0.500 (12.7)	1.063 (27.0)	1.358 (34.5)	1.488 (37.8)	1.363 (34.6)	1.4375-18NEF
2.057 (52.2)	2.541 (64.5)	2.756 (70.0)	0.138 (3.5)	0.598 (15.2)	1.311 (33.3)	1.717 (43.6)	1.882 (47.8)	1.523 (38.7)	1.7500-18NS
2.260 (57.4)	2.729 (69.3)	3.150 (80.0)	0.138 (3.5)	0.598 (15.2)	1.516 (38.5)	1.717 (43.6)	1.882 (47.8)	1.565 (39.7)	2.0000-18NS
2.260 (57.4)	2.979 (75.7)	3.150 (80.0)	0.138 (3.5)	0.610 (15.5)	1.898 (48.2)	2.070 (52.6)	2.276 (57.8)	1.654 (42.0)	2.2500-16UN

All dimensions in inches (millimeters in parenthesis)

Dimensions

Printed Circuit Contacts





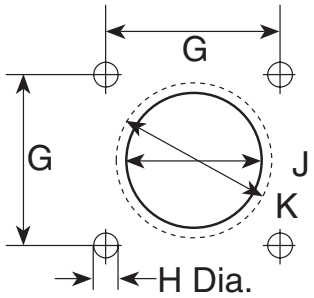
SHELL SIZE	USE AIT OR AMPHENOL PART NUMBER	A THREAD CLASS 2A	M +.010 -.000	REF.	R (TP) +/-.005	S +/- .031	T DIA. +.004 -.002	3102 REF. L	KK DIA. +.010 -.000	X REF.	Y REF.
8S	10-602460-XXX	.5000-28UNEF	0.562 (14.3)	0.110 (2.8)	0.594 (15.1)	0.875 (22.2)	0.120 (3.0)	0.969 (24.6)	0.375 (9.5)	0.407 (10.3)	0.188 (4.8)
10S	10-602461-XXX	.6250-24UNEF	0.562 (14.3)	0.110 (2.8)	0.719 (18.3)	1.000 (25.4)	0.120 (3.0)	0.969 (24.6)	0.500 (12.7)	0.407 (10.3)	0.188 (4.8)
10SL	10-602462-XXX	.6250-24UNEF	0.562 (14.3)	0.110 (2.8)	0.719 (18.3)	1.000 (25.4)	0.120 (3.0)	0.969 (24.6)	0.625 (15.9)	0.407 (10.3)	0.188 (4.8)
12S	10-602463-XXX	.7500-20UNEF	0.562 (14.3)	0.110 (2.8)	0.812 (20.6)	1.094 (27.8)	0.120 (3.0)	0.969 (24.6)	0.625 (15.9)	0.407 (10.3)	0.188 (4.8)
12	10-602464-XXX	.7500-20UNEF	0.750 (19.1)	0.110 (2.8)	0.812 (20.6)	1.094 (27.8)	0.120 (3.0)	1.344 (34.1)	0.625 (15.9)	0.594 (15.1)	0.188 (4.8)
14S	10-602465-XXX	.8750-20UNEF	0.562 (14.3)	0.110 (2.8)	0.906 (23.0)	1.188 (30.2)	0.120 (3.0)	0.969 (24.6)	0.750 (19.1)	0.407 (10.3)	0.188 (4.8)
14	10-602466-XXX	.8750-20UNEF	0.750 (19.1)	0.110 (2.8)	0.906 (23.0)	1.188 (30.2)	0.120 (3.0)	1.344 (34.1)	0.750 (19.1)	0.594 (15.1)	0.188 (4.8)
16S	10-602467-XXX	1.0000-20UNEF	0.562 (14.3)	0.110 (2.8)	0.969 (24.6)	1.281 (32.5)	0.120 (3.0)	0.969 (24.6)	0.875 (22.2)	0.407 (10.3)	0.188 (4.8)
16	10-602468-XXX	1.0000-20UNEF	0.750 (19.1)	0.110 (2.8)	0.969 (24.6)	1.281 (32.5)	0.120 (3.0)	1.344 (34.1)	0.875 (22.2)	0.594 (15.1)	0.188 (4.8)
18	10-602469-XXX	1.1250-18NEF	0.750 (19.1)	0.141 (3.6)	1.062 (27.0)	1.375 (34.9)	0.120 (3.0)	1.344 (34.1)	1.000 (25.4)	0.594 (15.1)	0.188 (4.8)
20	10-602470-XXX	1.1250-18NEF	0.750 (19.1)	0.141 (3.6)	1.156 (29.4)	1.500 (38.1)	0.120 (3.0)	1.344 (34.1)	1.125 (28.6)	0.594 (15.1)	0.188 (4.8)
22	10-602471-XXX	1.3750-18NEF	0.750 (19.1)	0.141 (3.6)	1.25 (31.8)	1.625 (41.3)	0.120 (3.0)	1.344 (34.1)	1.250 (31.8)	0.594 (15.1)	0.188 (4.8)
24	10-602472-XXX	1.5000-18NEF	0.812 (20.6)	0.141 (3.6)	1.375 (34.9)	1.750 (44.5)	0.147 (3.7)	1.406 (35.7)	1.375 (34.9)	0.594 (15.1)	0.188 (4.8)
28	10-602473-XXX	1.7500-18NS	0.812 (20.6)	0.141 (3.6)	1.562 (39.7)	2.000 (50.8)	0.147 (3.7)	1.406 (35.7)	1.625 (41.3)	0.594 (15.1)	0.188 (4.8)
32	10-602474-XXX	2.0000-18NS	0.875 (22.2)	0.156 (4.0)	1.75 (44.5)	2.250 (57.2)	0.173 (4.4)	1.469 (37.3)	1.875 (47.6)	0.594 (15.1)	0.188 (4.8)
36	10-602475-XXX	2.2500-16UN	0.875 (22.2)	0.156 (4.0)	1.938 (49.2)	2.500 (63.5)	0.173 (4.4)	1.469 (37.3)	2.062 (52.4)	0.594 (15.1)	0.188 (4.8)
40	10-602476-XXX	2.7500-16UN	0.875 (22.2)	0.156 (4.0)	2.188 (55.6)	2.750 (69.9)	0.173 (4.4)	1.469 (37.3)	2.312 (58.7)	0.594 (15.1)	0.188 (4.8)

XXX = Insert layout code. Call for correct code.

All dimensions in inches (millimeters in parenthesis)

Dimensions

Panel Cutouts

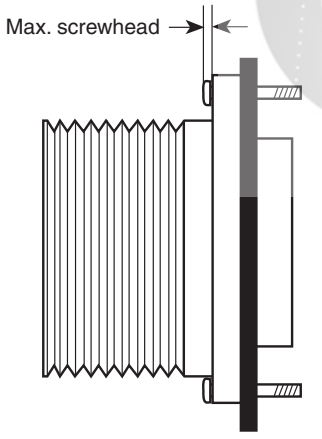


Dimension J is flange in front of panel.
Dimension K is flange at rear of panel.
See sealing screws on page 257.

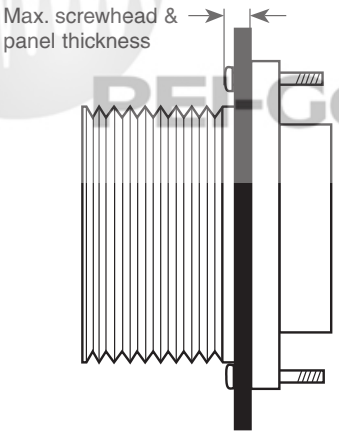
SHELL SIZE	FLANGE STYLE 0-2-6B			
	G (TP)	MOUNTING HOLE DIAMETER H	FRONT MOUNT J	REAR MOUNT ++ K
8S	0.594 (15.1)	0.134 (3.4)	0.396 (10.1)	0.603 (15.4)
10S	0.717 (18.2)	0.134 (3.4)	0.525 (13.3)	0.728 (18.5)
10SL	0.717 (18.2)	0.134 (3.4)	0.646 (16.4)	0.728 (18.5)
12S/12	0.811 (20.6)	0.134 (3.4)	0.646 (16.4)	0.854 (21.7)
14S/14	0.906 (23.0)	0.134 (3.4)	0.776 (19.7)	0.980 (24.9)
16S/16	0.969 (24.6)	0.134 (3.4)	0.902 (22.9)	1.091 (27.7)
18	1.063 (27.0)	0.134 (3.4)	1.028 (26.1)	1.224 (31.1)
20	1.157 (29.4)	0.134 (3.4)	1.161 (29.5)	1.358 (34.5)
22	1.252 (31.8)	0.134 (3.4)	1.287 (32.7)	1.488 (37.8)
24	1.374 (34.9)	0.154 (3.9)	1.417 (36.0)	1.626 (41.3)
28	1.563 (39.7)	0.154 (3.9)	1.654 (42.0)	1.854 (47.1)
32	1.752 (44.5)	0.177 (4.5)	1.902 (48.3)	2.118 (53.8)
36	1.937 (49.2)	0.177 (4.5)	2.150 (54.6)	2.362 (60.0)
40	2.185 (55.5)	0.177 (4.5)	2.409 (61.2)	2.610 (66.3)

++ 6B panel plug is front mount only

Panel Thickness



Front Mount



Rear Mount

SHELL SIZE	FRONT MOUNT	REAR MOUNT
8SL	.125 (3.18)	.187 (4.75)
10S		.187 (4.75)
10SL		.187 (4.75)
12S		.187 (4.75)
12		.125 (3.18)
14S		.187 (4.75)
16S		.187 (4.75)
16		.125 (3.18)
18		.125 (3.18)
20		.125 (3.18)
22		.125 (3.18)
24		.187 (4.75)
28		.187 (4.75)
32		.250 (6.35)
36		.250 (6.35)
40		.250 (6.35)

All dimensions in inches (millimeters in parenthesis)

Pre-Earth Series/FMLB

Amphenol® DL series Pre-Earth/First Mate Last Break Connectors are designed for applications where a protective circuit from the ground contact to the shell is a safety requirement. These connectors provide a path for any stray voltage to be shunted to a safe ground avoiding harm to the operator and to voltage sensitive equipment.

Pre-Earth (ground) contact mates first and provides safety from voltage outputs - protects operators and sensitive circuits.

Features

- MIL-DTL-5015 dimensions and performance where applicable
- Conformity with European (CE) safety standards (DIN VDE 0627 and certified through TUV Product Service GmbH) in the approved insert arrangement
- Offered in shell styles: 3102A box mount and 3106A straight plug
- Intermateable with AIT, MIL-DTL-5015 and 97 styles
- Class IP67 protection in the mated condition
- Main joint gasket between plug and receptacle shells provides superior moisture sealing
- Pre-Earth (ground contact) design
- First Mate/Last Break capability
- Standard plating is black zinc alloy. Green zinc plating is an available option.
- 2000 Vac RMS dielectric withstanding
- 5000 Megaohm at 500 Vac insulation resistance
- 250 Vac and 350 Vac operating voltage (10SL-3, 200 Vac and 300 Vac)
- UL file # E202200

Follow these 3 steps to create your part number. . .

STEP 1

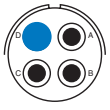
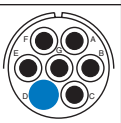
Select Shell Style, Plug or Receptacle

DL3102A
Box Mount Receptacle

DL3106A
Plug

STEP 2

Choose Layout

LAYOUT	MATING VIEW OF PIN INSERT	TOTAL CONTACTS	CURRENT RATING (AMPS) 13A CONTACT SIZE 16	23A CONTACT SIZE 12	46A CONTACT SIZE 8
10SL-3		3	3		
18-10		4		4	
18-12		6	6		
20-15		7		7	
22-22		4			4
24-106*		7			7
24-10		7			7

● Indicates Pre-Earth contact only *Pre-Earth contact in plug

STEP 3

Choose Contact

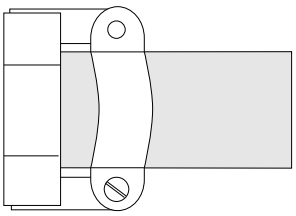
P = Pin
S = Socket

Create your part number using these three steps

(example)

DL3106A	18-10	S
1 Connector Type	2 Layout	3 Contact

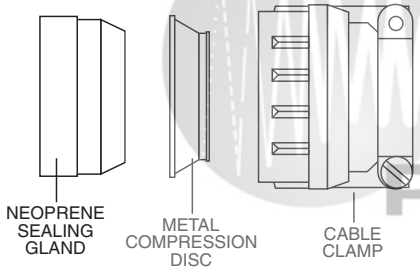
MS3057-A Cable Clamp



Standard MS3057 cable clamps have a dual clamping action to provide a balanced, positive hold on the wires and greatly reduce moisture transmission. This cable clamp accepts MS3420 bushings. MS3420 bushings can be nested to reduce the inside diameter to more closely match the diameter of the cable or wire bundle.

		STANDARD CLAMP				STANDARD CLAMP AND TELESCOPIC BUSHING		
SHELL SIZE	THREAD 2B	LOW COST CAST ZINC	ALUMINUM W/ BRASS SCREWS	ALUMINUM W/ STAINLESS STEEL SCREWS	MAXIMUM CABLE DIAMETER INCH (mm)	LOW COST ZINC WITH BUSHING	BUSHING INCLUDED	BUSHING ID INCH (mm)
8S	1/2-24UNEF	97-3057-1003	MS3057-3A	M85049/41-3A	.220 (5.58)	97-3057-1003-1	MS3420-3	0.130 (3.3)
10S/10SL	5/8-24UNEF	97-3057-1004	MS3057-4A	M85049/41-4A	.312 (7.92)	97-3057-1004-1	MS3420-4	0.220 (5.6)
12/12S/12SL	5/8-24UNEF	97-3057-1004	MS3057-4A	M85049/41-4A	.312 (7.92)	97-3057-1004-1	MS3420-4	0.220 (5.6)
14/14S	3/4-20UNEF	97-3057-1007	MS3057-6A	M85049/41-6A	.438 (11.13)	97-3057-1007-1	MS3420-6	0.312 (7.9)
16/16S	7/8-20UNEF	97-3057-1008	MS3057-8A	M85049/41-8A	.562 (14.27)	97-3057-1008-1	MS3420-8	0.437 (11.1)
18	1-20UNEF	97-3057-1010	MS3057-10A	M85049/41-10A	.625 (15.88)	97-3057-1010-1	MS3420-10	0.562 (14.3)
20/22	1 3/16-18UNEF	97-3057-1012	MS3057-12A	M85049/41-12A	.750 (19.05)	97-3057-1012-1	MS3420-12	0.625 (15.9)
24/28	1 7/16-18UNEF	97-3057-1016	MS3057-16A	M85049/41-16A	.938 (23.83)	97-3057-1016-1	MS3420-16, -12	0.625 (15.9)
32	1 3/4-18UNS	97-3057-1020	MS3057-20A	M85049/41-20A	1.250 (31.75)	97-3057-1020-1	MS3420-20, -16	0.750 (19.1)
36	2-18UNS	97-3057-1024	MS3057-24A	M85049/41-24A	1.375 (34.92)	97-3057-1024-1	MS3420-24, -20	0.937 (23.8)
40	2 1/4UNS-16	-	MS3057-28A	M85049/41-28A	1.625 (41.28)	-	-	- -

MS3057-C Waterproof Cable Clamp

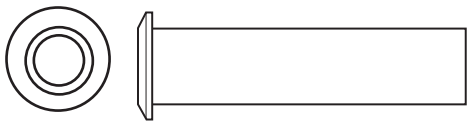


Standard MS3057-C waterproof cable clamp with mechanical strain relief for use with threaded endbells. Internal neoprene gland and compression ring will seal a broad range of round cable diameters as listed below. For reduction of cable diameters, order the appropriate MS3420A bushing in table.

SHELL SIZE	PART NUMBER	WIRE DIAMETER INCHES (mm)		OPTIONAL BUSHINGS	
		MAX.	MIN.	PART NUMBER	MAX WIRE DIA. IN. (mm)
10SL	MS3057-4C	.312 (7.93)	.188 (4.80)	MS3420-4A	.219 (5.56)
14S	MS3057-6C	.438 (11.12)	.281 (7.10)	MS3420-6A MS3420-4A	.312 (7.93) .219 (5.56)
16/16S	MS3057-8C	.530 (13.48)	.312 (7.90)	MS3420-8A MS3420-6A	.438 (11.1) .312 (7.93)
18	MS3057-10C	.625 (15.87)	.375 (9.50)	MS3420-10A MS3420-6A	.438 (11.1) .312 (7.93)
20/22	MS3057-12C	.750 (19.00)	.500 (12.70)	MS3420-12A MS3420-8A	.540 (13.74) .438 (11.10)
24/28	MS3057-16C	.940 (23.80)	.625 (15.90)	MS3420-16A MS3420-12A MS3420-8A	.750 (19.00) .540 (13.74) .438 (11.10)
32	MS3057-20C	1.250 (31.75)	-	MS3420-20A MS3420-16A MS3420-12A	.938 (23.8) .750 (19.00) .540 (13.74)
36	MS3057-24C	1.380 (35.00)	1.00 (25.40)	MS3420-24A MS3420-18A MS3420-16A	1.12 (28.50) .938 (23.80) .750 (19.00)
40	MS3057-28C	1.620 (41.25)	1.25 (31.80)	MS3420-28A MS3420-20A MS3420-16A	1.25 (31.75) .940 (23.80) .750 (19.00)

All dimensions in inches (millimeters in parenthesis)

MS3420 Telescoping Bushings

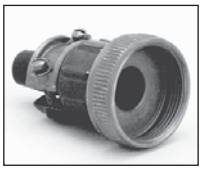


For use with Style A cable clamps and AIT/MS Style E/F endbells to eliminate dust, dirt, and oil from entering the cable clamp. Bushings can be nested, one inside the other, to reduce the inside diameter to better seal against the cable jacket. Each bushing will accept the next smallest bushing.

SHELL SIZE	1ST BUSHING PART NUMBER	INSIDE DIAMETER	2ND NESTED BUSHING	INSIDE DIAMETER	FITS IN CABLE CLAMP
10S/10SL	MS3420-4	.220 (5.59)	NONE	-	MS3057-4A
12/12S	MS3420-4	.220 (5.59)	NONE	-	MS3057-4A
14/14S	MS3420-6	.312 (7.92)	NONE	-	MS3057-6A
16S	MS3420-8	.437 (11.10)	NONE	-	MS3057-8A
16	MS3420-8	.437 (11.10)	NONE	-	MS3057-8A
18	MS3420-10	.562 (14.30)	NONE	-	MS3057-10A
20	MS3420-12	.625 (15.90)	NONE	-	MS3057-12A
22	MS3420-12	.625 (15.90)	NONE	-	MS3057-12A
24	MS3420-16	.750 (19.05)	MS3420-12	.625 (15.90)	MS3057-16A
28	MS3420-16	.750 (19.05)	MS3420-12	.625 (15.90)	MS3057-16A
32	MS3420-20	.937 (23.80)	MS3420-16	.750 (19.05)	MS3057-20A
36	MS3420-24	1.250 (31.75)	MS3420-20	.937 (23.80)	MS3057-24A
40	MS3420-28	1.375 (34.92)	MS3420-24	1.250 (31.75)	SE96-28A4

MS3420-A Reduction Bushings

For use with MS3057-C cable clamps (Style C) to reduce the wire sealing diameter. Bushings can be nested, one inside the other, to progressively reduce the inside diameter of the cable clamp. The column labeled "reduction bushings" shows the acceptable nesting options for each clamp.



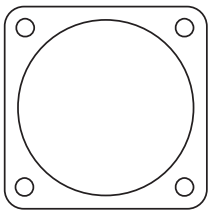
9767 Cable Clamps

9767 waterproof cable clamp with mechanical strain relief. An internal Neoprene gland seal bushing and compression washer will seal a broad range of round cable diameters as listed below.

SHELL SIZE	CABLE CLAMP PART NUMBER	MAX. CABLE OUTSIDE DIAMETER		MIN. CABLE OUTSIDE DIAMETER		THREAD CLASS 2B UNEF
		INCHES	(mm)	INCHES	(mm)	
10SL, 12S	9767-12-4	0.219	(5.55)	0.020	(0.51)	5/8-24
14S	9767-14-4	0.219	(5.55)	0.020	(0.51)	3/4-20
14S	9767-14-6	0.344	(8.73)	0.176	(4.47)	3/4-20
16S, 16	9767-16-4	0.219	(5.55)	0.020	(0.51)	7/8-20
16S, 16	9767-16-6	0.344	(8.73)	0.176	(4.47)	7/8-20
16S, 16	9767-16-8	0.438	(11.12)	0.177	(4.50)	7/8-20
18	9767-18-6	0.344	(8.73)	0.176	(4.47)	1-20
18	9767-18-8	0.438	(11.12)	0.177	(4.50)	1-20
18	9767-18-10	0.563	(14.29)	0.292	(7.42)	1-20
20, 22	9767-22-8	0.438	(11.12)	0.177	(4.50)	1-3/16-18
20, 22	9767-22-10	0.563	(14.29)	0.292	(7.42)	1-3/16-18
20, 22	9767-22-12	0.688	(17.46)	0.370	(9.40)	1-3/16-18
24, 28	9767-28-10	0.563	(14.29)	0.292	(7.42)	1-7/16-18
24, 28	9767-28-12	0.688	(17.46)	0.370	(9.40)	1-7/16-18
24, 28	9767-28-16	0.844	(21.43)	0.536	(13.61)	1-7/16-18
32	9767-32-20	1.031	(26.19)	0.590	(14.99)	1-3/4-18
36	9767-36-16	0.844	(21.43)	0.536	(13.61)	2-18

All dimensions in inches (millimeters in parenthesis)

Gaskets

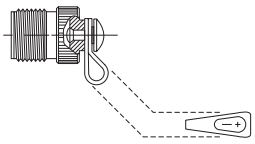
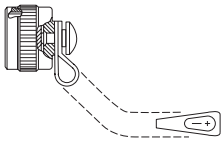
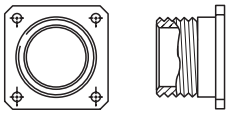


Synthetic rubber gaskets are used to ensure a moisture tight seal between a receptacle and the panel. Gaskets are available for front or rear panel mounting of style 0, 2, and 6B connectors. Gasket thickness is approximately .031" (1 mm), for nonconductive and low temperature types.
Conductive shielding gaskets contain an imbedded metal screen for EMI/RFI shielding in addition to moisture sealing. Gaskets are available for front or rear panel mounting of connectors. Gasket thickness is .020" (.5 mm).

SHELL SIZE	NON-CONDUCTIVE	CONDUCTIVE	LOW TEMPERATURE
8S	10-040450-008	10-040450-08S	10-036675-008
10S/10SL	10-040450-010	10-040450-10S	10-036675-010
12/12S	10-040450-012	10-040450-12S	10-036675-012
14/14S	10-040450-014	10-040450-14S	10-036675-014
16S	10-040450-016	10-040450-16S	10-036675-016
16	10-040450-016	10-040450-16S	10-036675-016
18	10-040450-018	10-040450-18S	10-036675-018
20	10-040450-020	10-040450-20S	10-036675-020
22	10-040450-022	10-040450-22S	10-036675-022
24	10-040450-024	10-040450-24S	10-036675-024
28	10-040450-028	10-040450-28S	10-036675-028
32	10-040450-032	10-040450-32S	10-036675-032
36	10-040450-036	10-040450-36S	10-036675-036
40	10-040450-040	10-040450-40S	10-036675-040

Metal Dust Caps With Sash Chain & Dummy Receptacles

Metal dust caps are used to protect the contacts when the connectors are left unmated. Dust caps come with metal chain lanyards.
Dummy receptacles are for front or rear panel mounting. The center of the dummy receptacle is closed. Dummy receptacles mount on the same centers and have the same outside dimensions as a 97-3102A receptacle. A version with a clearance hole through the middle of the connector is also available. Call for ordering information.

	DUST CAPS		
	PLUG CAP	RECEPTACLE	DUMMY RECEPTACLES
SHELL SIZE			
8S	MS25042-8DA*	MS25043-8DA*	MS3105-8*
10S/10SL	MS25042-10DA*	MS25043-10DA*	MS3105-10*
12/12S	MS25042-12DA*	MS25043-12DA*	MS3105-12*
14/14S	MS25042-14DA*	MS25043-14DA*	MS3105-14*
16S	MS25042-16DA*	MS25043-16DA*	MS3105-16*
16	MS25042-17DA*	MS25043-17DA*	MS3105-17*
18	MS25042-18DA*	MS25043-18DA*	MS3105-18*
20	MS25042-20DA*	MS25043-20DA*	MS3105-20*
22	MS25042-22DA*	MS25043-22DA*	MS3105-22*
24	MS25042-24DA*	MS25043-24DA*	MS3105-24*
28	MS25042-28DA*	MS25043-28DA*	MS3105-28*
32	MS25042-32DA*	MS25043-32DA*	MS3105-32*
36	MS25042-36DA*	MS25043-36DA*	MS3105-36*
40	MS25042-40DA*	MS25043-40DA*	MS3105-40*

*Call for other platings.

Assembly Instructions

Solder Contacts

1. Slide the rear accessories over the wire bundle in the proper sequence for re-assembly: cable clamp and/or endbell first, then ferrule and (if used) coupling nut.

2. Insert individual wires through the proper holes in the grommet. Use isopropyl alcohol as a lubricant.

3. Solder wires to appropriate contacts on the rear of the connector. A document covering standard soldering practices is available upon request by fax or mail. Please call.

4. Fixture the connector for reassembly using the endbell assembly tools on page 264.

5. Slide the grommet down the wires (lubricating the grommet with isopropyl alcohol will help).

6. Fill all unused grommet cavities with a wire hole filler to maintain the sealing integrity of the connector. (page 25).

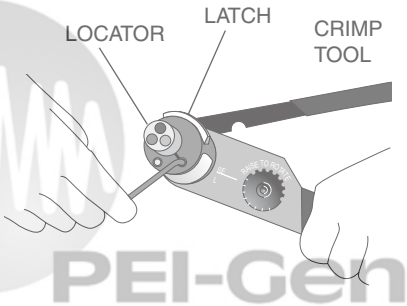
7. Slide coupling nut, ferrule, and endbell accessories over rear of the connector and tighten. For tooling, see page 264.

Crimp Tool Operation

NOTE: Hand crimp tools can be used with size 16S, 16 & 12 contacts. Size 8, 4 and 0 contacts require the use of air powered crimp tools. Call us for assistance in the use of these tools.

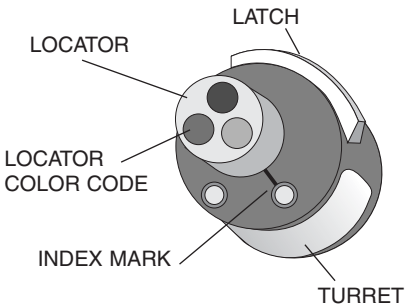
1. Strip the wires to the appropriate length. See strip lengths on the Contact Selection Guide, page 24.

2. Open the crimp tool by squeezing the handles. Push the latch on the turret to pop up the locator. Attach the turret to the crimp tool using the two captive hex bolts in the turret.

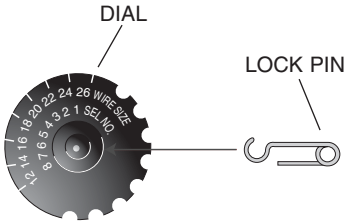


3. Select the proper locator position for your contact by rotating the locator until the proper color is aligned with the index mark. Push locator back down until it snaps into position.

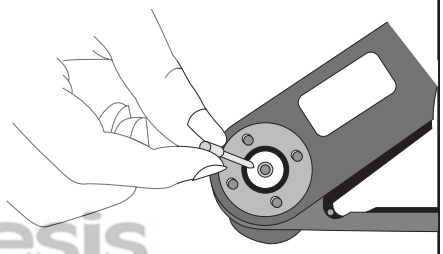
CONTACT SIZE	PIN LOCATOR COLOR	SOCKET LOCATOR COLOR
16S	Blue	Blue
16	Green	Red
12	Red	Red



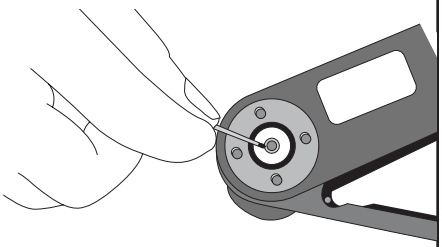
4. Adjust dial for proper wire gauge. To change the dial setting, remove the lock pin and lift center of dial. Turn to the desired wire gauge. Replace lock pin on dial.



5. Cycle the tool before inserting the contact to be sure the tool is in the open position. Drop the contact, mating end first, into the crimp cavity of the tool. Squeeze the tool handle just enough to grip the contact without actually crimping it.

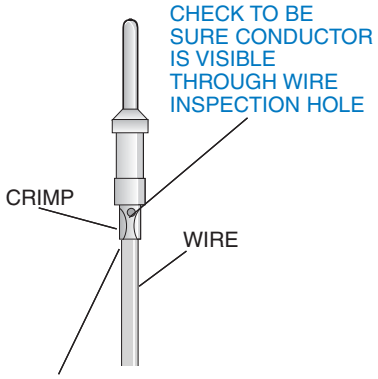


6. Insert the stripped wire into the contact with a slight twisting motion. Be sure all wire strands are inside the contact. Squeeze the handle to cycle the tool. The handle will not release until the contact is completely crimped.



Crimp Tool Operation (continued)

7. Remove the crimped contact. Pull on the wire slightly to be sure it is properly crimped. Be sure the contact is not bent or damaged in any way. Visually inspect the crimp:



INSULATION SHOULD BUTT UP AGAINST THE END OF THE CONTACT.

MICRO-SECTIONS
Enlargement of micro-section permits a final inspection of crimp quality. This test is recommended whenever new tools or new types of wire or contacts are used.

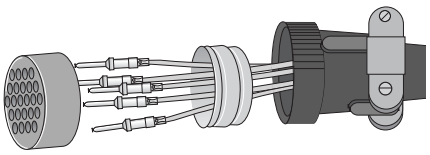
Crimp Tensile Strength

Initial minimum pullout force in lb. (before conditioning)

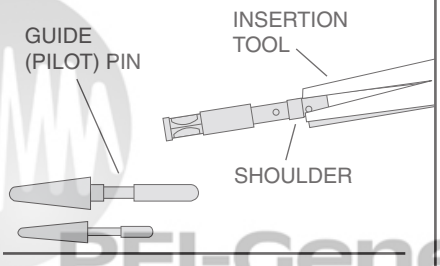
SIZE	WIRE GAUGE	LB.
16	20	20
	18	40
	16	50
12	14	70
	12	110
8	8	185
4	4	450
0	0	800

Insertion of Contacts

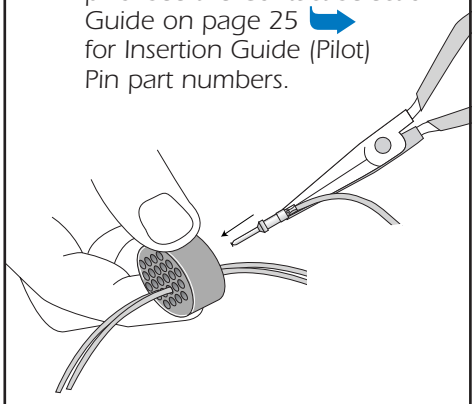
1. Slide the rear accessories over the wire bundle in the proper sequence for re-assembly: cable clamp and/or endbell first, then ferrule, and coupling nut.



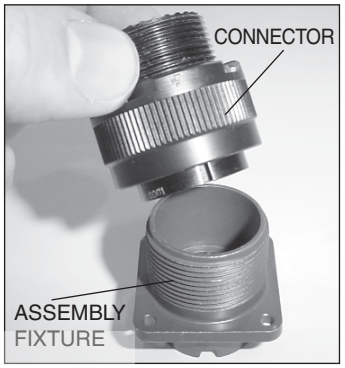
2. Use the proper insertion tool from the Contact Selection Chart on page 25. Place the contact in the tool. The tool should butt against the shoulder of the contact. Contact sizes 16S, 16, and 12 use a pliers style tool. Contact sizes 8, 4 and 0 use a tool with a 'C' shaped shaft.



3. Lubricate the grommet with isopropyl alcohol (do not use any lubricant other than isopropyl alcohol). Insert the contact through the appropriate cavity in the grommet. Sizes 16S, 16 and 12 socket contacts must be installed using guide (pilot) pins. See the Contact Selection Guide on page 25 for Insertion Guide (Pilot) Pin part numbers.

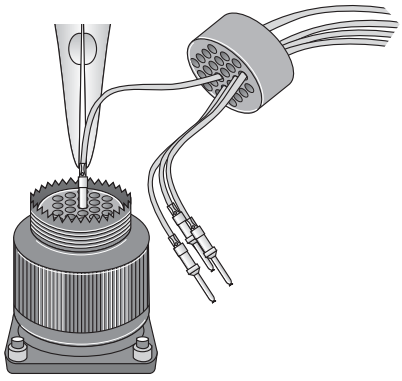


4. Place the connector into an assembly fixture (fixtures are available for production use, call us.) If you are not using a fixture, be sure to allow clearance on the mating face of the connector for the guide pins to come through the connector during insertion.



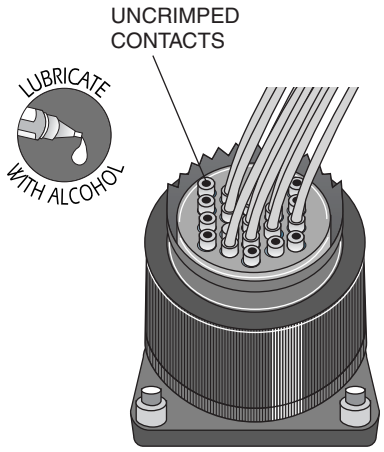
5. Lubricate the contact cavities of the connector insulator with isopropyl alcohol (do not use any other type of lubricant).

6. Using guide pins where necessary, push straight down with a firm even pressure until the contact snaps into position in the proper cavity. Start at the center of the pattern and work toward the outer edges.

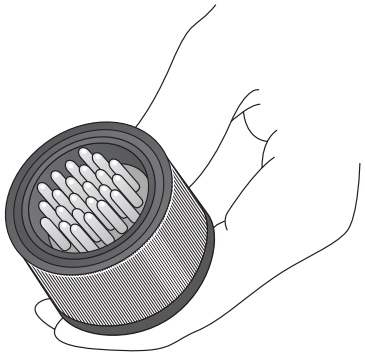


Insertion of Contacts
(continued)

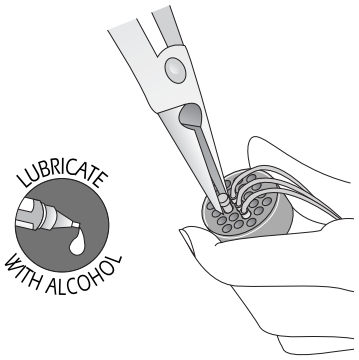
7. Fill any unused cavities with contacts.



8. Check the mating face of the connector to insure that all the same size contacts are on the same plane (fully inserted). If not, the contact is not fully inserted. Remove the contact using the proper extraction tool and procedure and reinsert. Do not attempt to reinsert the insertion tool to correct the problem.



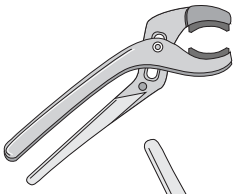
9. A wire hole filler must be inserted into the grommet behind the unused contacts to maintain the sealing integrity of the connector. See the Contact Selection Chart on page 25 for wire hole fillers.

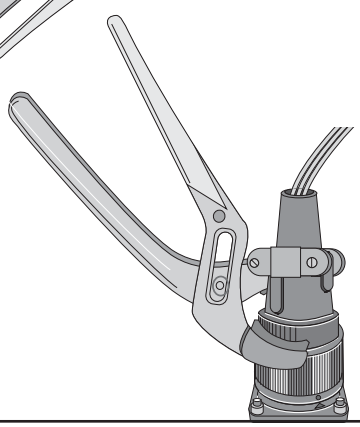


10. Place the connector back in the fixture for re-assembly. Slide the connector accessories back down the cable over the rear of the connector and tighten. Use the appropriate endbell tools as shown on page 264.

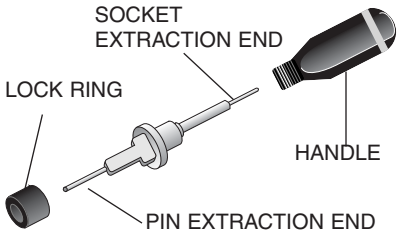
Extraction of Contacts

1. Remove the endbell accessories and slide them back over the wires. Use the appropriate endbell tools as shown on page 264.

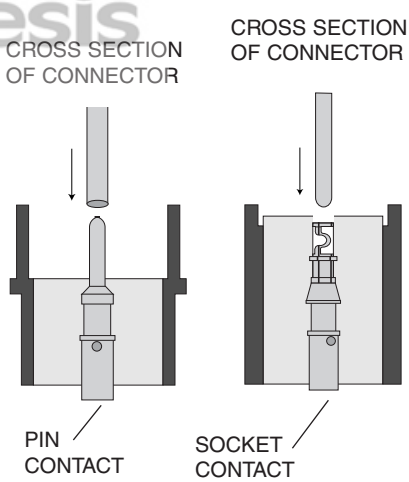




2. Use the proper extraction tool from the Contact Selection Chart on page 25. The extraction tool can be used for both pin and socket contacts by removing the shaft from the handle and reversing it for pin or socket extraction.



3. On the mating face of the connector, insert the tool over the pin contact or into the socket contact until the tool bottoms. Apply a slow continuous pressure to push the contact out the rear of the connector. When the shoulder of the tool "thunks" against the insulator, the contact is extracted.



4. Carefully remove the extraction tool from the connector to avoid damage to the insulator.

AIT/MS Series Connectors

JAN*MS 3102 R 18-3 P W RES

CONNECTOR TYPE

MS Military Standard

SHELL STYLE

Mates with

- 3100 = Wall mounting receptacle
- 3101 = Cable connecting receptacle (plug†)
- 3102 = Box mounting receptacle

- 3106 = Straight plug
- 3108 = 90° plug

SERVICE CLASS

- A Solid shell, not MS
- C Solid shell for pressurized applications
- E Environmentally resistant
- F Environmentally resistant with strain relief (JAN MS part number only)
- R Lightweight environmentally resistant (JAN MS part number only; not available for 3108)

SHELL SIZE & INSERT ARRANGEMENT

See tables on pages 50-69.

✣ Parts are the only MS approved inserts.

† Note : The military changed the designation from cable receptacle to plug in the MIL-DTL-5015 specifications. For insert arrangements over 50 and shell size 40 and above. Exceptions: 36-52, 40-1, 40-9 and 40-56 are approved.

(NOT JAN MS)

Modification for A style service class only

INSERT ROTATION

W, X, Y, and Z designate that insert is rotated in its shell from normal position. No letter is required for normal (no rotation) position.

See tables on pages 59-69.

CONTACT TYPES

- P Pin contact
- S Socket contact

EXCERPT FROM MIL-DTL-5015H

***3.30.3 JAN BRAND**

The United States Government has adopted, and is exercising legitimate control over the certification marks, "JAN" and "J", respectively, to indicate that items so marked or identified are manufactured to, and meet all the requirements of specifications. Accordingly, items acquired to, and meeting all the criteria specified herein and in applicable specifications shall bear the certification mark "JAN" except that items too small to bear the certification mark "JAN" shall bear the letter "J". The "JAN" or "J" shall be placed immediately before the part number except that if such location would place a hardship on the manufacturer in connection with such marking, the "JAN" or "J" may be located on the first line above or below the part number. Items furnished under contracts or orders which either permit or require deviation from the conditions or requirements specified herein or in applicable specifications shall not bear "JAN" or "J". In the event an item fails to meet the requirements of this specification and the applicable specification sheets or associated specifications, the manufacturer shall remove completely the military part number and the "JAN" or "J" from the sample tested and also from all items represented by the sample. The "JAN" or "J" certification mark shall not be used on products acquired to contractor drawings or specifications. The United States Government has obtained Certificate and Registration Number 504,860 for the certification mark "JAN" and Registration Number 1,586,261 for the certification mark "J".

AC Series Connectors

To more easily illustrate ordering procedure, part number ACC06AF18-1SX(025) is shown as follows:

If part number incorporates a "B"
see AIB/GT page 95.

AC C 06 AF 18-1 S X 025

SERIES
- AC Series designates Amphenol Industrial Series
- ACL AC Series with low smoke zero halogen inserts and grommets

CONTACT STYLE
- C Designates Crimp Contacts
- S Designates Solder Contacts

SHELL STYLE
- 00 Wall mounting receptacle
- 01 In Line receptacle
- 02 Box mounting receptacle
- 06 Straight plug
- 08 90˚ plug

CONNECTOR CLASS
- A General duty, threaded backshell, cable clamp, no grommet
- AF General duty, threaded backshell, cable clamp, no grommet
- CF General duty, threaded backshell, gland-sealed cable clamp, no grommet (08 only)
- E General duty, integral endbell with cable clamp, no grommet (08 not integral endbell)
- F General duty, threaded backshell, cable clamp, with grommet
- LCFZ Long threaded endbell, gland-sealed cable clamp, with grommet (06 only)
- PGA Environmental connector for jacketed cable
- PGR Environmental connector for jacketed cable
- R General duty, threaded backshell,no cable clamp, with grommet (06 only)
- SB Shielded shrink boot endbell with grommet (06 only)

SHELL SIZE & LAYOUT

Shell size and layout
See layout availability on pages 50-69

PLATING MODIFICATION CODES
- (003) Olive drab cadmium plate finish
- (023) Electroless nickel finish (RoHS with Crimp only)
- (024) Green zinc alloy finish
- (025) Black zinc cobalt finish (RoHS with Crimp only)
- (G96) Black hard-coat anodize
- (A24) .000035 gold/nickel on contacts
- (116) Less pre-tinned solder cups (Solder only)
- (472) 116 & 025 mod codes (RoHS)
- (548) 116 & 023 mod codes (RoHS)

ALTERNATE INSERT ROTATION

"W", "X", "Y", "Z" designates that the insert is rotated in its shell from a normal position. No letter required for normal (no rotation) position.
See pages 59-69.

CONTACT TYPE
- P Pin contacts
- S Socket contacts
- R RADSOK (High Amperage) Crimp socket contacts

AIB/GT Series

AIB/GT Series is basically a MIL-DTL-5015 (MIL-C-5015) connector, but with an improved coupling system. AIB/GT Series replaces the threaded coupling used in MIL-DTL-5015 with a positive, quick-mating, 3-point reverse bayonet lock. AIB/GT Series shares the same shell dimensions, contact layouts, contacts, and performance characteristics as the MIL-DTL-5015 threaded connectors; however, the two series do not intermate. Over 180 contact layouts are available from 1 to 85 circuits and up to 150 amps per contact. The standard MIL-DTL-5015 layouts allow the mixing of power and signal contacts, power only, or signal only. Contacts are available in solder, crimp, or PC termination covering wire gauges from size 26 to size 0 AWG. Thermocouple (J, Y, K, T) and coax contacts are also available. These connectors are completely sealed to withstand moisture, condensation, vibration, and flash-over across a broad range of wire diameters. When the two connector halves are mated, the rear sealing grommet plus the dynamic interfacial seal at the front create an environmentally sealed assembly.

Commercial and Military

AIB/GT Series connectors are made in accordance with German military specification VG 95 234 and MIL-DTL-5015. Originally designed for NATO combat vehicles, aircraft, and airborne equipment, these rugged connectors are now widely used in a broad range of demanding commercial applications from trucks to industrial robots.

Applications

Industrial environments requiring extreme environmental reliability and ease of mating and unmating, such as:

- Power Generators
- Battery Systems
- Engines
- Sensors
- Motion Control
- Off-road Vehicles
- Earth Moving Equipment
- Ships
- Railroad Equipment
- Mobile Equipment
- Industrial Machinery
- Telecommunications
- Mass Transit

Features

Simple and Fast Mating and Un-mating

AIB/GT Series connectors use a unique, "reverse bayonet" coupling system for ease of use. This system allows mating and un-mating of the connector halves with a simple 120˚ rotation – without compromising shock, vibration, or moisture resistance. The large, open ramps are easily cleaned of mud or other contaminants. The ramp coupling system eliminates the possibility of cross threading and thread damage possible with standard MIL-DTL-5015 threaded connectors. This quick-mating design is easier to mate in cold weather, tight spaces, or on equipment which must be disassembled frequently.

Shock and Vibration Resistant

AIB/GT Series connectors are supplied with standard military resistant sealing and 3-point bayonet coupling nut. The 3-point bayonet coupling incorporates a wave spring and washer which is specified by the Rail Industry. AIB/GT Series connectors pass the most stringent tests of shock and vibration performance while maintaining proper continuity and water tightness. Rugged aluminum alloy shell and hardware are light in weight yet highly resistant to damage.

Proven Reliability

AIB/GT Series connectors are used extensively in military vehicles such as the M1 Tank. They also have found applications on advanced locomotives, transit cars, and way maintenance equipment.

Features

Audible, Visual, and Tactile Confirmation of Mating

AIB/GT Series connectors provide the user with three independent checks that the connector halves are mated. When the coupling nut is fully rotated, the three studs snap into the end of the ramps with a loud "click" (audible confirmation). At that same moment, the user can actually feel the bolts click into the grooves (tactile confirmation). Blue dots on the receptacle and on the coupling nut are aligned when the connector is properly mated (visual confirmation).

Environmental

The sealing of this connector is not compromised by any of the operating conditions defined in MIL-DTL-5015. The connector is completely watertight when mated.

Broad Temperature Range

These connectors will operate in temperatures from -67˚ to +257˚F (-55˚ to +125˚C). High temperature and zero halogen insulators are also available. Call for ordering information.

Wide Range of Wire Gauges and Current Carrying Capability

Up to 150 amps with accommodations for wire gauges from size 26 up to size 0 AWG wire.

Wide Variety of Contacts

High reliability screw machine contacts with silver or gold plating are available in sizes from 20 through 0 to accommodate wire gauges from 26 to 0 AWG. Solder, Crimp, PC, Coax, and Thermocouple contacts are available.

AIB/GT Series connectors use rail industry standard crimp contacts which are completely interchangeable with other rail connectors such as Litton/Veam CIR series.

Intermateable and Intermountable with all VG 95 234 Connectors

The standard MIL-DTL-5015 layouts and dimensions ensure intermateability and intermountability with all connectors made in accordance with VG 95 234.

All AIB/GT Series connectors are intermountable with standard threaded MIL-DTL-5015 connectors, making it possible to upgrade without the need to change panel cutouts or clearances in most cases.

Technical Specifications

MATERIALS & FINISHES

Shell	Aluminum alloy. (Shells can be grounded)
Plating	Olive drab chromate coating over cadmium plating, black zinc cobalt, electroless nickel, green zinc, and black anodized
Contacts	Copper alloy
Platings	Hard silver plating or gold plating
Insulator*	Neoprene
Seals	Silicone, Neoprene, or Viton**

*Optional zero halogen and high temperature insulators are available. Call for information.
**Viton is a registered trademark of DuPont DOW Elastomers

Technical Specifications

ELECTRICAL DATA

Operating Voltage/Test Voltage According to MIL-DTL-5015

The indicated values for the "operating voltage" are limits concerning the electrical function. In any case, when the working voltage exceeds 50V, safety precautions must be in accordance with the following standards: VDE 0100, IEC 309-1 or applicable national standards

Current Rating

CONTACT SIZE	TEST CURRENT (AMPS)
16/16S	13
12	23
8	46 (69)*
4	80 (80)*
0	150 (225)*

*Test amps, multiconductor using Radsok contact

Altitude Voltage Derating* Chart

MS SERVICE RATING	NOMINAL DISTANCE INCHES		OPERATING VOLTAGE		STANDARD SEA LEVEL CONDITIONS		PRESSURE ALTITUDE† 50,000 FEET		PRESSURE ALTITUDE† 70,000 FEET	
	AIRSPACE	CREEPAGE	DC V	AC (RMS)	MINIMUM FLASHOVER VOLTAGE AC (RMS)	TEST VOLTAGE AC (RMS)	MINIMUM FLASHOVER VOLTAGE AC (RMS)	TEST VOLTAGE AC (RMS)	MINIMUM FLASHOVER VOLTAGE AC (RMS)	TEST VOLTAGE AC (RMS)
I	1/32	1/16	250	1,000	1,400	1,000	550	400	325	260
A	1/16	1/8	700	500	2,800	2,000	800	600	450	360
D	1/8	3/16	1,250	900	3,600	2,800	900	675	500	400
E	3/16	1/4	1,750	1,250	4,500	3,500	1,000	750	550	440
B	1/4	5/16	2,450	1,750	5,700	4,500	1,100	825	600	480
C	5/16	1	4,200	3,000	8,500	7,000	1,300	975	700	560

†Not corrected for changes in density due to variations in temperature

* No attempt has been made to recommend operating voltages. The designer must determine his own operating voltage by the application of a safety factor to the above derating chart to compensate for circuit transients, surges, etc.

Wire Range Sizes — 26 AWG to 0 AWG (See contact selection on pages 70-73

Contact Resistance

per MIL-DTL-5015 p3.5.4

CONTACT SIZE	CONTACT RESISTANCE MILLIOHM MAX.	POTENTIAL VOLTAGE DROP IN MILLIVOLTS MAX.
16/16S	6	21
12	3	20
8	1/(0.44)*	12 (20)*
4	0.5/(0.23)*	10 (18)*
0	0.2/(0.18)*	10 (27)*

*Using Radsok contact

Insulation Resistance — @77˚F (25˚C) > 5,000 Megohms

MECHANICAL

Operating Temperature — -67˚ to +257˚F (-55˚ to +125˚C) Neoprene

Sealing — 33 feet submersible when mated. ≈ IP 67 and NEMA 4P

Technical Specifications

Wire Sealing Range

The connector is designed for individual wire sealing. Sealing of an outer cable jacket on multiconductor cables must be accomplished with an appropriate endbell. Sealing is only guaranteed if wires according to MIL-W-5086 or within the listed ranges are used.

CONTACT SIZE	SEALING RANGE	
	INCHES	(mm)
16	.090 - .118	2.3 - 3.0
12	.126 - .177	3.2 - 4.5
8	.150 - .256	3.8 - 6.5
4	.279 - .366	7.1 - 9.3
0	.394 - .539	10.0 - 13.7

Insulation Strip Lengths

See Contact Selection Chart on page 70

Mating Life

2,000 cycles minimum (commercial) 500 cycles minimum (military)

Salt Spray

Olive drab chromate over cadmium - 500 hours
Non-conductive black zinc - 200 hours
Conductive black zinc - 48 hours
Black anodized - 500+ hours
Electroless nickel - 48 hours

Heat

Neoprene 257˚F (+125˚C); Low Smoke Zero Halogen (LSZH) 347˚F (+175˚C); Viton 392˚F (+200˚C)

Chemical Resistance

Diesel Fuel
JP-4
Hydraulic Fluid
Gasoline

48-hour intermittent spray for each chemical with no deterioration, followed by Contact Retention (CR), Insulation Resistance (IR), Dielectric Withstanding Voltage tests (DWV)

Corrosion Resistance

Olive Drab Cadmium Plated
48 Hrs per MIL-DTL-5015 (3.17/4.6.13)

Fluid Immersion

Hydraulic Fluid — 20 hours per MIL-DTL-5015 (3.19/4.6.15)
Lubrication Oil — 20 hours per MIL-DTL-5015 (3.19/4.6.15)

Vibration

per MIL-STD-810C, method 516.2, procedure VIII
1.0 g peak from 5 to 25 Hz
.030" double amplitude from 25 to 57 Hz
5g peak from 57 to 500 Hz

Basic Shock

Per MIL-STD-810C, method 516.2, procedure I
pulse at half sine wave of 30g for 11 seconds

Gun fire Shock

Per MIL-STD-810C, method 516.2, procedure IV
pulse at half sine wave of 100g for 1.5 seconds

Ballistic Shock

Per MIL-STD-810C, method 516.2, procedure IV
pulse at half sine wave of 200g for .5 seconds

Contact Type

Solder, Crimp, PC, Coax, or Thermocouple. Hard silver or gold plating.

Contact Insertion

From rear with simple hand tool. Removable, 5 cycles minimum.

Contact Retention

CONTACT SIZE	RETENTION FORCE MIN.
16	10
12	15
8	20
4	20
0	25

Pin and socket contacts are designed to resist severe vibration and repeated connection & disconnection. Contact retention and separation is tested according to MIL-DTL-5015 (3.10/4.6.6.3)

Technical Specifications

Number of Circuits	1 to 85
Polarization	Key and keyway plus three point bayonet with optional rotational polarization. See pages 59-69.

Rear Accessories Maximum Torque

SIZE	IN./LB. MAX.
10SL	26
14S	44
16	50
16S	50
18	55
20	65
22	85
24	90
28	114
32	120
36	153
40	170

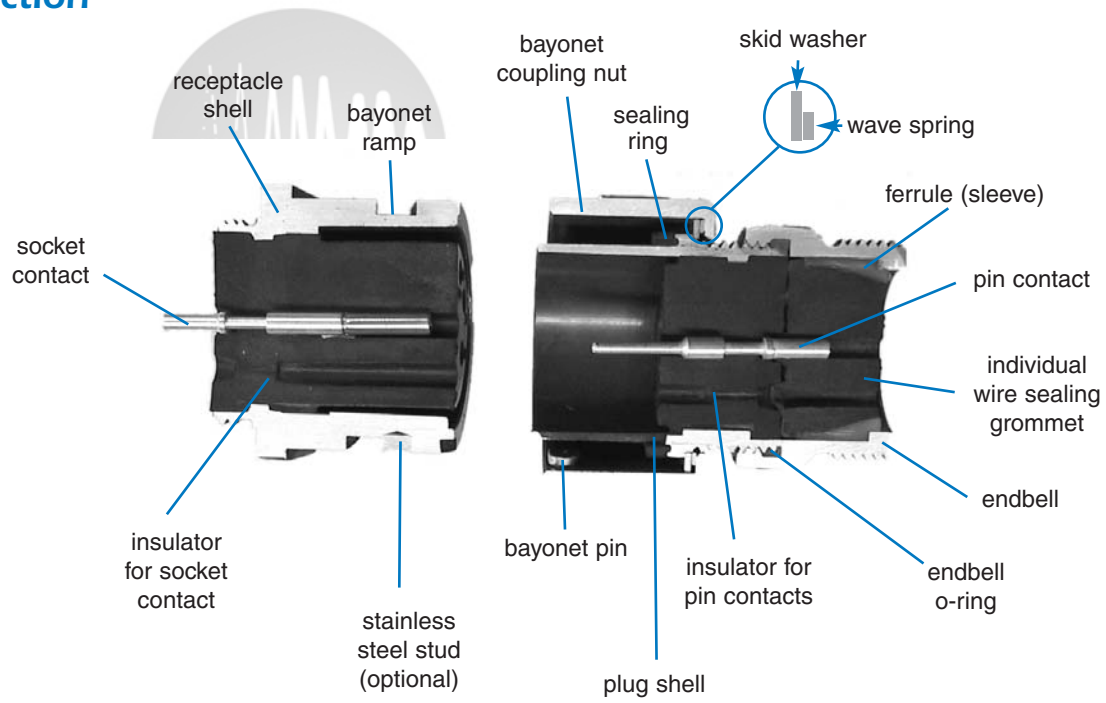
THERMOCOUPLE CODES		
MATERIAL	COLOR CODE	CODE
Iron	Black	IR
Constantan	Yellow	CON
Copper Alloy	–	Cu
Chromel	White	CH
Alumel	Green	AL

Color code is identified by small dot on wire well end of contact.

Thermocouple Types: J = Iron-Constantan
K = Alumel-Chromel
T = Copper-Constantan
E = Chromel-Constantan

Approvals/Agency Listing	UL File# E115497

AIB/GT Series Cross-Section



AIB/GT Series How to Order

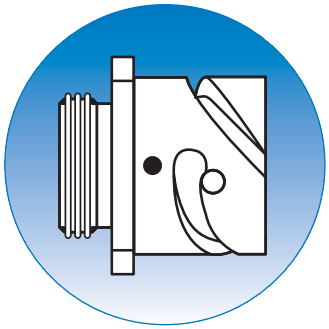
The next page contains a pictograph which portrays all of the standard possibilities for AIB/GT Series connectors. Follow the nine steps to create a description of the connector best suited to your application. This is not an Amphenol part number, but does give you a convenient way to select your connector. Call us with the description for a valid Amphenol part number. If you prefer to select the Amphenol part number, see the How-To-Order Guide on pages 94-95.

Many options not shown are available. Call us if your needs are not met by the options on the next page.

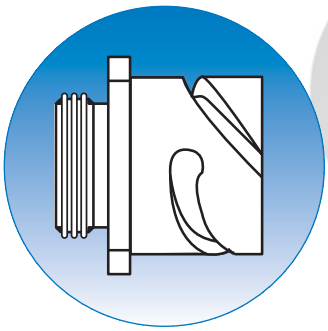
Follow these 9 steps to create your part number. . .

STEP 1
Select Connector Type

AIB



AIBC



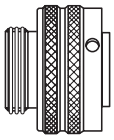
* AIBC is the commercial version of the AIB. It comes without wear pins in the receptacles and without wave springs in the coupling nuts.

** Note: AIBC are fully intermateable with all reverse bayonet connectors.

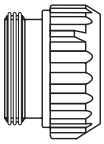
STEP 2
Select Shell Style, Plug or Receptacle

Plugs

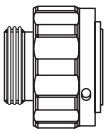
Standard (Most Popular) — 6



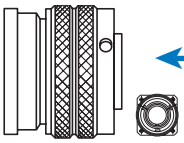
Rubber Covered — 4



Heavy Duty — 6HD

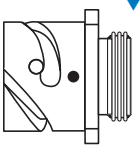
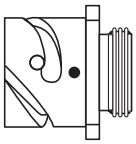
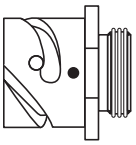
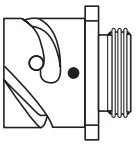
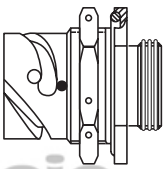
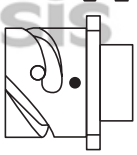
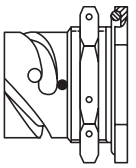
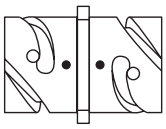


Box Mount — 6B



mates with

Receptacles

0		**Front Wall Mount with Accessory Threads** 
30		**Rear Wall Mount with Accessory Threads (Most Popular)** 
1		**Cable Mount with Accessory Threads** 
20		**Front Box Mount with Rear Accessory Threads** 
70		**Rear Mount Jam Nut with Accessory Threads** 
2		**Front Box Mount No Accessory Threads** 
7		**Rear Mount Jam Nut No Accessory Threads** 
TB		**Thru Bulkhead** 

Create your part number using these nine steps

(example)	AIB	6HD	F	A	24-28	P	W	S	– 472
	1 Connector Type	2 Shell Style	3 Endbells (if omitting endbell, enter - (dash))	4 Cable Clamp/ Heat Shrink Boot (if needed)	5 Layout	6 Contact	7 Rotation	8 Contact Type	9 Plating/ Modification

* See pages 94-95 for Amphenol order codes.

STEP 3
Choose Endbells

- RV — No Clamp
- G — Heat Shrink
- L — Long Extender
- F — Standard Extender
- T — 90°
- P — Potting * Potting Compound see page 261

STEP 4
Choose Cable Clamps and/or Heat Shrink Boot
(if applicable)

Heat Shrink Boot
Call with cable outside diameter.
See pages 258-260.

- C — MS-3057-C
- A — MS-3057-A
- 9767 — **9767** Call with cable outside diameter.

STEP 5
Choose layout
See pages 50-69.

STEP 6
Choose Contact
- P = Pin
- S = Socket
- PS = Style TB only

STEP 7
Choose Rotation
See pages 59-69.
(omit for normal)
- W
- X
- Y
- Z

STEP 8
Choose Contact Type
- S = Solder
- C = Crimp*
- H = PC**
- 0 = Less contacts

* When using a "C" in part number, the connector is supplied with the standard size crimp contacts for its layout. Bolded part number on pages 70-73 indicate crimp contacts. If reduced or enlarged crimp contacts are required, specify contact type 0 (less contacts) and order contacts separately.

** See page 75 for post diameters and lengths.

Standard Specials
Call with NPT thread size, Sealtite conduit diameter, or cable outside diameter.

Shielded Cable/Heat Shrink

Low Cost Gland Seal

Shielded Cable Banding

Internal thread version
External thread version

Gland Seal

Conduit Metal

Mesh Grip

Conduit Plastic
See pages 262-263.

STEP 9
Choose Platings/Modifications

CONTACTS
- B30 = Gold 30µ" Gold over Nickel
- T = Thermocouple
- RDS = RADSOK (Socket only) 8,4,0

Omit for silver contacts

SHELLS
- 023 = Nickel (RoHS with crimp only)
- 024 = Green Zinc Cobalt
- 025 = Black Zinc Cobalt (RoHS with crimp only)
- 027 = Conductive Black Zinc Cobalt (RoHS with crimp only)
- G96 = Black Anodized

Omit for olive drab chromate over cadmium

- 116 = Less Pre-tinned Solder Cups
- 472 = 116 & 025 mod codes (RoHS)
- 548 = 116 & 023 mod codes (RoHS)

MATERIALS
- L = Low Smoke Zero Halogen
- V = High Temperature Viton®*

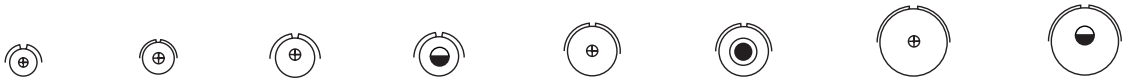
*Viton is a registered trademark of DuPont Dow Elastomers

Layouts by Number of Contacts

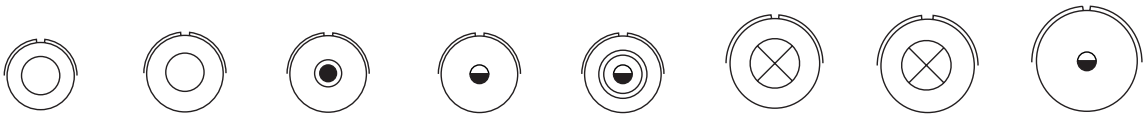
CONTACT LEGEND ⊕=16 ◒=12 ◉=8 ◯=4 ⊗=0
Mating face view of pin inserts

SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97)
P-lok (▼) **Thermocouple** (🌡) ***most popular**

1 CONTACT

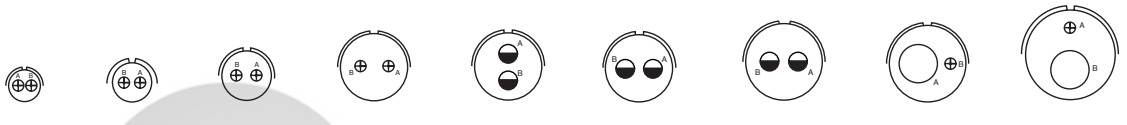


LAYOUT	8S-1	10S-2	12S-4	12-5	14S-4	14-3	16S-3	16-2
# OF CONTACTS	1-#16	1-#16	1-#16	1-#12	1-#16	1#8	1#16	1-#12
SERIES	✚ ✦	✚	✚	✚ ✦	● ✣ ✦	✚	● ✚	● ✚ ▼
SERVICE RATING	A	A	D	D	D	A	B	E

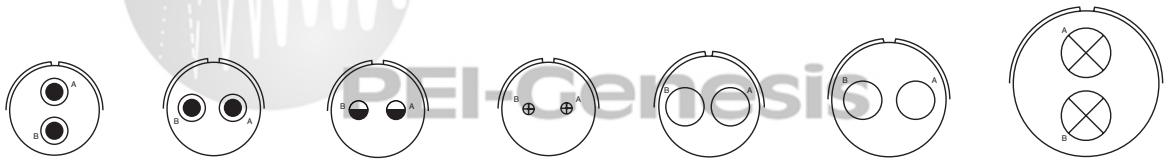


LAYOUT	16-12	18-6	18-7	18-16	18-420	20-2	22-7	24-52
# OF CONTACTS	1-#4	1-#4	1-#8	1-#12	1-#12	1-#0	1-#0	1-#12
SERIES	● ✚ ✦ ▼	● ✚ ▼	● ✣ ▼	● ✣ ✦ ▼	✦	● ✚	● ✚ ▼	● ✣
SERVICE RATING	A	D	B	C	17 KVac 24 KVdc	D	E	21 KVac 30 KVdc

2 CONTACTS

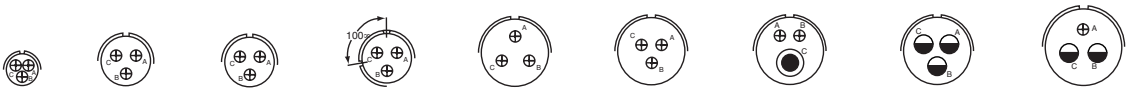


LAYOUT	10SL-4*	12S-3*	14S-9*	16S-4	16-11	16-13	18-3	18-14	20-12
# OF CONTACTS	2-#16	2-#16	2-#16	2-#16	2-#12	2*-#12	2-#12	1-#16; 1-#4	1-#16; 1-#4
SERIES	● ✚ ✦ 🌡	✚ ✦ 🌡	● ✚ ✦ 🌡	● ✚ ✦ 🌡	● ✚ ✦ ▼ 🌡	✖ ▼ 🌡	● ✚ ✦ ▼	● ✣ ▼	● ✣
SERVICE RATING	A	A	A	D	A	A	D	A	A

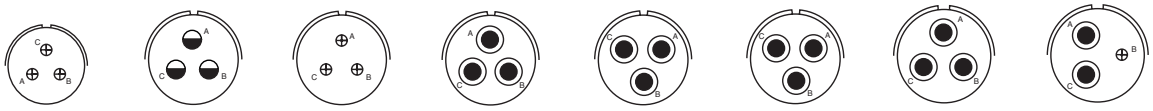


LAYOUT	20-23	22-1	22-8	22-11	24-9	28-7	32-5
# OF CONTACTS	2-#8	2-#8	2-#12	2-#16	2-#4	2-#4	2-#0
SERIES	● ✚ ✦ ▼	● ✦ ▼	● ✚ ✦ ▼	● ✚ ✦ ▼	● ✚ ✦ ▼	● ✣ ▼	● ✚ ✦
SERVICE RATING	A	D	E	B	A	D	D

3 CONTACTS



LAYOUT	10SL-3	14S-1	14S-7	14S-12	16S-5	16S-6	16-7	16-10	18-5
# OF CONTACTS	3-#16	3-#16	3-#16	3-#16	3-#16	3-#16	2-#16; 1-#8	3-#12	1-#16; 2-#12
SERIES	● ✚ ✦	✚ ✦	● ✚ ✦	● ✚ ✦	● ✚ ✦	● ✣ ✦	● ✚ ✦ ▼	● ✚ ✦ ▼	● ✚ ✦ ▼
SERVICE RATING	A	A	A	A	A	A	A	A	D



LAYOUT	18-22	20-3	20-6	20-19	20-51	20-59	22-2	22-6
# OF CONTACTS	3-#16	3-#12	3-#16	3-#8	3*-#8	3*-8 for #10 or 12 wire	3-#8	1-#16; 2-#8
SERIES	● ✣ ✦ ▼	● ✣ ✦ ▼	● ✣ ✦ ▼	● ✚ ✦ ▼	● ✣	● ✣	● ✚ ✦ ▼	● ✚ ▼
SERVICE RATING	D	D	D	A	A	A	D	D

Layouts by Number of Contacts

CONTACT LEGEND ⊕=16 ◒=12 ◉=8 ◯=4 ⊗=0
Mating face view of pin inserts

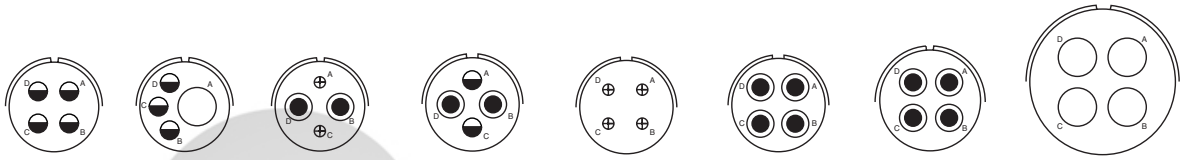
SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97)
P-lok (▼) **Thermocouple** (🌡) ***most popular**

3 CONTACTS (CONT.)

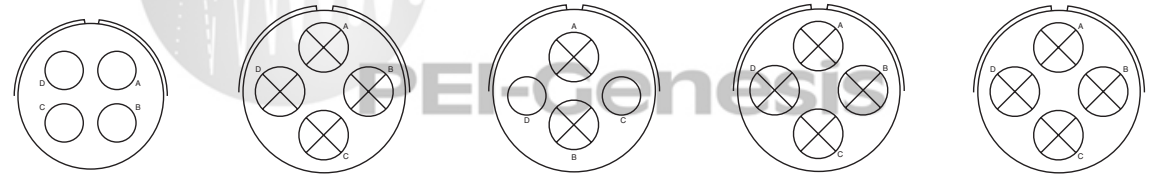
LAYOUT	22-9	22-21	22-80	28-3	28-6	28-72	36-4
# OF CONTACTS	3-#12	2-#16;1-#0	3*-#8 for #10 or 12 wire	3-#8	3*-#4	3-#4 (coax) RG-59A/U or RG-62A/U	3-#0
SERIES	● ✚ ✦ ▼	● ✣ ▼	● ✣	● ✚ ✦ ▼	● ✚ ✦ ▼	● ✣	● ✣
SERVICE RATING	E	A	A	E	D	(coax)	D(A); A(B,C)

4 CONTACTS

LAYOUT	12SL-844	14S-2*	14S-10	16-9	16-59	18-4*	18-10*	18-13	18-15
# OF CONTACTS	4-#16	4-#16	4-#16	2-#16; 2-#12	4-#12	4-#16	4-#12	3-#12; 1-#8	4**-#12
SERIES	✦	● ✚ ✦ 🌡	● ✚ ✦	● ✚ ✦ ▼ 🌡	● ✣	● ✚ ✦ ▼	● ✚ ✦ ▼	● ✚ ✧ ▼	● ✚ ✦ 🌡
SERVICE RATING	I	I	I	A	A	D	A	A	A

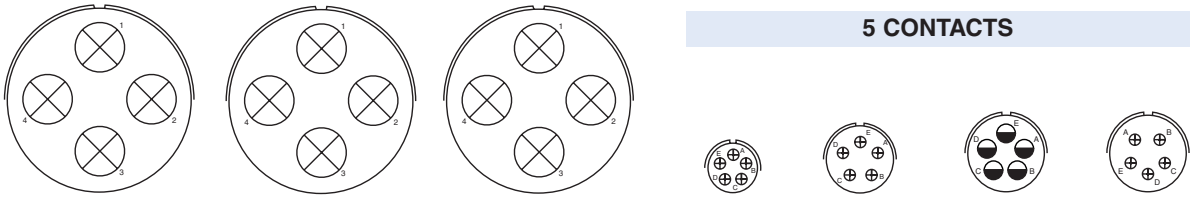


LAYOUT	20-4*	20-20	20-24	22-4	22-10	22-22*	24-22*	32-17
# OF CONTACTS	4-#12	3-#12; 1-#4	2-#16; 2-#8	2-#12; 2-#8	4-#16	4-#8	4-#8	4-#4
SERIES	● ✚ ✦ ▼ 🌡	● ✣ ▼	● ✚ ✦ ▼	● ✚ ✦ ▼	● ✚ ✦ ▼ 🌡	● ✚ ✦ ▼	● ✚ ✦ ▼	● ✚ ✦
SERVICE RATING	D	A	A	A	E	A	D	D

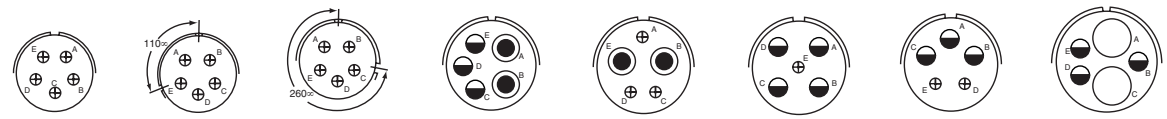


LAYOUT	32-58	36-5	36-51	36-64	36-65
# OF CONTACTS	4-#4 (coax) RG-161/U or RG-179/U	4-#0	2-#4; 2-#0	4-#0 (coax) RG-11/U; RG-12/U or RG-13/U	4-#0 (coax) RG-59/U; RG-62/U or RG-71/U
SERIES	● ✣	● ✚ ✦	● ✣	● ✣	● ✣
SERVICE RATING	COAX	A	D	(coax)	(coax)

5 CONTACTS



LAYOUT	40-57	40-66	40-86	14S-5*	16S-8*	18-11*	18-20
# OF CONTACTS	4-#0	4-#0 (coax) RG-63B/U	4-#0 (coax) RG-115A/U	5-#16	5-#16	5-#12	5-#16
SERIES	● ✣	● ✣	● ✣	● ✚ ✦	● ✚ ✦	● ✚ ✦ ▼ 🌡	● ✚ ✦ ▼
SERVICE RATING	E	(coax)	(coax)	I	A	A	A



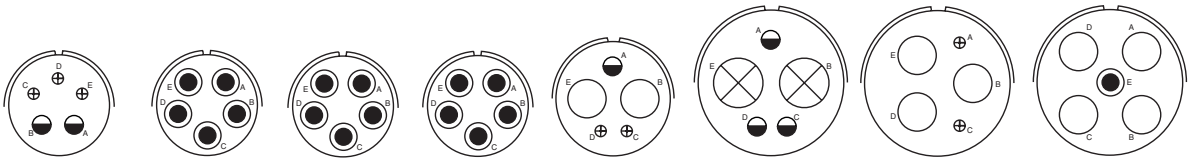
LAYOUT	18-29	18-30	18-31	20-14	22-12	22-13	22-34	24-12
# OF CONTACTS	5-#16	5-#16	5-#16	3-#12; 2-#8	3-#16; 2-#8	1-#16; 4-#12	2-#16; 3-#12	3-#12; 2-#4
SERIES	● ✣ ✦ ▼	● ✚ ✦	● ✚ ✦	● ✚ ✦ ▼	● ✣ ✦ ▼	● ✣ ✦ ▼	● ✚ ✦ ▼	● ✚ ✦ ▼
SERVICE RATING	A	A	A	A	D	D(E) A(A,B,C,D)	D	A

Layouts by Number of Contacts

CONTACT LEGEND ⊕=16 ◒=12 ◉=8 ○=4 ⊗=0
Mating face view of pin inserts

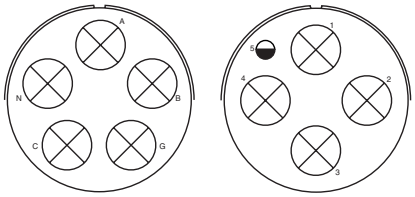
SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97)
P-lok (▼) **Thermocouple** (🌡) ***most popular**

5 CONTACTS (CONT.)



LAYOUT	24-17	24-51	24-53	24-79	28-5	32-1	32-2	32-79
# OF CONTACTS	3-#16; 2-#12	5-#8	5-#8	5-#8	2-#16; 1-#12; 2-#4	3-#12; 2-#0	2-#16; 3-#4	1-#8; 4-#4
SERIES	● ✣ ▼	● ✣	● ✣	● ✣	● ✣ ▼	● ✚	● ✚	● ✣
SERVICE RATING	D	B; E for AWG #10 or 12 wire A; C; D for AN #18 wire	A	A	D	E(A); D(B, C, D, E)	E	D

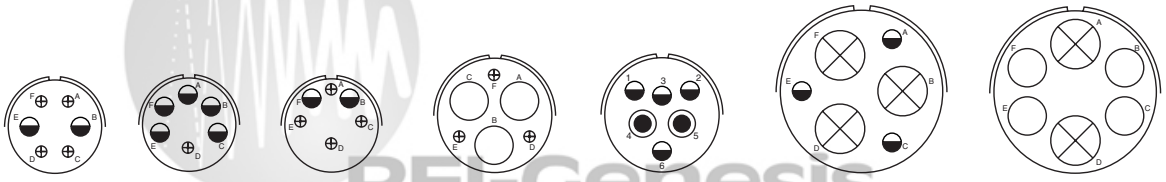
5 CONTACTS



LAYOUT	40-5	40-75
# OF CONTACTS	5-#0	4-#0; 1-#12
SERIES	● ✣	● ✣
SERVICE RATING	A	E

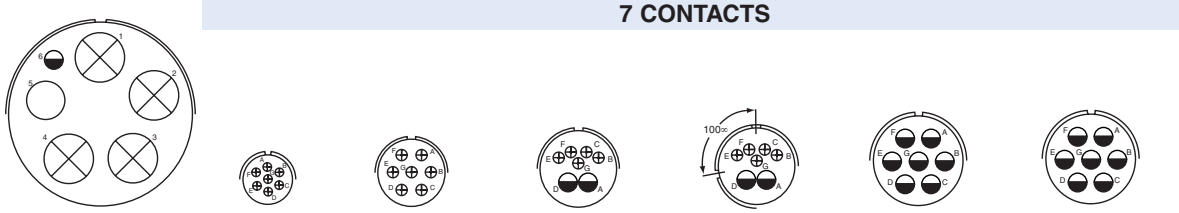
6 CONTACTS

LAYOUT	14S-6*	18-12	20-8	20-17	20-22	20-66
# OF CONTACTS	6-#16	6-#16	4-#16; 2-#8	1-#16; 5-#12	3-#16; 3-#8	1-#16 5-#12 for #10 wire
SERIES	● ✚ ✦ 🌡	● ✚ ▼ 🌡	● ✚ ✦ ▼	● ✣ ✦ ▼	● ✚ ✦ ▼	● ✣
SERVICE RATING	I	A	I	A	A	A

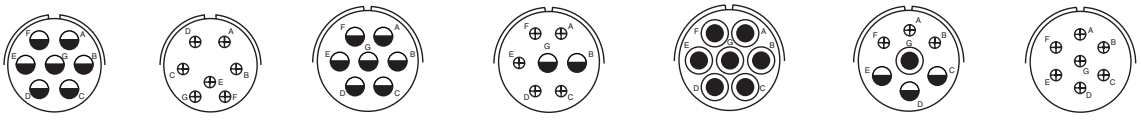


LAYOUT	22-5	22-15	22-24	28-22	28-82	36-3	36-6
# OF CONTACTS	4-#16; 2-#12	1-#16; 5-#12	4-#16; 2-#12	3-#16; 3-#4	4-#12; 2-#8	3-#12; 3-#0	4-#0; 2-#0
SERIES	● ✚ ✦ ▼	● ✚ ✦ ◆ 🌡	● ✣ ▼	● ✣ ▼	● ✣	● ✣	● ✚ ✦
SERVICE RATING	D	A(A, B, C, E, F); E(D)	D(C, D, E) A(A, B, F)	D	D	D	A

7 CONTACTS



LAYOUT	40-74	14SA7	16S-1*	18-9	18-17	20-15*	20-57
# OF CONTACTS	4-#0 (coax) RG-9B/U or RG-214/U 1-#4 (coax) RG-62/U; 1-#12	7-#16	7-#16	5-#16; 2-#12	5-#16; 2-#12	7-#12	12 for #14 or 16 wire
SERIES	● ✣	● ✣	● ✚ ✦ 🌡	● ✚ ✦ ▼ 🌡	● ✚ ✦ ▼	● ✚ ✦ ▼ 🌡	● ✣
SERVICE RATING	A	A	A	I	I	A	A



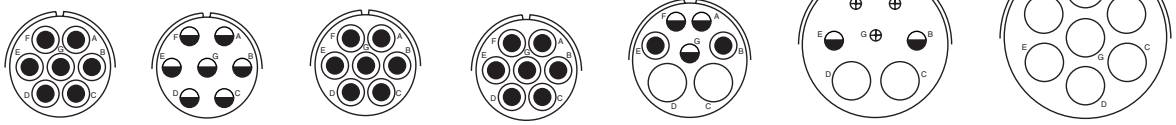
LAYOUT	22-28	22-33	24-2	24-3	24-10	24-16	24-27
# OF CONTACTS	7-#12	7-#16	7-#12	5-#16; 2-#12	7-#8	3-#16; 3-#12; 1-#8	7-#16
SERIES	● ✚ ✦ ▼	● ✣	● ✚ ✦ ▼	● ✣ ▼	● ✚ ✦ ▼	● ✣ ✦ ▼	● ✚ ▼ ✦
SERVICE RATING	A	D(A, B, C, D) A(E, F, G)	D	D	A	D(A, B, F, G) A(C, D, E)	E

Layouts by Number of Contacts

CONTACT LEGEND ⊕=16 ◒=12 ◉=8 ◯=4 ⊗=0
Mating face view of pin inserts

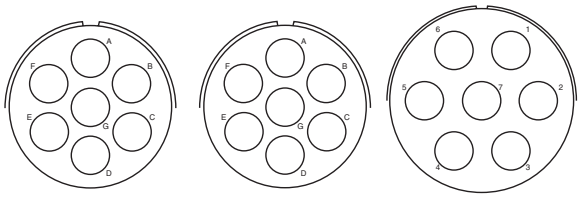
SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97)
P-lok (▼) **Thermocouple** (🌡) ***most popular**

7 CONTACTS (CONT.)



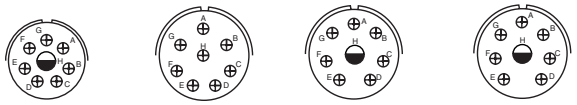
LAYOUT	24-60	24-66	24-71	24-75	28-10	32-10	36-73
# OF CONTACTS	7-#8 or 12 wire	7-#12	5-#8 for #10 or 12 wire, 2-#8	2-#8 for #16 wire; 5-#8	3-#12; 2-#8; 2-#4	3-#16; 2-#8; 2-#4	7-#4 (coax) RG-62B/U
SERIES	● ✣	● ✣	● ✣	● ✣	● ✚ ✦	● ✣	● ✣
SERVICE RATING	I	D	A	A	D(G); A(balance)	E(A, F); B(G); D(B, E); A(C, D)	(coax)

7 CONTACTS (CONT.)

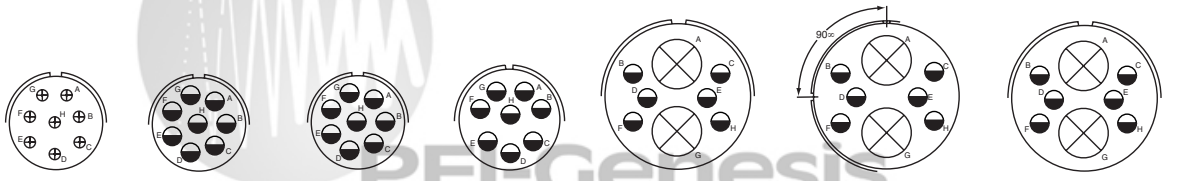


LAYOUT	36-77	36-83	40-87
# OF CONTACTS	7-#4	7-#4 (coax) RG-58/U	7-#4
SERIES	● ✣	● ✣	● ✣
SERVICE RATING	D	(coax)	D

8 CONTACTS

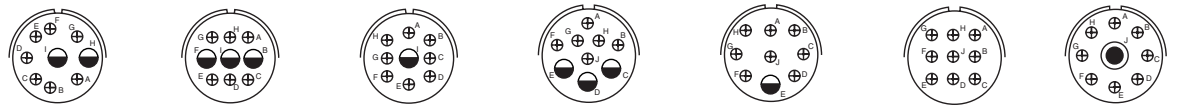


LAYOUT	18-8*	20-7*	20-9	20-79
# OF CONTACTS	7-#16; 1-#12	8-#16	7-#16; 1-#12	7-#16; 1-#12
SERIES	● ✚ ✦ ▼	● ✚ ✦ ▼ 🌡	● ✣	● ✣
SERVICE RATING	A	D(A, B, H, G); A(C, D, E, F)	H = (D); A(balance)	H = D; A(balance)

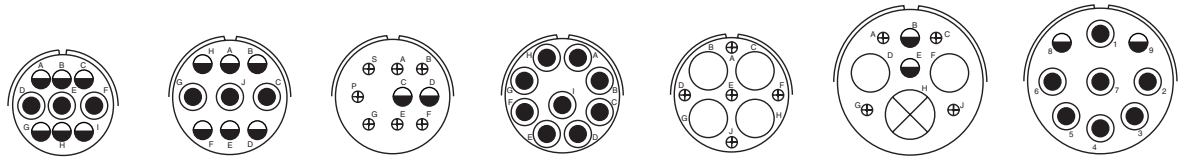


LAYOUT	22-18	22-23	22-65	24-6	32-15	32-52	32-57
# OF CONTACTS	8-#16	8-#12	12 for #14 or 16 wire	8-#12	6-#12; 2-#0	2-#0; 6-#12	2-#0 (coax) RG-7/U; 6-#12
SERIES	● ✚ ✦ ▼	● ✚ ✦ ▼ 🌡	● ✣	● ✣ ✦ ▼	● ✣	● ✣	● ✣
SERVICE RATING	D(A, B, F, G, H); A(C, D, E)	D(H); A(balance)	D(H); A(balance)	D(A, G, H); A(balance)	D	D	(coax)

9 CONTACTS



LAYOUT	20-16	20-18*	20-21	22-16	22-17	22-20	22-27
# OF CONTACTS	7-#16; 2-#12	6-#16; 3-#12	8-#16; 1-#12	6-#16; 3-#12	8-#16; 1-#12	9-#16	8-#16; 1-#8
SERIES	● ✚ ✦ ▼ 🌡	● ✚ ✦ ▼	● ✚ ✦ ▼	● ✚ ✦ ▼	● ✣ ▼	● ✣ ✦ ▼	● ✚ ✦ ▼
SERVICE RATING	A	A	A	A	D(A); A(balance)	A	D(J); A(balance)



LAYOUT	24-11	28-1	28-4	28-84	28AY	32-3	32-75
# OF CONTACTS	6-#12; 3-#8	6-#12; 3-#8	7-#16; 2-#12	9-#8	5-#16; 4-#4	4-#16; 2-#12; 2-#4; 1-#0	7-#8 (coax); RG-180B/U 2-#12
SERIES	● ✚ ✦ ▼	● ✚ ✦ ▼	● ✣ ▼	● ✣	● ✣	● ✚	● ✣
SERVICE RATING	A	D(A, J, E); A(balance)	E(G, P, S); D(balance)	A	A	D	D(8,9) (coax)

Layouts by Number of Contacts

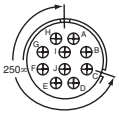
CONTACT LEGEND ⊕=16 ◒=12 ◉=8 ◯=4 ⊗=0
Mating face view of pin inserts

SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97)
P-lok (▼) **Thermocouple** (🌡) ***most popular**

10 CONTACTS

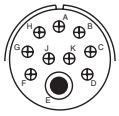
LAYOUT 18-1*
OF CONTACTS 10-#16
SERIES ● ✚ ✦ ▼ 🌡
SERVICE RATING A (B, C, F, G) I(balance)

LAYOUT 18-19
OF CONTACTS 10-#16
SERIES ● ✚ ✦ ▼
SERVICE RATING A

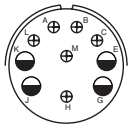


LAYOUT 18-24
OF CONTACTS 10-#16
SERIES ● ✚ ✦
SERVICE RATING A(B, C, F, G); I(balance)

LAYOUT 20-58
OF CONTACTS 5-#16; 5-#12
SERIES ● ✣
SERVICE RATING A

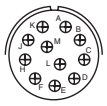


LAYOUT 24-21
OF CONTACTS 9-#16; 1-#8
SERIES ● ✚ ✦ ▼
SERVICE RATING D

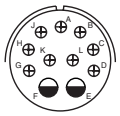


LAYOUT 28-19
OF CONTACTS 6-#16; 4-#12
SERIES ● ✚ ✦ ▼
SERVICE RATING B(H, M); D(A, B) A(balance)

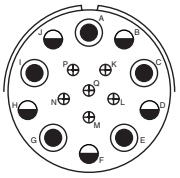
11 CONTACTS



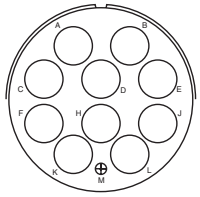
LAYOUT 20-33
OF CONTACTS 11-#16
SERIES ● ✣ ✦ ▼
SERVICE RATING A



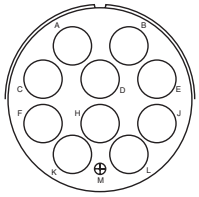
LAYOUT 24-20
OF CONTACTS 9-#16; 2-#12
SERIES ● ✣ ✦ ▼ 🌡
SERVICE RATING D



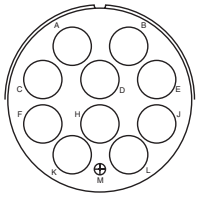
LAYOUT 36-14
OF CONTACTS 6-#16; 5-#12; 5-#8
SERIES ● ✣
SERVICE RATING D



LAYOUT 40-67
OF CONTACTS 10-#4 (coax); 1-#16 RG-59/U
SERIES ● ✣
SERVICE RATING A (coax)



LAYOUT 40-72
OF CONTACTS 10-#4 (coax); 1-#16 RG-9B/U
SERIES ● ✣
SERVICE RATING A (coax)

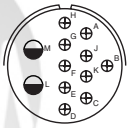


LAYOUT 40-80
OF CONTACTS 10-#4; 1-#16
SERIES ● ✣
SERVICE RATING A

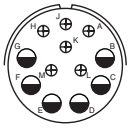
12 CONTACTS

LAYOUT 22-63
OF CONTACTS 8-#16; 4-#12
SERIES ● ✣
SERVICE RATING A

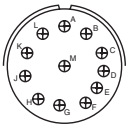
LAYOUT 24-19
OF CONTACTS 12-#16
SERIES ✦ ▼
SERVICE RATING A



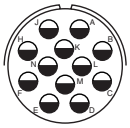
LAYOUT 28-8
OF CONTACTS 10-#16; 2-#12
SERIES ● ✣ ✦ ▼
SERVICE RATING E(L,M,); D(B) A(balance)



LAYOUT 28-9
OF CONTACTS 6-#16; 6-#12
SERIES ● ✣ ✦ ▼
SERVICE RATING D

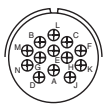


LAYOUT 28-18
OF CONTACTS 12-#16
SERIES ● ✚ ✦ ▼
SERVICE RATING C(M); D(G, H, I, K, L) A(A, B); I(balance)

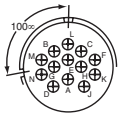


LAYOUT 28-51
OF CONTACTS 12-#12
SERIES ● ✣ ▼
SERVICE RATING A

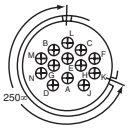
13 CONTACTS



LAYOUT 20-11
OF CONTACTS 13-#16
SERIES ● ✣ ✦ ▼
SERVICE RATING I



LAYOUT 20-25
OF CONTACTS 13-#16
SERIES ● ✣ ✦
SERVICE RATING I

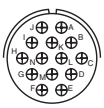


LAYOUT 20-30
OF CONTACTS 13-#16
SERIES ● ✣ ✦
SERVICE RATING I

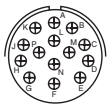
LAYOUT 22-70
OF CONTACTS 5-#16; 8-#12
SERIES ● ✣
SERVICE RATING A

LAYOUT 24-58
OF CONTACTS 7-#16; 3-#12; 3-#8
SERIES ● ✣
SERVICE RATING A

14 CONTACTS



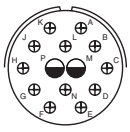
LAYOUT 20-27*
OF CONTACTS 14-#16
SERIES ● ✣ ✦ ▼ 🌡
SERVICE RATING A



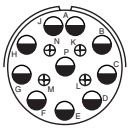
LAYOUT 22-19*
OF CONTACTS 14-#16
SERIES ● ✣ ✦ ▼ 🌡
SERVICE RATING A

LAYOUT 24-59
OF CONTACTS 7-#16; 7-#12
SERIES ● ✚
SERVICE RATING A

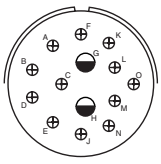
14 CONTACTS



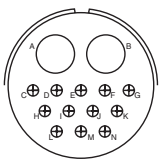
LAYOUT 28-2
OF CONTACTS 12-#16; 2-#12
SERIES ● ✣ ✦ ▼
SERVICE RATING D



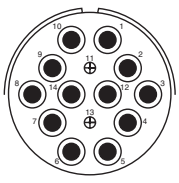
LAYOUT 28-20
OF CONTACTS 4-#16; 10-#12
SERIES ● ✣ ✦ ▼ 🌡
SERVICE RATING A



LAYOUT 32-4
OF CONTACTS 12-#16; 2-#12
SERIES ● ✣
SERVICE RATING A(F, J, K, N); D(balance)



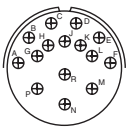
LAYOUT 32-9
OF CONTACTS 12-#16; 2-#4
SERIES ● ✣
SERVICE RATING D



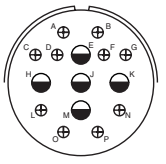
LAYOUT 36-78
OF CONTACTS 12-#8; 2-#16
SERIES ● ✣
SERVICE RATING A

15 CONTACTS

LAYOUT 24-65
OF CONTACTS 4-#16; 11-#12
SERIES ● ✣
SERVICE RATING A



LAYOUT 28-17*
OF CONTACTS 15-#16
SERIES ● ✣ ✦ ▼
SERVICE RATING B(R); D(M, N, P); A(A-L)



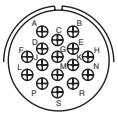
LAYOUT 32-12
OF CONTACTS 10-#16; 5-#12
SERIES ● ✣
SERVICE RATING A(C, D, E, F, G); D(balance)

Layouts by Number of Contacts

CONTACT LEGEND ⊕=16 ◒=12 ◉=8 ◯=4 ⊗=0
Mating face view of pin inserts

SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97)
P-lok (▼) **Thermocouple** (🌡) ***most popular**

16 CONTACTS



LAYOUT **24-5**
OF CONTACTS 16-#16
SERIES ● ✣ ✦ ▼ 🌡
SERVICE RATING A

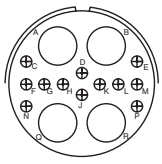
24-7*
14-#16; 2-#12
● ✣ ✦ ▼ 🌡
A

28-66
14-#12; 2-#8
● ✣
A

28-74
3-#8 for #10 wire;
4-#8; 9-#16
● ✣
A

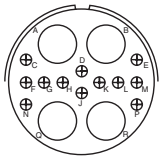
28-75
7-#8 for #10 wire
9-#16
● ✣
A

28-79
7-#8; 9-#16
● ✣
A

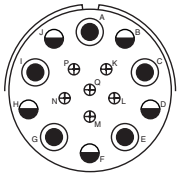


32-68
4-#4 (coax) RG-58C/U
12-#16
● ✣
A (coax)

16 CONTACTS



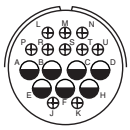
LAYOUT **32-82**
OF CONTACTS 12-#16; 4-#4
SERIES ● ✣
SERVICE RATING A



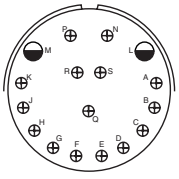
36-14
6-#16; 5-#12; 5-#8
● ✣
D

17 CONTACTS

20-29*
17-#16
● ✣ ✦ ▼ 🌡
A



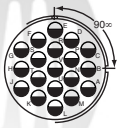
28-59
10-#16; 7-#12
● ✣
A



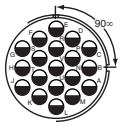
36-13
15-#16; 2-#12
● ✣
E(N, P, Q)
A(balance)

19 CONTACTS

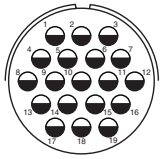
LAYOUT **22-14***
OF CONTACTS 19-#16
SERIES ● ✚ ✦ ▼ 🌡
SERVICE RATING A



24-67
19-#12
● ✣
I

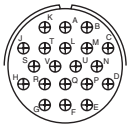


24-84
18-#12; 1-#12
(coax) RG-188/U or RG-174/U
● ✣
A (coax)

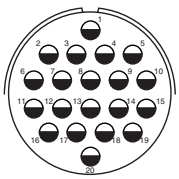


32-76
19-#12
● ✣
A

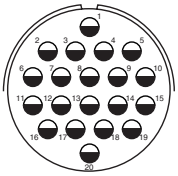
20 CONTACTS



LAYOUT **28-16**
OF CONTACTS 20-#16
SERIES ● ✚ ✦ ▼ 🌡
SERVICE RATING A

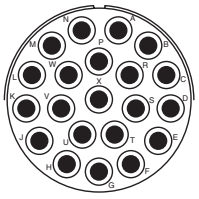


36-79
20-#12
● ✣
A



36-80
20-#12 for #10 wire
● ✣
A

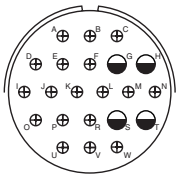
21 CONTACTS



40-68
21-#8
● ✣
A

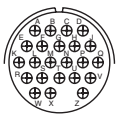
22 CONTACTS

28-11*
18-#16; 4-#12
● ✚ ✦ ▲ 🌡
A

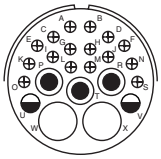


36-1
18-#16, 4-#12
● ✣ ✦
D

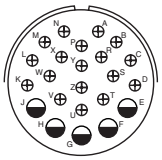
23 CONTACTS



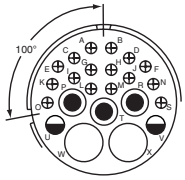
LAYOUT **24-80**
OF CONTACTS 23-#16
SERIES ● ✣
SERVICE RATING I



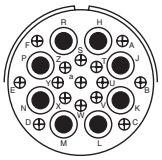
32-6
16-#16; 2-#12;
3-#8; 2-#4
● ✚ ✦
A



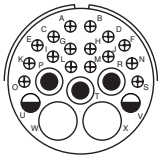
32-13
18-#16; 5-#12
● ✚ ✦
D



32-16
16-#16; 2-#12;
3-#8; 2-#4
● ✚
A



32-60
8-#8 (coax); 15-#16
RG-124/U
● ✣
A (coax)



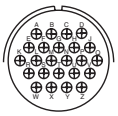
32-62
2-#8 (coax); 16-#16; 2-#12;
1-#8; 2-#4 RG-124/U
● ✣
A (coax)

Layouts by Number of Contacts

CONTACT LEGEND ⊕=16 ◒=12 ◉=8 ○=4 ⊗=0
Mating face view of pin inserts

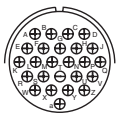
SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✜=non QPL) **97** (✦=97)
P-lok (▼) **Thermocouple** (🌡) ***most popular**

24 CONTACTS

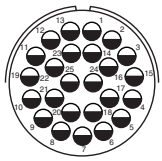


LAYOUT **24-28***
OF CONTACTS 24-#16
SERIES ● ✜ ✦ ▼ 🌡
SERVICE RATING I

25 CONTACTS

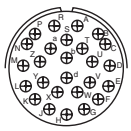


LAYOUT **24-AJ**
OF CONTACTS 25-#16
SERIES ● ✜
SERVICE RATING A

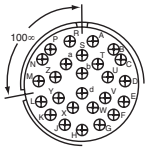


LAYOUT **32-25**
OF CONTACTS 25-#12
SERIES ● ✜
SERVICE RATING A

26 CONTACTS



LAYOUT **28-12***
OF CONTACTS 26-#16
SERIES ● ✚ ✦ ▼ 🌡
SERVICE RATING A

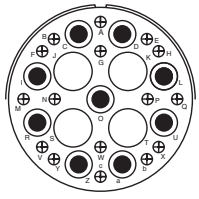


LAYOUT **28-13**
OF CONTACTS 26-#16
SERIES ● ✚ ✦
SERVICE RATING A

28 CONTACTS

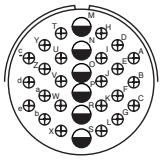
LAYOUT **24-96**
OF CONTACTS 28-#16
SERIES ● ✜
SERVICE RATING I

29 CONTACTS

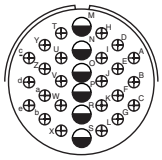


LAYOUT **40-10**
OF CONTACTS 16-#16; 9-#8; 4-#4
SERIES ● ✜
SERVICE RATING A

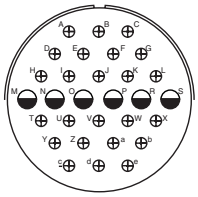
30 CONTACTS



LAYOUT **32-8**
OF CONTACTS 24-#16; 6-#12
SERIES ● ✚ ✦ 🌡
SERVICE RATING A

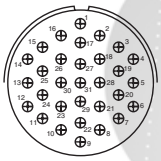


LAYOUT **32-56**
OF CONTACTS 6-#12 for #10 wire; 24-#16
SERIES ● ✜
SERVICE RATING A

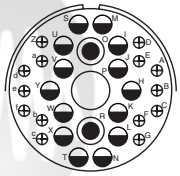


LAYOUT **40-1**
OF CONTACTS 24-#16; 6-#12
SERIES ● ✚
SERVICE RATING D

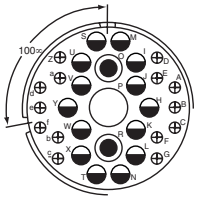
31 CONTACTS



LAYOUT **32-31**
OF CONTACTS 31-#16
SERIES ● ✜
SERVICE RATING A

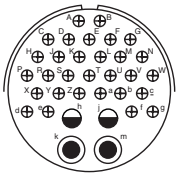


LAYOUT **36-9**
OF CONTACTS 14-#16; 14-#12; 2-#8; 1-#4
SERIES ● ✚ ✦
SERVICE RATING A



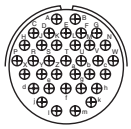
LAYOUT **36-18**
OF CONTACTS 14-#16; 14-#12; 2-#8; 1-#4
SERIES ● ✜ ✦
SERVICE RATING A

34 CONTACTS

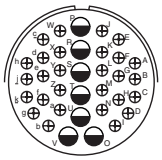


LAYOUT **36-20**
OF CONTACTS 30-#16; 2-#12; 2-#8
SERIES ● ✜
SERVICE RATING A

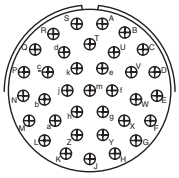
35 CONTACTS



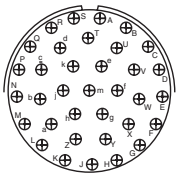
LAYOUT **28-15***
OF CONTACTS 35-#16
SERIES ● ✚ ✦ 🌡
SERVICE RATING A



LAYOUT **32-7***
OF CONTACTS 28-#16; 7-#12
SERIES ● ✚ ✦
SERVICE RATING I(A, B, h, j); A(balance)

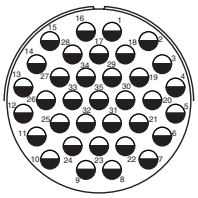


LAYOUT **36-15**
OF CONTACTS 35-#16
SERIES ● ✚ ✦ 🌡
SERVICE RATING D(M); A(balance)



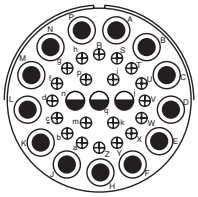
LAYOUT **36-85**
OF CONTACTS 35-#16 for #12 wire
SERIES ● ✜
SERVICE RATING D(M); A(balance)

35 CONTACTS



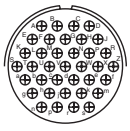
LAYOUT **40-35**
OF CONTACTS 35-#12
SERIES ● ✜
SERVICE RATING D

36 CONTACTS



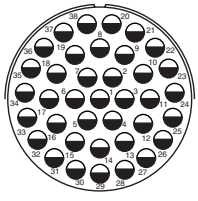
LAYOUT **40-64**
OF CONTACTS 13-#8 (coax) RG-124/U
20-#16; 3-#12
SERIES ● ✜
SERVICE RATING I (coax)

37 CONTACTS



LAYOUT **28-21***
OF CONTACTS 37-#16
SERIES ● ✚ ✦ 🌡
SERVICE RATING A

38 CONTACTS



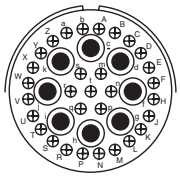
LAYOUT **40-AG**
OF CONTACTS 38-#12
SERIES ● ✜
SERVICE RATING A

Layouts by Number of Contacts

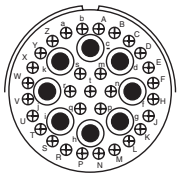
CONTACT LEGEND ⊕=16 ◒=12 ◉=8 ◯=4 ⊗=0
Mating face view of pin inserts

SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97)
P-lok (▼) **Thermocouple** (🌡) ***most popular**

39 CONTACTS

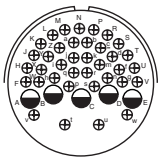


LAYOUT **36-54**
OF CONTACTS 31-#16; 8-#8
SERIES ● ✣
SERVICE RATING A



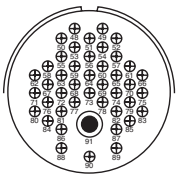
36-55
8-#8 for #6 wire; 31-#16
● ✣
A

42 CONTACTS



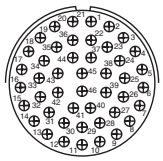
32-53
37-#16; 5-#12
● ✣
E(T, U) I(balance)

44 CONTACTS



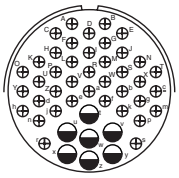
36-74
8-#1 (coax); RG187/U
43-#16
● ✣
A (coax)

46 CONTACTS

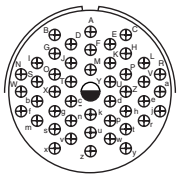


32-73
46-#16
● ✣
A

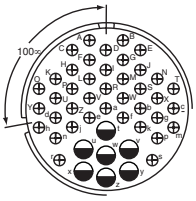
47 CONTACTS



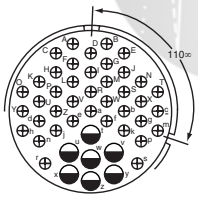
36-7*
40-#16; 7-#12
● ✚ ✦ 🌡
A



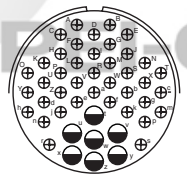
36-8
46-#16; 1-#12
● ✚ ✦ 🌡
A



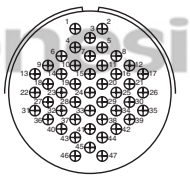
36-16
40-#16; 7-#12
● ✣ ✦
A



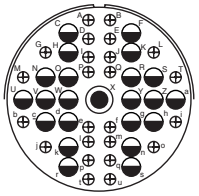
36-17
40-#16; 7-#12
● ✣ ✦
A



36-60
7-#12 for #10 wire; 40-#16
● ✣
A

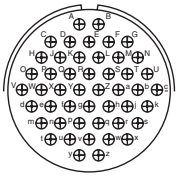


36-76
47-#16
● ✣
A

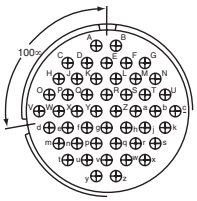


40-9
24-#16; 22-#12; 1-#8
● ✚
A

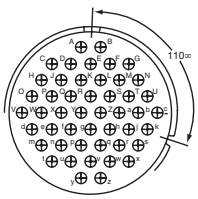
48 CONTACTS



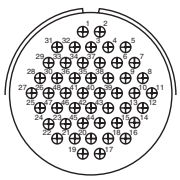
36-10*
48-#16
● ✚ ✦
A



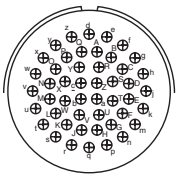
36-11
48-#16
● ✚ ✦
A



36-12
48-#16
● ✚ ✦
A



36-75
48-#16 for #14 wire
● ✣
A



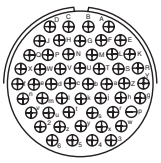
36-AF
48-#16
● ✣
A

Layouts by Number of Contacts

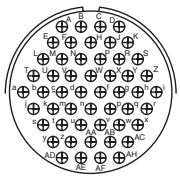
CONTACT LEGEND ⊕=16 ◒=12 ◉=8 ○=4 ⊗=0
Mating face view of pin inserts

SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97)
P-lok (▼) **Thermocouple** (🌡) ***most popular**

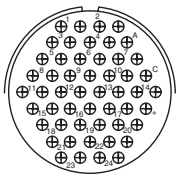
52 CONTACTS



LAYOUT 32-414
OF CONTACTS 52-#16
SERIES ✦
SERVICE RATING A

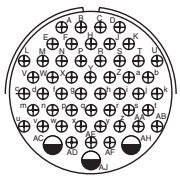


LAYOUT 36-52
OF CONTACTS 52-#16
SERIES ● ✣ 🌡
SERVICE RATING A

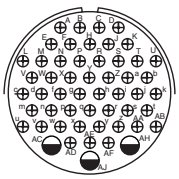


LAYOUT 36-403
OF CONTACTS 52-#16
SERIES ✦
SERVICE RATING A

53 CONTACTS

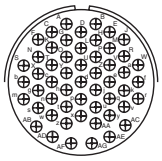


LAYOUT 36-59
OF CONTACTS 3-#12 for #10 wire; 50-#16
SERIES ● ✣
SERVICE RATING A

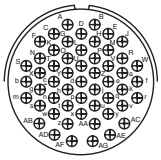


LAYOUT 36-71
OF CONTACTS 50-#16; 3-#12
SERIES ● ✣
SERVICE RATING A

54 CONTACTS

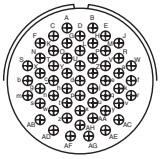


LAYOUT 32-22
OF CONTACTS 54-#16
SERIES ● ✣
SERVICE RATING A



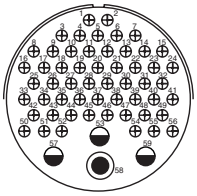
LAYOUT 32-64
OF CONTACTS 54-#16
SERIES ● ✣
SERVICE RATING I

55 CONTACTS



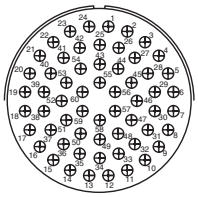
LAYOUT 32-AF
OF CONTACTS 55-#16
SERIES ● ✣
SERVICE RATING A

59 CONTACTS

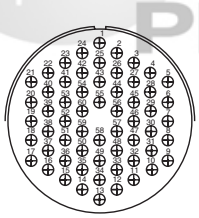


LAYOUT 40-61
OF CONTACTS 55-#16; 3-#12; 1-8
SERIES ● ✣
SERVICE RATING A

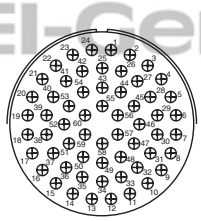
60 CONTACTS



LAYOUT 40-53
OF CONTACTS 60-#16
SERIES ● ✣ 🌡
SERVICE RATING A

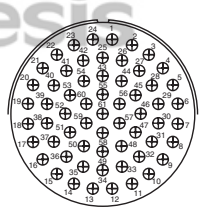


LAYOUT 40-62
OF CONTACTS 60-#16
SERIES ● ✣
SERVICE RATING A

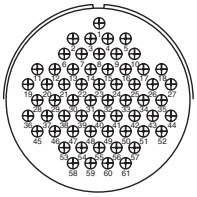


LAYOUT 40-85
OF CONTACTS 60-#16 for #14 wire
SERIES ● ✣
SERVICE RATING A

61 CONTACTS

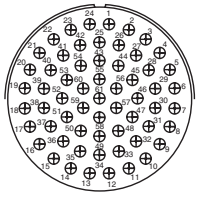


LAYOUT 40-63
OF CONTACTS 61-#16 for #14 wire
SERIES ● ✣
SERVICE RATING A



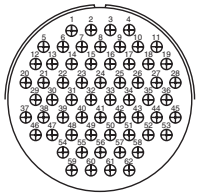
LAYOUT 40-70
OF CONTACTS 61-#16
SERIES ● ✣
SERVICE RATING A

61 CONTACTS

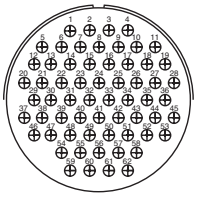


LAYOUT 40-73
OF CONTACTS 61-#16
SERIES ● ✣
SERVICE RATING A

62 CONTACTS

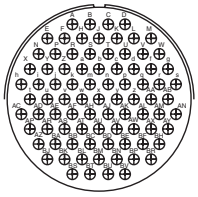


LAYOUT 40-81
OF CONTACTS 62-#16 for #14 wire
SERIES ● ✣
SERVICE RATING A



LAYOUT 40-82
OF CONTACTS 62-#16
SERIES ● ✣
SERVICE RATING A

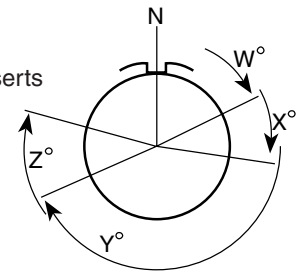
85 CONTACTS



LAYOUT 40-56
OF CONTACTS 85-#16
SERIES ● ✚ 🌡
SERVICE RATING A

Layouts by Shell Size

Mating Face view of pin inserts



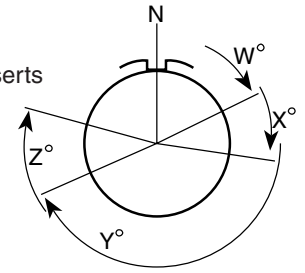
Alternate Insert Position (Rotation)

SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97) **P-lok** (▼) **Thermocouple** (🌡)
CONTACT METALLURGY KEY: **Alumel** (Al.) **Chromel** (Ch.) **Constantan** (Con.) **Copper** (Cu) **Iron** (Ir.)

	SERIES					CONTACTS SIZES							DEGREES OF ROTATION				
LAYOUT	97	AIT	AIB	P-lok	TOTAL	20	16	12	8	4	0	🌡	W	X	Y	Z	SERVICE RATING
8S-1	✦	✚			1		1						-	-	-	-	A
10S-2		✚			1		1						-	-	-	-	A
10SL-3	✦	✚	●		3		3						-	-	-	-	A
10SL-4	✦	✚	●		2		2						-	-	-	-	A
10SL-51		✣	●		2		2					🌡	10SL-4 45º A=Ir.; B=Con.				
10SL-52		✣	●		2		2					🌡	10SL-4 45º A=Cu; B=Con.				
10SL-53		✣	●		2		2					🌡	10SL-4 45º A=Al.; B=Ch.				
10SL-54		✣	●		3		3					🌡	10SL-3 A=Ir.; B=Con.; C=Cu				
10SL-55		✣	●		3		3					🌡	10SL-3 A=Al.; B=Ch.; C=Cu				
10SL-56		✣	●		2		2					🌡	10SL-4 A=Al.; B=Ch.				
10SL-57		✣	●		2		2					🌡	10SL-4 A=Ch.; B=Con.				
10SL-58		✣	●		3		3					🌡	10SL-3 A=Ch.; B=Al.; C=Cu				
10SL-59		✣	●		2		2					🌡	10SL-4 A=Ch.; B=Al.				
10SL-60		✣	●		2		2					🌡	10SL-4 A=Ir.; B=Con.				
10SL-61		✣	●		2		2					🌡	10SL-4 A=Cu; B=Con.				
10SL-62		✣	●		3		3					🌡	10SL-3 A=Cu; B=Al.; C=Ir.				
10SL-63		✣	●		3		3					🌡	10SL-3 A, C=Con.; B=Ch.				
10SL-64		✣	●		3		3					🌡	10SL-3 A, C=Ch.; B=Al.				
12S-1	✦	✣	●		2		2						12S-3 100º				A
12S-2	✦	✣	●		2		2						12S-3 250º				A
12S-3	✦	✚			2		2						70	145	215	290	A
12S-4		✚			1		1						-	-	-	-	D
12S-51		✣	●		2		2					🌡	12S-3 315º A=Ch.; B=Al.				
12S-54		✣	●		2		2					🌡	12S-3 315º A = Ir.; B=Con.				
12S-55		✣	●		2		2					🌡	12S-3 45º A=Cu; B=Con.				
12S-56		✣	●		2		2					🌡	12S-3 A=Al.; B=Ch.				
12S-57		✣	●		2		2					🌡	12S-3 60º A=Ch.; B=Al.				
12S-58		✣	●		2		2					🌡	12S-3 120º A=Ir.; B=Con.				
12S-59		✣	●		2		2					🌡	12S-3 A=Ir.; B=Con.				
12S-60		✣	●		2		2					🌡	12S-3 A=Cu; B=Con.				
12S-61		✣	●		2		2					🌡	12S-3 A=Ch.; B=Con.				
12S-62		✣	●		2		2					🌡	12S-3 A=Ch.; B=Al.				
12SL844	✦				4		4						-	-	-	-	I
12-5	✦	✚			1			1					-	-	-	-	D
14S-1	✦	✚			3		3						-	-	-	-	A
14S-2	✦	✚	●		4		4						-	120	240	-	I
14S-4	✦	✣	●		1		1						-	-	-		D
14S-5	✦	✚	●		5		5						-	110	-	-	I
14S-6	✦	✚	●		6		6						90	-	-	-	I
14S-7	✦	✚	●		3		3						90	180	270	-	A

Layouts by Shell Size

Mating Face view of pin inserts



Alternate Insert Position (Rotation)

SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97) **P-lok** (▼) **Thermocouple** (🌡)
CONTACT METALLURGY KEY: **Alumel** (Al.) **Chromel** (Ch.) **Constantan** (Con.) **Copper** (Cu) **Iron** (Ir.)

LAYOUT	SERIES 97	AIT	AIB	P-lok	TOTAL	CONTACTS SIZES 20	16	12	8	4	0	🌡	DEGREES OF ROTATION W	X	Y	Z	SERVICE RATING
14S-9	✦	✚	●		2		2						70	145	215	290	A
14S-10	✦	✣	●		4		4						14S-2 100º				I
14S-11	✦	✣	●		4		4						14S-2 250°				I
14S-12	✦	✣	●		3		3						14S-1 100° X & Z are valid. Call for details.				A
14S-13	✦	✣	●		3		3						14S-1 260°				A
14S-14	✦	✣	●		4		4						14S-2 100°				I
14S-51		✣	●		2		2					🌡	14S-9 90° A=Al.; B=Ch.				
14S-52		✣	●		4		4					🌡	14S-2 45° A, B=Cu; C=Al.; D=Ch.				
14S-53		✣	●		2		2					🌡	14S-9 90° A=Ir.; B=Con.				
14S-54		✣	●		6		6					🌡	14S-6 45° A, C, E=Ir.; B, D, F=Con.				
14S-55		✣	●		4		4					🌡	14S-2 45° A, C=Ir.; B, D=Con.				
14S-56		✣	●		4		4					🌡	14S-2 45° A=Ir.; B=Con.; C, D=Cu				
14S-57		✣	●		4		4					🌡	14S-2 45° A, C=Al.; B, D=Ch.				
14S-58		✣	●		3		3					🌡	14S-7 45° A=Al.; B=Ch.; C=Cu				
14S-59		✣	●		2		2					🌡	14S-9 90° A=Cu; B=Con.				
14S-60		✣	●		2		2					🌡	14S-9 A=Al.; B=Ch.				
14S-61		✣	●		6		6					🌡	14S-6 45° A=Al.; B=Ch.; C=Ir.; D=Con.; E, F=Cu				
14S-63		✣	●		6		6					🌡	14S-6 A, C= Al.; B, D=Ch.; E=Ir.; F=Con.				
14S-64		✣	●		4		4					🌡	14S-2 A, C=Con.; B, D=Cu				
14S-65		✣	●		6		6					🌡	14S-6 A, C, E= Cu; B, D, F=Con.				
14S-67		✣	●		6		6					🌡	14S-6 A=Al.; B=Ch.; Balance=Cu				
14S-68		✣	●		4		4					🌡	14S-2 45° A=Ch.; B=Con.; C, D=Cu				
14S-69		✣	●		3		3					🌡	14S-7 A=Con.; B=Ch.; C=Cu				
14S-70		✣	●		4		4					🌡	14S-2 A, D=Ch.; B, C=Al.				
14S-71		✣	●		4		4					🌡	14S-2 A, B, D=Cu; C=Con.				
14S-72		✣	●		2		2					🌡	14S-9 A=Con.; B=Cu				
14S-73		✣	●		4		4					🌡	14S-2 A, B=Cu; C=Al.; D=Ch.				
14S-74		✣	●		4		4					🌡	14S-2 A, B=Ch.; C, D=Al.				
14S-75		✣	●		4		4					🌡	14S-2 A, B=Cu; C, D=Con.				
14S-76		✣	●		4		4					🌡	14S-2 A, C=Al.; B, D=Ch.				
14S-77		✣	●		4		4					🌡	14S-2 A, D=Al.; B, C=Ch.				
14S-78		✣	●		2		2					🌡	14S-9 A=Ch.; B=Al.				
14SA7		✣	●		7		7						-	-	-	-	A
14-3		✚			1				1				-	-	-	-	A
16S-1	✦	✚	●		7		7						80	-	-	280	A
16S-3		✚			1		1						-	-	-	-	B
16S-4	✦	✚	●		2		2						35	110	250	325	D
16S-5	✦	✚	●		3		3						70	145	215	290	A
16S-6	✦	✣	●		3		3						90	180	270	-	A

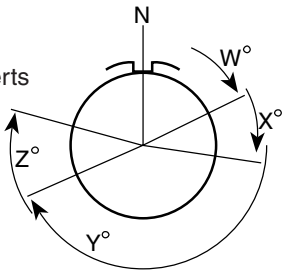
Layouts by Shell Size

SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✜=non QPL) **97** (✦=97) **P-lok** (▼) **Thermocouple** (🌡)
CONTACT METALLURGY KEY: **Alumel** (Al.) **Chromel** (Ch.) **Constantan** (Con.) **Copper** (Cu) **Iron** (Ir.)

LAYOUT	SERIES 97	AIT	AIB	P-lok	TOTAL	CONTACTS SIZES 20	16	12	8	4	0	🌡	DEGREES OF ROTATION W	X	Y	Z	SERVICE RATING
16S-8	✦	✚	●		5		5						-	170	265	-	A
16S-14	✦	✜	●		3		3						16S-4 110°				A
16S-15	✦	✜	●		2		2						16S-5 100°				D
16S-16	✦	✜	●		2		2						16S-4 250°				D
16S-17	✦	✜	●		3		3						16S-5 250°				A
16S-52		✜	●		2		2					🌡	16S-4 A=Ch.; B= Al.				
16S-54		✜	●		7		7					🌡	16S-1 A=Al.; B=C; Balance=Cu				
16S-55		✜	●		7		7					🌡	16S-1 A=Con.; Balance=Cu				
16SA18	✦	✜	●		7		7						16S-1 100°				A
16SA19	✦	✜	●		7		7						16S-1 260°				A
16SA20	✦	✜	●		7		7						16S-1 110°				A
16SA21	✦	✜	●		7		7						16S-1 250°				A
16-2		✚	●		1			1					-	-	-	-	E
16-7	✦	✚	●	▼	3		2		1				80	110	250	280	A
16-9	✦	✚	●	▼	4		2	2					35	110	250	325	A
16-10	✦	✚	●	▼	3			3					90	180	270	-	A
16-11	✦	✚	●	▼	2			2					35	110	250	325	A
16-12	✦	✚	●		1					1			-	-	-	-	A
16-13	✦	✚	●	▼	2			2				🌡	35	110	250	325	A=Ir.; B=Con.
16-52		✜	●		2			2				🌡	16-11 90° A=Al.; B=Ch.				
16-53		✜	●		4		2	2				🌡	16-9 70° A=Al.; C=Ch.; B, D=Cu				
16-55		✜	●		1			3				🌡	16-10 45° A=Al.; B=Ch.; C=Cu				
16-56		✜	●		2			2				🌡	16-13 90° A=Con.; B=Cu				
16-57		✜	●		3			3				🌡	16-10 A=Al.; B=Cu; C=Ch.				
16-58		✜	●		3			3				🌡	16-10 A=Con.; B, C=Cu				
16-59		✜	●		4			4					-	-	-	-	A
16-60		✜	●		2			2				🌡	16-13 A=Al.; B=Ch.				
16-62		✜	●		2			2				🌡	16-11 A=Con.; B=Cu				
18A31	✦	✜	●		10		10						18-1 110°				A(B,C,F,G) I(all others)
18-1	✦	✚	●	▼	10		10						70	145	215	290	A(B,C,F,G) I(all others)
18-3	✦	✚	●	▼	2			2					35	110	250	325	D
18-4	✦	✚	●		4		4						35	110	250	325	D
18-5	✦	✚	●	▼	3		1	2					80	110	250	280	D
18-6		✚	●		1					1			-	-	-	-	D
18-7		✜	●		1				1				-	-	-	-	B
18-8	✦	✚	●	▼	8		7	1					70	-	-	290	A
18-9	✦	✚	●	▼	7		5	2					80	110	250	280	I
18-10	✦	✚	●	▼	4			4					-	120	240	-	A
18-11	✦	✚	●	▼	5			5					-	170	265	-	A
18-12	✦	✚	●		6		6						80	-	-	280	A
18-13	✦	✚	●	▼	4			3	1				80	110	250	280	A
18-14		✜		▼	2		1			1			80	110	250	280	A
18-15	✦	✚	●		4			4				🌡	-	120	240	-	A,C=Ir. B,D=Con.
18-16	✦	✜	●		1			1					-	-	-	-	C
18-17	✦	✜	●		7		5	2					18-9 100°				I
18-18	✦	✜	●		7		5	2					18-9 250°				I
18-19	✦	✜	●	▼	10		10						80	120	240	-	A
18-20	✦	✜	●		5		5						90	180	270	-	A
18-22	✦	✜	●	▼	3		3						70	145	215	290	D
18-23	✦	✜	●		10		10						18-1 100°				A(B,C,F,G) I(all others)

Layouts by Shell Size

Mating Face view of pin inserts



Alternate Insert Position (Rotation)

SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97) **P-lok** (▼) **Thermocouple** (🌡)
CONTACT METALLURGY KEY: **Alumel** (Al.) **Chromel** (Ch.) **Constantan** (Con.) **Copper** (Cu) **Iron** (Ir.)

LAYOUT	SERIES 97	AIT	AIB	P-lok	TOTAL	CONTACTS SIZES 20	16	12	8	4	0	🌡	DEGREES OF ROTATION W	X	Y	Z	SERVICE RATING
18-24	✦	✣	●		10		10						18-1 250°				A(B,C,F,G) I(all others)
18-25	✦	✣	●		2			2					18-3 100°				D
18-26	✦	✣	●		2			2					18-3 250°				D
18-27	✦	✣	●		3		1	2					18-5 100°				D
18-28	✦	✣	●		3		1	2					18-5 250°				D
18-29	✦	✣	●	▼	5		5						90	180	270	-	A
18-30	✦	✣	●		5		5						18-20 110°				A
18-31	✦	✣	●		5		5						18-20 260°				A
18-420	✦				1 HV								24 KVdc, 17 KVac				
18-51		✣	●		6		6					🌡	18-12 A=Ir.; B, E=Con.; D=Cu; C, F=Dummy				
18-52		✣	●		5			5				🌡	18-11 A=Ir.; B=Con.; C=Ch.; D=Al.; E=Dummy				
18-53		✣	●		6		6					🌡	18-12 A, D=Ir.; B, E=Con.; C, F=Dummy				
18-54		✣	●		4			4				🌡	18-15 A, C=Al.; B, D=Ch.				
18-56		✣	●		10		10					🌡	18-1 45° A, C, E, G, I=Ir.; B, D, F, H, J=Con.				
18-57		✣	●		6		6					🌡	18-12 45° A, C, E=Al.; B, D, F=Ch.				
18-59		✣	●		6		6					🌡	18-12 45° A, C=Ir.; B, E, F=Con.; D=Cu				
18-60		✣	●		5			5				🌡	18-11 45° A, D=Al.; B, C,=Ch.; E=Cu				
18-61		✣	●		6		6					🌡	18-12 A, C=Ir.; B, D=Con.; E=Ch.; F=Al.				
18-62		✣	●		6		6					🌡	18-12 A, B, C=Ir.; D, E, F=Con.				
18-63		✣	●		4			4				🌡	18-15 A, C=Con.; B, D=Cu				
18-65		✣	●		6		6					🌡	18-12 A=Ir.; B=Con.; Balance=Cu				
18-66		✣	●		10		10					🌡	18-1 A, C, E, G, I=Cu; B, D, F, H, J=Con.				
18-67		✣	●		6		6					🌡	18-12 A, C, E=Cu; B, D, F=Con.				
18-68		✣	●		5			5				🌡	18-11 A, D=Al.; B, C=Ch.; E=Cu				
18-69		✣	●		10		10					🌡	18-1 A=Al.; B=Ch.; Balance=Cu				
18-70		✣	●		5			5				🌡	18-11 A=Ir.; B=Con.; C=Ch.; D=Al.; E=Cu				
18-71		✣	●		4			4				🌡	18-15 A=Con.; Balance=Cu				
18-72		✣	●		4			4				🌡	18-15 D=Con.; Balance=Cu				
18-73		✣	●		7		5	2				🌡	18-9 A=Al.; D=Ch.; Balance=Cu				
18-74		✣	●		6		6					🌡	18-12 A=Ch.; B=Al.; D=Ir.; E=Cu; C, F=Con.				
20A16	✦				13		13						20-11 182°				I
20A37	✦				4			4					20-4 250°				D
20-2		✣	●		1						1		-	-	-	-	D
20-3	✦	✣	●	▼	3			3					70	145	215	290	D
20-4	✦	✚	●	▼	4			4					45	110	250	-	D
20-6	✦	✣	●	▼	3		3						70	145	215	290	D
20-7	✦	✚	●	▼	8		8						80	110	250	280	A(B,C,F,G) I(all others)
20-8	✦	✚	●		6		4		2				80	110	250	280	I
20-11	✦	✚	●	▼	13		13						-	-	-	-	I

Layouts by Shell Size

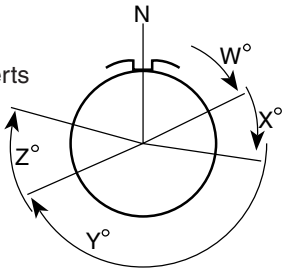
SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97) **P-lok** (▼) **Thermocouple** (🌡)
CONTACT METALLURGY KEY: **Alumel** (Al.) **Chromel** (Ch.) **Constantan** (Con.) **Copper** (Cu) **Iron** (Ir.)

LAYOUT	SERIES 97	AIT	AIB	P-lok	TOTAL	CONTACTS SIZES 20	16	12	8	4	0	🌡	DEGREES OF ROTATION W	X	Y	Z	SERVICE RATING
20-14	✦	✚	●		5			3	2				80	110	250	280	A
20-15	✦	✚	●	▼	7			7					80	-	-	280	A
20-16	✦	✚	●	▼	9		7	2					80	110	250	280	A
20-17	✦	✣	●	▼	6		1	5					90	180	270	-	A
20-18	✦	✚	●	▼	9		6	3					35	110	250	325	A
20-19	✦	✚	●	▼	3				3				90	180	270	-	A
20-20		✣	●		4			3		1			80	110	250	280	A
20-21	✦	✚	●	▼	9		8	1					35	110	250	325	A
20-22		✚	●		6		3		3				80	110	250	280	A
20-23	✦	✚	●	▼	2				2				35	110	250	325	A
20-24	✦	✚	●		4		2		2				35	110	250	325	A
20-25	✦	✣	●		13		13						20-11 100°				I
20-27	✦	✚	●	▼	14		14						35	110	250	325	A
20-29	✦	✚	●	▼	17		17						80	-	-	280	A
20-30	✦	✚	●		13		13						20-11 250°				I
20-32	✦	✣	●		8		8						20-7 260°				A(B,C,F,G) I(all others)
20-33	✦	✚	●	▼	11		11						-	-	-	280	A
20-51		✣	●		3				3				-	-	-	-	A
20-52		✣	●		4			4				🌡	20-4 315° A=Ir.; B=Con.; C=Ch.; D=Al.				
20-56		✣	●		8		8					🌡	20-7 45° A, B, G, H=Ir.; C, D, E, F=Con.				
20-57		✣	●		7‡			7‡					-	-	-	-	A
20-58		✣	●		10		5	5					-	-	-	-	A
20-59		✣	●		3‡				3				-	-	-	-	A
20-60		✣	●		8		8					🌡	20-7 45° D=Ch.; E=Al.; Balance=Cu				
20-61		✣	●		17		17					🌡	20-29 45° A, B, M=Cu; Balance=Con.				
20-62		✣	●		7			7				🌡	20-15 80° A, C, E=Al.; B, D, F=Ch.; G=Cu				
20-64		✣	●		14		14					🌡	20-27 A=Al.; C=Ch.; Balance=Cu				
20-65		✣	●		14		14					🌡	20-27 A, B, C, D, E, F, G=Ir.; H, I, J, K, L, M, N=Con.				
20-66		✣	●		6‡		5‡	1					-	-	-	-	A
20-67		✣	●		9		7	2				🌡	20-16 H=Al.; I=Ch.; Balance=Cu				
20-68		✣	●		8		8					🌡	20-7 A, B, G, H=Con.; C, D, E, F=Cu				
20-69		✣	●		14		14					🌡	20-27 A, B, C, D, E, F, G=Cu; H, I, J, K, L, M, N=Con.				
20-70		✣	●		17		17					🌡	20-29 A, C, E, G, J, L, N, R, T=Ir.; B, D, F, H, K, M, P, S=Con.				
20-71		✣	●		17		17					🌡	20-29 S=Al.; R=Ch.; Balance=Cu				
20-74		✣	●		17		17					🌡	20-29 A, C, E, G, J, L, N, R=Ir.; B, D, F, H, K, M, P, S=Con.;T=Cu				
20-75		✣	●		7			7				🌡	20-15 G=Al.; Balance=Ch.				
20-77		✣	●		9		7	2				🌡	20-16 A=Con.; Balance=Cu				
20-79		✣	●		8		7	1					-	-	-	-	A/D
20-80		✣	●		14		14					🌡	20-27 A, C, E, G, I, K, M=Cu; B, D, F, H, J, L, N=Con.				
20-81		✣	●		14		14					🌡	20-27 A, C, E, G, I, K, M=Ch.; B, D, F, H, J, L, N=Al.				
20-82		✣	●		17		17					🌡	20-29 A, C, E, G, J, L, N, R=Al.; B, D, F, H, K, M, P, S=Ch.; T=Cu				
22-1	✦	✚	●	▼	2				2				35	110	250	325	D
22-2	✦	✚	●	▼	3				3				70	145	215	290	D
22-4	✦	✚	●		4			2	2				35	110	250	325	A
22-5	✦	✚	●	▼	6		4	2					35	110	250	325	D
22-6		✚	●		3		1		2				80	110	250	280	D
22-7		✚	●		1						1			-	-	-	- E
22-8	✦	✣	●	▼	2			2					35	110	250	325	E
22-9	✦	✚	●	▼	3			3					70	145	215	290	E

‡ = Reduced contact crimp pot

Layouts by Shell Size

Mating Face view of pin inserts



Alternate Insert Position (Rotation)

SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97) **P-lok** (▼) **Thermocouple** (🌡)
CONTACT METALLURGY KEY: **Alumel** (Al.) **Chromel** (Ch.) **Constantan** (Con.) **Copper** (Cu) **Iron** (Ir.)

LAYOUT	SERIES 97	AIT	AIB	P-lok	TOTAL	CONTACTS SIZES 20	16	12	8	4	0	🌡	DEGREES OF ROTATION W	X	Y	Z	SERVICE RATING
22-10	✦	✚	●	▼	4		4						35	110	250	325	E
22-11	✦	✚	●	▼	2		2						35	110	250	325	B
22-12	✦	✣	●		5		3		2				80	110	250	280	A
22-13	✦	✣	●	▼	5		1	4					35	110	250	325	A(A-D) D(E)
22-14	✦	✚	●	▼	19		19						80	110	250	280	A
22-15	✦	✚	●	▼	6		1	5					80	110	250	280	A(A-C, E, F) E(D)
22-16	✦	✚	●	▼	9		6	3					80	110	250	280	A
22-17		✣	●		9		8	1					80	110	250	280	D(A) A(all others)
22-18	✦	✚	●	▼	8		8						80	110	250	280	A(C-E) D(all others)
22-19	✦	✚	●	▼	14		14						80	110	250	280	A
22-20	✦	✣	●	▼	9		9						35	110	250	325	A
22-21		✣	●		3		2				1		80	110	250	280	A
22-22	✦	✚	●		4				4				-	110	250	-	A
22-23	✦	✚	●	▼	8			8					35	-	250	-	D(H) A(all others)
22-24		✣	●		6		4	2					80	110	250	280	D(C, D, E) A(A, B, F)
22-26	✦				7		5	2									
22-27	✦	✚	●	▼	9		8		1				80	-	250	280	D(J) A(all others)
22-28	✦	✣	●	▼	7			7					80	-	-	280	A
22-30	✦	✣	●		19		19						22-14	100°			A
22-31	✦	✣	●		2		2						22-11	100°			B
22-32	✦	✣	●		6		4	2					22-5	260°			D
22-34	✦	✚		▼	5		2	3					80	110	250	280	D
22-57		✣	●		19		19					🌡	22-14	45°	A, C, E, G, J, L, N, R=Ir.; B, D, F, H, K, M, P, S=Con.; T, U, V=Cu			
22-60		✣	●		19		19					🌡	22-14	45°	U=Al.; N=Ch.; Balance=Cu		
22-62		✣	●		8			8				🌡	22-23	60°	A, B, F, G=Al.; C, D, E, H=Ch.		
22-63		✣	●		12		8	4					-	-	-	-	A
22-65		✣	●		8‡		8‡						-	-	-	-	A/D
22-68		✣	●		14		24					🌡	22-19	45°	A, C, E, G, J, L, M=Ir.; B, D, F, H, K, P, N=Con.		
22-69		✣	●		14		19					🌡	22-19	45°	A, C, E, G, J, L, M=Cu; B, D, F, H, K, P, N=Con.		
22-70		✣	●		13		5	8					-	-	-	-	A
22-71		✣	●		19		4	2				🌡	22-14	V=Al.; U=Ch.; Balance=Cu			
22-72		✣	●		6		4	2				🌡	22-5	B=Al.; E=Ch.; Balance=Cu			
22-73		✣	●		6			8				🌡	22-5	E=Al.; B=Ch.; Balance=Cu			
22-74		✣	●		8			8				🌡	22-23	A, C, E, G=Ir.; B, D, F, H=Con.			
22-75		✣	●		8							🌡	22-23	A=Al.; B, D, G, H=Cu; C=Ch.; E=Ir.; F=Con.			
22-76		✣	●		21							🌡		W=Con.; Balance=Cu			
22-77		✣	●		14							🌡	22-19	B, D, F, H, J, K, M, P=Cu; A, E, L=Ir.; C, G, N=Con.			
22-78		✣	●		19							🌡	22-14	A, C, E, G, H, K, M, P, R, T=Con.; Balance=Cu			

‡ = Reduced contact crimp pot

Layouts by Shell Size

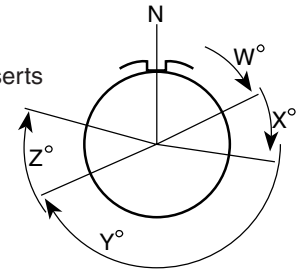
SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97) **P-lok** (▼) **Thermocouple** (🌡)
CONTACT METALLURGY KEY: **Alumel** (Al.) **Chromel** (Ch.) **Constantan** (Con.) **Copper** (Cu) **Iron** (Ir.)

LAYOUT	SERIES 97	AIT	AIB	P-lok	TOTAL	CONTACTS SIZES 20	16	12	8	4	0	🌡	DEGREES OF ROTATION W	X	Y	Z	SERVICE RATING
22-79		✣	●		4							🌡	22-10 A, C,=Con.; B, D=Cu				
22-80			●		3‡				3‡				-	-	-	-	A
24A35		✣	●		16		14	2					24-7 100°				A
24-2	✦	✚	●	▼	7			7					80	-	-	280	D
24-3		✣	●		7		5	2					80	110	250	280	D
24-5	✦	✚	●	▼	16		16						80	110	250	280	A
24-6	✦	✣	●	▼	8			8					80	110	250	280	D(A,G,H) A(all others)
24-7	✦	✚	●	▼	16		14	2					80	110	250	280	A
24-9	✦	✚	●	▼	2					2			35	110	250	325	A
24-10	✦	✚	●	▼	7				7				80	-	-	280	A
24-11	✦	✚	●	▼	9			6	3				35	110	250	325	A
24-12	✦	✚	●		5			3		2			80	110	250	280	A
24-15		✣	●		16		16						24-5 100°				A
24-16	✦	✣	●	▼	7		3	3	1				80	110	250	280	D(A,B, F, G) A(C, D, E)
24-17		✣	●		5		3	2					80	110	250	280	D
24-19	✦				12		12						-	-	-	-	A
24-20	✦	✚	●	▼	11		9	2					80	110	250	280	D
24-21	✦	✚	●	▼	10		9		1				80	110	250	280	D
24-22	✦	✚	●		4				4				45	110	250	-	D
24-24	✦	✣	●		16		16						24-5 250°				A
24-25	✦	✣	●		8			8					24-6 100°				D(A, G, H) A(all others)
24-26	✦	✣	●		8			8					24-6 250°				D(A, G, H) A(all others)
24-27	✦	✚	●	▼	7		7						80	-	-	280	E
24-28	✦	✚	●	▼	24		24						80	110	250	280	I
24-51		✣	●		5				5				-	-	-	-	A
24-52		✣	●		1 HV			1					30 KVdc, 21 KVac				
24-53		✣	●		5				5				-	-	-	-	A
24-56		✣	●		11		9	2				🌡	24-20 45° E=Al.; F=Ch.; Balance=Cu				
24-57		✣	●		24		24					🌡	24-28 45° A, C, J, V, Y, W, K, E, H, U, S, M=Ch.; Balance=Al.				
24-58		✣	●		13		7	3	3				-	-	-	-	A
24-59		✣	●		14		7	7					-	-	-	-	A
24-60		✣	●		7‡				7‡				-	-	-	-	A
24-62		✣	●		24		24					🌡	24-28 A, C, E, G=Ir.; B, D, F, H=Con.; R, T=Ch.; S, U=Al.; Balance=Cu				
24-63		✣	●		24		24 16					🌡	24-28 A, C, E, G, J, L, K, N, S, U, W, Y=Cu; B, D, F, H, Q, R, M, P, T, V, X, Z=Con.				
24-64		✣	●		16		14					🌡	24-5 A, B, C, D, E, F, G, H=Ir.; J, K, L, M, N, P, R, S=Con.				
24-65		✣	●		15		4	11					-	-	-	-	A
24-66		✣	●		7			7					-	-	-	-	D
24-67		✣	●		19			19					80	-	-	335	I
24-68		✣	●		24		14					🌡	24-28 D=Con.; Balance=Cu				
24-71		✣	●		7‡				7‡				-	-	-	-	A
24-75		✣	●		7‡				7‡				-	-	-	-	A
24-79		✣	●		5				5				-	108	-	-	A
24-80		✣	●		23		23						-	-	-	-	I
24-81		✣	●		16							🌡	24-7 A, C, E, G, I, K, M, N, P=Cu; B, D, F, H, J, L, O=Con.				
24-84		✣	●		19			19(18)					-	-	-	-	A/Coax
24-96		✣	●		28		28						-	-	-	-	I
24-AJ		✣	●		25		25						80	110	250	280	A
28-1	✦	✚	●	▼	9			6	3				80	110	250	280	D(A, E, J) A(all others)

‡ = Reduced contact crimp pot
( ) = Number of contacts that are coax

Layouts by Shell Size

Mating Face view of pin inserts



Alternate Insert Position (Rotation)

SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97) **P-lok** (▼) **Thermocouple** (🌡)
CONTACT METALLURGY KEY: **Alumel** (Al.) **Chromel** (Ch.) **Constantan** (Con.) **Copper** (Cu) **Iron** (Ir.)

LAYOUT	SERIES 97	AIT	AIB	P-lok	TOTAL	CONTACTS SIZES 20	16	12	8	4	0	🌡	DEGREES OF ROTATION W	X	Y	Z	SERVICE RATING
28-2	✦	✚	●	▼	14		12	2					35	110	250	325	D
28-3	✦	✚	●	▼	3				3				70	145	215	290	E
28-4		✣	●		9		7	2					80	110	250	280	E(G, P, S) D(all others)
28-5		✣	●		5		2	1		2			35	110	250	325	D
28-6	✦	✣	●	▼	3					3			70	145	215	290	D
28-7		✣	●		2					2			35	110	250	325	D
28-8	✦	✣	●	▼	12		10	2					80	110	250	280	E(L, M) B(D) A(all others)
28-9	✦	✚	●	▼	12		6	6					80	110	250	280	D
28-10	✦	✚	●	▼	7			3	2	2			80	110	250	280	D(G) A(all others)
28-11	✦	✚	●	▼	22		18	4					80	110	250	280	A
28-12	✦	✚	●	▼	26		26						90	180	270	-	A
28-13	✦	✣	●		26		26						28-12 100°				A
28-14		✣	●		11		11						80	110	250	280	D
28-15	✦	✚	●		35		35						80	110	250	280	A
28-16	✦	✚	●	▼	20		20						80	110	250	280	A
28-17	✦	✚	●	▼	15		15						80	110	250	280	A(A-L) B(R) D(M-P)
28-18	✦	✚	●	▼	12		12						70	145	215	290	E(M) D(G, H, J, K, L) A(A, B) I(C, D, E, F)
28-19	✦	✚	●	▼	10		6	4					80	110	250	280	A(C, E, G, J, K, L) B(H, M) D(A, B)
28-20	✦	✣	●	▼	14		4	10					80	110	250	280	A
28-21	✦	✚	●		37		37						80	110	250	280	A
28-22		✣	●		6		3			3			70	145	215	290	D
28-51		✣	●		12			12					80	135	195	-	A
28-53		✣	●		22		18	4				🌡	28-11 45° J, L=Al.; K, M=Ch.; Balance=Cu				
28-58		✣	●		14		4	10				🌡	28-20 45° A, C, E, G, K, M=Al.; B, D, F, H, L, N=Ch.; J, P=Cu				
28-59		✣	●		17		10	7					-	-	-	-	A
28-61		✣	●		37		37					🌡	28-21 45° A, C, J, Z, m, r, n, a, K, F, H, X, k, h, T, M, N, d=Ir.; Balance=Con.				
28-63		✣	●		14		4	10				🌡	28-20 45° A, C, E, G, J=Al.; B, D, F, H, P=Ch.; Balance=Cu				
28-64		✣	●		35		35					🌡	28-15 A, d=Al.; B, j=Ch.; C, D, E, F, G, N, P, R, S, H, J, K, L, M, W, X, Y, Z=Con.;Balance=Cu				
28-65		✣	●		26		26					🌡	28-12 A, C, E, G, J, L, N, R, T, V=Ir.; X, Z=Al.; B, D, F, H, K, M, P, S, U, W=Con.;Y, a=Ch.; b, d=Cu				
28-66		✣	●		16			14	2				-	-	-	-	A
28-72		✣	●		3					3(3)			-	-	-	-	Coax
28-74		✣	●		16‡		9		7‡				-	-	-	-	A
28-75		✣	●		16‡		9		7‡				-	-	-	-	A
28-79		✣	●		16		9		7				-	-	-	-	A
28-82		✣	●		6			4	2				-	-	-	-	D
28-84		✣	●		9				9				-	-	-	-	A

‡ = Reduced contact crimp pot ( ) = Number of contacts that are coax

Layouts by Shell Size

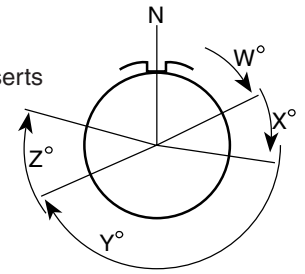
SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97) **P-lok** (▼) **Thermocouple** (🌡)
CONTACT METALLURGY KEY: **Alumel** (Al.) **Chromel** (Ch.) **Constantan** (Con.) **Copper** (Cu) **Iron** (Ir.)

LAYOUT	SERIES 97	AIT	AIB	P-lok	TOTAL	CONTACTS SIZES 20	16	12	8	4	0	🌡	DEGREES OF ROTATION W	X	Y	Z	SERVICE RATING
28-67		✣	●		20		20					🌡	28-16 U=Con.; Balance=Cu				
28-68		✣	●		35		35					🌡	28-15 45° T=Al.; U=Ch.; Balance=Cu				
28-69		✣	●		22		18	4				🌡	28-11 G=Al.; R=Ch.; Balance=Cu				
28-70		✣	●		22		18	4				🌡	28-11 A=Al.; B=Ch.; Balance=Cu				
28-77		✣	●		22		18	4				🌡	28-11 J=Con.; Balance=Cu				
28-81		✣	●		37		37					🌡	28-21 A, D, S, Z, n, s=Ir.; B, J, K, f, g, r=Con.; G, L, P, b, e, j=Al.; F, H, T, X, h, k=Ch.; Balance=Cu				
28-AY		✣	●		9		5			4			-	-	-	-	A
32A29		✣	●		23		16	2	3	2			32-6 250°				A
32A30		✣	●		5			3		2			32-1 100°				E(A) D(all others)
32-1		✚			5			3			2		80	110	250	280	E(A) D(all others)
32-2		✚	●		5		2			3			70	145	215	290	E
32-3		✚	●		9		4	2		2	1		80	110	250	280	D
32-4		✣	●		14		2	12					80	110	250	280	A(F, J, K, N) D(all others)
32-5	✦	✚	●		2						2		35	110	250	325	D
32-6	✦	✚	●		23		16	2	3	2			80	110	250	280	A
32-7	✦	✚	●		35		28	7					80	125	235	280	I(A, B, H, J) A(all others)
32-8	✦	✚	●		30		24	6					80	125	235	280	A
32-9		✣	●		14		12			2			80	110	250	280	D
32-10		✣	●		7		3		2	2			80	110	250	280	E(A, F) B(G) D(E) A(D)
32-12		✣	●		15		10	5					80	110	250	280	A(C, D, E, F, G) D(all others)
32-13		✚	●		23		18	5					80	110	250	280	D
32-15		✣	●		8			6			2		35	110	250	280	D
32-16		✣	●		23		16	2	3	2			-	-	-	-	A
32-17	✦	✚	●		4					4			45	110	250	-	D
32-19		✣	●		5			3			2		32-1 260°				E(A) D(all others)
32-20		✣	●		23		16	2	3	2			32-6 260°				A
32-22		✣	●		54		54						80	110	250	280	A
32-25		✣	●		25			25					60	125	-	-	A
32-31		✣	●		31		31						80	125	215	280	A
32-51		✣	●		30		24	6				🌡	32-8 90°M=Ch.; N= Al.; Balance=Cu				
32-52		✣	●		8			6			2		-	-	-	-	D
32-53		✣	●		42		37	5					-	-	-	-	I/E
32-55		✣	●		30		24	6				🌡	32-8 125°M, N=Ch.; O, P=Al.; Balance=Cu				
32-56		✣	●		30‡		24	6					-	-	-	-	A
32-57		✣	●		8			6			2(2)		-	-	-	-	Coax
32-58		✣	●		4					4(4)			-	-	-	-	Coax
32-60		✣	●		23		15		8(8)				-	-	-	-	A/Coax
32-62		✣	●		23		16	2	3 (2)	2			-	-	-	-	A/Coax
32-64		✣	●		54		54						-	-	-	-	I
32-68		✣	●		16		12			4(4)			65	135	225	275	A/Coax
32-73		✣	●		46		46						36	68	-	-	A
32-75		✣	●		9			2	7(7)				-	-	-	-	Coax
32-76		✣	●		19			19					80	110	250	280	A
32-79		✣	●		5				1	4			-	-	-	-	D
32-82		✣	●		16		12			4			-	-	-	-	A
32-414	✦				52		52						-	-	-	-	A

‡ = Reduced contact crimp pot
( ) = Number of contacts that are coax

Layouts by Shell Size

Mating Face view of pin inserts



Alternate Insert Position (Rotation)

SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✜=non QPL) **97** (✦=97) **P-lok** (▼) **Thermocouple** (🌡)
CONTACT METALLURGY KEY: **Alumel** (Al.) **Chromel** (Ch.) **Constantan** (Con.) **Copper** (Cu) **Iron** (Ir.)

LAYOUT	SERIES 97	AIT	AIB	P-lok	TOTAL	CONTACTS SIZES 20	16	12	8	4	0	🌡	DEGREES OF ROTATION W	X	Y	Z	SERVICE RATING
32-AF		✜	●		55		55						80	110	250	280	A
36-1	✦	✜	●		22								80	110	250	280	D
36-3		✜	●		6			3			3		70	145	215	290	D
36-4		✜	●		3						3		70	145	215	290	A(B, C) D(A)
36-5	✦	✚	●		4						4		45	120	240	-	A
36-6	✦	✚	●		6					4	2		35	110	250	325	A
36-7	✦	✚	●		47		40	7					80	110	250	280	A
36-8	✦	✚	●		47		46	1					80	110	250	280	A
36-9	✦	✚	●		31		14	14	2	1			80	125	235	280	A
36-10	✦	✚	●		48		48						80	125	235	280	A
36-11	✦	✜	●		48		48						36-10 100°				A
36-12	✦	✜	●		48		48						36-10 250°				A
36-14		✜	●		16		6	5	5				90	180	270	-	D
36-15	✦	✚	●		35		35						60	125	245	305	D(m) A(all others)
36-16		✜	●		47		40	7					36-7 100°				A
36-17		✜	●		47		40	7					36-7 250°				A
36-18		✜	●		31		14	14	2	1			36-9 100°				A
36-20		✜	●		34		30	2	2				-	-	-	-	A
36-21		✜	●		31		14	14	2	1			36-9 260°				A
36-51		✜	●		4					2	2		-	-	-	-	D
36-52		✜	●		52		52						-	-	-	-	A
36-54		✜	●		39		31		8				-	110	-	-	A
36-55		✜	●		39‡		31		8‡				-	-	-	-	A
36-59		✜	●		53‡		50	3‡					-	-	-	-	A
36-60		✜	●		47‡		40	7‡					-	-	-	-	A
36-64		✜	●		4						4(4)		-	-	-	-	Coax
36-65		✜	●		4						4(4)		-	-	-	-	Coax
36-71		✜	●		53		50	3					-	-	-	-	A
36-73		✜	●		7					7(7)			81	279	-	-	Coax
36-74		✜	●		44		44						-	-	-	-	A
36-75		✜	●		48‡		48‡						-	-	-	-	A
36-76		✜	●		47		47						-	-	-	-	A
36-77		✜	●		7					7			81	279	-	-	D
36-78		✜	●		14		2		12				85	106	254	325	A
36-79		✜	●		20			20					30	110	250	330	A
36-80		✜	●		20‡			20‡					30	110	250	330	A
36-83		✜	●		7					7(7)			81	279	-	-	Coax
36-403	✦				52		52						-	-	-	-	A
36-85		✜	●		35‡		35‡						-	-	-	-	A/D

‡ = Reduced contact crimp pot
( ) = Number of contacts that are coax

Layouts by Shell Size

SERIES KEY: **AIB** (●=GT) **AIT** (✚=MS; ✣=non QPL) **97** (✦=97) **P-lok** (▼) **Thermocouple** (🌡)
CONTACT METALLURGY KEY: **Alumel** (Al.) **Chromel** (Ch.) **Constantan** (Con.) **Copper** (Cu) **Iron** (Ir.)

LAYOUT	SERIES 97	AIT	AIB	P-lok	TOTAL	CONTACTS SIZES 20	16	12	8	4	0	🌡	DEGREES OF ROTATION W	X	Y	Z	SERVICE RATING
36-53		✣	●		47		40	7				🌡	36-7 45° u, v, w=Al.; x, y, z=Ch.; Balance=Cu				
36-56		✣	●		48		48					🌡	36-10 A, C, E, G, L, J, H, P, R, T, V, X, Z, b, d, f, h, k, q, n, m, u, w, y=Con.; Balance=Cu				
36-57		✣	●		47		40	7				🌡	36-8 W=Al.; f=Ch.; Balance=Cu				
36-58		✣	●		35		35					🌡	36-15 H=Al.; G=Ch.; Balance=Cu				
36-61		✣	●		35		35					🌡	36-15 A, C, E, J, K, L, M, N, P, R, T, V, f, X, Y, h, j, c=Con.; Balance=Cu				
36-62		✣	●		48		48					🌡	36-10 A, C, E=Al.; B, D, F=Ch.; Balance=Cu				
36-82		✣	●		52		52					🌡	36-52 v, g=Ir.; p, y, c=Con. x=Ch.; Balance=Cu				
36-AF		✣	●		48		48						-	-	-	-	A
40-1		✚	●		30		24	4					65	130	235	300	D
40-5		✣	●		5						5		33	-	-	270	A
40-9		✚	●		47		24	22	1				65	125	225	310	A
40-10		✣	●		29		16		9	4			-	-	-	-	A
40-35		✣	●		35			35					70	130	230	290	D
40-53		✣	●		60		60						80	110	250	280	A
40-56		✚	●		85		85						72	144	216	288	A
40-57		✣	●		4						4		30	150	-	-	E
40-61		✣	●		59		55	3	1				-	-	-	-	A
40-62		✚	●		60		60						-	-	-	-	A
40-63		✣	●		61‡		61‡						-	-	-	-	A
40-64		✣	●		36		20	3	13(13)				-	-	-	-	Coax
40-66		✣	●		4						4(4)		-	-	-	-	Coax
40-67		✣	●		11		1			10(10)			-	-	-	-	A/Coax
40-68		✣	●		21				21				-	-	-	-	A
40-70		✣	●		61		61						-	-	-	-	A
40-72		✣	●		11		1			10(10)			-	-	-	-	A/Coax
40-73		✣	●		61		61						-	-	-	-	A
40-74		✣	●		6			1		1(1)	4(4)		-	-	-	-	A/Coax
40-75		✣	●		5			1			4		-	-	-	-	E
40-80		✣	●		11		1			10			80	-	-	280	A
40-81		✣	●		62‡		62‡						-	-	-	-	A
40-85		✣	●		60‡		60‡						-	-	-	-	A
40-86		✣	●		4						4(4)		-	-	-	-	E/Coax
40-87		✣	●		7					7			37	74	285	322	D
40-58		✣	●		85		85					🌡	40-56 A, C, E, H, K, M, P, S, U, W, Y, a, c, f, h, j, m, p, r, t, v, x, z, AB, AD, AF, AJ, AL,AN, AP, AS, AU, AW, AY, BA, BC, BE, BH, BK, BM, BP, BS, BU=Ir.; Balance=Con.				
40-59		✣	●		85		85					🌡	40-56 B=Ch.; C=Con.; Balance=Cu				
40-77		✣	●		60		60					🌡	40-56 55, 60=Ir.; 57, 58, 59=Con.; 56=Ch.; Balance=Cu				
40-78		✣	●		60		60					🌡	40-53 50, 51=Ir.; 27, 28, 29, 31, 32, 34, 36, 37=Con.; 25, 39, 40, 41=Al.; 43,44,45, 46, 47, 48, 49, 52, 53, 54=Ch.; Balance=Cu				
40-AG		✣	●		38			38					37	74	285	322	A

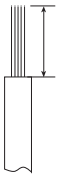
‡ = Reduced contact crimp pot
( ) = Number of contacts that are coax

Special Inserts Available

LAYOUT	SERIES 97	AIT	AIB	P-lok	TOTAL	CONTACT SIZES 20	16	12	8	4	0	🌡	DEGREES OF ROTATION W	X	Y	Z	SERVICE RATING
32-48		✣	●		48		48						80	*	*	*	I
32-59		✣	●		42		40		2				*	*	*	*	A
40-82		✣	●		62		62						*	*	*	*	A
40-AD		✣	●		8				4		4		*	*	*	*	A
40-AT		✣	●		43		18	24	1				*	*	*	*	A
40-AV		✣	●		3						3#2/0		*	*	*	*	D

* Call for details.

Pin & Socket Crimp Contacts

PIN CONTACT	SOCKET CONTACT	WIRE STRIP LENGTH	WIRE RANGE
			

CONTACT SIZE	WIRE SIZE	PART NUMBER					WIRE STRIP LENGTHS INCHES (mm)	WIRE SEALING RANGE INCHES (mm)
		PIN CONTACT		SOCKET CONTACT				
		SILVER	GOLD	SILVER	GOLD			
16S	16-18-20	**AIC16S-16P**	**AIC16S-16PG**	**AIC16S-16S**	**AIC16S-16SG**		.312 (7.9)	.090-.118 (2.3-3.0)
	12-14	AIC16S-12P	AIC16S-12PG	AIC16S-12S	AIC16S-12SG	C4		
	14-16	AIC16S-14P	AIC16S-14PG	AIC16S-14S	AIC16S-14SG	C3		
	18-20	AIC16S-20P	AIC16S-20PG	AIC16S-20S	AIC16S-20SG	C13		
	20-22	AIC16S-22P	AIC16S-22PG	AIC16S-22S	AIC16S-22SG	C14		
	22-24	AIC16S-24P	AIC16S-24PG	AIC16S-24S	AIC16S-24SG	C2		
16	16-18-20	**AIC16-16P**	**AIC16-16PG**	**AIC16-16S**	**AIC16-16SG**			
	12-14	AIC16-12P	AIC16-12PG	AIC16-12S	AIC16-12SG	C4		
	14-16	AIC16-14P	AIC16-14PG	AIC16-14S	AIC16-14SG	C3		
	18-20	AIC16-18P	AIC16-18PG	AIC16-18S	AIC16-18SG	C13		
	20-22	AIC16-20P	AIC16-20PG	AIC16-20S	AIC16-20SG	C14		
	20-24	AIC16-2024P	AIC16-2024PG	AIC16-2024S	AIC16-2024SG	C36		
	22-24	AIC16-22P	AIC16-22PG	AIC16-22S	AIC16-22SG	C2		
12	12-14	**AIC12-12P**	**AIC12-12PG**	**AIC12-12S**	**AIC12-12SG**		.312 (7.9)	.126-.177 (3.2-4.5)
	8-10	AIC12-8P	AIC12-8PG	AIC12-8S	AIC12-8SG	C5		
	10-12	AIC12-10P	AIC12-10PG	AIC12-10S	AIC12-10SG	C8		
	14-16	AIC12-14P	AIC12-14PG	AIC12-14S	AIC12-14SG	C9		
	16-18	AIC12-16P	AIC12-16PG	AIC12-16S	AIC12-16SG	C7		
	18-20	AIC12-18P	AIC12-18PG	AIC12-18S	AIC12-18SG	C6		
	20-22	AIC12-20P	AIC12-20PG	AIC12-20S	AIC12-20SG	C40		
8	8	**AIC8-8P**	**AIC8-8PG**	**AIC8-8S**	**AIC8-8SG**		.563 (14.3)	.150-.256 (3.8-6.5)
	8 High Power	-	-	AIC8-8SRAD	-			
	10-12	AIC8-10P	AIC8-10PG	AIC8-10S	AIC8-10SG	C10		
	12-14	AIC8-12P	AIC8-12PG	AIC8-12S	AIC8-12SG	C38		
4	4	**AIC4-4P**	**AIC4-4PG**	**AIC4-4S**	**AIC4-4SG**		.500 (12.7)	.279-.366 (7.1-9.3)
	4 High Power	-	-	AIC4-4SRAD	-			
	8	AIC4-8P	AIC4-8PG	AIC4-8S	AIC4-8SG	C15		
0	0	**AIC0-0P**	**AIC0-0PG**	**AIC0-0S**	**AIC0-0SG**		.750 (19.0)	394-.539 (10.0-13.7)
	0 High Power	-	-	AIC0-0SRAD	-			
	0-2	AIC0-2P	AIC0-2PG	AIC0-2S	AIC0-2SG	C11		
	4	AIC0-4P	AIC0-4PG	AIC0-4S	AIC0-4SG	C12		

Bolded items are standard crimp contacts

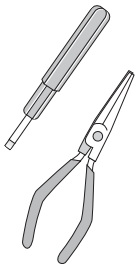
SOLDER THERMOCOUPLE CONTACTS			
	TYPE	PINS	SOCKETS
16S	Alumel	10-040799-02P*	10-040799-02S*
	Chromel	10-040799-01P*	10-040799-01S*
	Iron	10-040799-03P*	10-040799-03S*
	Constantan	10-040799-04P*	10-040799-24S*
16	Alumel	10-040799-12P*	10-040799-12S*
	Chromel	10-040799-11P*	10-040799-11S*
	Iron	10-040799-13P*	10-040799-13S*
	Constantan	10-040799-14P*	10-040799-14S*

SOLDER THERMOCOUPLE CONTACTS			
	TYPE	PINS	SOCKETS
12	Alumel	10-040799-42P*	10-040799-42S*
	Chromel	10-040799-41P*	10-040799-41S*
	Iron	10-040799-43P*	10-040799-43S*
	Constantan	10-040799-44P*	10-040799-44S*

Thermocouple Types: J = Iron-Constantan K = Alumel-Chromel
T = Copper-Constantan E = Chromel-Constantan

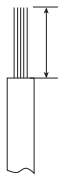
*Call for availability

† 16S contacts are used in 8S, 10S, 10SL, 12S, 14S and 16S connector sizes only.

ACCESSORIES	TOOLS						
							
WIRE HOLE FILLER (COLOR)	**CRIMP TOOLS**	**CRIMP LOCATOR & DIE SETS**	**LOCATOR COLOR**	**PILOT PIN/INSERTION GUIDE FOR SOCKETS**	**INSERTION TOOL**	**EXTRACTION TOOL**	
MS27488-16-1 (Blue)	AF8 (hand) WA27F (pneumatic) ††	TH29-1	Red	10-242758-016	DAK168-16	DRK59 Kit with Multiple Tips	
			Pin-Blue Socket-Green				
MS27488-12-1 (Yellow)			Green	10-242758-012	DAK168-12		
MS27488-8-1 (White)	400BHD	**Locator** 414DA-8N **Die Set** 4025-Pin 4026-Socket	-	10-242758-008	DAK282		
MS27488-4-1 (Blue)		**Locator** 414DA-4N **Die Set** 4043	-	-	AIC4INS	AIC4EXT	
MS27488-0-1 (Yellow)		**Locator** 414DA-0N **Die Set** 4042	-	-	AIC0INS	AIC0EXT	

†† Call for additional tool accessories.

Pin & Socket Coax Contacts

	COAX PIN	COAX SOCKET	WIRE STRIP LENGTH	WIRE RANGE	ACCESSORIES
					

COAX CONTACT SIZE	COAX WIRE SIZE	PART NUMBERS PINS SILVER	PINS GOLD	SOCKETS SILVER	SOCKETS GOLD	WIRE STRIP LENGTHS INCHES (mm)	WIRE SEALING RANGE INCHES (mm) MIN.	WIRE SEALING RANGE INCHES (mm) MAX.	WIRE HOLE FILLER
12	RG161/U RG174A/U RG179B/U RG187A/U RG188A/U RG316/U	21-33034-1	21-33014-21 21-33048-1() 21-33130-1()	21-33033-1	21-33013-21 21-33047-1() 21-33129-1 ()	Call for details	0.126 (3.2 mm)	0.177 (4.5 mm)	Yellow 10-405996-12
	RG178B/U RG196A/U		21-33014-22		21-33013-22				
8	RG58C/U RG141A/U RG303/U	21-33034-2(1)	21-33014-1(5) 21-33016-5(3) 21-33130-2()	21-33033-2(1) 21-33048-2()	21-33013-1(5) 21-33047-2() 21-33015-5(3) 21-33129-2()	Call for details	0.150 (3.8 mm)	0.256 (6.5 mm)	White 10-405996-8
	RG59B/U RG62A/U RG62B/U RG210/U	31-33034-5(1)	21-33014-5(5) 21-33016-2(3) 21-33130-5() 21-33064-21()	21-33033-3(1)	21-33013-5(5) 21-33015-2(3) 21-33129-3() 21-33063-21()				
	RG161/U RG174A/U RG179B/U RG187A/U RG188A/U RG316/U	21-33034-3(1)	21-33014-3(5) 21-33016-1(3) 21-33130-3 () 21-33064-20()	21-33033-3(1)	21-33013-3(5) 21-33015-1(3) 21-33129-3() 21-33063-20()				
	RG180B/U RG195A/U	21-33034-6	21-33014-6(5) 21-33048-3() 21-33130-6()	21-33033-6	21-33013-(6) 21-33047-3() 21-33129-6()				
	RG140/U RG302/U	21-33034-8	21-33014-8(5) 21-33033-8 21-33130-8()		21-33013-8(5) 21-33129-8()				
	RG55B/U RG142A/U RG142B/U RG223/U	21-33034-4	21-33014-5(5) 21-33130-4()	21-33033-4	21-33013-5(5) 21-33129-4()				
4	RG59B/U RG62A/U RG62B/U RG210/U		21-33060-10()		21-33059-10()	Call for details	0.279 (7.1 mm)	0.366 (9.3 mm)	Blue 10-405996-4
	RG212/U		21-33060-11()		21-33059-11()				
	RG55B/U RG142A/U RG142B/U RG223/U		31-33060-12()		21-33059-12()				

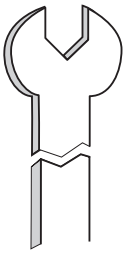
( ) Various platings available. Availability of coax contacts varies widely. Call for details.

TOOLS

M22520/10-01

M22520/5-01

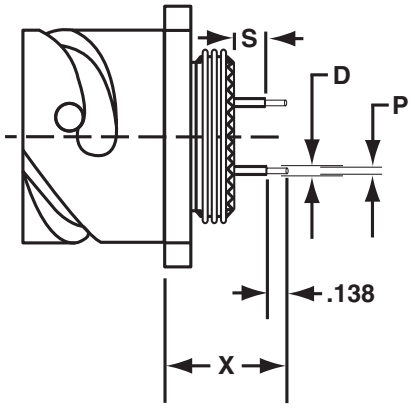
Crimp Dies



COAX CONTACT SIZE	COAX WIRE SIZE	HAND CRIMP TOOL	CRIMP DIE/LOCATOR	USE LOCATOR	COAX CLAMP NUT WRENCH
12	RG161/U RG174A/U RG179B/U RG187A/U RG188A/U RG316/U	M22520/10-01	M22520/10-05	A	11-8676-1
	RG178B/U RG196A/U			B	
8	RG58C/U RG141A/U RG303/U	M22520/10-01	M22520/10-07	B	11-8676-2
	RG59B/U RG62A/U RG62B/U RG210/U	M22520/5-01	M22520/5-45	B	11-8676-3
	RG161/U RG174A/U RG179B/U RG187A/U RG188A/U RG316/U	M22520/10-01	M22520/10-05	A	11-8676-2
	RG180B/U RG195A/U		M22520/10-07	B	
	RG140/U RG302/U			A	
	RG55B/U RG142A/U RG142B/U RG223/U				
4	RG59B/U RG62A/U RG62B/U RG210/U	M22520/5-01	M22520/5-45	B	11-8676-4
	RG212/U	M22520/5-01	M22520/5-39	A	
	RG55B/U RG142A/U RG142B/U RG223/U	M22520/10-01	M22520/10-07	A	

	Components			
	Plugs		Receptacles	
	AIB/GT	AIBC/ACA-B	AIB/GT	AIBC/ACA-B
O-Ring				
Barrel/Shell				
Insert/ Insulator				
Contacts				
Wave Spring and Skid Washer (Optional)				
Coupling Nut				
Individual Wire Sealing Grommet				
Ferrule/Sleeve Compression Ring				
Endbell/ Backshell/ Cable Clamp				

Printed Circuit Contacts



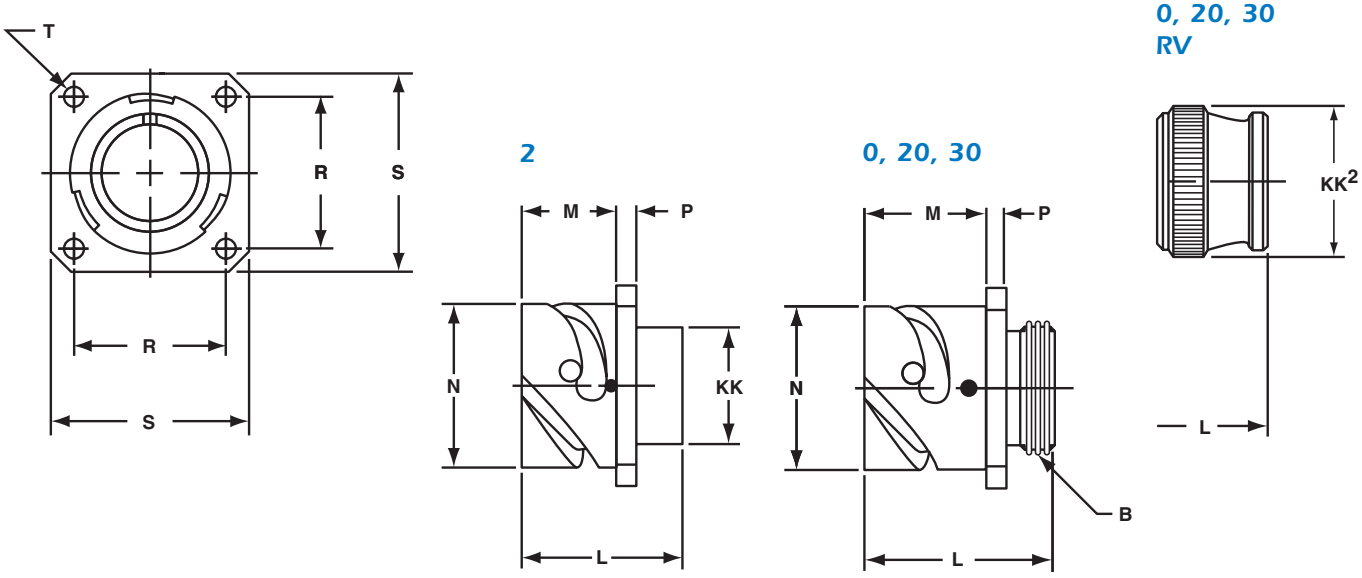
SHELL SIZE	H SERIES	
	S	X
10SL	.188 (4.78)	.567 (14.40)
14S	.188 (4.78)	.567 (14.40)
16S	.188 (4.78)	.567 (14.40)
16	.188 (4.78)	.622 (15.80)
18	.188 (4.78)	.622 (15.80)
20	.188 (4.78)	.622 (15.80)
22	.188 (4.78)	.622 (15.80)
24	.188 (4.78)	.622 (15.80)
28	.188 (4.78)	.657 (16.69)
32	.188 (4.78)	.720 (18.29)
36	.188 (4.78)	.720 (18.29)
40	.188 (4.78)	.720 (18.29)

CONTACT SIZE	D	P
12	.134 (3.4)	.070 (1.78)
16	.063 (1.6)	.030 (0.76)

All dimensions in inches (millimeters in parenthesis)

Dimensions

Style 0, 2, 20, 30 Receptacles



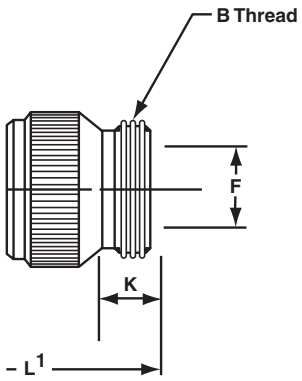
SHELL SIZE	M +.016-.000 (+0.4-0.0)	N +.000-.006 (+0.00-0.15)	P ± .008 (±0.2)	R ± .004 (±0.1)	S ± .012 (±0.3)	T +.004-.000 (+0.1-0.0)	KK MAX.	B THREAD CLASS 2A	L + .012 (+ 0.3)	L MAX.	KK² MAX.
10SL	.717 (18.20)	.717 (18.2)	.110 (2.8)	.717 (18.2)	1.000 (25.4)	.126 (3.2)	.626 (15.9)	.6250-24 UNEF	1.087 (27.6)	1.890 (48.0)	.787 (20.0)
14S	.717 (18.20)	.969 (24.6)	.126 (3.2)	.906 (23.0)	1.181 (30.0)	.126 (3.2)	.756 (19.2)	.7500-20 UNEF	1.087 (27.6)	1.890 (48.0)	.945 (24.0)
16S	.717 (18.20)	1.079 (27.4)	.126 (3.2)	.969 (24.6)	1.280 (32.5)	.126 (3.2)	.882 (22.4)	.8750-20 UNEF	1.087 (27.6)	1.890 (48.0)	1.024 (26.0)
16	.846 (21.50)	1.079 (27.4)	.126 (3.2)	.969 (24.6)	1.280 (32.5)	.126 (3.2)	.882 (22.4)	.8750-20 UNEF	1.331 (33.8)	2.205 (56.0)	1.024 (26.0)
18	.907 (23.05)	1.213 (30.8)	.157 (4.0)	1.063 (27.0)	1.378 (35.0)	.126 (3.2)	1.008 (25.6)	1.0000-20 UNEF	1.331 (33.8)	2.244 (57.0)	1.161 (29.5)
20	.907 (23.05)	1.346 (34.2)	.157 (4.0)	1.157 (29.4)	1.496 (38.0)	.126 (3.2)	1.142 (29.0)	1.1250-18 UNEF	1.331 (33.8)	2.244 (57.0)	1.299 (33.0)
22	.907 (23.05)	1.472 (37.4)	.157 (4.0)	1.252 (31.8)	1.614 (41.0)	.126 (3.2)	1.268 (32.2)	1.2500-18 UNEF	1.331 (33.8)	2.244 (57.0)	1.417 (36.0)
24	.907 (23.05)	1.610 (40.9)	.157 (4.0)	1.374 (34.9)	1.752 (44.5)	.146 (3.7)	1.390 (35.3)	1.3750-18 UNEF	1.331 (33.8)	2.244 (57.0)	1.575 (40.0)
28	.947 (24.05)	1.839 (46.7)	.157 (4.0)	1.563 (39.7)	2.000 (50.8)	.146 (3.7)	1.630 (41.4)	1.6250-18 UNEF	1.406 (35.7)	2.244 (57.0)	1.811 (46.0)
32	.947 (24.05)	2.102 (53.4)	.157 (4.0)	1.752 (44.5)	2.244 (57.0)	.169 (4.3)	1.882 (47.8)	1.8750-16 UN	1.469 (37.3)	2.362 (60.0)	2.028 (51.5)
36	.947 (24.05)	2.346 (59.6)	.157 (4.0)	1.937 (49.2)	2.500 (63.5)	.169 (4.3)	2.063 (52.4)	2.0625-16 UN	1.469 (37.3)	2.362 (60.0)	2.283 (58.0)
40	.947 (24.05)	2.579 (65.5)	.157 (4.0)	2.185 (55.5)	2.752 (69.9)	.169 (4.3)	2.323 (59.0)	2.3125-16 UN	1.469 (37.3)	2.362 (60.0)	2.539 (64.5)

All dimensions in inches (millimeters in parenthesis)

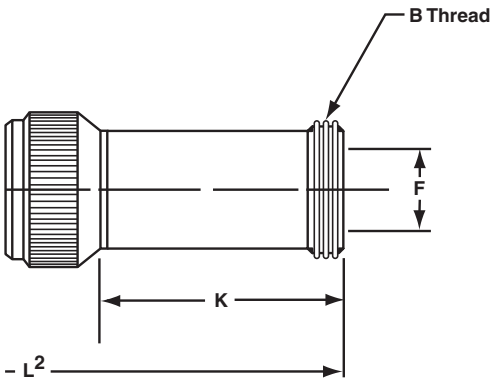
Dimensions

Style 0, 20, 30 Receptacles

F



L



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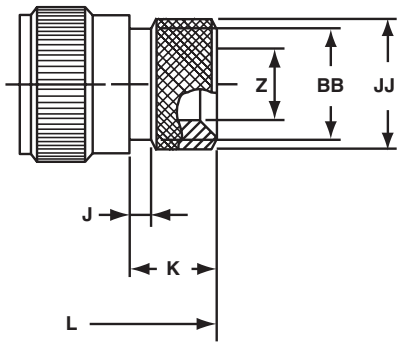


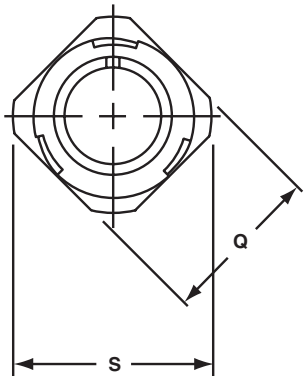
B THREAD CLASS 2A	F MIN.	K MIN.	L1 MAX.	L2 MAX.
.6250-24 UNEF	.409 (10.4)	.374 (9.5)	1.969 (50)	3.017 (76.6)
.7500-20 UNEF	.520 (13.2)	.374 (9.5)	1.969 (50)	3.048 (77.4)
.8750-20 UNEF	.638 (16.2)	.374 (9.5)	1.969 (50)	3.048 (77.4)
.8750-20 UNEF	.638 (16.2)	.374 (9.5)	2.362 (60)	3.304 (83.9)
1.0000-20 UNEF	.756 (19.2)	.374 (9.5)	2.362 (60)	3.419 (86.8)
1.1875-18 UNEF	.867 (22.0)	.374 (9.5)	2.362 (60)	3.404 (86.5)
1.1875-18 UNEF	.965 (24.5)	.374 (9.5)	2.362 (60)	3.408 (86.6)
1.4375-18 UNEF	1.094 (27.8)	.374 (9.5)	2.560 (65)	3.495 (88.8)
1.4375-18 UNEF	1.228 (31.2)	.374 (9.5)	2.560 (65)	3.629 (92.2)
1.7500-18 UNS	1.488 (37.8)	.433 (11.0)	2.560 (65)	3.777 (95.9)
2.0000-18 UNS	1.780 (45.2)	.465 (11.8)	3.150 (80)	3.821 (97.0)
2.2500-16 UN	2.016 (51.2)	.465 (11.8)	3.150 (80)	3.821 (97.0)

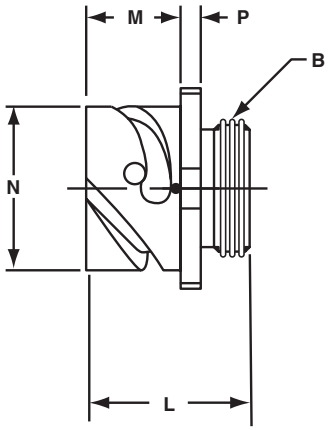
J ± .008 (±0.2)	K + .020 (±0.5)	L MAX.	Z MIN.	BB MAX.	JJ + .008 (+0.2)
.138 (3.5)	.461 (11.7)	1.969 (50)	.303 (7.7)	.524 (13.3)	.610 (15.5)
.138 (3.5)	.461 (11.7)	1.969 (50)	.417 (10.6)	.669 (17.0)	.752 (19.1)
.138 (3.5)	.461 (11.7)	1.969 (50)	.531 (13.5)	.862 (21.9)	.941 (23.9)
.138 (3.5)	.453 (11.5)	2.362 (60)	.531 (13.5)	.862 (21.9)	.941 (23.9)
.138 (3.5)	.453 (11.5)	2.362 (60)	.575 (14.6)	.862 (21.9)	.941 (23.9)
.138 (3.5)	.500 (12.7)	2.559 (65)	.736 (18.7)	1.031 (26.2)	1.165 (29.6)
.138 (3.5)	.500 (12.7)	2.559 (65)	.819 (20.8)	1.031 (26.2)	1.165 (29.6)
.138 (3.5)	.500 (12.7)	2.559 (65)	.969 (24.6)	1.358 (34.5)	1.488 (37.8)
.138 (3.5)	.500 (12.7)	2.559 (65)	1.063 (27.0)	1.358 (34.5)	1.488 (37.8)
.138 (3.5)	.598 (15.2)	2.756 (70)	1.311 (33.3)	1.717 (43.6)	1.882 (47.8)
.138 (3.5)	.598 (15.2)	3.150 (80)	1.516 (38.5)	1.717 (43.6)	1.882 (47.8)
.138 (3.5)	.610 (15.5)	3.150 (80)	1.898 (48.2)	2.071 (52.6)	2.276 (57.8)

All dimensions in inches (millimeters in parenthesis)

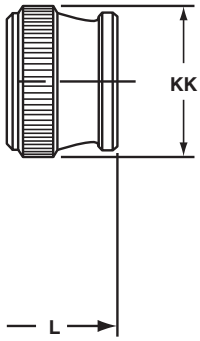
Dimensions

Style 1 Cable Receptacle





RV



SHELL SIZE	M +.016 -.000 (+0.4 - 0.0)	N +.000 -.006 (+0.00-0.15)	P ± .008 (±0.2)	Q ± .008 (±0.2)	S MAX.
10SL	.717 (18.20)	.717 (18.2)	.110 (2.8)	.811 (20.6)	.992 (25.2)
14S	.717 (18.20)	.969 (24.6)	.126 (3.2)	1.000 (25.4)	1.173 (29.8)
16S	.717 (18.20)	1.079 (27.4)	.126 (3.2)	1.126 (28.6)	1.272 (32.3)
16	.8461 (21.50)	1.079 (27.4)	.126 (3.2)	1.126 (28.6)	1.272 (32.3)
18	.907 (23.05)	1.213 (30.8)	.157 (4.0)	1.248 (31.7)	1.370 (34.8)
20	.907 (23.05)	1.346 (34.2)	.157 (4.0)	1.374 (34.9)	1.488 (37.8)
22	.907 (23.05)	1.472 (37.4)	.157 (4.0)	1.500 (38.1)	1.618 (41.1)
24	.907 (23.05)	1.610 (40.9)	.157 (4.0)	1.626 (41.3)	1.756 (44.6)
28	.947 (24.05)	1.839 (46.7)	.157 (4.0)	1.874 (47.6)	2.004 (50.9)
32	.947 (24.05)	2.102 (53.4)	.157 (4.0)	2.126 (54.0)	2.248 (57.1)
36	.947 (24.05)	2.346 (59.6)	.157 (4.0)	2.386 (60.6)	2.504 (63.6)
40	.947 (24.05)	2.579 (65.5)	.157 (4.0)	2.618 (66.5)	2.756 (70.0)

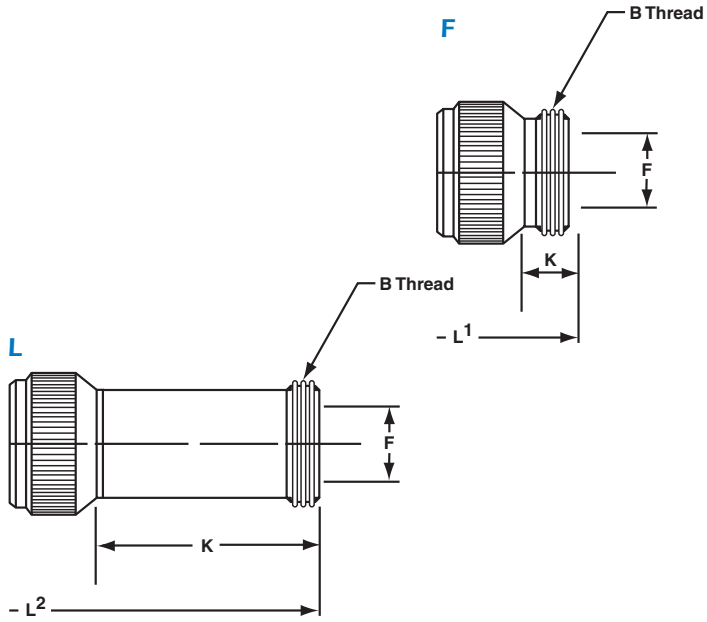
B THREAD CLASS 2A	L + .012 (+ 0.3)
.6250-24 UNEF	1.087 (27.6)
.7500-20 UNEF	1.087 (27.6)
.8750-20 UNEF	1.087 (27.6)
.8750-20 UNEF	1.331 (33.8)
1.0000-20 UNEF	1.331 (33.8)
1.1250-18 UNEF	1.331 (33.8)
1.2500-18 UNEF	1.331 (33.8)
1.3750-18 UNEF	1.331 (33.8)
1.6250-18 UNEF	1.406 (35.7)
1.8750-16 UN	1.469 (37.3)
2.0625-16 UN	1.469 (37.3)
2.3125-16 UN	1.469 (37.3)

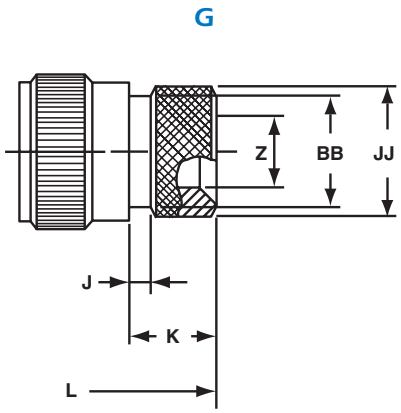
L MAX.	KK MAX.
1.890 (48.0)	.787 (20.0)
1.890 (48.0)	.945 (24.0)
1.890 (48.0)	1.024 (26.0)
2.205 (56.0)	1.024 (26.0)
2.244 (57.0)	1.161 (29.5)
2.244 (57.0)	1.299 (33.0)
2.244 (57.0)	1.417 (36.0)
2.244 (57.0)	1.575 (40.0)
2.244 (57.0)	1.811 (46.0)
2.362 (60.0)	2.028 (51.5)
2.362 (60.0)	2.283 (58.0)
2.362 (60.0)	2.539 (64.5)

All dimensions in inches (millimeters in parenthesis)

Dimensions

Style 1 Cable Receptacle





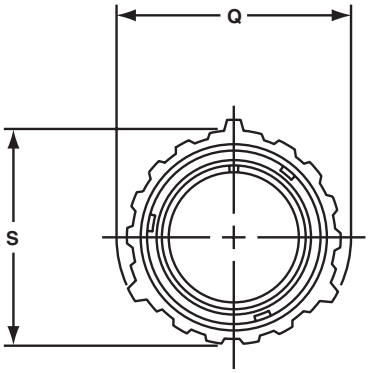
B THREAD CLASS 2A	F MIN.	K MIN.	L1 MAX.	L2 MAX.
.6250-24 UNEF	.409 (10.4)	.374 (9.5)	1.969 (50)	3.684 (93.6)
.7500-20 UNEF	.520 (13.2)	.374 (9.5)	1.969 (50)	3.748 (95.2)
.8750-20 UNEF	.638 (16.2)	.374 (9.5)	1.969 (50)	3.748 (95.2)
.8750-20 UNEF	.638 (16.2)	.374 (9.5)	2.362 (60)	3.71 (94.2)
1.0000-20 UNEF	.756 (19.2)	.374 (9.5)	2.362 (60)	4.094 (104.0)
1.1875-18 UNEF	.867 (22.0)	.374 (9.5)	2.362 (60)	4.094 (104.0)
1.1875-18 UNEF	.965 (24.5)	.374 (9.5)	2.362 (60)	4.102 (104.2)
1.4375-18 UNEF	1.094 (27.8)	.374 (9.5)	2.560 (65)	3.950 (100.4)
1.4375-18 UNEF	1.228 (31.2)	.374 (9.5)	2.560 (65)	4.392 (111.6)
1.7500-18 UNS	1.488 (37.8)	.433 (11.0)	2.560 (65)	5.038 (128.0)
2.0000-18 UNS	1.780 (45.2)	.465 (11.8)	3.150 (80)	4.354 (110.6)
2.2500-16 UN	2.016 (51.2)	.465 (11.8)	3.150 (80)	4.354 (110.6)

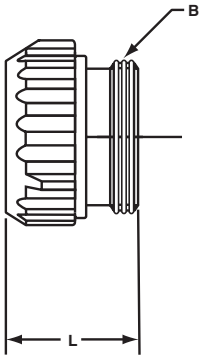
J ± .008 (±0.2)	K + .020 (±0.5)	L MAX.	Z MIN.	BB MAX.	JJ + .008 (+0.2)
.138 (3.5)	.461 (11.7)	1.969 (50)	.303 (7.7)	.524 (13.3)	.610 (15.5)
.138 (3.5)	.461 (11.7)	1.969 (50)	.417 (10.6)	.669 (17.0)	.752 (19.1)
.138 (3.5)	.461 (11.7)	1.969 (50)	.531 (13.5)	.862 (21.9)	.941 (23.9)
.138 (3.5)	.453 (11.5)	2.362 (60)	.531 (13.5)	.862 (21.9)	.941 (23.9)
.138 (3.5)	.453 (11.5)	2.362 (60)	.575 (14.6)	.862 (21.9)	.941 (23.9)
.138 (3.5)	.500 (12.7	2.559 (65)	.736 (18.7)	1.031 (26.2)	1.165 (29.6)
.138 (3.5)	.500 (12.7)	2.559 (65)	.819 (20.8)	1.031 (26.2)	1.165 (29.6)
.138 (3.5)	.500 (12.7)	2.559 (65)	.969 (24.6)	1.358 (34.5)	1.488 (37.8)
.138 (3.5)	.500 (12.7)	2.559 (65)	1.063 (27.0)	1.358 (34.5)	1.488 (37.8)
.138 (3.5)	.598 (15.2)	2.756 (70)	1.311 (33.3)	1.717 (43.6)	1.882 (47.8)
.138 (3.5)	.598 (15.2)	3.150 (80)	1.516 (38.5)	1.717 (43.6)	1.882 (47.8)
.138 (3.5)	.610 (15.5)	3.150 (80)	1.898 (48.2)	2.071 (52.6)	2.276 (57.8)

All dimensions in inches (millimeters in parenthesis)

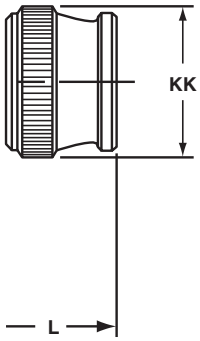
Dimensions

Style 4 Rubber-Covered Plugs





RV



SHELL SIZE	Q MAX.	S MAX.
10SL	1.319 (33.5)	1.122 (28.5)
18	1.929 (49.0)	1.713 (43.5)
20	2.028 (51.5)	1.811 (46.0)
22	2.224 (56.5)	1.988 (50.5)
24	2.362 (60.0)	2.126 (54.0)
28	2.638 (67.0)	2.402 (61.0)
32	2.992 (76.0)	2.661 (67.6)
36	3.240 (82.3)	2.925 (74.3)
40	3.465 (88.0)	3.150 (80.0)

B THREAD CLASS 2A	L + .012 (+ 0.3)
.6250-24 UNEF	1.087 (27.6)
1.0000-20 UNEF	1.331 (33.8)
1.1250-18 UNEF	1.331 (33.8)
1.2500-18 UNEF	1.331 (33.8)
1.3750-18 UNEF	1.331 (33.8)
1.6250-18 UNEF	1.406 (35.7)
1.8750-16 UN	1.469 (37.3)
2.0625-16 UN	1.469 (37.3)
2.3125-16 UN	1.469 (37.3)

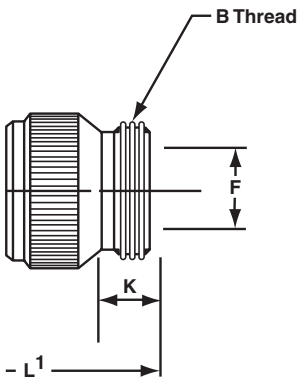
L MAX.	KK MAX.
1.890 (48.0)	.787 (20.0)
2.244 (57.0)	1.161 (29.5)
2.244 (57.0)	1.299 (33.0)
2.244 (57.0)	1.417 (36.0)
2.244 (57.0)	1.575 (40.0)
2.244 (57.0)	1.811 (46.0)
2.362 (60.0)	2.028 (51.5)
2.362 (60.0)	2.283 (58.0)
2.362 (60.0)	2.539 (64.5)

All dimensions in inches (millimeters in parenthesis)

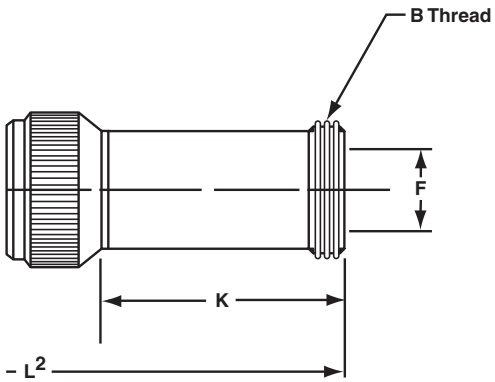
Dimensions

Style 4 Rubber-Covered Plugs

F



L



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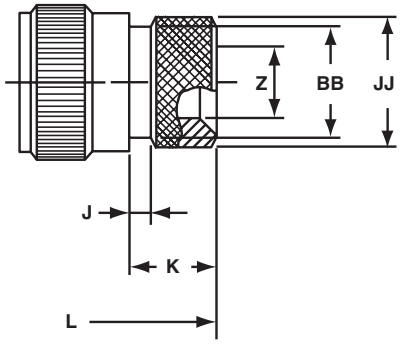


B THREAD CLASS 2A	F MIN.	K MIN.	L1 MAX.	L2 MAX.
.6250-24 UNEF	.409 (10.4)	.374 (9.5)	1.969 (50)	3.684 (93.6)
1.0000-20 UNEF	.756 (19.2)	.374 (9.5)	2.362 (60)	4.094 (104.0)
1.1875-18 UNEF	.867 (22.0)	.374 (9.5)	2.362 (60)	4.094 (104.0)
1.1875-18 UNEF	.965 (24.5)	.374 (9.5)	2.362 (60)	4.102 (104.2)
1.4375-18 UNEF	1.094 (27.8)	.374 (9.5)	2.560 (65)	3.950 (100.4)
1.4375-18 UNEF	1.228 (31.2)	.374 (9.5)	2.560 (65)	4.392 (111.6)
1.7500-18 UNS	1.488 (37.8)	.433 (11.0)	2.560 (65)	5.038 (128.0)
2.0000-18 UNS	1.780 (45.2)	.465 (11.8)	3.150 (80)	4.354 (110.6)
2.2500-16 UN	2.016 (51.2)	.465 (11.8)	3.150 (80)	4.354 (110.6)

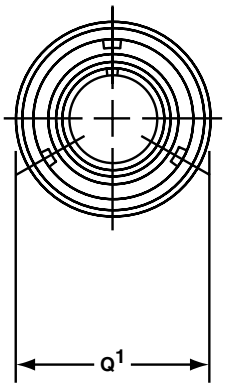
J ± .008 (±0.2)	K + .020 (±0.5)	L MAX.	Z MIN.	BB MAX.	JJ + .008 (+0.2)
.138 (3.5)	.461 (11.7)	1.969 (50)	.303 (7.7)	.524 (13.3)	.610 (15.5)
.138 (3.5)	.453 (11.5)	2.362 (60)	.575 (14.6)	.862 (21.9)	.941 (23.9)
.138 (3.5)	.500 (12.7)	2.559 (65)	.736 (18.7)	1.031 (26.2)	1.165 (29.6)
.138 (3.5)	.500 (12.7)	2.559 (65)	.819 (20.8)	1.031 (26.2)	1.165 (29.6)
.138 (3.5)	.500 (12.7)	2.559 (65)	.969 (24.6)	1.358 (34.5)	1.488 (37.8)
.138 (3.5)	.500 (12.7)	2.559 (65)	1.063 (27.0)	1.358 (34.5)	1.488 (37.8)
.138 (3.5)	.598 (15.2)	2.756 (70)	1.311 (33.3)	1.717 (43.6)	1.882 (47.8)
.138 (3.5)	.598 (15.2)	3.150 (80)	1.516 (38.5)	1.717 (43.6)	1.882 (47.8)
.138 (3.5)	.610 (15.5)	3.150 (80)	1.898 (48.2)	2.071 (52.6)	2.276 (57.8)

All dimensions in inches (millimeters in parenthesis)

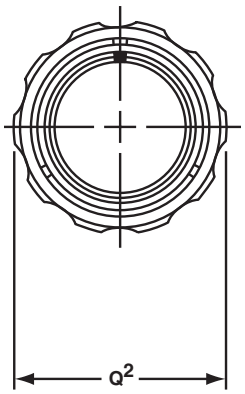
Dimensions

Style 6, 6HD Plugs

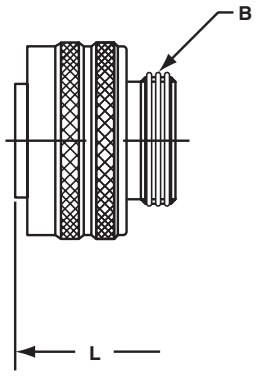
6

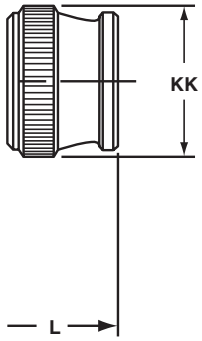


6HD



RV





SHELL SIZE	Q1 MAX.	Q2 MAX.
10SL	.898 (22.8)	1.007 (25.5)
14S	1.150 (29.2)	1.259 (31.9)
16S	1.260 (32.0)	1.410 (35.8)
16	1.260 (32.0)	1.410 (35.8)
18	1.437 (36.5)	1.547 (39.2)
20	1.571 (39,9)	1.681 (42.6)
22	1.697 (43.1)	1.847 (46.9)
24	1.835 (46.6)	1.965 (49.9)
28	2.102 (53.4)	2.222 (56.4)
32	2.366 (60.1)	2.482 (63.0)
36	2.610 (66.3)	2.721 (69.1)
40	2.850 (72.4)	2.953 (75.0)

B THREAD CLASS 2A	L + .012 (+ 0.3)
.6250-24 UNEF	1.087 (27.6)
.7500-20 UNEF	1.087 (27.6)
.8750-20 UNEF	1.087 (27.6)
.8750-20 UNEF	1.331 (33.8)
1.0000-20 UNEF	1.331 (33.8)
1.1250-18 UNEF	1.331 (33.8)
1.2500-18 UNEF	1.331 (33.8)
1.3750-18 UNEF	1.331 (33.8)
1.6250-18 UNEF	1.406 (35.7)
1.8750-16 UN	1.469 (37.3)
2.0625-16 UN	1.469 (37.3)
2.3125-16 UN	1.469 (37.3)

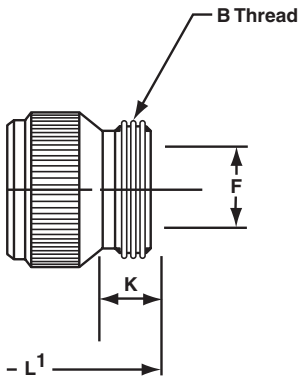
L MAX.	KK MAX.
1.890 (48.0)	.787 (20.0)
1.890 (48.0)	.945 (24.0)
1.890 (48.0)	1.024 (26.0)
2.205 (56.0)	1.024 (26.0)
2.244 (57.0)	1.161 (29.5)
2.244 (57.0)	1.299 (33.0)
2.244 (57.0)	1.417 (36.0)
2.244 (57.0)	1.575 (40.0)
2.244 (57.0)	1.811 (46.0)
2.362 (60.0)	2.028 (51.5)
2.362 (60.0)	2.283 (58.0)
2.362 (60.0)	2.539 (64.5)

All dimensions in inches (millimeters in parenthesis)

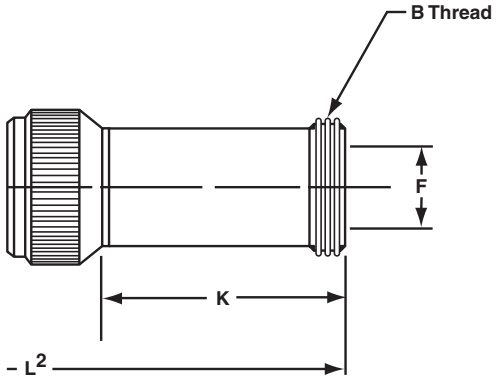
Dimensions

Style 6, 6HD Plugs

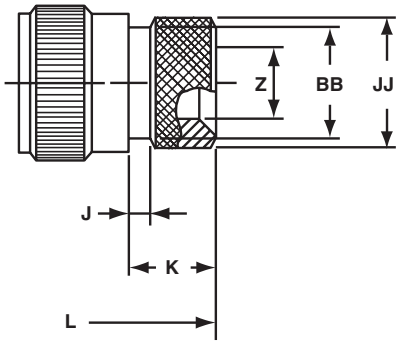
F



L



G



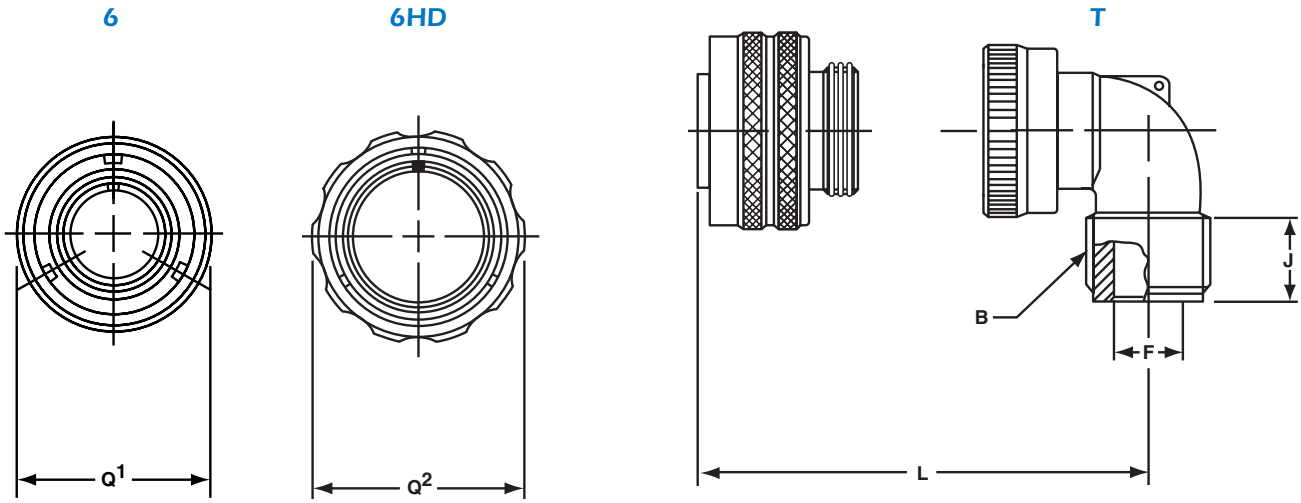
B THREAD CLASS 2A	F MIN.	K MIN.	L1 MAX.	L2 MAX.
.6250-24 UNEF	.409 (10.4)	.374 (9.5)	1.969 (50)	3.684 (93.6)
.7500-20 UNEF	.520 (13.2)	.374 (9.5)	1.969 (50)	3.748 (95.2)
.8750-20 UNEF	.638 (16.2)	.374 (9.5)	1.969 (50)	3.748 (95.2)
.8750-20 UNEF	.638 (16.2)	.374 (9.5)	2.362 (60)	3.71 (94.2)
1.0000-20 UNEF	.756 (19.2)	.374 (9.5)	2.362 (60)	4.094 (104.0)
1.1875-18 UNEF	.867 (22.0)	.374 (9.5)	2.362 (60)	4.094 (104.0)
1.1875-18 UNEF	.965 (24.5)	.374 (9.5)	2.362 (60)	4.102 (104.2)
1.4375-18 UNEF	1.094 (27.8)	.374 (9.5)	2.560 (65)	3.950 (100.4)
1.4375-18 UNEF	1.228 (31.2)	.374 (9.5)	2.560 (65)	4.392 (111.6)
1.7500-18 UNS	1.488 (37.8)	.433 (11.0)	2.560 (65)	5.038 (128.0)
2.0000-18 UNS	1.780 (45.2)	.465 (11.8)	3.150 (80)	4.354 (110.6)
2.2500-16 UN	2.016 (51.2)	.465 (11.8)	3.150 (80)	4.354 (110.6)

J ± .008 (±0.2)	K + .020 (±0.5)	L MAX.	Z MIN.	BB MAX.	JJ + .008 (+0.2)
.138 (3.5)	.461 (11.7)	1.969 (50)	.303 (7.7)	.524 (13.3)	.610 (15.5)
.138 (3.5)	.461 (11.7)	1.969 (50)	.417 (10.6)	.669 (17.0)	.752 (19.1)
.138 (3.5)	.461 (11.7)	1.969 (50)	.531 (13.5)	.862 (21.9)	.941 (23.9)
.138 (3.5)	.453 (11.5)	2.362 (60)	.531 (13.5)	.862 (21.9)	.941 (23.9)
.138 (3.5)	.453 (11.5)	2.362 (60)	.575 (14.6)	.862 (21.9)	.941 (23.9)
.138 (3.5)	.500 (12.7	2.559 (65)	.736 (18.7)	1.031 (26.2)	1.165 (29.6)
.138 (3.5)	.500 (12.7)	2.559 (65)	.819 (20.8)	1.031 (26.2)	1.165 (29.6)
.138 (3.5)	.500 (12.7)	2.559 (65)	.969 (24.6)	1.358 (34.5)	1.488 (37.8)
.138 (3.5)	.500 (12.7)	2.559 (65)	1.063 (27.0)	1.358 (34.5)	1.488 (37.8)
.138 (3.5)	.598 (15.2)	2.756 (70)	1.311 (33.3)	1.717 (43.6)	1.882 (47.8)
.138 (3.5)	.598 (15.2)	3.150 (80)	1.516 (38.5)	1.717 (43.6)	1.882 (47.8)
.138 (3.5)	.610 (15.5)	3.150 (80)	1.898 (48.2)	2.071 (52.6)	2.276 (57.8)

All dimensions in inches (millimeters in parenthesis)

Dimensions

Plug Style 6, 6HD Right Angle



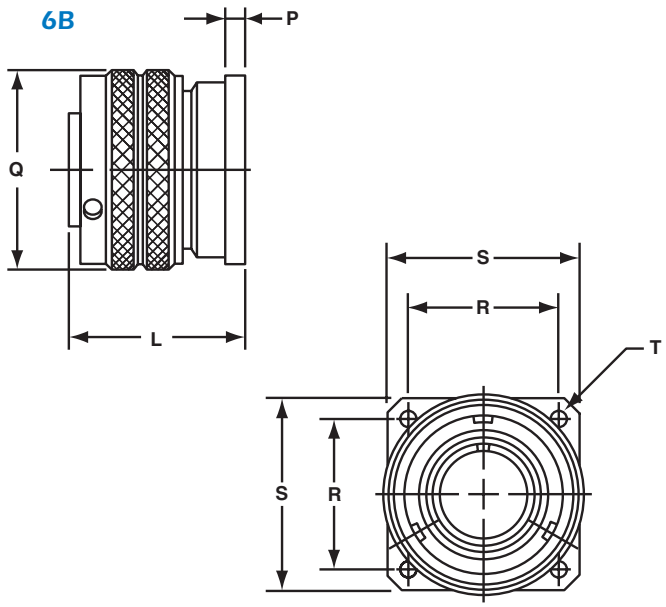
SHELL SIZE	Q1 MAX.	Q2 MAX.
10SL	.898 (22.8)	1.007 (25.5)
14S	1.150 (29.2)	1.259 (31.9)
16S	1.260 (32.0)	1.410 (35.8))
16	1.260 (32.0)	1.410 (35.8))
18	1.437 (36.5)	1.547 (39.2)
20	1.571 (39,9)	1.681 (42.6)
22	1.697 (43.1)	1.847 (46.9)
24	1.835 (46.6)	1.965 (49.9)
28	2.102 (53.4)	2.222 (56.4)
32	2.366 (60.1)	2.482 (63.0)
36	2.610 (66.3)	2.721 (69.1)
40	2.850 (72.4)	2.953 (75.0)

B THREAD CLASS 2A	F MAX.	J MIN.	K MAX.	L MAX.
.6250-24 UNEF	.337 (8.5)	.370 (9.4)	1.181 (30.0)	1.772 (45.0)
.7500-20 UNEF	.462 (11.7)	.370 (9.4)	1.181 (30.0)	1.850 (47.0)
.8750-20 UNEF	.587 (14.9)	.370 (9.4)	1.181 (30.0)	1.890 (48.0)
.8750-20 UNEF	.587 (14.9)	.370 (9.4)	1.181 (30.0)	2.244 (57.0)
1.0000-20 UNEF	.685 (17.4)	.370 (9.4)	1.378 (35.0)	2.283 (58.0)
1.1875-18 UNEF	.810 (20.5)	.370 (9.4)	1.378 (35.0)	2.402 (61.0)
1.1875-18 UNEF	.915 (23.2)	.370 (9.4)	1.378 (35.0)	2.402 (61.0)
1.4375-18 UNEF	1.025 (26.0)	.370 (9.4)	1.575 (40.0)	2.598 (66.0)
1.4375-18 UNEF	1.139 (28.9)	.370 (9.4)	15.75 (40.0)	2.598 (53.4)
1.7500-18 UNEF	1.447 (36.7)	.433 (11.0)	1.772 (45.0)	2.835 (72.0)
2.0000-18 UNS	1.687 (42.8)	.496 (12.6)	1.969 (50.0)	2.953 (75.0)
2.2500-16 UN	1.923 (48.8)	.496 (12.6)	2.165 (55.1)	3.071 (78.0)

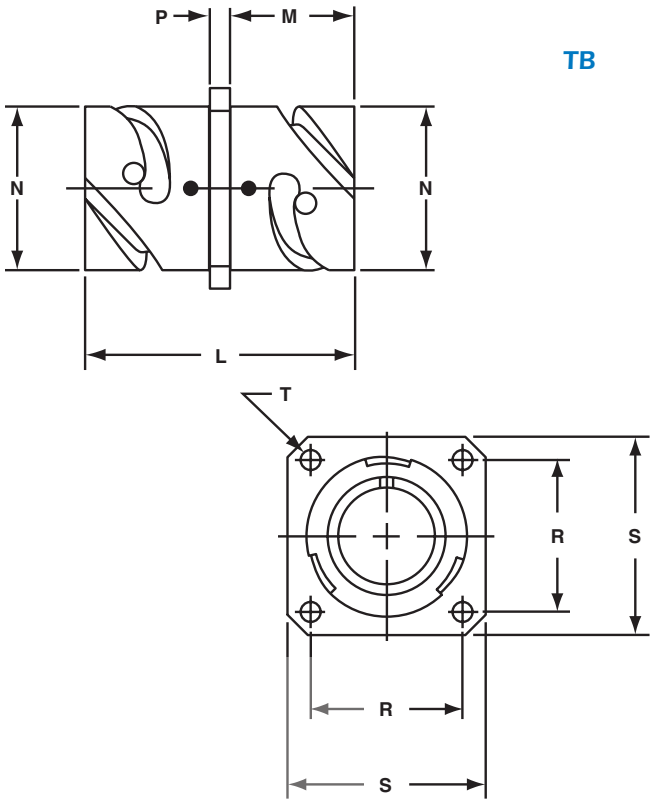
All dimensions in inches (millimeters in parenthesis)

Dimensions

6B Panel Plug



Style TB Thru-Bulkhead Receptacle



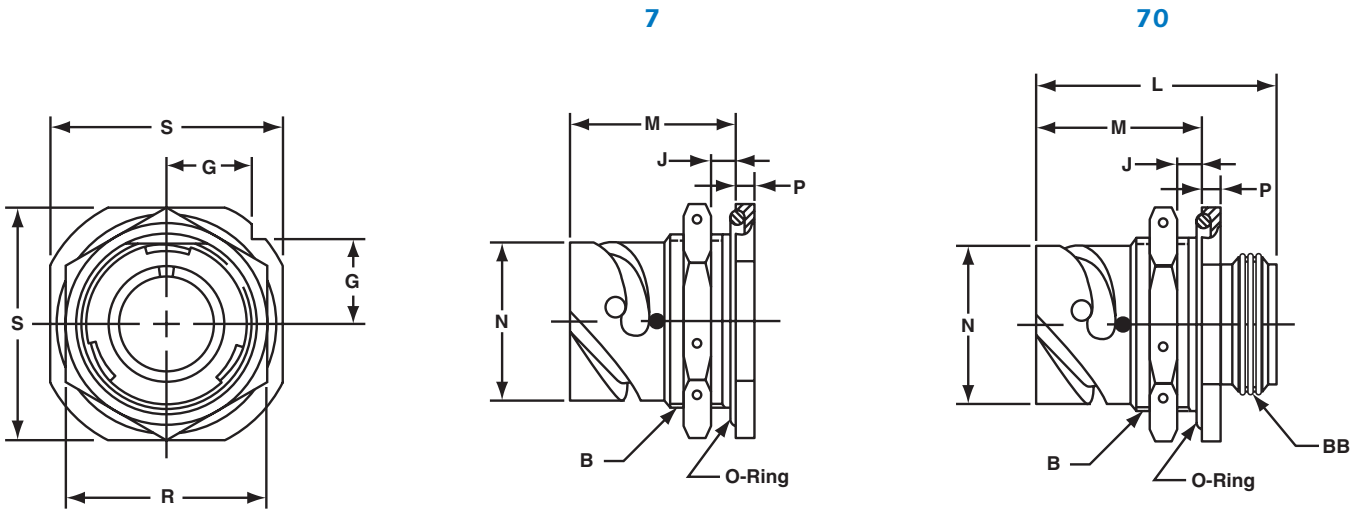
SHELL SIZE	L APPROX.	Q MAX.	P ±.008 (±0.2)	R ±.004 (±0.1)	S ± .012 (±0.3)	T +.004-.000 (+0.1-0.0)
10SL	1.087 (27.6)	.898 (22.8)	.110 (2.8)	.717 (18.2)	1.000 (25.4)	.126 (3.2)
14S	1.091 (27.7)	1.150 (29.2)	.126 (3.2)	.906 (23.0)	1.181 (30.0)	.126 (3.2)
16S	1.091 (27.7)	1.260 (32.0)	.126 (3.2)	.969 (24.6)	1.280 (32.5)	.126 (3.2)
16	1.469 (37.3)	1.260 (32.0)	.126 (3.2)	.969 (24.6)	1.280 (32.5)	.126 (3.2)
18	1.500 (38.1)	1.437 (36.5)	.157 (4.0)	1.063 (27.0)	1.378 (35.0)	.126 (3.2)
20	1.500 (38.1)	1.571 (39.9)	.157 (4.0)	1.157 (29.4)	1.496 (38.0)	.126 (3.2)
22	1.500 (38.1)	1.697 (43.1)	.157 (4.0)	1.252 (31.8)	1.614 (41.0)	.126 (3.2)
24	1.598 (40.6)	1.835 (46.6)	.157 (4.0)	1.374 (34.9)	1.752 (44.5)	.146 (3.7)
28	1.626 (41.3)	2.102 (53.4)	.157 (4.0)	1.563 (39.7)	2.000 (50.8)	.146 (3.7)
32	1.764 (44.8)	2.366 (60.1)	.157 (4.0)	1.752 (44.5)	2.244 (57.0)	.169 (4.3)
36	1.764 (44.8)	2.610 (66.3)	.157 (4.0)	1.937 (49.2)	2.500 (63.5)	.169 (4.3)
40	1.764 (44.8)	2.850 (72.4)	.157 (4.0)	2.185 (55.5)	2.752 (69.9)	.169 (4.3)

L Max.	M +.016-.000 (+0.4-0.0)	N +.000-.006 (+0.00-0.15)	P ±.008 (±0.2)	R ±.004 (±0.1)	S ±.012 (±0.3)	T +.004-.000 (+0.1-0.0)
1.488 (37.7)	.717 (18.2)	.717 (18.2)	.110 (2.8)	.717 (18.2)	1.000 (25.4)	.126 (3.2)
1.488 (37.7)	.717 (18.2)	.969 (24.6)	.126 (3.2)	.906 (23.0)	1.181 (30.0)	.126 (3.2)
1.488 (37.7)	.717 (18.2)	1.079 (24.6)	.126 (3.2)	.969 (23.0)	1.280 (30.0)	.126 (3.2)
2.049 (52.0)	.846 (21.5)	1.079 (27.4)	.126 (3.2)	.969 (24.6)	1.280 (32.5)	.126 (3.2)
2.049 (52.0)	.907 (23.0)	1.213 (30.8)	.157 (4.0)	1.063 (27.0)	1.378 (35.0)	.126 (3.2)
2.049 (52.0)	.907 (23.0)	1.346 (34.2)	.157 (4.0)	1.157 (29.4)	1.496 (38.0)	.126 (3.2)
2.049 (52.0)	.907 (23.0)	1.472 (37.4)	.157 (4.0)	1.252 (31.8)	1.614 (41.0)	.126 (3.2)
2.049 (52.0)	.90 (23.0)	1.610 (40.9)	.157 (4.0)	1.374 (34.9)	1.752 (44.5)	.146 (3.7)
2.049 (52.0)	.947 (24.0)	1.839 (46.7)	.157 (4.0)	1.563 (39.7)	2.000 (50.8)	.146 (3.7)
2.049 (52.0)	.947 (24.0)	2.102 (53.4)	.157 (4.0)	1.752 (44.5)	2.244 (57.0)	.160 (4.3)
2.049 (52.0)	.947 (24.0)	2.346 (59.6)	.157 (4.0)	1.937 (49.2)	2.500 (63.5)	.169 (4.3)
2.049 (52.0)	.947 (24.0)	2.579 (65.5)	.157 (4.0)	2.185 (55.5)	2.752 (69.9)	.160 (4.3)

All dimensions in inches (millimeters in parenthesis)

Dimensions

Style 7, 70 Jam Nut Receptacles

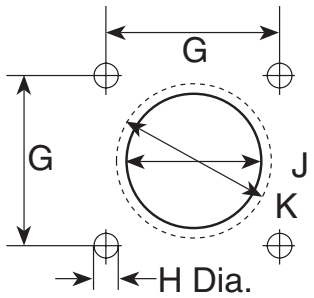


SHELL SIZE	B THREAD CLASS 2A	G ±.012 (±0.3)	J WALL THICKNESS MIN.	J WALL THICKNESS MAX.	L ± .010 (±0.3)	M ± .012 (±0.3)	N +.000-.0006 (+0.00-0.15)	P ± .007 (±0.2)	R ± .016 (±0.4)	S ± .12 (±0.3)	BB THREAD CLASS 2A
10SL	.8750-20 UNEF	.441 (11.2)	.094 (2.4)	.205 (5.2)	1.425 (36.2)	.965 (24.5)	.717 (18.2)	.157 (4.0)	1.062 (27)	1.252 (31.8)	.6250-24 UNEF
14S	1.1250-18 UNEF	.575 (14.6)	.094 (2.4)	.295 (7.5)	1.531 (38.9)	1.055 (26.8)	.969 (24.6)	.189 (4.8)	1.312 (33)	1.626 (41.3)	.7500-20 UNEF
16S	1.2500-180 UNEF	.618 (15.7)	.094 (2.4)	.295 (7.5)	1.531 (38.9)	1.055 (26.8)	1.079 (27.4)	.189 (4.8)	1.500 (38)	1.748 (44.4)	.8750-20 UNEF
16	1.2500-18 UNEF	.618 (15.7)	.094 (2.4)	.295 (7.5)	1.909 (48.5)	1.264 (32.1)	1.079 (27.4)	.189 (4.8)	1.500 (38)	1.748 (44.4)	.8750-20 UNEF
18	1.3750-18 UNEF	.661 (16.8)	.094 (2.4)	.354 (9.0)	1.941 (49.3)	1.327 (33.7)	12.13 (30.8)	.189 (4.8)	1.562 (40)	1.874 (47.6)	1.0000-20 UNEF
20	1.5000-18 UNEF	.709 (18.0)	.094 (2.4)	.358 (9.1)	1.941 (49.3)	1.327 (33.7)	1.346 (34.2)	.189 (4.8)	1.750 (44)	2.000 (50.8)	1.1250-18 UNEF
22	1.6250-18 UNEF	.795 (20.2)	.094 (2.4)	.358 (9.1)	1.941 (49.3)	1.327 (33.7)	1.472 (37.4)	.189 (4.8)	2.000 (51)	2.252 (57.2)	1.2500-18 UNEF
24	1.75000-18 UNEF	.795 (20.2)	.094 (2.4)	.358 (9.1)	1.953 (49.6)	1.327 (33.7)	1.610 (40.9)	.189 (4.8)	2.000 (51)	2.252 (57.2)	1.3750-18 UNEF
28	2.0000-18 UNS	.886 (22.5)	.094 (2.4)	.394 (10.0)	2.043 (51.9)	1.386 (35.2)	1.839 (46.7)	.220 (5.6)	2.188 (56)	2.500 (63.5)	1.6250-18 UNEF
32	2.2500-16 UN	.972 (24.7)	.094 (2.4)	.394 (10.0)	2.043 (51.9)	1.386 (35.2)	2.102 (53.4)	.220 (5.6)	2.438 (62)	2.748 (69.8)	1.8750-16 UN
36	2.5000-16 UN	1.059 (26.9)	.094 (2.4)	.327 (8.3)	2.043 (51.9)	1.386 (35.2)	2.346 (59.6)	.220 (5.6)	2.812 (71)	3.000 (76.2)	2.0625-16 UN
40	2.7500-16 UN	1.165 (29.6)	.094 (2.4)	.327 (8.3)	2.043 (51.9)	1.386 (35.2)	2.579 (65.5)	.220 (5.6)	3.000 (76)	3.248 (82.5)	2.3125-16 UN

All dimensions in inches (millimeters in parenthesis)

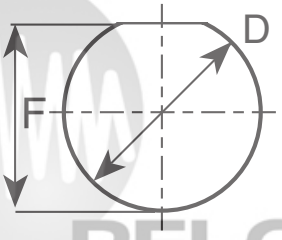
Dimensions

Panel Cutouts



Dim. J-flange in front of panel
Dim. K-flange at rear of panel
See sealing screws on page 257.

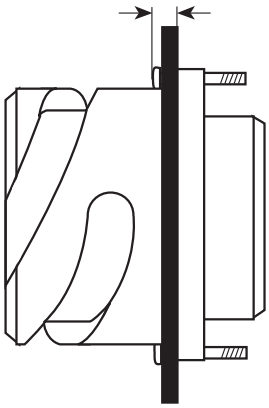
SHELL SIZE	STYLE 0, 2, 20, 30, TB FLANGE			
	G (TP)	MOUNTING HOLE DIAMETER H	J FRONT	K REAR
10SL	0.717 (18.2)	0.134 (3.4)	0.646 (16.4)	0.728 (18.5)
12S	0.811 (20.6)	0.134 (3.4)	0.646 (16.4)	0.854 (21.7)
14S	0.906 (23.0)	0.134 (3.4)	0.776 (19.7)	0.980 (24.9)
16S	0.969 (24.6)	0.134 (3.4)	0.902 (22.9)	1.091 (27.7)
16	0.969 (24.6)	0.134 (3.4)	0.902 (22.9)	1.091 (27.7)
18	1.063 (27.0)	0.134 (3.4)	1.028 (26.1)	1.224 (31.1)
20	1.157 (29.4)	0.134 (3.4)	1.161 (29.5)	1.358 (34.5)
22	1.252 (31.8)	0.134 (3.4)	1.287 (32.7)	1.488 (37.8)
24	1.374 (34.9)	0.154 (3.9)	1.417 (36.0)	1.626 (41.3)
28	1.563 (39.7)	0.154 (3.9)	1.654 (42.0)	1.854 (47.1)
32	1.752 (44.5)	0.177 (4.5)	1.902 (48.3)	2.118 (53.8)
36	1.937 (49.2)	0.177 (4.5)	2.150 (54.6)	2.362 (60.0)
40	2.185 (55.5)	0.177 (4.5)	2.409 (61.2)	2.610 (66.3)



SHELL SIZE	7/70 PANEL CUTOUT	
	F - FLAT	D - DIAMETER
10SL	0.830 (21.1)	0.875 (22.2)
14S	1.080 (27.4)	1.125 (28.6)
16S/16	1.210 (30.7)	1.250 (31.7)
18	1.320 (33.5)	1.375 (34.9)
20	1.450 (36.8)	1.500 (38.1)
22	1.570 (39.9)	1.625 (41.3)
24	1.700 (43.2)	1.750 (44.5)
28	1.950 (49.5)	2.000 (50.8)
32	2.200 (55.9)	2.250 (57.2)
36	2.450 (62.2)	2.500 (63.5)
40	2.700 (68.6)	2.750 (69.9)

Panel Thickness

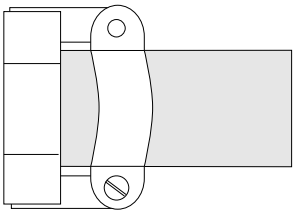
Rear Mount



SHELL SIZE	REAR MOUNT
10SL	.303 (7.70)
14S	.303 (7.70)
16S	.303 (7.70)
16	.242 (6.15)
18	.303 (7.70)
20	.303 (7.70)
22	.303 (7.70)
24	.303 (7.70)
28	.343 (8.70)
32	.309 (7.85)
36	.309 (7.85)
40	.309 (7.85)

All dimensions in inches (millimeters in parenthesis)

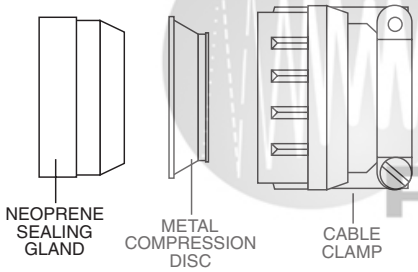
MS3057-A Cable Clamp



Standard MS3057 cable clamps have a dual clamping action to provide a balanced, positive hold on the wires and greatly reduce moisture transmission. This cable clamp accepts MS3420 bushings. MS3420 bushings can be nested to reduce the inside diameter to more closely match the diameter of the cable or wire bundle.

		STANDARD CLAMP				STANDARD CLAMP AND TELESCOPIC BUSHING		
SHELL SIZE	THREAD 2B	LOW COST CAST ZINC	ALUMINUM W/ BRASS SCREWS	ALUMINUM W/ STAINLESS STEEL SCREWS	MAXIMUM CABLE DIAMETER INCH (mm)	LOW COST ZINC WITH BUSHING	BUSHING INCLUDED	BUSHING ID INCH (mm)
8S	1/2-24UNEF	97-3057-1003	MS3057-3A	M85049/41-3A	.220 (5.58)	97-3057-1003-1	MS3420-3	0.130 (3.3)
10S/10SL	5/8-24UNEF	97-3057-1004	MS3057-4A	M85049/41-4A	.312 (7.92)	97-3057-1004-1	MS3420-4	0.220 (5.6)
12/12S/12SL	5/8-24UNEF	97-3057-1004	MS3057-4A	M85049/41-4A	.312 (7.92)	97-3057-1004-1	MS3420-4	0.220 (5.6)
14/14S	3/4-20UNEF	97-3057-1007	MS3057-6A	M85049/41-6A	.438 (11.13)	97-3057-1007-1	MS3420-6	0.312 (7.9)
16/16S	7/8-20UNEF	97-3057-1008	MS3057-8A	M85049/41-8A	.562 (14.27)	97-3057-1008-1	MS3420-8	0.437 (11.1)
18	1-20UNEF	97-3057-1010	MS3057-10A	M85049/41-10A	.625 (15.88)	97-3057-1010-1	MS3420-10	0.562 (14.3)
20/22	1 3/16-18UNEF	97-3057-1012	MS3057-12A	M85049/41-12A	.750 (19.05)	97-3057-1012-1	MS3420-12	0.625 (15.9)
24/28	1 7/16-18UNEF	97-3057-1016	MS3057-16A	M85049/41-16A	.938 (23.83)	97-3057-1016-1	MS3420-16, -12	0.625 (15.9)
32	1 3/4-18UNS	97-3057-1020	MS3057-20A	M85049/41-20A	1.250 (31.75)	97-3057-1020-1	MS3420-20, -16	0.750 (19.1)
36	2-18UNS	97-3057-1024	MS3057-24A	M85049/41-24A	1.375 (34.92)	97-3057-1024-1	MS3420-24, -20	0.937 (23.8)
40	2 1/4UNS-16	-	MS3057-28A	M85049/41-28A	1.625 (41.28)	-	-	- -

MS3057-C Waterproof Cable Clamp

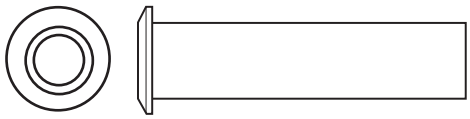


Standard MS3057-C waterproof cable clamp with mechanical strain relief for use with style F, L and T endbells. Internal neoprene gland and compression ring will seal a broad range of round cable diameters as listed below. For reduction of cable diameters, order the appropriate MS3420A bushing in table.

SHELL SIZE	PART NUMBER	WIRE DIAMETER INCHES (mm)		OPTIONAL BUSHINGS	
		MAX.	MIN.	PART NUMBER	MAX. WIRE DIA. (mm)
10SL	MS3057-4C	.312 (7.93)	.188 (4.80)	MS3420-4A	.219 (5.56)
14S	MS3057-6C	.438 (11.12)	.281 (7.10)	MS3420-6A MS3420-4A	.312 (7.93) .219 (5.56)
16/16S	MS3057-8C	.530 (13.48)	.312 (7.90)	MS3420-8A MS3420-6A	.438 (11.10) .312 (7.93)
18	MS3057-10C	.625 (15.87)	.375 (9.50)	MS3420-10A MS3420-6A	.438 (11.10) .312 (7.93)
20/22	MS3057-12C	.750 (19.00)	.500 (12.70)	MS3420-12A MS3420-8A	.540 (13.74) .438 (11.10)
24/28	MS3057-16C	.940 (23.8)	.625 (15.90)	MS3420-16A MS3420-12A MS3420-8A	.750 (19.00) .540 (13.74) .438 (11.10)
32	MS3057-20C	1.25 (31.75)	-	MS3420-20A MS3420-16A MS3420-12A	.938 (23.80) .750 (19.00) .540 (13.74)
36	MS3057-24C	1.38 (35.00)	1.00 (25.40)	MS3420-24A MS3420-18A MS3420-16A	1.12 (28.5) .938 (23.80) .750 (19.00)
40	MS3057-28C	1.62 (41.25)	1.25 (31.80)	MS3420-28A MS3420-20A MS3420-16A	1.25 (31.75) .940 (23.80) .750 (19.00)

All dimensions in inches (millimeters in parenthesis)

MS3420 Telescoping Bushings

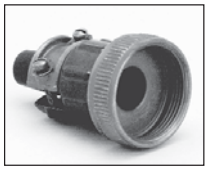


For use with style A cable clamps and AIT/MS style E/F endbells to eliminate dust, dirt and oil from entering the cable clamp. Bushings can be nested, one inside the other, to reduce the inside diameter and form a better seal against the cable jacket. Each bushing will accept the next smallest bushing.

SIZE	1ST BUSHING PART NUMBER	INSIDE DIAMETER	2ND NESTED BUSHING	INSIDE DIAMETER	FITS IN CABLE CLAMP
10SL	MS3420-4	.220 (5.59)	NONE	-	MS3057-4A
12S	MS3420-4	.220 (5.59)	NONE	-	MS3057-4A
14S	MS3420-6	.312 (7.92)	NONE	-	MS3057-6A
16S	MS3420-8	.437 (11.10)	NONE	-	MS3057-8A
16	MS3420-8	.437 (11.10)	NONE	-	MS3057-8A
18	MS3420-10	.562 (14.30)	NONE	-	MS3057-10A
20	MS3420-12	.625 (15.90)	NONE	-	MS3057-12A
22	MS3420-12	.625 (15.90)	NONE	-	MS3057-12A
24	MS3420-16	.750 (19.05)	MS3420-12	.625 (15.90)	MS3057-16A
28	MS3420-16	.750 (19.05)	MS3420-12	.625 (15.90)	MS3057-16A
32	MS3420-20	.937 (23.80)	MS3420-16	.750 (19.05)	MS3057-20A
36	MS3420-24	1.250 (31.75)	MS3420-20	.937 (23.80)	MS3057-24A
40	MS3420-28	1.375 (34.92)	MS3420-24	1.250 (31.75)	SE96-28A4

MS3420-A Reduction Bushings

For use with MS3057-C cable clamps (Style C) to reduce the wire sealing diameter. Bushings can be nested, one inside the other, to progressively reduce the inside diameter of the cable clamp. The column labeled "reduction bushings" shows the acceptable nesting options for each clamp.



9767 Cable Clamps

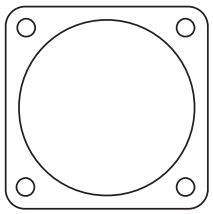
9767 waterproof cable clamp with mechanical strain relief. An internal neoprene gland seal bushing and compression washer will seal a broad range of round cable diameters as listed below.

SHELL SIZE	CABLE CLAMP PART NUMBER	MAX. CABLE OD		MIN. CABLE OD		THREAD CLASS 2B
		INCHES	(mm)	INCHES	(mm)	
10SL, 12S	9767-12-4	0.219	(5.55)	0.020	(0.51)	5/8-24 UNEF
14S	9767-14-4	0.219	(5.55)	0.020	(0.51)	3/4-20 UNEF
14S	9767-14-6	0.344	(8.73)	0.176	(4.47)	3/4-20 UNEF
16S, 16	9767-16-4	0.219	(5.55)	0.020	(0.51)	7/8-20 UNEF
16S, 16	9767-16-6	0.344	(8.73)	0.176	(4.47)	7/8-20 UNEF
16S, 16	9767-16-8	0.438	(11.12)	0.177	(4.50)	7/8-20 UNEF
18	9767-18-6	0.344	(8.73)	0.176	(4.47)	1-20 UNEF
18	9767-18-8	0.438	(11.12)	0.177	(4.50)	1-20 UNEF
18	9767-18-10	0.563	(14.29)	0.292	(7.42)	1-20 UNEF
20, 22	9767-22-8	0.438	(11.12)	0.177	(4.50)	1-3/16-18 UNEF
20, 22	9767-22-10	0.563	(14.29)	0.292	(7.42)	1-3/16-18 UNEF
20, 22	9767-22-12	0.688	(17.46)	0.370	(9.40)	1-3/16-18 UNEF
24, 28	9767-28-10	0.563	(14.29)	0.292	(7.42)	1-7/16-18 UNEF
24, 28	9767-28-12	0.688	(17.46)	0.370	(9.40)	1-7/16-18 UNEF
24, 28	9767-28-16	0.844	(21.43)	0.536	(13.61)	1-7/16-18 UNEF
32	9767-32-20	1.031	(26.19)	0.590	(14.99)	1-3/4-18 UNS
36	9767-36-16	0.844	(21.43)	0.536	(13.61)	2-18 UNS

All dimensions in inches (millimeters in parenthesis)

Accessories

Gaskets

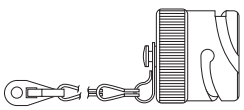
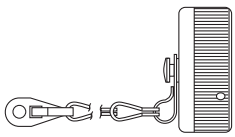
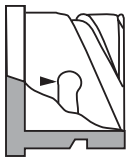
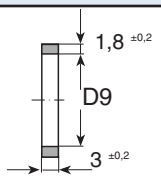


Synthetic rubber gaskets are used to insure a moisture tight seal between a receptacle and the panel. Gaskets are available for front or rear panel mounting of style 0, 2, 20, 30 and TB connectors. Gasket thickness is approximately .031" (1 mm), for nonconductive and low temperature types.
Conductive shielding gaskets contain an imbedded metal screen for EMI/RFI shielding in addition to moisture sealing. Gaskets are available for front or rear panel mounting of style 30 and TB connectors. Gasket thickness is .020" (.5 mm).

	FRONT MOUNT			REAR MOUNT
SHELL SIZE	NON-CONDUCTIVE	CONDUCTIVE	LOW TEMPERATURE	NON-CONDUCTIVE
10SL	10-040450-010	10-040450-10S	10-036675-010	10-580649-011
14S	10-040450-014	10-040450-14S	10-036675-014	10-580649-014
16S	10-040450-016	10-040450-16S	10-036675-016	10-580649-016
16	10-040450-016	10-040450-16S	10-036675-016	10-580649-016
18	10-040450-018	10-040450-18S	10-036675-018	10-580649-018
20	10-040450-020	10-040450-20S	10-036675-020	10-580649-020
22	10-040450-022	10-040450-22S	10-036675-022	10-580649-022
24	10-040450-024	10-040450-24S	10-036675-024	10-580649-024
28	10-040450-028	10-040450-28S	10-036675-028	10-580649-026
32	10-040450-032	10-040450-32S	10-036675-032	10-580649-032
36	10-040450-036	10-040450-36S	10-036675-036	10-580649-036
40	10-040450-040	10-040450-40S	10-036675-040	10-580649-040

Metal Dust Caps With Sash Chain

Metal dust caps are used to protect the contacts when the connectors are left unmated. Dust caps come with metal chain lanyards. Dummy Receptacles are for front or rear panel mounting. AIB/GT Series connectors have bayonet ramps. The center of the connector is closed. Dummy receptacles mount on the same centers and have the same outside dimensions as a STYLE 2 receptacle. A version with a clearance hole through the middle of the connector is also available. Call for ordering information.

	DUST CAPS			
	PLUG CAP	RECEPTACLE	DUMMY RECEPTACLES	PLUG SEAL RING
SHELL SIZE				
10SL	10-580903-11*	10-580902-11*	10-580595-11*	10-564843-101
14S	10-580903-14*	10-580902-14*	10-580595-14*	10-564843-141
16S	10-580903-16*	10-580902-16*	10-580595-16*	10-564843-161
16	10-580903-17*	10-580902-17*	10-580595-17*	10-564843-161
18	10-580903-18*	10-580902-18*	10-580595-18*	10-564843-181
20	10-580903-20*	10-580902-20*	10-580595-20*	10-564843-201
22	10-580903-22*	10-580902-22*	10-580595-22*	10-564843-221
24	10-580903-24*	10-580902-24*	10-580595-24*	10-564843-241
28	10-580903-28*	10-580902-28*	10-580595-28*	10-564843-281
32	10-580903-32*	10-580902-32*	10-580595-32*	10-564843-321
36	10-580903-36*	10-580902-36*	10-580595-36*	10-564843-161
40	10-580903-40*	10-580902-40*	10-580595-40*	10-564843-401

*Select code for plating:

Z = Black anodize
3 = Olive drab cadmium plate
9 = Olive drab cadmium nickel base
G = Electroless nickel
U = Green zinc cobalt
Y = Black Zinc cobalt

Solder Contacts

1. Slide the rear accessories over the wire bundle in the proper sequence for re-assembly: cable clamp and/or endbell first, then ferrule and (if used) coupling nut.

2. Insert individual wires through the proper holes in the grommet. Use isopropyl alcohol as a lubricant.

3. Solder wires to appropriate contacts on the rear of the connector. A document covering standard soldering practices is available upon request by fax or mail. Please call.

4. Fixture the connector for reassembly using the endbell assembly tools on page 96.

5. Slide the grommet down the wires (lubricating the grommet with isopropyl alcohol will help).

6. Fill all unused grommet cavities with a wire hole filler to maintain the sealing integrity of the connector. (page 73).

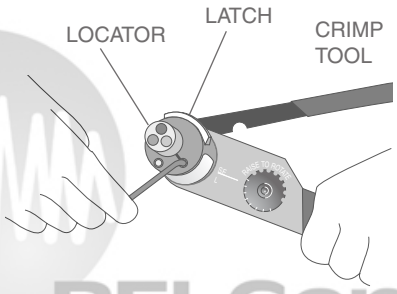
7. Slide coupling nut, ferrule, and endbell accessories over rear of the connector and tighten. For tooling, see page 96.

Crimp Tool Operation

NOTE: Hand crimp tools can be used with size 16S, 16 & 12 contacts. Size 8, 4 and 0 contacts require the use of air powered crimp tools. Call us for assistance in the use of these tools.

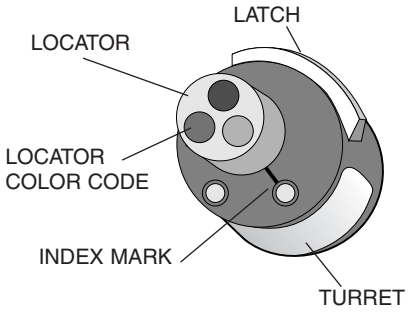
1. Strip the wires to the appropriate length. See strip lengths on the Contact Selection Guide, page 72.

2. Open the crimp tool by squeezing the handles. Push the latch on the turret to pop up the locator. Attach the turret to the crimp tool using the two captive hex bolts in the turret.

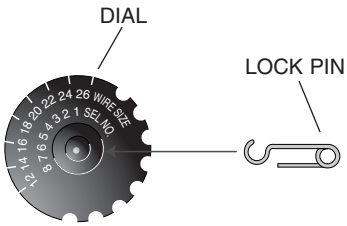


3. Select the proper locator position for your contact by rotating the locator until the proper color is aligned with the index mark. Push locator back down until it snaps into position.

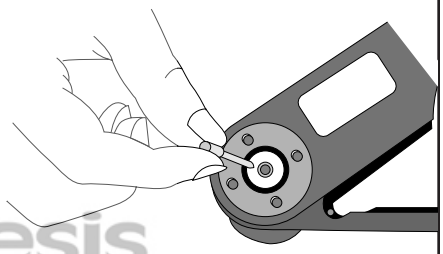
CONTACT SIZE	PIN LOCATOR COLOR	SOCKET LOCATOR COLOR
16S	Red	Red
16	Blue	Green
12	Green	Green



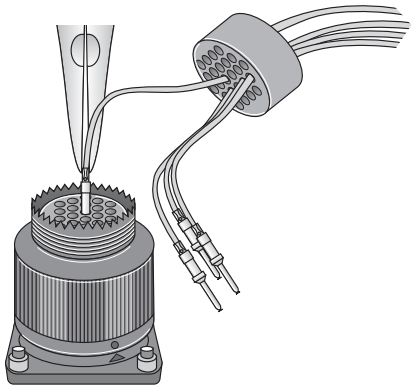
4. Adjust dial for proper wire gauge. To change the dial setting, remove the lock pin and lift center of dial. Turn to the desired wire gauge. Replace lock pin on dial.



5. Cycle the tool before inserting the contact to be sure the tool is in the open position. Drop the contact, mating end first, into the crimp cavity of the tool. Squeeze the tool handle just enough to grip the contact without actually crimping it.

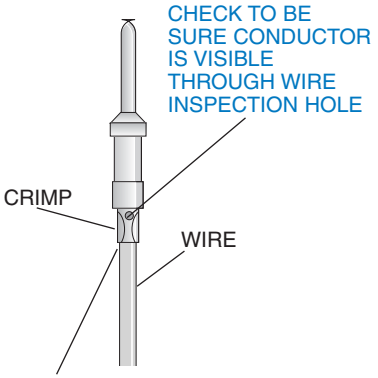


6. Insert the stripped wire into the contact with a slight twisting motion. Be sure all wire strands are inside the contact. Squeeze the handle to cycle the tool. The handle will not release until the contact is completely crimped.



Crimp Tool Operation (continued)

7. Remove the crimped contact. Pull on the wire slightly to be sure it is properly crimped. Be sure the contact is not bent or damaged in any way. Visually inspect the crimp:



INSULATION SHOULD BUTT UP AGAINST THE END OF THE CONTACT.

MICRO-SECTIONS

Enlargement of micro-section permits a final inspection of crimp quality. This test is recommended whenever new tools or new types of wire or contacts are used.

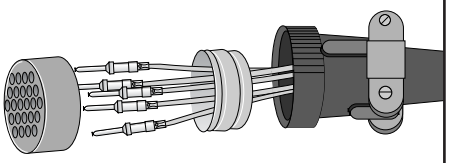
Crimp Tensile Strength

Initial minimum pullout force in lb. (before conditioning)

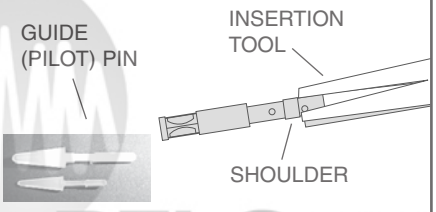
SIZE	WIRE GAUGE	LB.
16	20	20
	18	40
	16	50
12	14	70
	12	110
8	8	185
4	4	450
0	0	800

Insertion of Contacts

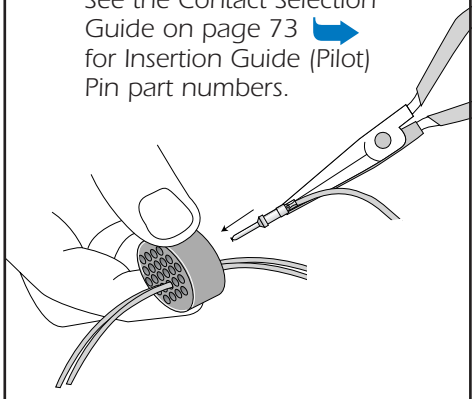
1. Slide the rear accessories over the wire bundle in the proper sequence for re-assembly: cable clamp and/or endbell first, then ferrule, and coupling nut.



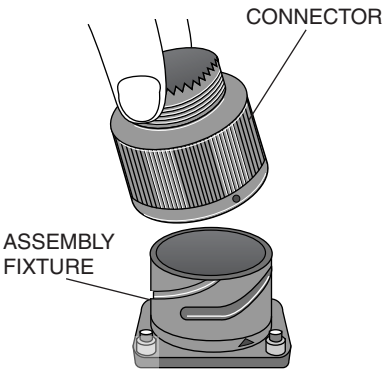
2. Use the proper insertion tool from the Contact Selection Chart on page 73. Place the contact in the tool. The tool should butt against the shoulder of the contact. Contact sizes 16S, 16, and 12 use a pliers style tool. Contact sizes 8, 4 and 0 use a tool with a 'C' shaped shaft.



3. Lubricate the grommet with isopropyl alcohol (do not use any lubricant other than isopropyl alcohol). Insert the contact through the appropriate cavity in the grommet. Sizes 16S, 16 and 12 socket contacts must be installed using guide pins. See the Contact Selection Guide on page 73 for Insertion Guide (Pilot) Pin part numbers.

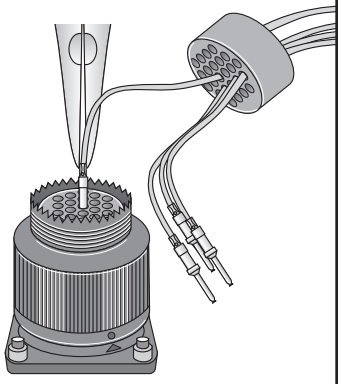


4. Place the connector into an assembly fixture (fixtures are available for production use, call us.) If you are not using a fixture, be sure to allow clearance on the mating face of the connector for the guide pins to come through the connector during insertion.



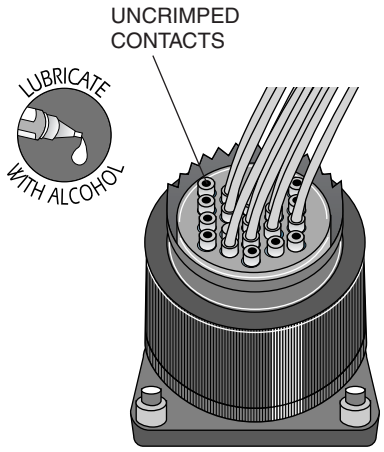
5. Lubricate the contact cavities of the connector insulator with isopropyl alcohol (do not use any other type of lubricant).

6. Using guide pins where necessary, push straight down with a firm even pressure until the contact snaps into position in the proper cavity. Start at the center of the pattern and work toward the outer edges.

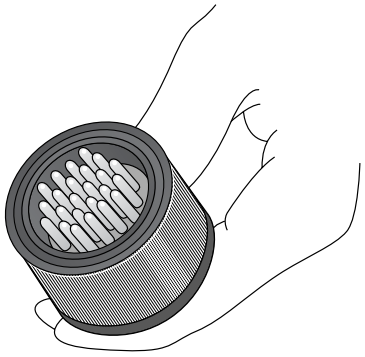


Insertion of Contacts

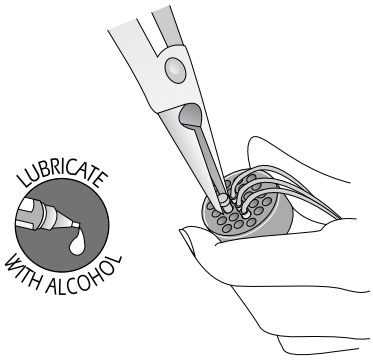
7. Fill any unused cavities with contacts.



8. Check the mating face of the connector to insure that all the same size contacts are on the same plane (fully inserted). If not, the contact is not fully inserted. Remove the contact using the proper extraction tool and procedure and reinsert. Do not attempt to reinsert the insertion tool to correct the problem.



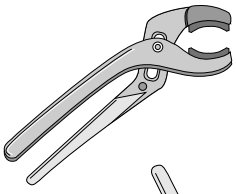
9. A wire hole filler must be inserted into the grommet behind the unused contacts to maintain the sealing integrity of the connector. See the Contact Selection Chart on page 73 for wire hole fillers.

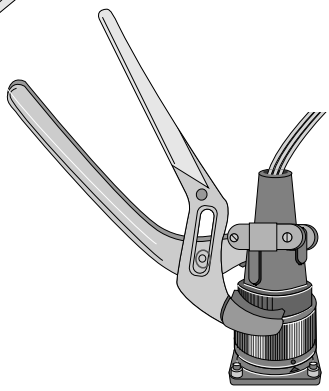


10. Place the connector back in the fixture for re-assembly. Slide the connector accessories back down the cable over the rear of the connector and tighten. Use the appropriate endbell tools as shown on page 73.

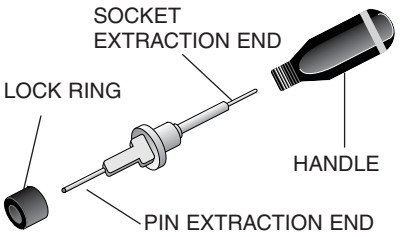
Extraction of Contacts

1. Remove the endbell accessories and slide them back over the wires. Use the appropriate endbell tools as shown on page 96.

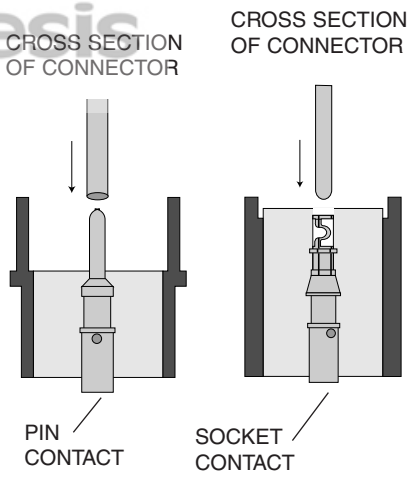




2. Use the proper extraction tool from the Contact Selection Chart on page 73. The extraction tool can be used for both pin and socket contacts by removing the shaft from the handle and reversing it for pin or socket extraction.



3. On the mating face of the connector, insert the tool over the pin contact or into the socket contact until the tool bottoms. Apply a slow continuous pressure to push the contact out the rear of the connector. When the shoulder of the tool "thunks" against the insulator, the contact is extracted.



4. Carefully remove the extraction tool from the connector to avoid damage to the insulator.

Amphenol How To Order Guide

AIB/GT Series Connectors

GT C 00 A 36-5 P W - 002

SERIES

GT Circular connectors with bayonet coupling

CONTACT STYLE/INSERT

C = Crimp
S = Solder
CY = Crimp with Viton
SY = Solder with Viton
CL = Crimp with low smoke/flame retardant inserts
SL = Solder with low smoke/flame retardant inserts

SHELL STYLE

00 Wall mount receptacle
01 Inline receptacle
02 Box mount receptacle
020 Box mount receptacle with accessory threads
030 Square flange receptacle - rear panel mount (Most Popular)
05 Dummy receptacle
06 Straight plug (Most Popular)
062 Straight plug with deep serrated coupling nut*
064 Panel mounted plug with heavy duty coupling nut
065 Straight plug with long heavy duty coupling nut
07 Jam nut receptacle - rear panel mount
070 Jam nut receptacle with accessory threads
08 90˚ angle plug
TB Thru-bulkhead

CONNECTOR SHELL VARIATIONS

Omit for standard olive drab with silver plated contacts
G96 Black anodized
014 Olive drab cadmium plate, nickel base
A24 Gold/nickel plated contacts
023 Electroless nickel (RoHS with Crimp only)
025 Black zinc cobalt (RoHS with Crimp only)
027 Conductive black zinc cobalt
024 Green zinc cobalt
B30 Gold
New! RDS Radsok power contacts 8, 4 & 0 socket contact only
116 Less pre-tinned solder cups
472 116 & 025 mod codes (RoHS)
548 116 & 023 mod codes (RoHS)

ALTERNATE INSERT ROTATION

"W", "X", "Y", "Z" designates that the insert is rotated in its shell from a normal position. No letter required for normal (no rotation) position.
See pages 59-69.

CONTACT STYLE

P designates pin contacts
S designates socket contacts

SHELL SIZE & LAYOUT

See pages 50-69.

CONNECTOR CLASS

A General duty, threaded backshell, no cable clamp, no grommet
AF General duty, threaded backshell, cable clamp, no grommet
F General duty, threaded backshell, cable clamp, with grommet
CF General duty, threaded endbell, gland-seal cable clamp, no grommet
CFZ General duty, threaded endbell, gland-seal cable clamp, with grommet
G One-piece, heat shrink endbell adaptor, with grommet (use with heat shrink boot – see Accessories, pages 258-260)
G2 Two-piece, heat shrink endbell adaptor, with grommet (use with heat shrink boot – see Accessories, pages 258-260)
LC Long threaded backshell, gland-seal cable clamp, with grommet, and basket-weave cord grip (please call with cable O.D.)
LCF Long threaded endbell, gland-seal cable clamp, no grommet
LCFZ Long threaded endbell, gland-seal cable clamp, with grommet
R General duty, threaded backshell, no cable clamp, with grommet
RV General duty, short backshell, with grommet (may be used with heat shrink boot – see Accessories, pages 258-260)
CFGG General duty, threaded endbell, gland-seal cable clamp, no grommet, rubber-covered coupling nut (shell styles 06 and 08 only)
PP Panel plug, only for shell styles 06 and 064
LT Long back shell for metal core conduit, with grommet (please call with conduit O.D.)
PFC For plastic, flexible conduit (please call with conduit O.D.) see pages 262-263.
SL Long backshell for use with PG gland-seal style cord grip (please call with cable O.D.)

Mateability with identical contact arrangements

Connector Style	Mateable with Style
GT00	GT06/062/064/065/08
GT01	GT06/062/064/065/08
GT02	GT06/062/064/065/08
GT020	GT06/062/064/065/08
GT030	GT06/062/064/065/08
GT06/062/064/065	GT00/01/02/020/03/030/05/070/TB
GT07/070	GT06/062/064/065/08
GT08	GT00/01/02/020/03/030/05/070/TB
GTTB	GT06/062/064/065/08

Have a unique requirement?
Doing standard modifications quickly is our specialty! To save cost, minimize lead time, and reduce assembly labor, **please call 800-523-0727** for engineering assistance.

AIBC/ACA-B Series Connectors

To more easily illustrate ordering procedure, part number ACA3106E181SXB-F80 is shown as follows:

ACA 3106 E 18 1 S X B - F80

SERIES

ACA Circular Connector Family

SHELL STYLES

- 3100 - Wall mount receptacle with rear accessory threads for front mounting through holes in flange
- 3101 - Cable connecting receptacle with rear accessory threads
- 3102 - Front mount box receptacle no rear accessory threads through holes in flange
- 3103 - Rear mount box receptacle with rear accessory threads through holes in flange
- 3106 - Plug straight
- 3107A - Jam nut receptacle rear mount no rear accessory threads
- 3108 - Plug with 90 degree endbell

CONNECTOR CLASS

- E Environmental with resilient insulator and endbell with clamp and bushing
- F Environmental with resilient insulator and endbell with rear accessory threads
- G Two piece backshell for heat shrink boots
- R Environmental with resilient insulator and shortened lightweight endbell without cable clamp

SHELL SIZE

10SL, 14S, 16S, 16, 18, 20, 22, 24, 28, 32, and 36

CONNECTOR MODIFICATION

- 01 - Metric crimp contacts
- 116 - Less solder filled contacts
- F80 - AWG Crimp contacts
- A176 - Gold plated contacts
- A23 - Electroless nickel plating shells
- A232 - Black zinc cobalt plated shells
- F42 - Less grommet, endbell & sleeve (ferrule)
- F0 - Less contacts (ordered separately)
- RFI - Grounding spring on barrel (3106 & 3108)
- T00 - Metric threaded holes in flange (3100, 3102, 3103 only)

Consult factory for other modifications

REVERSE BAYONET COUPLING

ALTERNATE POSITION

W, X, Y, and Z

No suffix required for normal position

See pages 59-69 for valid alternate insert position (rotation)

CONTACT TYPE

P - Pin

S - Socket

CONNECTOR ARRANGEMENT

See pages 50-58 for layouts by number of contacts

Mateability with identical contact arrangements

Connector Style	Mateable with Style
ACA 3100	ACA3106/ ACA3108
ACA 3101	ACA3106/ ACA3108
ACA 3102	ACA3106/ ACA3108
ACA 3103	ACA3106/ ACA3108
ACA 3105	ACA3106/ ACA3108
ACA 3106	ACA3101/ ACA3102/ ACA3103
ACA 3108	ACA3101/ ACA3102/ ACA3103

Use the AIB/GT Series part numbering system on pages 48-49 whenever possible.

Connector Tools

TG70 Strap Wrench

The strap wrench is used to connect or disconnect coupling nuts in a confined space, or to tighten or loosen endbells without damaging the connector plating. A strap wrench also increases torque, allowing you to more easily mate or unmate a connector pair. Substitute tools, such as a pipe wrench or pliers, should never be used because of the high probability of severe damage to the connector plating or the coupling mechanism.

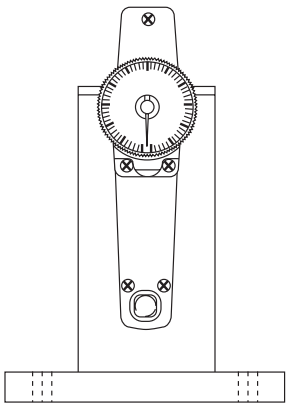
TG69P Non-Marring Adjustable Endbell Pliers For Field Service

The TG69P pliers have resilient jaws and are used to tighten or remove endbells without damaging the connector plating. The pliers are adjustable and will accommodate all of the connector sizes in this catalog. Substitute tools, such as a pipe wrench or metal jaw pliers, should never be used due to the high probability of severe damage to the connector plating. Replacement jaws, Part No. G77015, are available.

600 Series Production System

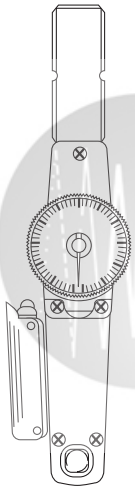
The 600 Series is a complete system for the proper assembly and torquing of connector endbells. The System includes a bench mounted or hand-held torque wrench, plug and receptacle holders, and a range of endbell tightening tools. When used together, these tools provide the user with consistent endbell installations. Each item is shipped with detailed assembly instructions.

600-007



Bench mounted Torque wrench

600-004



Hand held Torque wrench

Plug and Receptacle Holders

600B005-R 600B005-P 600D005-R 600D005-P

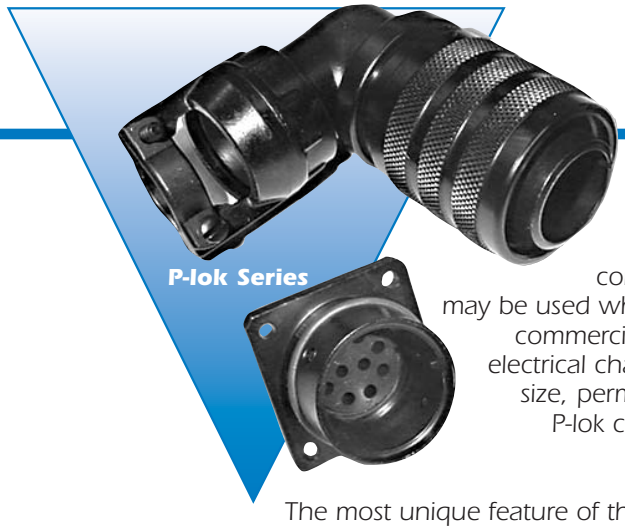
SIZE	MIL-DTL-5015 FOR AIT/MS, AIB/GT, P-lok RECEPTACLES	MIL-DTL-5015 FOR AIT/MS, AIB/GT, P-lok PLUGS	MIL-DTL-26482 FOR PT, PT-SE, MS311_, MS312_ RECEPTACLES	MIL-DTL-26482 FOR PT, PT-SE, MS311_, MS312_ PLUGS
8/8S	600B005-8R	600B005-8P	600D005-8R	600D005-8P
10S/SL	600B005-10R	600B005-10P	600D005-10R	600D005-10P
12/12S	600B005-12R	600B005-12P	600D005-12R	600D005-12P
14/14S	600B005-14R	600B005-14P	600D005-14R	600D005-14P
16/16S	600B005-16R	600B005-16P	600D005-16R	600D005-16P
18	600B005-18R	600B005-18P	600D005-18R	600D005-18P
20	600B005-20R	600B005-20P	600D005-20R	600D005-20P
22	600B005-22R	600B005-22P	600D005-22R	600D005-22P
24	600B005-24R	600B005-24P	600D005-24R	600D005-24P
28	600B005-28R	600B005-28P	-	-
32	600B005-32R	600B005-32P	-	-
36	600B005-36R	600B005-36P	-	-

Torque Values

Important Note:
If Barrel/Shell have three threads or less, torque to 30 to 35 inch - Lbs (3.4 to 4.0 NM) per L-725-2.

SIZE	IN./LB. MAX.
10SL	26
14S	44
16	50
16S	50
18	55
20	65
22	85
24	90
28	114
32	120
36	153
40	170

P-lok® Series



Amphenol Industrial P-lok connectors are quick mating, multi-pin connectors designed for use in a variety of commercial and industrial applications where reliable yet convenient electrical connections are required. P-lok connectors may be used where threaded MIL-DTL-5015 (MIL-C-5015) connectors or their commercial equivalent are specified. P-lok connectors feature the same electrical characteristics as MIL-DTL-5015 and are approximately the same size, permitting easy conversion from the threaded style connectors to P-lok connectors. P-lok connectors; however, are not intermateable with MIL-DTL-5015 connectors.

The most unique feature of the P-lok connector series is the quick mating coupling system. Similar to the coupling system used on pneumatic hose connections, the P-lok connector creates positive locking of the plug and receptacle using a spring loaded coupling ring on the plug and stainless steel ball bearings on the receptacle. The connection is confirmed through feel and by an audible snap, ensuring a positive lock that stays mated.

P-lok connectors are manufactured from machined aluminum and finished in black, hard anodized coating, providing a strong, industrial grade connector, engineered for a long service life in applications where threaded connections are not suitable. P-lok inserts and contacts are based on MIL-DTL-5015 specifications. The machined contacts are available for 16, 12, 8, 4 and 0 gauge wire in both crimp and solder styles with silver or gold plated finishes. P-lok is an environmentally sealed connector series that is rated to IP65 specifications. Insert layouts are available in 1 to 26 conductor arrangements. These connectors are available with a variety of plug and receptacle styles with various types of connector hardware and strain relief options.

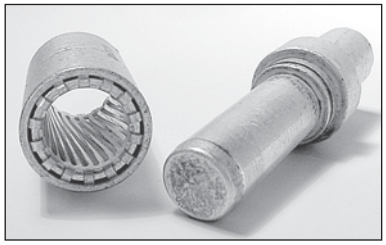
Applications

- Communications equipment
- Industrial controls
- Motion control
- Photographic lighting equipment
- Sensors
- Telecommunications
- Power generation

Features

- Rapid mate spring loaded, push to mate, pull to unmate coupling system
- Audible & tactile confirmation of positive locking connection
- Eliminates problems inherent in threaded connectors such as cross threading, improper mating & loose connections
- Insert arrangements available in 1 to 26 conductor arrangements

New! ▶ Power P-lok uses silver plate, crimp style, high amperage, low mating-force Radsok* socket contacts. Available in contact sizes 8, 4 and 0.



*Large Radsok contact shown for clarity of internal features.

MATERIALS & FINISHES

Shell	Aluminum Alloy
Plating	Black zinc conductive, electroless nickel, black cadmium, hard black anodized
Contacts	Brass or Copper alloy
Plating	Silver or Gold
Insulator	Neoprene®

ELECTRICAL DATA

Operating Voltage/Test Voltage

SERVICE RATING	SUGGESTED* OPERATING VOLTAGE	
	(DC)	(AC)
I	250	200
A	700	500
D	1,250	900
E	1,750	1250
B	2,450	1750
C	4,200	3000

Current Rating & Contact Resistance

CONTACT SIZE AWG	TEST CURRENTS		POTENTIAL DROP IN MILLIVOLTS	RESISTANCE MILLIOHM MAX.
	CONTACT	MULTI-CIRCUITS		
16	22	13	21	6
12	41	23	20	3
8	73 (100)*	46 (69)*	12 (20)*	1 (0.44)*
4	135 (120)*	80 (120)*	10 (18)*	0.5 (0.23)*
0*	(335)*	(225)*	10 (27)*	0.2 (0.18)*

*Using Radsok contact

MECHANICAL

Wire Range Sizes	16 to 4 AWG (crimp contacts on page 108)
Insulation Resistance	>5000 megohms @ 77°F (25°C)

Wire Sealing Range

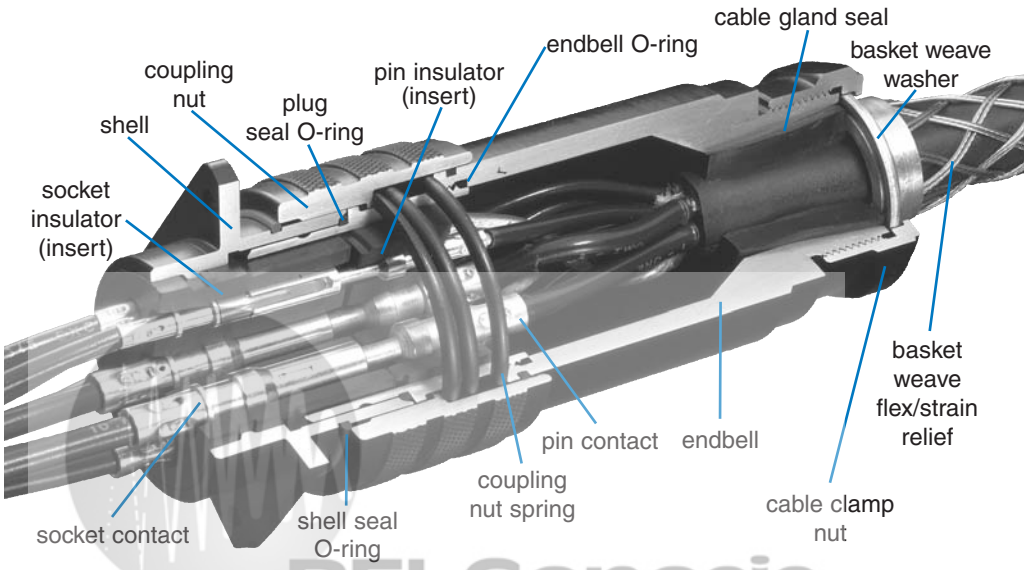
CONTACT SIZE	SEALING RANGE		INSULATION STRIP LENGTHS
	MIN. (mm)	MAX. (mm)	
16	.0900 (2.3)	0.118 (3.0)	0.312 (7.9)
12	0.126 (3.2)	0.1777 (4.5)	0.312 (7.9)
8	0.150 (3.8)	0.256 (6.5)	0.562 (14.3)
4	0.279 (7.1)	0.336 (9.3)	0.500 (12.7)
0	0.415 (10.5)	0.550 (13.9)	0.750 (19.0)

Mating Life	100 cycles minimum to MIL-DTL-5015, 3.16
Salt Spray	500 hours+
Fluid Resistance	Resistant to most oils, acids and alkalis.
Heat	-67°F (-55°C) to 257° (125°C)
Chemical Resistance	48 hours, method 1001 of MIL-STD-1344. No exposure of base metal.

Technical Specifications

Vibration	10 to 500 Hz (10 g's) 10 microseconds max. discontinuity per MIL-STD-1344 method 2005
Contact Type	Solder or Crimp (hard silver or gold plating).
Number of Circuits	1 to 26 (see pages 102-107).
Contact Insertion (crimp)	From rear with simple hand tools.
Humidity & Moisture Resistance	Class E. Meets IP65 requirements for coupled connectors.
Approvals	UL # E109316 (for 250 Volts) CSA LR83458
Shock	50 g's, 11 milliseconds duration, 3 major axes 10 microseconds max. discontinuity per MIL-STD-1344 condition A to MIL-DTL-5015, 3-13

Cross Section

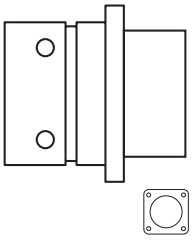


Components

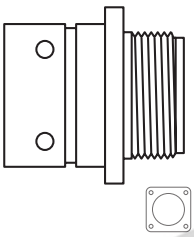
	O-Ring	Barrel/Shell	Insert	Contact	Coupling Nut	Coil Force Spring	Endbell	Cable Clamp
Plugs								
Receptacles								

Follow these 8 steps to create your part number...

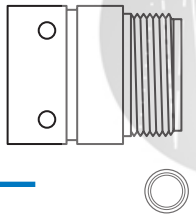
STEP 1
Select Shell Style, Plug or Receptacle



P3102B
Box Mount Receptacle

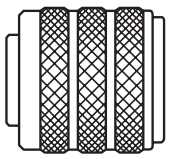


P3100
Wall Mount Receptacle



P3101
Cable Mount Receptacle

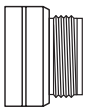
Mates with



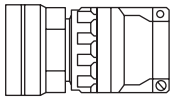
P3106
Plug

STEP 2
Choose Endbell

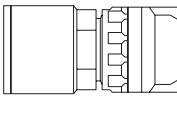
A — Threaded Adapter



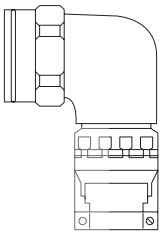
F* — Standard Clamp



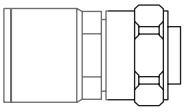
M* — Straight Gland Seal with Standard Clamp



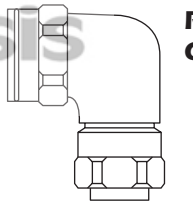
Z* — Right Angle Gland Seal with Standard Clamp



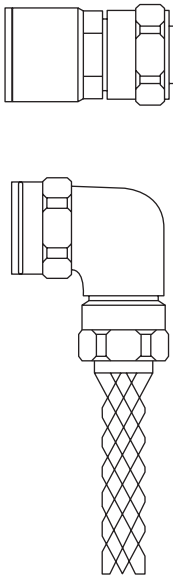
D — Straight Gland Seal



X — Right Angle Gland Seal



K — Straight Gland Seal with Basket Weave



Y — Right Angle Gland Seal with Basket Weave

*FOR F, M, AND Z ENDBELLS ONLY:

SHELL SIZE	MECHANICAL CLAMP ENTRY SIZE
16	.400 - .550
18	.400 - .600
20	.500 - .775
22	.500 - .775
24	.600 - .950
28	.600 - .950

STEP 3
Choose Layout

See chart on pages 103-107.

STEP 4
Choose Contact

P = Pin
S = Socket

STEP 5
Choose Rotation

See pages 106-107.
(omit for normal)
W, X, Y, Z

STEP 6
Choose Contact Termination

1 = Silver Crimp
2 = Silver Solder
3 = Gold Crimp
4 = Gold Solder
5 = Less Contact
7 = Silver Radsok 8, 4, 0 socket

See pages 108-111 for for other contact alternatives.

STEP 7
Choose Cable Gland Seal Code

For D, K, X and Y endbells only.
(omit for all others)

MIN./ MAX.	.125/.250	.250/.375	.375/.500	.500/.625	.625/.750	.750/.875	.875/1.000
CABLE GLAND SEAL CODE	2	3	4	5	6	7	8
16	X	X	X				
18	X	X	X	X			
20	X	X	X	X	X		
22	X	X	X	X	X	X	X
24	X	X	X	X	X	X	X
28	X	X	X	X	X	X	X

STEP 8
Choose Shell Plating

(omit for standard black zinc)

689 = Electroless Nickel
Y01 = Black Cadmium
Z01 = Hard Black Anodized

Create your part number using these eight steps

(example)	P3100	D	20-6	S	X	2	5	-689
	1 Shell Style	2 Endbell	3 Layout	4 Contact	5 Rotation	6 Contact Termination	7 Cable Gland Seal	8 Plating

Layouts by Number of Contacts

CONTACT LEGEND ⊕ =16 ◒ =12 ◉ =8 ○ =4 ⊗ =0
Mating face view of pin inserts

SERIES KEY: ▼=Standard ▽=Radsok®

1 CONTACT

LAYOUT	16-2
# OF CONTACTS	1-#12
SERIES	▼
SERVICE RATING	E

LAYOUT	16-12
# OF CONTACTS	1-#4
SERIES	▼ ▽
SERVICE RATING	A

LAYOUT	18-6
# OF CONTACTS	1-#4
SERIES	▼ ▽
SERVICE RATING	D

LAYOUT	18-7
# OF CONTACTS	1-#8
SERIES	▼ ▽
SERVICE RATING	B

LAYOUT	18-16
# OF CONTACTS	1-#12
SERIES	▼
SERVICE RATING	C

LAYOUT	22-7
# OF CONTACTS	1-#0
SERIES	▽
SERVICE RATING	E

2 CONTACTS

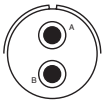
LAYOUT	16-11
# OF CONTACTS	2-#12
SERIES	▼
SERVICE RATING	D

LAYOUT	16-13
# OF CONTACTS	2-#12
SERIES	▼
SERVICE RATING	A

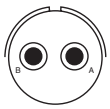
2 CONTACTS

LAYOUT	18-3
# OF CONTACTS	2-#12
SERIES	▼
SERVICE RATING	D

LAYOUT	18-14
# OF CONTACTS	1-#16; 1-#4
SERIES	▽
SERVICE RATING	A

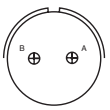


LAYOUT	20-23
# OF CONTACTS	2-#8
SERIES	▼ ▽
SERVICE RATING	A

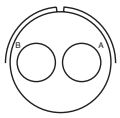


LAYOUT	22-1
# OF CONTACTS	2-#8
SERIES	▼ ▽
SERVICE RATING	D

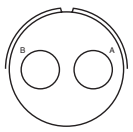
LAYOUT	22-8
# OF CONTACTS	2-#12
SERIES	▼
SERVICE RATING	E



LAYOUT	22-11
# OF CONTACTS	2-#16
SERIES	▼
SERVICE RATING	B



LAYOUT	24-9
# OF CONTACTS	2-#4
SERIES	▼ ▽
SERVICE RATING	A



LAYOUT	28-7
# OF CONTACTS	2-#4
SERIES	▼ ▽
SERVICE RATING	D

3 CONTACTS

LAYOUT	16-7
# OF CONTACTS	2-#16; 1-#8
SERIES	▼ ▽
SERVICE RATING	A

LAYOUT	16-10
# OF CONTACTS	3-#12
SERIES	▼
SERVICE RATING	A

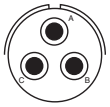
LAYOUT	18-5
# OF CONTACTS	1-#16; 2-#12
SERIES	▼
SERVICE RATING	D

LAYOUT	18-22
# OF CONTACTS	3-#16
SERIES	▼ ▽
SERVICE RATING	D

LAYOUT	20-3
# OF CONTACTS	3-#12
SERIES	▼
SERVICE RATING	D

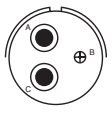
LAYOUT	20-6
# OF CONTACTS	3-#16
SERIES	▼
SERVICE RATING	D

LAYOUT	20-19
# OF CONTACTS	3-#8
SERIES	▼ ▽
SERVICE RATING	A

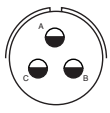


LAYOUT	22-2
# OF CONTACTS	3-#8
SERIES	▼ ▽
SERVICE RATING	D

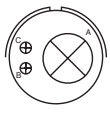
3 CONTACTS



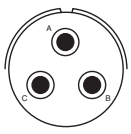
LAYOUT	22-6
# OF CONTACTS	1-#16; 2-#8
SERIES	▼ ▽
SERVICE RATING	D



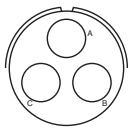
LAYOUT	22-9
# OF CONTACTS	3-#12
SERIES	▼
SERVICE RATING	E



LAYOUT	22-21
# OF CONTACTS	2-#16; 1-#0
SERIES	▽
SERVICE RATING	A



LAYOUT	28-3
# OF CONTACTS	3-#8
SERIES	▼ ▽
SERVICE RATING	E



LAYOUT	28-6
# OF CONTACTS	3-#4
SERIES	▼ ▽
SERVICE RATING	D

4 CONTACTS

LAYOUT	16-9
# OF CONTACTS	2-#16; 2-#12
SERIES	▼
SERVICE RATING	A

LAYOUT	18-4
# OF CONTACTS	4-#16
SERIES	▼
SERVICE RATING	D

LAYOUT	18-10
# OF CONTACTS	4-#12
SERIES	▼
SERVICE RATING	A

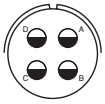
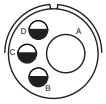
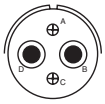
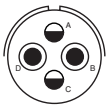
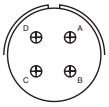
LAYOUT	18-13
# OF CONTACTS	3-#1; 1-#8
SERIES	▼ ▽
SERVICE RATING	A

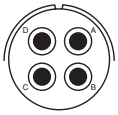
Layouts by Number of Contacts

CONTACT LEGEND ⊕=16 ◒=12 ◉=8 ◯=4 ⊗=0
Mating face view of pin inserts

SERIES KEY: ▼=Standard ▽=Radsok®

4 CONTACTS

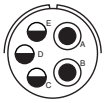
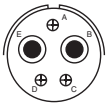








LAYOUT	20-4	20-20	20-24	22-4	22-10	22-22	24-22
# OF CONTACTS	4-#12	3-#12; 1-#4	2-#16; 2-#8	2-#12; 2-#8	4-#16	4-#8	4-#8
SERIES	▼	▼ ▽	▼ ▽	▼ ▽	▼	▼ ▽	▼ ▽
SERVICE RATING	D	A	A	A	E	A	D

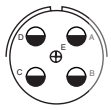
5 CONTACTS

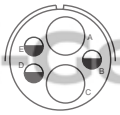
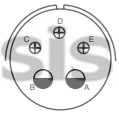
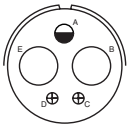


LAYOUT	18-11	18-20	18-29	20-14	22-12
# OF CONTACTS	5-#12	5-#16	5-#16	3-#12; 2-#8	3-#16; 2-#8
SERIES	▼	▼	▼	▼ ▽	▼ ▽
SERVICE RATING	A	A	A	A	A

5 CONTACTS

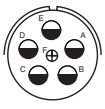


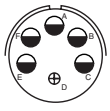
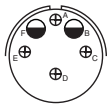
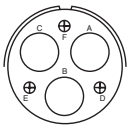




LAYOUT	22-13	22-34	24-12	24-17	28-5
# OF CONTACTS	1-#16; 4-#12	2-#16; 3-#12	3-#12; 2-#4	3-#16; 2-#12	2-#16; 1-#12; 2-#4
SERIES	▼	▼	▼ ▽	▼	▼ ▽
SERVICE RATING	A(A-D) D(E)	D	A	D	D

6 CONTACTS





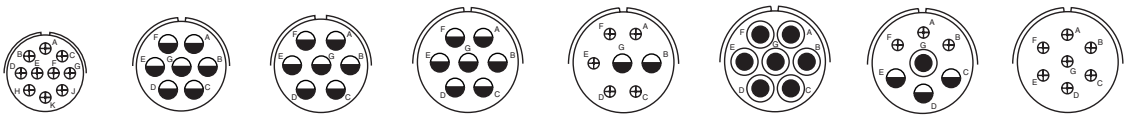
LAYOUT	18-12	20-8	20-17	20-22	22-5	22-15	22-24	28-22
# OF CONTACTS	6-#16	4-#16; 2-#8	1-#16; 5-#12	3-#16; 3-#8	4-#16; 2-#12	1-#16; 5-#12	4-#16; 2-#12	3-#16; 3-#4
SERIES	▼	▼ ▽	▼	▼ ▽	▼	▼	▼	▼ ▽
SERVICE RATING	A	I	A	A	D	A(A-C, E, F) E(D)	D(C-E) A(A, B, F)	D

Layouts by Number of Contacts

CONTACT LEGEND ⊕=16 ◒=12 ◉=8 ◯=4 ⊗=0
Mating face view of pin inserts

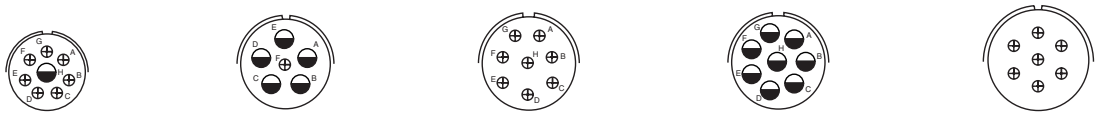
SERIES KEY: ▼=Standard ▽=Radsok®

7 CONTACTS



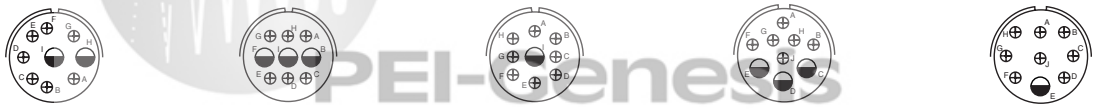
LAYOUT	18-9	20-15	22-28	24-2	24-3	24-10	24-16	24-27
# OF CONTACTS	5-#16; 2-#12	7-#12	7-#12	7-#12	5-#16; 2-#12	7-#8	3-#16; 3-#12; 1-#8	7-#16
SERIES	▼	▼	▼	▼	▼	▼ ▽	▼ ▽	▼
SERVICE RATING	I	A	A	D	D	A	D(A, B, F, G) A(C, D, E)	E

8 CONTACTS



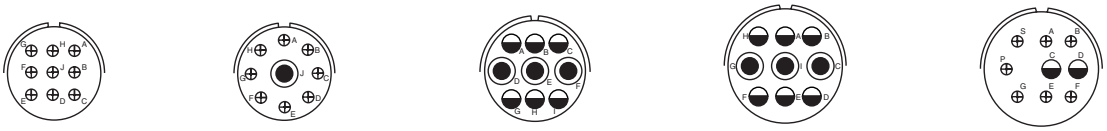
LAYOUT	18-8	20-7	22-18	22-23	24-6
# OF CONTACTS	7-#16; 1-#12	8-#16	8-#16	8-#12	8-#12
SERIES	▼	▼	▼	▼ ▽	▼ ▽
SERVICE RATING	A	A(B, C, F, G) I(all others)	A(C-E) D(all others)	D(H) A(all others)	D(A, G, H) A(all others)

9 CONTACTS



LAYOUT	20-16	20-18	20-21	22-16	22-17
# OF CONTACTS	7-#16; 2-#12	6-#16; 3-#12	8-#16; 1-#12	6-#16; 3-#12	8-#16; 1-#12
SERIES	▼	▼	▼	▼	▼
SERVICE RATING	A	A	A	A	D(A) A(all others)

9 CONTACTS



LAYOUT	22-20	22-27	24-11	28-1	28-4
# OF CONTACTS	9-#16	8-#16; 1-#8	6-#12; 3-#8	6-#12; 3-#8	7-#16; 2-#12
SERIES	▼	▼ ▽	▼ ▽	▼ ▽	▼
SERVICE RATING	A	D(J) A(all others)	A	D(A, E, J) A(all others)	E(G, P, S) D(all others)

Layouts by Number of Contacts

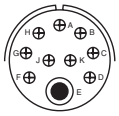
CONTACT LEGEND ⊕ =16 ◒ =12 ◉ =8 ◯ =4 ⊗ =0
Mating face view of pin inserts

SERIES KEY: ▼=Standard ▽=Radsok®

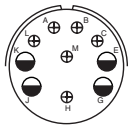
10 CONTACTS

LAYOUT 18-1
OF CONTACTS 10-#16
SERIES ▼
SERVICE RATING A(B, C, F, G) I(all others)

LAYOUT 18-19
OF CONTACTS 10-#16
SERIES ▼
SERVICE RATING A

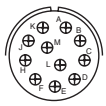


LAYOUT 24-21
OF CONTACTS 9-#16; 1-#12
SERIES ▼ ▽
SERVICE RATING D

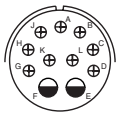


LAYOUT 28-19
OF CONTACTS 6-#16; 4-#12
SERIES ▼
SERVICE RATING A(C, E, G, J, K, L) B(H, M) D(A, B)

11 CONTACTS

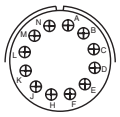


LAYOUT 20-33
OF CONTACTS 11-#16
SERIES ▼
SERVICE RATING A

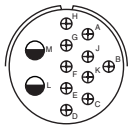


LAYOUT 24-20
OF CONTACTS 9-#16; 2-#12
SERIES ▼
SERVICE RATING D

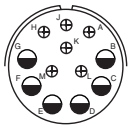
12 CONTACTS



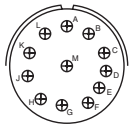
LAYOUT 24-19
OF CONTACTS 12-#16
SERIES ▼
SERVICE RATING A



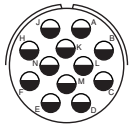
LAYOUT 28-8
OF CONTACTS 10-#16; 2-#12
SERIES ▼
SERVICE RATING E(L, M) B(D) A(all others)



LAYOUT 28-9
OF CONTACTS 6-#16; 6-#12
SERIES ▼
SERVICE RATING D



LAYOUT 28-18
OF CONTACTS 12-#16
SERIES ▼
SERVICE RATING E(M) D(G, H, J-L) A(A, B) I(C-E, F)

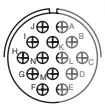


LAYOUT 28-51
OF CONTACTS 12-#12
SERIES ▼
SERVICE RATING A

13 CONTACTS

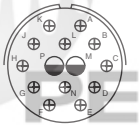
LAYOUT 20-11
OF CONTACTS 13-#16
SERIES ▼
SERVICE RATING I

14 CONTACTS

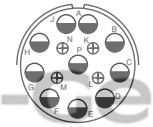


LAYOUT 20-27
OF CONTACTS 14-#16
SERIES ▼
SERVICE RATING A

LAYOUT 22-19
OF CONTACTS 14-#16
SERIES ▼
SERVICE RATING A



LAYOUT 28-2
OF CONTACTS 12-#16, 2-#12
SERIES ▼
SERVICE RATING D

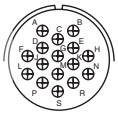


LAYOUT 28-20
OF CONTACTS 4-#16; 10-#12
SERIES ▼
SERVICE RATING A

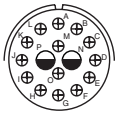
15 CONTACTS

LAYOUT 28-17
OF CONTACTS 15-#16
SERIES ▼
SERVICE RATING A(A-L) B(R) D(M-P)

16 CONTACTS



LAYOUT 24-5
OF CONTACTS 16-#16
SERIES ▼
SERVICE RATING A



LAYOUT 24-7
OF CONTACTS 14-#16; 2-#12
SERIES ▼
SERVICE RATING A

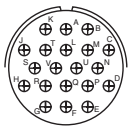
17 CONTACTS

LAYOUT 20-29
OF CONTACTS 17-#16
SERIES ▼
SERVICE RATING A

19 CONTACTS

LAYOUT 22-14
OF CONTACTS 19-#16
SERIES ▼
SERVICE RATING A

20 CONTACTS

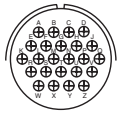


LAYOUT 28-16
OF CONTACTS 20-#16
SERIES ▼
SERVICE RATING A

22 CONTACTS

LAYOUT 28-11
OF CONTACTS 18-#16; 4-#12
SERIES ▼
SERVICE RATING A

24 CONTACTS



LAYOUT 24-28
OF CONTACTS 24-#16
SERIES ▼
SERVICE RATING I

26 CONTACTS

LAYOUT 28-12
OF CONTACTS 26-#16
SERIES ▼
SERVICE RATING A

Layouts by Shell Size

SERIES KEY: ▼ = Standard P-lok ▽ = Radsok® 8, 4, 0 socket contacts ♦ = Available in Standard or Radsok

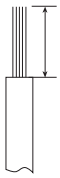
LAYOUT	P-LOK	TOTAL	CONTACT SIZES					DEGREES OF ROTATION				SERVICE RATING
			16	12	8	4	0	W	X	Y	Z	
16-2	▼	1		1				-	-	-	-	E
16-7	♦	3	2		1			80	110	250	280	A
16-9	▼	4	2	2				35	110	250	325	A
16-10	▼	3		3				90	180	270	-	A
16-11	▼	2		2				35	110	250	325	A
16-12	♦	1				1		-	-	-	-	A
16-13	▼	2		2				35	110	250	325	A
18-1	▼	10	10					70	145	215	290	A(B, C, F, G) I(all others)
18-3	▼	2		2				35	110	250	325	D
18-4	▼	4	4					35	110	250	325	D
18-5	▼	3	1	2				80	110	250	280	D
18-6	♦	1				1		-	-	-	-	D
18-7	♦	1			1			-	-	-	-	B
18-8	▼	8	7	1				70	-	-	290	A
18-9	▼	7	5	2				80	110	250	280	I
18-10	▼	4		4				-	120	240	-	A
18-11	▼	5		5				-	170	265	-	A
18-12	▼	6	6					80	-	-	280	A
18-13	♦	4		3	1			80	110	250	280	A
18-14	♦	2	1			1		80	110	250	280	A
18-16	▼	1		1				-	-	-	-	C
18-19	▼	10	10					80	120	240	-	A
18-20	▼	5	5					90	180	270	-	A
18-22	▼	3	3					70	145	215	290	D
18-29	▼	5	5					90	180	270	-	A
20-3	♦	3		3				70	145	215	290	D
20-4	▼	4		4				45	110	250	-	D
20-6	▼	3	3					70	145	215	290	D
20-7	▼	8	8					80	110	250	280	A(B, C, F, G) I(all others)
20-8	♦	6	4		2			80	110	250	280	I
20-11	▼	13	13					-	-	-	-	I
20-14	♦	5		3	2			80	110	250	280	A
20-15	▼	7		7				80	-	-	280	A
20-16	▼	9	7	2				80	110	250	280	A
20-17	▼	6	1	5				90	180	270	-	A
20-18	▼	9	6	3				35	110	250	325	A
20-19	♦	3			3			90	180	270	-	A
20-20	♦	4		3		1		80	110	250	280	A
20-21	▼	9	8	1				35	110	250	325	A
20-22	▼	6	3		3			80	110	250	280	A
20-23	▼	2			2			35	110	250	325	A
20-24	▼	4	2		2			35	110	250	325	A
20-27	▼	14	14					35	110	250	325	A
20-29	▼	17	17					80	-	-	280	A
20-33	▼	11	11					-	-	-	280	A
22-1	♦	2			2			35	110	250	325	D
22-2	♦	3			3			70	145	215	290	D
22-4	♦	4		2	2			35	110	250	325	A
22-5	▼	6	4	2				35	110	250	325	D
22-6	♦	3	1		2			80	110	250	280	D
22-7	▽	1					1	-	-	-	-	E
22-8	▼	2		2				35	110	250	325	E
22-9	▼	3		3				70	145	215	290	E
22-10	▼	4	4					35	110	250	325	E

Layouts by Shell Size

SERIES KEY: ▼ = Standard P-lok ▽ = Radsok® 8, 4, 0 socket contacts ♦ = Available in Standard or Radsok

LAYOUT	P-LOK	TOTAL	CONTACT SIZES					DEGREES OF ROTATION				SERVICE RATING
			16	12	8	4	0	W	X	Y	Z	
22-11	▼	2	2					35	110	250	325	B
22-12	♦	5	3		2			80	110	250	280	A
22-13	▼	5	1	4				35	110	250	325	A(A-D) D(E)
22-14	▼	19	19					80	110	250	280	A
22-15	▼	6	1	5				80	110	250	280	A(A-C, E, F) E(D)
22-16	▼	9	6	3				80	110	250	280	A
22-17	▼	9	8	1				80	110	250	280	D(A) A(all others)
22-18	▼	8	8					80	110	250	280	A(C-E) D(all others)
22-19	▼	14	14					80	110	250	280	A
22-20	▼	9	9					35	110	250	325	A
22-21	▽	3	2				1	80	110	250	280	A
22-22	♦	4			4			-	110	250		A
22-23	♦	8		8				35	-	250		D(H) A(all others)
22-24	▼	6	4	2				80	110	250	280	D(C, D, E,) A(A, B, F)
22-27	♦	9	8		1			80	-	250	280	D(J) A(all others)
22-28	▼	7		7				80	-	-	280	A
22-34	▼	5	2	3				80	110	250	280	D
24-2	▼	7		7				80	-	-	280	D
24-3	▼	7	5	2				80	110	250	280	D
24-5	▼	16	16					80	110	250	280	A
24-6	▼	8		8				80	110	250	280	D(A, G, H) A(all others)
24-7	▼	16	14	2				80	110	250	280	A
24-9	♦	2				2		35	110	250	325	A
24-10	♦	7			7			80	-	-	280	A
24-11	♦	9		6	3			35	110	250	325	A
24-12	♦	5		3		2		80	110	250	280	A
24-16	♦	7	3	3	1			80	110	250	280	D(A,B,F,G) A(C,D,E)
24-17	▼	5	3	2				80	110	250	280	D
24-19	▼	12	12					-	-	-	-	A
24-20	▼	11	9	2				80	110	250	280	D
24-21	▼	10	9		1			80	110	250	280	A
24-22	♦	4			4			45	110	250	-	D
24-27	▼	7	7					80	-	-	280	E
24-28	▼	24	24					80	110	250	280	I
28-1	♦	9		6	3			80	110	250	280	D(A,E,J) A(all others)
28-2	▼	14	12	2				35	110	250	325	D
28-3	♦	3			3			70	145	215	290	E
28-4	▼	9	7	2				80	110	250	280	E(G, P, S) D(all others)
28-5	♦	5	2	1		2		35	110	250	325	D
28-6	♦	3				3		70	145	215	290	D
28-7	♦	2				2		35	110	250	325	D
28-8	▼	12	10	2				80	110	250	280	E(L, M) B(D) A(all others)
28-9	▼	12	6	6				80	110	250	280	D
28-11	▼	22	18	4				80	110	250	280	A
28-12	▼	26	26					90	180	270	-	A
28-16	▼	20	20					80	110	250	280	A
28-17	▼	15	15					80	110	250	280	A(A-L) B(R) D(M-P)
28-18	▼	16	16					70	145	215	290	E(M) D(G, H, J-L) A(A, B) I(C-F)
28-19	▼	10	6	4				80	110	250	280	A(C, E, G, J-L) B(H, M) D(A, B)
28-20	▼	14	4	10				80	110	250	280	A
28-22	♦	6	3			3		70	145	215	290	D
28-51	▼	12		12				80	135	195	-	A

Pin & Socket Crimp Contacts

PIN CONTACT	SOCKET CONTACT	WIRE STRIP LENGTH	WIRE RANGE
			

CONTACT SIZE	WIRE SIZE	PART NUMBER					WIRE STRIP LENGTHS INCHES (mm)	WIRE SEALING RANGE INCHES (mm)
		PIN CONTACT		SOCKET CONTACT				
		SILVER	GOLD	SILVER	GOLD			
16S	16-18-20	**AIC16S-16P**	**AIC16S-16PG**	**AIC16S-16S**	**AIC16S-16SG**		.312 (7.9)	.090-.118 (2.3-3.0)
	12-14	AIC16S-12P	AIC16S-12PG	AIC16S-12S	AIC16S-12SG	C4		
	14-16	AIC16S-14P	AIC16S-14PG	AIC16S-14S	AIC16S-14SG	C3		
	18-20	AIC16S-20P	AIC16S-20PG	AIC16S-20S	AIC16S-20SG	C13		
	20-22	AIC16S-22P	AIC16S-22PG	AIC16S-22S	AIC16S-22SG	C14		
	22-24	AIC16S-24P	AIC16S-24PG	AIC16S-24S	AIC16S-24SG	C2		
16	16-18-20	**AIC16-16P**	**AIC16-16PG**	**AIC16-16S**	**AIC16-16SG**			
	12-14	AIC16-12P	AIC16-12PG	AIC16-12S	AIC16-12SG	C4		
	14-16	AIC16-14P	AIC16-14PG	AIC16-14S	AIC16-14SG	C3		
	18-20	AIC16-18P	AIC16-18PG	AIC16-18S	AIC16-18SG	C13		
	20-22	AIC16-20P	AIC16-20PG	AIC16-20S	AIC16-20SG	C14		
	20-24	AIC16-2024P	AIC16-2024PG	AIC16-2024S	AIC16-2024SG	C36		
	22-24	AIC16-22P	AIC16-22PG	AIC16-22S	AIC16-22SG	C2		
12	12-14	**AIC12-12P**	**AIC12-12PG**	**AIC12-12S**	**AIC12-12SG**		.312 (7.9)	.126-.177 (3.2-4.5)
	8-10	AIC12-8P	AIC12-8PG	AIC12-8S	AIC12-8SG	C5		
	10-12	AIC12-10P	AIC12-10PG	AIC12-10S	AIC12-10SG	C8		
	14-16	AIC12-14P	AIC12-14PG	AIC12-14S	AIC12-14SG	C9		
	16-18	AIC12-16P	AIC12-16PG	AIC12-16S	AIC12-16SG	C7		
	18-20	AIC12-18P	AIC12-18PG	AIC12-18S	AIC12-18SG	C6		
	20-22	AIC12-20P	AIC12-20PG	AIC12-20S	AIC12-20SG	C40		
8	8	**AIC8-8P**	**AIC8-8PG**	**AIC8-8S**	**AIC8-8SG**		.563 (14.3)	.150-.256 (3.8-6.5)
	8 High Power	-	-	AIC8-8SRAD	-			
	10-12	AIC8-10P	AIC8-10PG	AIC8-10S	AIC8-10SG	C10		
	12-14	AIC8-12P	AIC8-12PG	AIC8-12S	AIC8-12SG	C38		
4	4	**AIC4-4P**	**AIC4-4PG**	**AIC4-4S**	**AIC4-4SG**		.500 (12.7)	.279-.366 (7.1-9.3)
	4 High Power	-	-	AIC4-4SRAD	-			
	8	AIC4-8P	AIC4-8PG	AIC4-8S	AIC4-8SG	C15		
0	0	**AIC0-0P**	**AIC0-0PG**	**AIC0-0S**	**AIC0-0SG**		.750 (19.0)	394-.539 (10.0-13.7)
	0 High Power	-	-	AIC0-0SRAD	-			
	0-2	AIC0-2P	AIC0-2PG	AIC0-2S	AIC0-2SG	C11		
	4	AIC0-4P	AIC0-4PG	AIC0-4S	AIC0-4SG	C12		

Bolded items are standard crimp contacts

SOLDER THERMOCOUPLE CONTACTS			
	TYPE	PINS	SOCKETS
16S	Alumel	10-040799-02P*	10-040799-02S*
	Chromel	10-040799-01P*	10-040799-01S*
	Iron	10-040799-03P*	10-040799-03S*
	Constantan	10-040799-04P*	10-040799-24S*
16	Alumel	10-040799-12P*	10-040799-12S*
	Chromel	10-040799-11P*	10-040799-11S*
	Iron	10-040799-13P*	10-040799-13S*
	Constantan	10-040799-14P*	10-040799-14S*

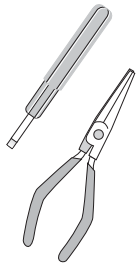
SOLDER THERMOCOUPLE CONTACTS			
	TYPE	PINS	SOCKETS
12	Alumel	10-040799-42P*	10-040799-42S*
	Chromel	10-040799-41P*	10-040799-41S*
	Iron	10-040799-43P*	10-040799-43S*
	Constantan	10-040799-44P*	10-040799-44S*

Thermocouple Types: J = Iron-Constantan K = Alumel-Chromel
T = Copper-Constantan E = Chromel-Constantan

*Call for availability

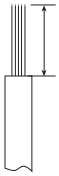
† 16S contacts are used in 8S, 10S, 10SL, 12S, 14S and 16S connector sizes only.

All dimensions in inches (millimeters in parenthesis)

ACCESSORIES	TOOLS					
						
WIRE HOLE FILLER (COLOR)	**CRIMP TOOLS**	**CRIMP LOCATOR & DIE SETS**	**LOCATOR COLOR**	**PILOT PIN/INSERTION GUIDE FOR SOCKETS**	**INSERTION TOOL**	**EXTRACTION TOOL**
MS27488-16-1 (Blue)	AF8 (hand) WA27F (pneumatic) ††	TH29-1	Red	10-242758-016	DAK168-16	DRK59 Kit with Multiple Tips
			Pin-Blue Socket-Green			
MS27488-12-1 (Yellow)			Green	10-242758-012	DAK168-12	
MS27488-8-1 (White)	400BHD	**Locator** 414DA-8N **Die Set** 4025-Pin 4026-Socket	-	10-242758-008	DAK282	
MS27488-4-1 (Blue)		**Locator** 414DA-4N **Die Set** 4043	-	-	AIC4INS	AIC4EXT
MS27488-0-1 (Yellow)		**Locator** 414DA-0N **Die Set** 4042	-	-	AIC0INS	AIC0EXT

†† Call for additional tool accessories.

Pin & Socket Coax Contacts

	PIN CONTACT	SOCKET CONTACT	WIRE STRIP LENGTH	WIRE RANGE	ACCESSORIES
					

COAX CONTACT SIZE	COAX WIRE SIZE	PART NUMBER				WIRE STRIP LENGTHS INCHES (mm)	WIRE SEALING RANGE INCHES (mm)		WIRE HOLE FILLER
		PINS		SOCKETS					
		SILVER	GOLD	SILVER	GOLD		MIN.	MAX.	
12	RG161/U RG174A/U RG179B/U RG187A/U RG188A/U RG316/U	21-33034-1	21-33014-21 21-33048-1() 21-33130-1()	21-33033-1	21-33013-21 21-33047-1() 21-33129-1 ()	Call for details	0.126" (3.2 mm)	0.177" (4.5 mm)	Yellow 10-405996-12
	RG178B/U RG196A/U	-	21-33014-22	-	21-33013-22				
8	RG58C/U RG141A/U RG303/U	21-33034-2(1)	21-33014-1(5) 21-33016-5(3) 21-33130-2()	21-33033-2(1) 21-33048-2()	21-33013-1(5) 21-33047-2() 21-33015-5(3) 21-33129-2()	Call for details	0.150" (3.8 mm)	0.256" (6.5 mm)	White 10-405996-8
	RG59B/U RG62A/U RG62B/U RG210/U	31-33034-5(1)	21-33014-5(5) 21-33016-2(3) 21-33130-5() 21-33064-21()	21-33033-3(1)	21-33013-5(5) 21-33015-2(3) 21-33129-3() 21-33063-21()				
	RG161/U RG174A/U RG179B/U RG187A/U RG188A/U RG316/U	21-33034-3(1)	21-33014-3(5) 21-33016-1(3) 21-33130-3 () 21-33064-20()	21-33033-3(1)	21-33013-3(5) 21-33015-1(3) 21-33129-3() 21-33063-20()				
	RG180B/U RG195A/U	21-33034-6	21-33014-6(5) 21-33048-3() 21-33130-6()	21-33033-6	21-33013-(6) 21-33047-3() 21-33129-6()				
	RG140/U RG302/U	21-33034-8	21-33014-8(5) 21-33033-8 21-33130-8()		21-33013-8(5) 21-33129-8()				
	RG55B/U RG142A/U RG142B/U RG223/U	21-33034-4	21-33014-5(5) 21-33130-4()	21-33033-4	21-33013-5(5) 21-33129-4()				
4	RG59B/U RG62A/U RG62B/U RG210/U	-	21-33060-10()	-	21-33059-10()	Call for details	0.279" (7.1 mm)	0.366" (9.3 mm)	Blue 10-405996-4
	RG212/U	-	21-33060-11()	-	21-33059-11()				
	RG55B/U RG142A/U RG142B/U RG223/U	-	31-33060-12()	-	21-33059-12()				

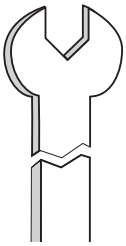
( ) Various platings available. Availability of coax contacts varies widely. Call for details.

TOOLS

M22520/10-01

M22520/5-01

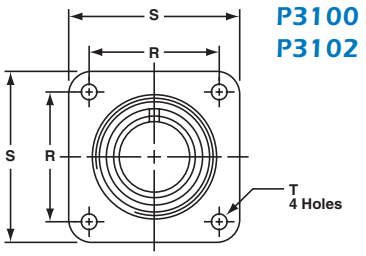
Crimp Dies



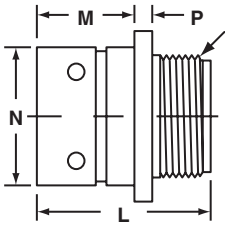
COAX CONTACT SIZE	COAX WIRE SIZE	HAND CRIMP TOOL	CRIMP DIE/LOCATOR	USE LOCATOR	COAX CLAMP NUT WRENCH
12	RG161/U RG174A/U RG179B/U RG187A/U RG188A/U RG316/U	M22520/10-01	M22520/10-05	A	11-8676-1
	RG178B/U RG196A/U			B	
8	RG58C/U RG141A/U RG303/U	M22520/10-01	M22520/10-07	B	11-8676-2
	RG59B/U RG62A/U RG62B/U RG210/U	M22520/5-01	M22520/5-45	B	11-8676-3
	RG161/U RG174A/U RG179B/U RG187A/U RG188A/U RG316/U	M22520/10-01	M22520/10-05	A	11-8676-2
	RG180B/U RG195A/U		M22520/10-07	B	
	RG140/U RG302/U			A	
	RG55B/U RG142A/U RG142B/U RG223/U				
4	RG59B/U RG62A/U RG62B/U RG210/U	M22520/5-01	M22520/5-45	B	11-8676-4
	RG212/U	M22520/5-01	M22520/5-39	A	
	RG55B/U RG142A/U RG142B/U RG223/U	M22520/10-01	M22520/10-07	A	

Dimensions

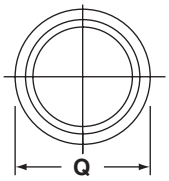
Receptacle Styles



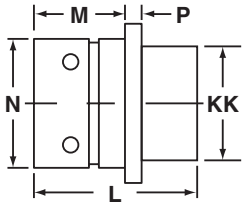
P3100
P3102



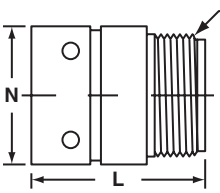
P3100



P3101



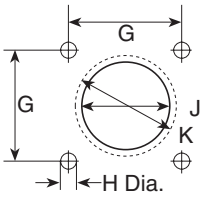
P3102



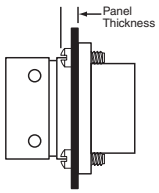
P3101

SHELL SIZE	P3100/P3102 M MAX.	N MAX.	P REF.	R (TP)	S MAX.	T MAX.	P3102B L MAX.	KK MAX.	P3101 Q REF.	P3100/P3101 L MAX.	B THREAD UNEF-2A
16	0.785 (19.9)	1.000 (25.4)	0.140 (3.6)	0.968 (24.59)	1.250 (31.80)	0.141 (3.58)	1.375 (34.9)	0.875 (22.2)	0.988 (25.1)	1.375 (34.90)	0.875-20
18	0.785 (19.9)	1.122 (28.5)	0.140 (3.6)	1.062 (26.97)	1.380 (35.10)	0.141 (3.58)	1.375 (34.9)	1.000 (25.4)	1.122 (28.5)	1.375 (34.90)	1.000-20
20	0.785 (19.9)	1.254 (31.9)	0.140 (3.6)	1.156 (29.36)	1.500 (38.10)	0.141 (3.58)	1.375 (34.9)	1.125 (28.6)	1.254 (31.9)	1.375 (34.90)	1.125-18
22	0.785 (19.9)	1.372 (34.8)	0.140 (3.6)	1.250 (31.75)	1.630 (41.40)	0.141 (3.58)	1.375 (34.9)	1.250 (31.8)	1.372 (34.8)	1.375 (34.90)	1.250-18
24	0.785 (19.9)	1.491 (37.9)	0.140 (3.6)	1.375 (34.93)	1.750 (44.50)	0.156 (3.96)	1.375 (34.9)	1.375 (34.9)	1.491 (37.9)	1.375 (34.90)	1.375-18
28	0.785 (19.9)	1.710 (43.4)	0.140 (3.6)	1.562 (39.67)	2.000 (50.80)	0.156 (3.96)	1.375 (34.9)	1.625 (41.3)	1.710 (43.4)	1.375 (34.90)	1.625-18

Receptacle Panel Cutouts & Thickness

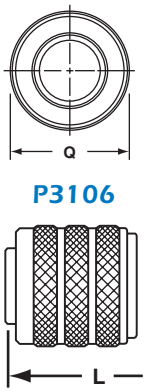


Front Mount



SHELL SIZE	G (TP)	H MIN.	J MIN.	K MIN.	PANEL THICKNESS
16	0.968 (24.6)	0.134 (3.4)	0.902 (22.9)	1.014 (25.8)	0.125 (3.2)
18	1.062 (27.0)	0.134 (3.4)	1.028 (26.1)	1.136 (28.9)	0.125 (3.2)
20	1.156 (29.4)	0.134 (3.4)	1.161 (29.5)	1.268 (32.2)	0.125 (3.2)
22	1.250 (31.8)	0.134 (3.4)	1.287 (32.7)	1.386 (35.2)	0.125 (3.2)
24	1.375 (34.9)	0.154 (3.9)	1.417 (36.0)	1.505 (38.2)	0.125 (3.2)
28	1.562 (39.7)	0.154 (3.9)	1.654 (42.0)	1.724 (43.8)	0.125 (3.2)

Plug Style



P3106

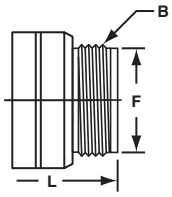
SHELL SIZE	Q DIA. MAX.
16	1.317 (33.5)
18	1.441 (36.6)
20	1.573 (40.0)
22	1.691 (43.0)
24	1.810 (46.0)
28	2.133 (54.2)

All dimensions in inches (millimeters in parenthesis)

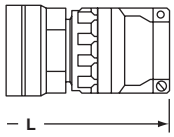
Dimensions

Endbell Styles for Receptacles & Plugs

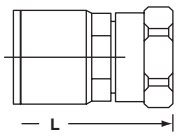
A



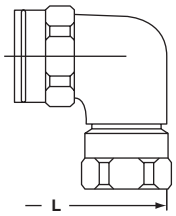
F



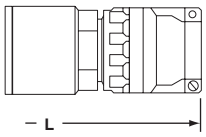
D



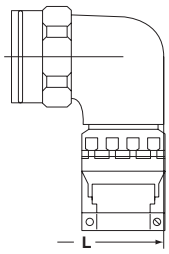
X



M



Z



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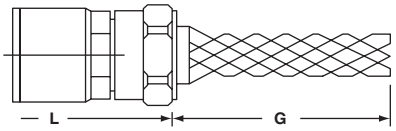

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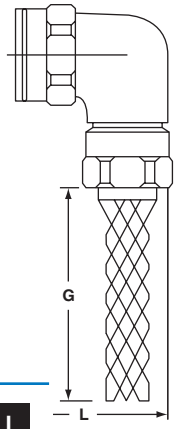


Receptacles

A		F	M	Z		D/K	X/Y	ENDBELL	
L MAX.	B THREAD CLASS 2A	L MAX.	L MAX.	L MAX.	CABLE MAX.	L MAX.	L MAX.	G MAX.	CABLE MAX.
1.994 (50.6)	0.8750-20UNEF	2.780 (70.6)	3.630 (92.13)	2.640 (67.04)	0.550 (13.97)	3.500 (88.9)	2.619 (66.52)	4.880 (124.0)	0.500 (11.10)
1.994 (50.6)	1.0000-20UNEF	2.859 (72.6)	3.630 (92.13)	2.810 (71.37)	0.600 (15.24)	3.500 (88.9)	2.811 (71.39)	5.500 (139.7)	0.625 (15.88)
1.994 (50.6)	1.1875-18NEF	2.874 (73.0)	4.130 (104.83)	2.983 (75.76)	0.750 (19.69)	4.000 (101.6)	2.980 (75.68)	5.500 (139.7)	0.750 (19.05)
1.994 (50.6)	1.1875-18NEF	2.874 (73.0)	4.130 (104.83)	2.983 (75.76)	0.750 (19.69)	4.000 (101.6)	2.980 (75.68)	5.500 (139.7)	0.750 (19.05)
1.994 (50.6)	1.4375-18NEF	2.983 (75.8)	4.380 (111.18)	3.218 (81.72)	0.950 (24.13)	4.250 (108.0)	3.245 (82.41)	7.130 (181.1)	1.000 (25.40)
1.994 (50.6)	1.4375-18NEF	2.983 (75.8)	5.050 (128.20)	3.218 (81.72)	0.950 (24.13)	4.920 (125.0)	3.245 (82.41)	7.130 (181.1)	1.000 (25.40)

Plugs

A		F	M	Z		D/K	X/Y	ENDBELL	
L MAX.	B THREAD CLASS 2A	L MAX.	L MAX.	L MAX.	CABLE MAX.	L MAX.	L MAX.	G MAX.	CABLE MAX.
2.193 (55.7)	0.8750-20UNEF	2.980 (75.7)	3.980 (101.1)	2.875 (73.0)	0.550 (14.0)	3.250 (82.6)	2.854 (72.5)	4.880 (124.0)	0.500 (12.70)
2.193 (55.7)	1.0000-20UNEF	3.059 (77.7)	3.980 (101.1)	3.045 (77.3)	0.600 (15.2)	3.250 (82.6)	3.046 (77.4)	5.500 (139.7)	0.625 (15.90)
2.193 (55.7)	1.1875-18NEF	3.074 (78.1)	4.480 (113.8)	3.218 (81.7)	0.750 (19.1)	3.750 (95.3)	3.215 (81.7)	5.500 (139.7)	0.750 (19.10)
2.193 (55.7)	1.1875-18NEF	3.074 (78.1)	4.480 (113.8)	3.218 (81.7)	0.750 (19.1)	3.750 (95.3)	3.215 (81.7)	5.500 (139.7)	0.750 (19.10)
2.193 (55.7)	1.4375-18NEF	3.183 (80.8)	4.820 (122.4)	3.453 (87.7)	0.950 (24.1)	4.000 (101.6)	3.480 (88.4)	7.130 (181.1)	1.000 (25.40)
2.193 (55.7)	1.4375-18NEF	3.183 (80.8)	5.320 (135.1)	3.453 (87.7)	0.950 (24.1)	4.670 (118.6)	3.480 (88.4)	7.130 (181.1)	1.000 (25.40)

All dimensions in inches (millimeters in parenthesis)

Assembly Instructions

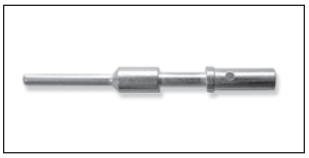
Read and understand these instructions prior to assembly.

1. Prepare cable by stripping jacket to the correct length. Cut squarely using the appropriate wire strippers. When preparing the individual conductors for assembly, make allowances in length to reach the outermost circle of contact cavities in the connector insert. Conductors need to be cut progressively longer as they extend out from the center of the cable or harness.

2. Prior to starting wire termination, lay out the cable or harness in accordance with your wiring diagram. This will reduce the need for twisting and crossing the conductors over one another. If the wiring layout is not correct, the termination operation will be difficult and the risk of making an error will be greatly increased.

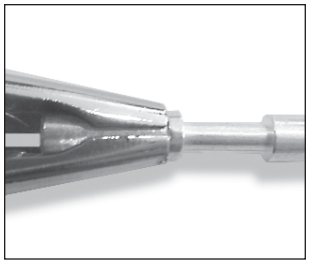
3. When using P-lok connectors with connector grommet seals, use only the correct size compression grommets to ensure a good seal around the cable jacket. Make sure that the cable jacket is smooth where the grommet is to seal. Remove any grooves or ridges by lightly sanding the outer cable jacket.

   Use only the proper crimping, insertion and extraction tools.
   See page 109.

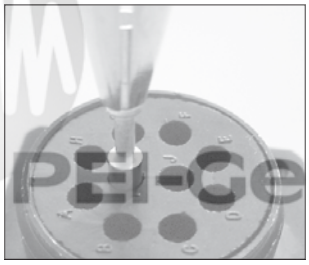


4. Crimping contacts to the wire conductors must be done carefully. First, ensure that the wire jacket is stripped to the proper length. Before crimping, ensure that the strands are all fully bottomed in the contact well by checking through the sight hole on the contact.

5. When using solder contacts, avoid direct contact between the soldering tool and the connector inserts. All solder terminations should meet ANSI/IPC-A-610 specifications.

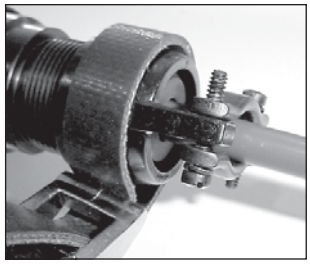


6. Be sure that all contacts are the proper size before attempting assembly into the insert cavities. This is particularly important when using mixed contact sizes in the same connector.



7. Seat all contacts properly so that they will not be damaged or become disengaged during connector mating.

8. When inserts have more contact cavities than conductors used in the application, load all cavities with either unused contacts or sealing plugs designed for this purpose. This will help ensure proper environmental sealing.
   See page 109.



9. After all termination contacts have been inserted into the connector and inspected, the cable adapter and rear hardware can be tightened. This operation should be done using a vise with smooth faced jaws to hold the assembly and tightening components with a conventional wrench for hex surfaces or a strap wrench for circular components.
   See page 264 for endbell tightening tools.

10. If terminated contacts have to be removed from a completed connector, be sure to remove the cable clamp and any other strain relief hardware before extracting the contacts. This will reduce the risk of damaging a contact or conductor.

11. When connectors having the same configuration are mounted close together, use alternate keying to prevent mismating or cross mating connectors.

12. Never try to straighten bent contacts. This will result in a high resistance connection and expose the base metal to possible corrosion.

13. Always inspect connector assemblies before placing connectors into operation.

PT Series

The Amphenol Miniature Cylindrical Connector Series offers high density contact arrangements in a miniature, circular metal shell. The connector is environmentally sealed and comes in three versions: a solder contact version (PT), a high performance crimp contact version (PT-SE) and a commercial crimp version (PT-CE). The three styles are intermateable, intermountable, and interchangeable with all MIL-DTL-26482 connectors, whether solder or crimp style is used. Both styles use a quick disconnect bayonet coupling for rapid positive mating and unmating of the connector. Both the PT and PT-SE types meet all requirements of MIL-DTL-26482.

Applications

- Power generators
- Engines
- Sensors
- Motion Control
- Off-road vehicles
- Earth moving equipment
- Ships
- Mobile equipment
- Industrial machinery
- Telecommunications
- Traffic control

Features

Rugged Shell
Aluminum alloy shell and hardware create a rugged connector with minimal weight. These connectors have been used extensively in commercial, military, and aerospace environments. Standard shells accept all MIL-DTL-26482 accessories.

Environmentally Sealed
Complete moisture sealing is achieved by combining four seals: shell, peripheral, interfacial, and wire. Wire seal is accomplished by multiple ripple design, exceeding the wire sealing requirements of MIL-DTL-26482.

Resistant to Military Environments
These connectors will operate in temperatures from -67˚F to +257˚F (-55˚C to +125˚C) under the harshest possible conditions.

Wide Range of Wire Gauges and Current Carrying Capacity
Up to 23 amps with wire gauges from size 24 up to size 12 AWG wire.

Resilient Insulator & Grommet
A resilient Neoprene insulator and integrated rear wire sealing grommet guarantees a liquid tight assembly. Crimp contacts that can be inserted from the rear of the connector are available. Solder contacts are permanently bonded into the insulator.

Solder or Crimp Gold Plated Contacts
PT connector contacts are gold plated per MIL-G-45204 Type II. PT-CE commercial crimp contacts are not military approved but the PT-SE crimp contacts are built in accordance to MIL-C-39029. Both types of contacts are crimped with the standard M22520/1 crimp tool. Socket contacts are closed to eliminate damage from test probes and to help prevent misaligned pins during engagement. Contact insertion is from the rear of the connector. When the contact is fully inserted, it snaps securely into metal retention tines embedded in the insulator. Contact extraction is accomplished from the front with the proper extraction tool. Pressing the tool plunger pushes the contact out through the rear of the connector.

Agency Approvals
- MIL-DTL-26482
- UL#E115497, for solder contacts only.

Technical Specifications

MATERIALS & FINISHES

Shell	Aluminum alloy
Plating	Anodic coating (alumilite), olive drab chromate over cadmium over nickel, electroless nickel, olive drab zinc cobalt, non-conductive black zinc, conductive black zinc
Contacts	Copper alloy
Platings	Gold plate, 50 microinches minimum per MIL-G-45204 Type II.
Insulator	Resilient Neoprene. PT-SE and PT-CE insulators also encase a tough plastic wafer which contains contact retention tines for high reliability retention of crimp contacts.

ELECTRICAL DATA

Operating Voltage & Test Voltage:

		MAXIMUM OPERATING VOLTAGE		TEST VOLTAGE	
SERVICE RATING*	TEST ALTITUDE	DC	AC (RMS)	DC	AC (RMS)
1	Sea Level	850	600	2,100	1,500
2		1,275	1,000	3,200	2,300
1	70,000 feet	-	300	535	375
2		-	450	770	500

*Each insulator layout has a specific “Service Rating”. The Service Ratings for each layout are listed on pages 119, 121-123.

Current Rating:

CONTACT SIZE	RATED CURRENT AMPS (MAX.)	TEST CURRENT AMPS (WORKING)	POTENTIAL DROP (MILLIVOLTS) INITIAL
20	7.5	7.5	< 55
16	22	13	< 50
12	41	23	< 50

Wire Range Sizes	24 to 12 AWG (and coax)
Contact Resistance	When tested to MIL-STD-1344 Method 3004, will not exceed voltage drops listed in table. Consult MIL-DTL-26482, 3.6.4 for details.
Insulation Resistance	5,000 Megohms minimum at 77˚F (25˚C)

MECHANICAL

Operating Temperature	-67˚F to +257˚F (-55˚C to +125˚C)
Sealing	48 hours in 6 feet of water per MIL-DTL-26482 4.6.14. Meets 10- and 20-day 50 to 95% humidity testing per MIL-STD-1344 Method 1002.2 per MIL-DTL-26482.

Wire Sealing Range:

CONTACT SIZE	AWG WIRE SIZE	INSULATION OUTSIDE DIAMETER LIMITS: INCHES(mm)		
		MIN. (PT)	MIN. (PT-SE/PT-CE)	MAX. (PT/PT-SE/PT-CE)
20	24, 22, and 20	.060 (1.52)	.047 (1.19)	.083 (2.11)
16	20, 18, and 16	.066 (1.68)	.066 (1.68)	.109 (2.77)
12	12 and 14	.097 (2.46)	.097 (2.46)	.149 (3.78)

Technical Specifications

Insulation Strip Lengths:

CONTACT SIZE	WIRE SIZE (AWG)	STRIP LENGTH INCHES (mm)
20	20-24	.375 (9.5)
16	16-20	.250 (6.35)
12	12-14	.232 (5.9)

Mating Life	500 cycles minimum
Salt Spray	Unmated connectors and protective covers meet 48-hour exposure to MIL-STD-1344 Method 1001 per MIL-DTL-26482. (Cadmium Plating)
Heat	+347˚F (+175˚C) for 1,000 hours to MIL-STD-1344 Method 1005.1 per MIL-DTL-26482.
Chemical Resistance	20 hour full immersion unmated in hydraulic fluid and lubricating oil per MIL-DTL-26482.
Vibration	10 to 2,000Hz (15g's) 10 microseconds maximum discontinuity. To MIL-STD-1344 Method 2005 per MIL-DTL-26482.
Shock	50g's, 11ms duration, three major axes. 10 microseconds maximum discontinuity. To MIL-STD-1344 Method 2004 per MIL-DTL-26482.
Contact Type	Solder, crimp, printed circuit, thermocouple, coax
Number of Circuits	PT: 1 to 61; PT-SE, PT-CE: 2 to 61
Contact Insertion (crimp)	Insertion from the rear of connector with simple hand tool. Front release with appropriate extraction tool.
Contact Retention	To MIL-STD-1344 Method 2007 per MIL-DTL-26482.

CONTACT SIZE	AXIAL LOAD MIN. NEWTONS (LBS)
20	66.7 (15)
12 and 16	111.2 (25)

Polarization	Five keyway, three point bayonet with optional rotational polarization. See pages 119,121.
Approvals	▪ MIL-DTL-26482 ▪ UL#E115497 (PT solder only)

Exerpt from MIL-DTL-26482H

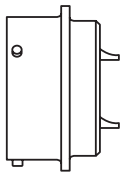
3.7.4 JAN and J marking. The United States Government has adopted and is exercising legitimate control over the certification marks "JAN" and "J", respectively, to indicate that items so marked or identified are manufactured to, and meet all the requirements of specifications. Accordingly, items acquired to, and meeting all of the criteria specified herein and in applicable specifications shall bear the certification mark "JAN" except that items too small to bear the certification mark "JAN" shall bear the letter "J". The "JAN" or "J" shall be placed immediately before the PIN except that if such location would place a hardship on the manufacturer in connection with such marking, the "JAN" or "J" may be located on the first line above or below the PIN. Items furnished under contracts or orders which either permit or require deviation from the conditions or requirements specified herein or in applicable specifications shall not bear "JAN" or "J". In the event an item fails to meet the requirements of this specification and the applicable specification sheets, the manufacturer shall remove completely the military PIN and the "JAN" or the "J" from the sample tested and also from all items represented by the sample. The "JAN" or "J" certification mark shall not be used on products acquired to contractor drawings or specification. The United States Government has obtained Certificate of Registration Number 504,860 for the certification mark "JAN" and Registration Number 1,586,261 for the certification mark “J”.

PIN = Part Identification Number

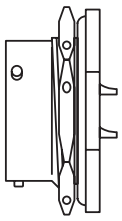
Follow these 6 steps to create your Solder part number. . .

STEP 1
Select Shell Style, Plug or Receptacle

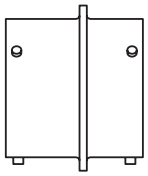
Mates with



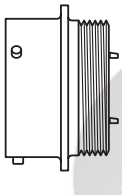
PT02E* / **MS3112E°**
Box Mount Receptacle



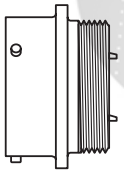
PT07A*
Jam Nut Receptacle



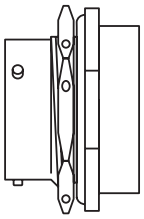
PTB*
Through Bulkhead Receptacle



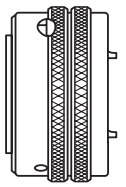
PT00* / **MS3110°**
Wall Mount Receptacle



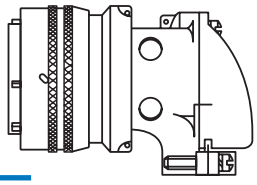
PT01* / **MS3111°**
Cable Mount Receptacle



PT07* / **MS3114°**
Jam Nut Receptacle

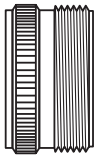


PT06* / **MS3116°**
Cable Plug

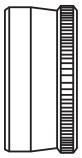


PT08*
Right Angle Cable Plug

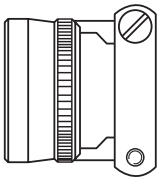
STEP 2
Choose Endbell



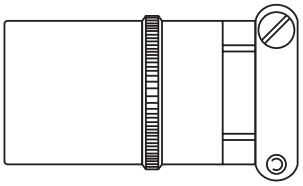
A*
General Duty Threaded



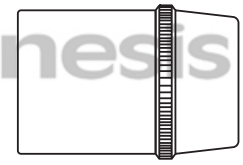
E††
Environmental no Clamp



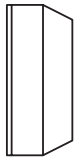
A-(SR)*
Non-Environmental with Clamp
E-(SR)*
F military°
Environmental with Clamp



J††
Environmental with Clamp and Cable Jacket Gland Seal



W*
Environmental without Clamp



P††
Environmental Potting

Right Angle (for PT08)

See page 188 for epoxy potting compound.

Create your solder part number using these steps

(Commercial example)

PT06*	E*	16-26*	P*	W*	SR*
1 Shell Style	2 End Bells	3 Layout	4 Contact	5 Rotation	6 Modifier

(Military example)

MS3116°	F°	16-26°	P°	W°
1 Shell Style	2 End Bells	3 Layout	4 Contact	5 Rotation

PART NUMBER KEY:
Commercial=(*) Commercial & Military=(††) Military Only=(°)

STEP 3

Choose Layout

LAYOUT	SERVICE RATING	CONTACTS					ROTATIONS			
		TOTAL	20	16	12	COAX	W	X	Y	Z
6-1*	I	1	1				-	-	-	-
8-2††	I	2	2				58	122	-	-
8-3††	I	3	3				60	210	-	-
8-4††	I	4	4				45	97#	184#	-
8-33*	I	3	3				90	-	-	-
8-98*	I	3	3				-	-	-	-
10-5*	I	5	5				45	151	180	270
10-6††	I	6	6				90	-	-	-
10-98††	I	6	6				90	180	240	270
12-3††	II	3		3			-	-	180	-
12-4*	I	4		4			38	-	-	-
12-8††	I	8	8				90	112	203	292
12-10††	I	10	10				60	155	270	295
12-14*	I	14	14				-	-	-	-
14-4*	I	4			4		45	-	-	-
14-5††	II	5		5			40	92	184	273
14-12††	I	12	8	4			43	90	-	-
14-15††	I	15	14	1			17	110	155	234
14-18††	I	18	18				15	90	180	270
14-19††	I	19	19				30	165	315	-
14-91*	HV 5k	3	3				-	60	-	-
16-8††	II	8		8			54	152	180	331
16-23††	I	23	22	1			158	270	-	-
16-26††	I	26	26				60	-	275	338
16-70	Coax	15	14			1	-	-	-	-
16-99††	I	23	21	2			66	156	223	340
18-5*	II	5			5		55	97	263	315
18-11††	II	11		11			62	119	241	340
18-30††	I	30	29	1			180	193	285	350
18-32††	I	32	32				85	138	222	265
20-16††	II	16		16			238	318	333	347
20-24††	I	24	24				70	145	215	290
20-25††	I	25	25				72	144	216	288
20-27††	I	27	27				72	144	216	288
20-39††	I	39	37	2			63	144	252	333
20-41††	I	41	41				45	126	225	-
20-90*	I	7	7				45	135	225	315
22-21††	II	21		21			16	135	175	349
22-32††	I	32	32				72	145	215	288
22-34*	I	34	34				62	142	218	298
22-36*	I	36	36				72	144	216	288
22-41††	I	41	27	14			39	135	264	-
22-55††	I	55	55				30	142	226	314
24-31*	I	31		31			90	225	255	-
24-61††	I	61	61				90	180	270	324

PART NUMBER KEY:
Commercial=(*) **Commercial & Military**=(††) **Military Only**=(°)
= **Commercial Rotation Only** (Not Military)

STEP 4

Choose Contact

P = Pin
S = Socket

STEP 5

Choose Rotation

See chart at left
(omit for normal)

W, X, Y, Z

STEP 6

Choose Modifier

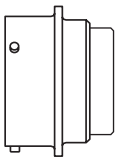
(omit for normal)

SR* = F-Style Strain Relief (not military)
002* = Black Anodized
005* = Anodic Coating (Alumilite)
014* = Olive Drab Chromate over Cadmium over Nickel (500-hour salt spray)
023* = Electroless Nickel
024* = Olive Drab Zinc Cobalt
025* = Non-Conductive Black Zinc (RoHS)
027* = Conductive Black Zinc (RoHS)
424* = Electroless Nickel and Strain Relief (SR & 023)
466* = Olive Drab Zinc Cobalt with Strain Relief (SR & 024)
470* = Non-conductive Black Zinc with Strain Relief (SR & 025) **(RoHS)**
476* = Conductive Black Zinc with Strain Relief (SR & 027) **(RoHS)**

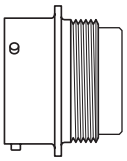
Follow these 6 steps to create your Crimp part number. . .

STEP 1
Select Shell Style, Plug or Receptacle

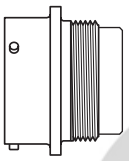
Mates with



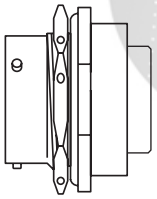
PT02SE* **PT02CE††** **MS3122E°**
Box Mount Receptacle



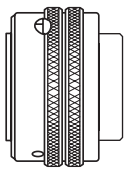
PT00* **MS3120°**
Wall Mount Receptacle



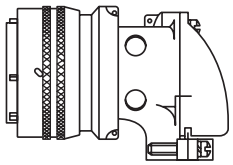
PT01* **MS3121°**
Cable Mount Receptacle



PT07* **MS3124°**
Jam Nut Receptacle

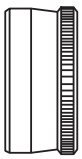


PT06* **MS3126°**
Cable Plug

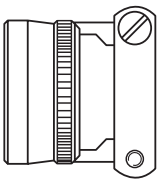


PT08*
Right Angle Cable Plug

STEP 2
Choose Endbell



SE* **E°**
Environmental no Clamp
CE†† Proprietary



SE-(SR)* **CE-(SR)††**
Add SR Modifier to end of part number to call out the F Style Endbell
F° Environmental with Clamp

SP* **CP†† P°**
Environmental Potting

Right Angle (for PT08)

See page 188 for epoxy potting compound.

Create your crimp part number using these steps

(Commercial example)

PT06*	SE*	16-26*	P*	W*	SR*
1 Shell Style	2 End Bells	3 Layout	4 Contact	5 Rotation	6 Modifier

(Military example)

MS3126°	F°	16-26°	P°	W°
1 Shell Style	2 End Bells	3 Layout	4 Contact	5 Rotation

PART NUMBER KEY:
SE=(*) **CE**=(††) **Military**=(°)

STEP 3
Choose Layout

LAYOUT	SERVICE RATING	TOTAL	CONTACTS					INSERT ROTATIONS			
			20	16	12	12 COAX	8 COAX	W	X	Y	Z
8-2††	I	2	2					58	122	-	-
8-3††	I	3	3					60	210	-	-
8-4††	I	4	4					45	97#	184#	-
8-33*°	I	3	3					90	-	-	-
10-6††°*	I	6	6					90	-	-	-
10-98††	I	6	6					90	180	240	270
12-3††°*	II	3		3				-	-	180	-
12-8††°*	I	8	8					90	112	203	292
12-10††°*	I	10	10					60	155	270	295
14-5††°*	II	5		5				40	92	184	273
14-12††°*	I	12	8	4				43	90	-	-
14-15††°*	I	15	14	1				17	110	155	234
14-18††°*	I	18	18					15	90	180	270
14-19††°*	I	19	19					30	165	315	-
14-22*	I	5	1		4			45	-	-	-
14-91*	HV 5k	3	3					-	60	-	-
16-8††°*	II	8		8				54	152	180	331
16-23††°*	I	23	22	1				158	270	-	-
16-26††°*	I	26	26					60	-	275	338
16-76*	Coax	14	8		1	5		-	-	-	-
16-99°*	I	23	21	2				66	156	223	340
18-5††*	II	5			5			55	97	263	315
18-11††*	II	11		11				62	119	241	340
18-30††°*	I	30	29	1				180	193	285	350
18-32††°*	I	32	32					85	138	222	265
18-80††	II/Coax	8	6				2	45	90	135	160
18-91††*	HV 5k	6	6					90	180	240	270
20-16††°*	II	16		16				238	318	333	347
20-27††	I	27	27					72	144	216	288
20-39††°*	I	39	37	2				63	144	252	333
20-41††°*	I	41	41					45	126	225	-
22-21††°*	II	21		21				16	135	175	349
22-7*	Coax	7					7	19	41	-	-
22-25*	I	25		25				60	125	211	336
22-32††	I	32	32					72	145	215	288
22-34††	I	34	34					62	142	218	298
22-36††	I	36	36					72	144	216	288
22-41††°*	I	41	27	14				39	135	264	-
22-55††°*	I	55	55					30	142	226	314
22-78*	Coax	7					7	19	41	-	-
22-96*	II	7			7✦			19	41	-	-
24-31††	I	31		31				90	225	255	-
24-51*	I	51	47		4			22	171	313	-
24-61††°*	I	61	61					90	180	270	324

STEP 4
Choose Contact

P = **Pin**
S = **Socket**

STEP 5
Choose Rotation

See chart at left
(omit for normal)

W, X, Y, Z

STEP 6
Choose Optional Modifier

(omit for normal)

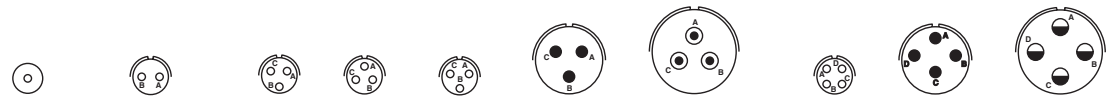
SR* = **Strain Relief Version**
002* = **Black Anodized**
005* = **Anodic Coating** (Alumilite)
014* = **Olive Drab Chromate over Cadmium over Nickel** (500-hour salt spray)
023* = **Electroless Nickel**
024* = **Olive Drab Zinc Cobalt**
025* = **Non-Conductive Black Zinc (RoHS)**
027* = **Conductive Black Zinc (RoHS)**
424* = **Electroless Nickel and Strain Relief** (SR & 023)
466* = **Olive Drab Zinc Cobalt with Strain Relief** (SR & 024)
470* = **Non-conductive Black Zinc with Strain Relief** (SR & 025) **(RoHS)**
476* = **Conductive Black Zinc with Strain Relief** (SR & 027) **(RoHS)**

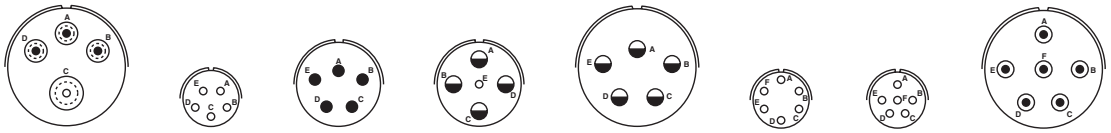
PART NUMBER KEY: ✦For size 10 AWG wire
SE=(*) **CE**=(††) **Military**=(°) # = **Commercial Rotation Only** (Not Military)

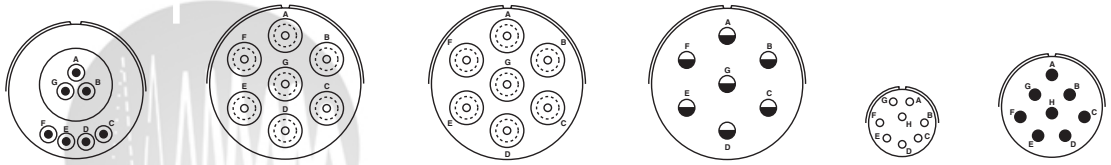
Layouts by Number of Contacts

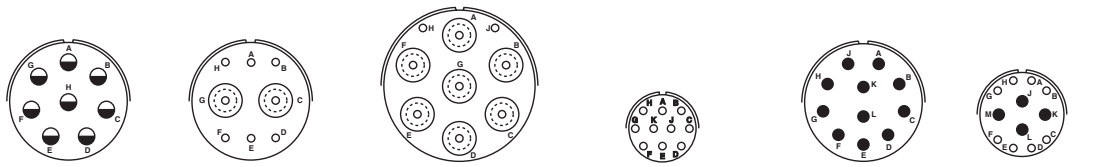
CONTACT LEGEND ○=20 ●=16 ◉=HV ◒=12 ◎=coax
Mating face view of pin inserts

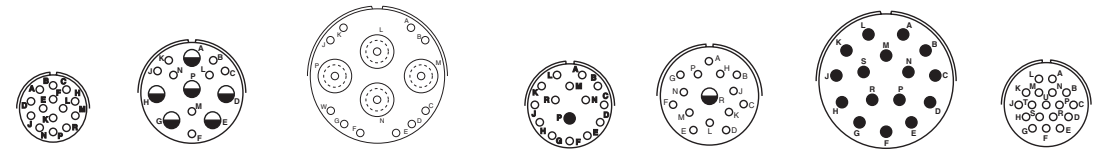
SERIES LEGEND ▲ = PT-Solder △ = Solder: Military & PT
■ = PT-CE ✦ = PT-SE Crimp ✧ = Crimp: Military & PT-SE

	1	2	3 CONTACTS					4 CONTACTS		
										
SHELL SIZE/LAYOUT	**6-1**	**8-2**	**8-3**	**8-33**	**8-98**	**12-3**	**14-91**	**8-4**	**12-4**	**14-4**
# OF CONTACTS	1-#20	2-#20	3-#20	3-#20	3-#16	3-#16	3-HV	4-#20	4-#16	4-#12
SERIES	▲	■ △	■ △	✧ ▲	▲	■ ✧ △	▲	■ △	▲	▲
SERVICE RATING	I	I	I	I	I	II	HV5k	I	I	I

	4 CONTACTS	5 CONTACTS				6 CONTACTS		
								
SHELL SIZE/LAYOUT	**18-76**	**10-5**	**14-5**	**14-22**	**18-5**	**10-6**	**10-98**	**18-91**
# OF CONTACTS	4(coax)	5-#20	5-#16	4-#12; 1-#20	5-#12	6-#20	6-#20	6-HV
SERIES	■	▲	■ △	✦	■ ✧ ▲	■ ✧ △	■ △	■ ✦
SERVICE RATING	(coax)	I	II	I	II	I	I	HV5k

	6 CONTACTS	7 CONTACTS			8 CONTACTS	
						
SHELL SIZE/LAYOUT	**20-90**	**22-7**	**22-78**	**22-96**	**12-8**	**16-8**
# OF CONTACTS	7-HV	7(coax)	7(coax)	7-#12	8-#20	8-#16
SERIES	▲	▲	✦	✦	■ ✧ △	■ ✧ △
SERVICE RATING	I	II	HV5k	I	I	I

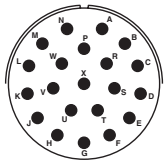
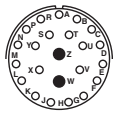
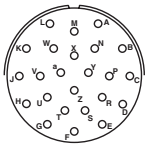
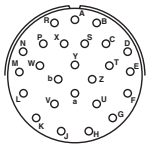
	8 CONTACTS	9	10	11	12 CONTACTS
					
SHELL SIZE/LAYOUT	**18-8**	**18-80**	**22-71**	**12-10**	**18-11**	**14-12**
# OF CONTACTS	8-#12	6-#20; 2(coax)	2-#20; 7(coax)	10-#20	11-#16	4-#16; 8-#20
SERIES		■ ▲	■	■ ✧ △	■ △	■ ✧ △
SERVICE RATING	I	II/(coax)	(coax)	I	II	I

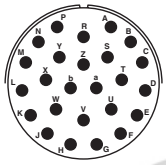
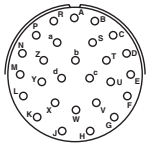
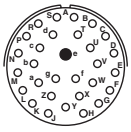
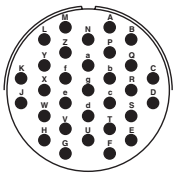
	14 CONTACTS			15 CONTACTS		16 CONTACTS	18
							
SHELL SIZE/LAYOUT	**12-14**	**16-76**	**20-70**	**14-15**	**16-70**	**20-16**	**14-18**
# OF CONTACTS	14-#20	5-#12; 8-#20; 1(coax)	10-#20; 4(coax)	1-#16; 14-#20	1-#12; 14-#20	16-#16	18-#20
SERIES	△	✦	■	■ ✧ △	Not rated	■ ✧ △	■ ✧ △
SERVICE RATING	Flashover 1500 Vac Rms	Size 12 (coax) User Defined	I	II		I	I

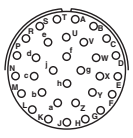
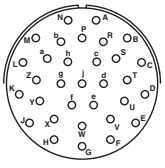
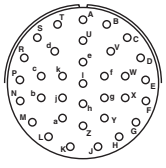
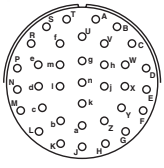
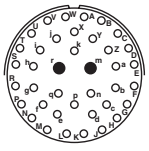
Layouts by Number of Contacts

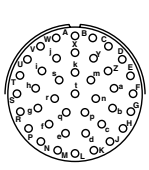
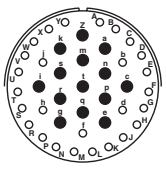
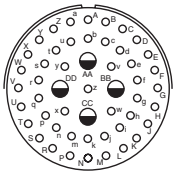
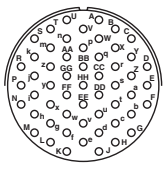
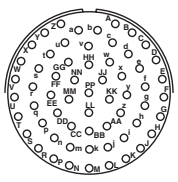
CONTACT LEGEND ○= 20 ●=16 ◉=HV ◒=12 ◎=coax
Mating face view of pin inserts

SERIES LEGEND ▲ = PT-Solder △ = Solder: Military & PT
■ = PT-CE ✦ = PT-SE Crimp ✧ = Crimp: Military & PT-SE

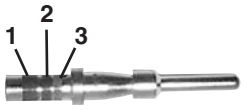
	19 CONTACTS	21 CONTACTS	23 CONTACTS		24 CONTACTS	25 CONTACTS
						
SHELL SIZE/LAYOUT	**14-19**	**22-21**	**16-23**	**16-99**	**20-24**	**20-25**
# OF CONTACTS	19-#20	21-#16	1-#16; 22-#20	2-#16; 21-#20	24-#20	25-#20
SERIES	■ ✧ △	■ ✧ △	■ ✧ △	✧ △	△	△
SERVICE RATING	I	II	I	I	I	I

	25 CONTACTS	26 CONTACTS	27 CONTACTS	30 CONTACTS	31 CONTACTS
					
SHELL SIZE/LAYOUT	**22-25**	**16-26**	**20-27**	**18-30**	**24-31**
# OF CONTACTS	25-#16	26-#20	27-#20	1-#16; 29-#20	31-#16
SERIES	△	■ ✧ △	■ ✦	■ ✧ ✦	■ ▲
SERVICE RATING	I	I	I	I	I

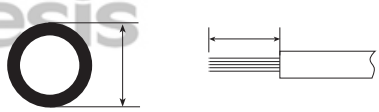
	32 CONTACTS		34 CONTACTS	36 CONTACTS	39 CONTACTS
					
SHELL SIZE/LAYOUT	**18-32**	**22-32**	**22-34**	**22-36**	**20-39**
# OF CONTACTS	32-#20	32-#20	34-#20	36-#20	2-#16 37-#20
SERIES	■ ✧ △	■ △	■ ▲	■ ▲	■ ✧ △
SERVICE RATING	I	I	I	I	I

	41 CONTACTS		51 CONTACTS	55 CONTACTS	61 CONTACTS
					
SHELL SIZE/LAYOUT	**20-41**	**22-41**	**24-51**	**22-55**	**24-61**
# OF CONTACTS	41-#20	14-#16; 27-#20	4-#12; 47-#20	55-#20	61-#20
SERIES	■ ✧ △	■ ✧ △		■ ✧ △	■ ✧ △
SERVICE RATING	I	I	I	I	I

Pin & Socket Crimp Contacts

CONTACT & WIRE SIZE	PIN CONTACT & COLOR BANDS	WIRE STRIP LENGTH
		

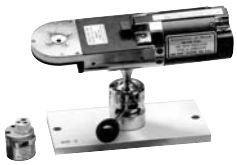
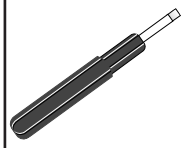
CONTACT SIZE	WIRE SIZE AWG	PIN CONTACT PART NUMBER	COLOR BANDS			WIRE STRIP LENGTH	WIRE SEALING RANGE	
			1	2	3		MIN.	MAX.
SE CRIMP CONTACTS								
20	20-24	M39029/31-240	Red	Yellow	Black	.375 (9.5)	.047 (1.2)	.083 (2.1)
16	16-20	M39029/31-228	Red	Red	Grey	.250 (6.4)	.066 (1.7)	.109 (2.7)
12	12-14	M39029/31-235	Red	Orange	Green	.232 (5.9)	.097 (2.5)	.149 (3.7)
20 Chromel	20-24	10-330940-01P	-	-	-	.375 (9.5)	.047 (1.2)	.083 (2.1)
20 Alumel	20-24	10-330940-02P	-	-	-			
20 Iron	20-24	10-330940-03P	-	-	-			
20 Constantan	20-24	10-330940-04P	-	-	-			
CE CRIMP CONTACTS								
20	20-24	10-189000-20F	-	-	-	.375 (9.5)	.047 (1.2)	.083 (2.1)
20	16-20	10-195962-20F	-	-	-	.375 (9.5)	.047 (1.2)	.083 (2.1)
16	16-20	10-189004-16F	-	-	-	.250 (6.4)	.066 (1.7)	.109 (2.7)
20 Chromel	20-24	10-252900-01P	-	-	-	.375 (9.5)	.047 (1.2)	.083 (2.1)
20 Alumel	20-24	10-252900-02P	-	-	-			
20 Iron	20-24	10-252900-03P	-	-	-			
20 Constantan	20-24	10-252900-04P	-	-	-			

CONTACT & WIRE SIZE	SOCKET CONTACT & COLOR BANDS	WIRE STRIP LENGTH
		

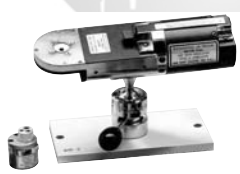
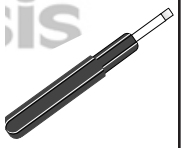
CONTACT SIZE	WIRE SIZE AWG	SOCKET CONTACT PART NUMBER	COLOR BANDS			WIRE STRIP LENGTH	WIRE SEALING RANGE	
			1	2	3		MIN.	MAX.
SE CRIMP CONTACTS								
20	20-24	M39029/32-259	Red	Green	White	.375 (9.5)	.047 (1.2)	.083 (2.1)
16	16-20	M39029/32-247	Red	Yellow	Violet	.250 (6.4)	.066 (1.7)	.109 (2.7)
12	12-14	M39029/32-254	Red	Green	Yellow	.232 (5.9)	.097 (2.5)	.149 (3.7)
20 Chromel	20-24	10-330940-01S	-	-	-	.375 (9.5)	.047 (1.2)	.083 (2.1)
20 Alumel	20-24	10-330940-02S	-	-	-			
20 Iron	20-24	10-330940-03S	-	-	-			
20 Constantan	20-24	10-330940-04S	-	-	-			
CE CRIMP CONTACTS								
20	20-24	10-597817-351	-	-	-	.375 (9.5)	.047 (1.2)	.083 (2.1)
20	16-20	10-195963-20F	-	-	-	.375 (9.5)	.047 (1.2)	.083 (2.1)
16	16-20	10-189006-16F	-	-	-	.250 (6.4)	.066 (1.7)	.109 (2.7)
20 Chromel	20-24	10-252900-01S	-	-	-	.375 (9.5)	.047 (1.2)	.083 (2.1)
20 Alumel	20-24	10-252900-02S	-	-	-			
20 Iron	20-24	10-252900-03S	-	-	-			
20 Constantan	20-24	10-252900-04S	-	-	-			

All dimensions in inches (millimeters in parenthesis)

Pin & Socket Crimp Contacts

WIRE HOLE FILLER	CRIMP TOOLS			INSERTION TOOL	EXTRACTION TOOL
	 AF8 M22520/1-01	 TH1A M22520/1-02			

PART NUMBER	COLOR	HAND CRIMP TOOL	POWER CRIMP TOOL	TURRET HEAD	COLOR USE LOCATOR	INSERTION TOOL	EXTRACTION TOOL
SE CRIMP CONTACTS							
MS27488-20-1	Red	AF8 or M22520/1-01	WA27F*	TH1A or M22520/1-02	Red	M81969/17-03	M81969/19-07
MS27488-16-1	Blue				Blue	M81969/17-04	M81969/19-08
MS27488-12-1	Yellow				Yellow	M81969/17-05	M81969/19-09
MS27488-20-1	Red				Red	M81969/17-03	M81969/19-07
CE CRIMP CONTACTS							
MS27488-20-1	Red	AF8 or M22520/1-01	WA27F*	TH1A or M22520/1-02	Red	11-6782	11-6900
MS27488-20-1	Red				Red	11-6782	
MS27488-16-1	Blue				Blue	11-6781	
MS27488-20-1	Red				Red	11-6782	

WIRE HOLE FILLER	CRIMP TOOLS			INSERTION TOOL	EXTRACTION TOOL
	 AF8 M22520/1-01	 TH1A M22520/1-02			

PART NUMBER	COLOR	HAND CRIMP TOOL	POWER CRIMP TOOL	TURRET HEAD	COLOR USE LOCATOR	INSERTION TOOL	EXTRACTION TOOL
SE CRIMP CONTACTS							
MS27488-20-1	Red	AF8 or M22520/1-01	WA27F*	TH1A or M22520/1-02	Red	M81969/17-03	M81969/19-07
MS27488-16-1	Blue				Blue	M81969/17-04	M81969/19-08
MS27488-12-1	Yellow				Yellow	M81969/17-05	M81969/19-09
MS27488-20-1	Red				Red	M81969/17-03	M81969/19-07
CE CRIMP CONTACTS							
MS27488-20-1	Red	AF8 or M22520/1-01	WA27F*	TH1A or M22520/1-02	Red	11-6782	11-6900
MS27488-20-1	Red				Red	11-6782	
MS27488-16-1	Blue				Blue	11-6781	
MS27488-20-1	Red				Red	11-6782	

*Call for more tool accessories.

Pin & Socket Solder Coax Contacts

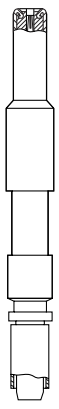
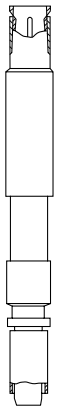
COAX WIRE SIZE	FITS IN SHELL SIZES	INNER SOLDER CONTACT		OUTER SHIELD CRIMP FERRULE		LOCATOR CAVITY	CLAMP NUT WRENCH
		PINS	SOCKETS	HAND TOOL	LOCATOR		
CONTACT SIZE 12							
RG161/U RG174A/U RG179B/U RG187A/U RG188A/U RG316/U	10 to 18	21-033020-032*	21-033019-032*	M22520/10-01	M22520/10-07	B	11-8676-1
RG196A/U		21-033020-031+	21-033061-031+		M22520/10-05		
Thermatics 2929-29		21-033020-033	21-033061-033	M22520/5-01	M22520/5-37		
CONTACT SIZE 8							
RG58C/U RG141A/U RG303/U	10 to 18	21-033020-002	21-033019-002	M22520/10-01	M22520/10-07	B	11-8672-2
RG59B/U RG62A/U		21-033020-003	21-033019-003	M22520/5-01	M22520/5-45		11-8672-3
RG62B/U RG210/U	20 to 24	21-033020-001	21-033019-001				
RG142B/U Times MI51115	10 to 18	21-033020-007*	21-033019-007*		M22520/5-43		11-8672-2
RG178B/U	10 to 18	21-033020-004	21-033019-004	M22520/10-01	M22520/10-05		
RG180B/U RG195A/U Tyco 5022D1312-9		21-033020-005*	21-033019-005*	M22520/10-01	M22520/10-07		
Tyco 5021D1331-9		21-033020-006*	21-033019-006*				

Note: Solder contacts are supplied with outer contact body bonded into the insert (insulator). Call for wire strip lengths and assembly instructions.

* Please check availability

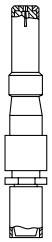
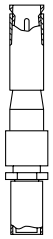
+ Only mate with each other

Solder (PT)

Pin	Socket
	

Note: Illustrations are for chart above.

Crimp (PT-SE)

Pin	Socket
	

Note: Illustrations are for chart on page 127.

Pin & Socket SE Crimp Coax Contacts

COAX WIRE SIZE	INNER SOLDER CONTACT PINS .00005 GOLD OVER SILVER	PINS .00010 GOLD OVER COPPER	SOCKETS .00005 GOLD OVER SILVER	SOCKETS .00010 GOLD OVER COPPER	HAND CRIMP TOOL (▲) CRIMP DIE (△)	CLAMP NUT WRENCH	INSERTION	EXTRACTION
CONTACT SIZE 12								
RG161/U RG174A/U RG179B/U RG187A/U RG188A/U RG316/U	21-033012-001 *21-033012-004*	21-033037-001* *21-033038-004*	21-033011-001 *21-033011-004*	21-033037-001* 21-033037-004*	M22520/10-01▲ M22520/10-05△ A	11-8676-1	11-8369-2 11-8660-2	11-7880-12 11-8154-2
RG178B/U RG196A/U	21-033012-003* *21-033012-005*	21-033038-003 *21-033038-005*	21-033011-003* *21-033011-005*	21-033037-003* *21-033037-005**			11-8369-1 11-8660-1	
Double Braid RG188/U RG316/U	21-033012-006* *21-033012-007**	21-033038-006* *21-033038-007**	21-033011-006* *21-033011-007**	21-033037-006* *21-033037-007**	M22520/5-01▲ M22520/5-37△ B		11-8369-2 11-8660-2	
Westrex 199-49-1 Tensolite 30850/87T1	N/A *21-033012-043*	N/A *21-033038-043*	N/A *21-033011-043*	N/A *21-033037-043*	M22520/10-01▲ M22520/10-05△ B			
CONTACT SIZE 8								
RG55B/U RG142A/U RG142B/U RG223/U	21-033012-021 *21-033012-025*	21-033038-021 *21-033038-025**	21-033011-021 *21-033011-025*	21-033037-021 *21-033037-025*	M22520/10-01▲ M22520/10-07△ A	11-8676-2	11-8369-5 11-8660-5	11-7880-8 11-8154-1
RG58C/U RG141A/U RG303/U	21-033012-022 *21-033012-026*	21-033038-022* *21-033038-026**	21-033011-022 *21-033011-026*	21-033037-022 *21-033037-026**	M22520/10-01▲ M22520/10-07△ B		11-8369-4 11-8660-4	
RG59B/U RG62A/U RG62B/U RG210/U	N/A *21-033012-036*	N/A *21-033038-036**	N/A *21-033011-036*	N/A *21-033037-036*	M22520/5-01▲ M22520/5-01△ B	11-8676-3	11-8369-5 11-8660-5	
RG140/U RG302/U	N/A *21-033012-037**	N/A *21-033038-037**	N/A *21-033011-037**	N/A *21-033037-037**	M22520/10-01▲ M22520/10-07△ A	11-8676-2	11-8369-5 11-8660-5	
RG161/U RG174A/U RG179B/U RG187A/U RG188A/U RG316/U	21-033012-034 *21-033012-030*	21-033038-034 *21-033038-030*	21-033011-034 *21-033011-030*	21-033037-034 *21-033037-030*	M22520/10-01▲ M22520/10-07△ A		11-8369-2 11-8660-2	
RG178B/U RG196A/	21-033012-035 *N/A*	21-033038-035 *N/A*	21-033011-035 *N/A*	21-033037-035 *N/A*				
RG180/BU RG195A/U	21-033012-024 *21-033012-046**	21-033038-024 *21-033037-046**	21-033011-024 *21-033011-049**	21-033037-024 *21-033037-046**	M22520/10-01▲ M22520/10-07△ B		11-8369-4 11-8660-4	
Thermax 50C25ADS1	N/A *21-033012-044*	N/A *21-033038-044**	N/A *21-033011-044*	N/A *21-033037-044**	M22520/5-01▲ M22520/5-37△ B		11-8369-2 11-8660-2	
Double Braid RG195/U	21-033012-028 *N/A*	21-033038-028* *N/A*	21-033011-028 *N/A*	21-033037-028* *N/A*	M22520/5-01▲ M22520/5-43△ B			
RG122/U Tyco 5022E5111	21-033012-023 *21-033012-027*	21-033038-023* *21-033038-027*	21-033011-023 *21-033011-027*	21-033037-023* *21-033037-027*	M22520/10-01▲ M22520/10-07△ B			
Tyco 9530D5314	21-033012-031 *N/A*	21-033038-031 *N/A*	21-033011-031 *N/A*	21-033037-031 *N/A*				
Tyco 9527A1317	N/A *21-033012-039*	N/A *21-033038-039**	N/A *21-033011-039*	N/A *21-033037-039**				
Tyco 7527A1318	N/A *21-033012-040**	N/A *21-033038-040**	N/A *21-033011-040*	N/A *21-033037-040**	M22520/10-01▲ M22520/10-05△ A			

Italicized = Matched impedance contacts ▲ = Hand crimp tool △ = Crimp Die
Availability of coax contacts varies widely.
*Call for availability Call for strip lengths and assembly instructions.

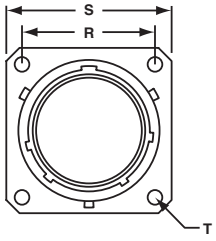
	Components			
	Plugs		Receptacles	
	PT	PTSE	PT	PTSE
O-Ring				
Barrel/ Shell				
Wave Spring				
Coupling Nut				
Insert/ Insulator				
Contacts				
Wire Sealing Grommet				
Ferrule/ Compression Ring				
Endbell/ Cable Clamp				

Dimensions

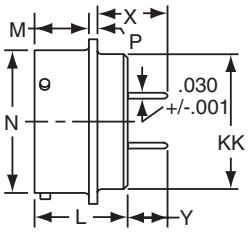
Printed Circuit Board

Box Mount

PT02

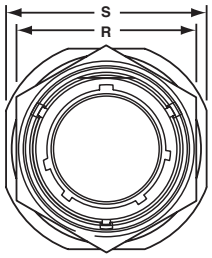


PT02PCB

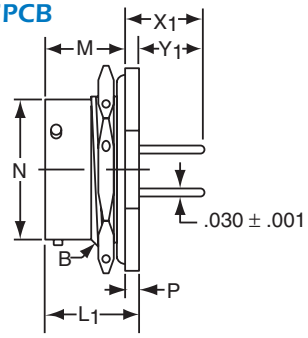


Jam Nut

PT07



PT07PCB



	BOX MOUNT										
SHELL SIZE	PART NUMBER PT02 WITH PCB CONTACTS	M	N +.001 -.055	P	R	S	T	L	KK DIA. MAX.	Y	X
6	71-570120*	0.431 (10.9)	0.348 (8.8)	0.062 (1.6)	0.469 (11.9)	0.688 (17.5)	0.120 (3.0)	0.825 (21.0)	0.323 (8.2)	0.380 (9.7)	0.774 (19.7)
8	71-570121*	0.431 (10.9)	0.473 (12.0)	0.062 (1.6)	0.594 (15.1)	0.812 (20.6)	0.120 (3.0)	0.825 (21.0)	0.449 (11.4)	0.380 (9.7)	0.774 (19.7)
10	71-570122*	0.431 (10.9)	0.590 (15.0)	0.062 (1.6)	0.719 (18.3)	0.938 (23.8)	0.120 (3.0)	0.825 (21.0)	0.573 (14.6)	0.380 (9.7)	0.774 (19.7)
12	71-570123*	0.431 (10.9)	0.750 (19.1)	0.062 (1.6)	0.812 (20.6)	1.031 (26.2)	0.120 (3.0)	0.825 (21.0)	0.699 (17.8)	0.380 (9.7)	0.774 (19.7)
14	71-570124*	0.431 (10.9)	0.875 (22.2)	0.062 (1.6)	0.906 (23.0)	1.125 (28.6)	0.120 (3.0)	0.825 (21.0)	0.823 (20.9)	0.380 (9.7)	0.774 (19.7)
16	71-570125*	0.431 (10.9)	1.000 (25.4)	0.062 (1.6)	0.969 (24.6)	1.219 (31.0)	0.120 (3.0)	0.825 (21.0)	0.949 (24.1)	0.380 (9.7)	0.774 (19.7)
18	71-570126*	0.431 (10.9)	1.125 (28.6)	0.062 (1.6)	1.062 (27.0)	1.312 (33.3)	0.120 (3.0)	0.825 (21.0)	1.073 (27.3)	0.380 (9.7)	0.774 (19.7)
20	71-570127*	0.556 (14.1)	1.250 (31.8)	0.094 (2.4)	1.156 (29.4)	1.438 (36.5)	0.120 (3.0)	1.076 (27.3)	1.199 (30.5)	0.286 (7.3)	0.806 (20.5)
22	71-570128*	0.556 (14.1)	1.375 (34.9)	0.094 (2.4)	1.250 (31.8)	1.561 (39.6)	0.120 (3.0)	1.076 (27.3)	1.323 (33.6)	0.286 (7.3)	0.806 (20.5)
24	71-570129*	0.556 (14.1)	1.500 (38.1)	0.127 (3.2)	1.375 (34.9)	1.688 (42.9)	0.147 (3.7)	1.109 (28.2)	1.449 (36.8)	0.253 (6.4)	0.773 (19.6)

	JAM NUT											
								PANEL THICKNESS				
SHELL SIZE	PART NUMBER PT07 WITH PCB CONTACTS	B THREAD CLASS 2A UNEF	M	N	P	R	Q	MIN.	MAX.	L_1	Y_1	X_1
6	71-533720*	.4375-28	0.696 (17.7)	0.348 (8.8)	0.125 (3.2)	0.625 (15.9)	0.812 (20.6)	0.062 (1.6)	0.125 (3.2)	0.821 (20.9)	0.376 (9.6)	0.501 (12.7)
8	71-533721*	.5625-24	0.696 (17.7)	0.473 (12.0)	0.125 (3.2)	0.750 (19.1)	0.938 (23.8)	0.062 (1.6)	0.125 (3.2)	0.821 (20.9)	0.376 (9.6)	0.501 (12.7)
10	71-533722*	.6875-24	0.696 (17.7)	0.590 (15.0)	0.125 (3.2)	0.875 (22.2)	1.062 (27.0)	0.062 (1.6)	0.125 (3.2)	0.821 (20.9)	0.376 (9.6)	0.501 (12.7)
12	71-533723*	.8750-20	0.696 (17.7)	0.750 (19.1)	0.125 (3.2)	1.062 (27.0)	1.25 (31.8)	0.062 (1.6)	0.125 (3.2)	0.821 (20.9)	0.376 (9.6)	0.501 (12.7)
14	71-533724*	1.0000-20	0.696 (17.7)	0.875 (22.2)	0.125 (3.2)	1.188 (30.2)	1.375 (34.9)	0.062 (1.6)	0.125 (3.2)	0.821 (20.9)	0.376 (9.6)	0.501 (12.7)
16	71-533725*	1.1250-18	0.696 (17.7)	1.000 (25.4)	0.125 (3.2)	1.312 (33.3)	1.500 (38.1)	0.062 (1.6)	0.125 (3.2)	0.821 (20.9)	0.376 (9.6)	0.501 (12.7)
18	71-533726*	1.2500-18	0.696 (17.7)	1.125 (28.6)	0.125 (3.2)	1.438 (36.5)	1.625 (41.3)	0.062 (1.6)	0.125 (3.2)	0.821 (20.9)	0.376 (9.6)	0.501 (12.7)
20	71-533727*	1.3750-18	0.884 (22.5)	1.250 (31.8)	0.156 (4.0)	1.562 (39.7)	1.812 (46.0)	0.062 (1.6)	0.250 (6.4)	1.04 (26.4)	0.367 (9.3)	0.523 (13.3)
22	71-533728*	1.5000-18	0.884 (22.5)	1.375 (34.9)	0.156 (4.0)	1.688 (42.9)	1.938 (49.2)	0.062 (1.6)	0.250 (6.4)	1.04 (26.4)	0.367 (9.3)	0.523 (13.3)
24	71-533729*	1.6250-18	0.917 (23.3)	1.500 (38.1)	1.56 (39.6)	1.816 (46.1)	2.062 (52.4)	0.062 (1.6)	0.250 (6.4)	2.477 (62.9)	0.334 (8.5)	0.490 (12.4)

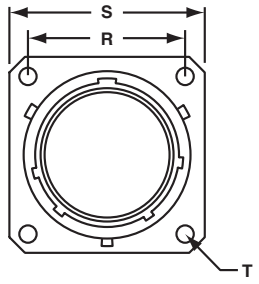
*Call for insert arrangement (layout) code

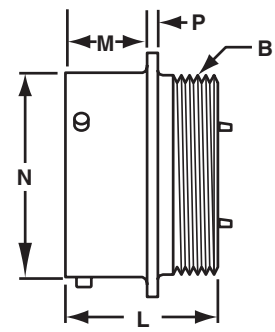
All dimensions in inches (millimeters in parenthesis)

Dimensions

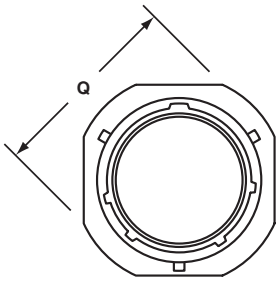
Receptacle Styles

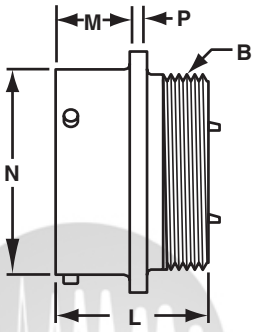
PT00
MS3110
MS3120



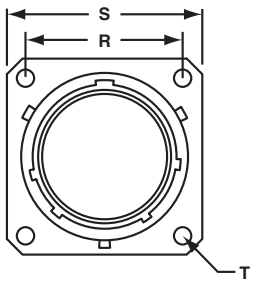


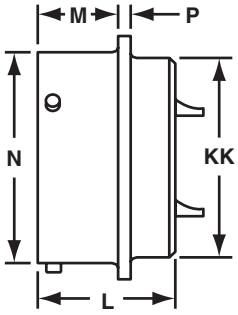
PT01
MS3111
MS3121



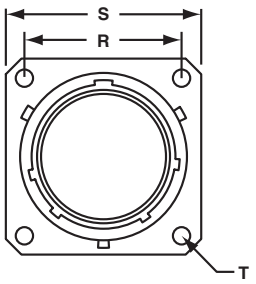


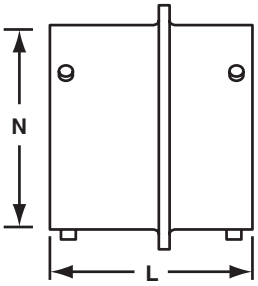
PT02
MS3112
MS3122





PTB





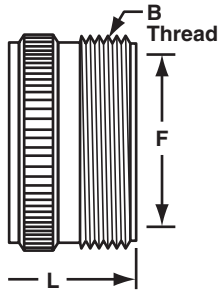
	PT00/PT02/PTB			PT01	PT00/PT02/PTB			PT02		PTB	PT01	PT00/PT01	
SHELL SIZE	M	N +.001 -.055	MS31_0 MS31_2 P	MS31_1 P	R (TP)	S	T	L	KK DIA. MAX.	L	PT01 Q	L	B THREAD CLASS 2A
6	0.431 (10.9)	0.348 (8.8)	0.062 (1.6)	0.093 (2.4)	0.469 (11.9)	0.688 (17.5)	0.120 (3.0)	0.825 (21.0)	0.323 (8.2)	1.050 (26.7)	0.812 (20.6)	0.906 (23.0)	.3125-32 NEF
8	0.431 (10.9)	0.473 (12.0)	0.062 (1.6)	0.093 (2.4)	0.594 (15.1)	0.812 (20.6)	0.120 (3.0)	0.825 (21.0)	0.449 (11.4)	1.050 (26.7)	0.938 (23.8)	0.906 (23.0)	.4375-28 UNEF
10	0.431 (10.9)	0.590 (15.0)	0.062 (1.6)	0.093 (2.4)	0.719 (18.3)	0.938 (23.8)	0.120 (3.0)	0.825 (21.0)	0.573 (14.6)	1.050 (26.7)	1.062 (27.0)	0.906 (23.0)	.5625-24 NEF
12	0.431 (10.9)	0.750 (19.1)	0.062 (1.6)	0.093 (2.4)	0.812 (20.6)	1.031 (26.2)	0.120 (3.0)	0.825 (21.0)	0.699 (17.8)	1.050 (26.7)	1.156 (29.4)	0.906 (23.0)	.6875-24 NEF
14	0.431 (10.9)	0.875 (22.2)	0.062 (1.6)	0.093 (2.4)	0.906 (23.0)	1.125 (28.6)	0.120 (3.0)	0.825 (21.0)	0.823 (20.9)	1.050 (26.7)	1.250 (31.8)	0.906 (23.0)	.8125-20 UNEF
16	0.431 (10.9)	1.000 (25.4)	0.062 (1.6)	0.093 (2.4)	0.969 (24.6)	1.219 (31.0)	0.120 (3.0)	0.825 (21.0)	0.949 (24.1)	1.050 (26.7)	1.344 (34.1)	0.906 (23.0)	.9375-20 UNEF
18	0.431 (10.9)	1.125 (28.6)	0.062 (1.6)	0.093 (2.4)	1.062 (27.0)	1.312 (33.3)	0.120 (3.0)	0.825 (21.0)	1.07 (27.3)	1.050 (26.7)	1.438 (36.5)	0.906 (23.0)	1.0625-18 NEF
20	0.556 (14.1)	1.250 (31.8)	0.094 (2.4)	0.115 (2.9)	1.156 (29.4)	1.438 (36.5)	0.120 (3.0)	1.076 (27.3)	1.199 (30.5)	1.330 (33.8)	1.562 (39.7)	1.125 (28.6)	1.1875-18 NEF
22	0.556 (14.1)	1.375 (34.9)	0.094 (2.4)	0.115 (2.9)	1.250 (31.8)	1.561 (39.6)	0.120 (3.0)	1.076 (27.3)	1.323 (33.6)	1.330 (33.8)	1.688 (42.9)	1.125 (28.6)	1.3125-18 NEF
24	0.556 (14.1)	1.500 (38.1)	0.127 (3.2)	0.115 (2.9)	1.375 (34.9)	1.688 (42.9)	0.147 (3.7)	1.109 (28.2)	1.449 (36.8)	1.330 (33.8)	1.812 (46.0)	1.188 (30.2)	1.4375-18 NEF

All dimensions in inches (millimeters in parenthesis)

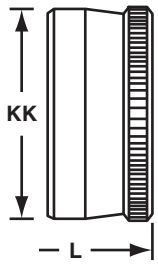
Dimensions

Endbell Styles

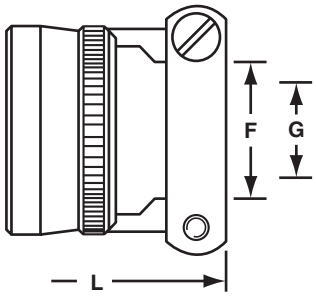
A



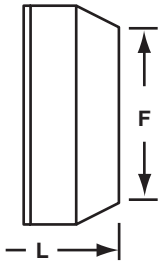
E



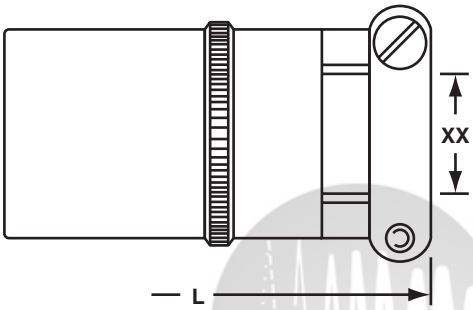
F/SR



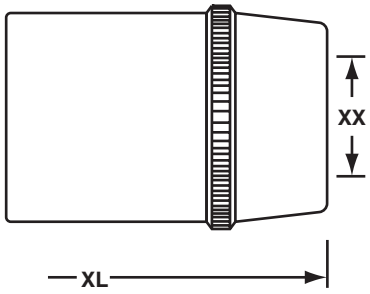
P



J



W



A ENDBELL		
F	L	B THREAD CLASS 2A UNEF
0.175 (4.4)	1.553 (39.4)	.3750-32
0.297 (7.5)	1.553 (39.4)	.5000-28
0.421 (10.7)	1.553 (39.4)	.6250-24
0.546 (13.9)	1.553 (39.4)	.7500-20
0.663 (16.8)	1.553 (39.4)	.8750-20
0.787 (20.0)	1.553 (39.4)	1.0000-20
0.879 (22.3)	1.553 (39.4)	1.1875-18
1.014 (25.8)	1.703 (43.3)	1.1875-18
1.134 (28.8)	1.703 (43.3)	1.4375-18
1.259 (32.0)	1.765 (44.8)	1.4375-18

E ENDBELL	
L	KK
1.266 (32.2)	0.440 (11.2)
1.266 (32.2)	0.560 (14.2)
1.266 (32.2)	0.682 (17.3)
1.266 (32.2)	0.813 (20.7)
1.266 (32.2)	0.930 (23.6)
1.266 (32.2)	1.057 (26.8)
1.266 (32.2)	1.175 (29.8)
1.516 (38.5)	1.301 (33.0)
1.516 (38.5)	1.430 (36.3)
1.578 (40.1)	1.555 (39.5)

F/SR ENDBELL		
F	G	L
- -	- -	- -
0.240 (6.1)	0.125 (3.2)	1.922 (48.8)
0.302 (7.7)	0.188 (4.8)	1.922 (48.8)
0.428 (10.9)	0.312 (7.9)	1.922 (48.8)
0.552 (14.0)	0.375 (9.5)	1.922 (48.8)
0.615 (15.6)	0.500 (12.7)	2.047 (52.0)
0.740 (18.8)	0.625 (15.9)	2.078 (52.8)
0.740 (18.8)	0.625 (15.9)	2.344 (59.5)
0.928 (23.6)	0.750 (19.1)	2.344 (59.5)
0.990 (25.1)	0.800 (20.3)	2.406 (61.1)

P ENDBELL	
F	L
0.192 (4.9)	1.438 (36.5)
0.317 (8.1)	1.438 (36.5)
0.434 (11.0)	1.438 (36.5)
0.548 (13.9)	1.438 (36.5)
0.673 (17.1)	1.438 (36.5)
0.798 (20.3)	1.438 (36.5)
0.899 (22.8)	1.438 (36.5)
1.024 (26.0)	1.656 (42.1)
1.149 (29.2)	1.656 (42.1)
1.274 (32.4)	1.717 (43.6)

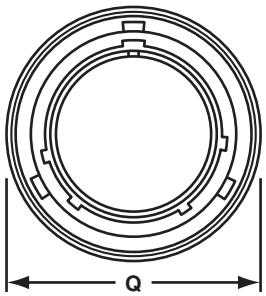
W	J	W/J ENDBELL	
XL	L	XX MIN.	XX MAX.
- -	- -	- -	- -
1.705 (43.3)	2.271 (57.7)	0.168 (4.3)	0.230 (5.8)
1.705 (43.3)	2.271 (57.7)	0.205 (5.2)	0.312 (7.9)
1.848 (46.9)	2.411 (61.2)	0.338 (8.6)	0.442 (11.2)
2.040 (51.8)	2.599 (66.0)	0.416 (10.6)	0.53 (13.7)
2.256 (57.3)	2.943 (74.8)	0.550 (14.0)	0.616 (15.6)
2.486 (63.1)	3.172 (80.6)	0.600 (15.2)	0.672 (17.1)
2.922 (74.2)	3.610 (91.7)	0.635 (16.1)	0.747 (19.0)
3.086 (78.4)	3.766 (95.7)	0.670 (17.0)	0.846 (21.5)
3.310 (84.1)	3.985 (101.2)	0.740 (18.8)	0.849 (21.6)

All dimensions in inches (millimeters in parenthesis)

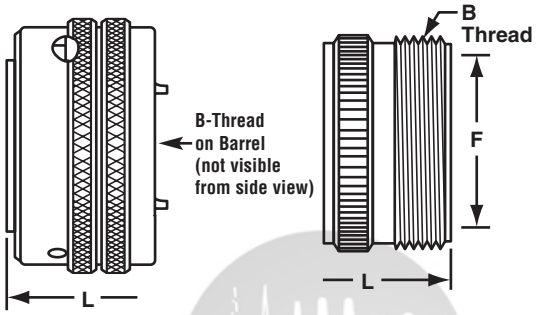
Dimensions

Straight Plugs

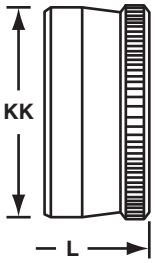
PT06
MS3116
MS3126



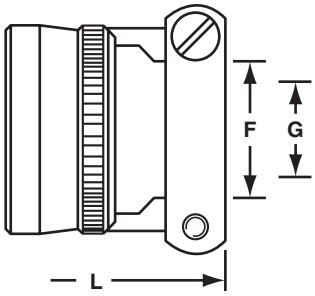
PT06A



PT06E
MS3116E
MS3126E



PT06E_SR
PT06SE_SR
PT06CE_SR
MS3116F
MS3126F



	PT06			PT06A			PT06E		PT06F/SR		
SHELL SIZE	Q	L	B THREAD CLASS 2A	F	L	B THREAD CLASS 2A UNEF	L	KK	F	G	L
6	0.625 (15.9)	0.906 (23.0)	.3125-32 NEF	0.175 (4.4)	1.553 (39.4)	.3750-32	1.266 (32.2)	0.440 (11.2)	- -	- -	- -
8	0.75 (19.1)	0.906 (23.0)	.4375-28 UNEF	0.297 (7.5)	1.553 (39.4)	.5000-28	1.266 (32.2)	0.560 (14.2)	0.240 (6.1)	0.125 (3.2)	1.922 (48.8)
10	0.859 (21.8)	0.906 (23.0)	.5625-24 NEF	0.421 (10.7)	1.553 (39.4)	.6250-24	1.266 (32.2)	0.682 (17.3)	0.302 (7.7)	0.188 (4.8)	1.922 (48.8)
12	1.013 (25.7)	0.906 (23.0)	.6875-24 NEF	0.546 (13.9)	1.553 (39.4)	.7500-20	1.266 (32.2)	0.813 (20.7)	0.428 (10.9)	0.312 (7.9)	1.922 (48.8)
14	1.156 (29.4)	0.906 (23.0)	.8125-20 UNEF	0.663 (16.8)	1.553 (39.4)	.8750-20	1.266 (32.2)	0.930 (23.6)	0.552 (14.0)	0.375 (9.5)	1.922 (48.8)
16	1.281 (32.5)	0.906 (23.0)	.9375-20 UNEF	0.787 (20.0)	1.553 (39.4)	1.0000-20	1.266 (32.2)	1.057 (26.8)	0.615 (15.6)	0.500 (12.7)	2.047 (52.0)
18	1.319 (33.5)	0.906 (23.0)	1.0625-18 NEF	0.879 (22.3)	1.553 (39.4)	1.1875-18	1.266 (32.2)	1.175 (29.8)	0.740 (18.8)	0.625 (15.9)	2.078 (52.8)
20	1.531 (38.9)	1.062 (27.0)	1.1875-18 NEF	1.014 (25.8)	1.703 (43.3)	1.1875-18	1.516 (38.5)	1.301 (33.0)	0.740 (18.8)	0.625 (15.9)	2.344 (59.5)
22	1.656 (42.1)	1.062 (27.0)	1.3125-18 NEF	1.134 (28.8)	1.703 (43.3)	1.4375-18	1.516 (38.5)	1.430 (36.3)	0.928 (23.6)	0.750 (19.1)	2.344 (59.5)
24*	1.776 (45.1)	1.125 (28.6)	1.4375-18 NEF	1.259 (32.0)	1.765 (44.8)	1.4375-18	1.578 (40.1)	1.555 (39.5)	0.990 (25.1)	0.800 (20.3)	2.406 (61.1)

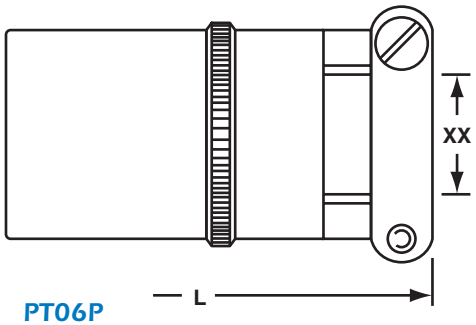
* Commercial

All dimensions in inches (millimeters in parenthesis)

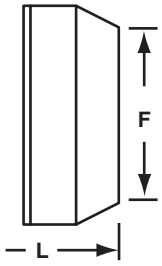
Dimensions

Straight Plugs

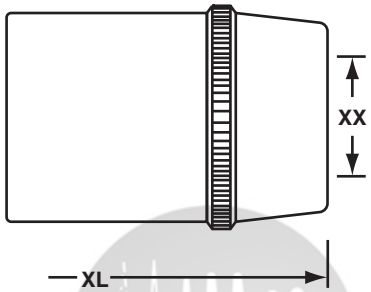
PT06J
MS3116J



PT06P
PT06SP
PT06CP
MS3116P
MS3126P

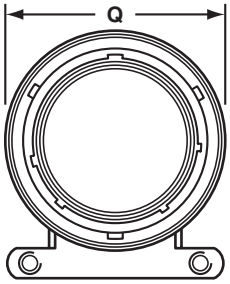


PT06W

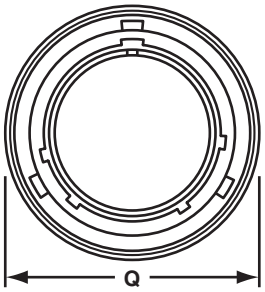


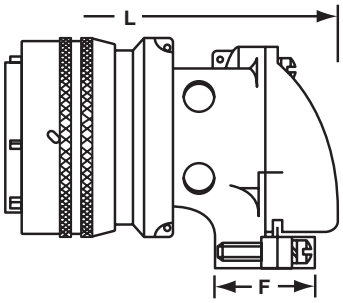
Right Angle Plugs

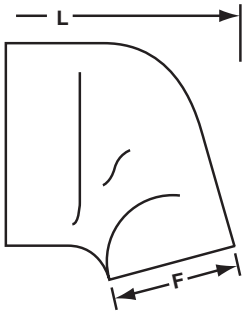
PT08E
PT08SE
PT08CP



PT08P
PT08SP
PT08CP







PT06P		PT06W	PT06J	PT06W/J	
F	L	XL	L	XX MIN.	XX MAX.
0.192 (4.9)	1.438 (36.5)	- -	- -	- -	- -
0.317 (8.1)	1.438 (36.5)	1.705 (43.3)	2.271 (57.7)	0.168 (4.3)	0.230 (5.8)
0.434 (11.0)	1.438 (36.5)	1.705 (43.3)	2.271 (57.7)	0.205 (5.2)	0.312 (7.9)
0.548 (13.9)	1.438 (36.5)	1.848 (46.9)	2.411 (61.2)	0.338 (8.6)	0.442 (11.2)
0.673 (17.1)	1.43 (36.5)	2.040 (51.8)	2.599 (66.0)	0.416 (10.6)	0.539 (13.7)
0.798 (20.3)	1.438 (36.5)	2.256 (57.3)	2.943 (74.8)	0.550 (14.0)	0.616 (15.6)
0.899 (22.8)	1.438 (36.5)	2.486 (63.1)	3.172 (80.6)	0.600 (15.2)	0.672 (17.1)
1.024 (26.0)	1.656 (42.1)	2.922 (74.2)	3.610 (91.7)	0.635 (16.1)	0.747 (19.0)
1.149 (29.2)	1.656 (42.1)	3.086 (78.4)	3.766 (95.7)	0.670 (17.0)	0.846 (21.5)
1.274 (32.4)	1.717 (43.6)	3.310 (84.1)	3.985 (101.2)	0.740 (18.8)	0.849 (21.6)

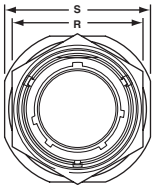
	PT08E			PT08P	
SHELL SIZE	Q	F	L	F	L
6	- -	- -	- -	- -	- -
8	0.796 (20.2)	0.169 (4.3)	1.786 (45.4)	0.312 (7.9)	1.656 (42.1)
10	0.921 (23.4)	0.170 (4.3)	1.880 (47.8)	0.438 (11.1)	1.781 (45.2)
12	1.046 (26.6)	0.264 (6.7)	1.965 (49.9)	0.516 (13.1)	1.743 (44.3)
14	1.171 (29.7)	0.310 (7.9)	2.113 (53.7)	0.625 (15.9)	1.953 (49.6)
16	1.297 (32.9)	0.330 (8.4)	2.315 (58.8)	0.656 (16.7)	2.000 (50.8)
18	1.422 (36.1)	0.444 (11.3)	2.432 (61.8)	0.703 (17.9)	2.046 (52.0)
20	1.562 (39.7)	0.510 (13.0)	2.695 (68.5)	0.766 (19.5)	2.218 (56.3)
22	1.672 (42.5)	0.515 (13.1)	2.742 (69.6)	0.812 (20.6)	2.265 (57.5)
24	1.797 (45.6)	0.656 (16.7)	2.980 (75.7)	0.918 (23.3)	2.624 (66.6)

All dimensions in inches (millimeters in parenthesis)

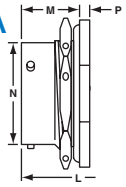
Dimensions

Jam Nut Receptacles

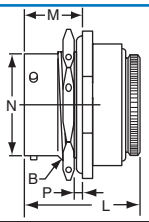
PT07



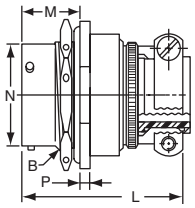
PT07A



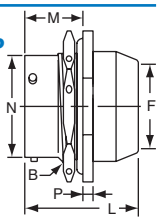
PT07E



PT07F



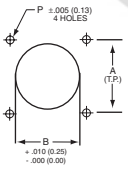
PT07P

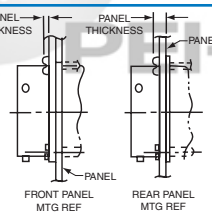


	PT07								PT07A	PT07E/SR		PT07P	
SHELL SIZE	B THREAD UNEF-2A	M	N	P	R	S	PANEL THICKNESS MIN.	PANEL THICKNESS MAX.	L	E	SR	F	L
6	.4375-28	0.696 (17.7)	0.348 (8.8)	0.125 (3.2)	0.625 (15.9)	0.812 (20.6)	0.062 (1.6)	0.125 (3.2)	0.821 (20.9)	1.282 (32.6)	- -	0.202 (5.1)	1.289 (32.7)
8	.5625-24	0.696 (17.7)	0.473 (12.0)	0.125 (3.2)	0.75 (19.1)	0.938 (23.8)	0.062 (1.6)	0.125 (3.2)	0.821 (20.9)	1.282 (32.6)	1.758 (44.7)	0.327 (8.3)	1.289 (32.7)
10	.6875-24	0.696 (17.7)	0.590 (15.0)	0.125 (3.2)	0.875 (22.2)	1.062 (27.0)	0.062 (1.6)	0.125 (3.2)	0.821 (20.9)	1.282 (32.6)	1.758 (44.7)	0.444 (11.3)	1.289 (32.7)
12	.8750-20	0.696 (17.7)	0.750 (19.1)	0.125 (3.2)	1.062 (27.0)	1.25 (31.8)	0.062 (1.6)	0.125 (3.2)	0.821 (20.9)	1.282 (32.6)	1.758 (44.7)	0.558 (14.2)	1.289 (32.7)
14	1.0000-20	0.696 (17.7)	0.875 (22.2)	0.125 (3.2)	1.188 (30.2)	1.375 (34.9)	0.062 (1.6)	0.125 (3.2)	0.821 (20.9)	1.282 (32.6)	1.758 (44.7)	0.638 (16.2)	1.289 (32.7)
16	1.1250-18	0.696 (17.7)	1.000 (25.4)	0.125 (3.2)	1.312 (33.3)	1.500 (38.1)	0.062 (1.6)	0.125 (3.2)	0.82 (20.9)	1.282 (32.6)	1.884 (47.9)	0.808 (20.5)	1.289 (32.7)
18	1.2500-18	0.696 (17.7)	1.125 (28.6)	0.125 (3.2)	1.438 (36.5)	1.625 (41.3)	0.062 (1.6)	0.125 (3.2)	0.821 (20.9)	1.282 (32.6)	1.884 (47.9)	0.909 (23.1)	1.602 (40.7)
20	1.3750-18	0.884 (22.5)	1.250 (31.8)	0.156 (4.0)	1.562 (39.7)	1.812 (46.0)	0.062 (1.6)	0.250 (6.4)	1.04 (26.4)	1.514 (38.5)	2.134 (54.2)	1.034 (26.3)	1.602 (40.7)
22	1.5000-18	0.884 (22.5)	1.375 (34.9)	0.156 (4.0)	1.688 (42.9)	1.938 (49.2)	0.062 (1.6)	0.25 (6.4)	1.04 (26.4)	1.514 (38.5)	2.134 (54.2)	1.159 (29.4)	1.602 (40.7)
24	1.6250-18	0.917 (23.3)	1.500 (38.1)	1.56 (39.6)	1.816 (46.1)	2.062 (52.4)	0.062 (1.6)	0.250 (6.4)	1.073 (27.2)	1.547 (39.3)	2.167 (55.0)	1.284 (32.6)	1.635 (41.5)

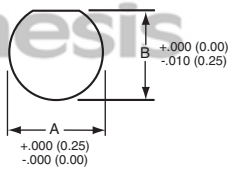
Panel Cutouts/Thickness

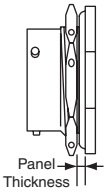
PT00/PT02/PTB





PT07





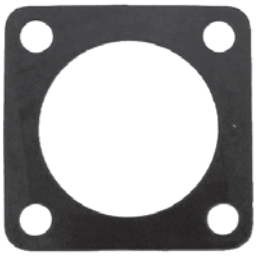
SHELL SIZE	B FRONT MOUNT	A	P ±.005 (±.125)	SCREW SIZE	PANEL THICKNESS B PT00/PT02	PANEL THICKNESS B PTB
6	0.323 (8.2)	0.469 (11.9)	0.125 (3.2)	#4	0.087 (2.2)	0.218 (5.5)
8	0.449 (11.4)	0.594 (15.1)	0.125 (3.2)	#4	0.087 (2.2)	0.218 (5.5)
10	0.573 (14.6)	0.719 (18.3)	0.125 (3.2)	#4	0.087 (2.2)	0.218 (5.5)
12	0.699 (17.8)	0.812 (20.6)	0.125 (3.2)	#4	0.087 (2.2)	0.218 (5.5)
14	0.823 (20.9)	0.906 (23.0)	0.125 (3.2)	#4	0.087 (2.2)	0.218 (5.5)
16	0.949 (24.1)	0.969 (24.6)	0.125 (3.2)	#4	0.087 (2.2)	0.218 (5.5)
18	1.073 (27.3)	1.062 (27.0)	0.125 (3.2)	#4	0.087 (2.2)	0.218 (5.5)
20	1.199 (30.5)	1.156 (29.4)	0.125 (3.2)	#4	0.212 (5.4)	0.334 (8.5)
22	1.323 (33.6)	1.250 (31.8)	0.125 (3.2)	#4	0.212 (5.4)	0.334 (8.5)
24	1.449 (36.8)	1.375 (34.9)	0.155 (3.9)	#6	0.212 (5.4)	0.311 (7.9)

SHELL SIZE	A +010-.000 (+.25-.00)	B +.000-.010 (+.00-.25)	PANEL THICKNESS MIN.	PANEL THICKNESS MAX.
6	0.447 (11.4)	0.420 (10.7)	0.062 (1.6)	0.125 (3.2)
8	0.572 (14.5)	0.542 (13.8)	0.062 (1.6)	0.125 (3.2)
10	0.697 (17.7)	0.669 (17.0)	0.062 (1.6)	0.125 (3.2)
12	0.884 (22.5)	0.830 (21.1)	0.062 (1.6)	0.125 (3.2)
14	1.007 (25.6)	0.955 (24.3)	0.062 (1.6)	0.125 (3.2)
16	1.134 (28.8)	1.084 (27.5)	0.062 (1.6)	0.125 (3.2)
18	1.259 (32.0)	1.208 (30.7)	0.062 (1.6)	0.125 (3.2)
20	1.384 (35.2)	1.333 (33.9)	0.062 (1.6)	0.250 (6.4)
22	1.507 (38.3)	1.459 (37.1)	0.062 (1.6)	0.250 (6.4)
24	1.634 (41.5)	1.575 (40.0)	0.062 (1.6)	0.250 (6.4)

MS3057-C Waterproof Cable Clamp

FLANGE MOUNT RECEPTACLE ACCESSORIES

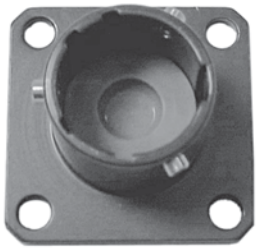
Gasket



Nut Plate

Sealing Screws

Dummy Receptacle



DUST CAPS

Plug Dust Cap

Receptacle Flange Dust Cap

Receptacle Jam Nut Dust Cap

Cable Clamp

	FLANGE MOUNT RECEPTACLE ACCESSORIES			DUST CAPS				
						RECEPTACLES		CABLE CLAMP A ENDBELLS
SHELL SIZE	GASKET	NUT PLATE	SEALING SCREWS	DUMMY RECEPTACLE	PLUGS	FLANGED	JAM NUT	
8	10-101949-008 CMD02-8	M85528/2-8A	S440-1/2	MS3115-8	MS3180-8CA	MS3181-8CA	MS3181-8NA	MS3057-3A
10	10-101949-010 CMD02-10	M85528/2-10A	S440-1/2	MS3115-10	MS3180-10CA	MS3181-10CA	MS3181-10NA	MS3057-4A
12	10-101949-012 CMD02-12	M85528/2-12A	S440-1/2	MS3115-12	MS3180-12CA	MS3181-12CA	MS3181-12NA	MS3057-6A
14	10-101949-014 CMD02-14	M85528/2-14A	S440-1/2	MS3115-14	MS3180-14CA	MS3181-14CA	MS3181-14NA	MS3057-8A
16	10-101949-016 CMD02-16	M85528/2-16A	S440-1/2	MS3115-16	MS3180-16CA	MS3181-16CA	MS3181-16NA	MS3057-10A
18	10-101949-018 CMD02-18	M85528/2-18A	S440-1/2	MS3115-18	MS3180-18CA	MS3181-18CA	MS3181-18NA	MS3057-12A
20	10-101949-020 CMD02-20	M85528/2-20A	S440-1/2	MS3115-20	MS3180-20CA	MS3181-20CA	MS3181-20NA	MS3057-12A
22	10-101949-022 CMD02-22	M85528/2-22A	S440-1/2	MS3115-22	MS3180-22CA	MS3181-22CA	MS3181-22NA	MS3057-16A
24	10-101949-024 CMD02-24	M85528/2-24B	S632-1/2	MS3115-24	MS3180-24CA	MS3181-24CA	MS3181-24NA	MS3057-16A

All dimensions in inches (millimeters in parenthesis)

PT Solder Contacts

1. Slide the rear accessories over the wire bundle in the proper sequence for re-assembly: cable clamp and/or endbell first, then ferrule, and (if used) the coupling nut.
2. Insert individual wires through the proper holes in the grommet.
3. Solder wires to appropriate contacts on the rear of the connector.
4. Fixture the connector for re-assembly using the endbell assembly tools on page 138 or a mating connector with contacts installed.
5. Slide the grommet down the wires (lubricating the grommet with isopropyl alcohol will help).
6. Fill all unused grommet cavities with a wire hole filler to maintain the sealing integrity of the connector.
7. Slide coupling nut, ferrule, and endbell accessories over rear of the connector and tighten.

See page 138 for more information.

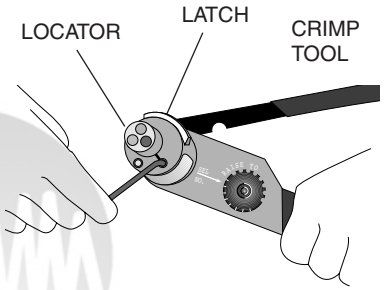
PTSE & PTCE Crimp Tool Operation

Hand Crimp Tool

1. Strip the wires to the appropriate length.

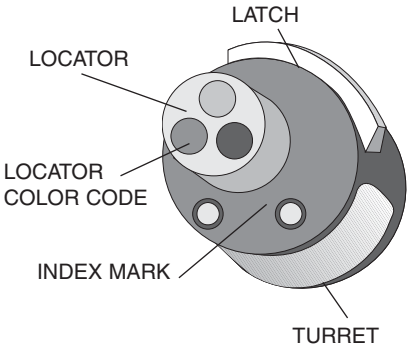
CONTACT SIZE	STRIP LENGTH
20	.1875 (4.8mm)
16	.2500 (6.4mm)
12	.2320 (5.9mm)

2. Open the (M22520/1-01) crimp tool by squeezing the handles. Push the latch on TH1A (M22520/1-02) to pop up the locator on the turret. Attach the turret to the AF8 crimp tool using the two captive hex bolts in the turret.

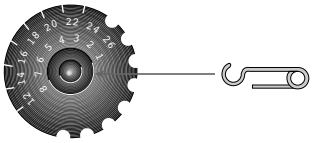


3. Select the proper locator position for your contact by rotating the locator until the proper color is aligned with the index mark. Push locator back down until it snaps into position

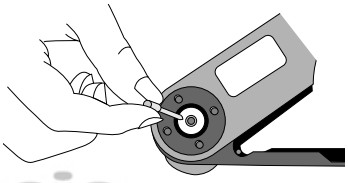
CONTACT SIZE	LOCATOR COLOR
20	RED
16	BLUE
12	YELLOW



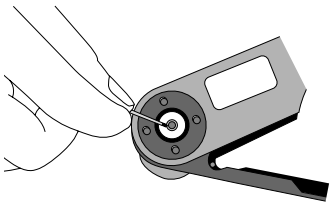
4. Adjust dial for proper wire gauge. To change the dial setting remove the lock pin and lift center of dial. Turn to the desired wire gauge. Replace lock pin on dial.



5. Cycle the tool before inserting the contact to be sure the tool is in the open position. Drop the contact, mating end first, into the crimp cavity of the tool. Squeeze the tool handle just enough to grip the contact without actually crimping it.

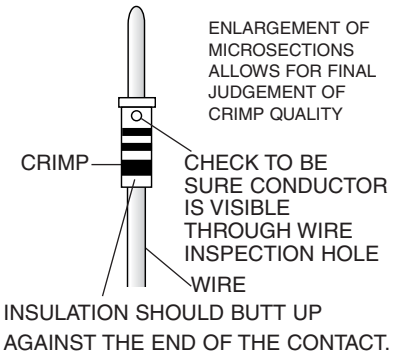


6. Insert the stripped wire into the contact with a slight twisting motion. Be sure all wire strands are inside the contact. Squeeze the handle to cycle the tool. The handle will not release until the contact is completely crimped.



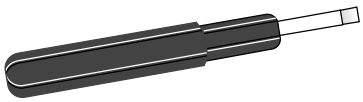
Crimp Tool Operation (continued)

7. Remove the crimped contact. Pull on the wire slightly to be sure it is properly crimped. Be sure the contact is not bent or damaged in any way. Visually inspect the crimp:



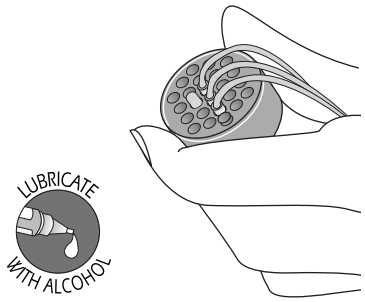
Insertion of Contacts

1. Slide the rear accessories over the wire bundle in the proper sequence for re-assembly: cable clamp and/or endbell first, then ferrule, and coupling nut.
2. Using the proper insertion tool from the chart on page 125, slide the tool over the wire side of the contact until the tool bottoms on the contact.

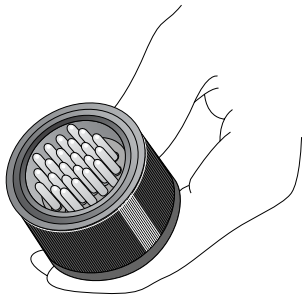


The tool for size 16 contacts butts against the shoulder of the contact. The rear, or insulation support, of the size 20 contacts butts against an internal shoulder in the tool tip.

3. Dip the contact and tool tip in isopropyl alcohol (do not use any lubricant other than isopropyl alcohol). Hold the tool perpendicular to the rear of the connector. Beginning with the center cavity and working outwards in a circular pattern, insert the wired contact into the rear of the connector until the contact snaps into place. A light pull on the wire will assure that the contact is locked securely.



4. Fill any unused cavities with contacts. A wire hole filler must be inserted into the grommet behind the unused contacts to maintain the sealing integrity of the connector. See page 125.
5. Check the mating face of the connector to insure that all the same size contacts are on the same plane (fully inserted). If not, the contact is not fully inserted. Remove the contact using the proper extraction tool and procedure and re-insert. Do not attempt to reinsert the insertion tool to correct the problem.

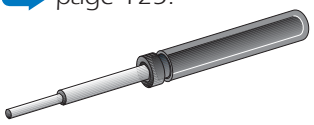


6. Fixture the connector for re-assembly using the endbell assembly tools on page 138 or a mating connector with contacts installed. Slide the connector accessories back down the cable over the rear of the connector and tighten. Torque as follows:

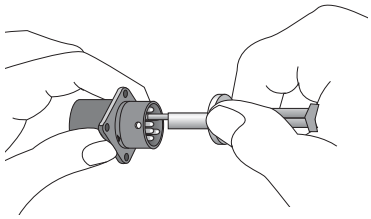
SIZE	TORQUE (INCH/LBS)
8, 10, 12, 14	10 - 15
16, 18	15- 25
20, 22, 24	25 - 35

Extraction of Contacts

1. Remove the endbell accessories and slide them back over the wires.
2. Use the proper extraction tool from the chart on page 125.



3. On the mating face of the connector, insert the tool over the contact and into the insulator until the tool bottoms. While keeping an even pressure against the tool, push the plunger on the tool shaft forward with your thumb and index finger. This will release the contact from the retention tine and push it toward the rear of the connector.



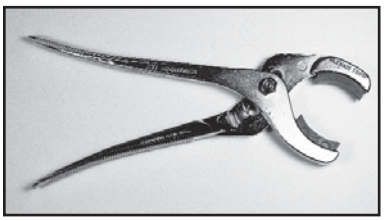
4. Carefully remove extraction tool from the connector. Pull the wire by hand to completely remove the contact from the rear of the connector.

Connector Tools

TG70 Strap Wrench

The strap wrench is used to connect or disconnect coupling nuts in a confined space, or to tighten or loosen endbells without damaging the connector plating. A strap wrench also increases torque, allowing you to more easily mate or unmate a connector pair. Substitute tools, such as a pipe wrench or pliers, should never be used because of the high probability of severe damage to the connector plating or the coupling mechanism.

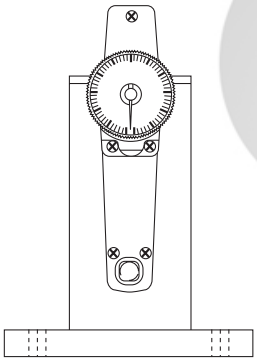
TG69P Non-Marring Adjustable Endbell Pliers For Field Service



The TG69P pliers have resilient jaws and are used to tighten or remove endbells without damaging the connector plating. The pliers are adjustable and will accommodate all of the connector sizes in this catalog. Substitute tools, such as a pipe wrench or metal jaw pliers, should never be used due to the high probability of severe damage to the connector plating. Replacement jaws, Part No. G77015, are available.

600 Series Production System

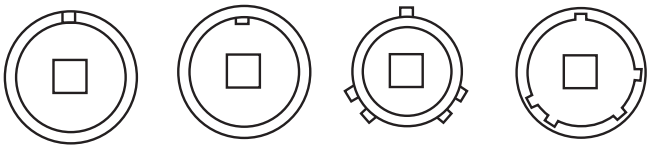
The 600 Series is a complete system for the proper assembly and torquing of connector endbells. The System includes a bench mounted or hand-held torque wrench, plug and receptacle holders, and a range of endbell tightening tools. When used together, these tools provide the user with consistent endbell installations. Each item is shipped with detailed assembly instructions.



600-007
Bench mounted
Torque wrench

600-004
Hand held
Torque
wrench

Plug and Receptacle Holders



600B005-R 600B005-P 600D005-R 600D005-P

SHELL SIZE	MIL-DTL-5015 FOR AIT/MS, AIB/GT, P-LOK		MIL-DTL-26482 FOR PT, PT-SE, MS311_, MS312_	
	RECEPTACLES	PLUGS	RECEPTACLES	PLUGS
8/8S	600B005-8R	600B005-8P	600D005-8R	600D005-8P
10S/SL	600B005-10R	600B005-10P	600D005-10R	600D005-10P
12/12S	600B005-12R	600B005-12P	600D005-12R	600D005-12P
14/14S	600B005-14R	600B005-14P	600D005-14R	600D005-14P
16/16S	600B005-16R	600B005-16P	600D005-16R	600D005-16P
18	600B005-18R	600B005-18P	600D005-18R	600D005-18P
20	600B005-20R	600B005-20P	600D005-20R	600D005-20P
22	600B005-22R	600B005-22P	600D005-22R	600D005-22P
24	600B005-24R	600B005-24P	600D005-24R	600D005-24P
28	600B005-28R	600B005-28P	-	-
32	600B005-32R	600B005-32P	-	-
36	600B005-36R	600B005-36P	-	-

Torque Values

Important Note:
If Barrel/Shell have three threads or less, torque to 30 to 35 inch - Lbs (3.4 to 4.0 NM) per L-725-2.

Endbell

SHELL SIZE	INCH-LBS. MIN	INCH-LBS. MAX	N-M MIN	N-M MAX
6	20	26	2.3	2.9
8	20	26	2.3	2.9
10	26	32	2.9	3.6
12	30	36	3.4	4.1
14	40	46	4.5	5.2
16	50	55	5.6	6.2
18	60	65	6.8	7.3
20	75	80	8.5	9.0
22	85	90	9.6	10.2
24	100	110	11.3	12.4

Jam Nut

SHELL SIZE	INCH-LBS. MIN	INCH-LBS. MAX	N-M MIN	N-M MAX
8	26	32	2.9	3.6
10	30	36	3.4	4.1
12	46	50	5.2	5.6
14	55	60	6.2	6.8
16	70	75	7.9	8.5
18	80	85	9.0	9.6
20	90	95	10.2	10.7
22	100	110	11.3	12.4
24	110	120	12.4	13.6

62GB Series

Amphenol 62GB Series connectors are built to British Standard Specification BS 9522 F00 17 which is similar to US military specification MIL-DTL-26482. They are machined from solid aluminum bar stock for superior strength and adaptability and may be specially ordered in brass or stainless steel. 62GB Series connectors feature a wide variety of both insert rotation and positive shell-to-shell keying that provides superior protection against mismating. The standard shell finish is corrosion resistant zinc olive drab; however, other finishes such as cadmium plate are also available. Inserts are made of polychloroprene rubber and are available in layouts from 2 to 61 conductor arrangements. Contacts are gold plated to eliminate contact corrosion and provide an indefinite shelf life.

Applications

Industrial, commercial and medical applications where mismating or cross plugging are a concern.

- Aircraft
- Communications systems
- Factory automation
- Industrial machinery
- Medical instrumentation
- Mobile equipment
- Sensors
- Ships

Features

- Medium size, highly adaptable
- Operating voltage to 1,500 Vac
- Positive shell-to-shell keying, insert rotations and alternate key/keyway locations
- Machined connector shell
- Wide variety of endbell styles
- Meet BS 9522 F00 17 and MIL-DTL-26482 specifications

Rugged Shell

Machined aluminum alloy shell and hardware create an exceptionally strong connector. These connectors have been used extensively in commercial, military, and aerospace environments. Standard shells accept most MIL-DTL-26482 accessories.

Environmentally Sealed

Complete moisture sealing is achieved by combining four seals: shell, peripheral, interfacial, and wire. Wire seal is accomplished by multiple ripple design, exceeding the wire sealing requirements of MIL-DTL-26482.

Resistant to Harshest Environments

These connectors will operate in temperatures from -67˚F to +257˚F (-55˚C to +125˚C) under the harshest possible conditions.

Wide Range of Wire Gauges and Current Carrying Capability

Up to 22 amps with wire gauges from size 24 up to size 8 AWG wire.

Resilient Insulator & Grommet

A resilient Neoprene insulator and integrated rear wire sealing grommet guarantees a liquid-tight assembly. Solder contacts are permanently bonded into the insulator.

Solder Gold Plated Contacts

62GB connector contacts are gold plated. Socket contacts are closed to eliminate damage from test probes and to help prevent misaligned pins during engagement.

Agency Approvals

- MIL-DTL-26482
- BS 9522 F00 17

Technical Specifications

MATERIALS & FINISHES

Shell	Aluminum alloy
Plating	Olive drab zinc or (714) olive drab chromate over cadmium
Contacts	Copper alloy
Platings	Gold plate, 50 microinches minimum per MIL-G-45204 Type II.
Insulator	Resilient neoprene

ELECTRICAL DATA

Operating Voltage & Test Voltage:

SERVICE RATING*	TEST ALTITUDE	MAXIMUM OPERATING VOLTAGE		TEST VOLTAGE	
		DC	AC (RMS)	DC	AC (RMS)
I	Sea Level	850	600	2100	500
II		1,275	1,000	3,200	2,300
I	70,000 feet	-	300	535	375
II		-	450	770	550

*Each insulator layout has a specific "Service Rating". The Service Ratings for each layout are listed on pages 143, 144.

Current Rating:

CONTACT SIZE	RATED CURRENT AMPS (MAX.)	TEST CURRENT AMPS (WORKING)	POTENTIAL DROP (MILLIVOLTS) INITIAL	CONTACT RESISTANCE MILLIOHMS (MAX)
20	7.5	7.5	< 55	10
16	22	13	< 50	10
12	41	23	< 50	10
8	45	40	< 50	10

Wire Range Sizes	24 to 8 AWG
Contact Resistance	When tested to MIL-STD-1344 Method 3004, will not exceed voltage drops listed in table above. Consult MIL-DTL-26482, 3.6.4 for details.
Insulation Resistance	5,000 Megohms minimum at 77˚F (25˚C)

MECHANICAL

Operating Temperature	-67˚F to +257˚F (-55˚C to +125˚C)
Sealing	48 hours in 6 feet of water per MIL-DTL-26482 4.6.14. Meets 10- and 20-day 50 to 95% humidity testing per MIL-STD-1344 Method 1002.2 per MIL-DTL-26482.

Wire Sealing Range:

CONTACT SIZE	AWG WIRE SIZE	INSULATION O.D. LIMITS: INCHES (mm)	
		MIN.	MAX.
20	24, 22, and 20	.047 (1.19)	.085 (2.16)
16	20, 18, and 16	.066 (1.68)	.109 (2.77)
12	12 and 14	.097 (2.46)	.142 (3.78)
8	8	.135 (3.43)	.145 (3.68)

All dimensions in inches (millimeters in parenthesis)

Technical Specifications

Insulation Strip Lengths:

CONTACT SIZE	WIRE SIZE (AWG)	STRIP LENGTH INCHES (mm)
20	20-24	.375 (9.5)
16	16-20	.250 (6.35)
12	12-14	.232 (5.9)
8	8-10	.232 (5.9)

Mating Life 500 cycles minimum

Salt Spray Unmated connectors and protective covers meet BS 9520: 1974, clause 1.2.6.16 Severity 1.

Heat +347˚F, (+175˚C) for 1000 hours to MIL-STD-1344 Method 1005.1 per MIL-DTL-26482.

Chemical Resistance Immersion in 4 solvents and 9 fluids including aircraft fuels, lubricating oils and hydraulic fluids.

Vibration 10 to 2,000Hz (15g's) 10 microseconds maximum discontinuity. To MIL-STD-1344 Method 2005 per MIL-DTL-26482.

Shock 50g's. 11ms duration, three major axes. 10 microseconds maximum discontinuity. To MIL-STD-1344 Method 2004 per MIL-DTL-26482.

Contact Type Solder, PC

Number of Circuits 2 to 61

Contact Retention To MIL-STD-1344 Method 2007 per MIL-DTL-26482

CONTACT SIZE	AXIAL LOAD MIN. NEWTONS (lbs)
20	66.7 (15)
16	112 (25)
12	112 (25)
8	112 (25)

Polarization Five keyway, three point bayonet with optional rotational polarization and keyway positions.

See pages 143, 145.

Approvals BS 9522 F0017

NEW Plastic Version of 62GB (62IP) - Call for Details!

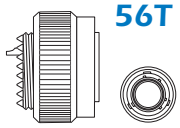
All dimensions in inches (millimeters in parenthesis)

Follow these 5 steps to create your part number. . .

STEP 1

Select Shell Style, Plug, Receptacle and Rear Accessory

Plugs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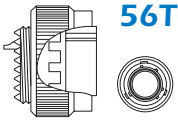
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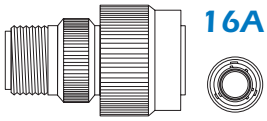
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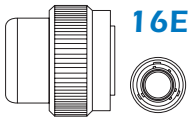
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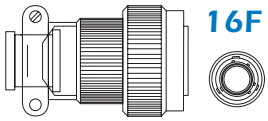
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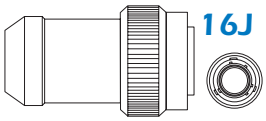
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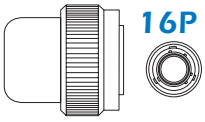
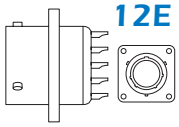

16P

mates with

Flange Receptacles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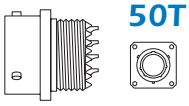
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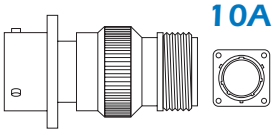
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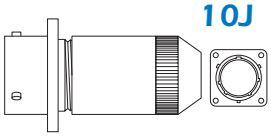
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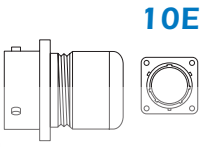
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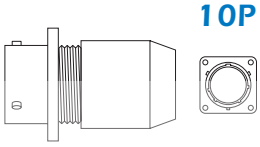
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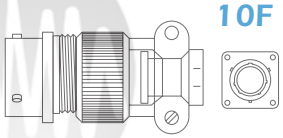
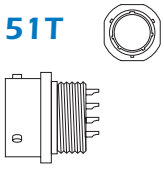

10F

mates with

Inline Receptacles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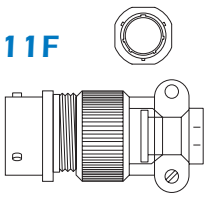
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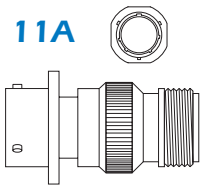
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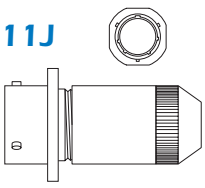
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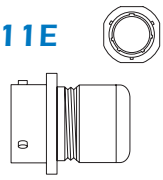
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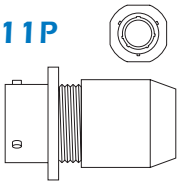
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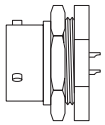
Jam Nut Receptacles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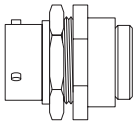
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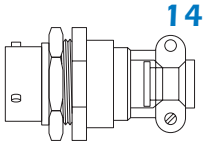
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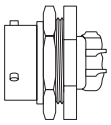
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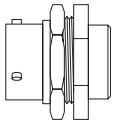
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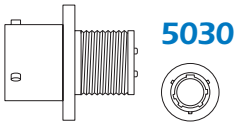

5030

Style Code

- **A** = **General Duty Thread**
- **E** = **Environmentally Sealed**
- **F** = **Environmentally Sealed** with Strain Relief
- **J** = **Environmentally Sealed** with Cable Gland Seal
- **P** = **Potting Cup**
- **T** = **Barrel/Shell Assembly** with Rear Threads, No Endbell
- **TG** = **Plug Barrel** (56 only) with Rear Threads, No Endbell and EMI/RFI Grounding Fingers

STEP 2

Choose Layout

Insert Arrangement	GB	Service Rating	Total Number of Contacts	Contact Size				Orientation θ (degrees)				
				20	16	12	8	Normal	W	X	Y	Z
8-2	■	I	2	2				0	58	122	-	-
8-3	■	I	3	3				0	60	210	-	-
8-33	□	I	3	3				0	90	-	-	-
8-4	■	I	4	4				0	45	-	-	-
8-98	□	I	3	3				0	-	-	-	-
10-2	□	II	2		2			0	-	-	-	-
10-6	□	I	6	6				0	90	-	-	-
10-7	□	I	7	7				0	-	-	-	-
12-3	□	II	3		3			0	-	-	180	-
12-10	□	I	10	10				0	60	155	270	295
14-02*	■	II	2			2		0	*	*	*	*
14-5	□	II	5		5			0	40	92	184	273
14-12	□	I	12	8	4			0	43	90	-	-
14-15	□	I	15	14	1			0	17	110	155	234
14-19	□	I	19	19				0	30	165	315	-
16-04*	■	III	4			4		0	*	*	*	*
16-8	□	II	8		8			0	54	152	180	331
16-23	■	I	23	22	1			0	158	270	-	-
16-26	□	I	26	26				0	60	-	275	338
18-11	□	II	11		11			0	62	119	241	340
18-02*	■	III	2				2	0	*	*	*	*
18-32	□	I	32	32				0	85	138	222	265
20-16	□	II	16		16			0	238	318	333	347
20-41	□	I	41	41				0	45	126	225	-
22-21	□	II	21		21			0	16	135	175	349
22-55	□	I	55	55				0	30	142	226	314
24-61	□	I	61	61				0	90	180	270	324

* Call for details
□ 62GB and BS9522 F0017 Layout
■ 62GB Layout only

STEP 3

Choose Contact

P = Pin
S = Socket

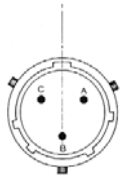
STEP 4

Choose Rotation

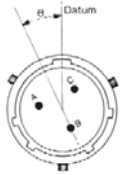
See chart on next page
(omit for normal)

W, X, Y, Z

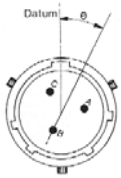
Mating Face view of pin inserts



Normal position with pin conacts



Alternative position of insert with socket contacts (Ø counterclockwise)

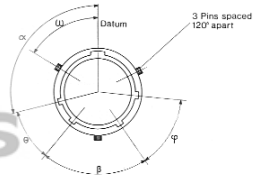


Alternative position of insert with pin contacts (Ø clockwise)

Or Choose Keyway

A, B, C, D, E, F

See chart on page 145.



STEP 5

Choose Modifier (62GB only)

044 = Rough Grip Heavy Duty Coupling Nut (plugs only)
046 = Box Mount (plugs only)
214 = F Style Endbell with Wire Sealing Grommet
219 = Printed Circuit Board
12E & 57A only
760 = Crimp Contacts

Shell Plating

(omit for standard green zinc)

714 = Olive Drab Chromate over Cadmium
416 = Electroless Nickel (RoHS)
639 = Clear Chromate over Cadmium
608 = Black Anodized
771 = Black Zinc Cobalt

(example)

Create your part number using these 5 steps

62GB	56TG	10-6	P	W	608
Series Prefix	1 Shell Style	2 Layout	3 Contact	4 Rotation	5 Modifier

Layouts by Number of Contacts

CONTACT LEGEND ○=20 ●=16 ◔=12 ◒=8
Mating face view of pin inserts

SERIES LEGEND ■ = 62GB ☐ = 62GB and BS9522 F0017

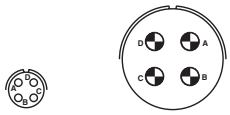
2 CONTACTS

SHELL SIZE/LAYOUT # OF CONTACTS	8-2 2-#20	10-2 2-#16	14-2 2-#12	18-2 2-#8
SERVICE RATING	I	II	II	III
SERIES	■	☐	■	■

3 CONTACTS

SHELL SIZE/LAYOUT # OF CONTACTS	8-3 3-#20	8-33 3-#20	8-98 3-#20	12-3 3-#16
SERVICE RATING	I	I	I	II
SERIES	■	☐	☐	☐

4 CONTACTS



SHELL SIZE/LAYOUT # OF CONTACTS	8-4 4-#20	16-4 4-#12
SERVICE RATING	I	III
SERIES	■	■

5 CONTACTS

SHELL SIZE/LAYOUT # OF CONTACTS	14-5 5-#16
SERVICE RATING	II
SERIES	☐

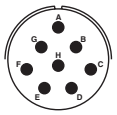
6 CONTACTS

SHELL SIZE/LAYOUT # OF CONTACTS	10-6 6-#20
SERVICE RATING	I
SERIES	☐

7 CONTACTS

SHELL SIZE/LAYOUT # OF CONTACTS	10-7 7-#20
SERVICE RATING	I
SERIES	☐

8 CONTACTS



SHELL SIZE/LAYOUT # OF CONTACTS	16-8 8-#16
SERVICE RATING	II
SERIES	☐

10 CONTACTS

SHELL SIZE/LAYOUT # OF CONTACTS	12-10 10-#20
SERVICE RATING	I
SERIES	☐

11 CONTACTS

SHELL SIZE/LAYOUT # OF CONTACTS	18-11 11-#16
SERVICE RATING	II
SERIES	☐

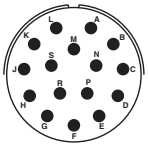
12 CONTACTS

SHELL SIZE/LAYOUT # OF CONTACTS	14-12 8-#20; 4-#16
SERVICE RATING	I
SERIES	☐

15 CONTACTS

SHELL SIZE/LAYOUT # OF CONTACTS	14-15 1-#16; 14-#20
SERVICE RATING	II
SERIES	☐

16 CONTACTS

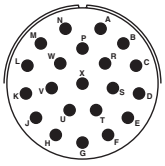


SHELL SIZE/LAYOUT # OF CONTACTS	20-16 16-#20
SERVICE RATING	II
SERIES	☐

19 CONTACTS

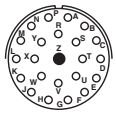
SHELL SIZE/LAYOUT # OF CONTACTS	14-19 18-#20
SERVICE RATING	I
SERIES	☐

21 CONTACTS



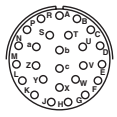
SHELL SIZE/LAYOUT # OF CONTACTS	22-21 21-#16
SERVICE RATING	II
SERIES	☐

23 CONTACTS



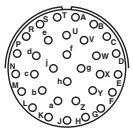
SHELL SIZE/LAYOUT # OF CONTACTS	16-23 1-#16; 22-#20
SERVICE RATING	I
SERIES	■

26 CONTACTS



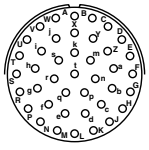
SHELL SIZE/LAYOUT # OF CONTACTS	16-26 26-#20
SERVICE RATING	I
SERIES	☐

32 CONTACTS



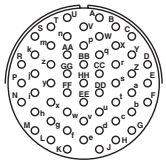
SHELL SIZE/LAYOUT # OF CONTACTS	18-32 32-#20
SERVICE RATING	I
SERIES	☐

41 CONTACTS



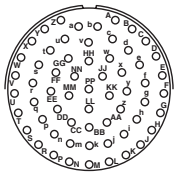
SHELL SIZE/LAYOUT # OF CONTACTS	20-41 41-#20
SERVICE RATING	I
SERIES	☐

55 CONTACTS



SHELL SIZE/LAYOUT # OF CONTACTS	22-55 55-#20
SERVICE RATING	I
SERIES	☐

61 CONTACTS



SHELL SIZE/LAYOUT # OF CONTACTS	24-61 61-#20
SERVICE RATING	I
SERIES	☐

Choose Keyway Orientations

Shell Size	Keying	Values for α (degrees)	Values for θ (degrees)	Values for β (degrees)	Values for ψ (degrees)	Values for ω (degrees)
8	N	105	35	75	50	60
	A	92	35	75	50	47
	B	-	-	-	50	-
	C	-	-	-	50	-
	D	118	35	75	50	73
	E	118	30	100	30	73
	F	82	50	75	45	47
10	N	105	35	75	50	60
	A	95	35	75	50	50
	B	85	35	75	50	40
	C	125	35	75	50	80
	D	115	35	75	50	70
	E	115	30	100	30	70
	F	85	50	75	45	50
12	N	105	35	75	50	60
	A	97	35	75	50	52
	B	89	35	75	50	44
	C	121	35	75	50	76
	D	113	35	75	50	68
	E	115	30	100	30	70
	F	85	50	75	45	50
14	N	105	35	75	50	60
	A	98	35	75	50	53
	B	91	35	75	50	46
	C	119	35	75	50	74
	D	112	35	75	50	67
	E	75	30	100	30	30
	F	120	50	75	35	75
16	N	105	35	75	50	60
	A	99	35	75	50	54
	B	93	35	75	50	48
	C	117	35	75	50	72
	D	111	35	75	50	66
	E	75	30	100	30	30
	F	120	50	75	35	75
18	N	105	35	75	50	60
	A	100	35	75	50	55
	B	95	35	75	50	50
	C	115	35	75	50	70
	D	110	35	75	50	65
	E	75	30	100	30	30
	F	120	50	75	35	75
20	N	105	35	75	50	60
	A	100	35	75	50	55
	B	95	35	75	50	50
	C	115	35	75	50	70
	D	110	35	75	50	65
	E	75	30	100	30	30
	F	120	50	75	35	75
22	N	105	35	75	50	60
	A	101	35	75	50	56
	B	97	35	75	50	52
	C	113	35	100	50	68
	D	109	35	75	50	64
	E	75	30	75	30	30
	F	120	50	75	35	75
24	N	105	35	75	50	60
	A	101	35	75	50	56
	B	97	35	75	50	52
	C	113	35	75	50	68
	D	109	35	75	50	64
	E	75	30	100	30	30
	F	120	50	75	35	75

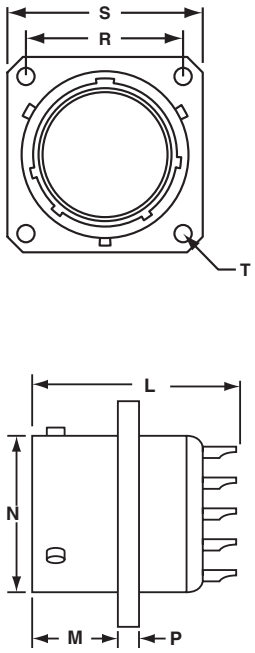
Components

O-Ring		
Barrel/ Shell		
Wave Spring		
Coupling Nut		
Lock Ring		
Insert/ Insulator		
Contacts		
Wire Sealing Grommet		
Ferrule/ Compression Ring		
Endbell/ Cable Clamp		

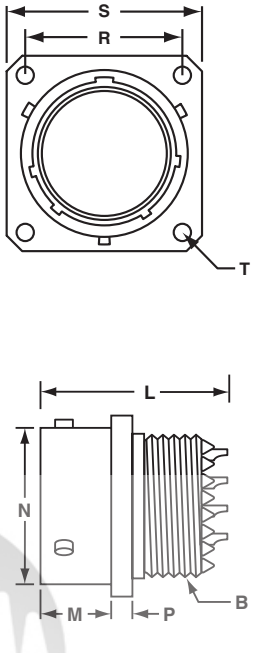
Dimensions

Receptacle Styles

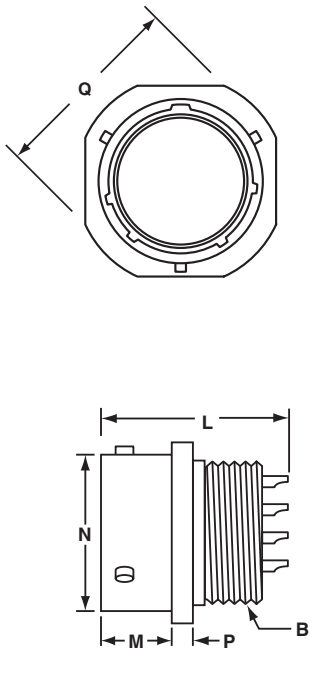
62GB12E



62GB50T



62GB51T



	62GB12E/62GB50T					
SHELL SIZE	M	N +.001 -.055	P	R (TP)	S	T
8	0.445 (11.3)	0.473 (12.0)	0.062 (1.6)	0.594 (15.1)	0.817 (20.8)	0.120 (3.0)
10	0.445 (11.3)	0.590 (15.0)	0.062 (1.6)	0.719 (18.3)	0.842 (21.4)	0.120 (3.0)
12	0.445 (11.3)	0.750 (19.1)	0.062 (1.6)	0.812 (20.6)	1.036 (26.3)	0.120 (3.0)
14	0.445 (11.3)	0.875 (22.2)	0.062 (1.6)	0.906 (23.0)	1.130 (28.7)	0.120 (3.0)
16	0.445 (11.3)	1.000 (25.4)	0.062 (1.6)	0.969 (24.6)	1.223 (31.1)	0.120 (3.0)
18	0.445 (11.3)	1.125 (28.6)	0.062 (1.6)	1.062 (27.0)	1.317 (33.5)	0.120 (3.0)
20	0.555 (14.1)	1.250 (31.8)	0.080 (2.4)	1.156 (29.4)	1.442 (36.6)	0.120 (3.0)
22	0.555 (14.1)	1.375 (34.9)	0.080 (2.4)	1.250 (31.8)	1.567 (39.8)	0.120 (3.0)
24	0.590 (15.0)	1.500 (38.1)	0.080 (3.2)	1.375 (34.9)	1.692 (43.0)	0.147 (3.7)

62GB12E	
L	KK DIA. MAX.
0.080 (2.0)	0.434 (11.0)
0.080 (2.0)	0.558 (14.2)
0.080 (2.0)	0.683 (17.3)
0.080 (2.0)	0.808 (20.5)
0.080 (2.0)	0.933 (23.7)
0.080 (2.0)	1.057 (26.8)
0.875 (22.2)	1.182 (30.0)
0.875 (22.2)	1.307 (33.2)
0.875 (22.2)	1.432 (36.4)

62GB50T/62GB51T	
L	B THREAD CLASS 2A
0.978 (24.8)	.4375-28 UNEF
0.978 (24.8)	.5625-24 NEF
0.978 (24.8)	.6875-24 NEF
0.978 (24.8)	.8125-20 UNEF
0.978 (24.8)	.9375-20 UNEF
0.978 (24.8)	1.0625-18 NEF
1.048 (26.6)	1.1875-18 NEF
1.048 (26.6)	1.3125-18 NEF
1.048 (26.6)	1.4375-18 NEF

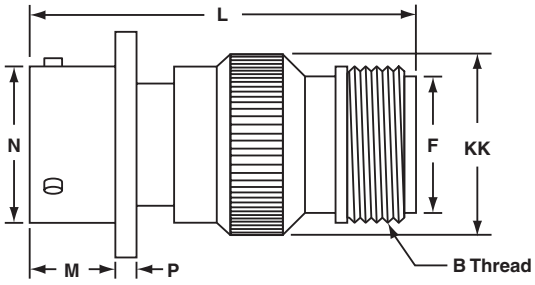
NOTE: See page 149 for panel cutouts/thickness.

All dimensions in inches (millimeters in parenthesis)

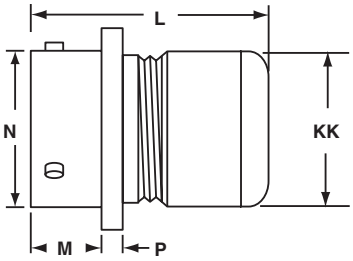
Dimensions

Endbell Styles

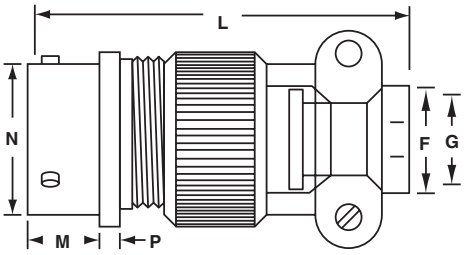
62GB10A
62GB11A



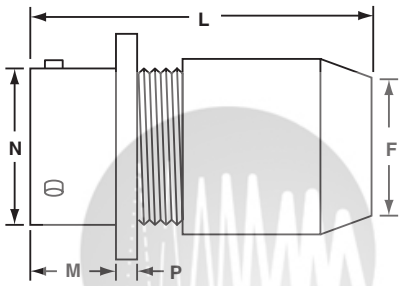
62GB10E
62GB11E



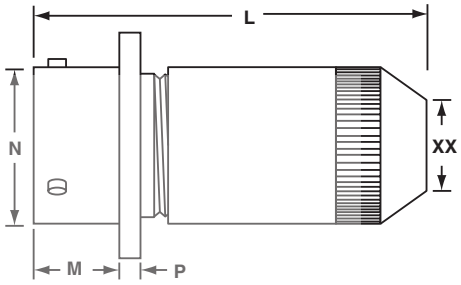
62GB10F
62GB11F



62GB10P
62GB11P



62GB10J
62GB11J

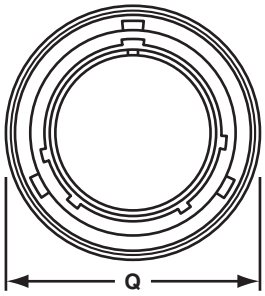


62GB10A/11A				62GB10E/11E		62GB10F/11F			62GB10P/11P		62GB10J/11J		
F	L	KK	B THREAD CLASS 2A	L	KK	F	G	L	F	L	L	XX MIN.	XX MAX.
0.297 (7.5)	1.624 (41.2)	0.561 (14.2)	.5000-28 UNEF	1.281 (32.5)	0.561 (14.2)	0.240 (6.1)	0.156 (4.0)	1.762 (44.8)	0.260 (6.6)	1.453 (36.9)	1.846 (46.9)	0.168 (4.3)	0.230 (5.8)
0.421 (10.7)	1.624 (41.2)	0.686 (17.4)	.6250-24 NEF	1.281 (32.5)	0.686 (17.4)	0.302 (7.7)	0.188 (4.8)	1.762 (44.8)	0.463 (11.8)	1.453 (36.9)	1.846 (46.9)	0.205 (5.2)	0.312 (7.9)
0.546 (13.9)	1.624 (41.2)	0.811 (20.6)	.7500-20 UNEF	1.281 (32.5)	0.811 (20.6)	0.428 (10.9)	0.312 (7.9)	1.762 (44.8)	0.577 (14.7)	1.453 (36.9)	1.947 (49.5)	0.338 (8.6)	0.442 (11.2)
0.663 (16.8)	1.624 (41.2)	0.936 (23.8)	.8750-20 UNEF	1.281 (32.5)	0.936 (23.8)	0.552 (14.0)	0.375 (9.5)	1.736 (44.1)	0.590 (15.0)	1.453 (36.9)	2.147 (54.5)	0.416 (10.6)	0.539 (13.7)
0.787 (20.0)	1.624 (41.2)	1.061 (26.9)	1.0000-20 UNEF	1.281 (32.5)	1.061 (26.9)	0.615 (15.6)	0.500 (12.7)	1.876 (47.7)	0.713 (18.1)	1.453 (36.9)	2.347 (59.6)	0.550 (14.0)	0.616 (15.6)
0.879 (22.3)	1.624 (41.2)	1.118 (28.4)	1.1875-18 NEF	1.281 (32.5)	1.186 (30.1)	0.740 (18.8)	0.625 (15.9)	1.876 (47.7)	0.835 (21.2)	1.453 (36.9)	2.547 (64.7)	0.600 (15.2)	0.672 (17.1)
1.014 (25.8)	1.687 (42.8)	1.311 (33.3)	1.1875-18 NEF	1.383 (35.1)	1.311 (33.3)	0.740 (18.8)	0.625 (15.9)	2.118 (53.8)	1.015 (25.8)	1.672 (42.5)	2.831 (71.9)	0.635 (16.1)	0.747 (19.0)
1.134 (28.8)	1.687 (42.8)	1.436 (36.5)	1.4375-18 NEF	1.383 (35.1)	1.436 (36.5)	0.928 (23.6)	0.750 (19.1)	2.118 (53.8)	1.015 (25.8)	1.672 (42.5)	3.031 (77.0)	0.670 (17.0)	0.846 (21.5)
1.259 (32.0)	1.730 (43.9)	1.561 (39.6)	1.4375-18 NEF	1.383 (35.1)	1.561 (39.6)	0.990 (25.1)	0.800 (20.3)	2.250 (57.2)	1.265 (32.1)	1.734 (44.0)	3.074 (78.1)	0.740 (18.8)	0.849 (21.6)

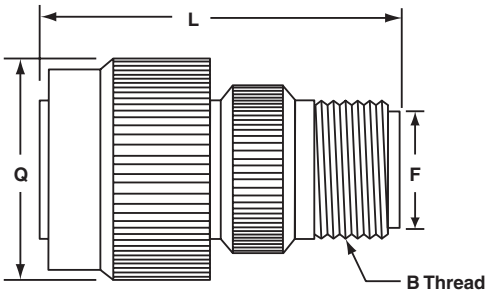
All dimensions in inches (millimeters in parenthesis)

Dimensions

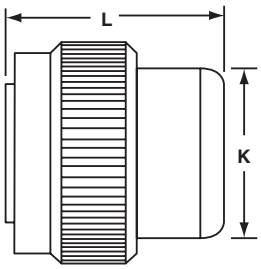
Straight Plug



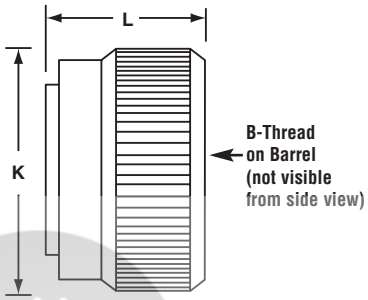
62GB16A



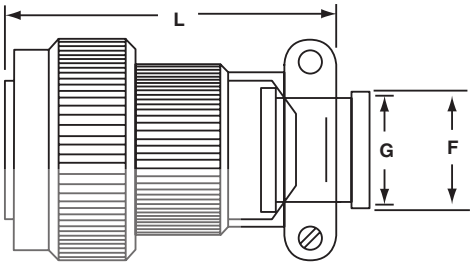
62GB16E



62GB56T/62GB56TG



62GB16F



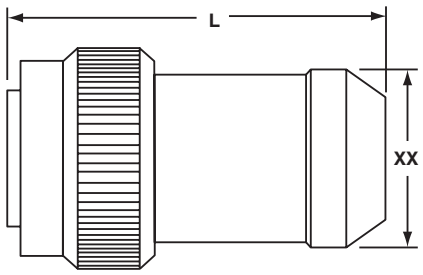
	62GB56T/62GB56TG			62GB16A			62GB16E		62GB16F		
SHELL SIZE	Q MAX.	L MAX.	B THREAD CLASS 2A	F	L	B THREAD CLASS 2A	L	KK	F	G	L
8	0.750 (19.1)	0.976 (24.8)	.4375-28 UNEF	0.297 (7.5)	1.614 (41.0)	.5000-28 UNEF	1.281 (32.5)	0.561 (14.2)	0.240 (6.1)	0.156 (4.0)	1.752 (44.5)
10	0.859 (21.8)	0.976 (24.8)	.5625-24 NEF	0.421 (10.7)	1.614 (41.0)	.6250-24 NEF	1.281 (32.5)	0.686 (17.4)	0.302 (7.7)	0.188 (4.8)	1.752 (44.5)
12	1.013 (25.7)	0.976 (24.8)	.6875-24 NEF	0.546 (13.9)	1.614 (41.0)	.7500-20 UNEF	1.281 (32.5)	0.811 (20.6)	0.428 (10.9)	0.312 (7.9)	1.752 (44.5)
14	1.156 (29.4)	0.976 (24.8)	.8125-20 UNEF	0.663 (16.8)	1.614 (41.0)	.8750-20 UNEF	1.281 (32.5)	0.936 (23.8)	0.552 (14.0)	0.375 (9.5)	1.726 (43.8)
16	1.281 (32.5)	0.976 (24.8)	.9375-20 UNEF	0.787 (20.0)	1.614 (41.0)	1.0000-20 UNEF	1.281 (32.5)	1.061 (26.9)	0.615 (15.6)	0.500 (12.7)	1.866 (47.4)
18	1.319 (33.5)	0.976 (24.8)	1.0625-18 NEF	0.879 (22.3)	1.614 (41.0)	1.1875-18 NEF	1.281 (32.5)	1.186 (30.1)	0.740 (18.8)	0.625 (15.9)	1.866 (47.4)
20	1.531 (38.9)	0.976 (24.8)	1.1875-18 NEF	1.014 (25.8)	1.614 (41.0)	1.1875-18 NEF	1.281 (32.5)	1.311 (33.3)	0.740 (18.8)	0.625 (15.9)	2.040 (51.8)
22	1.656 (42.1)	0.976 (24.8)	1.3125-18 NEF	1.134 (28.8)	1.614 (41.0)	1.4375-18 NEF	1.281 (32.5)	1.436 (36.5)	0.928 (23.6)	0.750 (19.1)	2.040 (51.8)
24	1.777 (45.1)	0.976 (24.8)	1.4375-18 NEF	1.259 (32.0)	1.658 (42.1)	1.4375-18 NEF	1.281 (32.5)	1.561 (39.6)	0.990 (25.1)	0.800 (20.3)	2.178 (55.3)

All dimensions in inches (millimeters in parenthesis)

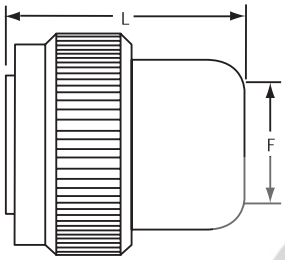
Dimensions

Straight Plug Styles

62GB16J

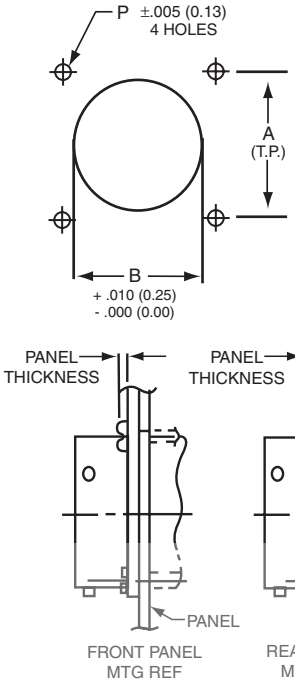


62GB16P



Panel Cutout/Thickness

62GB12E
62GB50T
62GB10



62GB16P	
F	L
0.260 (6.6)	1.306 (33.2)
0.463 (11.8)	1.415 (35.9)
0.557 (14.1)	1.384 (35.2)
0.590 (15.0)	1.384 (35.2)
0.713 (18.1)	1.384 (35.2)
0.835 (21.2)	1.384 (35.2)
1.015 (25.8)	1.539 (39.1)
1.015 (25.8)	1.539 (39.1)
1.265 (32.1)	1.602 (40.7)

62GB16J		
L	XX MIN.	XX MAX.
1.836 (46.6)	0.168 (4.3)	0.230 (5.8)
1.836 (46.6)	0.205 (5.2)	0.312 (7.9)
1.937 (49.2)	0.338 (8.6)	0.442 (11.2)
2.137 (54.3)	0.416 (10.6)	0.539 (13.7)
2.337 (59.4)	0.550 (14.0)	0.616 (15.6)
2.537 (64.4)	0.600 (15.2)	0.672 (17.1)
2.758 (70.1)	0.635 (16.1)	0.747 (19.0)
2.958 (75.1)	0.670 (17.0)	0.846 (21.5)
3.002 (76.3)	0.740 (18.8)	0.849 (21.6)

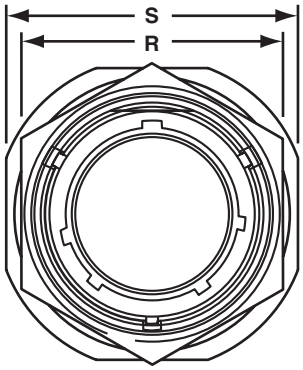
SHELL SIZE	B FRONT MOUNT	A	P ±.005	SCREW SIZE	PANEL THICKNESS
8	0.449 (11.4)	0.594 (15.1)	0.125 (3.2)	#4	0.087 (2.2)
10	0.573 (14.6)	0.719 (18.3)	0.125 (3.2)	#4	0.087 (2.2)
12	0.699 (17.8)	0.812 (20.6)	0.125 (3.2)	#4	0.087 (2.2)
14	0.823 (20.9)	0.906 (23.0)	0.125 (3.2)	#4	0.087 (2.2)
16	0.949 (24.1)	0.969 (24.6)	0.125 (3.2)	#4	0.087 (2.2)
18	1.073 (27.3)	1.062 (27.0)	0.125 (3.2)	#4	0.087 (2.2)
20	1.199 (30.5)	1.156 (29.4)	0.125 (3.2)	#4	0.212 (5.4)
22	1.323 (33.6)	1.250 (31.8)	0.125 (3.2)	#4	0.212 (5.4)
24	1.449 (36.8)	1.375 (34.9)	0.155 (3.9)	#6	0.212 (5.4)

All dimensions in inches (millimeters in parenthesis)

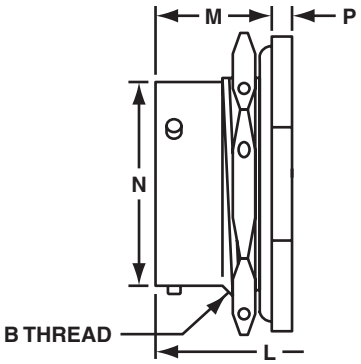
Dimensions

Jam Nut Receptacles

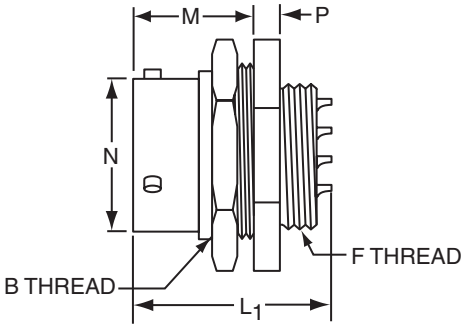
62GB



62GB57A



62GB57T



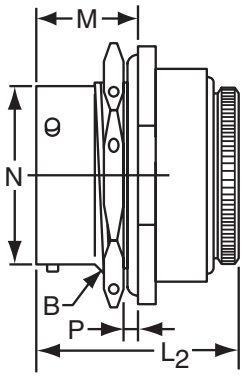
	62GB								62GB57A	62GB57T	
SHELL SIZE	B THREAD CLASS 2A	M ±.005 (± 0.13)	N	P	R	Q	PANEL THICKNESS J MIN.	PANEL THICKNESS J MAX.	L	L_1	F THREAD CLASS 2A
8	.5625-24 NEF	0.706 (17.9)	0.473 (12.0)	0.117 (3.0)	0.750 (19.1)	0.942 (23.9)	0.062 (1.6)	0.125 (3.2)	0.978 24.8)	0.978 (24.8)	.4375-28 UNEF
10	.6875-24 NEF	0.706 (17.9)	0.590 (15.0)	0.117 (3.0)	0.875 (22.2)	1.067 (27.1)	0.062 (1.6)	0.125 (3.2)	0.823 (20.9)	0.978 (24.8)	.5625-24 NEF
12	.8750-20 UNEF	0.706 (17.9)	0.750 (19.1)	0.117 (3.0)	1.062 (27.0)	1.255 (31.9)	0.062 (1.6)	0.125 (3.2)	0.823 (20.9)	0.978 (24.8)	.6875-24 NEF
14	1.0000-20 UNEF	0.706 (17.9)	0.875 (22.2)	0.117 (3.0)	1.187 (30.1)	1.380 (35.1)	0.062 (1.6)	0.125 (3.2)	0.823 (20.9)	0.978 (24.8)	.8125-20 UNEF
16	1.1250-18 NEF	0.706 (17.9)	1.000 (25.4)	0.117 (3.0)	1.312 (33.3)	1.505 (38.2)	0.062 (1.6)	0.125 (3.2)	0.823 (20.9)	0.978 (24.8)	.9375-20 UNEF
18	1.2500-18 NEF	0.706 (17.9)	1.125 (28.6)	0.117 (3.0)	1.437 (36.5)	1.630 (41.4)	0.062 (1.6)	0.125 (3.2)	0.823 (20.9)	0.978 (24.8)	1.0625-18 NEF
20	1.3750-18 NEF	0.894 (22.7)	1.250 (31.8)	0.148 (3.8)	1.562 (39.7)	1.817 (46.2)	0.062 (1.6)	0.250 (6.4)	1.042 (26.5)	1.048 (26.6)	1.1875-18 NEF
22	1.5000-18 NEF	0.894 (22.7)	1.375 (34.9)	0.148 (3.8)	1.687 (42.8)	1.942 (49.3)	0.062 (1.6)	0.250 (6.4)	1.042 (26.5)	1.048 (26.6)	1.3125-18 NEF
24	1.6250-18 NEF	0.927 (23.5)	1.500 (38.1)	0.148 (3.8)	1.812 (46.0)	2.067 (52.5)	0.062 (1.6)	0.250 (6.4)	1.075 (27.3)	1.048 (26.6)	1.4375-18 NEF

All dimensions in inches (millimeters in parenthesis)

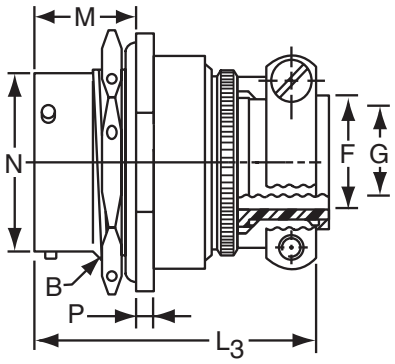
Dimensions

Jam Nut Receptacles

62GB14E

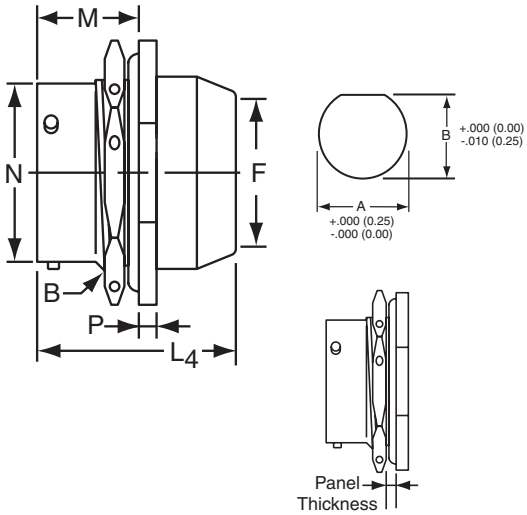


62GB14F



Panel Cutouts/Thickness

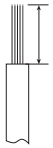
62GB17P



62GB14E	62GB14F			62GB14P		PANEL THICKNESS			
L_2	F MIN.	G MAX.	L_3	F	L_4	SHELL SIZE	A +010-.000 (+.25-.00)	B +.000-.010 (+.00-.25)	MIN.	MAX.
1.344 (34.1)	0.240 (6.1)	0.156 (4.0)	1.762 (44.8)	0.260 (6.6)	1.391 (35.3)	8	0.572 (14.5)	0.542 (13.8)	0.062 (1.6)	0.125 (3.2)
1.344 (34.1)	0.302 (7.7)	0.188 (4.8)	1.762 (44.8)	0.463 (11.8)	1.391 (35.3)	10	0.697 (17.7)	0.669 (17.0)	0.062 (1.6)	0.125 (3.2)
1.344 (34.1)	0.428 (10.9)	0.312 (7.9)	1.762 (44.8)	0.577 (14.7)	1.391 (35.3)	12	0.884 (22.5)	0.830 (21.1)	0.062 (1.6)	0.125 (3.2)
1.344 (34.1)	0.552 (14.0)	0.375 (9.5)	1.762 (44.8)	0.590 (15.0)	1.391 (35.3)	14	1.007 (25.6)	0.955 (24.3)	0.062 (1.6)	0.125 (3.2)
1.344 (34.1)	0.615 (15.6)	0.500 (12.7)	1.876 (47.7)	0.713 (18.1)	1.391 (35.3)	16	1.134 (28.8)	1.084 (27.5)	0.062 (1.6)	0.125 (3.2)
1.344 (34.1)	0.740 (18.8)	0.625 (15.9)	1.876 (47.7)	0.835 (21.2)	1.391 (35.3)	18	1.259 (32.0)	1.208 (30.7)	0.062 (1.6)	0.125 (3.2)
1.576 (40.0)	0.740 (18.8)	0.625 (15.9)	2.118 (53.8)	1.015 (25.8)	1.641 (41.7)	20	1.384 (35.2)	1.333 (33.9)	0.062 (1.6)	0.250 (6.4)
1.576 (40.0)	0.928 (23.6)	0.750 (19.1)	2.118 (53.8)	1.015 (25.8)	1.641 (41.7)	22	1.507 (38.3)	1.459 (37.1)	0.062 (1.6)	0.250 (6.4)
1.609 (40.9)	0.990 (25.1)	0.800 (20.3)	2.250 (57.2)	1.265 (32.1)	1.672 (42.5)	24	1.634 (41.5)	1.575 (40.0)	0.062 (1.6)	0.250 (6.4)

All dimensions in inches (millimeters in parenthesis)

Pins



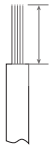

Insertion tool

Extraction tool

SIZE	WIRE SIZE AWG	PIN	WIRE STRIP LENGTHS INCHES (MM)	WIRE SEALING RANGE INCHES (MM) MAX.	WIRE SEALING RANGE INCHES (MM) MIN.	WIRE HOLE FILLER	HAND CRIMP TOOL	POWER CRIMP TOOL ††	TURRRET HEAD	USE TURRET HEAD LOCATOR COLOR	INSERTION TOOL METAL	EXTRACTION TOOL METAL
20	20-24	62-1525	3.14 (8.00)	.047 (1.19)	.085 (2.16)	MS27488-20-1	M22520/1-01	WA27F	M22520/1-02	RED	M81969/17-03	M81969/19-07
16	16-20	62-1708	3.14 (8.00)	.066 (1.68)	.109 (2.77)	MS27488-16-1	M22520/1-01	WA27F	M22520/1-02	BLUE	M81969/17-04	M81969/19-08
12	12-14	62-1621	3.14 (8.00)	.097 (2.46)	.142 (3.78)	MS27488-12-1	M22520/1-01	WA27F	M22520/1-02	YELLOW	M81969/17-05	M81969/19-09

†† Call for more tool accessories.

Sockets




Insertion tool

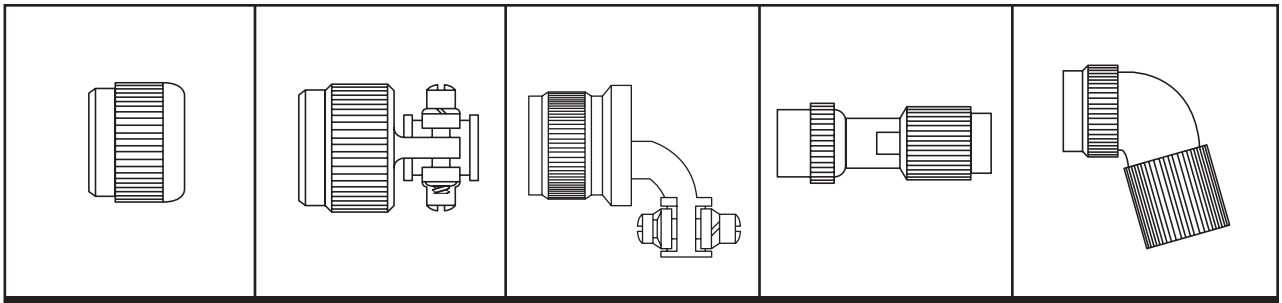
Extraction tool

SIZE	WIRE SIZE AWG	SOCKET	WIRE STRIP LENGTHS INCHES (MM)	WIRE SEALING RANGE INCHES (MM) MAX.	WIRE SEALING RANGE INCHES (MM) MIN.	WIRE HOLE FILLER	HAND CRIMP TOOL	POWER CRIMP TOOL ††	TURRRET HEAD	USE TURRET HEAD LOCATOR COLOR	INSERTION TOOL METAL	EXTRACTION TOOL METAL
20	20-24	62-1563	3.14 (8.00)	.047 (1.19)	.085 (2.16)	MS27488-20-1	M22520/1-01	WA27F	M22520/1-02	RED	M81969/17-03	M81969/19-07
16	16-20	62-1770	3.14 (8.00)	.066 (1.68)	.109 (2.77)	MS27488-16-1	M22520/1-01	WA27F	M22520/1-02	BLUE	M81969/17-04	M81969/19-08
12	12-14	62-1698	3.14 (8.00)	.097 (2.46)	.142 (3.78)	MS27488-12-1	M22520/1-01	WA27F	M22520/1-02	YELLOW	M81969/17-05	M81969/19-09

†† Call for more tool accessories.

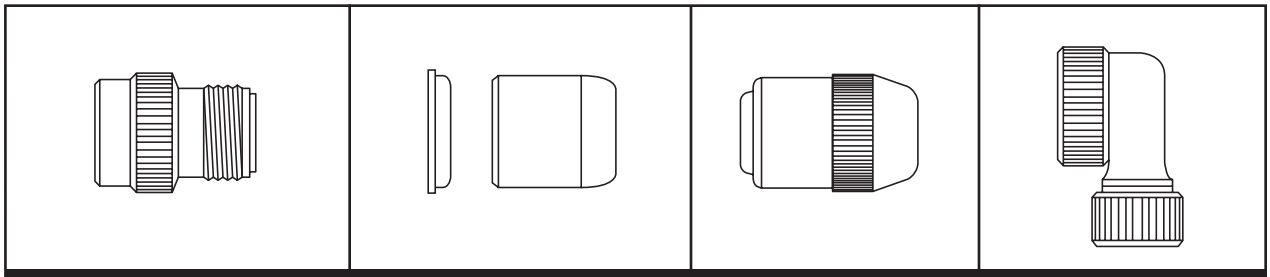
All dimensions in inches (millimeters in parenthesis)

Endbells or Type T Connectors



SHELL SIZE	62GB GROMMET KITS				
				SHIELDED GLAND SEAL ENDBELLS (SCREENED)	
	E ENDBELL	F ENDBELL	RIGHT ANGLE ENDBELL	STRAIGHT	75 DEGREE
08	62GB-584-08-XXP or S	62GB-585-08-XXP or S	62GB-711-08-XXP or S	62GB-587-08-XXP or S	62GB-5028-08-XXP or S
10	62GB-584-10-XXP or S	62GB-585-10-XXP or S	62GB-711-10-XXP or S	62GB-587-10-XXP or S	62GB-5028-10-XXP or S
12	62GB-584-12-XXP or S	62GB-585-12-XXP or S	62GB-711-12-XXP or S	62GB-587-12-XXP or S	62GB-5028-12-XXP or S
14	62GB-584-14-XXP or S	62GB-585-14-XXP or S	62GB-711-14-XXP or S	62GB-587-14-XXP or S	62GB-5028-14-XXP or S
16	62GB-584-16-XXP or S	62GB-585-16-XXP or S	62GB-711-16-XXP or S	62GB-587-16-XXP or S	62GB-5028-16-XXP or S
18	62GB-584-18-XXP or S	62GB-585-18-XXP or S	62GB-711-18-XXP or S	-	-
20	62GB-584-20-XXP or S	62GB-585-20-XXP or S	62GB-711-20-XXP or S	62GB-587-20-XXP or S	62GB-5028-20-XXP or S
22	62GB-584-22-XXP or S	62GB-585-22-XXP or S	62GB-711-22-XXP or S	62GB-587-22-XXP or S	-
24	62GB-584-24-XXP or S	62GB-585-24-XXP or S	62GB-711-24-XXP or S	62GB-587-24-XXP or S	62GB-5028-24-XXP or S

XX Call for layout code.

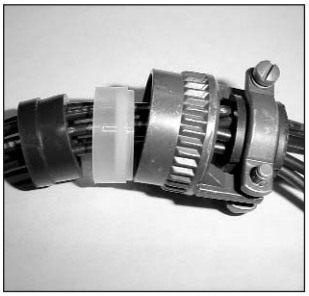


SHELL SIZE	62GB GROMMET KITS			
			GLAND SEAL ENDBELL/GROMMET KIT	
	A ENDBELL	POTTING CUP (MOULD)	J	RIGHT ANGLE SHIELDED (SCREENED)
08	62GB-77608	62GB-586-08	62GB-720-08	62GB-1225-08
10	62GB-77610	62GB-586-10	62GB-720-10	62GB-1225-10
12	62GB-77612	62GB-586-12	62GB-720-12	62GB-1225-12
14	62GB-77614	62GB-586-14	62GB-720-14	62GB-1225-14
16	62GB-77616	62GB-586-16	62GB-720-16	-
18	62GB-77618	62GB-586-18	62GB-720-18	-
20	62GB-77620	62GB-586-20	62GB-720-20	-
22	62GB-77622	62GB-586-22	62GB-720-22	-
24	62GB-77624	62GB-586-24	62GB-720-24	-

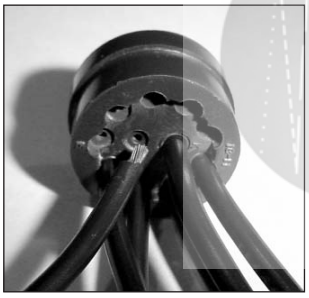
Solder Assembly Instructions

Read and understand these instructions prior to assembly.

1. Slide the back-end accessories over the wire bundle in the proper sequence for reassembly: Cable clamp and/or endbell first, then ferrule/follower and coupling nut (if used).



2. Pre-tin the wire ends and insert the individual wires through the proper holes in the grommet.



3. Solder the wires to the appropriate contacts on the rear of the connector.

4. Place the connector in the fixture for reassembly using the endbell assembly tool pictured on page 138 or a mating connector with the contacts installed.

5. Slide the grommet down the wires – lubricating the grommet with isopropyl alcohol will help.

6. Fill each unused cavity in the grommet with a wire hole filler to maintain the sealing integrity of the connector.

7. Slide ferrule and endbell accessories over the rear of the connector and tighten. Torque as follows:

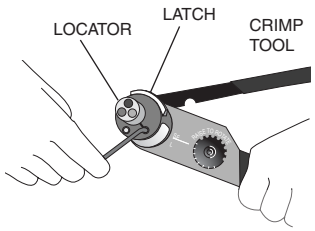
See page 138 for torque values.

Crimp Tool Operation

NOTE: Hand crimp tools can be used with size 20, 16 & 12 contacts.

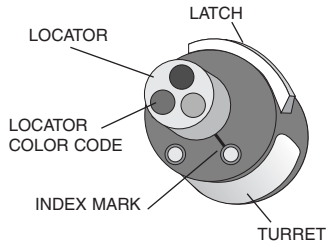
1. Strip the wires to the appropriate length. See strip lengths on the Contact Selection Guide, page 152.

2. Open the crimp tool by squeezing the handles. Push the latch on the turret to pop up the locator. Attach the turret to the crimp tool using the two captive hex bolts in the turret.

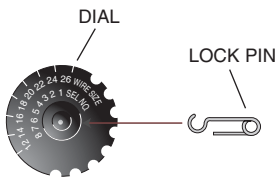


3. Select the proper locator position for your contact by rotating the locator until the proper color is aligned with the index mark. Push locator back down until it snaps into position.

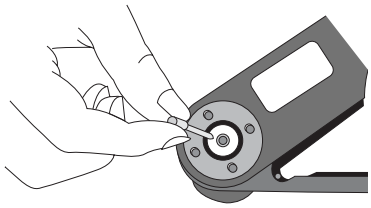
CONTACT SIZE	LOCATOR COLOR
20	Red
16	Blue
12	Yellow



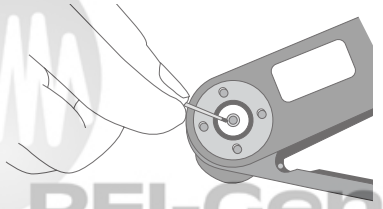
4. Adjust dial for proper wire gauge. To change the dial setting, remove the lock pin and lift center of dial. Turn to the desired wire gauge. Replace lock pin on dial.



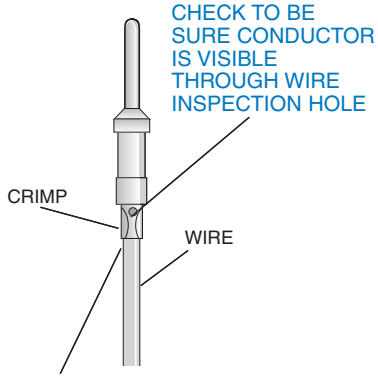
5. Cycle the tool before inserting the contact to be sure the tool is in the open position. Drop the contact, mating end first, into the crimp cavity of the tool. Squeeze the tool handle just enough to grip the contact without actually crimping it.



6. Insert the stripped wire into the contact with a slight twisting motion. Be sure all wire strands are inside the contact. Squeeze the handle to cycle the tool. The handle will not release until the contact is completely crimped.



7. Remove the crimped contact. Pull on the wire slightly to be sure it is properly crimped. Be sure the contact is not bent or damaged in any way. Visually inspect the crimp:

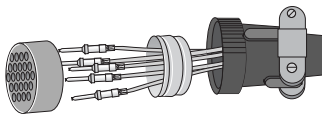


INSULATION SHOULD BUTT UP AGAINST THE END OF THE CONTACT.

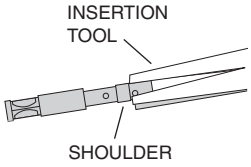
MICRO-SECTIONS
Enlargement of micro-section permits a final inspection of crimp quality. This test is recommended whenever new tools or new types of wire or contacts are used.

Insertion of Contacts

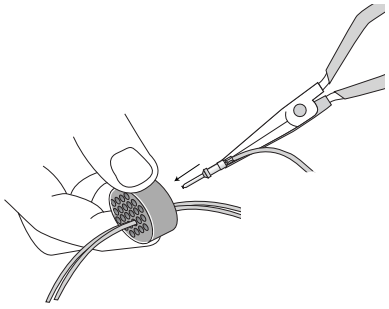
1. Slide the rear accessories over the wire bundle in the proper sequence for re-assembly: cable clamp and/or endbell first, then ferrule, and coupling nut.



2. Use the proper insertion tool from the Contact Selection Chart on page 152. Place the contact in the tool. The tool should butt against the shoulder of the contact. Contact sizes 20, 16, and 12 use a pliers style tool.



3. Lubricate the grommet with isopropyl alcohol (do not use any lubricant other than isopropyl alcohol). Insert the contact through the appropriate cavity in the grommet.

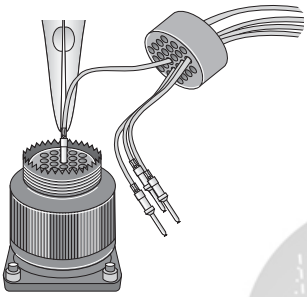


4. Place the connector into an assembly fixture (fixtures are available for production use, call us.) If you are not using a fixture, be sure to allow clearance on the mating face of the connector for the guide pins to come through the connector during insertion.

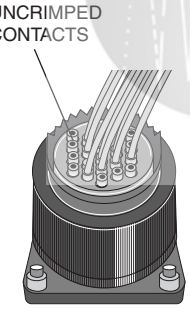
Insertion of Contacts (continued)

5. Lubricate the contact cavities of the connector insulator with isopropyl alcohol (do not use any other type of lubricant).

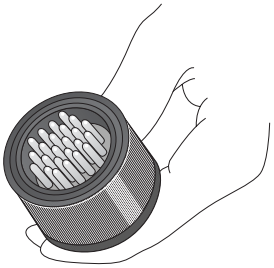
6. Using guide pins where necessary, push straight down with a firm even pressure until the contact snaps into position in the proper cavity. Start at the center of the pattern and work toward the outer edges.



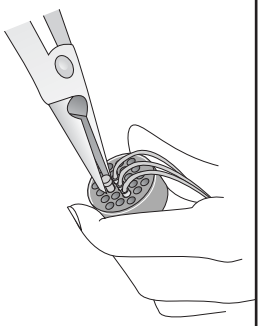
7. Fill any unused cavities with contacts.



8. Check the mating face of the connector to insure that all the same size contacts are on the same plane (fully inserted). If not, the contact is not fully inserted. Remove the contact using the proper extraction tool and procedure and reinsert. Do not attempt to reinsert the insertion tool to correct the problem.



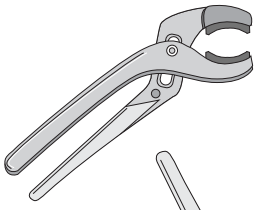
9. A wire hole filler must be inserted into the grommet behind the unused contacts to maintain the sealing integrity of the connector. See the Contact Selection Chart on page 152 for wire hole fillers.

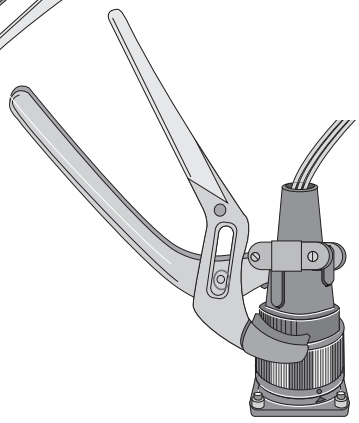


10. Place the connector back in the fixture for re-assembly. Slide the connector accessories back down the cable over the rear of the connector and tighten. Use the appropriate endbell tools as shown on page 264.

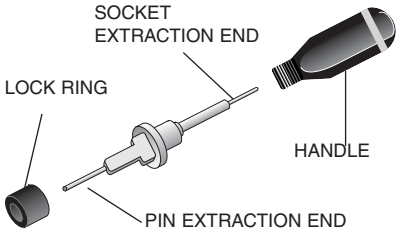
Extraction of Contacts

1. Remove the endbell accessories and slide them back over the wires. Use the appropriate endbell tools as shown on page 264.

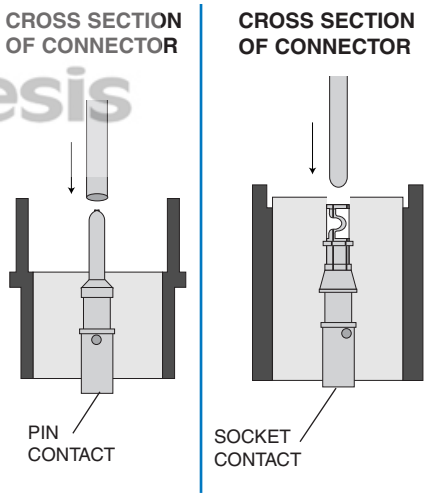




2. Use the proper extraction tool from the Contact Selection Chart on page 152.
The extraction tool can be used for both pin and socket contacts by removing the shaft from the handle and reversing it for pin or socket extraction.



3. On the mating face of the connector, insert the tool over the pin contact or into the socket contact until the tool bottoms. Apply a slow continuous pressure to push the contact out the rear of the connector. When the shoulder of the tool "thunks" against the insulator, the contact is extracted.



4. Carefully remove the extraction tool from the connector to avoid damage to the insulator.

MB Series

MIL-DTL-26482 Series II

MIL-DTL-26482 Series II connectors are used extensively in the demanding high reliability world of today's aerospace industry. Utilizing a quick-mating, three point bayonet coupling system, Amphenol's MB Connector Series contact retention system and high-quality silicone seals, these connectors work in the harshest of conditions. MBs are intermateable with all MIL-DTL-26482 Series I connectors such as Amphenol's PT Series of connectors.

Applications

- Commercial and military aircraft
- High-temperature industrial equipment
- Instrumentation
- Avionics

Features

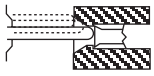
High-Quality Contact System
Amphenol's MB Connector Series use industry standard M39029 crimp-style contacts and the field proven the contact retention clip that locks the contact into place while allowing easy insertion and removal with simple and low-cost plastic tools.

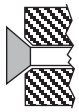
Wide Range of Cable Accessories Including Military Standard
Unlike MIL-DTL-26482 Series I style connectors, MIL-DTL-26482 Series II style are supplied without rear accessories but with military standard rear threads. This lets users choose from one of the broadest array of endbells, including M85049 standard endbells, from low-cost simple cable tie versions to fully environmental sealed EMI shielded endbells.

Broad Operating Temperatures
MBs are constructed using high-quality silicone for the peripheral, interfacial and wire seals. This, along with the stable hard dielectric insert material that houses the contact retention clip provide operating temperature from -55°C up to +200°C.

Rear Contact Insertion and Release System
Used properly, the insertion and extraction tools never touch or come in contact with or damage the interfacial seals, a common problem with front release contact systems.

Cork in a Bottle Interfacial Seal System
Socket inserts are constructed with a hard dielectric and funnel-shaped contact lead-ins which not only assist aligning the contacts when mating, but also provide for compression of the raised individual contact seals on the high-quality silicone interfacial seals of the pin insert.





Technical Specifications

MATERIALS & FINISHES

Shell	High-grade aluminum alloy per QQ-A-367, QQ-A-591 or QQ-A-225
Jam Nut	Aluminum alloy per QQ-A-225
Coupling Nut	High-grade aluminum alloy per QQ-A-591
Plating	Electroless nickel per MIL-C-26074 class 3 or 4 grade B, or Olive drab chromate over cadmium over nickel per QQ-P-416
Bayonet Pins	Passivated stainless steel per QQ-S-763
Contacts	Copper Alloy
Plating	Gold plated per MIL-G-45204 50 microinches
Insulator	Rigid plastic dielectric
Grommet & Seals	Silicone based elastomer

ELECTRICAL DATA

Working & Test Voltage

Service Rating	Working		Test	
	At Sea Level Vac rms	70,000 feet Altitude Vac rms	At Sea Level Vac rms	70,000 feet Altitude Vac rms
I	600	300	1,500	375
II	1,000	450	2,300	500

Current Rating

Wire Size AWG	Contact Size	Max. Current for test in amps	Potential Drop Millivolt at 25°C, 77°F
24	20	3	<45
20	20	7.5	<55
20	16	7.5	<45
16	16	13	<50
14	12	17	<45
12	12	23	<50

Wire Range Sizes	24 AWG – 12 AWG
Insulation Resistance	5,000 Megohms minimum at 25°C; (77°F) 500 Megohm minimum at 200°C (392°F) Class L and 175°C (347°F) Class W

MECHANICAL

Operating Temperature	Electroless nickel -55°C to +200°C; (-67°F to +392°F) Olive drab chromate over cadmium over nickel -55°C to +175°C; (-67°F to +347°F)

Wire Sealing Range

Contact Size	Wire Sealing Range Min. inch (mm)	Wire Sealing Range Max. inch (mm)
20	.040 (1.02)	.083 (2.11)
16	.053 (1.35)	.103 (2.62)
12	.097 (2.46)	.158 (4.01)

Insulation Strip Length

Contact Size	Wire Size AWG	Strip Length inch (mm)
20	20-24	.188 (4.76)
16	16-20	.281 (7.14)
12	12-14	.281 (7.14)

All dimensions in inches (millimeters in parenthesis)

Technical Specifications

Mating Life	500 cycles minimum, 250 cycle minimum for shielded plug
Salt Spray	Class L & W 48 hours unmated; 452 hours mated per MIL-STD-1344 method, 1001 per MIL-DTL-26482
Heat	Class L, +200°C (+392°F); Class W +175°C (+347°F) for 1000 hours to MIL-STD-1344 Method 1005.1
Chemical Resistance	Tested unmated according to MIL-DTL-26482 4.6.28 for hydraulic fluid, lubricating oil, deicing fluids, jet fuels, solvents and coolants
Vibration	10 to 2000Hz (20g's) 10 microseconds maximum discontinuity. To MIL-STD-1344 Method 2005 per MIL-DTL-26482
Shock:	150g's 6ms duration, three major axes. 10 microsecond maximum discontinuity
Contact Type	Crimp, coax, twinax, printed circuit board, and fiber optic
Number of Circuits	3 to 61
Contact Insertion & Extraction	Insertion from rear of connector with simple plastic or high quality metal hand tool. Extraction from rear with plastic or high-quality metal hand tools
Contact Retention	Per MIL-STD-1344A method 2007 per MIL-DTL-26482

Contact Size	Axial Load Pounds Min.
20	20
16	25
12	30

Polarization	Five keyway, three point bayonet with optional rotational polarization. ➥See page 161.
Approvals	MIL-DTL-26482

Excerpt from MIL-DTL-26482H

3.7.4 JAN and J marking. The United States Government has adopted and is exercising legitimate control over the certification marks "JAN" and "J", respectively, to indicate that items so marked or identified are manufactured to, and meet all the requirements of specifications. Accordingly, items acquired to, and meeting all of the criteria specified herein and in applicable specifications shall bear the certification mark "JAN" except that items too small to bear the certification mark "JAN" shall bear the letter "J". The "JAN" or "J" shall be placed immediately before the PIN except that if such location would place a hardship on the manufacturer in connection with such marking, the "JAN" or "J" may be located on the first line above or below the PIN. Items furnished under contracts or orders which either permit or require deviation from the conditions or requirements specified herein or in applicable specifications shall not bear "JAN" or "J". In the event an item fails to meet the requirements of this specification and the applicable specification sheets, the manufacturer shall remove completely the military PIN and the "JAN" or the "J" from the sample tested and also from all items represented by the sample. The "JAN" or "J" certification mark shall not be used on products acquired to contractor drawings or specification. The United States Government has obtained Certificate of Registration Number 504,860 for the certification mark "JAN" and Registration Number 1,586,261 for the certification mark "J".

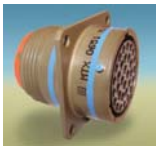
PIN = Part Identification Number

Create Your Part Number

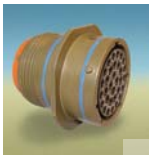
STEP 1
Choose Receptacle or Plug Style

STEP 2
Choose Finish

Receptacles

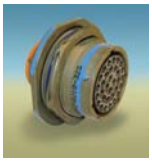


Narrow Flange Receptacle +
MS3470
MB10



Cable Receptacle†††
MS3471
MB13

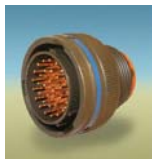
Wide Flange Receptacle†††
MS3472
MB11



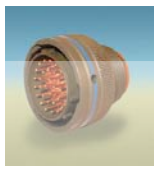
Jam Nut Receptacle††† +
MS3474
MB14

MATES WITH

Plugs



Standard Plug +
MS3476
MB16



Shielded Plug††† +
MS3475
MB18

††† Not available in Size 8
\+ Most popular

L = Electroless Nickel 200°C

W = Olive Drab Chromate over Cadmium over Nickel 175°C 500 Hour Salt Spray

Legend for Charts:
Olive Drab Type = Military
Dark Blue = Commercial
Dark Brown Type = Military & Commercial
= General info

Create Your Part Number

STEP 3

Choose Layout (Listed by Shell Size)

For listing by # of contacts, see page 162.

Layout Number	Service Rating	Total Number of Contacts	20	16	12	Rotations W	X	Y	Z
8-33	I	3	3			90	-	-	-
8-98	I	3	3			-	-	-	-
10-6	I	6	6			90	-	-	-
12-3	II	3		3		-	-	180	-
12-8	I	8	8			90	112	203	292
12-10	I	10	10			60	155	270	295
14-4	I	4			4	45	-	-	-
14-5	II	5		5		40	92	184	273
14-9S	I	9	5		4	15	90	180	270
14-12	I	12	8	4		43	90	-	-
14-15	I	15	14	1		17	110	155	234
14-18	I	18	18			15	90	180	270
14-19	I	19	19			30	165	315	-
16-8	II	8		8		54	152	180	331
16-23S	I	23	22	1		158	270	-	-
16-26	I	26	26			60	-	275	338
18-8	I	8			8	180	-	-	-
18-11S	II	11		11		62	119	241	340
18-30S	I	30	29	1		180	193	285	350
18-32	I	32	32			85	138	222	265
20-16	II	16		16		238	318	333	347
20-24S	I	24	24			70	145	215	290
20-39	I	39	37	2		63	144	252	333
20-41	I	41	41			45	126	225	-
22-12S	I	12			12	-	-	-	-
22-19S	I	19			19	15	90	225	308
22-21	II	21		21		16	135	175	349
22-32S	I	32	32			72	145	215	288
22-41	I	41	27	14		39	135	264	-
22-55	I	55	55			30	142	226	314
22-95S	I	32	26		6	26	180	266	-
24-19S	II	19			19	30	165	315	-
24-31	I	31		31		90	225	255	-
24-61	I	61	61			90	180	270	324

Arrangements designated with an S are tooled in socket only.

STEP 4

Choose Contact

P = Pin
S = Socket

Note: See Step 6 if you are not ordering contacts with part.

A = Less Pin Contacts
B = Less Socket Contact
The "A" and "B" designators are used only when other than power contacts (PCB, Coax, Thermocouple, or Fiber Optic contacts)

STEP 5

Choose Rotation (See chart at left)

(omit for normal)
W
X
Y
Z

STEP 6

Choose Modifier

For other commercial modification, i.e., less tools, with pc contact or with endbell, call.

Omit for standard contacts
LC = for use with standard contacts, but supplied without contacts, seal plugs or tools
(PO must state Less Contacts)

Note: LC is not marked on part

STEP 7

Example: Military Part Number Description

1 Shell Style	2 Finish	3 Layout	4 Contact	5 Rotation	6 Modifier
MS3470	L	24-61	P	W	-LC

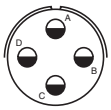
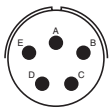
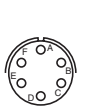
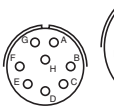
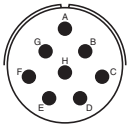
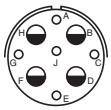
Example: Commercial Part Number Description

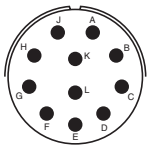
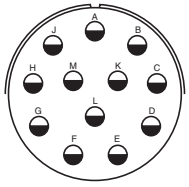
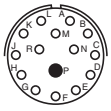
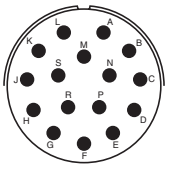
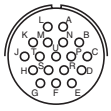
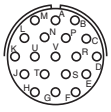
1 Shell Style	2 Finish	3 Layout	4 Contact	5 Rotation	6 Modifier
MB10	L	24-61	P	W	-LC

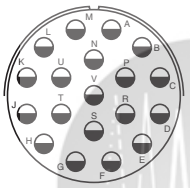
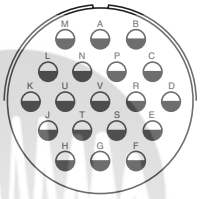
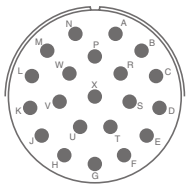
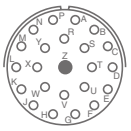
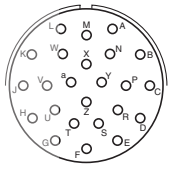
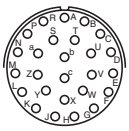
Layouts by Number of Contacts

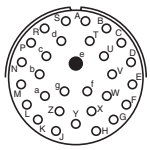
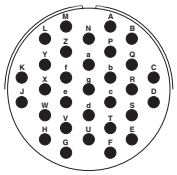
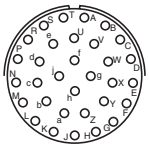
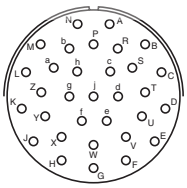
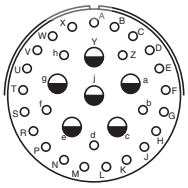
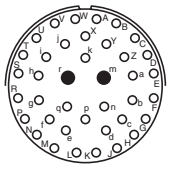
○ 20 ● 16 ◒ 12

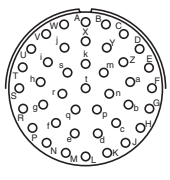
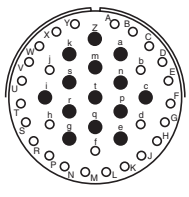
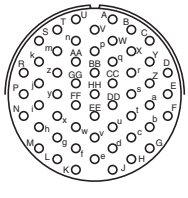
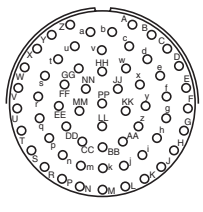
Drawing not to scale; mating face view of pin insert shown (socket view is opposite)

Contacts	3	4	5	6	8			9
								
SHELL SIZE/LAYOUT	8-33	8-98*	14-4	14-5	10-6	12-8	16-8	18-8	14-9S
# OF CONTACTS	3-#20	3-#20	4-#12	5-#16	6-#20	8-#20	8-#16	8-#12	5-#20, 4-#12
SERVICE RATING	I	I	I	II	I	I	II	I	I

Contacts	10	11	12		15	16	18	19
								
SHELL SIZE/LAYOUT	12-10	18-11S	14-12	22-12S	14-15	20-16	14-18	14-19
# OF CONTACTS	10-#20	11-#16	8-#20, 4-#16	12-#12	14-#20, 1-#16	16-#16	18-#20	19-#20
SERVICE RATING	I	II	I	I	I	II	I	I

Contacts	19		21	23	24	26
						
SHELL SIZE/LAYOUT	22-19S	24-19S	22-21	16-23S	20-24S	16-26
# OF CONTACTS	19-#12	19-#12	21-#16	22-#20, 1-#16	24-#20	26-#20
SERVICE RATING	I	II	II	I	I	I

Contacts	30	31	32			39
						
SHELL SIZE/LAYOUT	18-30S	24-31	18-32	22-32S	22-95S	20-39
# OF CONTACTS	29-#20, 30-#16	31-#16	32-#20	32-#20	36-#20, 6-#12	37-#20, 2-#16
SERVICE RATING	I	I	I	I	I	I

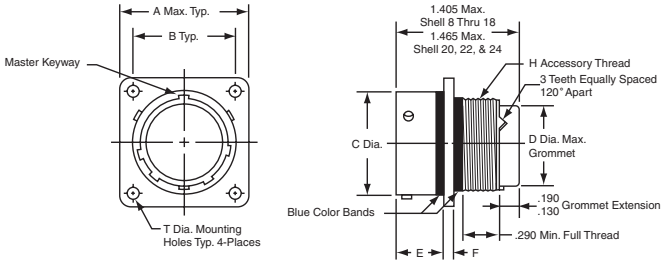
Contacts	41		55	61
				
SHELL SIZE/LAYOUT	20-41	22-41	22-55	24-61
# OF CONTACTS	41-#20	27-#20, 14-#16	55-#20	61-#20
SERVICE RATING	I	I	I	I

*Layout available in MS3470 and MS3476 only.
Arrangements designated with an S are tooled in socket only.

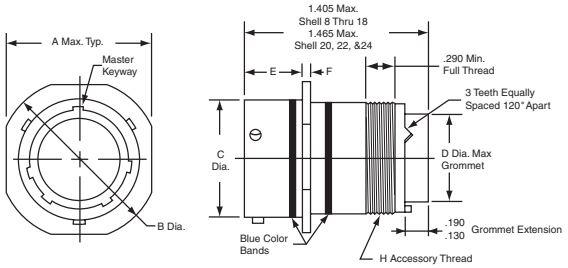
Dimensions

Receptacles

MB10 (MS3470) MB11 (MS3472)



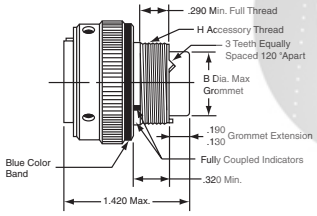
MB13 (MS3471)



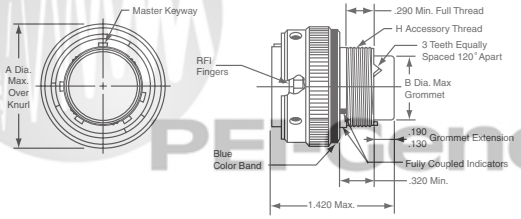
Shell Size	A Max MS3470/ MB10 MB3471/ MB13	A Max MB3472/ MB10	B ± .005 (±.127) MB3470/ MB10	B ± .005 (±.127) MB3472/ MB11	B Dia. ± .020 (±.508) MS3471/ MB13	C Diameter ± .003 (±.076)	D Diameter Max	E	F ± .016 (±.406)	H Thread Class 2A	T ± .005 (.127) MS3470/ MB10
8	0.828 (21.0)	1.065 (27.1)	0.594 (15.1)	0.734 (18.6)	0.938 (23.8)	0.471 (12.0)	0.305 (7.7)	.462/.431 (11.735/10.947)	0.062 (1.6)	.5000-20 UNF	0.120 (3.0)
10	0.954 (24.2)	1.141 (29.0)	0.719 (18.3)	0.812 (20.6)	1.062 (27.0)	0.588 (14.9)	0.405 (10.3)	.462/.431 (11.735/10.947)	0.062 (1.6)	.6250-24 UNEF	0.120 (3.0)
12	1.047 (26.6)	1.266 (32.2)	0.812 (20.6)	0.938 (23.8)	1.156 (29.4)	0.748 (19.0)	0.531 (13.5)	.462/.431 (11.735/10.947)	0.062 (1.6)	.7500-20 UNEF	0.120 (3.0)
14	1.141 (29.0)	1.360 (34.5)	0.906 (23.0)	1.031 (26.2)	1.250 (31.8)	0.873 (22.2)	0.665 (16.9)	.462/.431 (11.735/10.947)	0.062 (1.6)	.8750-20 UNEF	0.100 (3.0)
16	1.234 (31.3)	1.453 (36.9)	0.969 (24.6)	1.125 (28.6)	1.344 (34.1)	0.998 (25.3)	0.790 (20.1)	.462/.431 (11.735/10.947)	0.062 (1.6)	1.0000-20 UNEF	0.120 (3.0)
18	1.328 (33.7)	1.532 (38.9)	1.062 (27.0)	1.203 (30.6)	1.438 (36.5)	1.123 (28.5)	0.869 (22.1)	.462/.431 (11.735/10.947)	0.062 (1.6)	1.0625-18 UNEF	0.120 (3.0)
20	1.453 (36.9)	1.688 (42.9)	1.156 (29.4)	1.297 (32.9)	1.562 (39.7)	1.248 (31.7)	0.994 (25.2)	.587/.556 (14.910/14.122)	0.094 (2.4)	1.1875-18 UNEF	0.120 (3.0)
22	1.578 (40.1)	1.766 (44.9)	1.250 (31.8)	1.375 (34.9)	1.688 (42.9)	1.373 (34.9)	1.119 (28.4)	.587/.556 (14.910/14.122)	0.094 (2.4)	1.3125-18 UNEF	0.120 (3.0)
24	1.703 (43.3)	1.891 (48.0)	1.375 (34.9)	1.500 (38.1)	1.812 (46.0)	1.498 (38.0)	1.244 (31.6)	.620/.589 (15.748/14.961)	0.094 (2.4)	1.4375-18 UNEF	0.140 (3.7)

Plugs

MB16 (MS3476)



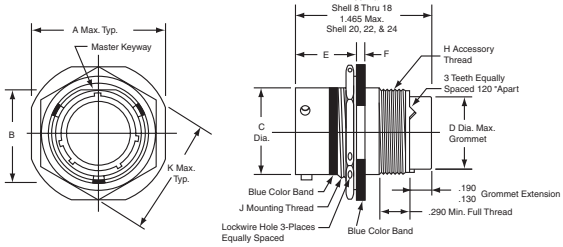
MB18 (MS3475)



Shell Size	A Diameter Max	B Diameter Max	H Thread Class 2A
8	0.78 (19.9)	0.305 (7.7)	.5000-20 UNEF
10	0.926 (23.5)	0.405 (10.3)	.6250-24 UNEF
12	1.04 (26.5)	0.531 (13.5)	.7500-20 UNEF
14	1.183 (30.0)	0.665 (16.9)	.8750-20 UNEF
16	1.31 (33.1)	0.790 (20.1)	1.0000-20 UNEF
18	1.391 (35.3)	0.869 (22.1)	1.0625-18 UNEF
20	1.53 (38.9)	0.994 (25.2)	1.1875-18 UNEF
22	1.656 (42.1)	1.119 (28.4)	1.3125-18 UNEF
24	1.777 (45.1)	1.244 (31.6)	1.4375-18 UNEF

Jam Nut Receptacle

MB14 (MS3474)

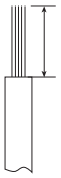


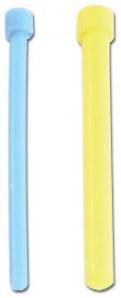
Shell Size	A Max	B ± .005 (±0.127)	C Diameter ± .003 (±0.076)	D Diameter Max	E Max/Min	F Max/Min	H Thread Class 2A	K Max	J Mounting Thread Class 2A
8	0.954 (24.2)	0.525 (13.3)	0.471 (12.0)	0.305 (7.7)	.707/.658 (17.958/16.713)	.113/.086 (2.870/2.184)	.5000-20 UNEF	0.767 (19.5)	.5625-24 UNEF
10	1.078 (27.4)	0.650 (16.5)	0.588 (14.9)	0.405 (10.3)	.707/.658 (17.958/16.713)	.113/.086 (2.870/2.184)	.6250-24 UNEF	0.892 (22.7)	.6875-24 UNEF
12	1.266 (32.2)	0.813 (20.7)	0.748 (19.0)	0.531 (13.5)	.707/.658 (17.958/16.713)	.113/.086 (2.870/2.184)	.7500-20 UNEF	1.079 (27.4)	.8750-20 UNEF
14	1.391 (35.3)	0.937 (23.8)	0.873 (22.2)	0.665 (16.9)	.707/.658 (17.958/16.713)	.113/.086 (2.870/2.184)	.8750-20 UNEF	1.205 (30.6)	1.0000-20 UNEF
16	1.516 (38.5)	1.061 (26.9)	0.998 (25.3)	0.790 (20.1)	.707/.658 (17.958/16.713)	.113/.086 (2.870/2.184)	1.0000-20 UNEF	1.329 (33.8)	1.1250-18 UNEF
18	1.641 (41.7)	1.186 (30.1)	1.123 (28.5)	0.869 (22.1)	.707/.658 (17.958/16.713)	.113/.086 (2.870/2.184)	1.0625-18 UNEF	1.455 (37.0)	1.2500-18 UNEF
20	1.828 (46.4)	1.311 (33.3)	1.248 (31.7)	0.994 (25.2)	.772/.721 (19.609/18.313)	.148/.096 (3.759/2.438)	1.1875-18 UNEF	1.579 (40.1)	1.3750-18 UNEF
22	1.954 (49.6)	1.436 (36.5)	1.373 (34.9)	1.119 (28.4)	.772/.721 (19.609/18.313)	.148/.096 (3.759/2.438)	1.3125-18 UNEF	1.705 (43.3)	1.5000-18 UNEF
24	2.078 (52.8)	1.561 (39.6)	1.498 (38.0)	1.244 (31.6)	.772/.721 (19.609/18.313)	.148/.096 (3.759/2.438)	1.4375-18 UNEF	1.829 (46.5)	1.6250-18 UNEF

All dimensions in inches (millimeters in parenthesis)

Contacts

Pins

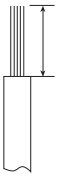


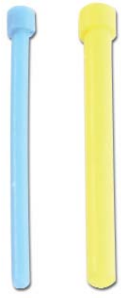


Head goes in first, trim excess

Contact Size	Wire Size Awg	Pin Contact Part Number	Color Bands			Wire Strip Lengths	Wire Insulation Range		Wire Hole Filler	Color
			1	2	3		Min	Max		
20	20, 22 & 24	M39029/4-110	Brown	Brown	Black	.1875 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-1	Red
16	16, 18 & 20	M39029/4-111	Brown	Brown	Brown	.2812 (7.14)	.053 (1.35)	.103 (2.62)	MS27488-16-1	Blue
12	12 & 14	M39029/4-113	Brown	Brown	Orange	.2812 (7.14)	.097 (2.46)	.158 (4.01)	MS27488-12-1	Yellow
20 Alumel*	20, 22 & 24	M39029/9-134	Brown	Orange	Yellow	.1875 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-1	Red
20 Chromel*	20, 22 & 24	M39029/9-135	Brown	Orange	Green	.1875 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-1	Red
16 Fiber Optic*	-	MIL-T-29504/10	-	-	-	-	-	-	-	-
12 Coax*	-	call	-	-	-	-	-	-	-	-

Sockets



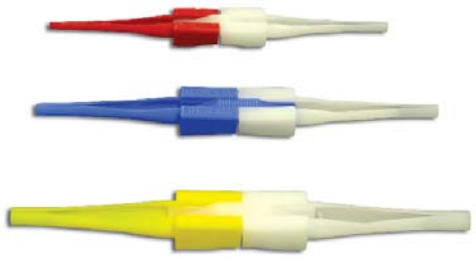


Head goes in first, trim excess

Contact Size	Wire Size Awg	Pin Contact Part Number	Color Bands			Wire Strip Lengths	Wire Insulation Range		Wire Hole Filler	Color
			1	2	3		Min	Max		
20	20, 22 & 24	M39029/5-115	Brown	Brown	Green	.1875 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-1	Red
16	16, 18 & 20	M39029/5-116	Brown	Brown	Blue	.2812 (7.14)	.053 (1.35)	.103 (2.62)	MS27488-16-1	Blue
12	12 & 14	M39029/5-118	Brown	Brown	Grey	.2812 (7.14)	.097 (2.46)	.158 (4.01)	MS27488-12-1	Yellow
20 Alumel*	20, 22 & 24	M39029/10-140	Brown	Yellow	Black	.1875 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-1	Red
20 Chromel*	20, 22 & 24	M39029/10-141	Brown	Yellow	Brown	.1875 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-1	Red
16 Fiber Optic*	-	MIL-T-29504/11	-	-	-	-	-	-	-	-
12 Coax*	-	call	-	-	-	-	-	-	-	-

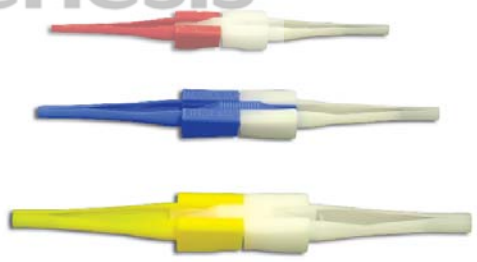
* Special – call for information.

All dimensions in inches (millimeters in parenthesis)



Hand Crimp Tool	Power Crimp Tool	Turret Heads	Use Locator Color	Metal		Plastic		
				Insertion Tool	Extraction Tool	Insertion/Extraction Tool	Insertion Tip Color	Extraction Tip Color
M22520/1-01	WA27F††	M22520/1-02	Red	DAK83-20B	DRK83-20B	M81969/14-11	Red	White
M22520/1-01	WA27F††	M22520/1-02	Blue	DAK83-16B	DRK83-16B	M81969/14-03	Blue	White
M22520/1-01	WA27F††	M22520/1-02	Yellow	DAK83-12B	DRK83-12B	M81969/14-04	Yellow	White
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-

†† Call for more tool accessories.



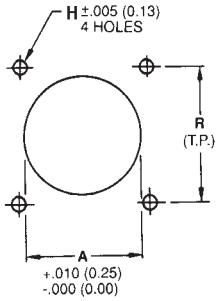
Hand Crimp Tool	Power Crimp Tool	Turret Heads	Use Locator Color	Metal		Plastic		
				Insertion Tool	Extraction Tool	Insertion/Extraction Tool	Insertion Tip Color	Extraction Tip Color
M22520/1-01	WA27F††	M22520/1-02	Red	DAK83-20B	DRK83-20B	M81969/14-11	Red	White
M22520/1-01	WA27F††	M22520/1-02	Blue	DAK83-16B	DRK83-16B	M81969/14-03	Blue	White
M22520/1-01	WA27F††	M22520/1-02	Yellow	DAK83-12B	DRK83-12B	M81969/14-04	Yellow	White
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-

†† Call for more tool accessories.

Panel Cutouts and Panel Thickness

MB Flanged Panel Cutouts

MS3470/MB10
MS3472/MB11

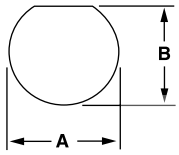


Shell Size	A Diameter	MS3470/MB10 Narrow Flange R	MS3470/MB10 Narrow Flange Screw H	MS3470/MB10 Narrow Flange Size	MS3472/MB11 Wide Flange R	MS3472/MB11 Wide Flange Screw H	MS3472/MB11 Wide Flange Size
8	.620 (15.75)	.594 (15.09)	.125 (3.14)	#4	-	-	-
10	.740 (18.80)	.719 (18.26)	.125 (3.14)	#4	.812 (20.62)	.155 (3.97)	#6
12	.864 (21.95)	.812 (20.62)	.125 (3.14)	#4	.938 (23.93)	.155 (3.97)	#6
14	.990 (25.15)	.906 (23.01)	.125 (3.14)	#4	1.031 (26.19)	.155 (3.97)	#6
16	1.118 (28.40)	.969 (24.61)	.125 (3.14)	#4	1.125 (28.58)	.155 (3.97)	#6
18	1.240 (31.50)	1.062 (26.97)	.125 (3.14)	#4	1.203 (30.56)	.155 (3.97)	#6
20	1.366 (34.70)	1.156 (29.36)	.125 (3.14)	#4	1.297 (32.94)	.155 (3.97)	#6
22	1.490 (37.85)	1.250 (31.75)	.125 (3.14)	#4	1.375 (34.92)	.155 (3.97)	#6
24	1.616(41.05)	1.375 (34.92)	.155 (3.97)	#6	1.500 (38.10)	.155 (3.97)	#6

See page 135 for MS3470/MB10 Gaskets.
See Page 257 for Nut Plates and Seal Screws.

Jam Nut Panel Cutouts

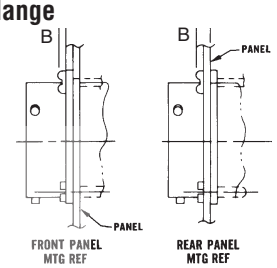
MS3474/MB14



Shell Size	A Diameter ±.005 (±0.13)	B±.005 (±0.13)
10	.697 (17.70)	.661 (16.79)
12	.895 (22.73)	.824 (20.93)
14	1.010 (25.65)	.948 (24.08)
16	1.135 (28.33)	1.072 (27.23)
18	1.260 (32.00)	1.197 (30.40)
20	1.385 (35.18)	1.322 (33.58)
22	1.510 (38.35)	1.447 (36.75)
24	1.635 (41.53)	1.572 (39.93)

Panel Thickness

MS3470/MB10 Narrow Flange
MS3472/MB11 Wide Flange

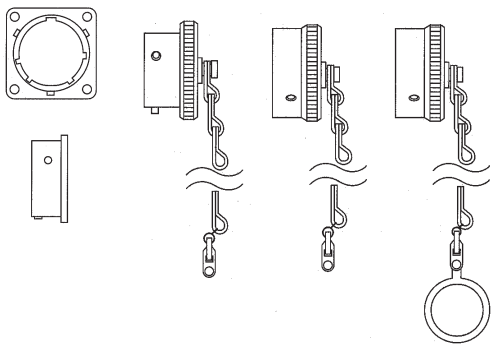


Shell Size	Narrow Flange MS3470/MB10 ✱B Max	Wide Flange MS3472/MB11 ✱B Max
8	.087 (2.21)	.118 (3.00)
10		
12		
14		
16		
18		
20	.212 (5.38)	.212 (5.38)
22		
24		

✱(Screw Head Front Mtg. or Panel Thickness plus Screw Head Rear Mtg.)

Dummy Receptacles & Metal Dust Caps

Dummy Receptacles **Metal Dust Caps✱✱**



Shell Size	Dummy Receptacle Part Number	Metal Dust Caps For Plugs	Metal Dust Caps For Receptacle Flanged✱✱ with Sash Chain	Metal Dust Caps For Receptacle Jam Nut✱✱ with Sash Chain and Ring
8	MS3115-8	MS3180-8CA	MS3181-8CA	MS3181-8NA
10	MS3115-10	MS3180-10CA	MS3181-10CA	MS3181-10NA
12	MS3115-12	MS3180-12CA	MS3181-12CA	MS3181-12NA
14	MS3115-14	MS3180-14CA	MS3181-14CA	MS3181-14NA
16	MS3115-16	MS3180-16CA	MS3181-16CA	MS3181-16NA
18	MS3115-18	MS3180-18CA	MS3181-18CA	MS3181-18NA
20	MS3115-20	MS3180-20CA	MS3181-20CA	MS3181-20NA
22	MS3115-22	MS3180-22CA	MS3181-22CA	MS3181-22NA
24	MS3115-24	MS3180-24CA	MS3181-24CA	MS3181-24NA

✱✱ Sash chain version for attachment to mounting screw on flanged receptacles. Sash chain with ring for mounting to jam nut receptacle.

All dimensions in inches (millimeters in parenthesis)

Standard Cable Clamps

Light weight
open rear design

Shell Size	Straight Clamp		90°		Cable Entry	
	Low Cost	Self-Locking	Low Cost	Self-Locking	Max	Min
8	M85049/52-1-8✱	M85049/52#8✱	M85049/51-1-8✱	M85049/51#8✱	.204 (5.18)	.125 (3.18)
10	M85049/52-1-10✱	M85049/52#10✱	M85049/51-1-10✱	M85049/51#10✱	.286 (7.26)	.187 (4.75)
12	M85049/52-1-12✱	M85049/52#12✱	M85049/51-1-12✱	M85049/51#12✱	.416 (10.57)	.291 (7.39)
14	M85049/52-1-14✱	M85049/52#14✱	M85049/51-1-14✱	M85049/51#14✱	.476 (12.09)	.351 (8.92)
16	M85049/52-1-16✱	M85049/52#16✱	M85049/51-1-16✱	M85049/51#16✱	.625 (15.88)	.501 (12.72)
18	M85049/52-1-18✱	M85049/52#18✱	M85049/51-1-18✱	M85049/51#18✱	.706 (17.93)	.518 (13.16)
20	M85049/52-1-20✱	M85049/52#20✱	M85049/51-1-20✱	M85049/51#20✱	.831 (21.11)	.581 (14.76)
22	M85049/52-1-22✱	M85049/52#22✱	M85049/51-1-22✱	M85049/51#22✱	.956 (24.28)	.644 (16.36)
24	M85049/52-1-24✱	M85049/52#24✱	M85049/51-1-24✱	M85049/51#24✱	1.081 (27.46)	.706 (17.93)

# Select S or N:
S = Self Locking with Detent
N = Self Locking with No Detent

✱ Select plating code to match connector plating
N = Electroless Nickel (High Temp 200° C Fluid Resistant)
W = Olive Drab Chromate over Cadmium over Electroless Nickel (500 Hour Salt Spray)

	Description	Part Number Prefix	Straight	90°	45°
	Heat Shrink Boot Adapter See pages 258-260.	M85049/60	X		
	Environmental	M85049/7			X
		M85049/9		X	
		M85049/11	X		
	EMI/RFI Non Environmental	M85049/23			X
		M85049/24		X	
		M85049/25	X		
	EMI/RFI Environmental	M85049/6			X
		M85049/8		X	
		M85049/10	X		
	EMI/RFI Crimp Ring	M85049/26	X		
	EMI/RFI Banding	M85049/82			X
		M85049/83		X	
		M85049/84	X		
	Cable Tie	M85049/55		X	
		M85049/53	X		
		M85049/54			X
	Wire Seal Compression Nuts "E"	M85049/31	X		

Note: If Military Standard versions don't fit or work for your applications, please call with your requirements. We will delight you with our design capabilities.

All dimensions in inches (millimeters in parenthesis)

Assembly

Wire Stripping and Contact Crimping

1. Strip wires. (See above for correct strip length for contact.) Insert wire into rear of contact. Wire insulation must butt against rear of contact. Wire must be visible thru inspection hole.

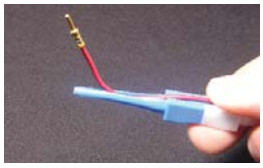
2. Use M22520/1-01 crimp tool with proper crimp location M22520/1-02.

Contact Size	Color
20	Red
16	Blue
12	Yellow

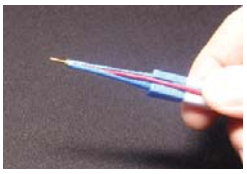
3. Insert contact and wire into tool jaws. To crimp, squeeze handles together fully until ratchet releases and allows handles to expand; otherwise, contact cannot be extracted from tool jaws. Maintain slight insertion pressure on wire while crimping contact to wire.*

Contact Insertion

1. Remove backshell and put wired contacts thru cable clamp opening.

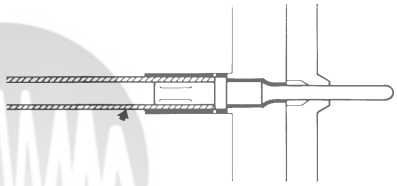


2. Use colored end of CIET tool for insertion. Place wire into tool at large opening. To facilitate contact insertion, a 6-in. min. free length of wire is recommended.

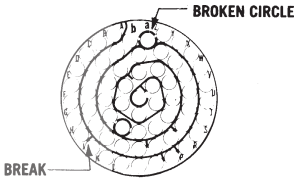


3. Slide back tool on wire while holding thumb against wire at opening. Wire will slip into tool.

4. With tool pressed against shoulder of contact, starting at the center cavity, insert wired contact and tool into properly identified cavity at rear of plug with firm, even pressure. Do not use excessive pressure.



5. When contact bottoms, a slight click can be heard as tines of metal retaining clip snap into place behind contact shoulder.



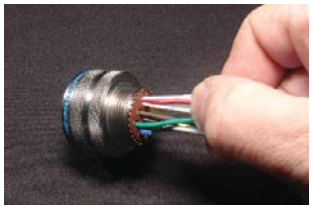
6. Check face of plug or receptacle for proper contact installation. In socket inserts with a large number of contact, cavities are identified in a spiral pattern. A projecting line from the spiral indicates omission of a letter; a broken circle around a cavity indicates transition between capitals and lower case and double letters.

7. Withdraw tool from rear of plug. To be sure that contact is locked, pull back lightly on wire. Then remove tool from wire and proceed with other contacts.

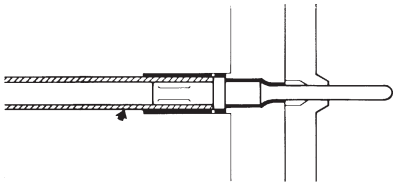
8. After all contacts are inserted, fill unwired cavities with sealing plugs (insert head first and leave end protruding for ease of removal), assemble backshell on rear of connector.

See page 264 for endbell tightening tools.

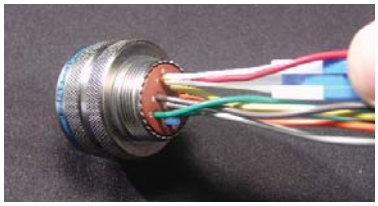
Contact Extraction



1. Remove backshell and slide back along wires to allow access. To extract a contact, use white end of CIET tool. Place wire into tool at large opening. Slide back tool on wire while holding thumb against wire at opening. Wire will slip into tool.



2. Push tool into rear of plug until it bottoms. At this point, tool releases tines on retaining clip so that contact can be extracted.



3. While maintaining slight insertion force on tool, firmly hold wire against serrated shoulder at center of tool and extract both wired contact and tool from plug.

* **Important Note:** Microsection the contact to verify crimp quality.

Note: LJT Series shown.

MIL-DTL-38999 Series I

LJT MIL-DTL-38999 Series I connectors offer high density contact arrangements in a miniature circular shell. Originally designed for the especially demanding requirements of today's high performance military and commercial aircraft, these connectors are finding their way into applications needing extremely reliable interconnections. LJT's features include, total environmental sealing, wide operating temperature range (-65°C to 200°C), quick mating three point bayonet coupling, 100% scoop proof shell design, EMI-RFI shielding, and they are available in a rugged 500 hour salt spray plating.

Applications

- High Performance Military Aircraft
- Commercial Airlines
- Communications Equipment
- Armored Personnel Carriers & Tanks
- Missiles
- Shipboard
- Medical Instrumentation
- High Reliability Test Equipment

Features

Quick Mating
A three point bayonet coupling system that not only makes the LJTs quick mating but also provides an audible and tactile "click," along with visual verification of mated connectors via a sighting hole and high-visibility, bright blue painted bayonet pins.

Shielded Interconnect
LJT plugs feature high quality grounding springs that provide 360 degrees of EMI/RFI shielding protection. These springs ground the barrel of the LJT plugs to the inside wall of the LJT receptacles with a wiping action that offers effective protection from reception or transmission of electronic noise.

Many Contact Layouts and Styles
LJT connectors come in a wide variety of contact sizes and layouts up to 128 contacts. Printed circuit board, fiber optic, thermocouple, and coax style contacts are available for special applications.

Utilizes High-Quality Military Contacts
For standard applications, LJT's come with crimp style military contacts design to resist bending and provide reliable performance under the most rigorous conditions.

Corrosion Resistant
LJT's are available with cadmium over nickel plating that has met and passed the 500 hour military salt spray corrosion tests.

Technical Specifications

MATERIALS AND FINISHES

Shell	Aluminum alloy
Bayonet Pins	Passivated stainless steel per QQ-S-763
Plating	A - Clear Chromate over cadmium over electroless nickel per QQ-P-416 B - Olive drab chromate over cadmium over electroless nickel per QQ-P-416 F - Electroless nickel per QQ-N-290 C - Hard, anodic, non-conductive in accordance with MIL-A-862
Contacts	Copper alloy
Plating	Gold plated, 50 microinches per MIL-G-45204 type II, grade C, class I
Insulator	Hard dielectric wafer which contains metal retention tines for high reliability retention of crimp contacts
Grommet & Seals	Silicone based elastomer
Grounding Springs	Beryllium copper

ELECTRICAL DATA

Operating Voltage & Test Voltage (Unmated Condition)

	Service Rating			
Test Voltages	**N**	**M**	**I**	**II**
Sea Level	1000	1300	1800	2300
100,000 feet	200	200	200	200

Current Rating by contact size and wire accommodation (Test Amps)

Wire Size	22D	22M*	22*	20	16	12
28	1.5	1.5	-	-	-	-
26	2.0	2.0	-	-	-	-
24	3.0	3.0	3.0	3.0	-	-
22	-	-	5.0	5.0	-	-
20	-	-	-	7.5	7.5	-
18	-	-	-	-	10.0	-
16	-	-	-	-	13.0	-
14	-	-	-	-	-	17.0
12	-	-	-	-	-	23.0

Contact Resistance of mated contacts end to end

Contact Size	Max. Millivolt Drop
22D	40
22M*	30
22*	40
20	35
16	25
12	25

Insulation Resistance 5,000 megohms minimum

MECHANICAL

Operating Temperature
A - Plating -65°C to 150°C (-85°F to 302°F)
B - Plating -65°C to 175°C (-85°F to 347°F)
F - Plating -65°C to 200°C (-85°F to 392°F)
C - Anodic (non-conductive) -65°C to 200°C (-85°F to 392°F)

Sealing: Against sand, dust per MIL-STD-202 & ice resistance

Wire Sealing Range

Contact Size	Minimum inches	Maximum inches	Minimum mm	Maximum mm
22D	0.030	0.054	0.76	1.37
22M*	0.030	0.050	0.76	1.27
22*	0.034	0.060	0.86	1.52
20	0.040	0.083	1.02	2.11
16	0.065	0.109	1.65	2.77
12	0.097	0.142	2.46	3.61
10	0.135	0.162	3.42	4.12
8 (Coax)	0.135	0.155	3.43	3.94
8 (Twinax)	0.124	0.134	3.15	3.40

Technical Specifications

Insulation Strip Length	

Contact Size	Strip Length
22*, 22D or 22M*	.125 (3.18)
20	.188 (4.77)
16	.188 (4.77)
12	.188 (4.77)

Mating Life	500 cycles minimum
Salt Spray	Finish A: 48 hour per MIL-STD-1344A method 1001 condition B Finish B: 500 hour per MIL-STD 1344A method 1001 condition C Finish F: 48 hour per MIL-STD-1344A method 1001 condition B Finish C: 500 hour per MIL-STD 1344A method 1001 condition C
Heat	Finish A: 150°C (302°F) Finish B: 175°C (347°F) Finish F: 200°C (392°F) 1000 hours to MIL-STD-1344 method 1005 Finish C: 200°C (392°F)
Chemical Resistance	Lubricating oils, hydraulic fluids, coolants, deicing fluids per\ MIL-STD-1344A Method 1016 condition a-1
Sine Vibration	30g at ambient temperature with simulated accessory load
Random Vibration	49.5 grms at ambient temperatures
Shock	300g ±15% half sine wave magnitude for 3 ±1 milliseconds
EMI Shielding Effectiveness	100 MHz to 10 GHz - minimum attenuation of 50dB
Contact Type	Crimp, fiber optic, coax, twinax, or printed circuit
Number of Circuits	2 to 128
Contact Insertion	Rear insertion/rear extraction with simple plastic or high-quality metal hand tools.
Contact Retention	Per MIL-DTL-38999K tested to MIL-STD-1344A method 2007

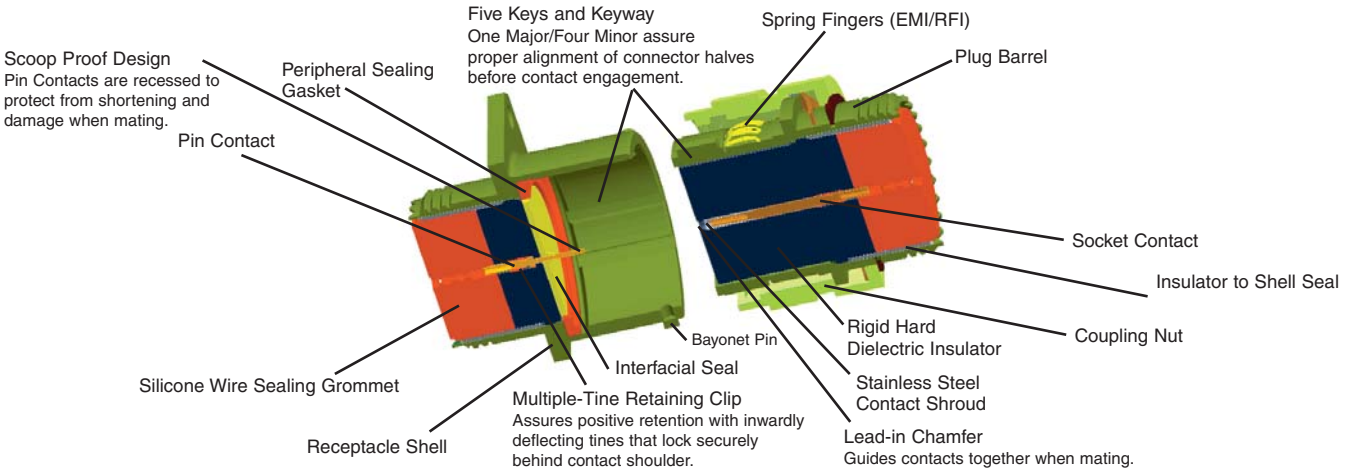
Contact	Axial load Newtons ±10%	Axial load Pounds ±10%
22*, 22D, 22M*	44	10
20	67	15
16	111	25
12	111	25

Polarization	Three point bayonet coupling, five keyways with optional master keyway rotations, note insert and four minor keyways remain fixed.
Approvals	MIL-DTL-38999

* inactive for new designs

All dimensions in inches (millimeters in parenthesis)

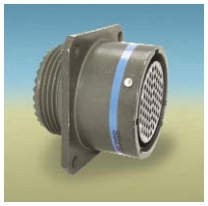
Cross Section

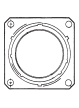


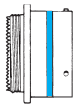
Create Your Part Number

STEP 1
Choose Plug or Receptacle Style

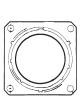
Receptacles

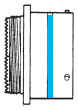






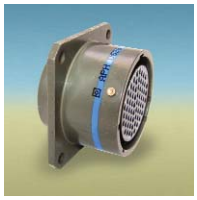
MS27466
LJT00R
Front mount with rear accessory threads.

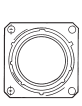


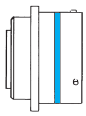


+

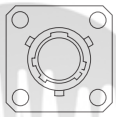
MS27656
LJTPQ00R
Rear mount with rear accessory threads.

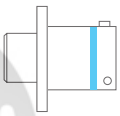




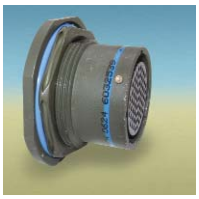


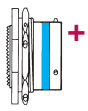
MS27496E
LJT02RE
Front mount without rear accessory threads.





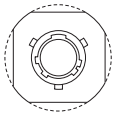
MS27505E
LJTP02RE
Rear mount without rear accessory threads.

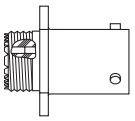




+

MS27468
LJT07R
Jam Nut with rear accessory threads.





LJT01R
In-line with accessory threads.

+ Most Popular

STEP 2
Choose Class

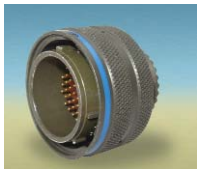
E = No Rear Accessories

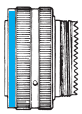
P = Potting Ring & Cup

T = No Rear Accessories
NOT used on MS27505E & MS27496E

MATES WITH

Plug





+

MS27467
LJT06

Available with PC pins. Call for details.

RE = No Rear Accessories
used on LJT02RE & LJTP02RE

RP = Potting Ring & Cup

RT = No Rear Accessories
NOT used on MS27505E & MS27496E

RGF = Electroless Nickel
plated ground plane aluminum 200°C

RGW = Olive Drab
cadmium plated ground plane aluminum 175°C

STEP 8

Example: Military Part Number Description

MS27468	T	25	F	35	P		-LC
1 Shell Style	2 Class	3A Size	4 Plating	3B Layout	5 Contact	6 Rotation	7 Modifier

Example: Commercial Part Number Description

LJT07	RE	25-35	P	N	-014	-LC
1 Shell Style	2 Class	3 Layout	5 Contact	6 Rotation (Omit for normal)	4* Plating	7 Modifier

*Note: Out of Sequence

LEGEND FOR CHARTS:

Olive Drab Type = Military

Dark Blue = Commercial

Dark Brown Type = Military & Commercial

= General info

Create Your Part Number

STEP 3

Choose Layout (Listed by Shell Size)

For listing by # of contacts, see pages 174 - 177.

Layout Number	Service Rating	Contacts							Specials			
		Total	22D	22M	22	20	16	12	12*	10	8*	8**
9-6	M	6		6								
9-35	M	6	6									
9-44	M	4			4							
9-98	I	3				3						
11-2✦	I	2					2					
11-4✦	I	4				4						
11-5✦	I	5				5						
11-13	M	13		13								
11-35	M	13	13									
11-98	I	6				6						
11-99	I	7				7						
13-3●	II	3					3					
13-4	I	4					4					
13-8	I	8				8						
13-22	M	22		22								
13-35	M	22	22									
13-98	I	10				10						
15-4●✦	I	4						4				
15-5	II	5					5					
15-15	I	15				14	1					
15-18	I	18				18						
15-19✦	I	19				19						
15-35	M	37	37									
15-37	M	37		37								
15-68●✦	I	8					8					
15-97✦	I	12				8	4					
17-2	M	39	38									1
17-6	I	6						6				
17-8	II	8					8					
17-13●✦	I	13					13					
17-22●	COAX	4							2		2	
17-25●✦	M	24	22								2	
17-26	I	26				26						
17-35	M	55	55									
17-42●	M	42			42							
17-55	M	55		55								
17-99	I	23				21	2					
19-11	II	11					11					
19-18✦	M	18	14									4
19-28●	I	28				26	2					
19-30●	I	30				29	1					
19-32	I	32				32						
19-35	M	66	66									
19-53●	M	53			53							
19-66	M	66		66								
19-67●✦	M	67		67								
19-68●✦	I	18					18					
21-1	M	79		79								
21-2●✦	M	65			65							
21-11✦	I	11						11				
21-16	II	16					16					
21-35	M	79	79									
21-39	I	39				37	2					
21-41	I	41				41						
21-75✦	N	4									(See Note 4)	
21-79●✦	II	19	17								(See Note 5)	
23-1	M	100		100								
23-2	M	85			85							
23-5●✦		5										5
23-6●	M	6										6
23-14●✦	I	14						14				
23-21	II	21					21					
23-32●	I	32				32						
23-35	M	100	100									
23-36●✦	I	36				36						
23-53	I	53			53							
23-55✦	I	55				55						
25-1	M	128		128								
25-2	M	100			100							
25-4	I	56				48	8					
25-7●✦	M	99	97									2
25-11●✦	N	11				2				9		
25-19✦	I	19						19				
25-20●✦	N	30				10	13**		4			3
25-24	I	24					12	12				
25-29	I	29					29					
25-35	M	128	128									
25-37●✦	I	37					37					
25-43✦	I	43				23	20					
25-46✦	I	46				40	4				2	
25-61	I	61				61						

WHEN CHOOSING LAYOUT

First Number = Step 3A – Shell Size, Dash = Step 4 – Plating, Second Number = 3B – Layout

STEP 4

Choose Plating

Finish	Military Plating	Commercial Plating	Commercial Plating + SR
Cadmium plated nickel base	A	-	SR
Olive drab cadmium plate nickel base	B	014	386
Electroless nickel	F	023	424
Electroless nickel space compatible	-	453	467
Anodic coating (Alumilite)	C	005	300
Chromate tested (Iridite 14-2)	-	011	344
Passivated steel (Hermetic only)	E	-	-
Stainless Steel	-	155	-

SR = Strain Relief

STEP 5

Choose Contact

Note: See Step 6 if you are not ordering contacts with part.

P = Pin
S = Socket
H = 1500 Mating Cycles Pin
J = 1500 Mating Cycles Socket
A = Less Pin Contacts
B = Less Socket Contact

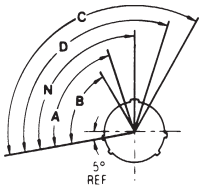
Use A or B only for special contact types (PC Pin, Thermocouple, Fiberoptic).

STEP 6

Choose Alternate Shell Position

N = Normal Standard (omit on Military part number)
A = Next Most Popular
B = Limited Availability
C = Check for Availability
D = Check for Availability

Shell Size	N	A	B	C	D
9	95	77	-	-	113
11	95	81	67	123	109
13	95	75	63	127	115
15	95	74	61	129	116
17	95	77	65	125	113
19	95	77	65	125	113
21	95	77	65	125	113
23	95	80	69	121	110
25	95	80	69	121	110



Mating Face of Receptacle

STEP 7

Choose Modifier

For other commercial modification, i.e., less tools, with PC contact or with endbell, call.

Omit for standard contacts
LC = less contacts, wire hole fillers and plastic insertion/extraction tool.
(Purchase Order must state Less Contacts)

Note: LC is not marked on part

(4) MS Connector 21-75 is supplied with four size 8 twinax contacts. Proprietary connector 21-75 is supplied with four size 8 coax contacts.

(5) MS connector 21-79 has provision for two size 8 coax contacts. Coax contacts are not supplied unless specified by customer.

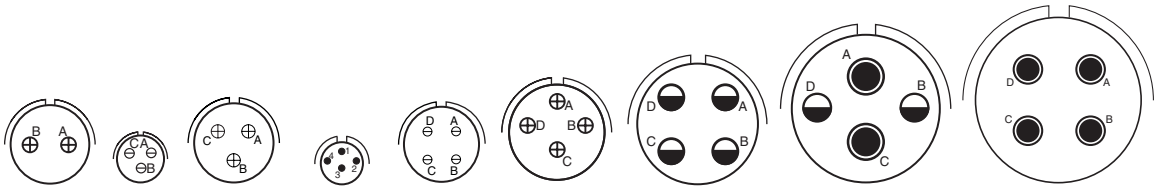
● NOT QPL'D
✦ Not Tooled for RP or 02RE
* COAX ** TWINAX

Layout by Number of Contacts

View of Mating Face of Pin Insert

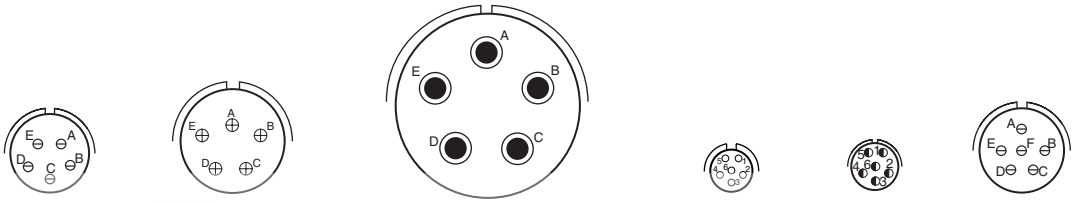
Drawing not to scale; mating face view of pin insert shown (socket view is opposite)

Contacts 2 / 3 / 4



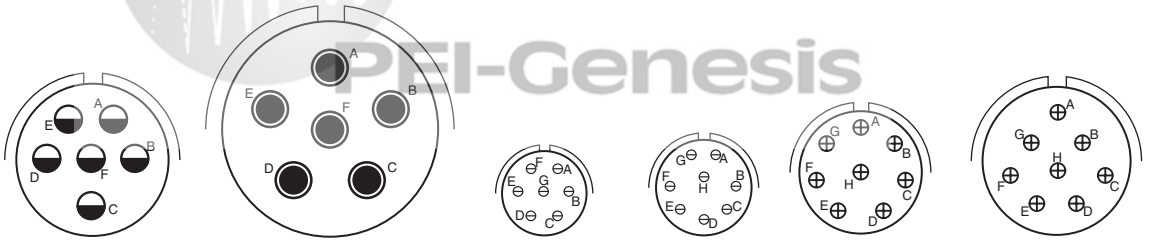
	11-2✦	9-98	13-3•	9-44	11-4✦	13-4	15-4•✦	17-22•	21-75✦
LAYOUT									
# OF CONTACTS	2-#16	3-#20	3-#16	4-#22	4-#20	4-#16	4-#12	2-#12✱, 2-#8✱	4-#8✱✱
SERVICE RATING	I	I	II	M	I	I	I	COAX	N

Contacts 5 / 6



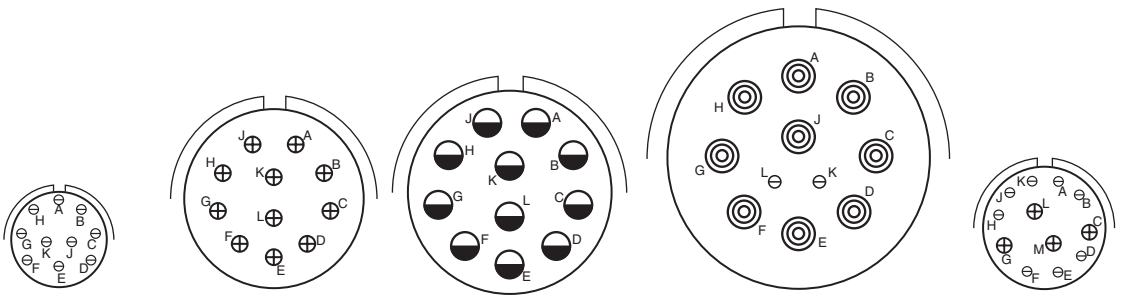
	11-5✦	15-5	23-5•✦	9-6	9-35	11-98
LAYOUT						
# OF CONTACTS	5-#20	5-#16	5-#8✱✱	6-#22M	6-#22D	6-#20
SERVICE RATING	I	II	M	M	M	I

Contacts 6 / 7 / 8



	17-6	23-6•	11-99	13-8	15-68•✦	17-8
LAYOUT						
# OF CONTACTS	6-#12	6-#8✱✱	7-#20	8-#20	8-#16	8-#16
SERVICE RATING	I	M	I	I	I	II

Contacts 10 / 11 / 12



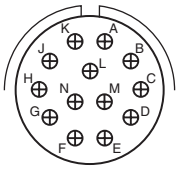
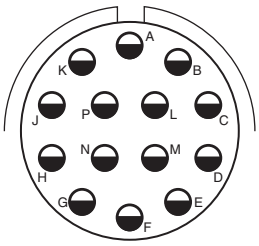
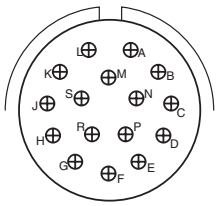
	13-98	19-11	21-11✦	25-11•✦	15-97✦
LAYOUT					
# OF CONTACTS	10-#20	11-#16	11-#12	2-#20, 9-#10✱	8-#20, 4-#16
SERVICE RATING	I	II	I	N	I

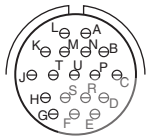
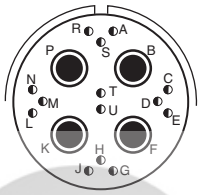
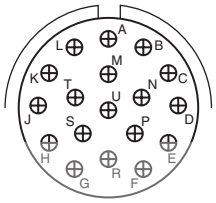
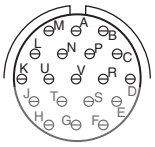
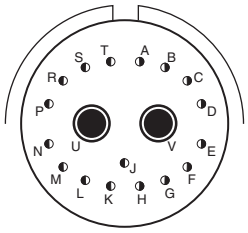
✱Coax ✱✱Twinax • NOT QPL'D ✦ Not Tooled for RP or 02RE Call for more information.

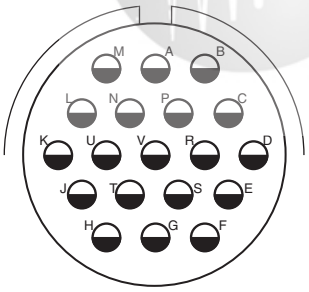
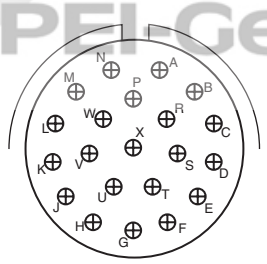
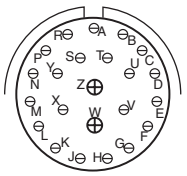
Layout by Number of Contacts

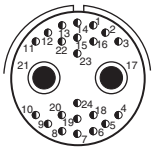
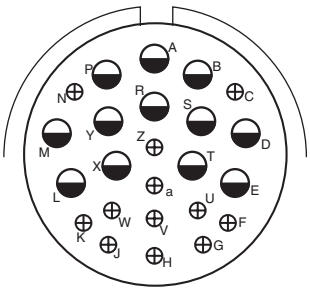
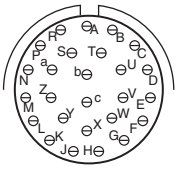
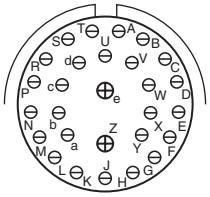
View of Mating Face of Pin Insert 8 10 12 16 20 22 22D 22M

Drawing not to scale; mating face view of pin insert shown (socket view is opposite)

Contacts	13			14	15	16
						
LAYOUT	**11-13**	**11-35**	**17-13•✦**	**23-14•✦**	**15-15**	**21-16**
# OF CONTACTS	13-#22M	13-#22D	13-#16	14-#12	14-#20, 1-#16	16-#16
SERVICE RATING	M	M	I	I	I	II

Contacts	18			19	
					
LAYOUT	**15-18**	**19-18✦**	**19-68•✦**	**15-19✦**	**21-79•✦**
# OF CONTACTS	18-#20	14-#22D, 4-#8✱✱	18-#16	19-#20	17-#22D, 2-#8✱
SERVICE RATING	I	M	I	I	II

Contacts	19	21	22	23
					
LAYOUT	**25-19✦**	**23-21**	**13-22**	**13-35**	**17-99**
# OF CONTACTS	19-#12	21-#16	22-#22M	22-#22D	21-#20, 2-#16
SERVICE RATING	I	II	M	M	I

Contacts	24		26	28
				
LAYOUT	**17-25•✦**	**25-24**	**17-26**	**19-28•**
# OF CONTACTS	22-#22D, 2-#8✱	12-#16, 12-#12	26-#20	26-#20, 2-#16
SERVICE RATING	M	I	I	I

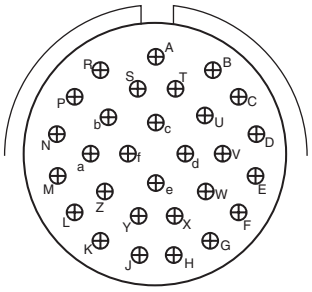
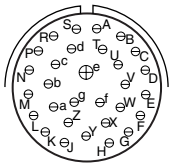
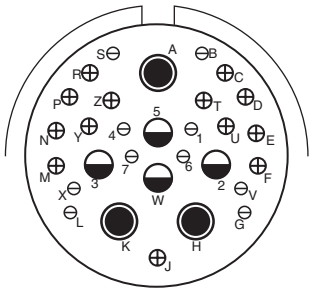
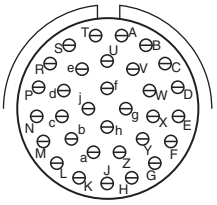
✱Coax ✱✱Twinax • NOT QPL'D ✦ Not Tooled for RP or 02RE Call for more information.

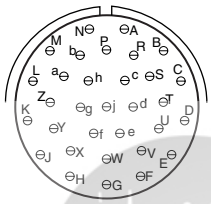
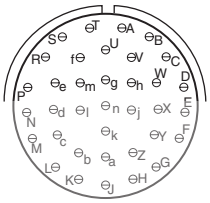
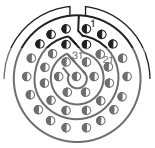
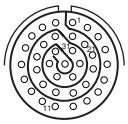
Layout by Number of Contacts

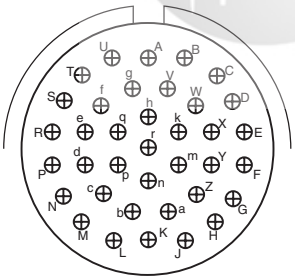
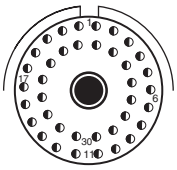
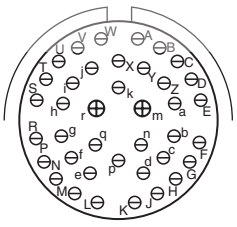
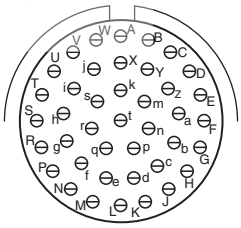
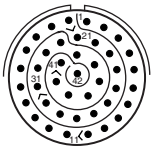
View of Mating Face of Pin Insert

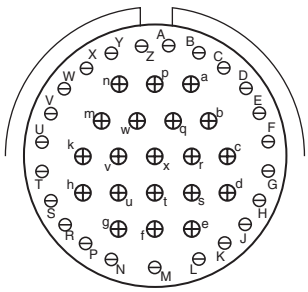
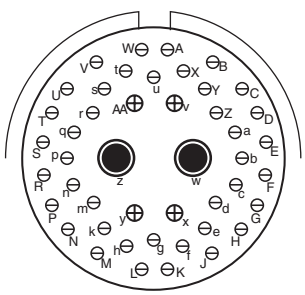
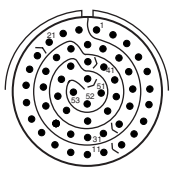
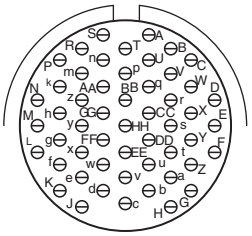
8 10 12 16 20 22 22D 22M

Drawing not to scale; mating face view of pin insert shown (socket view is opposite)

Contacts	29	30		32
				
LAYOUT # OF CONTACTS SERVICE RATING	**25-29** 29-#16 I	**19-30•** 29-#20, 1-#16 I	**25-20•✦** 10-#20, 13-#16, 4-#12✱, 3-#8✱✱ I	**19-32** 32-#20 I

Contacts	32	36	37	
				
LAYOUT # OF CONTACTS SERVICE RATING	**23-32•** 32-#20 I	**23-36•✦** 36-#20 I	**15-35** 37-#22D M	**15-37** 37-#22M M

Contacts	37	39	41	42
					
LAYOUT # OF CONTACTS SERVICE RATING	**25-37•✦** 37-#16 I	**17-2** 38-#22D, 1-#8✱✱ M	**21-39** 37-#20, 2-#16 I	**21-41** 41-#20 I	**17-42•** 42-#22 M

Contacts	43	46	53	
				
LAYOUT # OF CONTACTS SERVICE RATING	**25-43✦** 23-#20, 20-#16 I	**25-46✦** 40-#20, 4-#16, 2-#8✱ I	**19-53•** 53-#22 M	**23-53** 53-#20 I

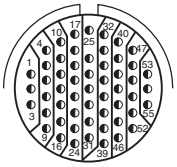
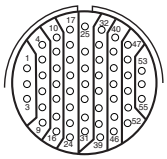
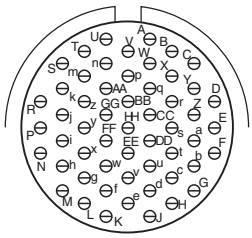
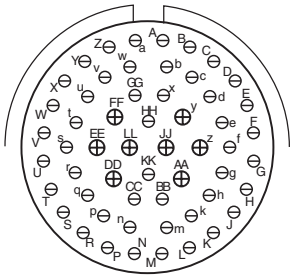
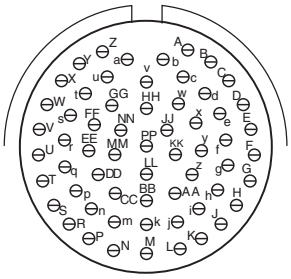
✱Coax ✱✱Twinax • NOT QPL'D ✦ Not Tooled for RP or 02RE Call for more information.

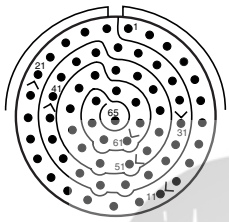
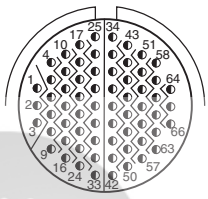
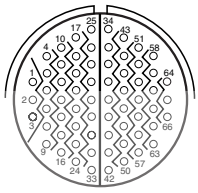
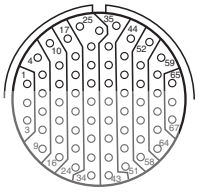
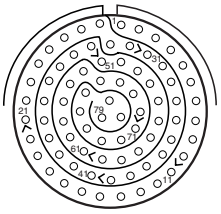
Layout by Number of Contacts

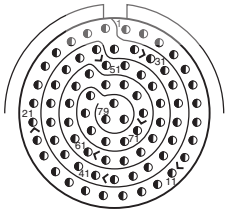
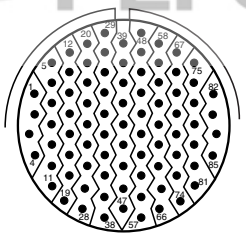
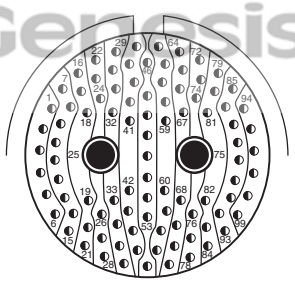
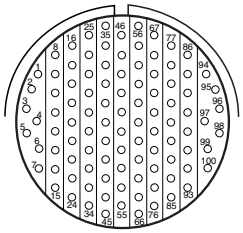
View of Mating Face of Pin Insert

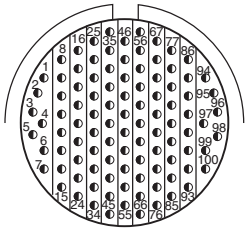
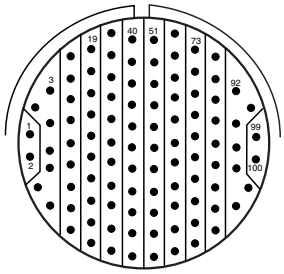
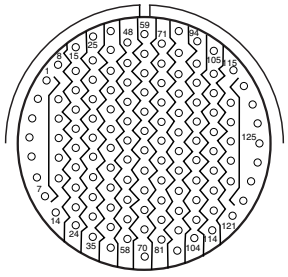
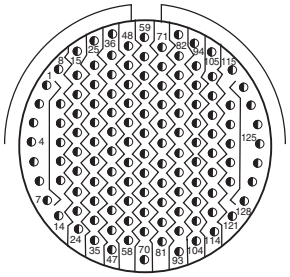
8 | 10 | 12 | 16 | 20 | 22 | 22D | 22M

Drawing not to scale; mating face view of pin insert shown (socket view is opposite)

Contacts	55			56	61
					
LAYOUT	**17-35**	**17-55**	**23-55✦**	**25-4**	**25-61**
# OF CONTACTS	55-#22D	55-#22M	55-#20	48-#20, 8-#16	61-#20
SERVICE RATING	M	M	I	I	I

Contacts	65	66		67	79
					
LAYOUT	**21-2•✦**	**19-35**	**19-66**	**19-67•✦**	**21-1**
# OF CONTACTS	65-#22	66-#22D	66-#22M	67-#22M	79-#22M
SERVICE RATING	M	M	M	M	M

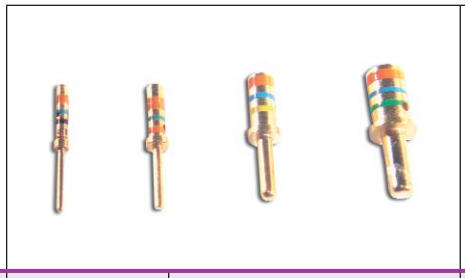
Contacts	79	85	99	100
				
LAYOUT	**21-35**	**23-2**	**25-7•✦**	**23-1**
# OF CONTACTS	79-#22D	85-#22	97-#22D, 2-#8✱✱	100-#22M
SERVICE RATING	M	M	M	M

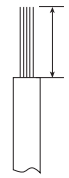
Contacts	100		128	
				
LAYOUT	**23-35**	**25-2**	**25-1**	**25-35**
# OF CONTACTS	100-#22D	100-#22	128-#22M	128-#22D
SERVICE RATING	M	M	M	M

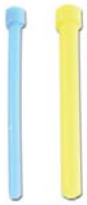
✱Coax ✱✱Twinax • NOT QPL'D ✦ Not Tooled for RP or 02RE Call for more information.

Contacts

Pins





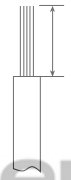


Head goes in first, trim excess

Contact Size	Wire Size Awg	Pin Contact Part Number	Color Bands			Wire Strip Lengths	Wire Range		Wire Hole Filler	Color
			1	2	3		Min	Max		
22D	28,26,24&22	M39029/58-360	Orange	Blue	Black	.125 (3.18)	.030 (0.76)	.054 (1.37)	MS27488-22-1	Black
✱22M	28,26&24	M39029/58-361	Orange	Blue	Brown	.125 (3.18)	.030 (0.76)	.050 (1.27)	MS27488-22-1	Black
✱22	26,24&22	M39029/58-362	Orange	Blue	Red	.125 (3.18)	.034 (0.86)	.060 (1.52)	MS27488-22-1	Black
20	20,22&24	M39029/58-363	Orange	Blue	Orange	.188 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-1	Red
16	16,18&20	M39029/58-364	Orange	Blue	Yellow	.188 (4.77)	.065 (1.65)	.109 (2.77)	MS27488-16-1	Blue
12	12&14	M39029/58-365	Orange	Blue	Green	.188 (4.77)	.097 (2.46)	.142 (3.61)	MS27488-12-1	Yellow
8	Coax+	-	-	-	-	-	.135 (3.43)	.155 (3.94)	-	-

+ For Fiber Optic contacts, call. ✱ Inactive for new design

Sockets



Head goes in first, trim excess

Contact Size	Wire Size Awg	Socket Contact Part Number	Color Bands			Wire Strip Lengths	Wire Range		Wire Hole Filler	Color
			1	2	3		Min	Max		
22D	28,26,24&22	M39029/56-348	Orange	Yellow	Gray	.125 (3.18)	.030 (0.76)	.054 (1.37)	MS27488-22-1	Black
20	20,22&24	M39029/56-351	Orange	Green	Brown	.188 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-1	Red
16	16,18&20	M39029/56-352	Orange	Green	Red	.188 (4.77)	.065 (1.65)	.109 (2.77)	MS27488-16-1	Blue
12	12&14	M39029/56-353	Orange	Green	Orange	.188 (4.77)	.097 (2.46)	.142 (3.61)	MS27488-12-1	Yellow
8	Coax+	-	-	-	-	-	.135 (3.43)	.155 (3.94)	-	-

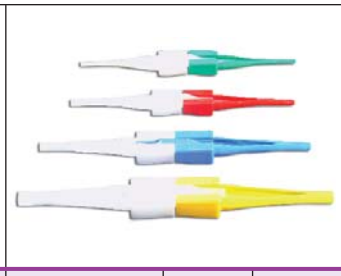
+ For Fiber Optic contacts, call.

Excerpt from MIL-DTL-38999K

3.43.2 JAN brand. The United States Government has adopted, and is exercising legitimate control over the certification marks "JAN" and "J", respectively, to indicate that items so marked or identified are manufactured to, and meet all the requirements of military specification. Accordingly, items acquired to, and meeting all of the criteria specified herein and in applicable specifications shall bear the certification mark "JAN" except that items too small to bear the certification mark "JAN" shall bear the letter "J". The "JAN" or "J" shall be placed immediately before the PIN except that if such location would place a hardship on the manufacturer in connection with such marking, the "JAN" or "J" may be located on the first line above or below the PIN. Items furnished under contracts or orders which either permit or require deviation from the conditions or requirements specified herein or in applicable specifications shall not bear "JAN" or "J". In the event an item fails to meet the requirements of this specification and the applicable specification sheets or associated detail specifications, the manufacturer shall remove the "JAN" or the "J" from the sample tested and also from all items represented by the sample. The "JAN" or "J" certification mark shall not be used on products acquired to contractor drawings or specification. The United States Government has obtained Certificate of Registration No. 504,860 for the certification mark "JAN".

Note: The "JAN" or "J" is not part of the PIN but indicates a certification.
PIN = Part Identification Number

All dimensions in inches (millimeters in parenthesis)

Hand Crimp Tool	Power Crimp Tool	Turret Heads	Use Locator Color	Plastic Insertion/ Extraction Tool	Insertion Tip Color	Extraction Tip Color	Metal Insertion Tool	Color Band	Metal Extraction Tool	Color Band	
										1	2
M22520/2-01	WA22††	M22520/2-09	-	M81969/14-01	Green	White	MS27495A22M	Black	MS27495R22M	Black	White
M22520/2-01	WA22††	M22520/2-09	-	M81969/14-01	Green	White	MS27495A22M	Black	MS27495R22M	Black	White
M22520/2-01	WA22††	M22520/2-09	-	M81969/14-01	Green	White	MS27495A22	Black	MS27495R22M	Black	White
M22520/1-01	WA27F††	M22520/1-04	Red	M81969/14-10	Red	Orange	MS27495A20	Red	MS27495R20	Red	White
M22520/1-01	WA27F††	M22520/1-04	Blue	M81969/14-03	Blue	White	MS27495A16	Blue	MS27495R16	Blue	White
M22520/1-01	WA27F††	M22520/1-04	Yellow	M81969/14-04	Yellow	White	DAK95-12B	-	DRK95-12B	-	-
-	-	-	-	-	-	-	-	-	-	-	-

†† Call for more tool accessories.




Hand Crimp Tool	Power Crimp Tool	Turret Heads	Use Locator Color	Plastic Insertion/ Extraction Tool	Insertion Tip Color	Extraction Tip Color	Metal Insertion Tool	Color Band	Metal Extraction Tool	Color Band	
										1	2
M22520/2-01	WA22††	M22520/2-07	-	M81969/14-01	Green	White	MS27495A22M	Black	MS27495R22M	Black	White
M22520/1-01	WA27F††	M22520/1-04	Red	M81969/14-10	Red	Orange	MS27495A20	Red	MS27495R20	Red	White
M22520/1-01	WA27F††	M22520/1-04	Blue	M81969/14-03	Blue	White	MS27495A16	Blue	MS27495R16	Blue	White
M22520/1-01	WA27F††	M22520/1-04	Yellow	M81969/14-04	Yellow	White	DAK95-12B	-	DRK95-12B	-	-
-	-	-	-	-	-	-	-	-	-	-	

†† Call for more tool accessories.

Contacts

Coax Contacts

	Coax Pin	Coax Socket	Crimping Tools	
			 M22520/5-01	 Crimp Dies

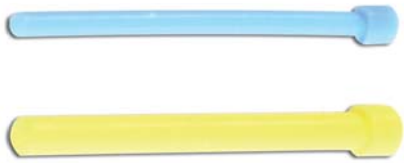
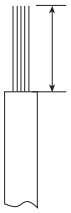
Coax Contact Size	Cable Type	Contact Part Number		Crimping Tools	
		Pin	Socket	Inner Contact	Crimp Ferrule
16	RG-178B/U, RG-196A/U	21-033122-564 (M39029/76-425)	21-033123-564 (M39029/77-429)	M22520/2-01 w/ Positioner M22522/2-35 or w/ Daniels Positioner K532	M22520/4-01 w/ Positioner M22520/4-02
	RG-174A/U, RG-188A/U, RG-161/U, RG-187A/U, RG-316/U, RG-179B/U	21-033122-563 (M39029/76-424)	21-033123-563 (M39029/77-428)		
12		21-033122-546 (M39029/28-211)	21-033123-546 (M39029/75-416)	M22520/2-01 w/ Positioner M22520/2-34 or w/ Daniels Positioner K323	M22520/31-01 w/ Positioner M22520/31-02 or Daniels GS-200 Tool w/ Positioner G2P330
	RG-180B/U, RG-195A/U	21-033122-541 (M39029/28-409)	21-033123-541 (M39029/75-417)		
8	RG-187A/U, RG-179B/U, RG-174A/U, RG-188A/U, RG-316/U, RG-161/U	21-033102-023	21-033101-023	M22520/2-01 w/ Positioner M22520/2-31 or solder	M22520/5-01 w/ die set M22520/5-03 (A) or M22520/5-08 (A) or M22520/5-35 (B) or M22520/10-01 w/ die set M22520/10-05 (A)
	RG-142B/U, RG-223/U	21-033102-024	21-033101-024		M22520/5-01 w/ die set M22520/5-05 (A) or M22520/5-19 (A) or M22520/10-01 w/ die set M22520/10-07 (A)
	RG-180B/U, RG-195A/U	21-033102-021 (M39029/60-367)	21-033101-021 (M39029/59-366)		M22520/5-01 w/ die set M22520/5-05 (B) or M22520/5-41 (B) or M22520/10-01 w/ die set M22520/10-07 (B)
	RG-400	21-033102-027	21-033101-027	M22520/2-01 w/ Positioner M22520/2-10	M22520/5-01 w/ die set M22520/5-45 (A)
	RG-58 (M17/155-00001)	21-033102-029	21-033101-029	Solder	M22520/5-01 w/ die set M22520/5-05 (B)

Printed Circuit Board Contacts - Pin

PCB Pin Contacts	Size	Tail Diameter	Contact Stickout Max/Min						
			MS27466 LJT00RT	MS27656 LJTPQ00RT	MS27496 LJT02RE	MS27505 LJTP02RE	MS27467 LJT06RE	MS27468 LJT07RE	
								(9-17)	(19-25)
10-407552-015	22M	0.019	.372 / .317	.357 / .302	.576 / .521	.576 / .520	.372 / .317	.351 / .296	.329 / .279
10-407552-055	22M	0.019	.261 / .206	.246 / .191	.465 / .410	.465 / .409	.261 / .206	.240 / .185	.218 / .168
10-407552-085	22M	0.019	.097 / .047	.082 / .032	.301 / .251	.301 / .250	.097 / .047	.076 / .026	.054 / .009
10-407552-115	22M	0.019	.035 / NS	.020 / NS	.239 / .189	.239 / .188	.035 / NS	.014 / NS	NS
10-497640-015	20	0.019	.385 / .335	.370 / .320	.589 / .539	.589 / .538	.385 / .335	.364 / .314	.342 / .297
10-497640-025	20	0.019	.250 / .200	.235 / .185	.454 / .404	.454 / .403	.250 / .200	.229 / .179	.207 / .162
10-497640-045	20	0.019	NS	NS	.191 / .141	.191 / .141	NS	NS	NS
10-497596-015	20	0.025	.095 / .049	.080 / .034	.299 / .253	.299 / .252	.095 / .049	.074 / .028	.052 / .011
10-497596-025	20	0.025	.185 / .139	.170 / .124	.389 / .343	.389 / .342	.185 / .139	.164 / .118	.142 / .101
10-497596-035	20	0.025	.266 / .220	.251 / .205	.470 / .424	.470 / .423	.266 / .220	.245 / .199	.223 / .182
10-497596-055	20	0.025	.383 / .337	.368 / .322	.587 / .541	.587 / .540	.383 / .337	.362 / .316	.340 / .299
10-497695-015	16	0.040	.292 / .242	.277 / .227	.496 / .446	.496 / .445	.292 / .242	.271 / .221	.249 / .204
10-497630-035	16	0.062	.097 / .047	.082 / .032	.301 / .251	.301 / .250	.385 / .335	.076 / .026	.054 / .009
10-497630-055	16	0.062	.296 / .250	.281 / .235	.454 / .401	.454 / .401	.232 / .182	.229 / .175	.207 / .158
10-597502-015	12	0.081	.265 / .215	.250 / .200	.469 / .410	.469 / .418	.265 / .215	.244 / .194	.222 / .177

= Standard PC tail used

All dimensions in inches (millimeters in parenthesis)

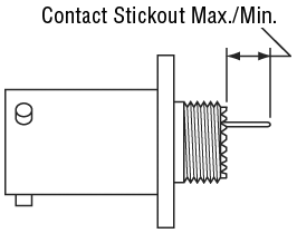
Wire Hole Filler	Wire Strip Length	Wire Sealing Range
		

Installation Tools		Wire Strip Lengths	Wire Sealing Range	
Insertion	Removal		Min	Max
M81969/8-07 or M81969/14-03	M81969/8-08 or M81969/14-03	call for details	.065 (1.65)	.109 (2.77)
M81969/8-09 or M81969/14-04	M81969/8-10 or M81969/14-04	call for details	.097 (2.46)	.142 (3.61)
Hand insertion	11-9170 or MS	call for details	.135 (3.43)	.155 (3.94)

All dimensions in inches (millimeters in parenthesis)

Printed Circuit Board Contacts - Socket

PCB Socket Contacts	Size	Tail Diameter	Contact Stickout Max/Min						
			MS27466 LJT00RT	MS27656 LJTPQ00RT	MS27496 LJT02RE	MS27505 LJTP02RE	MS27467 LJT06RE	MS27468 LJT07RE	
								(9-17)	(19-25)
10-497623-015	22M	0.019	.328 / .263	.313 / .248	.532 / .467	.532 / .466	.328 / .263	.307 / .424	.285 / .225
10-497623-335	22M	0.019	.264 / .199	.249 / .188	.468 / .406	.468 / .405	.264 /.199	.243 / .182	.221 / .165
10-497623-025	22M	0.019	.905 / .840	.890 / .825	1.109 / 1.044	1.109 / 1.043	.905 / .840	.884 / .819	.862 / .802
10-497623-035	22M	0.019	.385 / .320	.370 / .305	.589 / .524	.589 / .523	.385 / .320	.364 / .299	.342 / .282
10-497623-045	22M	0.019	.245 / .180	.230 / .165	.449 / .384	.449 / .383	.245 / .180	.224 / .159	.202 / .142
10-497623-075	22M	0.019	.183 / .118	.168 / .103	.387 / .322	.387 / .321	.183 / .118	.162 / .097	.140 / .080
10-497623-145	22M	0.019	.646 / .576	.631 / .561	.850 / .780	.850 / .779	.646 / .576	.625 / .555	.603 / .538
10-497623-155	22M	0.025	.460 / .395	.445 / .380	.664 / .599	.664 / .598	.460 / .395	.439 / .374	.417 / .357
10-497643-015	20	0.025	.385 / .339	.370 / .316	.589 / .535	.589 / .536	.385 / .331	.364 / .310	.342 / .293
10-497643-025	20	0.025	.250 / .204	.235 / .181	.454 / .400	.454 / .401	.250 / .196	.229 / .175	.207 / .158
10-497643-035	20	0.025	.592 / .546	.577 / .523	.796 / .742	.796 / .743	.592 / .538	.571 / .517	.549 / .500
10-497650-015	16	0.040	.292 / .246	.277 / .223	.496 / .442	.496 / .443	.292 / .238	.271 / .217	.249 / .200



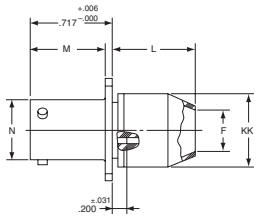
= Standard PC tail used

All dimensions in inches (millimeters in parenthesis)

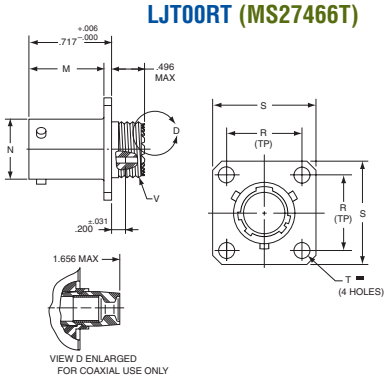
Dimensions

Receptacles

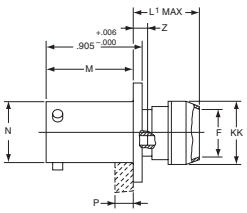
LJT00RP (MS27466P)



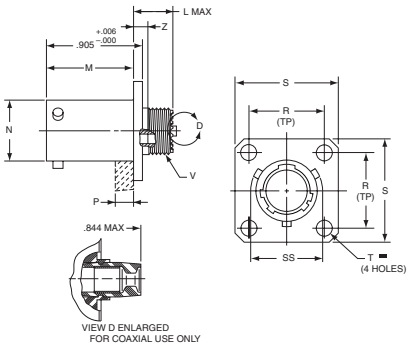
LJT00RE (MS27466E)
LJT00RT (MS27466T)



LJTPQ00RP (MS27656P)

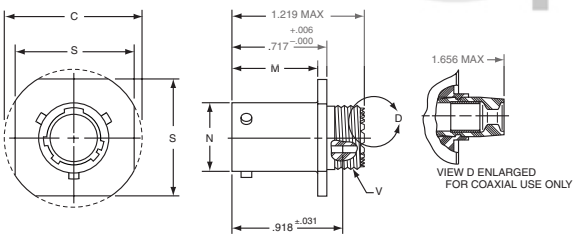


LJTPQ00RE (MS27656E)
LJTPQ00RT (MS27656T)



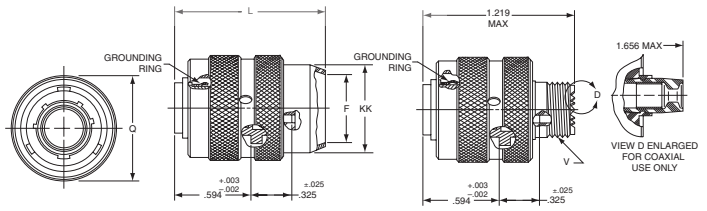
Shell Size	F Min. Dia.	L Max. MS27466/ LJT00R	L Max. MS27656/ LJTPQ00R	L^1 Max. MS27656/ LJTPQ00R	M +.000 / -.005 MS27466/ LJT00R	M +.000 / -.005 MS27656/ LJTPQ00R	N Dia. +.001/ -.005	R (TP)	S Dimension MS27466/ LJT00R ±.016	S Dimension MS27656/ LJTPQ00R +.011/-.010	T Dia. ±.005 (±.127)	KK Dimension Max. MS27466/ LJT00R	KK Dimension Max. MS27656/ LJTPQ00	V Thread Class 2A (Plated)	Z Max. MS27466/ LJTPQ00R	SS Dia. MS27466/ LJTPQ00R
9	0.434 (11.0)	0.813 (20.7)	0.453 (11.5)	0.641 (16.3)	0.632 (16.1)	0.820 (20.8)	0.572 (14.5)	0.719 (18.3)	0.938 (23.8)	0.938 (23.8)	0.128 (3.3)	0.608 (15.4)	0.625 (15.9)	.4375-28 UNEF	0.138 (3.5)	0.662 (16.8)
11	0.548 (13.9)	0.813 (20.7)	0.453 (11.5)	0.641 (16.3)	0.632 (16.1)	0.820 (20.8)	0.700 (17.8)	0.812 (20.6)	1.031 (26.2)	1.031 (26.2)	0.128 (3.3)	0.734 (18.6)	0.750 (19.1)	.5625-24 UNEF	0.138 (3.5)	0.810 (20.6)
13	0.673 (17.1)	0.813 (20.7)	0.453 (11.5)	0.641 (16.3)	0.632 (16.1)	0.820 (20.8)	0.850 (21.6)	0.906 (23.0)	1.125 (28.6)	1.125 (28.6)	0.128 (3.3)	0.858 (21.8)	0.875 (22.2)	.6875-24 UNEF	0.138 (3.5)	0.960 (24.4)
15	0.798 (20.3)	0.813 (20.7)	0.453 (11.5)	0.641 (16.3)	0.632 (16.1)	0.820 (20.8)	0.975 (24.8)	0.969 (24.6)	1.219 (31.0)	1.219 (31.0)	0.128 (3.3)	0.984 (25.0)	1.000 (25.4)	.8125-20 UNEF	0.138 (3.5)	1.085 (27.6)
17	0.899 (22.8)	0.813 (20.7)	0.453 (11.5)	0.641 (16.3)	0.632 (16.1)	0.820 (20.8)	1.100 (27.9)	1.062 (27.0)	1.312 (33.3)	1.312 (33.3)	0.128 (3.3)	1.110 (28.2)	1.125 (28.6)	.9375-20 UNEF	0.138 (3.5)	1.210 (30.7)
19	1.024 (26.0)	0.813 (20.7)	0.453 (11.5)	0.641 (16.3)	0.632 (16.1)	0.820 (20.8)	1.207 (30.7)	1.156 (29.4)	1.438 (36.5)	1.438 (36.5)	0.128 (3.3)	1.234 (31.3)	1.250 (31.8)	1.0625-18 UNEF	0.138 (3.5)	1.317 (33.5)
21	1.149 (29.2)	0.906 (23.0)	0.484 (12.3)	0.672 (17.1)	0.602 (15.3)	0.790 (20.1)	1.332 (33.8)	1.250 (31.8)	1.562 (39.7)	1.562 (39.7)	0.128 (3.3)	1.360 (34.5)	1.375 (34.9)	1.1875-18 UNEF	0.168 (4.3)	1.442 (36.6)
23	1.274 (32.4)	0.906 (23.0)	0.484 (12.3)	0.672 (17.1)	0.602 (15.3)	0.790 (20.1)	1.457 (37.0)	1.375 (34.9)	1.688 (42.9)	1.688 (42.9)	0.147 (3.7)	1.484 (37.7)	1.500 (38.1)	1.3125-18 UNEF	0.168 (4.3)	1.567 (39.8)
25	1.399 (35.5)	0.906 (23.0)	0.484 (12.3)	0.672 (17.1)	0.602 (15.3)	0.790 (20.1)	1.582 (40.2)	1.500 (38.1)	1.812 (46.0)	1.812 (46.0)	0.147 (3.7)	1.610 (40.9)	1.625 (41.3)	1.4375-18 UNEF	0.168 (4.3)	1.692 (43.0)

LJT01RE/LJT01RT



Shell Size	C Max.	M +.000/-.005 (+.000/-.127)	N +.000/-.005 (+.000/-.127)	S ± .016 (±.406)	V Thread Class 2A (Plated)
9	1.094 (27.8)	0.632 (16.1)	0.572 (14.5)	0.938 (23.8)	.4375-28 UNEF
11	1.188 (30.2)	0.632 (16.1)	0.700 (17.8)	1.031 (26.2)	.5625-24 UNEF
13	1.281 (32.5)	0.632 (16.1)	0.850 (21.6)	1.125 (28.6)	.5625-24 UNEF
15	1.375 (34.9)	0.632 (16.1)	0.975 (24.8)	1.219 (31.0)	.5625-24 UNEF
17	1.469 (37.3)	0.632 (16.1)	1.100 (27.9)	1.312 (33.3)	.9375-20 UNEF
19	1.594 (40.5)	0.632 (16.1)	1.207 (30.7)	1.438 (36.5)	1.0625-18 UNEF
21	1.719 (43.7)	0.602 (15.3)	1.332 (33.8)	1.562 (39.7)	1.0625-18 UNEF
23	1.844 (46.8)	0.602 (15.3)	1.457 (37.0)	1.688 (42.9)	1.0625-18 UNEF
25	1.969 (50.0)	0.602 (15.3)	1.582 (40.2)	1.812 (46.0)	1.0625-18 UNEF

LJT06RP (MS27467P)
LJT06RE (MS27467E)
LJT06RT (MS27467T)



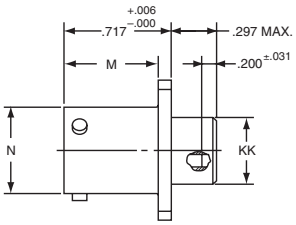
Shell Size	F Min. Diameter	L Max.	Q Max.	KK Diameter Max.	V Thread Class 2A (Plated)
9	0.434 (11.0)	1.531 (38.9)	0.844 (21.4)	0.608 (15.4)	.4375-28 UNEF
11	0.548 (13.9)	1.531 (38.9)	0.969 (24.6)	0.734 (18.6)	.5625-24 UNEF
13	0.673 (17.1)	1.531 (38.9)	1.141 (29.0)	0.858 (21.8)	.5625-24 UNEF
15	0.798 (20.3)	1.531 (38.9)	1.266 (32.2)	0.984 (25.0)	.5625-24 UNEF
17	0.899 (22.8)	1.531 (38.9)	1.391 (35.3)	1.110 (28.2)	.9375-20 UNEF
19	1.024 (26.0)	1.531 (38.9)	1.500 (38.1)	1.234 (31.3)	1.0625-18 UNEF
21	1.149 (29.2)	1.625 (41.3)	1.625 (41.3)	1.360 (34.5)	1.0625-18 UNEF
23	1.274 (32.4)	1.625 (41.3)	1.750 (44.5)	1.484 (37.7)	1.0625-18 UNEF
25	1.399 (35.5)	1.625 (41.3)	1.875 (47.6)	1.610 (40.9)	1.0625-18 UNEF

All dimensions in inches (millimeters in parenthesis)

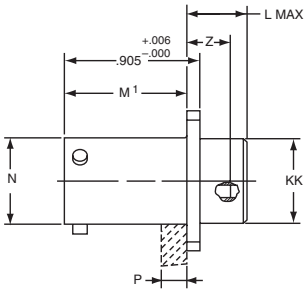
Dimensions

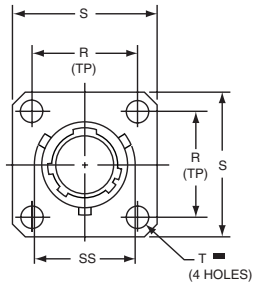
Receptacles

LJT02RE (MS27496E)



LJTP02RE (MS27505E)

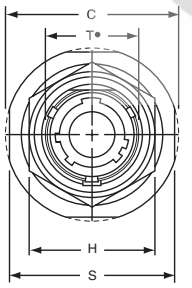


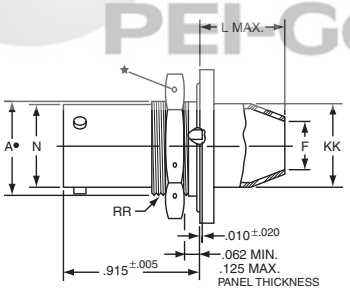


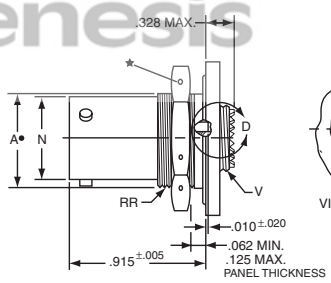
Shell Size	L Max.	M +.000/-.005 (+.000/-.127)	M1 +.001/-.005 (+.000/-.127)	N Diameter +.001/-.005 (+.025/-.127)	P Max. Panel Thickness	R (TP)	S +.011/-.010 (+.279/-.254)	T Diameter ±.005 (±.127)	Z ±.031 (±.787)	KK Diameter +.006/-.005 (+.152/-.127)	SS Diameter +.000/-.016 (+.000/-.406)
9	0.203 (5.2)	0.632 (16.1)	0.820 (20.8)	0.572 (14.5)	0.234 (5.9)	0.719 (18.3)	0.938 (23.8)	0.128 (3.3)	0.107 (2.7)	0.433 (11.0)	0.662 (16.8)
11	0.203 (5.2)	0.632 (16.1)	0.820 (20.8)	0.700 (17.8)	0.234 (5.9)	0.812 (20.6)	1.031 (26.2)	0.128 (3.3)	0.107 (2.7)	0.557 (14.1)	0.810 (20.6)
13	0.203 (5.2)	0.632 (16.1)	0.820 (20.8)	0.850 (21.6)	0.234 (5.9)	0.906 (23.0)	1.125 (28.6)	0.128 (3.3)	0.107 (2.7)	0.676 (17.2)	0.960 (24.4)
15	0.203 (5.2)	0.632 (16.1)	0.820 (20.8)	0.975 (24.8)	0.234 (5.9)	0.969 (24.6)	1.219 (31.0)	0.128 (3.3)	0.107 (2.7)	0.801 (20.3)	1.085 (27.6)
17	0.203 (5.2)	0.632 (16.1)	0.820 (20.8)	1.100 (27.9)	0.234 (5.9)	1.062 (27.0)	1.312 (33.3)	0.128 (3.3)	0.107 (2.7)	0.926 (23.5)	1.210 (30.7)
19	0.203 (5.2)	0.632 (16.1)	0.820 (20.8)	1.207 (30.7)	0.234 (5.9)	1.156 (29.4)	1.438 (36.5)	0.128 (3.3)	0.107 (2.7)	1.032 (26.2)	1.317 (33.5)
21	0.234 (5.9)	0.602 (15.3)	0.790 (20.1)	1.332 (33.8)	0.204 (5.2)	1.250 (31.8)	1.562 (39.7)	0.128 (3.3)	0.137 (3.5)	1.157 (29.4)	1.44 (36.6)
23	0.234 (5.9)	0.602 (15.3)	0.790 (20.1)	1.457 (37.0)	0.204 (5.2)	1.375 (34.9)	1.688 (42.9)	0.147 (3.7)	0.137 (3.5)	1.282 (32.6)	1.567 (39.8)
25	0.234 (5.9)	0.602 (15.3)	0.790 (20.1)	1.582 (40.2)	0.193 (4.9)	1.500 (38.1)	1.812 (46.0)	0.147 (3.7)	0.137 (3.5)	1.407 (35.7)	1.692 (43.0)

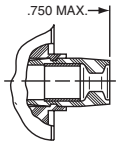
LJT07RP (MS27468P)

LJT07RE (MS27468E)
LJT07RT (MS27468T)









VIEW D ENLARGED FOR COAXIAL USE ONLY

Shell Size	A• +.000/-.010 (+.000/-.254)	C Max.	F Min. Diameter	H Hex. +.017 (-.016)	L Max.	N +.001/-.005 (+.025/-.127)	S ±.016 (±.406)	T• +.010/-.000 (+.254/-.000)	V Thread Class 2A (Plated)	KK Diameter Max.	RR Thread Class 2A (Plated)
9	0.669 (17.0)	1.199 (30.5)	0.434 (11.0)	0.875 (22.2)	0.625 (15.9)	0.572 (14.5)	1.062 (27.0)	0.697 (17.7)	.7375-28 UNEF	0.608 (15.4)	.6875-24 UNEF
11	0.769 (19.5)	1.386 (35.2)	0.548 (13.9)	1.000 (25.4)	0.625 (15.9)	0.700 (17.8)	1.250 (31.8)	0.822 (20.9)	.5625-24 UNEF	0.734 (18.6)	.8125-20 UNEF
13	0.955 (24.3)	1.511 (38.4)	0.673 (17.1)	1.188 (30.2)	0.625 (15.9)	0.850 (21.6)	1.375 (34.9)	1.007 (25.6)	.6875-24 UNEF	0.858 (21.8)	1.0000-20 UNEF
15	1.084 (27.5)	1.636 (41.6)	0.798 (20.3)	1.312 (33.3)	0.625 (15.9)	0.975 (24.8)	1.500 (38.1)	1.134 (28.8)	.8125-20 UNEF	0.984 (25.0)	1.1250-18 UNEF
17	1.208 (30.7)	1.761 (44.7)	0.899 (22.8)	1.438 (36.5)	0.625 (15.9)	1.100 (27.9)	1.625 (41.3)	1.259 (32.0)	.9375-20 UNEF	1.110 (28.2)	1.2500-18 UNEF
19	1.333 (33.9)	1.949 (49.5)	1.024 (26.0)	1.562 (39.7)	0.656 (16.7)	1.207 (30.7)	1.812 (46.0)	1.384 (35.2)	1.0625-18 UNEF	1.234 (31.3)	1.3750-18 UNEF
21	1.459 (37.1)	2.073 (52.7)	1.149 (29.2)	1.688 (42.9)	0.750 (19.1)	1.332 (33.8)	1.938 (49.2)	1.507 (38.3)	1.1875-18 UNEF	1.360 (34.5)	1.5000-18 UNEF
23	1.580 (40.1)	2.199 (55.9)	1.274 (32.4)	1.812 (46.0)	0.750 (19.1)	1.457 (37.0)	2.062 (52.4)	1.634 (41.5)	1.3125-18 UNEF	1.484 (37.7)	1.6250-18 UNEF
25	1.709 (43.4)	2.323 (59.0)	1.399 (35.5)	2.000 (50.8)	0.750 (19.1)	1.582 (40.2)	2.188 (55.6)	1.759 (44.7)	1.4375-18 UNEF	1.610 (40.9)	1.7500-18 UNEF

• "D" shaped mounting hole dimensions

All dimensions in inches (millimeters in parenthesis)

Accessories

LJT Shell Size	Dummy Receptacles	Receptacle Dust Caps		Plug Cap
		For Flanged	For Jam Nut	
9	M38999/9-9B	MS27502**9C	MS27502**9N	MS27501**9C
11	M38999/9-11B	MS27502**11C	MS27502**11N	MS27501**11C
13	M38999/9-13B	MS27502**13C	MS27502**13N	MS27501**13C
15	M38999/9-15B	MS27502**15C	MS27502**15N	MS27501**15C
17	M38999/9-17B	MS27502**17C	MS27502**17N	MS27501**17C
19	M38999/9-19B	MS27502**19C	MS27502**19N	MS27501**19C
21	M38999/9-21B	MS27502**21C	MS27502**21N	MS27501**21C
23	M38999/9-23B	MS27502**23C	MS27502**23N	MS27501**23C
25	M38999/9-25B	MS27502**25C	MS27502**25N	MS27501**25C

** Select code for plating
B = Olive Drab Chromate over Cadmium over Nickel (500 Hour Salt Spray) (most Popular)
F = Electroless Nickel (Fluid Resistant)
A = Gold Iridite over Cadmium Nickel
C = Hard Anodize

Straight

Right Angle

LJT Shell Size	Endbells		Cable Range	
	Straight Low Cost	Right Angle Low Cost	Min	Max
9	M85049/49-2-8**	M85049/47**8	.098 (2.50)	.234 (5.94)
11	M85049/49-2-10**	M85049/47**10	.153 (3.80)	.234 (5.94)
13	M85049/49-2-12**	M85049/47**12	.190 (4.80)	.328 (8.33)
15	M85049/49-2-14**	M85049/47**14	.260 (6.60)	.457 (11.61)
17	M85049/49-2-16**	M85049/47**16	.283 (7.20)	.614 (15.60)
19	M85049/49-2-18**	M85049/47**18	.325 (8.30)	.634 (16.10)
21	M85049/49-2-20**	M85049/47**20	.343 (8.70)	.698 (17.73)
23	M85049/49-2-22**	M85049/47**22	.381 (9.70)	.823 (20.90)
25	M85049/49-2-24**	M85049/47**24	.418 (10.60)	.853 (21.67)

** Select code for connector plating
W = Olive Drab Chromate over Cadmium over Nickel (1000 Hour Salt Spray)
N = Electroless Nickel (Fluid Resistant)
A = Black Anodize

All dimensions in inches (millimeters in parenthesis)

Accessories

Straight

Right Angle

LJT Shell Size	Self Locking Endbells		Cable Range	
	Straight	Right Angle	Min.	Max.
9	M85049/49-2#8**	M85049/47#**8	.098 (2.49)	.234 (5.94)
11	M85049/49-2#10**	M85049/47#**10	.153 (3.89)	.234 (5.94)
13	M85049/49-2#12**	M85049/47#**12	.190 (4.83)	.328 (8.33)
15	M85049/49-2#14**	M85049/47#**14	.260 (6.60)	.457 (11.61)
17	M85049/49-2#16**	M85049/47#**16	.283 (7.19)	.614 (15.60)
19	M85049/49-2#18**	M85049/47#**18	.325 (8.25)	.634 (16.10)
21	M85049/49-2#20**	M85049/47#**20	.343 (8.71)	.698 (17.73)
23	M85049/49-2#22**	M85049/47#**22	.391 (9.68)	.823 (20.90)
25	M85049/49-2#24**	M85049/47#**24	.418 (10.62)	.853 (21.67)

All dimensions in inches (millimeters in parenthesis)

# Select S or N:
S = Self Locking with Detent
N = Self Locking with No Detent

** Select code for connector plating
W = Olive Drab Chromate over Cadmium over Nickel (1000 Hour Salt Spray)
N = Electroless Nickel (Fluid Resistant)
S = 300 Series Steel, Passivated

	Sealed	EMI/RFI	S = Straight A = 90° B = 45°	Orientation	Description
M85049/62 	Y	N	S	Heat Shrink Boot Adapters	Designed for use with straight or right angle shrink boots. A knurled rear section with a boot groove provide an excellent surface for the boot to grab the metal endbell. Available with lock wire and drain holes. See Heat Shrink Boots on ➥ pages 258-260.
M85049/32 	N	N	S	Extender Back Shell	Non-environmental designed for use with jacketed cable allow extra space to break out the wires and still provide stain relief clamping to the outside of the cable jacket.
M85049/17 	Y	Y	S	Extender Back Shell	This EMI/RFI shielding environmentally sealing endbell features a standard style cable clamp with gland seal at the end of an extender style backshell.
M85049/29 	N	Y	S	Extender Back Shell	This EMI/RFI shielding non-environmentally sealing endbell features a standard style cable clamp.
Banding  M85049/85 M85049/86 M85049/87	Y	Y	S B A	Banding Adapter	Banding adapters utilize a band of metal that fastens and grounds cable shields to the outside of endbells. This method of terminating shields has advantages in that they typically use tools to tighten trim the bands. These tools make the termination tight, repeatable, reworkable (if you make a mistake just cut the band off and start again) and facilitates service. Banding adapters help lower the total applied cost by having simpler designs that have fewer parts with uncomplicated assembly procedures.
Custom			SAB	Custom Designs Call	If the Military Standard endbells don't fit your needs, just call us and we will customize an endbell solution to fit you. Most of these customized endbells are typically assembled in 4-8 weeks or sooner!
M85049/27	N	N	S	E Nut	Wire seal compression nut

Stripping and Crimping

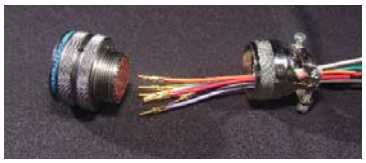
1. Strip wires according to contact size: 3/16" for #20 and 9/32" for #16 and #12. #20 contacts accommodate AWG wire sizes 20, 22, or 24; #16 accommodates 16, 18, or 20; and #12 accommodates 12 or 14.

2. Insert wire into rear of contact. Wire insulation must butt against rear of contact. Wire must be visible thru inspection hole.

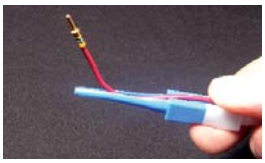
3. Use M22520/1-01 crimp tool with proper crimp location M22520/1-02. The color code band on the contact (red for #20, blue for #16, and yellow for #12) **must** match the color code of the locator and the insertion tool throughout the crimping and assembly operations.

4. Insert contact and wire into tool jaws. To crimp, squeeze handles together fully until ratchet releases and allows handles to expand; otherwise, contact cannot be extracted from tool jaws. Maintain slight insertion pressure on wire while crimping contact to wire.

Contact Insertion

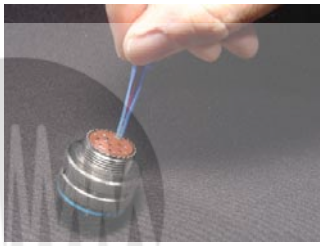


1. Remove backshell and put wired contacts thru cable clamp opening.

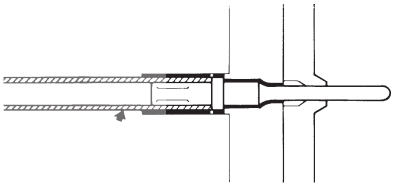


2. Use colored end of CIET tool for insertion. Place wire into tool at large opening. To facilitate contact insertion, a 6-inch minimum free length of wire is recommended.

3. Slide back tool on wire while holding thumb against wire at opening. Wire will slip into tool.



4. With tool pressed against shoulder of contact, starting at the center cavity, insert wired contact and tool into properly identified cavity at rear of plug with firm, even pressure. Do not use excessive pressure.

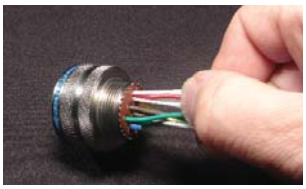


5. When contact bottoms, a slight "click" can be heard as tines of metal retaining clip snap into place behind contact shoulder.

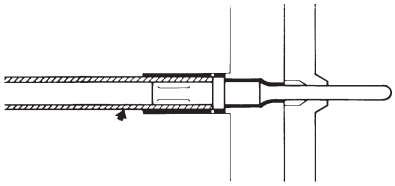
6. Withdraw tool from rear of plug. To be sure that contact is locked, pull back lightly on wire. Then remove tool from wire and proceed with other contacts.

7. After all contacts are inserted, fill unwired cavities with sealing plugs (insert head first and leave end protruding for ease of removal), assemble backshell on rear of connector.

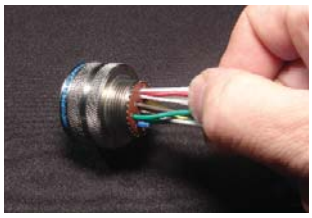
Contact Extraction



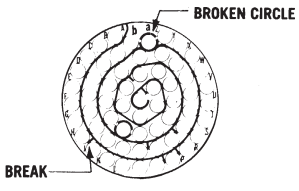
1. Remove backshell and slide back along wires to allow access. To extract a contact, use white end of CIET tool. Place wire into tool at large opening. Slide back tool on wire while holding thumb against wire at opening. Wire will slip into tool.



2. Push tool into rear of plug until it bottoms. At this point, tool releases tines on retaining clip so that contact can be extracted.

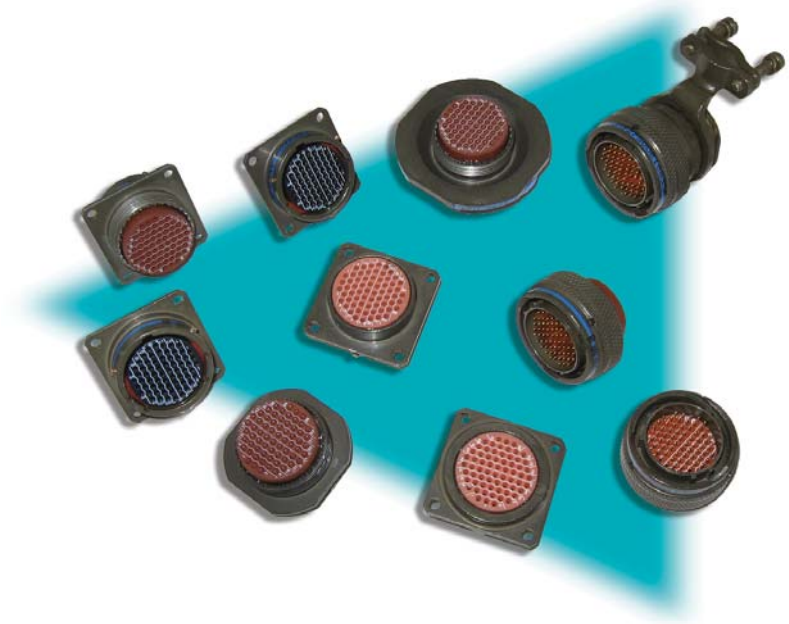


3. While maintaining slight insertion force on tool, firmly hold wire against serrated shoulder at center of tool and extract both wired contact and tool from plug.



4. Check face of plug or receptacle for proper contact installation. In socket inserts with a large number of contact, cavities are identified in a spiral pattern. A projecting line from the spiral indicates omission of a letter; a broken circle around a cavity indicates transition between capitals and lower case and double letters.

MIL-DTL-38999 Series II



JT MIL-DTL-38999 Series II connectors offer high density contact arrangements in a low profile miniature circular shell. JT's were designed for use in avionics and military vehicles where more and more electronics systems are being packed in to the same physical space leaving less available for interconnect devices. JT features include, very small area for mating the connectors, total environmental sealing, wide operating temperature range (-65°C to 200°C), extremely light weight connector design, quick mating three point bayonet coupling, wide range of receptacle styles, and available in a ruggedized 500 hour salt spray plating.

Applications

- High Performance Military Aircraft
- Commercial Airlines
- Communications Equipment
- Missiles
- Sophisticated Test Equipment
- Shipboard

Features

High Reliability
MIL-DTL-38999 Series II - JT style connectors are used in performance aircraft that demand reliable connections in some of the most rigorous environments. The connectors must perform flawlessly under wide temperature ranges, high vibrations, and be resistant to a vast array of contaminants.

Low Profile Connector Design
JT's require a fraction of the space needed to mate most of the other high performance connectors. This allows interconnects to be locating in areas that would be impossible for other mating systems.

Light Weight
Today's aircraft designs require connectors the are very light weight. Saving weight on the connector systems allows the aircraft to carry more fuel maximizing its range or payload carrying capacity.

High Density Connectors
JT connectors offer up to 128 contacts per connector. Ideally suited for the demands of today's digital electronics that are used on fly by wire aircraft, advanced robotics, and critical industrial equipment.

Operates at Extreme Temperatures
These connectors will operate in temperatures from -65°C up to 200°C (-85°F up to 392°F)

Quick Mating Coupling Systems
Three point bayonet coupling nuts provide fast, one-third of a turn connector mating. Mating is easily verified with an audible and tactile "click" and a bayonet pin sighting hole located in the coupling nut.

Broad Range of Military and Commercial Accessories
Many military standard endbells to MIL-C-85049 specifications and a wide array of cable termination style are available. Straight, 45 and 90 degree endbells come in many styles from low-cost, standard clamp to shielded environmentally sealed and everything in between.

MIL-DTL-38999 approved
JT's are fully intermatable and intermountable with all other manufacturer's MIL-DTL-38999 Series II connectors.

Technical Specifications

MATERIALS AND FINISHES

Shell	Aluminum alloy
Platings	A - Clear Chromate over cadmium over electroless nickel per QQ-P-416 B - Olive drab chromate over cadmium over electroless nickel per QQ-P-416 F - Electroless nickel per QQ-N-290 C - Hard, anodic, non-conductive in accordance with MIL-A-862
Contacts	Copper alloy
Plating	Gold plate, 50 microinches per MIL-G-45204 type II, grade C, class 1
Insulator	Hard dielectric wafer which contains metal retention tines for high reliability retention of crimp contacts
Grommet & Seals	Silicone based elastomer
Grounding Springs	Beryllium copper (Grounded plug only)

ELECTRICAL DATA

Operating Voltage & Test Voltage (unmated condition)

	Service Rating			
Test Voltages	**N**	**M**	**I**	**II**
Sea Level	1000	1300	1800	2300
100,000 feet	200	200	200	200

Current Rating by contact size and wire accommodation (Test Amps)

Wire Size	22D	22M*	22*	20	16	12
28	1.5	1.5	-	-	-	-
26	2.0	2.0	2.0	-	-	-
24	3.0	3.0	3.0	3.0	-	-
22	5.0	-	5.0	5.0	-	-
20	-	-	-	7.5	7.5	-
18	-	-	-	-	10.0	-
16	-	-	-	-	13.0	-
14	-	-	-	-	-	17.0
12	-	-	-	-	-	23.0

Contact Resistance of mated contacts end to end

Contact Size	Maximum Millivolt Drop
22D	40
22M*	30
22*	40
20	35
16	25
12	25

Insulation Resistance 5,000 megohms minimum

MECHANICAL

Operating Temperature	A - Plating -65°C to 150°C (-85°F to 302°F) B - Plating -65°C to 175°C (-85°F to 347°F) F - Plating -65°C to 200°C (-85°F to 392°F) C - Anodic (non-conductive) -65°C to 200°C (-85°F to 392°F)
Sealing	Against sand, dust per MIL-STD-202 & ice resistance

Wire Sealing Range

Contact Size	Minimum inches	Maximum inches	Minimum mm	Maximum mm
22D	0.030	0.054	0.76	1.37
22M*	0.030	0.050	0.76	1.27
22*	0.034	0.086	0.60	1.52
20	0.040	0.083	1.02	2.11
16	0.065	0.109	1.65	2.77
12	0.097	0.142	2.46	3.61

Technical Specifications

Insulation Strip Length	

Contact Size	Strip Length
22*, 22D or 22M*	.125 (3.18)
20	.188 (4.77)
16	.188 (4.77)
12	.188 (4.77)

Mating Life	500 cycles minimum: 250 for plug with grounding fingers (JTG6)
Salt Spray	Finish A: 48 hour per MIL-STD-1344A method 1001 condition B Finish B: 500 hour per MIL-STD 1344A method 1001 condition C Finish F: 48 hour per MIL-STD-1344A method 1001 condition B Finish C: 500 hour per MIL-STD 1344A method 1001 condition C
Heat	Finish A: 150°C (302°F) Finish B: 175°C (347°F) Finish F: 200°C (392°F) 1000 hours to MIL-STD-1344 method 1005 Finish C: 200°C (392°F)
Chemical Resistance	Lubricating oils, hydraulic fluids, coolants, deicing fluids per MIL-STD-1344A Method 1016 condition a-1
Sine Vibration	Not applicable
Random Vibration	43.7 grms at ambient temperatures
Shock	300g ±15% for 3 ±1 milliseconds per MIL-DTL-38999J 4.7.23
EMI Shielding Effectiveness	100 MHz to 10 GHz - minimum attenuation of 45dB
Contact Type	Crimp, fiber optic, coax, twinax, or printed circuit
Number of Circuits	2 to 128
Contact Insertion	Rear insertion/rear extraction with simple plastic or high-quality metal hand tools.
Contact Retention	Per MIL-C-38999K tested to MIL-STD-1344A method 2007

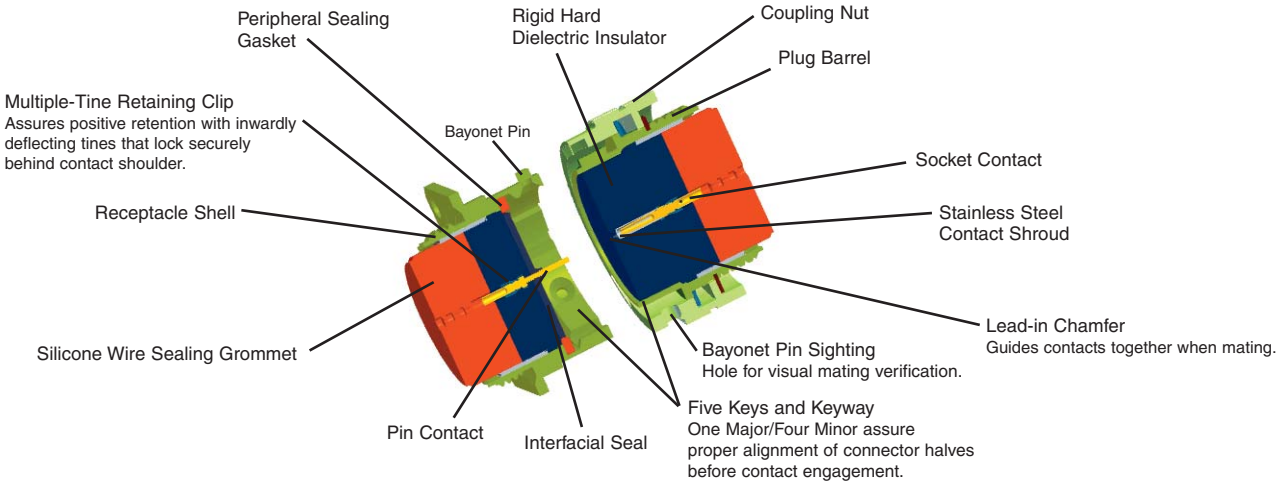
Contact	Axial load Newtons ±10%	Axial load Pounds ±10%
22*, 22D, 22M*	44	10
20	67	15
16	111	25
12	111	25

Polarization	Three point bayonet coupling, five keyways with optional master keyway rotations, note insert and four minor keyways remain fixed.
Approvals	MIL-DTL-38999

* inactive for new designs

All dimensions in inches (millimeters in parenthesis)

Cross Section

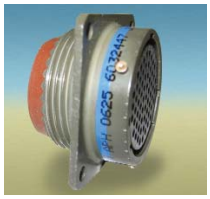


Create Your Part Number

STEP 1
Choose Plug or Receptacle Style

Receptacles

MS27472
JT00R
Front mount with accessory threads.



Rear mount with accessory threads.
MS27497
JTPQ00R

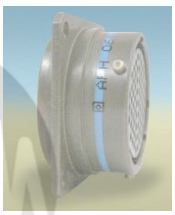
+

In-line with accessory threads.
JT01R

Front mount. No accessory threads.
MS27499E
JT02RE

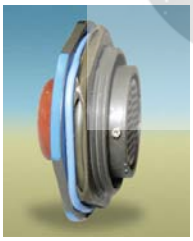
Front mount. No accessory threads.
MS27513E
JT02RE

Rear mount. No accessory threads.
MS27508E
JTP02RE



+

Rear mount. Jam nut with accessory threads.
MS27474
JT07



+

JTL07R
Call for Details

+ Most Popular

MATES WITH

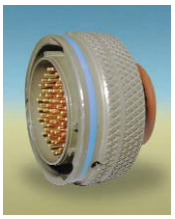
STEP 2
Choose Class

T = No Rear Accessories
P = Potting Ring & Cup

E = No Rear Accessories
used on MS27499E, MS27513E, & MS27508E

Plugs

Standard
MS27473
JT06R



+

With grounding spring.
MS27484
JTG06R

+

MS27500
JT08R

Available with PC pins. Call for details.

RE = No Rear Accessories
used on JT02RE & JTP02RE
RP = Potting Ring & Cup
RT = No Rear Accessories

STEP 8

Example: Military Part Number Description

MS27474	T	24	F	35	P		-LC
1 Shell Style	2 Class	3A Size	4 Plating	3B Layout	5 Contact	6 Rotation	7 Modifier

Example: Commercial Part Number Description

JT07	RE	24-35	P	N	-014	-LC
1 Shell Style	2 Class	3 Layout	5 Contact	6 Rotation (Omit for normal)	4* Plating	7 Modifier

*Note: Out of Sequence

Legend for Charts:

Olive Drab Type = Military
Dark Blue = Commercial
Dark Brown Type = Military & Commercial
= General info

Create Your Part Number

STEP 3

Choose Layout (Listed by Shell Size)

For listing by # of contacts, see pages 196 - 198.

Layout Number	Service Rating	Contacts: Total Number	22D	22M	22	20	16	12
8-35	M	6	6					
8-44	M	4			4			
8-98	I	3				3		
8-6	M	6		6				
10-4•✦	I	4				4		
10-5	I	5				5		
10-13	M	13		13				
10-35	M	13	13					
10-98	I	6				6		
10-99	I	7				7		
12-3	II	3					3	
12-4	I	4					4	
12-8	I	8				8		
12-22	M	22		22				
12-35	M	22	22					
12-98	I	10				10		
14-4•✦	I	4						4
14-5	II	5					5	
14-15	I	15				14	1	
14-18	I	18				18		
14-19•✦	I	19				19		
14-35	M	37	37					
14-37	M	37		37				
14-68•✦	I	8					8	
14-97✦	I	12				8	4	
16-6	I	6						6
16-8	II	8					8	
16-13•✦	I	13					13	
16-26	I	26				26		
16-35	M	55	55					
16-42	M	42			42			
16-55	M	55		55				
16-99	I	23				21	2	
18-11	II	11					11	
18-28	I	28				26	2	
18-30	I	30				29	1	
18-32	I	32				32		
18-35	M	66	66					
18-53	M	53			53			
18-66	M	66		66				
18-68•✦	I	18					18	
18-96✦	I	9						9
20-1	M	79		79				
20-2	M	65			65			
20-11•✦	I	11						11
20-16	II	16					16	
20-35	M	79	79					
20-39	I	39				37	2	
20-41	I	41				41		
22-1	M	100		100				
22-2	M	85			85			
22-14•✦	I	14						14
22-21	II	21					21	
22-32	I	32				32		
22-35	M	100	100					
22-53✦	I	53				53		
22-55	I	55				55		
24-1	M	128		128				
24-2	M	100			100			
24-4	I	56				48	8	
24-19✦	I	19						19
24-24	I	24					12	12
24-29	I	29					29	
24-35	M	128	128					
24-37•✦	I	37					37	
24-43•✦	I	43				23	20	
24-61	I	61				61		

WHEN CHOOSING LAYOUT

First Number = Step 3A – Shell Size, Dash = Step 4 – Plating, Second Number = 3B – Layout

• Not QPL'D
✦ Not Tooled for RP or 02RE

STEP 4

Choose Plating

Finish	Military Plating	Commercial Plating	Commercial Plating and SR
Cadmium plated nickel base	A	-	SR
Olive drab cadmium plate nickel base	B	014	386
Electroless nickel	F	023	424
Electroless nickel space compatible	-	453	467
Anodic coating (Alumilite)	C	005	300
Chromate tested (Iridite 14-2)	-	011	344
Passivated steel (Hermetic only)	E	-	-

SR = Strain Relief

STEP 5

Choose Contact

Note: See Step 7 if you are not ordering contacts with part.

P = Pin
S = Socket
A = Less Pin Contacts
B = Less Socket Contact

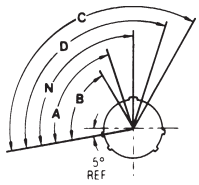
Use A or B only for special contact types (PC Pin, Thermocouple, Fiberoptic).

STEP 6

Choose Alternate Shell Position

N = Normal Standard (omit on Military part number)
A = Next Most Popular
B = Limited Availability
C = Check for Availability
D = Check for Availability

Shell Size	N	A	B	C	D
8	100	82	-	-	118
10	100	86	72	128	114
12	100	80	68	132	120
14	100	79	66	134	121
16	100	82	70	130	118
18	100	82	70	130	118
20	100	82	70	130	118
22	100	85	74	126	115
24	100	85	74	126	115



Mating Face of Receptacle

STEP 7

Choose Modifier

For other commercial modification, i.e., less tools, with PC contact or with endbell, call.

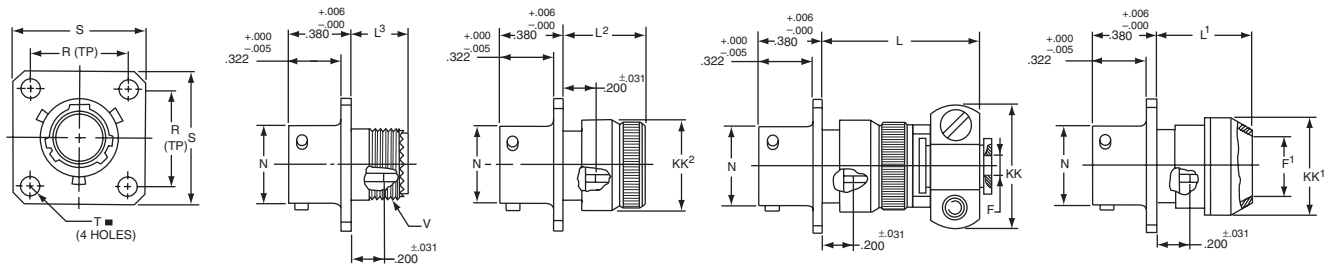
Omit for standard contacts
LC = less contacts, wire hole fillers and plastic insertion/extraction tool.
(Purchase Order must state Less Contacts)

Note: LC is not marked on part

Dimensions

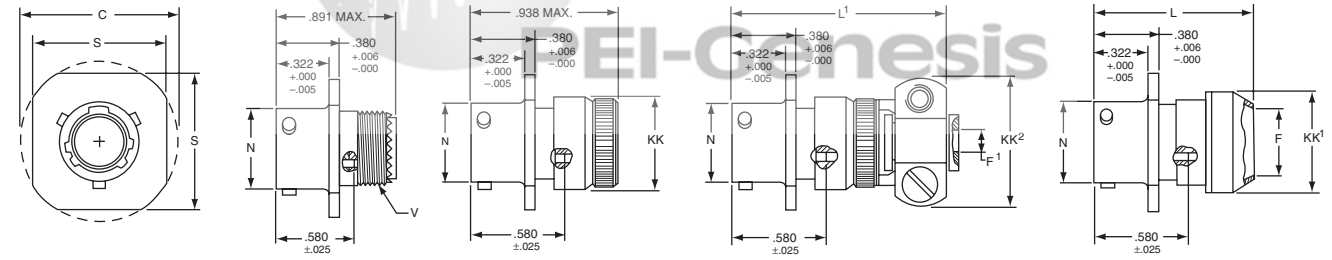
Receptacles

JT00RT (MS27472T) JT00RE (MS27472E) JT00RE_-SR JT00RP (MS27472P)



Shell Size	F Diameter +.010/-.025 (+.254/-.635)	F[1] Diameter +.010 (+.254)	L Max		L[1] Max		L[2] Max	L[3] Max	N +.001/-.005 (+.025/-.127)	P Max Panel Thickness
			MS27472/ JT00R	MS27497/ JTPQ00R	MS27472/ JT00R	MS27497/ JTPQ00R	MS27472/ JT00R	MS27497/ JTPQ00R		MS27497/ JTPQ00R
8	0.125 (3.2)	0.444 (11.3)	1.094 (27.8)	1.140 (29.0)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	0.473 (12.0)	0.142 (3.6)
10	0.188 (4.8)	0.558 (14.2)	1.094 (27.8)	1.140 (29.0)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	0.590 (15.0)	0.142 (3.6)
12	0.312 (7.9)	0.683 (17.3)	1.094 (27.8)	1.140 (29.0)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	0.750 (19.1)	0.142 (3.6)
14	0.375 (9.5)	0.808 (20.5)	1.344 (34.1)	1.375 (34.9)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	0.875 (22.2)	0.142 (3.6)
16	0.500 (12.7)	0.909 (23.1)	1.344 (34.1)	1.375 (34.9)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	1.000 (25.4)	0.142 (3.6)
18	0.625 (15.9)	1.034 (26.3)	1.344 (34.1)	1.375 (34.9)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	1.125 (28.6)	0.142 (3.6)
20	0.625 (15.9)	1.159 (29.4)	1.344 (34.1)	1.375 (34.9)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	1.250 (31.8)	0.142 (3.6)
22	0.750 (19.1)	1.284 (32.6)	1.469 (37.3)	1.516 (38.5)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	1.375 (34.9)	0.142 (3.6)
24	0.800 (20.3)	1.409 (35.8)	1.469 (37.3)	1.500 (38.1)	0.688 (17.5)	0.540 (13.7)	0.547 (13.9)	0.500 (12.7)	1.500 (38.1)	0.142 (3.6)

JT01RT JT01RE JT01RE_-SR JT01RP

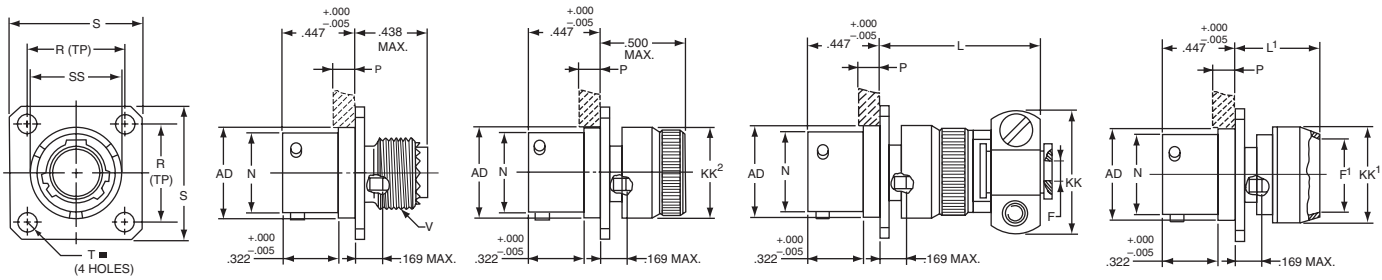


Shell Size	C Max.	F Diameter +.010 (-.254)	F[1] Diameter +.010/-.025 (+.254/-.635)	L Max	L[1] Max	N Diameter +.001/-.005 (+.025/-.127)	S +.017/-.016 (+.431/-.406)	KK Diameter Max	KK[1] Diameter Max	KK[2] Max	V Thread Class 2A (Plated)
8	0.965 (24.5)	0.444 (11.3)	0.125 (3.2)	1.031 (26.2)	1.562 (39.7)	0.473 (12.0)	0.812 (20.6)	0.578 (14.7)	0.625 (15.9)	0.812 (20.6)	.4375-28 UNEF
10	1.089 (27.7)	0.558 (14.2)	0.188 (4.8)	1.031 (26.2)	1.562 (39.7)	0.590 (15.0)	0.938 (23.8)	0.703 (17.9)	0.750 (19.1)	0.875 (22.2)	.5625-24 UNEF
12	1.183 (30.0)	0.683 (17.3)	0.312 (7.9)	1.031 (26.2)	1.562 (39.7)	0.750 (19.1)	1.031 (26.2)	0.828 (21.0)	0.875 (22.2)	1.000 (25.4)	.6875-20 UNEF
14	1.277 (32.4)	0.808 (20.5)	0.375 (9.5)	1.031 (26.2)	1.812 (46.0)	0.875 (22.2)	1.125 (28.6)	0.953 (24.2)	1.000 (25.4)	1.125 (28.6)	.8125-20 UNEF
16	1.371 (34.8)	0.909 (23.1)	0.500 (12.7)	1.031 (26.2)	1.812 (46.0)	1.000 (25.4)	1.219 (31.0)	1.078 (27.4)	1.125 (28.6)	1.188 (30.2)	.9375-20 UNEF
18	1.465 (37.2)	1.034 (26.3)	0.625 (15.9)	1.031 (26.2)	1.812 (46.0)	1.125 (28.6)	1.312 (33.3)	1.203 (30.6)	1.250 (31.8)	1.438 (36.5)	1.0625-18 UNEF
20	1.589 (40.4)	1.159 (29.4)	0.625 (15.9)	1.031 (26.2)	1.812 (46.0)	1.250 (31.8)	1.438 (36.5)	1.328 (33.7)	1.375 (34.9)	1.438 (36.5)	1.1875-18 UNEF
22	1.715 (43.6)	1.284 (32.6)	0.750 (19.1)	1.031 (26.2)	1.938 (49.2)	1.375 (34.9)	1.562 (39.7)	1.453 (36.9)	1.500 (38.1)	1.625 (41.3)	1.3125-18 UNEF
24	1.838 (46.7)	1.409 (35.8)	0.800 (20.3)	1.109 (28.2)	1.938 (49.2)	1.500 (38.1)	1.688 (42.9)	1.578 (40.1)	1.625 (41.3)	1.719 (43.7)	1.4375-18 UNEF

All dimensions in inches (millimeters in parenthesis)

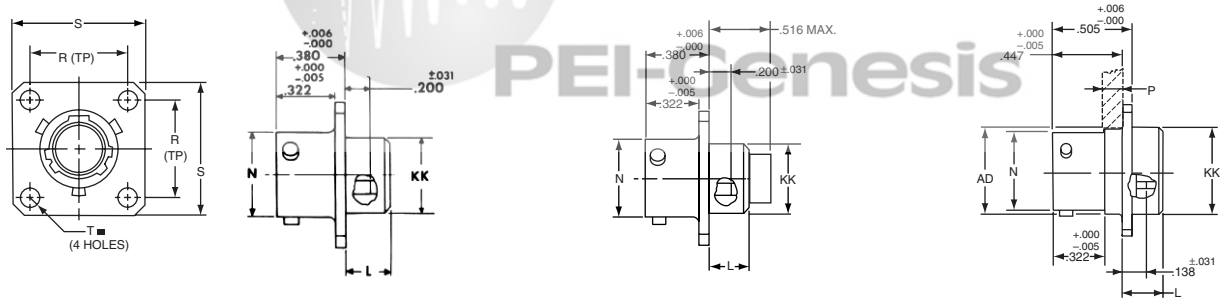
Dimensions

JTPQ00RT (MS27497T) JTPQ00RE (MS27497E) JTPQ00RE_-SR JTPQ00RP (MS27497P)



R (TP)	S ±.016 (±.406)	T Diameter ±.005 (±.127)	V Thread Class 2A (Plated)	AD Diameter ±.005 (±.127) MS27497/ JTPQ00R	KK Max MS27472/ JT00R	KK Max MS27497/ JTPQ00R	KK1 Diameter Max	KK2 Diameter Max	SS Diameter +.000/-.016 (+.000/-.406) MS27497/ JTPQ00R
0.594 (15.1)	0.812 (20.6)	0.120 (3.0)	.4375-28 UNEF	0.516 (13.1)	0.812 (20.6)	0.781 (19.8)	0.625 (15.9)	0.578 (14.7)	0.563 (14.3)
0.719 (18.3)	0.938 (23.8)	0.120 (3.0)	.5625-24 UNEF	0.633 (16.1)	0.875 (22.2)	0.844 (21.4)	0.750 (19.1)	0.703 (17.9)	0.680 (17.3)
0.812 (20.6)	1.031 (26.2)	0.120 (3.0)	.6875-24 UNEF	0.802 (20.4)	1.000 (25.4)	0.969 (24.6)	0.875 (22.2)	0.828 (21.0)	0.85 (21.8)
0.906 (23.0)	1.125 (28.6)	0.120 (3.0)	.8125-20 UNEF	0.927 (23.5)	1.125 (28.6)	1.094 (27.8)	1.000 (25.4)	0.953 (24.2)	0.98 (25.0)
0.969 (24.6)	1.219 (31.0)	0.120 (3.0)	.9375-20 UNEF	1.052 (26.7)	1.188 (30.2)	1.154 (29.3)	1.125 (28.6)	1.078 (27.4)	1.10 (28.1)
1.062 (27.0)	1.312 (33.3)	0.120 (3.0)	1.0625-18 UNEF	1.177 (29.9)	1.438 (36.5)	1.406 (35.7)	1.250 (31.8)	1.203 (30.6)	1.23 (31.3)
1.156 (29.4)	1.438 (36.5)	0.120 (3.0)	1.1875-18 UNEF	1.302 (33.1)	1.438 (36.5)	1.406 (35.7)	1.375 (34.9)	1.328 (33.7)	1.35 (34.5)
1.250 (31.8)	1.562 (39.7)	0.120 (3.0)	1.3125-18 UNEF	1.427 (36.2)	1.625 (41.3)	1.594 (40.5)	1.500 (38.1)	1.453 (36.9)	1.48 (37.7)
1.375 (34.9)	1.688 (42.9)	0.147 (3.7)	1.4375-18 UNEF	1.552 (39.4)	1.719 (43.7)	1.625 (41.3)	1.625 (41.3)	1.578 (40.1)	1.61 (40.9)

JT02RE (MS27499) JT02RE_-053 (MS27513E) JTP02RE (MS27508E)



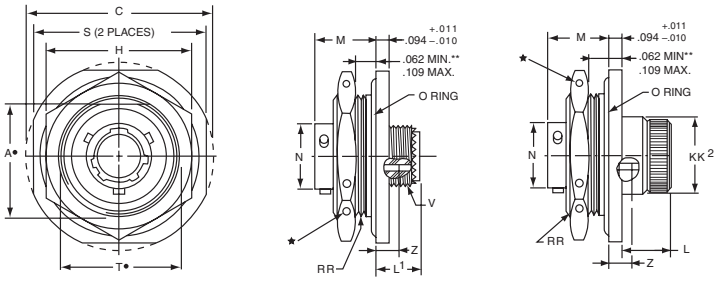
Shell Size	L Max MS27499/ JT02RE MS27513/ JT02RE	L Max MS27508/ JTP02RE	N +.001/-.005 (+.025/-.127)	P Max Panel Thickness MS27508/ JTP02RE	R (TP)	S ±.016 (±.406)	T Diameter ±.005 (±.127)	AD Diameter ±.005 (±.127) MS27508/ JTP02R	KK Diameter Max MS27499/ JT02RE MS27513/ JT02RE	KK Diameter Max MS27508/ JTP02RE
8	0.286 (7.3)	0.225 (5.7)	0.473 (12.0)	0.147 (3.7)	0.594 (15.1)	0.812 (20.6)	0.120 (3.0)	0.516 (13.1)	0.438 (11.1)	0.531 (13.5)
10	0.286 (7.3)	0.225 (5.7)	0.590 (15.0)	0.152 (3.9)	0.719 (18.3)	0.938 (23.8)	0.120 (3.0)	0.633 (16.1)	0.563 (14.3)	0.656 (16.7)
12	0.286 (7.3)	0.225 (5.7)	0.750 (19.1)	0.152 (3.9)	0.812 (20.6)	1.031 (26.2)	0.120 (3.0)	0.802 (20.4)	0.688 (17.5)	0.828 (21.0)
14	0.286 (7.3)	0.225 (5.7)	0.875 (22.2)	0.152 (3.9)	0.906 (23.0)	1.125 (28.6)	0.120 (3.0)	0.927 (23.5)	0.813 (20.7)	0.953 (24.2)
16	0.286 (7.3)	0.225 (5.7)	1.000 (25.4)	0.152 (3.9)	0.969 (24.6)	1.219 (31.0)	0.120 (3.0)	1.052 (26.7)	0.938 (23.8)	1.078 (27.4)
18	0.286 (7.3)	0.225 (5.7)	1.125 (28.6)	0.152 (3.9)	1.062 (27.0)	1.312 (33.3)	0.120 (3.0)	1.177 (29.9)	1.047 (26.6)	1.203 (30.6)
20	0.286 (7.3)	0.225 (5.7)	1.250 (31.8)	0.179 (4.5)	1.156 (29.4)	1.438 (36.5)	0.120 (3.0)	1.302 (33.1)	1.172 (29.8)	1.328 (33.7)
22	0.286 (7.3)	0.225 (5.7)	1.375 (34.9)	0.179 (4.5)	1.250 (31.8)	1.562 (39.7)	0.120 (3.0)	1.427 (36.2)	1.297 (32.9)	1.453 (36.9)
24	0.286 (7.3)	0.225 (5.7)	1.500 (38.1)	0.169 (4.3)	1.375 (34.9)	1.688 (42.9)	0.147 (3.7)	1.552 (39.4)	1.422 (36.1)	1.578 (40.1)

All dimensions in inches (millimeters in parenthesis)

Dimensions

Receptacles

JT07RT (MS27474T) JT07RE (MS27474E)



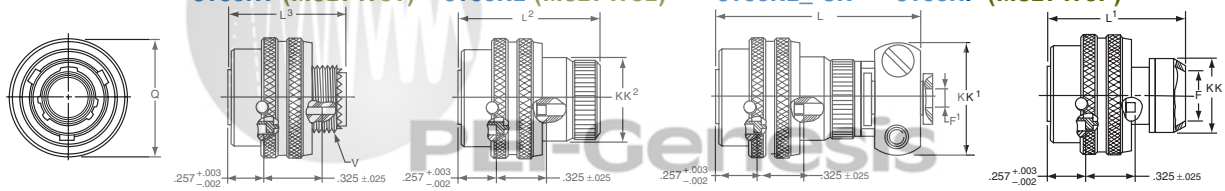
Shell Size	A• +.000/-.010 (+.000/-.254)	C Max.	F Diameter +.010/-.025 (+.254/-.635)	F1 Diameter	H Hex. +.017/-.016 (+.432/-.406)	L Max.	L1 Max.	L2 Max.	L3 Max.
8	0.830 (21.1)	1.390 (35.3)	0.125 (3.2)	0.444 (11.3)	1.062 (27.0)	0.484 (12.3)	0.453 (11.5)	0.563 (14.3)	1.047 (26.6)
10	0.955 (24.3)	1.515 (38.5)	0.188 (4.8)	0.558 (14.2)	1.188 (30.2)	0.484 (12.3)	0.453 (11.5)	0.563 (14.3)	1.047 (26.6)
12	1.084 (27.5)	1.640 (41.7)	0.312 (7.9)	0.683 (17.3)	1.312 (33.3)	0.484 (12.3)	0.453 (11.5)	0.563 (14.3)	1.047 (26.6)
14	1.208 (30.7)	1.765 (44.8)	0.375 (9.5)	0.808 (20.5)	1.438 (36.5)	0.484 (12.3)	0.453 (11.5)	0.563 (14.3)	1.297 (32.9)
16	1.333 (33.9)	1.953 (49.6)	0.500 (12.7)	0.909 (23.1)	1.562 (39.7)	0.484 (12.3)	0.453 (11.5)	0.563 (14.3)	1.297 (32.9)
18	1.459 (37.1)	2.031 (51.6)	0.625 (15.9)	1.034 (26.3)	1.688 (42.9)	0.484 (12.3)	0.453 (11.5)	0.563 (14.3)	1.297 (32.9)
20	1.576 (40.0)	2.156 (54.8)	0.625 (15.9)	1.159 (29.4)	1.812 (46.0)	0.453 (11.5)	0.422 (10.7)	0.531 (13.5)	1.266 (32.2)
22	1.701 (43.2)	2.280 (57.9)	0.750 (19.1)	1.284 (32.6)	2.000 (50.8)	0.453 (11.5)	0.422 (10.7)	0.531 (13.5)	1.391 (35.3)
24	1.826 (46.4)	2.405 (61.1)	0.800 (20.3)	1.409 (35.8)	2.125 (54.0)	0.375 (9.5)	0.422 (10.7)	0.609 (15.5)	1.391 (35.3)

• "D" shaped mounting hole dimensions

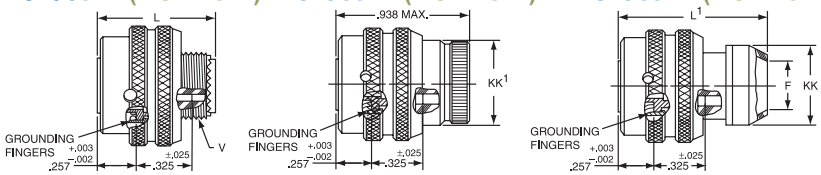
All dimensions in inches (millimeters in parenthesis)

Plugs

JT06RT (MS27473T) JT06RE (MS27473E) JT06RE_-SR JT06RP (MS27473P)



JTG06RT (MS27484T) JTG06RE (MS27484E) JTG06RP (MS27484P)

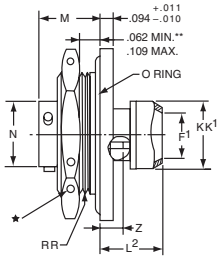


Shell Size	F Dia.	F1 Diameter +.010/-.025 (+.254/-.635)	L Max.		L1 Max.	L2 Max.	L3 Max.	Q Dia. Max.	V Thread Modified		KK Dia. Max.	KK1 Max.		KK2 Max
		MS27437/ JT06R	MS27437/ JT06R	MS27484/ JTG06R		MS27476/ JT06R	MS27476/ JT06R		Class 2A UNEF	Modified Major Dia.		MS27473/ JT06R	MS27484/ JTG06R	MS27473/ JT06R
8	0.444 (11.3)	0.125 (3.2)	1.562 (39.7)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	0.734 (18.6)	.4375-28	.421 - .417 (10.69 - 10.59)	0.625 (15.9)	0.812 (20.6)	0.578 (14.7)	0.578 (14.7)
10	0.558 (14.2)	0.188 (4.8)	1.562 (39.7)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	0.844 (21.4)	.5625-24	.542 - .538 (13.77 - 13.67)	0.750 (19.1)	0.875 (22.2)	0.703 (17.9)	0.70 (17.9)
12	0.683 (17.3)	0.312 (7.9)	1.562 (39.7)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	1.016 (25.8)	.6875-24	.667 - .663 (16.94 - 16.84)	0.875 (22.2)	1.000 (25.4)	0.828 (21.0)	0.828 (21.0)
14	0.808 (20.5)	0.375 (9.5)	1.812 (46.0)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	1.141 (29.0)	.8125-20	.791 - .787 (20.09 - 19.99)	1.000 (25.4)	1.125 (28.6)	0.953 (24.2)	0.953 (24.2)
16	0.909 (23.1)	0.500 (12.7)	1.812 (46.0)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	1.265 (32.1)	.9375-20	.916 - .912 (23.27 - 23.16)	1.125 (28.6)	1.188 (30.2)	1.078 (27.4)	1.078 (27.4)
18	1.034 (26.3)	0.625 (15.9)	1.812 (46.0)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	1.391 (35.3)	1.0625-18	1.034 - 1.030 (26.26 - 26.16)	1.250 (31.8)	1.438 (36.5)	1.203 (30.6)	1.203 (30.6)
20	1.159 (29.4)	0.625 (15.9)	1.812 (46.0)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	1.500 (38.1)	1.1875-18	1.158 - 1.154 (29.41 - 29.31)	1.375 (34.9)	1.438 (36.5)	1.328 (33.7)	1.328 (33.7)
22	1.284 (32.6)	0.750 (19.1)	1.938 (49.2)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	1.625 (41.3)	1.3125-18	1.283 - 1.279 (32.59 - 32.49)	1.500 (38.1)	1.625 (41.3)	1.453 (36.9)	1.453 (36.9)
24	1.409 (35.8)	0.800 (20.3)	1.938 (49.2)	0.891 (22.6)	1.062 (27.0)	0.938 (23.8)	0.891 (22.6)	1.750 (44.5)	1.4375-18	1.408 - 1.404 (35.76 - 35.66)	1.625 (41.3)	1.719 (43.7)	1.578 (40.1)	1.578 (40.1)

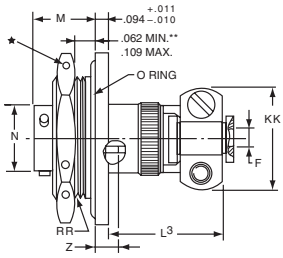
Dimensions

Receptacles

JT07RP (MS27474P)



JT07RE_-SR

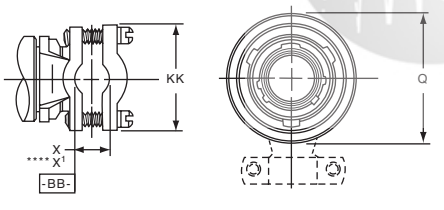


M ±.005 (±.127)	N +.001/-.005 (+.025/-.127)	S ±.016 (±.406)	T• +.010/-.000 (+.254/-.000)	V Thread Class 2A (Plated)	Z ±.031 (±.787)	KK Max.	KK1 Dia. Max.	KK2 Dia. Max.	RR Thread Class 2A (Plated)
0.438	0.473	1.250	0.884	.4375-28	0.144	0.812	0.625	0.578	.8750-20UNEF
(11.1)	(12.0)	(31.8)	(22.5)	UNEF	(3.7)	(20.6)	(15.9)	(14.7)	
0.438	0.590	1.375	1.007	.5625-24	0.144	0.875	0.750	0.703	1.0000-20UNEF
(11.1)	(15.0)	(34.9)	(25.6)	UNEF	(3.7)	(22.2)	(19.1)	(17.9)	
0.438	0.750	1.500	1.134	.6875-24	0.144	1.000	0.875	0.828	1.1250-18UNEF
(11.1)	(19.1)	(38.1)	(28.8)	UNEF	(3.7)	(25.4)	(22.2)	(21.0)	
0.438	0.875	1.625	1.259	.8125-20	0.144	1.125	1.000	0.953	1.2500-18UNEF
(11.1)	(22.2)	(41.3)	(32.0)	UNEF	(3.7)	(28.6)	(25.4)	(24.2)	
0.438	1.000	1.781	1.384	.9375-20	0.144	1.188	1.125	1.078	1.3750-18UNEF
(11.1)	(25.4)	(45.2)	(35.2)	UNEF	(3.7)	(30.2)	(28.6)	(27.4)	
0.438	1.125	1.890	1.507	1.0625-18	0.144	1.438	1.250	1.203	1.5000-18UNEF
(11.1)	(28.6)	(48.0)	(38.3)	UNEF	(3.7)	(36.5)	(31.8)	(30.6)	
0.464	1.250	2.016	1.634	1.1875-18	0.188	1.438	1.375	1.328	1.6250-18UNEF
(11.8)	(31.8)	(51.2)	(41.5)	UNEF	(4.8)	(36.5)	(34.9)	(33.7)	
0.464	1.375	2.140	1.759	1.3125-18	0.188	1.625	1.500	1.453	1.7500-18UNS
(11.8)	(34.9)	(54.4)	(44.7)	UNEF	(4.8)	(41.3)	(38.1)	(36.9)	
0.464	1.500	2.265	1.884	1.4375-18	0.188	1.719	1.625	1.578	1.8750-16UN
(11.8)	(38.1)	(57.5)	(47.9)	UNEF	(4.8)	(43.7)	(41.3)	(40.1)	

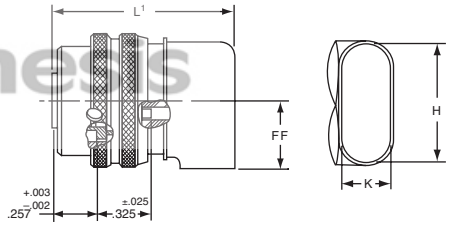
• "D" shaped mounting hole dimensions

Plugs

JT08RE (MS27500E)



JT08RP



Shell Size	H +.010 (+.254)	K +.010 (+.254)	L Max.	L1 Max.	Q Diameter Max.	X Min. Cable	X1 Max. Cable	FF Max.	FF1 Max.	KK Max.
8	0.547	0.156	1.578	1.125	0.734	0.082	0.234	0.438	0.984	0.755
	(13.9)	(4.0)	(40.1)	(28.6)	(18.6)	(2.1)	(5.9)	(11.1)	(25.0)	(19.2)
10	0.709	0.188	1.578	1.156	0.844	0.082	0.234	0.516	1.016	0.755
	(18.0)	(4.8)	(40.1)	(29.4)	(21.4)	(2.1)	(5.9)	(13.1)	(25.8)	(19.2)
12	0.829	0.281	1.656	1.250	1.016	0.114	0.328	0.594	1.078	0.817
	(21.1)	(7.1)	(42.1)	(31.8)	(25.8)	(2.9)	(8.3)	(15.1)	(27.4)	(20.8)
14	1.000	0.438	1.844	1.406	1.141	0.176	0.457	0.656	1.203	0.943
	(25.4)	(11.1)	(46.8)	(35.7)	(29.0)	(4.5)	(11.6)	(16.7)	(30.6)	(24.0)
16	1.021	0.500	2.000	1.469	1.265	0.238	0.634	0.719	1.265	1.067
	(25.9)	(12.7)	(50.8)	(37.3)	(32.1)	(6.0)	(16.1)	(18.3)	(32.1)	(27.1)
18	1.145	0.562	2.046	1.531	1.391	0.208	0.614	0.781	1.328	1.14
	(29.1)	(14.3)	(52.0)	(38.9)	(35.3)	(5.3)	(15.6)	(19.8)	(33.7)	(29.2)
20	1.270	0.625	2.125	1.594	1.500	0.302	0.608	0.844	1.359	1.399
	(32.3)	(15.9)	(54.0)	(40.5)	(38.1)	(7.7)	(15.4)	(21.4)	(34.5)	(35.5)
22	1.395	0.688	2.250	1.656	1.625	0.302	0.823	0.906	1.421	1.399
	(35.4)	(17.5)	(57.2)	(42.1)	(41.3)	(7.7)	(20.9)	(23.0)	(36.1)	(35.5)
24	1.520	0.750	2.422	1.797	1.750	0.302	0.853	0.969	1.703	1.58
	(38.6)	(19.1)	(61.5)	(45.6)	(44.5)	(7.7)	(21.7)	(24.6)	(43.3)	(40.3)

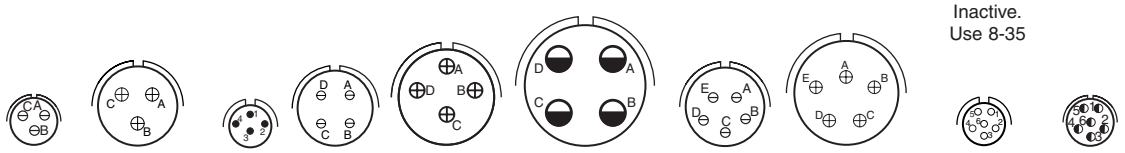
All dimensions in inches (millimeters in parenthesis)

Layout by Number of Contacts

View of Mating Face of Pin Insert

12 16 20 22 22D 22M

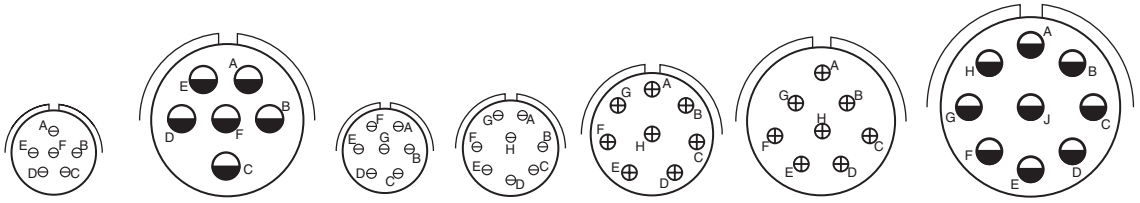
Contacts 3 4 5 6



LAYOUT	8-98	12-3	8-44	10-4•✦	12-4	14-4•✦	10-5	14-5	8-6	8-35
# OF CONTACTS	3-#20	3-#16	4-#22	4-#20	4-#16	4-#12	5-#20	5-#16	6-#22M	6-#22D
SERVICE RATING	I	II	M	I	I	I	I	II	M	M

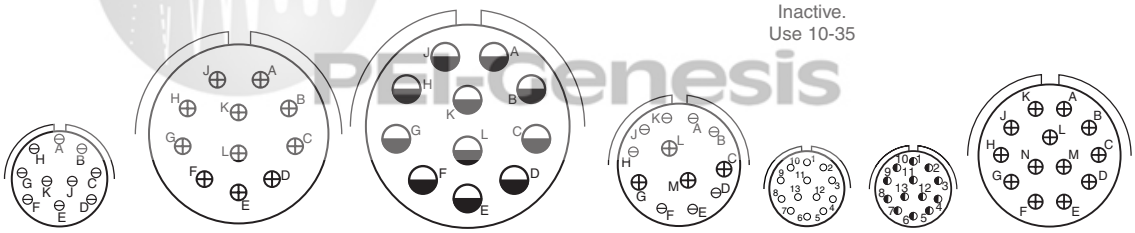
Inactive. Use 8-35

Contacts 6 7 8 9



LAYOUT	10-98	16-6	10-99	12-8	14-68•✦	16-8	18-96✦
# OF CONTACTS	6-#20	6-#12	7-#20	8-#20	8-#16	8-#16	9-#12
SERVICE RATING	I	I	I	I	I	II	I

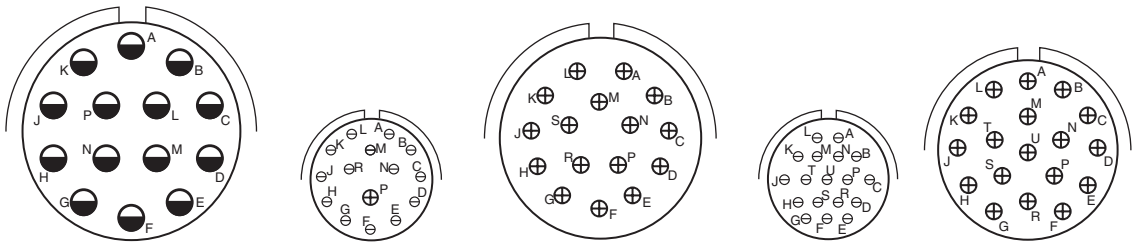
Contacts 10 11 12 13



Inactive. Use 10-35

LAYOUT	12-98	18-11	20-11•✦	14-97✦	10-13	10-35	16-13•✦
# OF CONTACTS	10-#20	11-#16	11-#12	8-#20, 4-#16	13-#22M	13-#22D	13-#16
SERVICE RATING	I	II	I	I	M	M	M

Contacts 14 15 16 18



LAYOUT	22-14•✦	14-15	20-16	14-18	18-68•✦
# OF CONTACTS	14-#12	14-#20, 1-#16	16-#16	18-#20	18-#16
SERVICE RATING	I	I	II	I	I

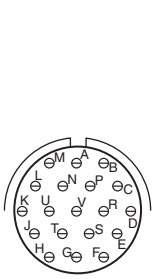
• NOT QPL'D ✦Not Tooled for RP or 02RE Call for more information.

Layout by Number of Contacts

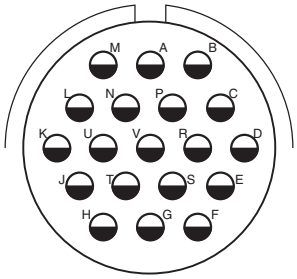
View of Mating Face of Pin Insert

◒	⊕	⊖	•	◐	○
12	16	20	22	22D	22M

Contacts 19

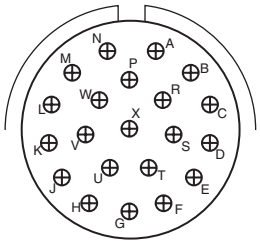


LAYOUT 14-19•✦
OF CONTACTS 19-#20
SERVICE RATING I



24-19✦
19-#12
I

Contacts 21



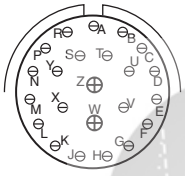
22-21
21-#16
II

Contacts 22

12-22
22-#22M
M

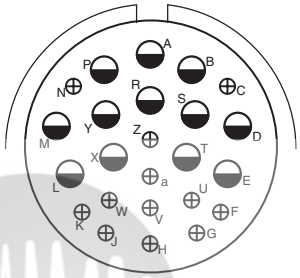
12-35
22-#22D
M

Contacts 23



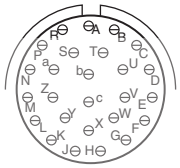
16-99
21-#22, 2-#16
I

Contacts 24



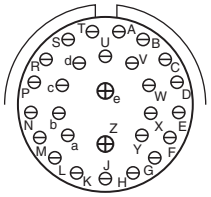
24-24
12-#16, 12#12
I

Contacts 26



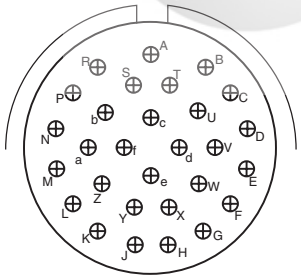
16-26
26-#20
I

Contacts 28



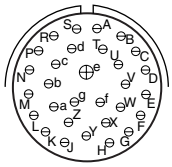
18-28
26-#20, 2-#16
I

Contacts 29



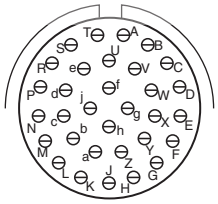
24-29
29-#16
I

Contacts 30



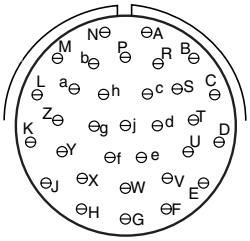
18-30
29-#20, 1-#16
I

Contacts 32



18-32
32-#20
I

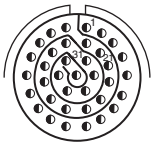
Pin Insert Only



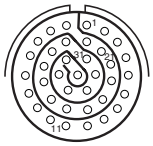
22-32
32-#20
I

Contacts 37

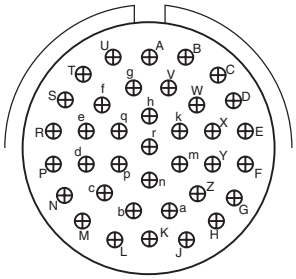
Inactive.
Use 14-35



14-35
37-#22D
M

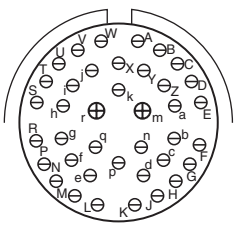


14-37
37-#22M
M



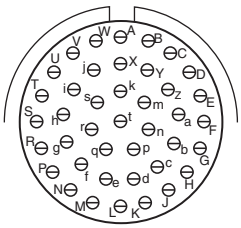
24-37•✦
37-#16
I

Contacts 39



20-39
37-#20, 2-#16
I

Contacts 41



20-41
41-#20
I

• NOT QPL'D ✦Not Tooled for RP or 02RE Call for more information.

Layout by Number of Contacts

View of Mating Face of Pin Insert

◒	⊕	⊖	•	◐	○
12	16	20	22	22D	22M

Contacts	42	43	53	55	
					Inactive. Use 16-35
LAYOUT	**16-42**	**24-43•✦**	**18-53**	**22-53✦**	**16-35**	**16-55**
# OF CONTACTS	42-#22	23-#20, 20-#16	53-#22	53-#20	55-#22D	55-#22M
SERVICE RATING	M	I	M	I	M	M

Contacts	55	56	61	65
LAYOUT	**22-55**	**24-4**	**24-61**	**20-2**
# OF CONTACTS	55-#20	48-#20, 8-#16	61-#20	65-#22
SERVICE RATING	I	I	I	M

Contacts	66		79	85
LAYOUT	**18-35**	**18-66**	**20-1**	**20-35**	**22-2**
# OF CONTACTS	66-#22D	66-#22M	79-#22M	79-#22D	85-#22
SERVICE RATING	M	M	M	M	M

Contacts	100			128	
	Inactive. Use 22-35		Inactive. No Replacement	Inactive. Use 24-35	
LAYOUT	**22-1**	**22-35**	**24-2**	**24-1**	**24-35**
# OF CONTACTS	100-#22M	100-#22D	100-#22	128-#22M	128-#22D
SERVICE RATING	M	M	M	M	M

• NOT QPL'D ✦Not Tooled for RP or 02RE Call for more information.

Connector Tools

TG70 Strap Wrench

The strap wrench is used to connect or disconnect coupling nuts in a confined space, or to tighten or loosen endbells without damaging the connector plating. A strap wrench also increases torque, allowing you to more easily mate or unmate a connector pair. Substitute tools, such as a pipe wrench or pliers, should never be used because of the high probability of severe damage to the connector plating or the coupling mechanism.

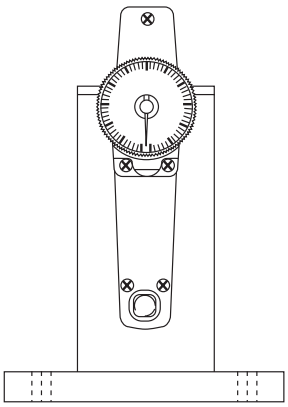
TG69P Non-Marring Adjustable Endbell Pliers For Field Service

The TG69P pliers have resilient jaws and are used to tighten or remove endbells without damaging the connector plating. The pliers are adjustable and will accommodate all of the connector sizes in this catalog. Substitute tools, such as a pipe wrench or metal jaw pliers, should never be used due to the high probability of severe damage to the connector plating. Replacement jaws, Part No. G77015, are available.

600 Series Production System

The 600 Series is a complete system for the proper assembly and torquing of connector endbells. The system includes a bench mounted or hand-held torque wrench, plug and receptacle holders, and a range of endbell tightening tools. When used together, these tools provide the user with consistent endbell installations. Each item is shipped with detailed assembly instructions.

600-007

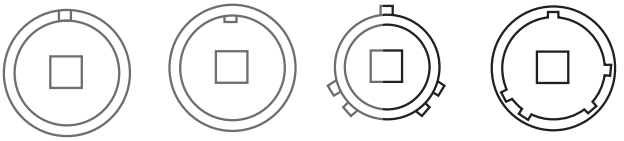


Bench Mounted Torque Wrench

600-004

Hand Held Torque Wrench

Plug and Receptacle Holders



600B005-R **600B005-P** **600D005-R** **600D005-P**

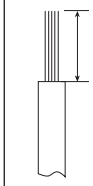
Size	MIL-DTL-5015 for 97, MS310_, AIT, AIB, GT		MIL-DTL-26482 for PT, PTSE, MB, 62GB, MS311_, MS312_, MS347_	
	Receptacles	Plugs	Receptacles	Plugs
8/8S	600B005-8R	600B005-8P	600D005-8R	600D005-8P
10S/SL	600B005-10R	600B005-10P	600D005-10R	600D005-10P
12/12S	600B005-12R	600B005-12P	600D005-12R	600D005-12P
14/14S	600B005-14R	600B005-14P	600D005-14R	600D005-14P
16/16S	600B005-16R	600B005-16P	600D005-16R	600D005-16P
18	600B005-18R	600B005-18P	600D005-18R	600D005-18P
20	600B005-20R	600B005-20P	600D005-20R	600D005-20P
22	600B005-22R	600B005-22P	600D005-22R	600D005-22P
24	600B005-24R	600B005-24P	600D005-24R	600D005-24P
28	600B005-28R	600B005-28P	-	-
32	600B005-32R	600B005-32P	-	-
36	600B005-36R	600B005-36P	-	-

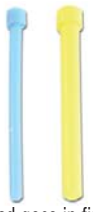
Size	MIL-DTL-38999 Series I for LJT		MIL-DTL-38999 Series II for JT		MIL-DTL-38999 Series III for TV-CTV			
	Receptacles	Plugs	Receptacles	Plugs	Shell Size		Receptacles	Plugs
9	600F005-9R	600F005-9P	600FF005-8R	600FF005-8P	A	9	600H005-9R#	600H005-9P#
11	600F005-11R	600F005-11P	600FF005-10R	600FF005-10P	B	11	600H005-11R#	600H005-11P#
13	600F005-13R	600F005-13P	600FF005-12R	600FF005-12P	C	13	600H005-13R#	600H005-13P#
15	600F005-15R	600F005-15P	600FF005-14R	600FF005-14P	D	15	600H005-15R#	600H005-15P#
17	600F005-17R	600F005-17P	600FF005-16R	600FF005-16P	E	17	600H005-17R#	600H005-17P#
19	600F005-19R	600F005-19P	600FF005-18R	600FF005-18P	F	19	600H005-19R#	600H005-19P#
21	600F005-21R	600F005-21P	600FF005-20R	600FF005-20P	G	21	600H005-21R#	600H005-21P#
23	600F005-23R	600F005-23P	600FF005-22R	600FF005-22P	H	23	600H005-23R#	600H005-23P#
25	600F005-25R	600F005-25P	600FF005-24R	600FF005-24P	J	25	600H005-25R#	600H005-25P#

Add polarizations: N, A, B, C, D, E

Contacts

Pins



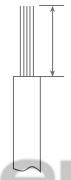


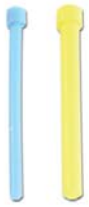
Head goes in first, trim excess

Contact Size	Wire Size Awg	Pin Contact Part Number	Color Bands			Wire Strip Lengths	Wire Range		Wire Hole Filler	Color
			1	2	3		Min	Max		
22D	28,26,24&22	M39029/58-360	Orange	Blue	Black	.125 (3.18)	.030 (0.76)	.054 (1.37)	MS27488-22-1	Black
✱22M	28,26&24	M39029/58-361	Orange	Blue	Brown	.125 (3.18)	.030 (0.76)	.050 (1.27)	MS27488-22-1	Black
✱22	26,24&22	M39029/58-362	Orange	Blue	Red	.125 (3.18)	.034 (0.86)	.060 (1.52)	MS27488-22-1	Black
20	20,22&24	M39029/58-363	Orange	Blue	Orange	.188 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-1	Red
16	16,18&20	M39029/58-364	Orange	Blue	Yellow	.188 (4.77)	.065 (1.65)	.109 (2.77)	MS27488-16-1	Blue
12	12&14	M39029/58-365	Orange	Blue	Green	.188 (4.77)	.097 (2.46)	.142 (3.61)	MS27488-12-1	Yellow
8	Coax+	-	-	-	-	-	.135 (3.43)	.155 (3.94)	-	-

+ For Fiber Optic contacts, call. ✱ Inactive for new design

Sockets





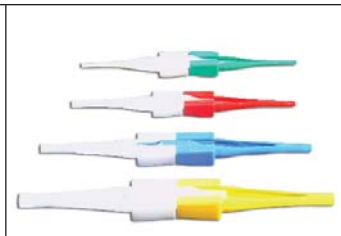
Head goes in first, trim excess

Contact Size	Wire Size Awg	Socket Contact Part Number	Color Bands			Wire Strip Lengths	Wire Range		Wire Hole Filler	Color
			1	2	3		Min	Max		
22D	28,26,24&22	M39029/57-354	Orange	Green	Yellow	.125 (3.18)	.030 (0.76)	.054 (1.37)	MS27488-22-1	Black
✱22M	28,26&24	M39029/57-355	Orange	Green	Green	.125 (3.18)	.030 (0.76)	.050 (1.27)	MS27488-22-1	Black
✱22	28,26&24	M39029/57-356	Orange	Green	Blue	.125 (3.18)	.034 (0.86)	.060 (1.52)	MS27488-22-1	Black
20	20,22&24	M39029/57-357	Orange	Green	Violet	.188 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-1	Red
16	16,18&20	M39029/57-358	Orange	Green	Gray	.188 (4.77)	.065 (1.65)	.109 (2.77)	MS27488-16-1	Blue
12	12&14	M39029/57-359	Orange	Green	White	.188 (4.77)	.097 (2.46)	.142 (3.61)	MS27488-12-1	Yellow
8	Coax+	-	-	-	-	-	.135 (3.43)	.155 (3.94)	-	-

+ For Fiber Optic contacts, call. ✱ Inactive for new design

Contact Color Codes			
0	Black	5	Green
1	Brown	6	Blue
2	Red	7	Violet
3	Orange	8	Gray
4	Yellow	9	White

All dimensions in inches (millimeters in parenthesis)

Hand Crimp Tool	Power Crimp Tool	Turret Heads	Use Locator Color	Plastic Insertion/ Extraction Tool	Insertion Tip Color	Extraction Tip Color	Metal Insertion Tool	Color Band	Metal Extraction Tool	Color Band	
										1	2
M22520/2-01	WA22††	M22520/2-09	-	M81969/14-01	Green	White	MS27495A22M	Black	MS27495R22M	Black	White
M22520/2-01	WA22††	M22520/2-09	-	M81969/14-01	Green	White	MS27495A22M	Black	MS27495R22M	Black	White
M22520/2-01	WA22††	M22520/2-09	-	M81969/14-01	Green	White	MS27495A22	Black	MS27495R22	Brown	White
M22520/1-01	WA27F††	M22520/1-04	Red	M81969/14-10	Red	Orange	MS27495A20	Red	MS27495R20	Red	White
M22520/1-01	WA27F††	M22520/1-04	Blue	M81969/14-03	Blue	White	MS27495A16	Blue	MS27495R16	Blue	White
M22520/1-01	WA27F††	M22520/1-04	Yellow	M81969/14-04	Yellow	White	DAK95-12B	-	DRK95-12B	-	-
-	-	-	-	-	-	-	-	-	-	-	-

†† Call for more tool accessories.




Hand Crimp Tool	Power Crimp Tool	Turret Heads	Use Locator Color	Plastic Insertion/ Extraction Tool	Insertion Tip Color	Extraction Tip Color	Metal Insertion Tool	Color Band	Metal Extraction Tool	Color Band	
										1	2
M22520/2-01	WA22††	M22520/2-09	-	M81969/14-01	Green	White	MS27495A22M	Black	MS27495R22M	Black	White
M22520/2-01	WA22††	M22520/2-09	-	M81969/14-01	Green	White	MS27495A22M	Black	MS27495R22M	Black	White
M22520/2-01	WA22††	M22520/2-09	-	M81969/14-01	Green	White	MS27495A22	Black	MS27495R22	Brown	White
M22520/1-01	WA27F††	M22520/1-04	Red	M81969/14-10	Red	Orange	MS27495A20	Red	MS27495R20	Red	White
M22520/1-01	WA27F††	M22520/1-04	Blue	M81969/14-03	Blue	White	MS27495A16	Blue	MS27495R16	Blue	White
M22520/1-01	WA27F††	M22520/1-04	Yellow	M81969/14-04	Yellow	White	DAK95-12B	-	DRK95-12B	-	-
--	-	-	-	-	-	-	-	-	-	-	

†† Call for more tool accessories.

Contacts

Coax Contacts

	Coax Pin	Coax Socket	Crimping Tools	
			 M22520/2-01	 Crimp Dies

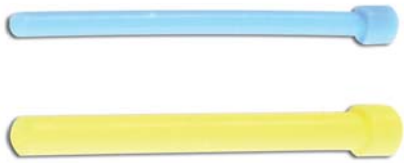
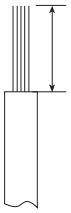
Coax Contact Size	Cable Type	Contact Part Number		Crimping Tools	
		Pin	Socket	Inner Contact	Crimp Ferrule
16	RG-178B/U, RG-196A/U	21-033122-564 (M39029/76-425)	21-033121-564 (M39029/78-433)	M22520/2-01 w/ Positioner M22522/2-35 or w/ Daniels Positioner K532	M22520/4-01 w/ Positioner M22520/4-02
	RG-174A/U, RG-188A/U, RG-161/U, RG-187A/U, RG-316/U, RG-179B/U	21-033122-563 (M39029/76-424)	21-033121-563 (M39029/78-433)		
12		21-033122-546 (M39029/28-211)	21-033121-546 (M39029/27-210)	M22520/2-01 w/ Positioner M22520/2-34 or w/ Daniels Positioner K323	M22520/31-01 w/ Positioner M22520/31-02 or Daniels GS-200 Tool w/ Positioner G2P330
	RG-180B/U, RG-195A/U	21-033122-541 (M39029/28-409)	21-033121-541 (M39029/27-420)		

Printed Circuit Board Contacts - Pin

PCB Pin Contacts	Size	Tail Diameter	Contact Stickout Max/Min					
			MS27472 JT00RT	MS27497 JTPQ00RT	MS27499 JT02RE	MS27508 JTP02RE	MS27473 JT06RT	MS27474 JT07RT
10-407552-015	22M	0.019	.379 / .317	.379 / .317	.577 / .520	.577 / .520	.379 / .317	.379 / .317
10-407552-055	22M	0.019	.268 / .206	.268 / .206	.466 / .409	.466 / .409	.268 / .206	.268 / .206
10-407552-085	22M	0.019	.104 / .047	.104 / .047	.302 / .250	.302 / .250	.104 / .047	.104 / .047
10-407552-115	22M	0.019	.042 / NS	.042 / NS	.240 / .188	.240 / .188	.042 / NS	.042 / NS
10-497640-015	20	0.019	.392 / .335	.392 / .335	.590 / .538	.590 / .538	.392 / .335	.392 / .335
10-497640-025	20	0.019	.257 / .200	.257 / .200	.455 / .403	.455 / .403	.257 / .200	.257 / .200
10-497640-045	20	0.019	NS	NS	.192 / .140	.192 / .140	NS	NS
10-497596-015	20	0.025	.102 / .049	.102 / .049	.300 / .252	.300 / .252	.102 / .049	.102 / .049
10-497596-025	20	0.025	.192 / .139	.192 / .139	.390 / .342	.390 / .342	.192 / .139	.192 / .139
10-497596-035	20	0.025	.273 / .220	.273 / .220	.471 / .423	.471 / .423	.273 / .220	.273 / .220
10-497596-055	20	0.025	.390 / .337	.390 / .337	.588 / .540	.588 / .540	.390 / .337	.390 / .337
10-497695-015	16	0.040	.299 / .242	.299 / .242	.497 / .445	.497 / .445	.229 / .242	.229 / .242
10-497630-035	16	0.062	.104 / .047	.104 / .047	.302 / .250	.302 / .250	.104 / .047	.104 / .047
10-497630-055	16	0.062	.257 / .200	.257 / .200	.455 / .403	.455 / .403	.272 / .215	.272 / .200
10-597502-015	12	0.081	.272 / .215	.272 / .215	.470 / .418	.470 / .418	.272 / .215	.272 / .215

= Standard PC tail used

All dimensions in inches (millimeters in parenthesis)

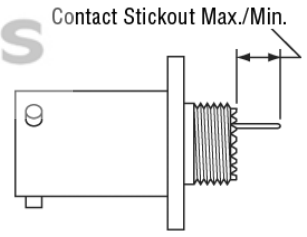
Wire Hole Filler	Wire Strip Length	Wire Sealing Range
		

Installation Tools		Wire Strip Lengths	Wire Sealing Range	
Insertion	Removal		Min	Max
M81969/8-07 or M81969/14-03	M81969/8-08 or M81969/14-03	call for details	.065 (1.65)	.109 (2.77)
M81969/8-09 or M81969/14-04	M81969/8-10 or M81969/14-04	call for details	.097 (2.46)	.142 (3.61)

All dimensions in inches (millimeters in parenthesis)

Printed Circuit Board Contacts - Socket

PCB Socket Contacts	Size	Tail Diameter	Contact Stickout Max/Min					
			MS27472 JT00RT	MS27497 JTPQ00RT	MS27499 JT02RE	MS27508 JTP02RE	MS27473 JT06RT	MS27474 JT07RT
10-407553-055	22M	0.019	.268 / .194	.268 / .194	.466 / .395	.466 / .395	.268 / .194	.268 / .194
10-407553-175	22M	0.019	.268 / .178	.268 / .178	.466 / .409	.466 / .409	.268 / .178	.268 / .178
10-407553-085	22M	0.019	.104 / .035	.104 / .035	.302 / .236	.302 / .236	.104 / .035	.104 / .035
10-497641-025	20	0.019	.257 / .200	.257 / .200	.455 / .403	.455 / .403	.257 / .200	.257 / .200
10-497631-055	16	0.062	.257 / .200	.257 / .200	.455 / .403	.455 / .403	.257 / .200	.257 / .200



All dimensions in inches (millimeters in parenthesis)

Excerpt from MIL-DTL-38999K

3.43.2 JAN brand. The United States Government has adopted, and is exercising legitimate control over the certification marks "JAN" and "J", respectively, to indicate that items so marked or identified are manufactured to, and meet all the requirements of military specification. Accordingly, items acquired to, and meeting all of the criteria specified herein and in applicable specifications shall bear the certification mark "JAN" except that items too small to bear the certification mark "JAN" shall bear the letter "J". The "JAN" or "J" shall be placed immediately before the PIN except that if such location would place a hardship on the manufacturer in connection with such marking, the "JAN" or "J" may be located on the first line above or below the PIN. Items furnished under contracts or orders which either permit or require deviation from the conditions or requirements specified herein or in applicable specifications shall not bear "JAN" or "J". In the event an item fails to meet the requirements of this specification and the applicable specification sheets or associated detail specifications, the manufacturer shall remove the "JAN" or the "J" from the sample tested and also from all items represented by the sample. The "JAN" or "J" certification mark shall not be used on products acquired to contractor drawings or specification. The United States Government has obtained Certificate of Registration No. 504,860 for the certification mark "JAN".

Note: The "JAN" or "J" is not part of the PIN but indicates a certification.
PIN = Part Identification Number

Accessories




JT Shell Size	Dummy Receptacles	Receptacle Dust Caps		Plug Cap
		For Flanged	For Jam Nut	
8	M38999/10-8B	MS27511**8C	MS27511**8N	MS27510**8CL
10	M38999/10-10B	MS27511**10C	MS27511**10N	MS27510**10CL
12	M38999/10-12B	MS27511**12C	MS27511**12N	MS27510**12CL
14	M38999/10-14B	MS27511**14C	MS27511**14N	MS27510**14CL
16	M38999/10-16B	MS27511**16C	MS27511**16N	MS27510**16CL
18	M38999/10-18B	MS27511**18C	MS27511**18N	MS27510**18CL
20	M38999/10-20B	MS27511**20C	MS27511**20N	MS27510**20CL
22	M38999/10-22B	MS27511**22C	MS27511**22N	MS27510**22CL
24	M38999/10-24B	MS27511**24C	MS27511**24N	MS27510**24CL

** Select code for plating
B = Olive Drab Chromate over Cadmium over Nickel (500 Hour Salt Spray) (most Popular)
F = Electroless Nickel (Fluid Resistant)
A = Gold Iridite over Cadmium Nickel
C = Hard Anodize


Straight


Right Angle

JT Shell Size	Endbells		Cable Range	
	Straight Low Cost	Right Angle Low Cost	Min	Max
8	M85049/49-2-8**	M85049/47**8	.098 (2.49)	.234 (5.94)
10	M85049/49-2-10**	M85049/47**10	.153 (3.89)	.234 (5.94)
12	M85049/49-2-12**	M85049/47**12	.190 (4.83)	.328 (8.33)
14	M85049/49-2-14**	M85049/47**14	.260 (6.60)	.457 (11.61)
16	M85049/49-2-16**	M85049/47**16	.283 (7.19)	.634 (16.10)
18	M85049/49-2-18**	M85049/47**18	.325 (8.25)	.614 (15.60)
20	M85049/49-2-20**	M85049/47**20	.343 (8.71)	.698 (17.73)
22	M85049/49-2-22**	M85049/47**22	.391 (9.68)	.823 (20.90)
24	M85049/49-2-24**	M85049/47**24	.418 (10.6)	.853 (21.67)

** Select code for connector plating
W = Olive Drab Chromate over Cadmium over Nickel (1000 Hour Salt Spray)
N = Electroless Nickel (Fluid Resistant)
A = Black Anodize

All dimensions in inches (millimeters in parenthesis)

Accessories

Straight

Right Angle

JT Shell Size	Self Locking Endbells		Cable Range	
	Straight	Right Angle	Min	Max
8	M85049/49-2#8**	M85049/47#**8	.098 (2.49)	.234 (5.94)
10	M85049/49-2#10**	M85049/47#**10	.153 (3.89)	.234 (5.94)
12	M85049/49-2#12**	M85049/47#**12	.190 (4.83)	.328 (8.33)
14	M85049/49-2#14**	M85049/47#**14	.260 (6.60)	.457 (11.61)
16	M85049/49-2#16**	M85049/47#**16	.283 (7.19)	.614 (15.60)
18	M85049/49-2#18**	M85049/47#**18	.325 (8.25)	.634 (16.10)
20	M85049/49-2#20**	M85049/47#**20	.343 (8.71)	.698 (17.73)
22	M85049/49-2#22**	M85049/47#**22	.391 (9.68)	.823 (20.90)
24	M85049/49-2#24**	M85049/47#**24	.418 (10.62)	.853 (21.67)

All dimensions in inches (millimeters in parenthesis)

# Select S or N:
S = Self Locking with Detent
N = Self Locking with No Detent

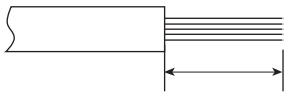
** Select code for connector plating
W = Olive Drab Chromate over Cadmium over Nickel (1000 Hour Salt Spray)
N = Electroless Nickel (Fluid Resistant)
S = 300 Series Steel, Passivated

	Sealed	EMI/RFI	S = Straight A = 90° B = 45°	Orientation	Description
M85049/62 	Y	N	S	Heat Shrink Boot Adapters	Designed for use with straight or right angle shrink boots. A knurled rear section with a boot groove provide an excellent surface for the boot to grab the metal endbell. Available with lock wire and drain holes. See Heat Shrink Boots on ➥ pages 258-260.
M85049/32 	N	N	S	Extender Backshell	Non-environmental designed for use with jacketed cable allow extra space to break out the wires and still provide stain relief clamping to the outside of the cable jacket.
M85049/17 	Y	Y	S	Extender Backshell	This EMI/RFI shielding environmentally sealing endbell features a standard style cable clamp with gland seal at the end of an extender style backshell.
M85049/29 	N	Y	S	Extender Backshell	This EMI/RFI shielding non-environmentally sealing endbell features a standard style cable clamp.
Banding  M85049/85 M85049/86 M85049/87	Y	Y	S B A	Banding Adapter	Banding adapters utilize a band of metal that fastens and grounds cable shields to the outside of endbells. This method of terminating shields has advantages in that they typically use tools to tighten trim the bands. These tools make the termination tight, repeatable, reworkable (if you make a mistake just cut the band off and start again) and facilitates service. Banding adapters help lower the total applied cost by having simpler designs that have fewer parts with uncomplicated assembly procedures.
Custom			SAB	Custom Designs Call	If the Military Standard endbells don't fit your needs, just call us and we will customize an endbell solution to fit you. Most of these customized endbells are typically assembled in 4-8 weeks or sooner!
M85049/27	N	N	S	E Nut	Wire seal compression nut

Assembly

Wire Stripping

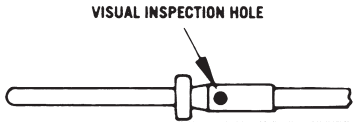
Strip insulation from end of wire to be crimped.
(See table for proper stripping dimensions.)
Do not cut or damage wire strands.



Wire Size	A
22, 22M, 22D	.125 (3.18)
20	.188 (4.77)
16	.188 (4.77)
12	.188 (4.77)

All dimensions in inches (millimeters in parenthesis)

Contact Crimping



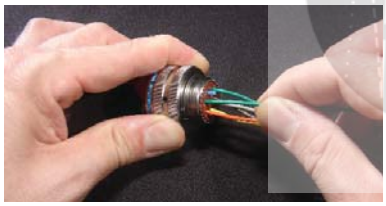
1. Insert stripped wire into contact crimp pot. Wire must be visible thru inspection hole.

2. Using correct crimp tool and locator, cycle the tool once to be sure the indentors are open. Insert contact and wire into locator. Squeeze tool handles firmly and completely to insure a proper crimp. The tool will not release unless the crimp indentors in the tool head have been fully actuated.

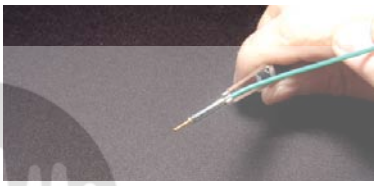
3. Release crimped contact and wire from tool. Be certain the wire if visible thru inspection hole in contact.

Contact Insertion

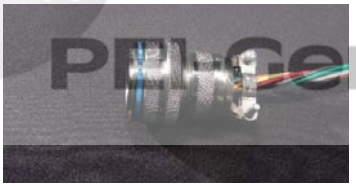
1. Remove hardware from plug or receptacle and slip over wire bundle in proper order for reassembly.



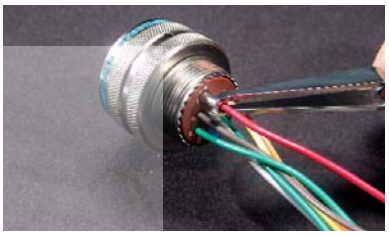
4. Remove tool and pull back lightly on wire to make sure contact is properly seated. Repeat operation with remainder of contacts to be inserted, beginning with the center cavity and working outward in alternating rows.



2. Using proper plastic or metal insertion tool for corresponding contact, position wire in tip of the tool so that the tool tip butts up against the contact shoulder.



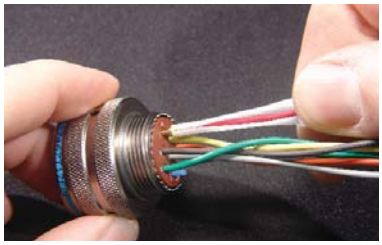
5. After all contacts are inserted, fill any empty cavities with wire sealing plugs. Reassemble plug or receptacle hardware.



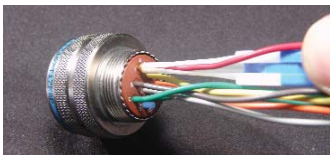
3. Press tool against contact shoulder and, with firm and even pressure, insert wired contact and tool tip into center contact cavity. A slight "click" may be heard as metal retaining tines snap into place behind contact shoulder.

Contact Extraction

1. Remove hardware from plug or receptacle and slide hardware back along wire bundle.

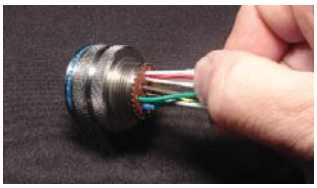


4. Hold wire firmly in tool and extract wired contact and tool. Repeat operation for all contacts to be extracted.



2. Using plastic or metal extraction tool with proper color code corresponding to contact size, place wire in tool.

5. Fill any empty cavities with wire sealing plugs. Reassemble plug or receptacle hardware.



3. Insert tool into contact cavity until tool tip bottoms against the contact shoulder, expanding clip retaining tines.

Note: LJT Series shown.

D38999 – TV-CTV

MIL-DTL-38999 Series III

TV MIL-DTL-38999 Series III connectors offer high density contact arrangements in a miniature circular shell. Originally designed for the especially demanding requirements of today's high performance military and commercial aircraft, these connectors are finding their way into applications needing extremely reliable interconnections. TV's features include, total environmental sealing, wide operating temperature range (-65°C up to 200°C), quick-mating, triple lead threaded, self-locking coupling, 100% scoop proof shell design, EMI - RFI shielding, and are available in a ruggedized 500 hour salt spray plating or 1000 hour salt spray material.

Applications

- High Performance Military Aircraft
- Commercial Airlines
- Communications Equipment
- Armored Personnel Carriers & Tanks
- Missiles
- Shipboard

Features

High Reliability

D38999 - TV style connectors are used in performance aircraft that demand reliable connections in some of the most rigorous environments. The connectors must perform flawlessly under wide temperature ranges, high vibrations and be resistant to a vast array of contaminants. Visual confirmation of complete mating is accomplished by the plug coupling nut covering over a red band on the mating shell.

Outstanding EMI Shielding Protection

These connectors provide excellent signal integrity due to the shielded mating system that utilizes 360 degree shell grounding fingers providing protection of up to 65 dB at 10 GHz.

Operates at Extreme Temperatures

These connectors will operate in temperatures from -65°C up to 200°C (-85°F up to 392°F).

High Density Connectors

If space and weight are at a premium, TV connectors offer up to 128 contacts per connector. Ideally suited for the demands of today's digital electronics used on fly-by wire aircraft, advanced robotics, and critical industrial equipment.

Self-Locking Connector Systems

Self-locking coupling nuts and self-locking endbell accessory hardware provide the best performance for threaded connectors in high vibration applications.

Broad Range of Military and Commercial Accessories

Many military standard endbells to M85049 specifications and a wide array of cable termination style are available. Straight, 45 and 90 degree endbells come in many styles from low cost standard clamp to shielded environmentally sealed and everything in between.

Contacts Protection

TV connectors are designed to be scoop proof. Pin contacts are recessed to prevent contact damage and contact shorting from happening when connector halves are put together while mating.

MIL-DTL-38999 approved

TV's are fully intermatable and intermountable with all other manufacturer's MIL-DTL-38999 Series III connectors.

Technical Specifications

MATERIALS AND FINISHES

Shell & Plating

Aluminum Alloy	Composite	Stainless Steel	Marine Material
W - Olive drab Chromate over Cadmium over Electroless Nickel per QQ-P-416 **W52** - Olive drab Zinc cobalt **F** - Electroless Nickel per QQ-N-290	**J** - Olive drab Cadmium Plate per QQ-P-416 **M** - Conductive Electroless Nickel Plating	**K** - Conductive, Corrosion Resistant Steel, Passivated **S** - Electrodeposited Nickel per QQ-N-290	**RB** - Nickel Aluminum Bronze

Contacts	Copper alloy
Plating	Gold plated, 50 microinches per MIL-G-45204 type II, grade C, class I
Insulator	Hard dielectric wafer which contains tines for high reliability retention of crimp contacts
Grommet & Seals	Silicone based elastomer
Grounding Springs	Beryllium copper (Grounded Plug Only)

ELECTRICAL DATA

Contact Sizes 22D, 20, 16 and 12

Operating Voltage & Test Voltage (Unmated Condition)

	Service Rating			
Test Voltages	**N**	**M**	**I**	**II**
Sea Level	1000	1300	1800	2300
100,000 feet	200	200	200	200

Current Rating by contact size and wire accommodation (Test Amps)

Wire Size	22D	20	16	12
28	1.5	-	-	-
26	2.0	-	-	-
24	3.0	3.0	-	-
22	5.0	5.0	-	-
20	-	7.5	7.5	-
18	-	-	10.0	-
16	-	-	13.0	-
14	-	-	-	17.0
12	-	-	-	23.0

Contact Resistance of mated contacts end to end

Contact Size	Maximum Millivolt Drop
22D	40
20	35
16	25
12	25

Insulation Resistance	5,000 megohms minimum

MECHANICAL

Operating Temperature	W, W52, RB & J plating -65°C to 175°C (-85°F to 347°F) F, M, K & S plating -65°C to 200°C (-85°F to 392°F)
Sealing	Against sand, dust per MIL-STD-202 & ice resistance

Wire Sealing Range

Contact Size	Minimum inches	Maximum inches	Minimum mm	Maximum mm
22D	0.030	0.054	0.76	1.37
20	0.040	0.083	1.02	2.11
16	0.065	0.109	1.65	2.77
12	0.097	0.142	2.46	3.61
10	0.135	0.162	3.42	4.12
8 (coax)	0.135	0.155	3.43	3.94
8 (twinax)	0.124	0.134	3.15	3.40

Technical Specifications

Insulation Strip Length	

Contact Size	Strip Length
22D	.125 (3.18)
20	.188 (4.77)
16	.188 (4.77)
12	.188 (4.77)

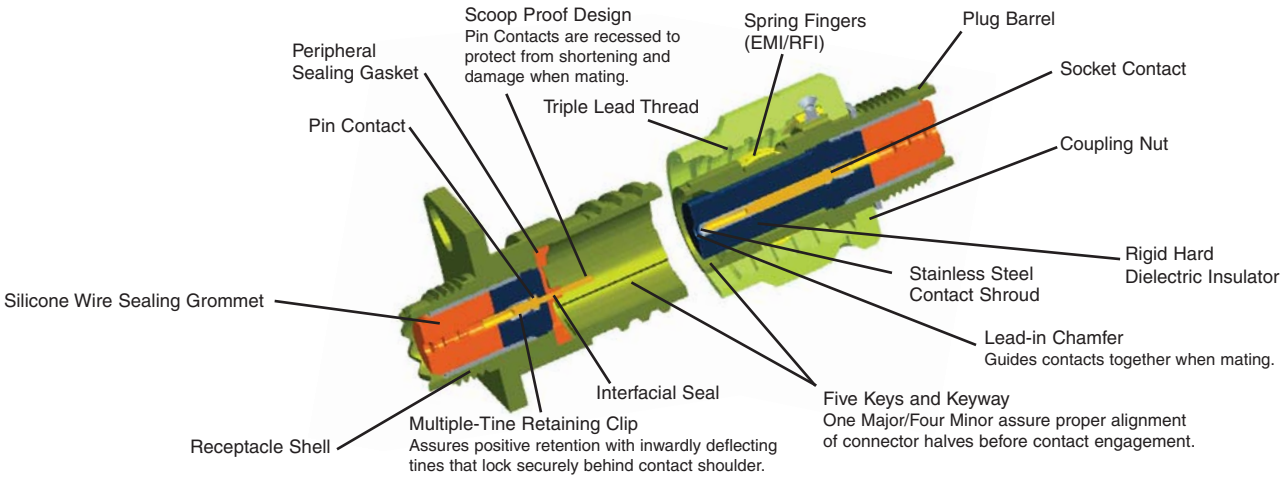
Mating Life	500 cycles minimum
Salt Spray	Finish W & W52: 500 hour per MIL-STD-1344A method 1001 condition C Finish F: 48 hour per MIL-STD-1344A method 1001 condition B Finish J & M: 2000 hour per MIL-STD-1344A method 1001 condition C Finish S & K: 2000 hour per MIL-STD-1344A method 1001 condition C Finish RB: 500 hour per BS CECC 75201-002
Temp. Durability	Finish W 175°C (347°F), Finish F 200°C (392°F), mated, wired test period 1000 hours to MIL-STD-1344 Method 1005 Finish M, K & S: 200°C (392°F) Finish J, RB & W52: 175°C (347°F)
Chemical Resistance	Lubricating oils, hydraulic fluids, coolants, deicing fluids per MIL-STD-1344A Method 1016 condition a-1
Sine Vibration	60g at -55°C per MIL-DTL-38999K 4.5.22.2.1
Random Vibration	49.5 grms at ambient temperatures
Shock	300 grms
EMI Shielding Effectiveness	100 MHz to 10 GHz - minimum attenuation of 50dB
Contact Type	Crimp, fiber optic, coax, twinax, or printed circuit
Number of Circuits	2 to 128
Contact Insertion	Rear Insertion/Rear Extraction with simple plastic or high quality metal hand tools.
Contact Retention	Per MIL-DTL-38999K tested to MIL-STD-1344A method 2007

Contact	Axial load Newtons ±10%	Axial load Pounds ±10%
22D	44	10
20	67	15
16	111	25
12	111	25

Polarization	Five keyways with optional master keyway rotations (Note insert and main keyways remain fixed)
Approvals	MIL-DTL-38999

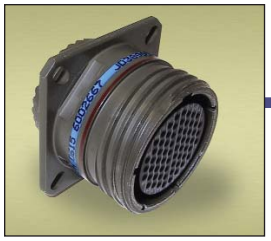
All dimensions in inches (millimeters in parenthesis)

Cross Section



Create Your Part Number - Military

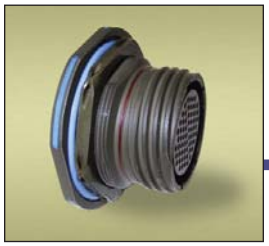
STEP 1
Choose Shell Style



D38999/20
Wall Mount Receptacle

mates with

D38999/26
Straight Cable Plug



D38999/24
Jam Nut Receptacle

Lanyard Release Plug
Call for more details.

Hermetics
Please Call
D38999/21 - Box Mount
D38999/23 - Jam Nut
D38999/25 - Solder Mount
D38999/27 - Weld Mount

STEP 2
Service Class

F = Electroless Nickel (Aluminum)
K = Stainless Steel - Firewall - 45dB
W = Olive Drab Chromate over Cadmium (Aluminum)
C = Anodized (Aluminum)
S = Stainless Steel/ Electroless Nickel - 65dB
J = Composite (Olive Drab Chromate over Cadmium)
M = Composite (Electroless Nickel)

Call for Info
G = Space Grade
L = Corrosion Resistant Steel/Electroless Nickel
Y = Hermetic Stainless Steel
N = Hermetic Stainless Steel/Electroless Nickel

LEGEND FOR CHARTS:
Olive Drab Type = Military
Dark Blue = Commercial
Dark Brown Type = Military & Commercial
= General info

Available with PC pins.
Call for more details.

STEP 3
Choose Layout
(Listed by Shell Size)

For listing by # of contacts, see pages 214 - 217.

Military D38999 Layout	Service Rating	Contacts: Total Number	22D	20	16	12	10	8	Available in Hermetic Pin Layouts
A35	M	6	6						P
A98	I	3		3					P
B2	I	2			2				
B5	I	5		5					P
B35	M	13	13						P
B98	I	6		6					P
B99	I	7		7					
C4	I	4			4				P
C8	I	8		8					P
C35	M	22	22						P
C98	I	10		10					P
D5	II	5			5				P
D15	I	15		14	1				P
D18	I	18		18					P
D19	I	19		19					P
D35	M	37	37						P
D97	I	12		8	4				P
E2	M	39	38					1**	
E6	I	6				6			P
E8	II	8			8				P
E26	I	26		26					P
E35	M	55	55						P
E99	I	23		21	2				
F11	II	11			11				P
F18	M	18	14					4**	
F28	I	28		26	2				
F32	I	32		32					P
F35	M	66	66						P
G11	I	11				11			
G16	II	16			16				P
G35	M	79	79						P
G39	I	39		37	2				P
G41	I	41		41					P
G75	M	4						4*	(See Note)
H21	II	21			21				P
H35	M	100	100						P
H53	I	53		53					P
H55	I	55		55					P
J4	I	56		48	8				P
J7	TWINAX	99	97					2**	
J8	TWINAX	8						8***	
J11	N	11		2			9		
J19	I	19				19			P
J20	N	30		10	13	4*		3**	
J24	I	24			12	12			P
J29	I	29			29				
J35	M	128	128						P
J43	I	43		23	20				
J61	I	61		61					P
J90	I	46		40	4			2**	

P - Pin inserts only (Call for socket availability)
Note: MS connector 21-75 is supplied with size 8 twinax
Propriety connector 21-75 is supplied with size 8 coax

*Coax **Twinax ***Coax/Twinax Call for more information.

Create Your Part Number - Military

STEP 4
Choose Contact

P = Pin
S = Socket
H = 1500 Mating Cycles Pins
J = 1500 Mating Cycles Socket
A = Less Pin Contacts
B = Less Socket Contacts

Use only for special contact types (PC Pin, Thermocouple, Fiberoptic).

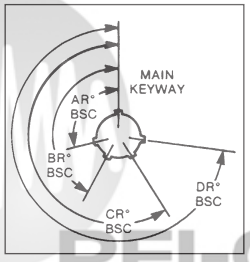
STEP 5
Choose Rotation

N = Normal (Standard)
A = Next Most popular
B = Not popular, limited availability
C =
D =
E =

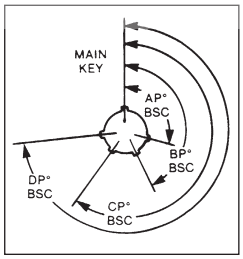
Check for availability

Shell Size		Minor Key Locations AR & AP	BR & BP	CR & CP	DR & DP
A	N	105	140	215	265
	A	102	132	248	320
	B	80	118	230	312
	C	35	140	205	275
	D	64	155	234	304
	E	91	131	197	240
B C D	N	95	141	208	236
	A	113	156	182	292
	B	90	145	195	252
	C	53	156	220	255
	D	119	146	176	298
	E	51	141	184	242
E F	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272
G H I	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272

Receptacle



Plug



STEP 6
Choose Modifier

Omit for standard contacts

LC = For use with standard contacts but supplied with contacts, seal plugs or tools.
(P.O. must state Less Contacts.)
LC is not marked on parts.

NEW! **Universal MOD**
(Kitted not marked on part)

U = Universal for heat shrink tube or boots

US = Constant force braided shield (screen) terminator

UT = EMI/RFI plated cloth tape

SB_ or HSB_ = Heavy duty heat shrink boot
(see pages 258 - 260)

CG = Cord Grip

CA = Flexible Conduit Adapter

STEP 7
Create Part # by using these 6 steps

D38999/20 (see note)	F	A35	P	N	- LC
1 Shell Style	2 Finish	3 Layout	4 Contact	5 Rotation	6 Modifier

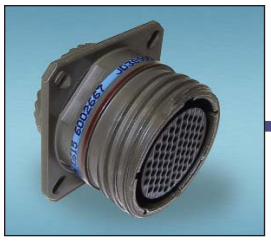
Order by numbers in Olive Drab, all other numbers are for assistance in selecting the proper part #.

Note: Parts numbers will be prefixed with the United States Government Certification Marks "J" or "JAN". The Certification and Registration 504,860 for "JAN" and 1,586,261 for the "J" Certification marks. EXAMPLE: JD38999/20FA35PN

Create Your Part Number - Commercial

STEP 1
Choose Shell Style

Note: To be used with Service Classes RF, RK & RS only for 200°C.
TVS/CTVS
TVPS/CTVPS



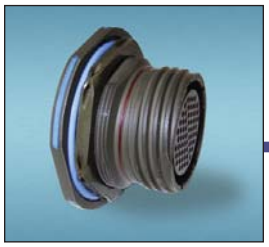
TVP00/TVPS00
CTVP00/CTVPS00
Wall Mount Receptacle

NEW!

TV01/TVS01
CTV01/CTVS01
In-Line Receptacle

NEW!

TVP02/TVPS02
CTVP02/CTVPS02
Box Mount Receptacle



TV07/TVS07
CTV07/CTVS07
Jam Nut Receptacle

mates with

TV06/TVS06
CTV06/CTVS06
Straight Cable Plug

TVS06RB_W88
Straight Cable Plug
Heavy Duty Coupling Nut

TV09/TVS09
Flange Mounting Plug
Please call for details

Note: For high vibration and harsh environment applications. Please call. (TV26/HTV26)

STEP 2
Service Class

- **RB** = **Marine Nickel Aluminum Bronze**
- **RF** = **Electroless Nickel (Aluminum)**
- **RK** = **Stainless Steel - Firewall - 45dB**
- **RW** = **Olive Drab Chromate over Cadmium (Aluminum)**
- **RS** = **Stainless Steel/ Electroless Nickel - 65dB**

Call for Info

- **Y** = **Hermetic Stainless Steel**
- **YN** = **Hermetic Stainless Steel/ Electroless Nickel**
- **RGF** = **Electroless Nickel Plated Ground Plane Aluminum, 200°C**
- **RGW** = **Olive Drab Cadmium Plated Ground Plane Aluminum, 175°C**
- **RQF** = **Same as RF except with Quadrax Contacts**
- **RQW** = **Same as RW except with Quadrax Contacts**
- **RGQF** = **Same as RGF except with Quadrax Contacts**
- **RGQW** = **Same as RGW except with Quadrax Contacts**
- **RQK** = **Same as RK except with Quadrax Contacts#**
- **RX** = **Alternate Finish, requires special variation suffix**

Not Firewall Capable

Available with PC pins.
Call for more details.

STEP 7
Create Part # by using these 6 steps

Hermetics
Please Call
TVPS02 - Box Mount
TVS07 - Jam Nut
TVSIY - Solder Mount
TVSHIY - Weld Mount

1	2	3	4	5	6
TVP00	RW	9-35	P	-	- LC
Shell Style	Class	Layout	Contact	Rotation (omit for normal)	Modifier

= General info

Order by numbers in DARK BLUE, all other numbers are for assistance in selecting the proper part #.

Create Your Part Number - Commercial

STEP 3

Choose Layout
(Listed by Shell Size)

For listing by # of contacts, see pages 214 - 217.

Commercial TV/CTV Layout	Service Rating	Contacts: Total Number	22D	20	16	12	10	8	Available in Hermetic Pin Layouts
9-5	Grounded	1						1**	
9-35	M	6	6						P
9-94●	M	2		2					
9-98	I	3		3					P
11-2●	I	2			2				
11-4●		4		4					
11-5●	I	5		5					P
11-35	M	13	13						P
11-54	II	4	4						
11-98	I	6		6					P
11-99	I	7		7					
13-4	I	4			4				P
13-8	I	8		8					P
13-13	I,FIBER OPTIC	4			2	2			
13-35	M	22	22						P
13-98	I	10		10					P
15-4●	I	4				4			
15-5	II	5			5				P
15-15	I	15		14	1				P
15-18	I	18		18					P
15-19●	I	19		19					P
15-35	M	37	37						P
15-97	I	12		8	4				P
17-2	M	39	38					1**	
17-6	I	6				6			P
17-8	II	8			8				P
17-22●	COAX	4					2	2*	
17-26	I	26		26					P
17-35	M	55	55						P
17-99	I	23		21	2				
19-11	II	11			11				P
19-18●	M	18	14					4**	
19-28	I	28		26	2				
19-31●	M	15	12			1		2	
19-32	I	32		32					P
19-35	M	66	66						P
19-68	I	18			18				
21-11	I	11				11			P
21-16	II	16			16				
21-29	I	27		19	4	4			
21-35	M	79	79						P
21-39	I	39		37	2				P
21-41	I	41		41					P
21-75	M	4						4*	(See Note)
21-79	II	19	17					2*	
23-6	M	6						6***	
23-14●	I	14				14			
23-21	II	21			21				P
23-35	M	100	100						P
23-53	I	53		53					P
23-54●	M	53	40		9	4			
23-55●	I	55		55					P
25-4	I	56		48	8				P
25-7●	TWINAX	99	97					2**	
25-8●	TWINAX	8						8***	
25-11●	N	11		2			9		
25-17●	M	42	36					6**	
25-19	I	19				19			P
25-20●	N	30		10	13**		4	3**	
25-24	I	24			12	12			P
25-26●	I	25		16		5		4*	
25-29	I	29			29				
25-35	M	128	128						P
25-37●	I	37			37				
25-43●	I	43		23	20				
25-46●	I	46		40	4			2*	
25-61	I	61		61					P
25-90	I	46		40	4			2**	
25-F4●	M/I	66	49		13	4			

● Not tooled for 02-R
P - Pin inserts only (Call for socket availability)
Note: MS connector 21-75 is supplied with size 8 twinax
Propriety connector 21-75 is supplied with size 8 coax
*Coax **Twinax ***Coax/Twinax Call for more information.

STEP 4

Choose Contact

P = Pin
S = Socket
H = 1500 Mating Cycles Pins
J = 1500 Mating Cycles Socket
A = Less Pin Contacts
B = Less Socket Contacts

] Use only for special contact types (PC Pin, Thermocouple, Fiberoptic).

STEP 5

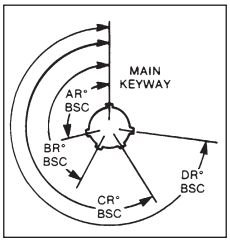
Choose Rotation

Omit for normal contacts (standard)
A = Next Most popular
B = Not popular, limited availability
C =
D =
E =

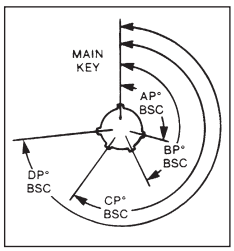
] **Check for availability**

Shell Size		Minor Key Locations: AR & AP	BR & BP	CR & CP	DR & DP
9	N	105	140	215	265
	A	102	132	248	320
	B	80	118	230	312
	C	35	140	205	275
	D	64	155	234	304
	E	91	131	197	240
11	N	95	141	208	236
13	A	113	156	182	292
15	B	90	145	195	252
	C	53	156	220	255
	D	119	146	176	298
	E	51	141	184	242
17	N	80	142	196	293
19	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272
21	N	80	142	196	293
23	A	135	170	200	310
25	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272

Receptacle



Plug



STEP 6

Modifier

Omit for standard contacts
LC = For use with standard contacts but supplied with contacts, seal plugs or tools. (P.O. must state Less Contacts.)(LC) LC is not marked on parts.
W52 = Olive Drab Zinc Cobalt
W88 = Heavy Duty Plug (RB Only)
See page 211 for more Modifiers.

Layout by Number of Contacts

View of Mating Face of Pin Insert

22D 20 16 12 10 8

Contacts	2	3	4					
D38999 LAYOUT	-	B2	A98	-	-	C4	-	-
TV/CTV LAYOUT	9-94•	11-2•	9-98	11-4•	11-54	13-4	13-13	15-4•
# OF CONTACTS	2-#20	2-#16	3-#20	4-#20	4-#22D	4-#16	2-#16, 2-#12	4-#12
SERVICE RATING	M	I	I	I	II	I	I, FIBER OPTIC	I

Contacts	4		5		6		
D38999 LAYOUT	-	G75	B5	D5	A35	B98	E6
TV/CTV LAYOUT	17-22•	21-75	11-5•	15-5	9-35	11-98	17-6
# OF CONTACTS	2-#12✱, 2-#8✱	4-#8✱	5-#20	5-#16	6-#22D	6-#20	6-#12
SERVICE RATING	COAX	M	I	II	M	I	I

Contacts	6	7	8		
D38999 LAYOUT	-	B99	C8	E8	J8
TV/CTV LAYOUT	23-6	11-99	13-8	17-8	25-8•
# OF CONTACTS	6-#8✱✱✱	7-#20	8-#20	8-#16	8-#8✱✱✱
SERVICE RATING	M	I	I	II	TWINAX

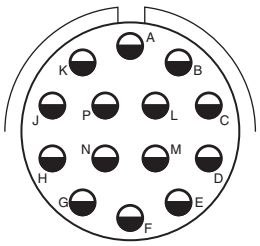
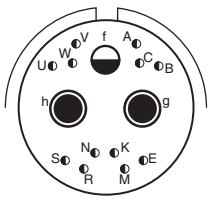
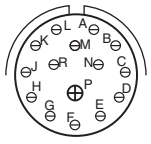
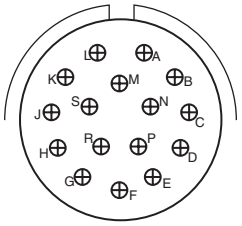
Contacts	10	11		12
D38999 LAYOUT	C98	F11	G11	J11	D97
TV/CTV LAYOUT	13-98	19-11	21-11	25-11•	15-97
# OF CONTACTS	10-#20	11-#16	11-#12	2-#20, 9-#10	8-#20, 4-#16
SERVICE RATING	I	II	I	N	I

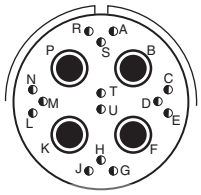
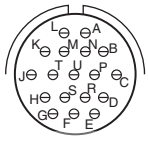
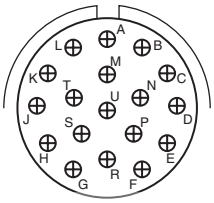
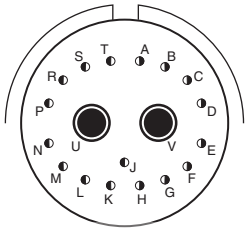
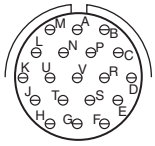
✱Coax ✱✱Twinax ✱✱✱Coax/Twinax •Not Tooled for 02-R Call for more information.

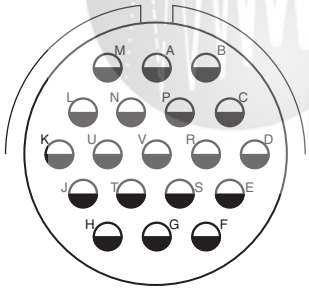
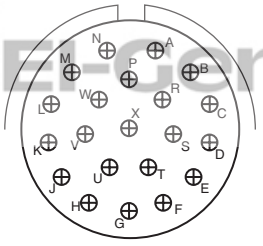
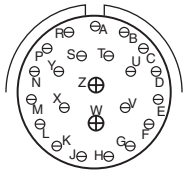
Layout by Number of Contacts

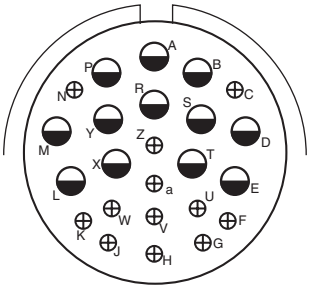
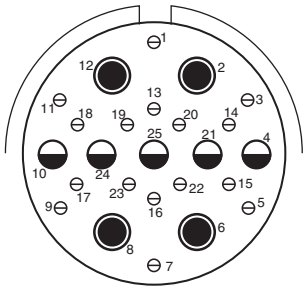
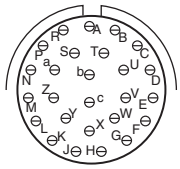
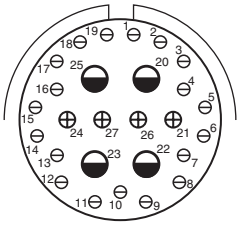
View of Mating Face of Pin Insert

22D 20 16 12 10 8

Contacts	13	14	15		16
					
D38999 LAYOUT	B35	-	F31	D15	G16
TV/CTV LAYOUT	11-35	23-14•	19-31•	15-15	21-16
# OF CONTACTS	13-#22D	14-#12	12-#22D, 1-#12, 2-#8*	14-#20,1-#16	16-#16
SERVICE RATING	M	I	M	I	II

Contacts	18			19	
					
D38999 LAYOUT	F18	D18	-	-	D19
TV/CTV LAYOUT	19-18•	15-18	19-68	21-79	15-19•
# OF CONTACTS	14-#22D, 4-#8**	18-#20	18-#16	17-#22D, 2-#8*	19-#20
SERVICE RATING	M	I	I	II	I

Contacts	19	21	22	23
				
D38999 LAYOUT	J19	H21	C35	E99
TV/CTV LAYOUT	25-19	23-21	13-35	17-99
# OF CONTACTS	19-#12	21-#16	22-#22D	21-#20, 2-#16
SERVICE RATING	I	II	M	I

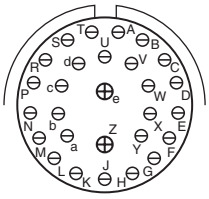
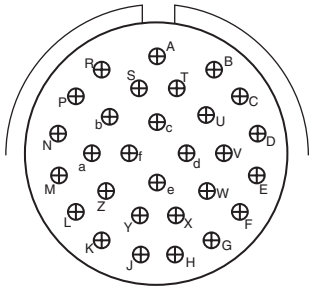
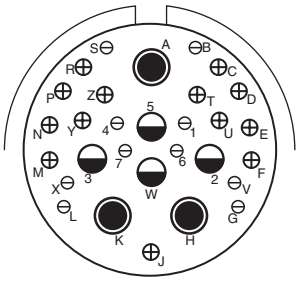
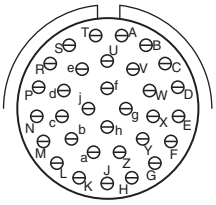
Contacts	24	25	26	27
				
D38999 LAYOUT	J24	-	E26	-
TV/CTV LAYOUT	25-24	25-26•	17-26	21-29
# OF CONTACTS	12-#16, 12-#12	16-#20, 5-#12, 4-#8*	26-#20	19-#20, 4-#16, 4-#12
SERVICE RATING	I	I	I	I

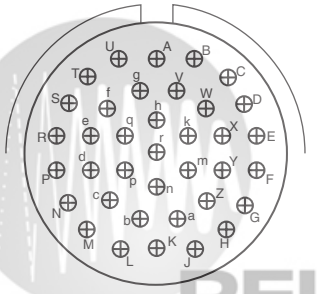
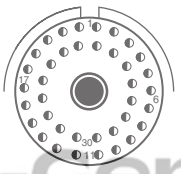
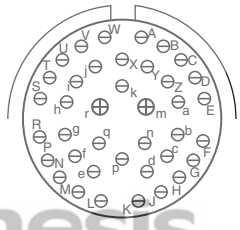
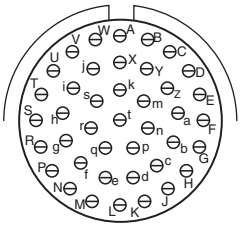
*Coax **Twinax ***Coax/Twinax •Not Tooled for 02-R Call for more information.

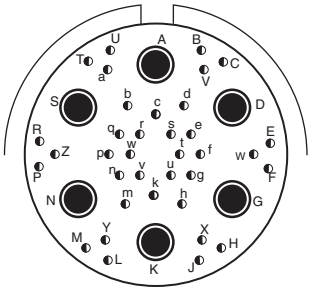
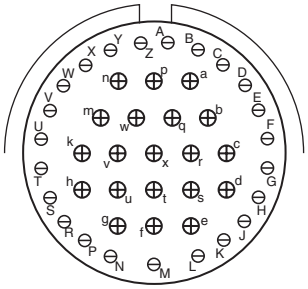
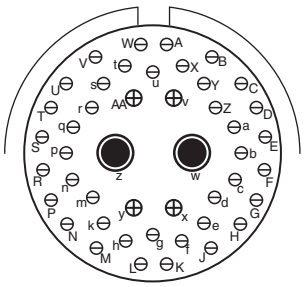
Layout by Number of Contacts

View of Mating Face of Pin Insert

22D 20 16 12 10 8

Contacts	28	29	30	32
				
D38999 LAYOUT	F28	J29	J20	F32
TV/CTV LAYOUT	19-28	25-29	25-20•	19-32
# OF CONTACTS	26-#20, 2-#16	29-#16	10-#20, 13-#16**, 4-#12*, 3-#8**	32-#20
SERVICE RATING	I	I	N	I

Contacts	37		39	41
					
D38999 LAYOUT	D35	-	E2	G39	G41
TV/CTV LAYOUT	15-35	25-37•	17-2	21-39	21-41
# OF CONTACTS	37-#22D	37-#16	38-#22D, 1-#8**	37-#20;2-#16	41-#20
SERVICE RATING	M	I	M	I	I

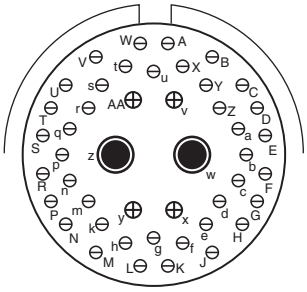
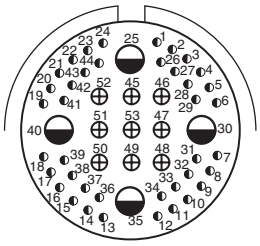
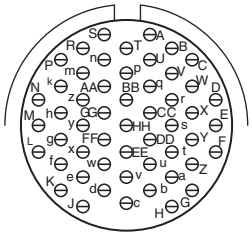
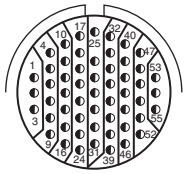
Contacts	42	43	46
			
D38999 LAYOUT	-	J43	-
TV/CTV LAYOUT	25-17•	25-43•	25-46•
# OF CONTACTS	36-#22D, 6-#8**	23-#20, 20-#16	40-#20, 4-#16, 2-#8*
SERVICE RATING	M	I	I

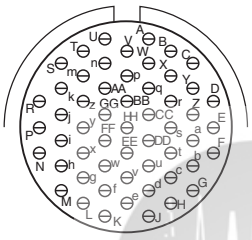
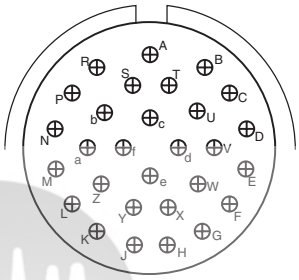
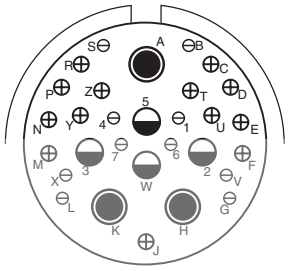
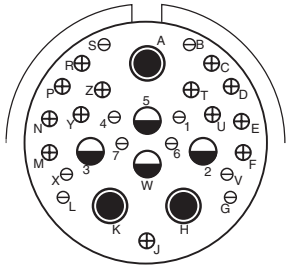
*Coax **Twinax ***Coax/Twinax •Not Tooled for 02-R Call for more information.

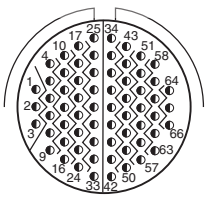
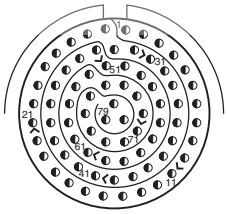
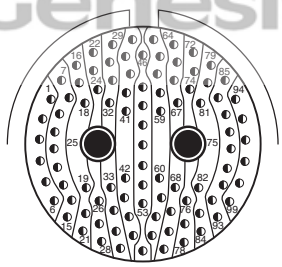
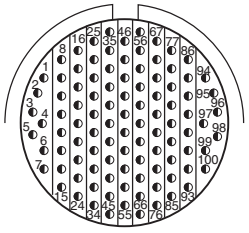
Layout by Number of Contacts

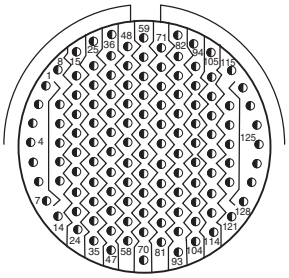
View of Mating Face of Pin Insert

22D 20 16 12 10 8

Contacts	46	53		55
				
D38999 LAYOUT	**J90**	**-**	**H53**	**E35**
TV/CTV LAYOUT	**25-90**	**23-54•**	**23-53**	**17-35**
# OF CONTACTS	40-#20, 4-#16, 2-#8**	40-#22D, 9-#16, 4-#12	53-#20	55-#22D
SERVICE RATING	I	M	I	M

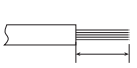
Contacts	55	56	61	66
				
D38999 LAYOUT	**H55**	**J4**	**J61**	**-**
TV/CTV LAYOUT	**23-55•**	**25-4**	**25-61**	**25-F4•**
# OF CONTACTS	55-#20	48-#20, 8-#16	61-#20	49-#22D, 13-#16, 4-#12
SERVICE RATING	I	I	I	M/I

Contacts	66	79	99	100
				
D38999 LAYOUT	**F35**	**G35**	**J7**	**H35**
TV/CTV LAYOUT	**19-35**	**21-35**	**25-7•**	**23-35**
# OF CONTACTS	66-#22D	79-#22D	97-#22D, 2-#8**	100-#22D
SERVICE RATING	M	M	TWINAX	M

Contacts	128
	
D38999 LAYOUT	**J35**
TV/CTV LAYOUT	**25-35**
# OF CONTACTS	128-#22D
SERVICE RATING	M

*Coax **Twinax ***Coax/Twinax •Not Tooled for 02-R Call for more information.

Pins



Head goes in first, trim excess

Contact Size	Wire Size AWG	Pin Contact Part Number	Color Bands 1	2	3	Wire Strip Lengths	Wire Range Min	Max	Wire Hole Filler	Color
22D	22,24,26 & 28	M39029/58-360	Orange	Blue	Black	.125 (3.18)	.030 (0.76)	.054 (1.37)	MS27488-22-1	Black
		M39029/107-620#	Blue	Red	Black					
20	20,22 & 24	M39029/58-363	Orange	Blue	Orange	.188 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-1	Red
		M39029/107-621#	Blue	Red	Brown					
16	16,18 & 20	M39029/58-364	Orange	Blue	Yellow	.188 (4.77)	.065 (1.65)	.109 (2.77)	MS27488-16-1	Blue
		M39029/107-622#	Blue	Red	Red					
12	12 & 14	M39029/58-365	Orange	Blue	Green	.188 (4.77)	.097 (2.46)	.142 (3.61)	MS27488-12-1	Yellow
		M39029/107-623#	Blue	Red	Orange					
10	10 & 12	M39029/58-528	Green	Red	Gray	-	.135 (3.42)	.162 (4.12)	M85049/81-10	Green
8	Coax* RG180B/U RG195A/U	M39029/60-367	Orange	Blue	Violet	Detailed Instructions included with contacts	-	-	MS27488-8-1	Red
8	Twinax** M17/M176-0002	M39029/90-529	Green	Red	White		-	-	MS27488-8-1	Red

For Fiber Optic (MIL-T-29504/4 for size 16 contacts) or Thermocouple Contacts, call.
#1500 Mating Cycle Contacts
*Coax **Twinax call for details

Sockets

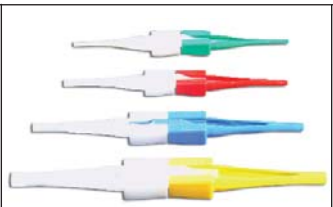
Head goes in first, trim excess

Contact Size	Wire Size AWG	Pin Contact Part Number	Color Bands 1	2	3	Wire Strip Lengths	Wire Range Min	Max	Wire Hole Filler	Color
22D	22,24,26 & 28	M39029/56-348	Orange	Yellow	Gray	.125 (3.18)	.030 (0.76)	.054 (1.37)	MS27488-22-1	Black
		M39029/106-614#	Blue	Brown	Yellow					
20	20,22 & 24	M39029/56-351	Orange	Blue	Orange	.188 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-1	Red
		M39029/106-615#	Blue	Brown	Green					
16	16,18 & 20	M39029/56-352	Orange	Blue	Yellow	.188 (4.77)	.065 (1.65)	.109 (2.77)	MS27488-16-1	Blue
		M39029/106-616#	Blue	Brown	Blue					
12	12 & 14	M39029/56-353	Orange	Blue	Green	.188 (4.77)	.097 (2.46)	.142 (3.61)	MS27488-12-1	Yellow
		M39029/106-617#	Blue	Brown	Violet					
10	10 & 12	M39029/56-527	Green	Red	Violet	-	.135 (3.42)	.162 (4.12)	M85049/81-10	Green
8	Coax* RG180B/U RG195A/U	M39029/59-366	Orange	Blue	Blue	Detailed Instructions included with contacts	-	-	MS27488-8-1	Red
8	Twinax** M17/M176-0002	M39029/91-530	Green	Orange	Black		-	-	MS27488-8-1	Red

For Fiber Optic (MIL-T-29504/5 for size 16 contacts) or Thermocouple Contacts, call.
#1500 Mating Cycle Contacts
*Coax **Twinax call for details

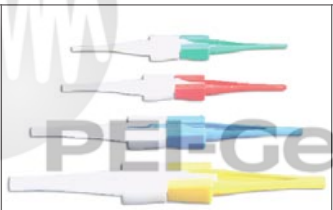
Contact Color Codes									
0	Black	1	Brown	2	Red	3	Orange	4	Yellow

All dimensions in inches (millimeters in parenthesis)

Hand Crimp Tool	Power Crimp Tool	Turret Heads	Use Locator Color	Plastic Insertion/ Extraction Tool	Insertion Tip Color	Extraction Tip Color	Metal Insertion Tool	Color Band	Metal Extraction Tool	Color† Band 1	Color† Band 2
M22520/2-01	WA22††	M22520/2-09	-	M81969/14-01	Green	White	MS27495A22M	Black	MS27495R22M	Black	White
M22520/1-01	WA27F††	M22520/1-04	Red	M81969/14-10	Red	Orange	MS27495A20	Red	MS27495R20	Red	White
M22520/1-01	WA27F††	M22520/1-04	Blue	M81969/14-03	Blue	White	MS27495A16	Blue	MS27495R16	Blue	White
M22520/1-01	WA27F††	M22520/1-04	Yellow	M81969/14-04	Yellow	White	DAK95-12B	-	DRK95-12B	-	-
TP201423	-	1716P-1	-	M81969/14-05	Gray	White	M81969/8-11	Green	M81969/8-12	Green	White
M22520/2-01 M22520/5-01	WA22†† HX23	M22520/2-31 (inner) M22520/5-05 (outer)		M81969/14-12	Green		-	-	DRK264-8	-	-
M22520/2-01 M22520/5-01	WA22†† HX23	M22520/2-37 (inner) M22520/5-200 (outer)		M81969/14-12	Green		M81969/46-06	Red	M81969/46-12	-	-

†† Call for more tool accessories.

Hand Crimp Tool	Power Crimp Tool	Turret Heads	Use Locator Color	Plastic Insertion/ Extraction Tool	Insertion Tip Color	Extraction Tip Color	Metal Insertion Tool	Color Band	Metal Extraction Tool	Color† Band 1	Color† Band 2
M22520/2-01	WA22††	M22520/2-07	-	M81969/14-01	Green	White	MS27495A22M	Black	MS27495R22M	Black	White
M22520/1-01	WA27F††	M22520/1-04	Red	M81969/14-10	Red	Orange	MS27495A20	Red	MS27495R20	Red	White
M22520/1-01	WA27F††	M22520/1-04	Blue	M81969/14-03	Blue	White	MS27495A16	Blue	MS27495R16	Blue	White
M22520/1-01	WA27F††	M22520/1-04	Yellow	M81969/14-04	Yellow	White	DAK95-12B	-	DRK95-12B	-	-
TP201423	-	1716P-1	-	M81969/14-05	Gray	White	M81969/8-11	Green	M81969/8-12	Green	White
M22520/2-01 M22520/5-01	WA22†† HX23	M22520/2-31 (inner) M22520/5-05 (outer)		M81969/14-12	Green		-	-	DRK264-8	-	-
M22520/2-01 M22520/5-01	WA22†† HX23	M22520/2-37 (inner) M22520/5-200 (outer)		M81969/14-12	Green		M81969/46-06	Red	M81969/46-12	-	-

† Band #1 indicates Tool Size
Band #2 indicates Removal Tool
†† Call for more tool accessories.

Contact Color Codes									
5	Green	6	Blue	7	Violet	8	Gray	9	White

Coax Contacts

	Coax Pin	Coax Socket	Crimping Tools	
			 M22520/5-01	 Crimp Dies

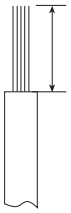
Coax Contact Size	Cable Type	Contact Part Number		Crimping Tools	
		Pin	Socket	Inner Contact	Crimp Ferrule
16	RG-178B/U, RG-196A/U	21-033122-564 (M39029/76-425)	21-033123-564 (M39029/77-429)	M22520/2-01 w/ Positioner M22522/2-35 or w/ Daniels Positioner K532	M22520/4-01 w/ Positioner M22520/4-02
	RG-174A/U, RG-188A/U, RG-161/U, RG-187A/U, RG-316/U, RG-179B/U	21-033122-563 (M39029/76-424)	21-033123-563 (M39029/77-428)		
12		21-033122-546 (M39029/28-211)	21-033123-546 (M39029/75-416)	M22520/2-01 w/ Positioner M22520/2-34 or w/ Daniels Positioner K323	M22520/31-01 w/ Positioner M22520/31-02 or Daniels GS-200 Tool w/ Positioner G2P330
	RG-180B/U, RG-195A/U	21-033122-541 (M39029/28-409)	21-033123-541 (M39029/75-417)		
8	RG-187A/U, RG-179B/U, RG-174A/U, RG-188A/U, RG-316/U, RG-161/U	21-033102-023	21-033101-023	M22520/2-01 w/ Positioner M22520/2-31 or solder	M22520/5-01 w/ die set M22520/5-03 (A) or M22520/5-08 (A) or M22520/5-35 (B) or M22520/10-01 w/ die set M22520/10-05 (A)
	RG-142B/U, RG-223/U	21-033102-024	21-033101-024		M22520/5-01 w/ die set M22520/5-05 (A) or M22520/5-19 (A) or M22520/10-01 w/ die set M22520/10-07 (A)
	RG-180B/U, RG-195A/U	21-033102-021 (M39029/60-367)	21-033101-021 (M39029/59-366)		M22520/5-01 w/ die set M22520/5-05 (B) or M22520/5-41 (B) or M22520/10-01 w/ die set M22520/10-07 (B)
	RG-400	21-033102-027	21-033101-027	M22520/2-01 w/ Positioner M22520/2-10	M22520/5-01 w/ die set M22520/5-45 (A)
	RG-58 (M17/155-00001)	21-033102-029	21-033101-029	Solder	M22520/5-01 w/ die set M22520/5-05 (B)

Printed Circuit Board Contacts - Pin

PCB Pin Contacts	Size	Tail Diameter	Contact Stickout Max/Min				
			D38999/20 TVP00	TVP02	D38999/26 TV06	D38999/24 TV07	
						Metal	Composite
10-407552-015	22D	0.019	.335 /.280	.555 / .500	.360 / .305	.329 / .279	.286 / .236
10-407552-055	22D	0.019	.224 / .169	.444 / .389	.249 / .194	.218 / .168	.175 / .125
10-407552-085	22D	0.019	.060 / .010	.280 / .230	.085 / .035	.054 / .009	.011 / NS
10-407552-115	22D	0.019	.002 / NS	.222 / NS	.023 / NS	NS	NS
10-497640-015	20	0.019	.348 / .298	.568 / .518	.373 / .323	.342 / .297	.299 / .254
10-497640-025	20	0.019	.213 / .163	.433 / .383	.238 / .188	.207 / .162	.164 / .119
10-497640-045	20	0.019	NS	NS	NS	NS	NS
10-497596-015	20	0.025	.058 / .012	.278 / .232	.083 / .037	.052 / .011	.009 / .044
10-497596-025	20	0.025	.148 / .102	.368 / .322	.173 / .127	.142 / .101	.099 / .058
10-497596-035	20	0.025	.229 / .183	.449 / .403	.254 /.208	.223 / .182	.180 / .058
10-497596-055	20	0.025	.346 / .300	.566 / .520	.371 / .325	.340 / .299	.297 / .256
10-497695-015	16	0.040	.255 / .205	.475 / .425	.280 / .230	.249 / .204	.206 / .161
10-497630-035	16	0.062	.060 / .010	.280 / .230	.085 / .035	.054 / .009	.011 / NS
10-497630-055	16	0.062	.228 / .178	.460 / .375	.253 / .203	.244 / .177	.201 / .190
10-597502-015	12	0.081	.228 / .178	.448 / .398	.252 / .203	.222 / .177	.179 / .134

= Standard PC tail used

All dimensions in inches (millimeters in parenthesis)

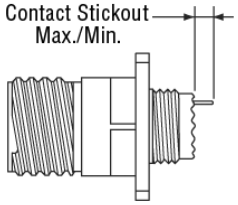
Wire Hole Filler	Wire Strip Length	Wire Sealing Range
 Head goes in first, trim excess		

Installation Tools		Wire Strip Lengths	Wire Sealing Range	
Insertion	Removal		Min	Max
M81969/8-07 or M81969/14-03	M81969/8-08 or M81969/14-03	call for details	.065 (1.65)	.109 (2.77)
M81969/8-09 or M81969/14-04	M81969/8-10 or M81969/14-04	call for details	.097 (2.46)	.142 (3.61)
Hand insertion	11-9170 or MS	call for details	.135 (3.43)	.155 (3.94)

All dimensions in inches (millimeters in parenthesis)

Printed Circuit Board Contacts - Socket

PCB Socket Contacts	Size	Tail Diameter	Contact Stickout Max/Min				
			D38999/20 TVP00	TVP02	D38999/26 TV06	D38999/24 TV07	
						Metal	Composite
10-497623-015	22M	0.019	.291 / .226	.511 / .446	.316 / .251	.285 / .222	.242 / .182
10-497623-335	22M	0.019	.242 / .181	.471 / .399	.267 / .202	.258 / .180	.215 / .155
10-497623-025	22M	0.019	.868 /.803	1.088 / 1.023	.893 / .828	.862 / .802	.819 / .759
10-497623-035	22M	0.019	.348 / .283	.568 / .503	.373 / .308	.342 / .282	.299 / .239
10-497623-045	22M	0.019	.208 / .143	.428 / .363	.233 / .168	.202 / .142	.159 / .099
10-497623-075	22M	0.019	.146 / .081	.366 / .301	.171 / .106	.140 / .080	.097 / .037
10-497623-145	22M	0.019	.609 / .539	.829 / .759	.634 / .564	.603 / .538	.560 / .495
10-497623-155	22M	0.025	.423 / .358	.643 / .578	.448 / .383	.417 / .357	.374 / .314
10-497643-015	20	0.025	.348 / .294	.568 / .514	.373 / .319	.342 / .293	.299 / .250
10-497643-025	20	0.025	.213 / .159	.433 / .379	.238 / .184	.207 / .158	.164 / .115
10-497643-035	20	0.025	.555 / .501	.775 / .721	.580 / .526	.549 / .500	.506 / .457
10-497650-015	16	0.040	.255 / .201	.475 / .421	.280 / .226	.249 / .200	.206 / .157



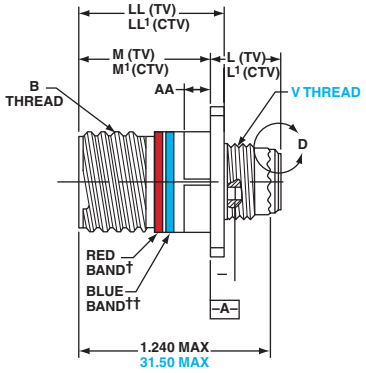
= Standard PC tail used

All dimensions in inches (millimeters in parenthesis)

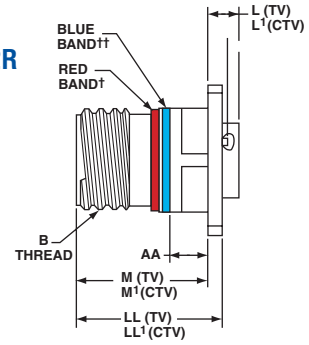
Dimensions

Receptacles

TVP00R/TVPS00R
CTVP00R/CTVPS00R
D38999/20

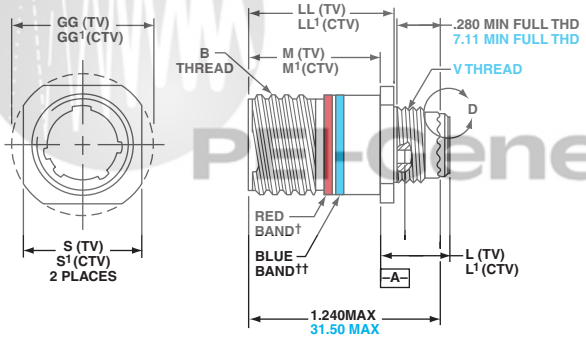


TVP02R/TVPS02R
CTVP02R/CTVPS02R



Shell Size	MS Shell Code	B Thread Class 2A 1.0P-0.3L -TS (Plated)	M +.000/ -.005 (+.000/ -.130) TV	M¹ +.000/ -.005 (+.000/ -.130) CTV	Z Max. (TV)	Z¹ Max. (CTV)	L Max. (TV)		L¹ Max. (CTV)		LL +.006/ .000 (+.150/ -.000) TV	LL¹ ±.005/ (±.130) CTV
							D38999/20 / TVP00R / TVP01R	TVP02R	D38999/20 / CTVP00R / CTVP01R	CTVP02R		
9	A	0.625	.820 (20.83)	.775 (19.69)	.153 (3.89)	.198 (5.03)	.469 (11.91)	.205 (5.21)	.514 (13.06)	.250 (6.35)	.905 (22.99)	.913 (23.19)
11	B	0.750	.820 (20.83)	.775 (19.69)	.153 (3.89)	.198 (5.03)	.469 (11.91)	.205 (5.21)	.514 (13.06)	.250 (6.35)	.905 (22.99)	.913 (23.19)
13	C	0.875	.820 (20.83)	.775 (19.69)	.153 (3.89)	.198 (5.03)	.469 (11.91)	.205 (5.21)	.514 (13.06)	.250 (6.35)	.905 (22.99)	.913 (23.19)
15	D	1.000	.820 (20.83)	.775 (19.69)	.153 (3.89)	.198 (5.03)	.469 (11.91)	.205 (5.21)	.514 (13.06)	.250 (6.35)	.905 (22.99)	.913 (23.19)
17	E	1.1875	.820 (20.83)	.775 (19.69)	.153 (3.89)	.198 (5.03)	.469 (11.91)	.205 (5.21)	.514 (13.06)	.250 (6.35)	.905 (22.99)	.913 (23.19)
19	F	1.250	.820 (20.83)	.775 (19.69)	.153 (3.89)	.198 (5.03)	.469 (11.91)	.205 (5.21)	.514 (13.06)	.250 (6.35)	.905 (22.99)	.913 (23.19)
21	G	1.375	.790 (20.07)	.745 (18.92)	.183 (4.65)	.228 (5.79)	.500 (12.70)	.235 (5.97)	.545 (13.84)	.280 (7.11)	.905 (22.99)	.913 (23.19)
23	H	1.500	.790 (20.07)	.745 (18.92)	.183 (4.65)	.228 (5.79)	.500 (12.70)	.235 (5.97)	.545 (13.84)	.280 (7.11)	.905 (22.99)	.913 (23.19)
25	J	1.625	.790 (20.07)	.745 (18.92)	.183 (4.65)	.228 (5.79)	.500 (12.70)	.235 (5.97)	.545 (13.84)	.280 (7.11)	.905 (22.99)	.913 (23.19)

TV01R/TVS01R
CTV01R/CTVS01R

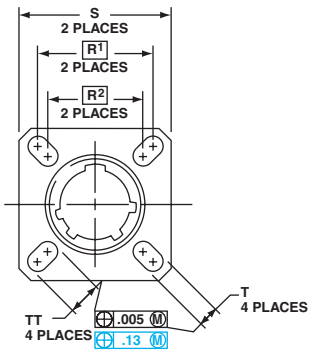


Shell Size	MS Shell Size Code	B Thread Class 2A 0.1P-0.3L-TS (Plated)	M +.000/ -.005 (+.000/ -.130) TV	M¹ +.000/ -.005 (+.000/ -.130) CTV	Z Max. (TV)	Z¹ Max. (CTV)	L Max. (TV)	L¹ Max. (CTV)	LL +.006/ -.000 (± .150 -.000) TV	LL¹ ± .005 ±.130) CTV	S ±.010 (±.250) TV	S¹ ±.010 (±.250) CTV	GG ±.010 (±.250) TV	GG¹ ±.010 (±.250) CTV	V Thread Metric
9	A	0.625	.820 (20.83)	.775 (19.69)	153 (3.89)	.198 (5.03)	.469 (11.91)	.514 (13.06)	.905 (22.99)	.913 (23.19)	.675 (17.15)	.635 (16.13)	.812 (20.62)	.699 (17.75)	M12X1-6g
11	B	0.750	.820 (20.83)	.775 (19.69)	.153 (3.89)	.198 (5.03)	.469 (11.91)	.514 (13.06)	.905 (22.99)	.913 (22.99)	.800 (20.32)	.765 (19.43)	.905 (22.99)	875 (22.22)	M15X1-6g
13	C	0.875	.820 (20.83)	.775 (19.69)	.153 (3.89)	.198 (5.03)	.469 (11.91)	.514 (13.06)	.905 (22.99)	.913 (23.19)	.925 (23.50)	.885 (22.47)	1.093 (27.76)	1.007 (25.57)	M18X1-6g
15	D	1.000	.820 (20.83)	.775 (19.69)	.153 (3.89)	.198 (5.03)	.469 (11.91)	.514 (13.06)	.905 (22.99)	.913 (23.19)	1.050 (26.67)	1.100 (27.94)	1.219 (30.96)	1.140 (28.95)	M22X1-6g
17	E	1.1875	.820 (20.83)	.775 (19.69)	.153 (3.89)	.198 (5.03)	.469 (11.91)	.514 (13.06)	.905 (22.99)	.913 (23.19)	1.238 (31.45)	1.197 (30.40)	1.375 (34.93)	1.229 (31.21)	M25X1-6g
19	F	1.250	.820 (20.83)	.775 (19.69)	.153 (3.89)	.198 (5.03)	.469 (11.91)	.514 (13.06)	.905 (22.99)	.913 (23.19)	1.300 (33.02)	1.260 (32.00)	1.469 (37.31)	1.380 (35.05)	M28X1-6g
21	G	1.375	.790 (20.07)	.745 (18.92)	.183 (4.65)	.228 (5.79)	.500 (12.70)	.545 (13.84)	.905 (35.18)	.913 (23.19)	1.425 (36.20)	1.385 (22.99)	1.625 (41.28)	1.493 (37.92)	M31X1-6g
23	H	1.500	.790 (20.07)	.745 (18.92)	.183 (4.65)	.228 (5.79)	.500 (12.70)	.545 (13.84)	.905 (22.99)	.913 (23.19)	1.550 (39.37)	1.510 (38.35)	1.750 (44.45)	1.626 (41.30)	M34X1-6g
25	J	1.625	.790 (20.07)	.745 (18.92)	.183 (4.65)	.228 (5.79)	.500 (12.70)	.545 (13.84)	.905 (22.99)	.913 (23.19)	1.675 (42.55)	1.635 (41.53)	1.875 (47.63)	1.777 (45.13)	M37X1-6g

All dimensions in inches (millimeters in parenthesis)

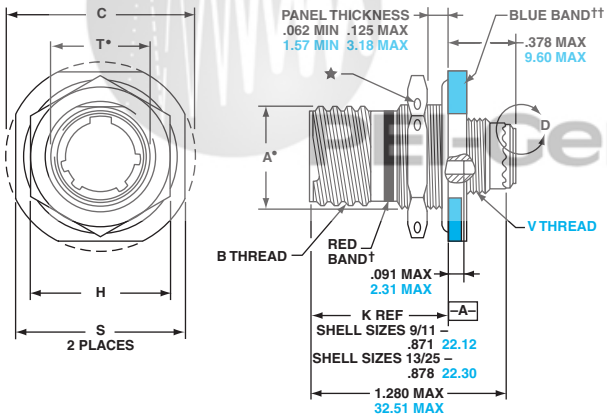
Receptacles

TVP00R/TVPS00R
CTVP00R/CTVPS00R
TVP02R/TVPS02R
CTVP02R/CTVPS02R
D38999/20 (continued)



R1	R2	S Max.	T +.008/-.006 (+.200/-.130)	TT +.008/-.006 (+.200/-.130)	V Thread Metric
D38999/20 / TVP00R / CTVP00R / TVP02R / CTVP02R	D38999/20 / TVP00R / CTVP00R / TVP02R / CTVP02R	D38999/20 / TVP00R / CTVP00R / TVP02R / CTVP02R	D38999/20 / TVP00R / CTVP00R /TVP02R / CTVP02R	D38999/20 / TVP00R / CTVP00R / TVP02R / CTVP02R	D38999/20 /TVP00R / TVP00R / CTV01R
.719 (18.26)	.594 (15.09)	.948 (24.10)	.128 (3.25)	.216 (5.49)	M12X1-6g
.812 (20.62)	.719 (18.26)	1.043 (26.50)	.128 (3.25)	.194 (4.93)	M15X1-6g
.906 (23.01)	.812 (20.62)	1.137 (28.90)	.128 (3.25)	.194 (4.93)	M18X1-6g
.969 (24.61)	.906 (23.01)	1.232 (31.30)	.128 (3.25)	.173 (4.39)	M22X1-6g
1.062 (26.97)	.969 (24.61)	1.323 (33.70)	.128 (3.25)	.194 (4.93)	M25X1-6g
1.156 (29.36)	1.062 (26.97)	1.449 (36.90)	.128 (3.25)	.194 (4.93)	M28X1-6g
1.250 (31.75)	1.156 (29.36)	1.575 (40.10)	.128 (3.25)	.194 (4.93)	M31X1-6g
1.375 (34.92)	1.250 (31.75)	1.701 (43.30)	.154 (3.91)	.242 (6.15)	M34X1-6g
1.500 (38.10)	1.375 (34.92)	1.823 (46.40)	.154 (3.91)	.242 (6.15)	M37X1-6g

TV07R/TVS07R
CTV02R/CTVS07R
D38999/24



Shell Size		A• +.000/-.010 (+.000/-.250)	B Thread Class 2A 0.1P-0.3L-TS (Plated)	C Max. Flange Wrench	D1 +.010/-.000 (+.250/-.000)	D2 +.010/-.000 (+.250/-.000)	H Hex +.017/-.016 (+.430/-.410)	S ±.010	T• +.010/-.000 (+.250/-.000)	V Thread Metric
TV07/CTV07	D38999/24									
9	A	0.669 (16.99)	0.625	1.199 (30.45)	.700 (17.78)	.670 (17.02)	.875 (22.23)	1.062 (26.97)	.697 (17.70)	M12X1-6g
11	B	0.769 (19.53)	0.750	1.386 (35.20)	.825 (20.96)	.770 (19.59)	1.000 (25.40)	1.250 (31.75)	.822 (20.88)	M15X1-6g
13	C	0.955 (24.26)	0.875	1.511 (38.38)	1.010 (25.65)	.955 (24.26)	1.188 (30.18)	1.375 (34.93)	1.007 (25.58)	M18X1-6g
15	D	1.084 (27.53)	1.000	1.636 (41.55)	1.135 (28.83)	1.085 (27.56)	1.312 (33.32)	1.500 (38.10)	1.134 (28.80)	M22X1-6g
17	E	1.208 (30.68)	1.1875	1.761 (44.73)	1.260 (32.01)	1.210 (30.73)	1.438 (36.53)	1.625 (41.28)	1.259 (31.98)	M25X1-6g
19	F	1.333 (33.86)	1.250	1.949 (49.50)	1.385 (35.18)	1.335 (33.91)	1.562 (39.67)	1.812 (46.02)	1.384 (35.15)	M28X1-6g
21	G	1.459 (37.06)	1.375	2.073 (52.65)	1.510 (38.35)	1.460 (37.08)	1.688 (42.80)	1.938 (49.23)	1.938 (38.28)	M31X1-6g
23	H	1.575 (40.01)	1.500	2.199 (55.85)	1.635 (41.53)	1.585 (40.26)	1.812 (46.02)	2.062 (52.37)	2.062 (41.50)	M34X1-6g
25	J	1.709 (43.41)	1.625	1.625 (59.00)	1.760 (44.70)	1.710 (43.43)	2.000 (50.80)	2.188 (55.58)	2.188 (44.68)	M37X1-6G

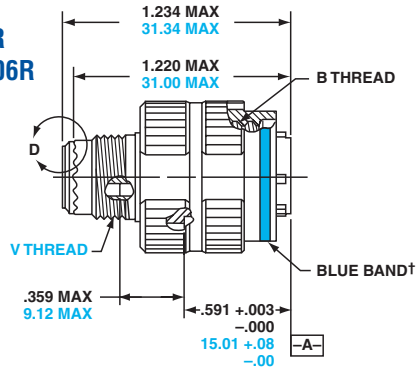
All dimensions in inches (millimeters in parenthesis)

Dimensions

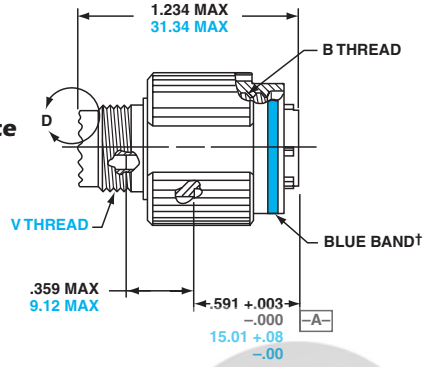
Plugs

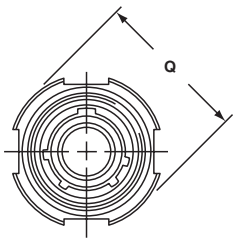
TV06R/TVS06R
CTV06R/CTVS06R
D38999/26

Metal



Composite



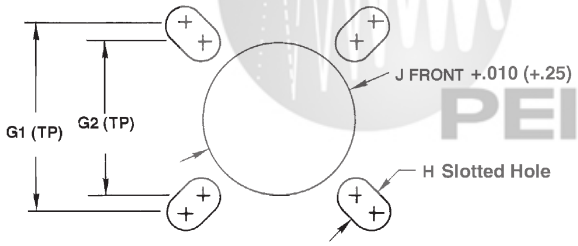


Shell Size		B Thread 0.1P-0.3L-TS-2B (Plated)	Q Diameter Max.	V Thread Metric
TV06/CTV06	D38999/26			
9	A	0.625	.858 (21.80)	M12X1-6g
11	B	0.750	.984 (25.00)	M15X1-6g
13	C	0.875	1.157 (29.40)	M18X1-6g
15	D	1.000	1.280 (32.50)	M22X1-6g
17	E	1.1875	1.406 (35.70)	M25X1-6g
19	F	1.250	1.516 (38.50)	M28X1-6g
21	G	1.375	1.642 (41.70)	M31X1-6g
23	H	1.500	1.768 (44.90)	M34X1-6g
25	J	1.625	1.890 (48.00)	M37X1-6G

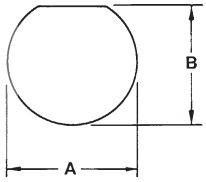
All dimensions in inches (millimeters in parenthesis)

Panel Cutouts

Wall Mount Receptacle



Jam Nut Receptacle



Shell Size		D38999/20 & TV/CTV Wall Mount			
D38999	TV/CTV	G1	G2	H Diameter +.005 (+.130) -.000 (.000)	Front Mount J Min.
A	9	.72 (18.26)	.59 (15.09)	.130 (3.25)	.626 (15.90)
B	11	.81 (20.62)	.71 (18.26)	.130 (3.25)	.751 (19.08)
C	13	.91 (23.01)	.81 (20.62)	.130 (3.25)	.876 (22.25)
D	15	.97 (24.61)	.90 (23.01)	.130 (3.25)	1.001 (25.43)
E	17	1.06 (26.97)	.96 (24.61)	.130 (3.25)	1.188 (30.81)
F	19	1.16 (29.36)	1.06 (26.97)	.130 (3.25)	1.251 (31.78)
G	21	1.25 (31.75)	1.15 (29.36)	.130 (3.25)	1.376 (34.95)
H	23	1.38 (34.93)	1.25 (31.75)	.155 (3.94)	1.511 (38.38)
J	25	1.50 (38.10)	1.37 (34.93)	.155 (3.94)	1.626 (41.30)

D38999/24 & TV/CTV Jam Nut	
A +.010 (+.025) -.000 (.000)	B +.000 (000) -.010 (-.025)
.700 (17.78)	.670 (17.02)
.825 (20.96)	.770 (19.59)
1.010 (25.65)	.955 (24.26)
1.135 (28.83)	1.085 (27.56)
1.260 (32.01)	1.210 (30.73)
1.385 (35.18)	1.335 (33.91)
1.510 (38.35)	1.460 (37.08)
1.635 (41.53)	1.585 (40.29)
1.760 (44.70)	1.710 (43.43)

All dimensions in inches (millimeters in parenthesis)

Panel Thickness

Wall Mount Receptacle

D38999/20 Rear Mount .125" (3.18) Max

Jam Nut Receptacle

D38999/24 Jam Nut
.125" (3.18) Max/.062" (1.57) Min

Connector Tools

TG70 Strap Wrench

The strap wrench is used to connect or disconnect coupling nuts in a confined space, or to tighten or loosen endbells without damaging the connector plating. A strap wrench also increases torque, allowing you to more easily mate or unmate a connector pair. Substitute tools, such as a pipe wrench or pliers, should never be used because of the high probability of severe damage to the connector plating or the coupling mechanism.

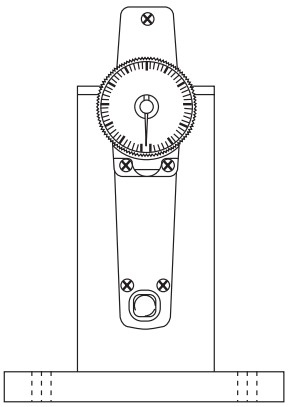
TG69P Non-Marring Adjustable Endbell Pliers For Field Service

The TG69P pliers have resilient jaws and are used to tighten or remove endbells without damaging the connector plating. The pliers are adjustable and will accommodate all of the connector sizes in this catalog. Substitute tools, such as a pipe wrench or metal jaw pliers, should never be used due to the high probability of severe damage to the connector plating. Replacement jaws, Part No. G77015, are available.

600 Series Production System

The 600 Series is a complete system for the proper assembly and torquing of connector endbells. The system includes a bench mounted or hand-held torque wrench, plug and receptacle holders, and a range of endbell tightening tools. When used together, these tools provide the user with consistent endbell installations.
Each item is shipped with detailed assembly instructions.

600-007

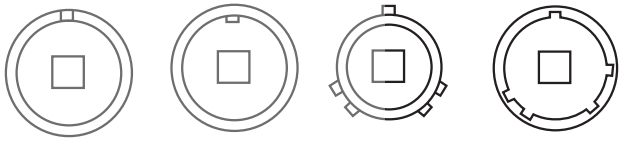


Bench Mounted Torque Wrench

600-004

Hand Held Torque Wrench

Plug and Receptacle Holders



600B005-R 600B005-P 600D005-R 600D005-P

Size	MIL-DTL-5015 for 97,MS310_, AIT, AIB, GT		MIL-DTL-26482 for PT, PTSE, MB, 62GB, MS31_, MS312_, MS347_	
	Receptacles	Plugs	Receptacles	Plugs
8/8S	600B005-8R	600B005-8P	600D005-8R	600D005-8P
10S/SL	600B005-10R	600B005-10P	600D005-10R	600D005-10P
12/12S	600B005-12R	600B005-12P	600D005-12R	600D005-12P
14/14S	600B005-14R	600B005-14P	600D005-14R	600D005-14P
16/16S	600B005-16R	600B005-16P	600D005-16R	600D005-16P
18	600B005-18R	600B005-18P	600D005-18R	600D005-18P
20	600B005-20R	600B005-20P	600D005-20R	600D005-20P
22	600B005-22R	600B005-22P	600D005-22R	600D005-22P
24	600B005-24R	600B005-24P	600D005-24R	600D005-24P
28	600B005-28R	600B005-28P	-	-
32	600B005-32R	600B005-32P	-	-
36	600B005-36R	600B005-36P	-	-

Size	MIL-DTL-38999 Series I for LJT		MIL-DTL-38999 Series II for JT		MIL-DTL-38999 Series III for TV-CTV			
	Receptacles	Plugs	Receptacles	Plugs	Shell Size		Receptacles	Plugs
9	600F005-9R	600F005-9P	600FF005-8R	600FF005-8P	A	9	600H005-9R#	600H005-9P#
11	600F005-11R	600F005-11P	600FF005-10R	600FF005-10P	B	11	600H005-11R#	600H005-11P#
13	600F005-13R	600F005-13P	600FF005-12R	600FF005-12P	C	13	600H005-13R#	600H005-13P#
15	600F005-15R	600F005-15P	600FF005-14R	600FF005-14P	D	15	600H005-15R#	600H005-15P#
17	600F005-17R	600F005-17P	600FF005-16R	600FF005-16P	E	17	600H005-17R#	600H005-17P#
19	600F005-19R	600F005-19P	600FF005-18R	600FF005-18P	F	19	600H005-19R#	600H005-19P#
21	600F005-21R	600F005-21P	600FF005-20R	600FF005-20P	G	21	600H005-21R#	600H005-21P#
23	600F005-23R	600F005-23P	600FF005-22R	600FF005-22P	H	23	600H005-23R#	600H005-23P#
25	600F005-25R	600F005-25P	600FF005-24R	600FF005-24P	J	25	600H005-25R#	600H005-25P#

Add polarizations: N, A, B, C, D, E

Dummy Receptacles, Dust Caps & Plug Caps

10-553974-XX†

10-552943-XX†

10-553970-XX†
10-553120-XX†

10-552944-XX†
10-553998-XX†

D38999	TV/CTV	Dummy Receptacles	Receptacle Dust Caps		Plug Cap
			For Flanged	For Jam Nut	
A	9	D38999/22AW	D38999/33W9R	D38999/33W9N	D38999/32W9##
B	11	D38999/22BW	D38999/33W11R	D38999/33W11N	D38999/32W11##
C	13	D38999/22CW	D38999/33W13R	D38999/33W13N	D38999/32W13##
D	15	D38999/22DW	D38999/33W15R	D38999/33W15N	D38999/32W15##
E	17	D38999/22EW	D38999/33W17R	D38999/33W17N	D38999/32W17##
F	19	D38999/22FW	D38999/33W19R	D38999/33W19N	D38999/32W19##
G	21	D38999/22GW	D38999/33W21R	D38999/33W21N	D38999/32W21##
H	23	D38999/22HW	D38999/33W23R	D38999/33W23N	D38999/32W23##
J	25	D38999/22JW	D38999/33W25R	D38999/33W25N	D38999/32W25##

Olive Drab Chromate over Cadmium over Nickel (500 Hour Salt Spray)
= Select code for ring or loop
N = Ring to attach to back shell as shown
R = Loop for screw mounting
XX = Shell Size

Finish	10-No Suffix
Olive Drab,Cadmium, Nickel Base	-XX9
Electroless Nickel	-XXG

† Select code for connector plating

Cable Clamps

Straight

Right Angle

D38999	TV/CTV	Low Cost	Self Locking	Low Cost	Self Locking	Cable Range	
						Min.	Max.
A	9	M85049/38-9**	M85049/38S9**	M85049/39-9**	M85049/39S9**	.098 (2.49)	.234 (5.94)
B	11	M85049/38-11**	M85049/38S11**	M85049/39-11**	M85049/39S11**	.153 (3.89)	.234 (5.94)
C	13	M85049/38-13**	M85049/38S13**	M85049/39-13**	M85049/39S13**	.190 (4.83)	.328 (8.33)
D	15	M85049/38-15**	M85049/39S15**	M85049/39-15**	M85049/39S15**	.260 (6.60)	.457 (11.61)
E	17	M85049/38-17**	M85049/38S17**	M85049/39-17**	M85049/39S17**	.283 (7.19)	.614 (15.60)
F	19	M85049/38-19**	M85049/38S19**	M85049/39-19**	M85049/39S19**	.325 (8.25)	.634 (16.10)
G	21	M85049/38-21**	M85049/38S21**	M85049/39-21**	M85049/39S21**	.343 (8.71)	.698 (17.73)
H	23	M85049/38-23**	M85049/38S23**	M85049/39-23**	M85049/39S23**	.381 (9.68)	.823 (20.90)
J	25	M85049/38-25**	M85049/38S25**	M85049/39-25**	M85049/39S25**	.418 (10.62)	.853 (21.67)

** Select code for plating selection
W = Olive Drab Chromate over Cadmium over Nickel (1000 Hour Salt Spray) (most Popular)
N = Electroless Nickel (Fluid Resistant)
A = Black Anodize

All dimensions in inches (millimeters in parenthesis)

Standard Mil-Spec Accessories

	Sealed	EMI/RFI	S=Straight A=90° B=45°	Orientation	Description
M85049/69 	Y	N	S	Heat Shrink Boot Adapters	Designed for use with straight or right angle shrink boots. A knurled rear section with a boot groove provide an excellent surface for the boot to grab the metal endbell. Available with lock wire and drain holes. See Heat Shrink Boots on ➥ pages 258-260.
M85049/21 	N	N	S	Extender Backshell	Non-environmental, designed for use with jacketed cable, allows extra space to break out the wires and still provide stain relief clamping to the outside of the cable jacket. Used with M85049/38 or 39
M85049/18 	Y	Y	S	Extender Backshell	This EMI/RFI shielding environmentally sealing endbell features a standard style cable clamp with gland seal at the end of and extender style backshell.
M85049/19 	N	Y	S	Extender Backshell	This EMI/RFI shielding non-environmentally sealing endbell features a standard style cable clamp.
Banding  M85049/88 M85049/89 M85049/90	Y	Y	S B A	Banding Adapter	Banding adapters utilize a band of metal that fastens and grounds cable shields to the outside of endbells. This method of terminating shields has advantages in that they typically use tools to tighten trim the bands. These tools make the termination tight, repeatable, reworkable (if you make a mistake just cut the band off and start again) and facilitates service. Banding adapters help lower the total applied cost by having simpler designs that have fewer parts with uncomplicated assembly procedures.
M85049/14S	N	N	S	E Nut	Wire seal compression nut

Low Cost Universal Endbells

Spring

Mesh Tape

Potted (Preferred)

U = Unshielded

US = with EMI shielding spring

UT = with EMI shielding tape

CG = Cord Grips

NEW!

Right Angle

CA = Flexible Conduit Adapter

Q = Quick Thread Converter

For use with Standard Accessoried Thread

MS3057

(use when needed)

Excerpt from MIL-DTL-38999K

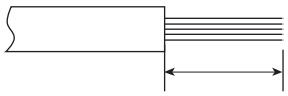
3.43.2 JAN brand. The United States Government has adopted, and is exercising legitimate control over the certification marks "JAN" and "J", respectively, to indicate that items so marked or identified are manufactured to, and meet all the requirements of military specification. Accordingly, items acquired to, and meeting all of the criteria specified herein and in applicable specifications shall bear the certification mark "JAN" except that items too small to bear the certification mark "JAN" shall bear the letter "J". The "JAN" or "J" shall be placed immediately before the PIN except that if such location would place a hardship on the manufacturer in connection with such marking, the "JAN" or "J" may be located on the first line above or below the PIN. Items furnished under contracts or orders which either permit or require deviation from the conditions or requirements specified herein or in applicable specifications shall not bear "JAN" or "J". In the event an item fails to meet the requirements of this specification and the applicable specification sheets or associated detail specifications, the manufacturer shall remove the "JAN" or the "J" from the sample tested and also from all items represented by the sample. The "JAN" or "J" certification mark shall not be used on products acquired to contractor drawings or specification. The United States Government has obtained Certificate of Registration No. 504,860 for the certification mark "JAN".

Note: The "JAN" or "J" is not part of the PIN but indicates a certification.
PIN = Part Identification Number

Assembly Instructions

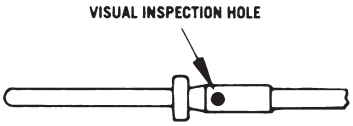
Wire Stripping

Strip insulation from end of wire to be crimped.
(See table for proper stripping dimensions.)
Do not cut or damage wire strands.



Wire Size	A
22, 22M, 22D	.125 (3.18)
20	.188 (4.77)
16	.188 (4.77)
12	.188 (4.77)

Contact Crimping



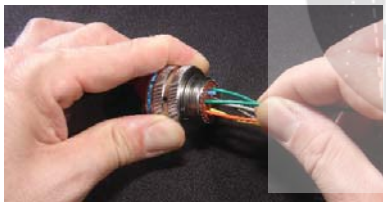
1. Insert stripped wire into contact crimp pot. Wire must be visible thru inspection hole.

2. Using correct crimp tool and locator, cycle the tool once to be sure the indentors are open. Insert contact and wire into locator. Squeeze tool handles firmly and completely to insure a proper crimp. The tool will not release unless the crimp indentors in the tool head have been fully actuated.

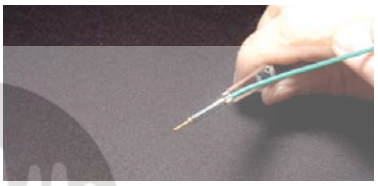
3. Release crimped contact and wire from tool. Be certain the wire if visible thru inspection hole in contact.

Contact Insertion

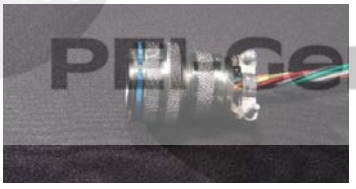
1. Remove hardware from plug or receptacle and slip over wire bundle in proper order for reassembly.



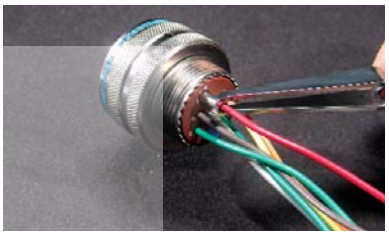
4. Remove tool and pull back lightly on wire to make sure contact is properly seated. Repeat operation with remainder of contacts to be inserted, beginning with the center cavity and working outward in alternating rows.



2. Using proper plastic or metal insertion tool for corresponding contact, position wire in tip of the tool so that the tool tip butts up against the contact shoulder.



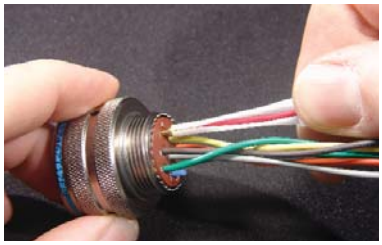
5. After all contacts are inserted, fill any empty cavities with wire sealing plugs. Reassemble plug or receptacle hardware.



3. Press tool against contact shoulder and, with firm and even pressure, insert wired contact and tool tip into center contact cavity. A slight "click" may be heard as metal retaining tines snap into place behind contact shoulder.

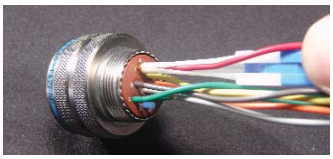
Contact Extraction

1. Remove hardware from plug or receptacle and slide hardware back along wire bundle.



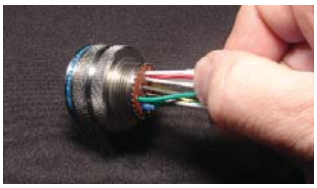
4. Hold wire firmly in tool and extract wired contact and tool. Repeat operation for all contacts to be extracted.

Note: LJT Series shown.



2. Using plastic or metal extraction tool with proper color code corresponding to contact size, place wire in tool.

5. Fill any empty cavities with wire sealing plugs. Reassemble plug or receptacle hardware.



3. Insert tool into contact cavity until tool tip bottoms against the contact shoulder, expanding clip retaining tines.

SJT connectors offer high density contact arrangements in a miniature circular shell. It is one of a family of internationally accepted NATO standard connectors based on the MIL-DTL-38999 designs. Originally designed for the demanding requirements of today's high performance military and commercial aircraft, these connectors are now finding there way into applications needing extremely reliable interconnections. These connectors are built to and meet the requirements of JAN1003 and VG96912. SJT's feature environmental sealing, wide operating temperature range (-65°C to 200°C) quick mating three point bayonet coupling, scoop proof shell design with EMI-RFI shielding available. They are also available with a 500 hour salt spray resistant plating.

Applications

- High Performance Military Aircraft
- Commercial Airlines
- Communications Equipment
- Armored Personnel Carriers & Tanks
- Missiles
- Shipboard
- Medical Instrumentation
- High Reliability Test Equipment

Features

Quick Mating
A three point bayonet coupling system that not only makes the SJT's quick mating ,but also provides an audible and tactile "click" along with a visual verification of mating.

Shielded Interconnect
The SJT range can be supplied with 360 degree EMI/RFI shielding spring protection. These springs ground the barrel of the plug to the inside wall of the receptacle with a wiping action that offers effective protection from reception or transmission of electrical noise.

Many Contact Layouts and Styles
SJT connectors come in a wide variety of contact sizes and layouts up to 128 contacts. Printed circuit board, fibre optic, thermocouple and coax style contacts are available for special applications.

Utilizes High-Quality Military Contacts
The SJT range of connectors use the same crimp style military contacts as the MIL-DTL-38999 connectors to provide reliable performance under rigorous conditions.

Corrosion Resistant
SJT's are available with cadmium over nickel plating that has meet and passed 500 hour military salt spray corrosion tests.

Technical Specifications

MATERIALS AND FINISHES

Shell	Aluminum alloy
Bayonet Pins	Passivated stainless steel per QQ-S-763
Plating	(Default) - Clear Chromate over cadmium over electroless nickel per QQ-P-416 014 - Olive drab chromate over cadmium over electroless nickel per QQ-P-416 023 - Electroless nickel per QQ-N-290 005 - Hard, anodic, non-conductive in accordance with MIL-A-862 W52 - Olive Drab Zinc Cobalt
Contacts	Copper alloy
Plating	Gold plated, 50 microinches per MIL-G-45204 type II, grade C, class I
Insulator	Hard dielectric wafer which contains metal retention tines for high reliability retention of crimp contacts
Grommet & Seals	Silicone based elastomer
Grounding Springs	Beryllium copper

ELECTRICAL DATA

Operating Voltage & Test Voltage (Unmated Condition)

	Service Rating			
Test Voltages	N	M	I	II
Sea Level	1000	1300	1800	2300
100,000 feet	200	200	200	200

Current Rating by contact size and wire accommodation (Test Amps)

Wire Size	22D	22M*	22*	20	16	12
28	1.5	1.5	-	-	-	-
26	2.0	2.0	-	-	-	-
24	3.0	3.0	3.0	3.0	-	-
22	-	-	5.0	5.0	-	-
20	-	-	-	7.5	7.5	-
18	-	-	-	-	10.0	-
16	-	-	-	-	13.0	-
14	-	-	-	-	-	17.0
12	-	-	-	-	-	23.0

Contact Resistance of mated contacts end to end

Contact Size	Max. Millivolt Drop
22D	40
22M*	30
22*	40
20	35
16	25
12	25

MECHANICAL

Operating Temperature	(Default) Plating -65°C to 150°C (-85°F to 302°F) 014 Plating -65°C to 175°C (-85°F to 347°F) 023 Plating -65°C to 200°C (-85°F to 392°F) 005 Anodic (non-conductive) -65°C to 200°C (-85°F to 392°F) W52 Plating -65°C to 175°C (-85°F to 347°F)
Sealing	Against sand, dust per MIL-STD-202 & ice resistance

Wire Sealing Range

Contact Size	Minimum inches	Maximum inches	Minimum mm	Maximum mm
22D	0.030	0.054	0.76	1.37
22M*	0.030	0.050	0.76	1.27
22*	0.034	0.060	0.86	1.52
20	0.040	0.083	1.02	2.11
16	0.065	0.109	1.65	2.77
12	0.097	0.142	2.46	3.61
10	0.135	0.162	3.42	4.12
8 (Coax)	0.135	0.155	3.43	3.94
8 (Twinax)	0.124	0.134	3.15	3.40

Technical Specifications

Insulation Strip Length	See table below

Contact Size	Strip Length
22* , 22D or 22M*	.125 (3.18)
20	.188 (4.77)
16	.188 (4.77)
12	.188 (4.77)

Mating Life	500 cycles minimum
Salt Spray	Finish (Default): 48 hour per MIL-STD-1344A method 1001 condition B Finish 014: 500 hour per MIL-STD-1344A method 1001 condition C Finish 023: 48 hour per MIL-STD-1344A method 1001 condition B Finish 005: 500 hour per MIL-STD-1344A method 1001 condition C Finish W52: 500 hour per MIL-STD-1344A method 1001 condition C
Heat	Finish (Default): 150°C (302°F) Finish 014: 175°C (347°F) Finish 023: 200°C (392°F) Finish 005: 150°C (302°F) Finish W52: 175°C (347°F)
Chemical Resistance	Lubricating oils, hydraulic fluids, coolants, deicing fluids per\ MIL-STD-1344A Method 1016 condition a-1
Sine Vibration	30g at ambient temperature with simulated accessory load
Random Vibration	49.5 grms at ambient temperatures
Shock	300g ±15% half sine wave magnitude for 3 ±1 milliseconds
EMI Shielding Effectiveness	100 MHz to 10 GHz - minimum attenuation of 50dB
Contact Type	Crimp, fiber optic, coax, twinax, or printed circuit
Number of Circuits	2 to 128
Contact Insertion	Rear insertion/rear extraction with simple plastic or high-quality metal hand tools.
Contact Retention	Per MIL-DTL-38999K tested to MIL-STD-1344A method 2007

Contact	Axial load Newtons ±10%	Axial load Pounds ±10%
22* , 22D, 22M*	44	10
20	67	15
16	111	25
12	111	25

Polarization	Three point bayonet coupling, five keyways with optional master keyway rotations, note insert and four minor keyways remain fixed.
Approvals	In accordance with JAN1003 and VG96912

* inactive for new designs

Create Your Part Number

STEP 1
Choose Plug or Receptacle Style

STEP 2
Choose Class

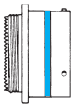
RE = No Rear Threads

RP = Potting Ring & Cup

RT = Rear Threads

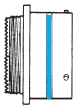
Receptacles

SJT00RT



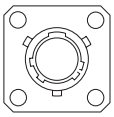
Front mount with rear accessory threads.

SJTP00RT

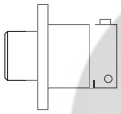


+

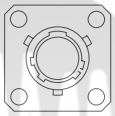
Rear mount with rear accessory threads.



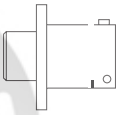
SJT02RE



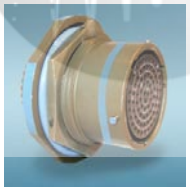
Front mount without rear accessory threads.



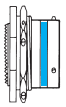
SJTP02RE



Rear mount without rear accessory threads.



SJT07RT



+

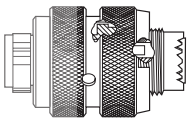
Jam Nut with rear accessory threads.

+ Most Popular

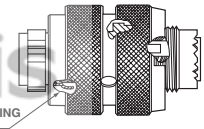
MATES WITH

Plugs

SJT06RT - Straight Plug



SJTG06RT - Straight Plug with Grounding Fingers



Available with PC pins. Call for details.

STEP 8

Example: Commercial Part Number Description

SJT07	RT	24-35	P	N	-014	-LC
1 Shell Style	2 Class	3 Layout	5 Contact	6 Rotation	4* Plating	7 Modifier

*Note: Out of Sequence

Call for Details

SJTB - Thru Bulkhead
SJT1Y - Hermetic Soder Mount
SJT07Y - Hermetic Jam Nut

= General info

Create Your Part Number

STEP 3
Choose Layout (Listed by Shell Size)

For listing by # of contacts, see page 234 - 237.

Layout Number	Service Rating	Contacts: Total Contacts	22D	22M	22	20	16	12	12 (Coax)	10 (Power)	8 (Coax)	8 (Twinax)
8-6	M	6		6								
8-35	M	6	6									
8-44	M	4			4							
8-98	I	3				3						
10-1	M	1									1	
10-2✦	I	2					2					
10-4✦	I	4				4						
10-5✦	I	5				5						
10-13	M	13		13								
10-35	M	13	13									
10-98	I	6				6						
12-4	I	4					4					
12-8	I	8				8						
12-22	M	22		22								
12-35	M	22	22									
12-98	I	10				10						
14-5	II	5					5					
14-15	I	15				14	1					
14-18	I	18				18						
14-19	I	19				19						
14-35	M	37	37									
14-37	M	37		37								
14-97✦	I	12				8	4					
16-2✦	M	39	38								1	
16-6	I	6						6				
16-8	II	8					8					
16-13✦	I	13					13					
16-26	I	26				26						
16-35	M	55	55									
16-42✦	M	42			42							
16-55	M	55		55								
16-99	I	23				21	2					
18-11	II	11					11					
18-17	M	17	10			1	4				2	
18-32	I	32				32						
18-35	M	66	66									
18-66	M	66		66								
20-1	M	79		79								
20-2	M	65			65							
20-11✦	I	11						11				
20-16	II	16					16					
20-35	M	79	79									
20-39	I	39				37	2					
20-41	I	41				41						
20-75✦	M	4									4	
20-79✦	II	19	17								2	
22-1	M	100		100								
22-2	M	85			85							
22-21	II	21					21					
22-35	M	100	100									
22-53	I	53				53						
24-1	M	128		128								
24-2	M	100			100							
24-4	I	56				48	8					
24-7✦	M	99	97								2	
24-11✦	N	11				2				9		
24-19✦	I	19						19				
24-20✦	N	30				10	13		4		3	
24-24	I	24					12	12				
24-29	I	29					29					
24-35	M	128	128									
24-37✦	I	37					37					
24-43✦	I	43				23	20					
24-46✦	I	46				40	4				2	
24-61	I	61				61						

WHEN CHOOSING LAYOUT
First Number = Step 3A – Shell Size, Dash = Step 4 – Plating, Second Number = 3B – Layout

✦ Not Tooled for RP or 02RE

STEP 4
Choose Plating

Finish	Suffix Data	Suffix Data + Strain Relief
Cadmium plated nickel base	-	SR
Olive drab cadmium plate nickel base	014	386
Electroless nickel	023	424
Anodic coating (Alumilite)	005	300
Olive drab zinc cobalt	W52	W52-SR

SR = Strain Relief

STEP 5
Choose Contact

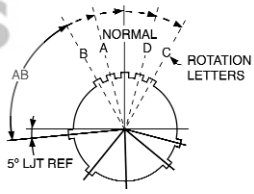
P = Pin
S = Socket
(1500 Mating Cycles Available - Call for details.

Note: See Step 6 if you are not ordering contacts with part.

STEP 6
Choose Alternate Shell Position

N = Normal Standard
A = Next Most Popular
B = Limited Availability
C = Check for Availability
D = Check for Availability

Shell Size	N	A	B	C	D
9	95	77	-	-	113
11	95	81	67	123	109
13	95	75	63	127	115
15	95	74	61	129	116
17	95	77	65	125	113
19	95	77	65	125	113
21	95	77	65	125	113
23	95	80	69	121	110
25	95	80	69	121	110



Mating Face of Receptacle

STEP 7
Choose Modifier

For other commercial modification, i.e., less tools, with PC contact or with endbell, call.

Omit LC = for standard contacts less contacts, wire hole fillers and plastic insertion/extraction tool.
(Purchase Order must state Less Contacts)

Note: LC is not marked on part

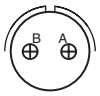
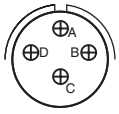
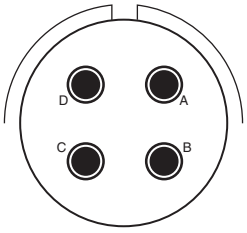
Layout by Number of Contacts

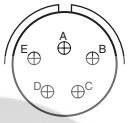
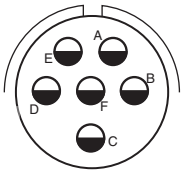
View of Mating Face of Pin Insert

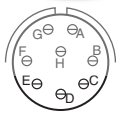
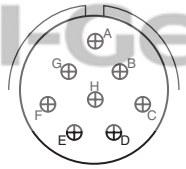
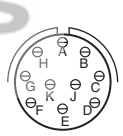
8 10 12 16 20 22 22D 22M

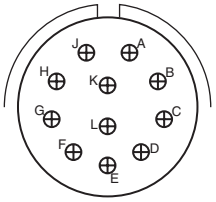
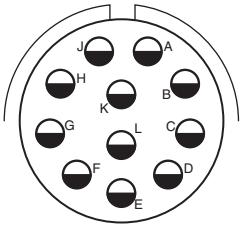
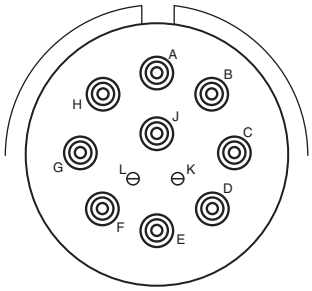
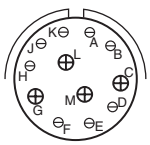
Drawing not to scale; mating face view of pin insert shown (socket view is opposite)

SJT

Contacts	1	2	3	4			
							
LAYOUT	**10-1**	**10-2**	**8-98**	**8-44**	**10-4**	**12-4**	**20-75**
# OF CONTACTS	1-#8 **	2-#16	3-#20	4-#22	4-#20	4-#16	4-#8 **
SERVICE RATING	M	I	I	M	I	I	N

Contacts	5		6			
						
LAYOUT	**10-5**	**14-5**	**8-6**	**8-35**	**10-98**	**16-6**
# OF CONTACTS	5-#20	5-#16	6-#22M	6-#22D	6-#20	6-#12
SERVICE RATING	I	II	M	M	I	I

Contacts	8		10
			
LAYOUT	**12-8**	**16-8**	**12-98**
# OF CONTACTS	8-#20	8-#16	10-#20
SERVICE RATING	I	II	I

Contacts	11			12
				
LAYOUT	**18-11**	**20-11**	**24-11**	**14-97**
# OF CONTACTS	11-#16	11-#12	2-#20, 9-#10 *	8-#20, 4-#16
SERVICE RATING	II	I	N	I

*Coax **Twinax

Layout by Number of Contacts

View of Mating Face of Pin Insert

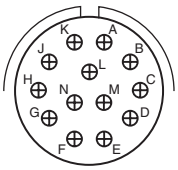
8 10 12 16 20 22 22D 22M

Drawing not to scale; mating face view of pin insert shown (socket view is opposite)

Contacts 13

LAYOUT 10-13
OF CONTACTS 13-#22M
SERVICE RATING M

10-35
13-#22D
M

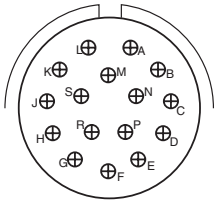


16-13
13-#16
I

Contacts 15

14-15
14-#20, 1-#16
I

Contacts 16

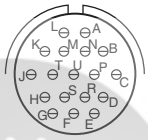


20-16
16-#16
II

Contacts 17

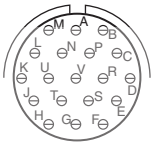
LAYOUT 18-17
OF CONTACTS 10-#22D, 1-#20, 4-#16, 2-#8**
SERVICE RATING M

Contacts 18

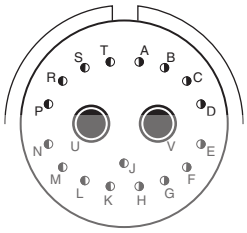


14-18
18-#20
I

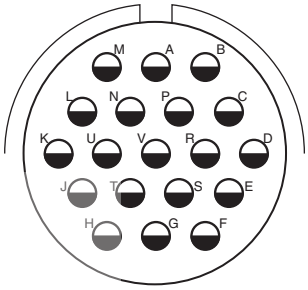
Contacts 19



14-19
19-#20
I

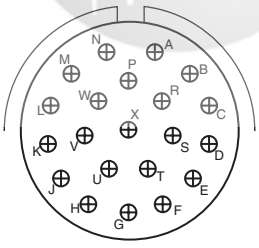


20-79
17-#22D, 2-#8 *
II



24-19
19-#12
I

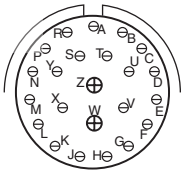
Contacts 21 22 23



LAYOUT 22-21
OF CONTACTS 21-#16
SERVICE RATING II

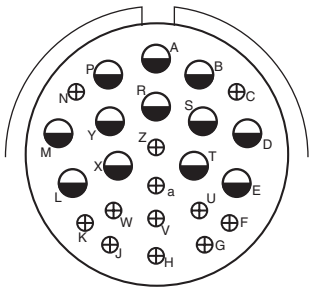
12-22
22-#22M
M

12-35
22-#22D
M



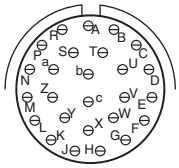
16-99
21-#20, 2-#16
I

Contacts 24



LAYOUT 24-24
OF CONTACTS 12-#16, 12-#12
SERVICE RATING I

Contacts 26



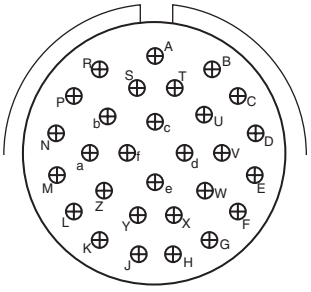
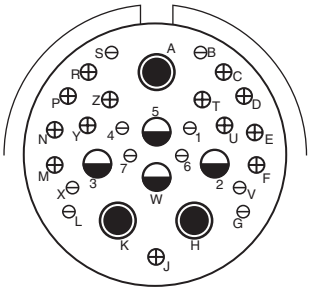
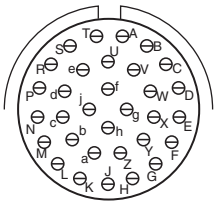
16-26
26-#20
I

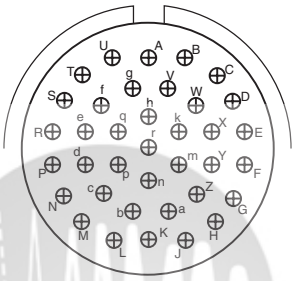
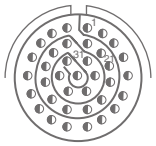
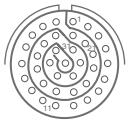
*Coax **Twinax

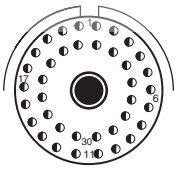
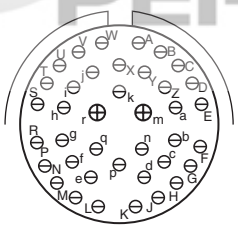
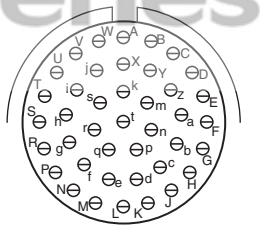
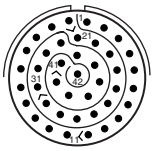
Layout by Number of Contacts

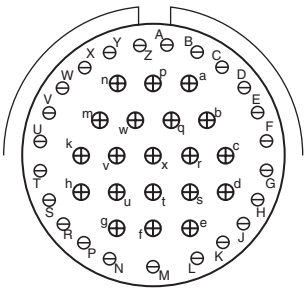
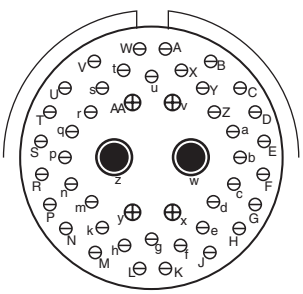
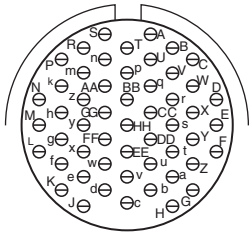
View of Mating Face of Pin Insert

Drawing not to scale; mating face view of pin insert shown (socket view is opposite)

Contacts	29	30	32
			
LAYOUT	**24-29**	**24-20**	**18-32**
# OF CONTACTS	29-#16	10-#20, 13-#16	32-#20
SERVICE RATING	I	I	I

Contacts	37		
			
LAYOUT	**24-37**	**14-35**	**14-37**
# OF CONTACTS	37-#16	37-#22D	37-#22M
SERVICE RATING	I	M	M

Contacts	39		41	42
				
LAYOUT	**16-2**	**20-39**	**20-41**	**16-42**
# OF CONTACTS	38-#22D, 1-#8**	37-#20, 2-#16	41-#20	42-#22
SERVICE RATING	M	I	I	M

Contacts	43	46	53
			
LAYOUT	**24-43**	**24-46**	**22-53**
# OF CONTACTS	23-#20, 20-#16	40-#20, 4-#16, 2-#8*	53-#20
SERVICE RATING	I	I	M

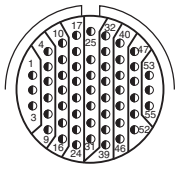
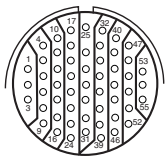
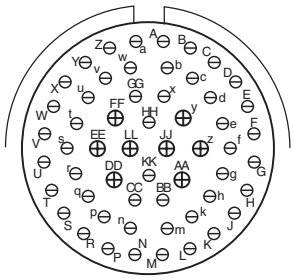
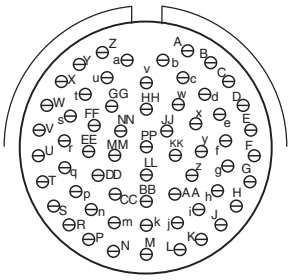
*Coax **Twinax

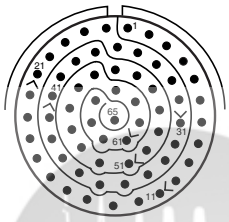
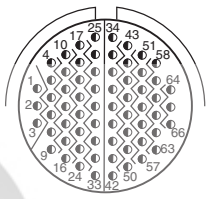
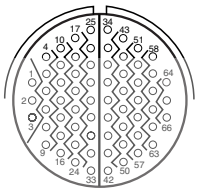
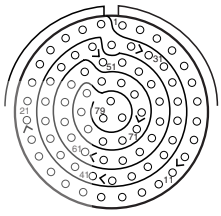
Layout by Number of Contacts

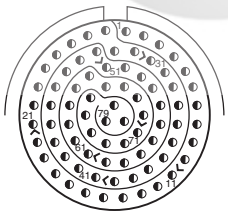
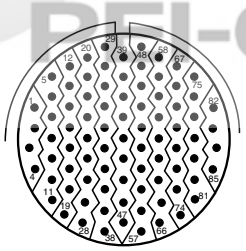
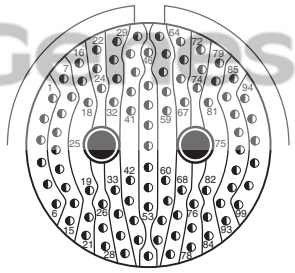
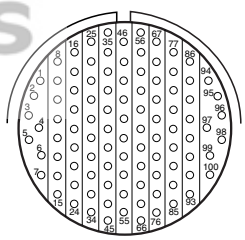
View of Mating Face of Pin Insert

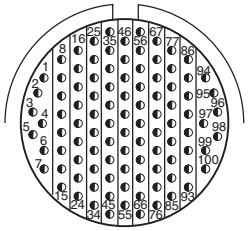
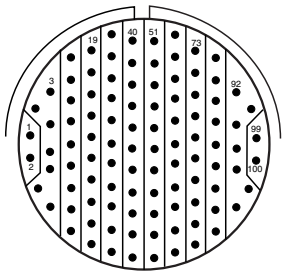
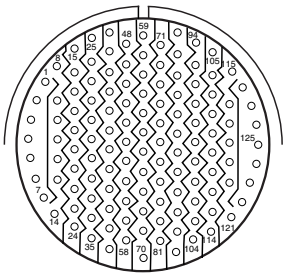
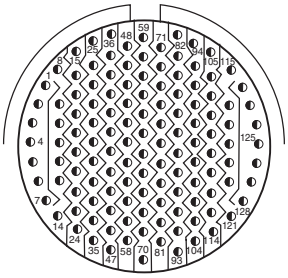
8 10 12 16 20 22 22D 22M

Drawing not to scale; mating face view of pin insert shown (socket view is opposite)

Contacts	55		56	61
				
LAYOUT	**16-35**	**16-55**	**24-4**	**24-61**
# OF CONTACTS	55-#22D	55-#22M	48-#20, 8-#16	61-#20
SERVICE RATING	M	M	I	I

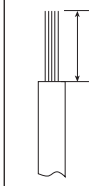
Contacts	65	66		79
				
LAYOUT	**20-2**	**18-35**	**18-66**	**20-1**
# OF CONTACTS	65-#22	66-#22D	66-#22M	79-#22M
SERVICE RATING	M	M	M	M

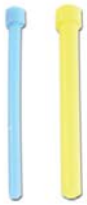
Contacts	79	85	99	100
				
LAYOUT	**20-35**	**22-2**	**24-7**	**22-1**
# OF CONTACTS	79-#22D	85-#22	97-#22D, 2-#8**	100-#22M
SERVICE RATING	M	M	M	M

Contacts	100		128	
				
LAYOUT	**22-35**	**24-2**	**24-1**	**24-35**
# OF CONTACTS	100-#22D	100-#22	128-#22M	128-#22D
SERVICE RATING	M	M	M	M

*Coax **Twinax

Pins



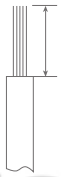


Head goes in first, trim excess

Contact Size	Wire Size Awg	Pin Contact Part Number	Color Bands			Wire Strip Lengths	Wire Range		Wire Hole Filler	Color
			1	2	3		Min	Max		
22D	28,26,24&22	M39029/58-360	Orange	Blue	Black	.125 (3.18)	.030 (0.76)	.054 (1.37)	MS27488-22-1	Black
*22M	28,26&24	M39029/58-361	Orange	Blue	Brown	.125 (3.18)	.030 (0.76)	.050 (1.27)	MS27488-22-1	Black
*22	26,24&22	M39029/58-362	Orange	Blue	Red	.125 (3.18)	.034 (0.86)	.060 (1.52)	MS27488-22-1	Black
20	20,22&24	M39029/58-363	Orange	Blue	Orange	.188 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-1	Red
16	16,18&20	M39029/58-364	Orange	Blue	Yellow	.188 (4.77)	.065 (1.65)	.109 (2.77)	MS27488-16-1	Blue
12	12&14	M39029/58-365	Orange	Blue	Green	.188 (4.77)	.097 (2.46)	.142 (3.61)	MS27488-12-1	Yellow
8	Coax+	-	-	-	-	-	.135 (3.43)	.155 (3.94)	-	-

+ For Fiber Optic contacts, call. * Inactive for new design

Sockets

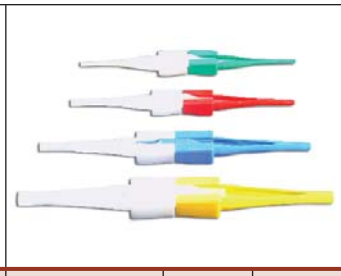


Head goes in first, trim excess

Contact Size	Wire Size Awg	Socket Contact Part Number	Color Bands			Wire Strip Lengths	Wire Range		Wire Hole Filler	Color
			1	2	3		Min	Max		
22D	28,26,24&22	M39029/56-348	Orange	Yellow	Gray	.125 (3.18)	.030 (0.76)	.054 (1.37)	MS27488-22-1	Black
20	20,22&24	M39029/56-351	Orange	Green	Brown	.188 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-1	Red
16	16,18&20	M39029/56-352	Orange	Green	Red	.188 (4.77)	.065 (1.65)	.109 (2.77)	MS27488-16-1	Blue
12	12&14	M39029/56-353	Orange	Green	Orange	.188 (4.77)	.097 (2.46)	.142 (3.61)	MS27488-12-1	Yellow
8	Coax+	-	-	-	-	-	.135 (3.43)	.155 (3.94)	-	-

+ For Fiber Optic contacts, call.

All dimensions in inches (millimeters in parenthesis)

Hand Crimp Tool	Power Crimp Tool	Turret Heads	Use Locator Color	Plastic Insertion/ Extraction Tool	Insertion Tip Color	Extraction Tip Color	Metal Insertion Tool	Color Band	Metal Extraction Tool	Color Band	
										1	2
M22520/2-01	WA22††	M22520/2-09	-	M81969/14-01	Gren	White	MS27495A22M	Black	MS27495R22M	Black	White
M22520/2-01	WA22††	M22520/2-09	-	M81969/14-01	Green	White	MS27495A22M	Black	MS27495R22M	Black	White
M22520/2-01	WA22††	M22520/2-09	-	M81969/14-01	Green	White	MS27495A22	Black	MS27495R22M	Black	White
M22520/1-01	WA27F††	M22520/1-04	Red	M81969/14-10	Red	Orange	MS27495A20	Red	MS27495R20	Red	White
M22520/1-01	WA27F††	M22520/1-04	Blue	M81969/14-03	Blue	White	MS27495A16	Blue	MS27495R16	Blue	White
M22520/1-01	WA27F††	M22520/1-04	Yellow	M81969/14-04	Yellow	White	DAK95-12B	-	DRK95-12B	-	-
-	-	-	-	-	-	-	-	-	-	-	-

†† Call for more tool accessories.




Hand Crimp Tool	Power Crimp Tool	Turret Heads	Use Locator Color	Plastic Insertion/ Extraction Tool	Insertion Tip Color	Extraction Tip Color	Metal Insertion Tool	Color Band	Metal Extraction Tool	Color Band	
										1	2
M22520/2-01	WA22††	M22520/2-07	-	M81969/14-01	Green	White	MS27495A22M	Black	MS27495R22M	Black	White
M22520/1-01	WA27F††	M22520/1-04	Red	M81969/14-10	Red	Orange	MS27495A20	Red	MS27495R20	Red	White
M22520/1-01	WA27F††	M22520/1-04	Blue	M81969/14-03	Blue	White	MS27495A16	Blue	MS27495R16	Blue	White
M22520/1-01	WA27F††	M22520/1-04	Yellow	M81969/14-04	Yellow	White	DAK95-12B	-	DRK95-12B	-	-
-	-	-	-	-	-	-	-	-	-	-	

†† Call for more tool accessories.

Coax Contacts

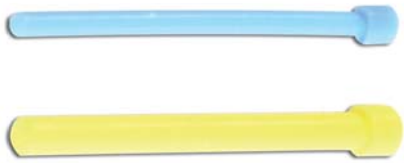
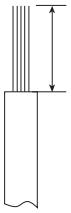
	Coax Pin	Coax Socket	Crimping Tools	
			 M22520/5-01	 Crimp Dies

Coax Contact Size	Cable Type	Contact Part Number		Crimping Tools	
		Pin	Socket	Inner Contact	Crimp Ferrule
16	RG-178B/U, RG-196A/U	21-033122-564 (M39029/76-425)	21-033123-564 (M39029/77-429)	M22520/2-01 w/ Positioner M22522/2-35 or w/ Daniels Positioner K532	M22520/4-01 w/ Positioner M22520/4-02
	RG-174A/U, RG-188A/U, RG-161/U, RG-187A/U, RG-316/U, RG-179B/U	21-033122-563 (M39029/76-424)	21-033123-563 (M39029/77-428)		
12		21-033122-546 (M39029/28-211)	21-033123-546 (M39029/75-416)	M22520/2-01 w/ Positioner M22520/2-34 or w/ Daniels Positioner K323	M22520/31-01 w/ Positioner M22520/31-02 or Daniels GS-200 Tool w/ Positioner G2P330
	RG-180B/U, RG-195A/U	21-033122-541 (M39029/28-409)	21-033123-541 (M39029/75-417)		
8	RG-187A/U, RG-179B/U, RG-174A/U, RG-188A/U, RG-316/U, RG-161/U	21-033102-023	21-033101-023	M22520/2-01 w/ Positioner M22520/2-31 or solder	M22520/5-01 w/ die set M22520/5-03 (A) or M22520/5-08 (A) or M22520/5-35 (B) or M22520/10-01 w/ die set M22520/10-05 (A)
	RG-142B/U, RG-223/U	21-033102-024	21-033101-024		M22520/5-01 w/ die set M22520/5-05 (A) or M22520/5-19 (A) or M22520/10-01 w/ die set M22520/10-07 (A)
	RG-180B/U, RG-195A/U	21-033102-021 (M39029/60-367)	21-033101-021 (M39029/59-366)		M22520/5-01 w/ die set M22520/5-05 (B) or M22520/5-41 (B) or M22520/10-01 w/ die set M22520/10-07 (B)
	RG-400	21-033102-027	21-033101-027	M22520/2-01 w/ Positioner M22520/2-10	M22520/5-01 w/ die set M22520/5-45 (A)
	RG-58 (M17/155-00001)	21-033102-029	21-033101-029	Solder	M22520/5-01 w/ die set M22520/5-05 (B)

Printed Circuit Board Contacts - Pin

PCB Pin Contacts	Size	Tail Diameter	Contact Stickout Max/Min						
			SJT00RT	SJTP00RT	SJT02RE	SJTP02RE	SJT06RE	SJT07RE	
								(9-17)	(19-25)
10-407552-015	22M	0.019	.372 / .317	.357 / .302	.576 / .521	.576 / .520	.372 / .317	.351 / .296	.329 / .279
10-407552-055	22M	0.019	.261 / .206	.246 / .191	.465 / .410	.465 / .409	.261 / .206	.240 / .185	.218 / .168
10-407552-085	22M	0.019	.097 / .047	.082 / .032	.301 / .251	.301 / .250	.097 / .047	.076 / .026	.054 / .009
10-407552-115	22M	0.019	.035 / NS	.020 / NS	.239 / .189	.239 / .188	.035 / NS	.014 / NS	NS
10-497640-015	20	0.019	.385 / .335	.370 / .320	.589 / .539	.589 / .538	.385 / .335	.364 / .314	.342 / .297
10-497640-025	20	0.019	.250 / .200	.235 / .185	.454 / .404	.454 / .403	.250 / .200	.229 / .179	.207 / .162
10-497640-045	20	0.019	NS	NS	.191 / .141	.191 / .141	NS	NS	NS
10-497596-015	20	0.025	.095 / .049	.080 / .034	.299 / .253	.299 / .252	.095 / .049	.074 / .028	.052 / .011
10-497596-025	20	0.025	.185 / .139	.170 / .124	.389 / .343	.389 / .342	.185 / .139	.164 / .118	.142 / .101
10-497596-035	20	0.025	.266 / .220	.251 / .205	.470 / .424	.470 / .423	.266 / .220	.245 / .199	.223 / .182
10-497596-055	20	0.025	.383 / .337	.368 / .322	.587 / .541	.587 / .540	.383 / .337	.362 / .316	.340 / .299
10-497695-015	16	0.040	.292 / .242	.277 / .227	.496 / .446	.496 / .445	.292 / .242	.271 / .221	.249 / .204
10-497630-035	16	0.062	.097 / .047	.082 / .032	.301 / .251	.301 / .250	.385 / .335	.076 / .026	.054 / .009
10-497630-055	16	0.062	.296 / .250	.281 / .235	.454 / .401	.454 / .401	.232 / .182	.229 / .175	.207 / .158
10-597502-015	12	0.081	.265 / .215	.250 / .200	.469 / .410	.469 / .418	.265 / .215	.244 / .194	.222 / .177

= Standard PC tail used

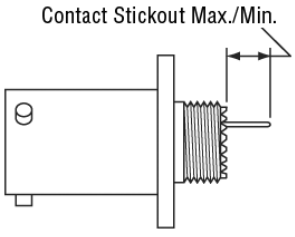
Wire Hole Filler	Wire Strip Length	Wire Sealing Range
		

Installation Tools		Wire Strip Lengths	Wire Sealing Range	
Insertion	Removal		Min	Max
M81969/8-07 or M81969/14-03	M81969/8-08 or M81969/14-03	call for details	.065 (1.65)	.109 (2.77)
M81969/8-09 or M81969/14-04	M81969/8-10 or M81969/14-04	call for details	.097 (2.46)	.142 (3.61)
Hand insertion	11-9170 or MS	call for details	.135 (3.43)	.155 (3.94)

All dimensions in inches (millimeters in parenthesis)

Printed Circuit Board Contacts - Socket

PCB Socket Contacts	Size	Tail Diameter	Contact Stickout Max/Min						
			SJT00RT	SJTP00RT	SJT02RE	SJTP02RE	SJT06RE	SJT07RE	
								(9-17)	(19-25)
10-497623-015	22M	0.019	.328 / .263	.313 / .248	.532 / .467	.532 / .466	.328 / .263	.307 / .424	.285 / .225
10-497623-335	22M	0.019	.264 / .199	.249 / .188	.468 / .406	.468 / .405	.264 /.199	.243 / .182	.221 / .165
10-497623-025	22M	0.019	.905 / .840	.890 / .825	1.109 / 1.044	1.109 / 1.043	.905 / .840	.884 / .819	.862 / .802
10-497623-035	22M	0.019	.385 / .320	.370 / .305	.589 / .524	.589 / .523	.385 / .320	.364 / .299	.342 / .282
10-497623-045	22M	0.019	.245 / .180	.230 / .165	.449 / .384	.449 / .383	.245 / .180	.224 / .159	.202 / .142
10-497623-075	22M	0.019	.183 / .118	.168 / .103	.387 / .322	.387 / .321	.183 / .118	.162 / .097	.140 / .080
10-497623-145	22M	0.019	.646 / .576	.631 / .561	.850 / .780	.850 / .779	.646 / .576	.625 / .555	.603 / .538
10-497623-155	22M	0.025	.460 / .395	.445 / .380	.664 / .599	.664 / .598	.460 / .395	.439 / .374	.417 / .357
10-497643-015	20	0.025	.385 / .339	.370 / .316	.589 / .535	.589 / .536	.385 / .331	.364 / .310	.342 / .293
10-497643-025	20	0.025	.250 / .204	.235 / .181	.454 / .400	.454 / .401	.250 / .196	.229 / .175	.207 / .158
10-497643-035	20	0.025	.592 / .546	.577 / .523	.796 / .742	.796 / .743	.592 / .538	.571 / .517	.549 / .500
10-497650-015	16	0.040	.292 / .246	.277 / .223	.496 / .442	.496 / .443	.292 / .238	.271 / .217	.249 / .200

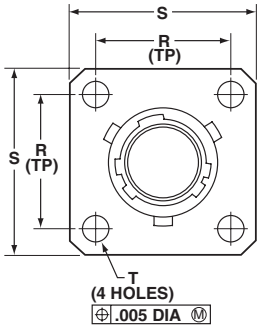


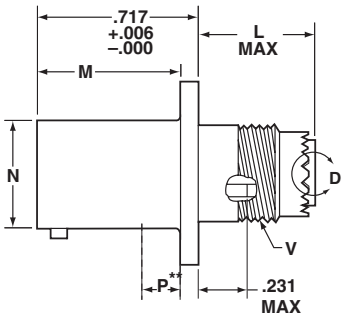
= Standard PC tail used

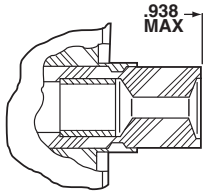
Dimensions

Receptacles

SJT00RT



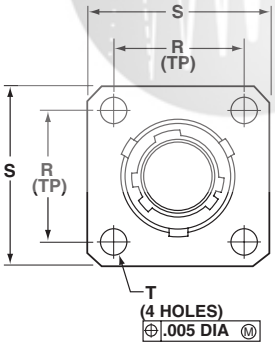


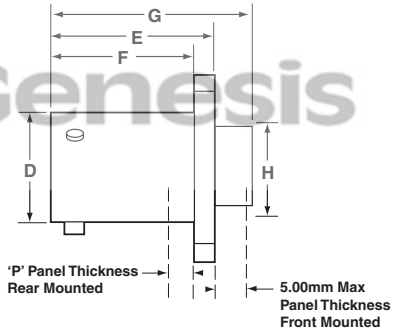


VIEW D ENLARGED
FOR COAXIAL USE ONLY

Shell Size	L Max.	M +.000/-.005 (+.00/-.01)	R (TP)	S +.011/-.010 (±04/-.04)	T +.005/-.005 (+.01/-.01)	V Thread Modified		N +.001/ -.005 (+.00/-0.01)	P Max.
						CLASS 2A (Plated UNEF)	Modified Major Diameter		
8	.500 (12.7)	.632 (16.05)	.594 (15.09)	.812 (20.62)	.120 (3.05)	.4375-28	.412 - .417	.473 (12.61)	.117 (2.92)
10	.500 (12.7)	.632 (16.05)	.719 (18.26)	.938 (23.82)	.120 (3.05)	.5625-24	.542 - .538	.590 (14.99)	.117 (2.92)
12	.500 (12.7)	.632 (16.05)	.812 (20.62)	1.031 (26.19)	.120 (3.05)	.6875-24	.667 - .663	.750 (19.65)	.117 (2.92)
14	.500 (12.7)	.632 (16.05)	.906 (23.01)	1.125 (28.57)	.120 (3.05)	.8125-20	.791 - .787	.875 (22.22)	.117 (2.92)
16	.500 (12.7)	.632 (16.05)	.969 (24.61)	1.219 (30.96)	.120 (3.05)	.9375-20	.916 - .912	1.000 (25.40)	.117 (2.92)
18	.500 (12.7)	.632 (16.05)	1.062 (26.97)	1.312 (33.32)	.120 (3.05)	1.0625-18	1.034 - 1.030	1.125 (28.57)	.117 (2.92)
20	.500 (12.7)	.602 (15.29)	1.156 (29.36)	1.438 (36.52)	.120 (3.05)	1.1875-18	1.158 - 1.154	1.250 (31.75)	.087 (2.21)
22	.500 (12.7)	.602 (15.29)	1.250 (31.75)	1.562 (39.67)	.120 (3.05)	1.3125-18	1.283 - 1.279	1.375 (34.92)	.087 (2.21)
24	.550 (13.97)	.602 (15.29)	1.375 (34.92)	1.688 (42.87)	.147 (3.73)	1.4375-18	1.408 - 1.404	1.500 (38.10)	.055 (1.39)

SJT02RE



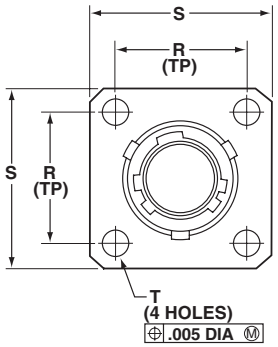


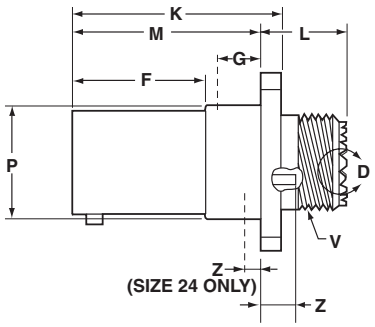
Shell Size	F +.001/ -.005 (+.00/-0.01)	E +.006/-.000 (+0.15/-0.00)	G Max.	H Max.	B (TP)	A +.011/-.010 (+0.40/-0.04)	C +.005/ -.005 (+0.01/-0.01)	D +.001/ -.005 (+0.00/-0.13)	P Max.
8	.632 (16.05)	.717 (18.21)	1.089 (27.65)	.469 (11.91)	.594 (15.09)	.812 (20.62)	.120 (3.05)	.473 (12.00)	.117 (3.00)
10	.632 (16.05)	.717 (18.21)	1.089 (27.65)	.594 (15.09)	.719 (18.26)	.938 (23.82)	.120 (3.05)	.590 (15.00)	.117 (3.00)
12	.632 (16.05)	.717 (18.21)	1.089 (27.65)	.719 (18.26)	.812 (20.62)	1.031 (26.19)	.120 (3.05)	.750 (19.05)	.117 (3.00)
14	.632 (16.05)	.717 (18.21)	1.089 (27.65)	.844 (21.44)	.906 (23.01)	1.125 (28.57)	.120 (3.05)	.875 (22.22)	.117 (3.00)
16	.632 (16.05)	.717 (18.21)	1.089 (27.65)	.969 (24.61)	.969 (24.61)	1.219 (30.96)	.120 (3.05)	1.000 (25.4)	.117 (3.00)
18	.632 (16.05)	.717 (18.21)	1.089 (27.65)	1.078 (27.38)	1.062 (26.97)	1.312 (33.32)	.120 (3.05)	1.125 (28.57)	.117 (3.00)
20	.602 (15.29)	.717 (18.21)	1.089 (27.65)	1.203 (30.56)	1.156 (29.36)	1.438 (36.52)	.120 (3.05)	1.250 (31.75)	.117 (3.00)
22	.602 (15.29)	.717 (18.21)	1.089 (27.65)	1.329 (33.73)	1.250 (31.75)	1.562 (39.67)	.120 (3.05)	1.375 (34.92)	.117 (3.00)
24	.602 (15.29)	.717 (18.21)	1.131 (28.72)	1.453 (36.91)	1.375 (34.92)	1.688 (42.87)	.147 (3.73)	1.500 (38.10)	.055 (2.26)

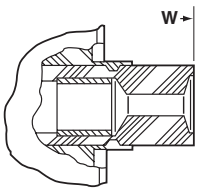
All dimensions in inches (millimeters in parenthesis)

Receptacles

SJTP00RT







VIEW D ENLARGED
FOR COAXIAL USE ONLY

Shell Size	F +.000/ -.005 (+.000/-.010)	K +.006/-.000 (+.150/-.000)	L Max.	M +.000/-.005 (+.000/-.010)	R (TP)	S +.011/-.010 (±.04/-.04)	T +.005/-.005 (+.01/-.01)	Z +.031/ -.031 (+.07/-0.07)	V Thread Class 2A (Plated UNEF)	P Diameter +.001/ -.005 (+.00/-0.01)	W Max.	G Max.
8	.609 (15.47)	.945 (24.00)	.539 (13.69)	.860 (21.84)	.594 (15.09)	.812 (20.62)	.120 (3.05)	.062 (1.58)	.4375-28	.516 (13.11)	.812 (20.62)	.345 (8.76)
10	.609 (15.47)	.945 (24.00)	.539 (13.69)	.860 (21.84)	.719 (18.26)	.938 (23.82)	.120 (3.05)	.062 (1.58)	.5625-24	.633 (16.08)	.812 (20.62)	.345 (8.76)
12	.609 (15.47)	.945 (24.00)	.539 (13.69)	.860 (21.84)	.812 (20.62)	1.031 (26.19)	.120 (3.05)	.062 (1.58)	.6875-24	.802 (20.37)	.812 (20.62)	.345 (8.76)
14	.609 (15.47)	.945 (24.00)	.539 (13.69)	.860 (21.84)	.906 (23.01)	1.125 (28.57)	.120 (3.05)	.062 (1.58)	.8125-20	.927 (23.54)	.812 (20.62)	.345 (8.76)
16	.609 (15.47)	.945 (24.00)	.539 (13.69)	.860 (21.84)	.969 (24.61)	1.219 (30.96)	.120 (3.05)	.062 (1.58)	.9375-20	1.052 (26.72)	.812 (20.62)	.345 (8.76)
18	.609 (15.47)	.945 (24.00)	.539 (13.69)	.860 (21.84)	1.062 (26.97)	1.312 (33.32)	.120 (3.05)	.062 (1.58)	1.0625-18	1.177 (29.89)	.812 (20.62)	.345 (8.76)
20	.609 (15.47)	.945 (24.00)	.539 (13.69)	.860 (21.84)	1.156 (29.36)	1.438 (36.52)	.120 (3.05)	.062 (1.58)	1.1875-18	1.302. (33.07)	812 (20.62)	.345 (8.76)
22	.609 (15.47)	.945 (24.00)	.539 (13.69)	.860 (21.84)	1.250 (31.75)	1.562 (39.67)	.120 (3.05)	.062 (1.58)	1.3125-18	1.427 (36.25)	.812 (20.62)	.345 (8.76)
24	.750 (19.05)	1.085 (27.55)	.493 (11.15)	1.000 (25.4)	1.375 (34.92)	1.688 (42.87)	.147 (3.73)	.078 (1.98)	1.4375-18	1.552 (39.42)	.781 (19.84)	.452 (11.48)

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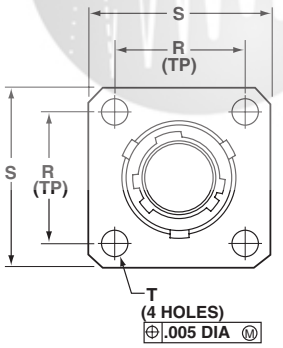
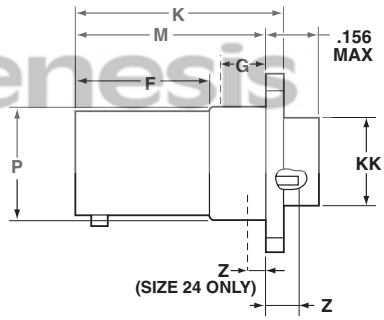




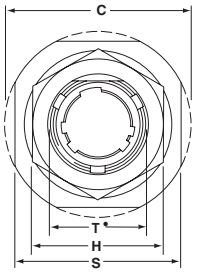
Shell Size	F +.000/-.005 (+.00/-.01)	K +.006/-.000 (+.15/-.00)	M +.000/-.005 (+.00/-.04)	R (TP)	S +.011/-.010 (±.04/-.04)	T +.005/-.005 (+.01/-.01)	Z +.031/ -.031 (+.07/-.07)	P Diameter +.001/-.005 (+.00/-0.01)	KK Diameter +.005/-.002 (+0.01/-0.00)	G Max.
8	.609 (15.47)	.945 (24.00)	.860 (21.84)	.594 (15.09)	.812 (20.62)	.120 (3.05)	.062 (1.58)	.516 (13.11)	.417 (10.59)	.345 (8.76)
10	.609 (15.47)	.945 (24.00)	.860 (21.84)	.719 (18.26)	.938 (23.82)	.120 (3.05)	.062 (1.58)	.633 (16.08)	.538 (13.66)	.345 (8.76)
12	.609 (15.47)	.945 (24.00)	.860 (21.84)	.812 (20.62)	1.031 (26.19)	.120 (3.05)	.062 (1.58)	.802 (20.37)	.663 (16.84)	.345 (8.76)
14	.609 (15.47)	.945 (24.00)	.860 (21.84)	.906 (23.01)	1.125 (28.57)	.120 (3.05)	.062 (1.58)	.927 (23.54)	.787 (19.99)	.345 (8.76)
16	.609 (15.47)	.945 (24.00)	.860 (21.84)	.969 (24.61)	1.219 (30.96)	.120 (3.05)	.062 (1.58)	1.052 (26.72)	.912 (23.16)	.345 (8.76)
18	.609 (15.47)	.945 (24.00)	.860 (21.84)	1.062 (26.97)	1.312 (33.32)	.120 (3.05)	.062 (1.58)	1.177 (29.89)	1.030 (26.16)	.345 (8.76)
20	.609 (15.47)	.945 (24.00)	.860 (21.84)	1.156 (29.36)	1.438 (36.52)	.120 (3.05)	.062 (1.58)	1.302 (33.07)	1.154 (29.31)	.345 (8.76)
22	.609 (15.47)	.945 (24.00)	.860 (21.84)	1.250 (31.75)	1.562 (39.67)	.120 (3.05)	.062 (1.58)	1.427 (36.25)	1.279 (32.49)	.345 (8.76)
24	.750 (19.05)	1.085 (27.55)	1.000 (25.4)	1.375 (34.92)	1.688 (42.87)	.147 (3.73)	.078 (1.98)	1.552 (39.42)	1.404 (35.66)	.452 (11.48)

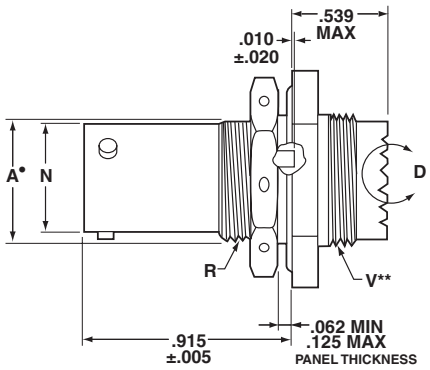
All dimensions in inches (millimeters in parenthesis)

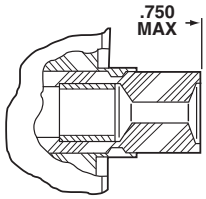
Dimensions

Receptacles

SJT07RT







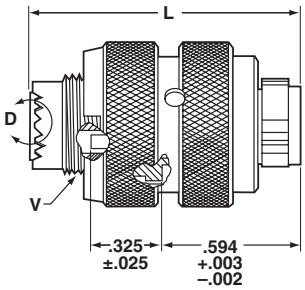
VIEW D ENLARGED
FOR SIZE 8 COAXIAL USE ONLY

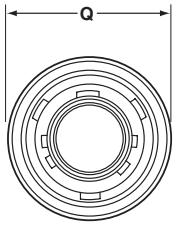
Shell Size	C Max.	A +.001/-.010 (+0.00/-0.25)	H Hex. +.017/-.016 (+0.43/-0.41)	S +.016/-.016 (+0.41/-0.41)	T +.010/-.000 (+0.25/-0.00)	V Thread Class 2A (Plated UNEF)	R Thread Class 2A (Plated UNEF)	N +.001/ -.005 (+.000/-0.01)
8	1.078 (27.38)	.542 (13.77)	.750 (19.05)	.938 (23.82)	.572 (14.52)	.5625-24	.5625-24	.473 (12.61)
10	1.203 (30.56)	.669 (16.92)	.875 (22.22)	1.062 (26.97)	.697 (17.70)	.6875-24	.6875-24	.590 (14.99)
12	1.391 (35.33)	.830 (21.08)	1.062 (26.97)	1.250 (31.75)	.884 (22.45)	.8125-20	.8750-20	.750 (19.65)
14	1.515 (38.48)	.955 (24.26)	1.188 (30.17)	1.375 (34.92)	1.007 (25.58)	.9375-20	1.0000-20	.875 (22.22)
16	1.641 (41.68)	1.084 (27.53)	1.312 (33.32)	1.500 (38.10)	1.134 (28.80)	1.0625-18	1.1250-18	1.00 (25.40)
18	1.766 (44.86)	1.208 (30.68)	1.438 (36.52)	1.625 (41.27)	1.259 (31.98)	1.1875-18	1.2500-18	1.125 (28.57)
20	1.953 (49.61)	1.333 (33.86)	1.562 (39.67)	1.812 (46.02)	1.384 (35.15)	1.3125-18	1.3750-18	1.250 (31.75)
22	2.078 (52.78)	1.459 (37.06)	1.688 (42.87)	1.938 (49.22)	1.507 (38.28)	1.4375-18	1.5000-18	1.375 (34.92)
24	2.203 (55.96)	1.580 (46.13)	1.812 (46.62)	2.062 (52.37)	1.634 (41.50)	1.4375-18	1.6250-18	1.500 (38.10)

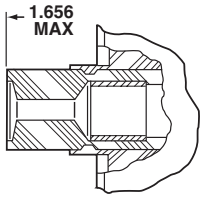
All dimensions in inches (millimeters in parenthesis)

Plugs

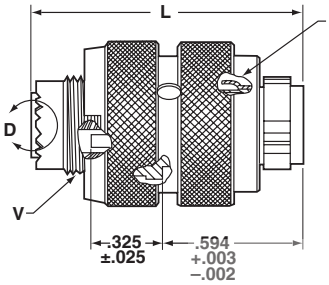
SJT06RT
SJTG06RT







VIEW D ENLARGED
FOR SIZE 8 COAXIAL USE ONLY



Shell Size	L Max.	Q Max.	V Thread	
			Class 2A (Plated UNEF)	Modified Major Diameter
8	1.219 (30.96)	.734 (18.64)	.4375-28	.412 - .417
10	1.219 (30.96)	.844 (21.44)	.5625-24	.542 - .538
12	1.219 (30.96)	1.016 (25.81)	.6875-24	.667 - .663
14	1.219 (30.96)	1.141 (28.98)	.8125-20	.791 - .787
16	1.219 (30.96)	1.265 (32.13)	.9375-20	.916 - .912
18	1.219 (30.96)	1.391 (35.33)	1.0625-18	1.034 - 1.030
20	1.219 (30.96)	1.500 (38.10)	1.1875-18	1.158 - 1.154
22	1.219 (30.96)	1.625 (41.28)	1.3125-18	1.283 - 1.279
24	1.258 (31.95)	1.750 (44.45)	1.4375-18	1.408 - 1.404

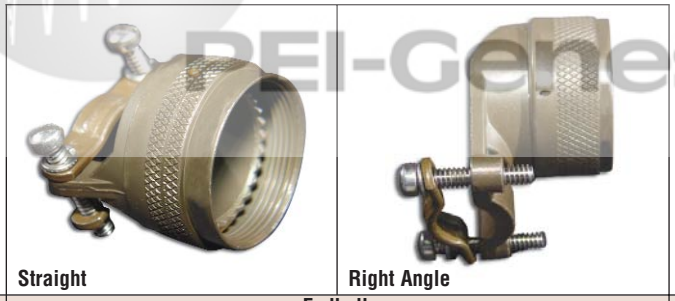
All dimensions in inches (millimeters in parenthesis)

Accessories

SJT Shell Size	Dummy Receptacles	Receptacle Dust Caps			Plug Dust Caps	
		For Flanged	For Jam Nut	No Chain	With Chain	No Chain
8	10-476807-08†	10-431918-08†	10-432984-08†	10-325943-08†	10-476810-08†	10-476801-08†
10	10-467807-10†	10-431918-10†	10-432984-10†	10-325943-10†	10-476810-10†	10-476801-10†
12	10-467807-12†	10-431918-12†	10-432984-12†	10-325943-12†	10-476810-12†	10-476801-12†
14	10-467807-14†	10-431918-14†	10-432984-14†	10-325943-14†	10-476810-14†	10-476801-14†
16	10-467807-16†	10-431918-16†	10-432984-16†	10-325943-16†	10-476810-16†	10-476801-16†
18	10-467807-18†	10-431918-18†	10-432984-18†	10-325943-18†	10-476810-18†	10-476801-18†
20	10-467807-20†	10-431918-20†	10-432984-20†	10-325943-20†	10-476810-20†	10-476801-20†
22	10-467807-22†	10-431918-22†	10-432984-22†	10-325943-22†	10-476810-22†	10-476801-22†
24	10-467807-24†	10-431918-24†	10-432984-24†	10-325943-24†	10-476810-24†	10-476801-24†

† Select code for connector plating

Finish	Suffix
Anodic coating (005)	-XX5
Cadmium plate nickel base (default)	-XX7
Olive Drab, Cadmium, nickel base (014)	-XX9
Electroless Nickel (023)	-XXG



Straight

Right Angle

SJT Shell Size	Endbells		Cable Range	
	Straight Low Cost	Right Angle Low Cost	Min	Max
9	M85049/49-2-8**	M85049/47**8	.098 (2.50)	.234 (5.94)
11	M85049/49-2-10**	M85049/47**10	.153 (3.80)	.234 (5.94)
13	M85049/49-2-12**	M85049/47**12	.190 (4.80)	.328 (8.33)
15	M85049/49-2-14**	M85049/47**14	.260 (6.60)	.457 (11.61)
17	M85049/49-2-16**	M85049/47**16	.283 (7.20)	.614 (15.60)
19	M85049/49-2-18**	M85049/47**18	.325 (8.30)	.634 (16.10)
21	M85049/49-2-20**	M85049/47**20	.343 (8.70)	.698 (17.73)
23	M85049/49-2-22**	M85049/47**22	.381 (9.70)	.823 (20.90)
25	M85049/49-2-24**	M85049/47**24	.418 (10.60)	.853 (21.67)

** Select code for connector plating
W = Olive Drab Chromate over Cadmium over Nickel (1000 Hour Salt Spray)
N = Electroless Nickel (Fluid Resistant)
A = Black Anodize

All dimensions in inches (millimeters in parenthesis)

Straight

Right Angle

SJT Shell Size	Self Locking Endbells		Clamp Range	
	Straight	Right Angle	Min	Max
9	M85049/49-2#8**	M85049/47#**8	.098 (2.49)	.234 (5.94)
11	M85049/49-2#10**	M85049/47#**10	.153 (3.89)	.234 (5.94)
13	M85049/49-2#12**	M85049/47#**12	.190 (4.83)	.328 (8.33)
15	M85049/49-2#14**	M85049/47#**14	.260 (6.60)	.457 (11.61)
17	M85049/49-2#16**	M85049/47#**16	.283 (7.19)	.614 (15.60)
19	M85049/49-2#18**	M85049/47#**18	.325 (8.25)	.634 (16.10)
21	M85049/49-2#20**	M85049/47#**20	.343 (8.71)	.698 (17.73)
23	M85049/49-2#22**	M85049/47#**22	.391 (9.68)	.823 (20.90)
25	M85049/49-2#24**	M85049/47#**24	.418 (10.62)	.853 (21.67)

Select S or N:

S = Self Locking with Detent

N = Self Locking with No Detent

** Select code for connector plating

W = Olive Drab Chromate over Cadmium over Nickel (1,000 Hour Salt Spray)

N = Electroless Nickel (Fluid Resistant)

S = 300 Series Steel, Passivated

	Sealed	EMI/RFI	S=Straight A=90° B=45°	Orientation	Description
M85049/62 	Y	N	S	Heat Shrink Boot Adapters	Designed for use with straight or right angle shrink boots. A knurled rear section with a boot groove provides an excellent surface for the boot to grab the metal endbell. Available with lock wire and drain holes. See Heat Shrink Boots on pages 258-260.
M85049/32 	N	N	S	Extender Back Shell	Non-environmental design for use with jacketed cable allows extra space to break out the wires and still provide stain relief clamping to the outside of the cable jacket.
M85049/17 	Y	Y	S	Extender Back Shell	This EMI/RFI shielding, environmentally sealing endbell features a standard style cable clamp with gland seal at the end of and extender style backshell.
M85049/29 	N	Y	S	Extender Back Shell	This EMI/RFI shielding, non-environmentally sealing endbell features a standard style cable clamp.
Banding  M85049/85 M85049/86 M85049/87	Y	Y	S B A	Banding Adapter	Banding adapters utilize a band of metal that fastens and grounds cable shields to the outside of endbells. This method of terminating shields has advantages in that they typically use tools to tighten trim the bands. These tools make the termination tight, repeatable, reworkable (if you make a mistake just cut the band off and start again) and facilitates service. Banding adapters help lower the total applied cost by having simpler designs that have fewer parts with uncomplicated assembly procedures.
Custom			SAB	Custom Designs Call	If the Military Standard endbells don't fit your needs, just call us and we will customize an endbell solution to fit you. Most of these customized endbells are typically assembled in 4-8 weeks or sooner!
M85049/27	N	N	S	E Nut	Wire seal compression nut

All dimensions in inches (millimeters in parenthesis)

Stripping and Crimping

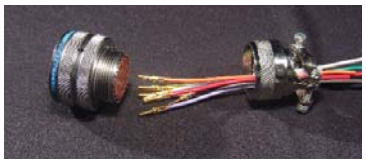
1. Strip wires according to contact size: 3/16" for #20 and 9/32" for #16 and #12. #20 contacts accommodate AWG wire sizes 20, 22, or 24; #16 accommodates 16, 18, or 20; and #12 accommodates 12 or 14.

2. Insert wire into rear of contact. Wire insulation must butt against rear of contact. Wire must be visible thru inspection hole.

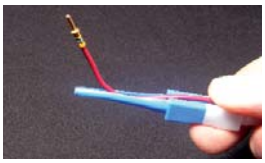
3. Use M22520/1-01 crimp tool with proper crimp location M22520/1-02. The color code band on the contact (red for #20, blue for #16, and yellow for #12) **must** match the color code of the locator and the insertion tool throughout the crimping and assembly operations.

4. Insert contact and wire into tool jaws. To crimp, squeeze handles together fully until ratchet releases and allows handles to expand; otherwise, contact cannot be extracted from tool jaws. Maintain slight insertion pressure on wire while crimping contact to wire.

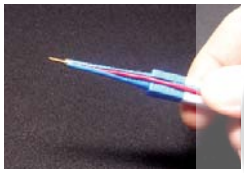
Contact Insertion



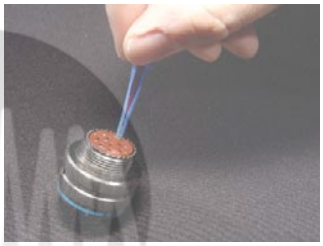
1. Remove backshell and put wired contacts thru cable clamp opening.



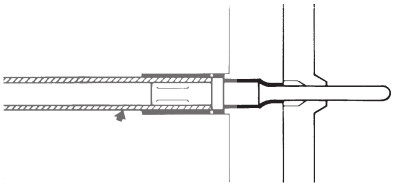
2. Use colored end of CIET tool for insertion. Place wire into tool at large opening. To facilitate contact insertion, a 6-inch minimum free length of wire is recommended.



3. Slide back tool on wire while holding thumb against wire at opening. Wire will slip into tool.



4. With tool pressed against shoulder of contact, starting at the center cavity, insert wired contact and tool into properly identified cavity at rear of plug with firm, even pressure. Do not use excessive pressure.

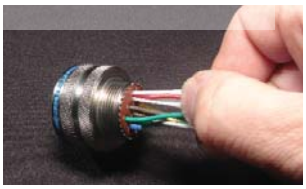


5. When contact bottoms, a slight "click" can be heard as tines of metal retaining clip snap into place behind contact shoulder.

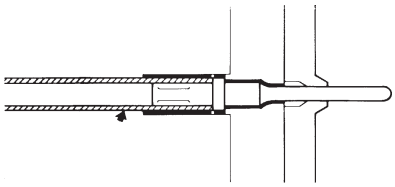
6. Withdraw tool from rear of plug. To be sure that contact is locked, pull back lightly on wire. Then remove tool from wire and proceed with other contacts.

7. After all contacts are inserted, fill unwired cavities with sealing plugs (insert head first and leave end protruding for ease of removal), assemble backshell on rear of connector.

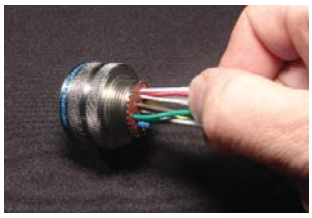
Contact Extraction



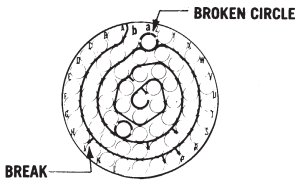
1. Remove backshell and slide back along wires to allow access. To extract a contact, use white end of CIET tool. Place wire into tool at large opening. Slide back tool on wire while holding thumb against wire at opening. Wire will slip into tool.



2. Push tool into rear of plug until it bottoms. At this point, tool releases tines on retaining clip so that contact can be extracted.



3. While maintaining slight insertion force on tool, firmly hold wire against serrated shoulder at center of tool and extract both wired contact and tool from plug.



4. Check face of plug or receptacle for proper contact installation. In socket inserts with a large number of contact, cavities are identified in a spiral pattern. A projecting line from the spiral indicates omission of a letter; a broken circle around a cavity indicates transition between capitals and lower case and double letters.

Note: LJT Series shown.

RJ Field Series

RJ Field Series

Amphenol's RJ Field Harsh Environment Ethernet Connector System is a simple, elegant solution for connecting RJ45 style Cat 5/5E connectors in a rugged, sealed, and vibration resistant package. RJ Field connectors meet or exceed all of the 10 BaseT, 100 BaseTX, and 1000 BaseT network requirements. The RJ Field plug connectors use the patented RJStop® to depress and protect the fragile RJ45 plastic latch while capturing the complete RJ45 connector in a high quality insulator. This insulator is then snapped into the plug housing and a simple plastic or metal gland seal cord grip is tightened onto the cable providing up to an IP67 seal on cable. The RJ Field system is a one-step mating system that needs absolutely no tooling to assemble, unlike competing products that require special tooling and time consuming cable preparation and termination procedures

There are three basic mating styles at present; RJF544 - Low cost composite push-pull style, designed around the popular Amphenol ECTA connectors, RJF - Quick mating bayonet style based on MIL-DTL-26482 Amphenol PT connectors, RJFTV - Vibration resistant metal ratcheted, threaded style MIL-DTL-38999 type for high reliability even in high vibration applications.

Applications

- Robotics
- Special Machines
- Welding Machines
- CNC Machines
- Process & Motion Control

Technical Specifications

MATERIALS & FINISHES

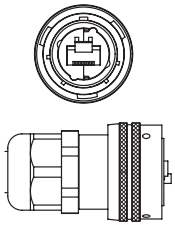
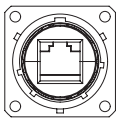
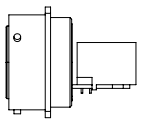
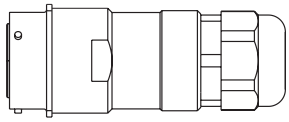
Shell & Plating	See table
Contacts	Copper Alloy
Plating	Gold
Inserts	Low smoke, halogen free, glass filled, thermoplastic (UL94V0, NFF16102 & DIN5510-2)
Data Transmission	10 BaseT, 100 BasetTX, 1000 BaseT networks Cat 5e per TIA/EIA 568B and Class D per ISO/IEC 11801
Operating temperature	-40°F to 185°F (-40°C to 85°C)
Sealing	IP67 in mated condition ≈ NEMA 4P and unmated for sealed receptacles
Humidity	21 days, 110°F (43°C), 98% relative humidity
Thermal Shock	5 cycles at -40°F to 212°F (-40°C to 100°C)
Operating temperature	-40°F to 185°F (-40°C to 85°C)
Sealing	IP67 in mated condition ≈ NEMA 4P and unmated for Sealed receptacles
Cables Sealing Range .197" to .472" (5 to 12 mm)	

CONSTRUCTION	ENHANCED EMI SHIELDING %	SHELL FINISH	SALT SPRAY (HOURS)	RJF544 ECTA	RJF MIL-DTL-26482	RJFTV MIL-DTL-38999
Composite	No	Black	>1000	X		
	Yes	Nickel (N)	>48	X		
Aluminum Alloy	No	Anodized (B)	>96		X	
	No	Hard Anodized (A)	>500		X	
	Yes	Nickel (N)	>48		X	X
	Yes	Olive Drab (G)	>500		X	X
MATING SYSTEM				Push-Pull	Bayonet	Triple lead ratched thread
NUMBER OF POSSIBLE CODINGS (POLARIZATIONS)				1	4	4

Amphenol®

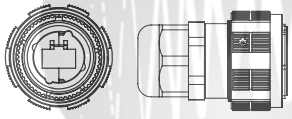
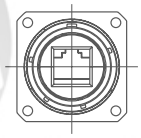
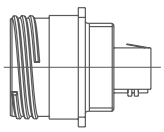
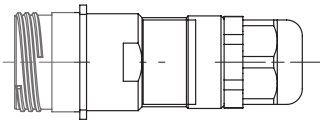
How to Order

RJF

	Plugs		Flanged Receptacles			
						
	CABLE GLANDS		STANDARD BOX MOUNT	SEALED INSERT BOX MOUNT (UNMATED)	CABLE GLANDS	
PLATING	PLASTIC	METAL			PLASTIC	METAL
Black Anodized	RJF6B	RJF6MB	RJF21B	RJF2S_§_1B	RJF2PE1B	RJF2PEM1B
Nickel (shielded)	RJF6N	RJF6MN	RJF21N	RJF2S_§_1N	RJF2PE1N	RJF2PEM1N
Hard Black Anodized	RJF6A	RJF6MA	RJF21A	RJF2S_§_1A	RJF2PE1A	RJF2PEM1A
Olive Drab Cadmium (shielded)	RJF6G	RJF6MG	RJF21G	RJF2S_§_1G	RJF2PE1G	RJF2PEM1G

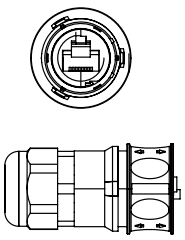
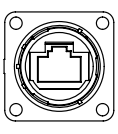
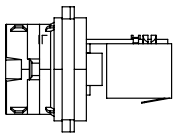
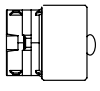
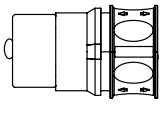
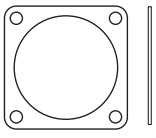
_§_ Add rotation code A, B, C, D

RJFTV

	Plugs		Flanged Receptacles			
						
	CABLE GLANDS		STANDARD BOX MOUNT	SEALED INSERT BOX MOUNT (UNMATED)	CABLE GLANDS	
PLATING	PLASTIC	METAL			PLASTIC	METAL
Nickel (shielded)	RJFTV6N	RJFTV6MN	RJFTV21N	RJFTV2S_§_1N	RJFTV2PE1N	RJFTV2PEM1N
Olive Drab Cadmium (shielded)	RJFTV6G	RJFTV6MG	RJFTV21G	RJFTV2S_§_1G	RJFTV2PE1G	RJFTV2PEM1G

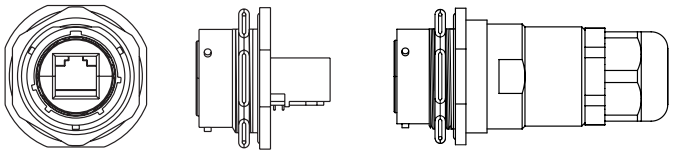
_§_ Add rotation code A, B, C, D

RJF544

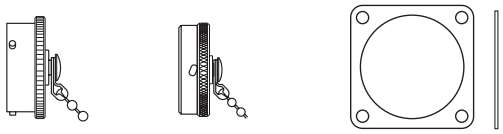
	RJ45 Female		Accessories			
						
PLUG	COMPOSITE	METALIZED NICKEL	DUST CAPS		FLANGED GASKET
			PLUG	RECEPTACLE	
RJF544-6	RJF544-21	RJF544-2M1	544-02BM	544-02BE	544-02JE

How to Order

Jam Nut Receptacles



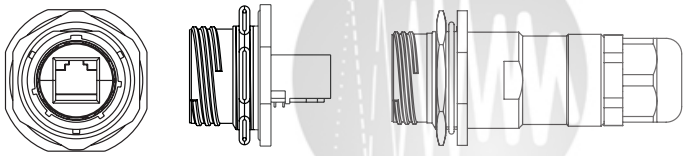
Accessories



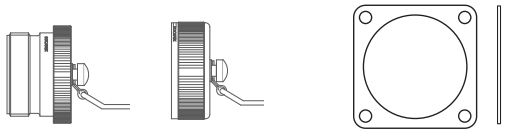
STANDARD	SEALED INSERT (UNMATED)	INLINE CABLE GLAND		DUSTCAPS			FLANGED GASKET
		PLASTIC	METAL	PLUG	BOX MOUNT	JAM NUT	
RJF71B	RJF7S_§_1B	RJF7PE1B	RJF7PEM1B	RJFC6B	RJFC2B	RJFC7B	JE18
RJF71N	RJF7S_§_1N	RJF7PE1N	RJF7PEM1N	RJFC6N	RJFC2N	RJFC7N	
RJF71A	RJF7S_§_1A	RJF7PE1A	RJF7PEM1A	RJFC6A	RJFC2A	RJFC7A	
RJF71G	RJF7S_§_1G	RJF7PE1G	RJF7PEM1G	RJFC6G	RJFC2G	RJFC7G	

_§_ Add rotation code A, B, C, D

Jam Nut Receptacles



Accessories



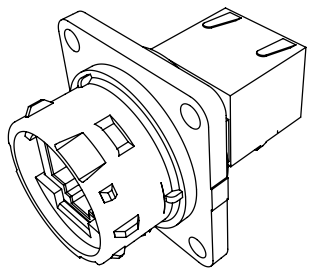
STANDARD	SEALED INSERT (UNMATED)	INLINE CABLE GLAND		DUSTCAPS			FLANGED GASKET
		PLASTIC	METAL	PLUG	BOX MOUNT	JAM NUT	
RJFTV71N	RJFTV7S_§_1N	RJFTV7PE1N	RJFTV7PEM1N	RJFTVC6N	RJFTVC2N	RJFTVC7N	JE19
RJFTV71G	RJFTV7S_§_1G	RJFTV7PE1G	RJFTV7PEM1G	RJFTVC6G	RJFTVC2G	RJFTVC7G	

_§_ Add rotation code A, B, C, D

Available Terminal Types - *Call for details*

Standard - Type 1

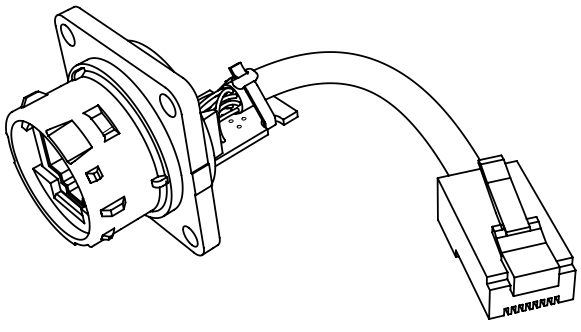
RJ45 Female Receptacle.



Pre-wired - Type 2

Receptacle with pre-attached cable.

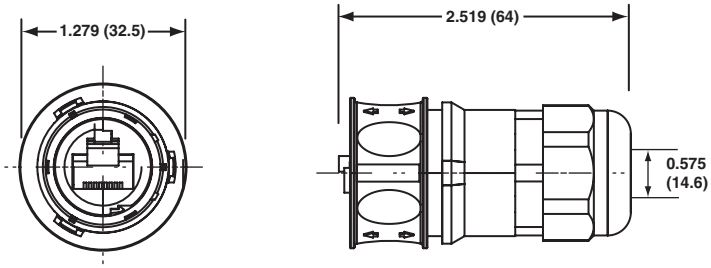
- Available in different lengths and terminations
- Call for more information



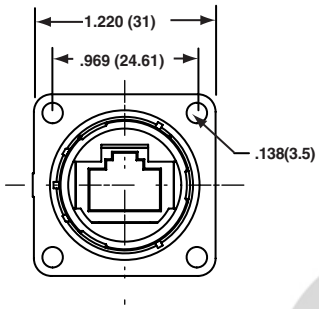
Dimensions

RJF544

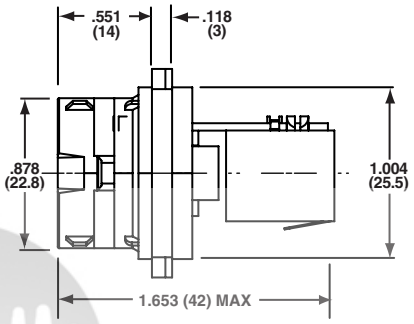
RJF544-6 Plug



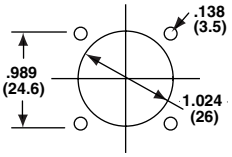
Box Mount Receptacle



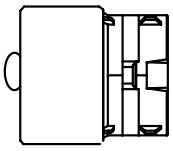
RJF544-2



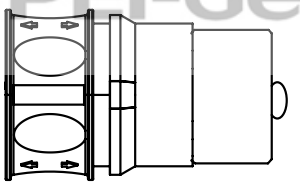
Panel Cutout



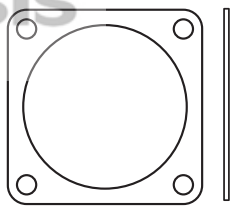
Plug Cap
544-02BM



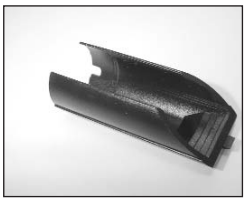
Receptacle Cap
544-02BE



Gasket
544-02JE



Insert Removal Tools - Insert proper tool to unlock and remove insert from rear



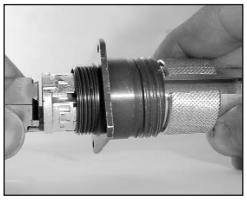
544 OT 02

Plug Insert Removal

Insert removal tool for plugs RJF544 only.

RJ FODE

Plug Insert Removal



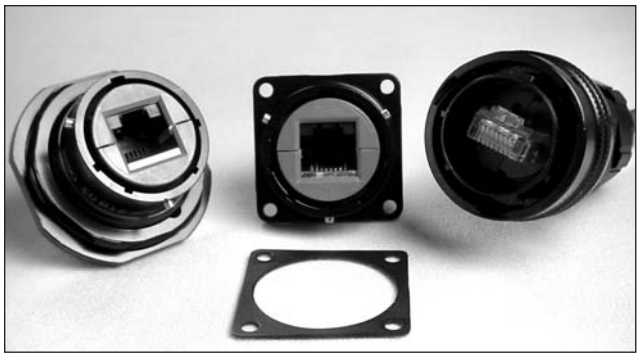
Receptacle Insert Removal

Insert removal tool for plugs and receptacles RJF and RJFTV only.

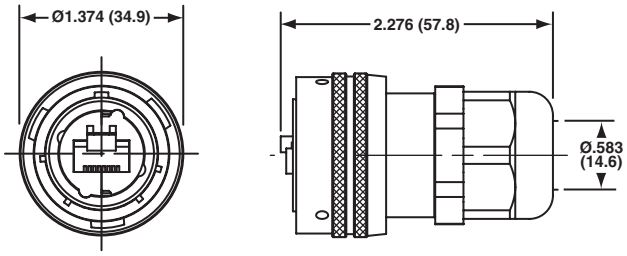
All dimensions in inches (millimeters in parenthesis)

Dimensions

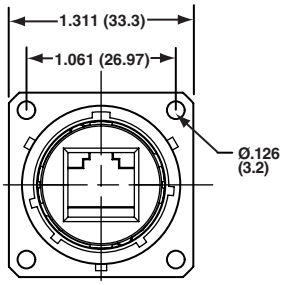
RJF



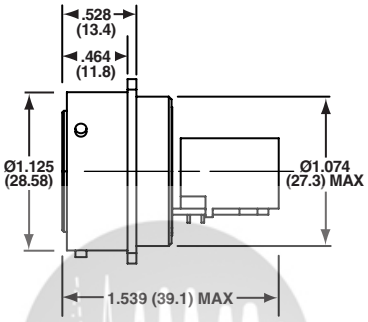
RJF6 Plug



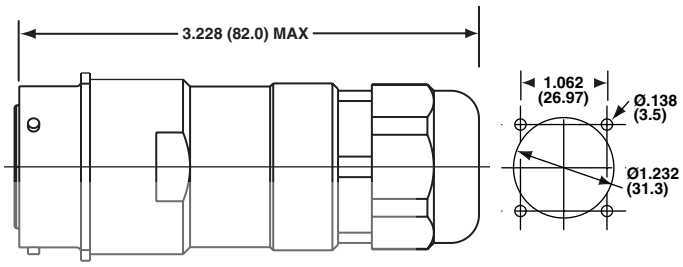
Box Mount Receptacle



RJF21

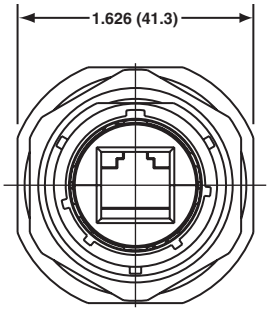


RJF21PE (M)

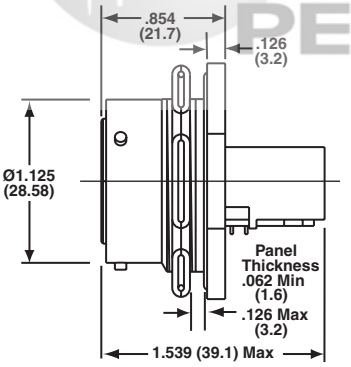


Panel Cutout

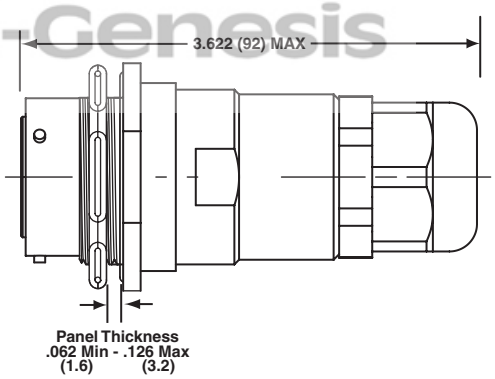
Jam Nut Receptacle



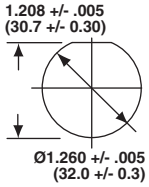
RJF71



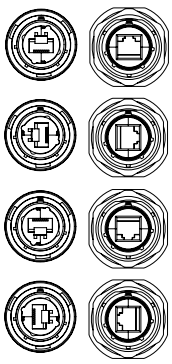
RJF71PE (M)



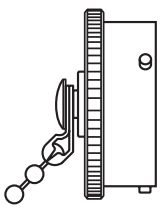
Panel Cutout



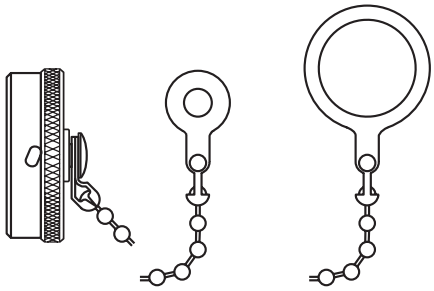
Plug / Receptacle



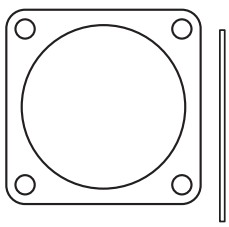
Plug Cap
RJFC6



Receptacle Caps
RJFC2 RJFC7



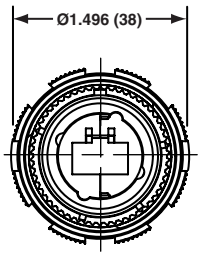
Gasket
JE18



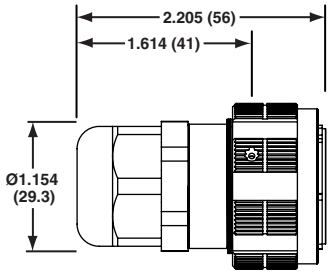
All dimensions in inches (millimeters in parenthesis)

Dimensions

RJFTV

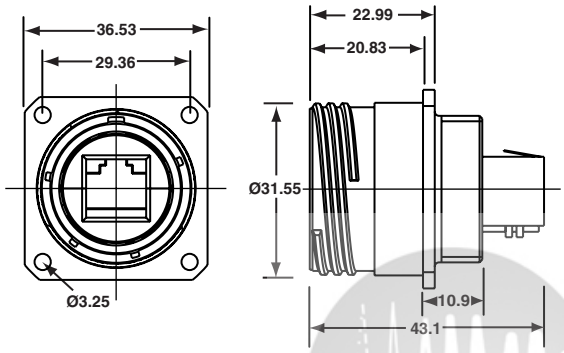


RJFTV6

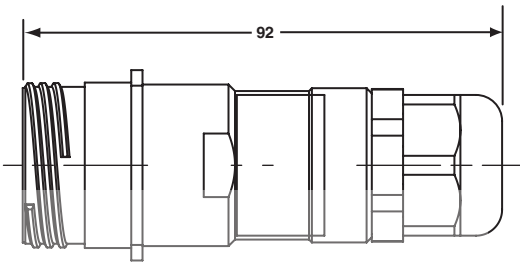


Cable Exit Range
.2165-.5110 (5.5-13.0)

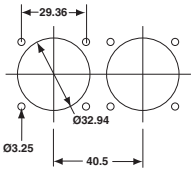
RJFTV2



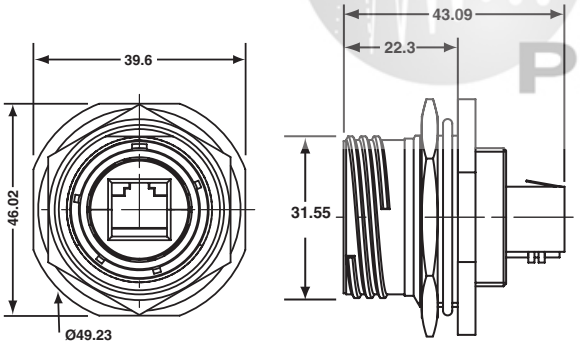
RJFTV2PE (M)



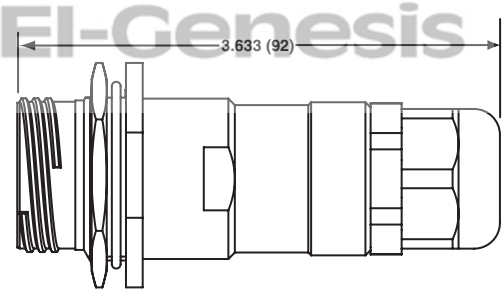
Panel Cutout



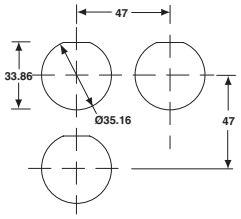
RJFTV7



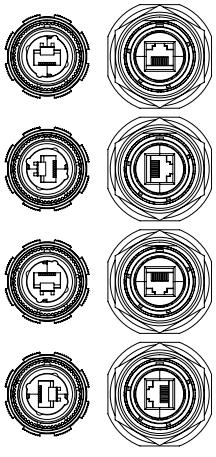
RJFTV7PE (M)



Panel Cutout



Plug Receptacle



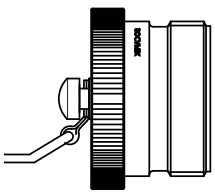
Code A

Code B

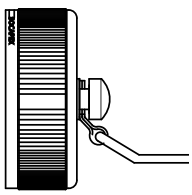
Code C

Code D

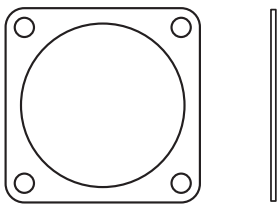
Plug RJFTVC6



Receptacle Cap RJFTVC2 Box Mount RJFTVC7 Jamnut



Gasket JE19

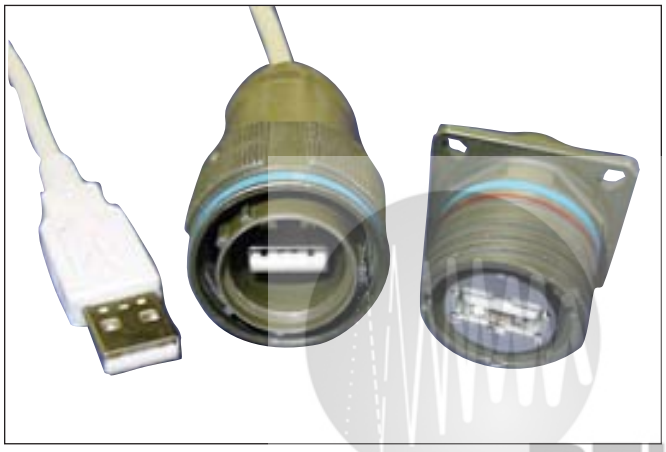


All dimensions in inches (millimeters in parenthesis)

Additional RJ Field Styles & Cable

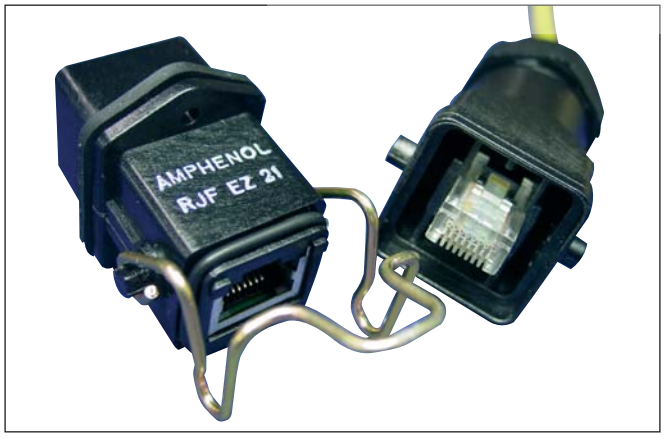
RJB

RJ11



USB-A

USB-B



RJF EZ

FW/FTV

High Performance Free Ethernet Cable

High performance, low smoke, halogen free, ethernet cable is available on reels for field termination or to your specific length pre-terminated with shielded RJ45 connectors. This cable is dual shielded, ultraviolet (UV) resistant, and has a built-in Kevlar strength member providing the most secure, highest quality connection available for your most demanding network applications.

CAT5E 190-038045-00
CAT5 190-036161-00

Sold Per Foot

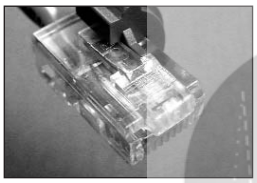
Assembly Instructions

Read and understand these instructions prior to assembly.

Cable Plugs

1. Carefully slide cable gland over RJ45 connector.

2. Depress the RJ45 latch. Place part A of the RJStop over the RJ45 body capturing the depressed latch.



3. Slide part B of the RJStop over the RJ45 connector and snap part A to part B. The latch should now be fully depressed and locked into the RJStop.

4. Carefully insert the RJ45 - RJStop in the rear of the connector and for the RJF and the RJFTV align insert with proper coding (polarization).

5. After verifying the proper coding, snap RJStop assembly into the plug body. Make sure the RJStop is fully seated in the plug body.

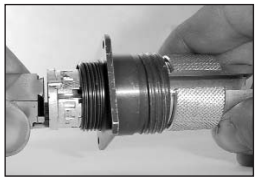
6. Slide up the cable gland seal and tighten onto the rear of the plug body.

7. Tighten rear seal nut to compress the gland onto the cable. Please note if jacket is not smooth, round and between 0.20 to 0.47 inches (5 to 12 mm) in diameter, use a small piece of adhesive line (dual wall) heat shrink tubing on jacket of cable.

Receptacles

1. After verifying proper alignment of Coding (polarization), insert RJ assembly into rear of the shell until it fully snaps into place.

2. Mate a standard RJ45 cordset to the rear receptacle.



3. Mount to panel with proper accessories (panel mount gasket see pages 252 & 253, nut plates and sealing screw see page 257).

PE Version

1 Slide cable gland seal and extender endbell up your cable.

2 Thread the extender endbell onto the rear of the receptacle body.

3 Slide the cable gland seal and tighten onto the rear of the plug body.

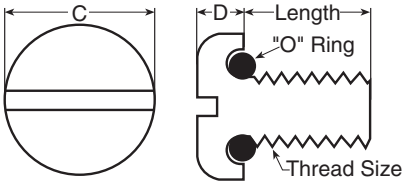
4 Tighten rear seal nut to compress the gland onto the cable. Please note that if jacket is not smooth, round and between 0.20 to 0.47 inches (5 to 12mm) in diameter, use a small piece of adhesive line (dual wall) heat shrink tubing on jacket of cable.

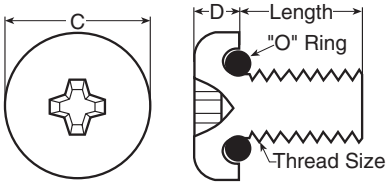
Insert Extraction

Plug inserts are removed from rear with simple tool. Receptacle inserts are removed from front with simple tool. See page 252.

Sealing Screws

Sealing screws are designed with a groove underneath the head to incorporate an O-ring. When tightened, the O-ring is compressed against the connector flange to form an air, water, and gas-tight seal. These screws are also vibration resistant. The reservoir beneath the head confines the O-ring and permits full metal-to-metal contact between the screw and the connector flange. Sealing screws can be reused without spoiling the sealing action. Sealing screws are used in conjunction with the nutplates below.





Slotted Pan Head						
Part Number	Thread	Length	C MAX	D MAX	Clear Hole MIN	Clear Hole MAX
S-440-3/8	4-40NC-2A	3/8"	.220"	.069"	.125"	.129"
S-440-1/2		1/2"				
S-440-5/8		5/8"				
S-440-3/4		3/4"				
S-632-3/8	6-32NC-2A	3/8"	.271"	.083"	.147"	.152"
S-632-1/2		1/2"				
S-632-5/8		5/8"				
S-632-3/4		3/4"				
Metric						
SM4-12mm	M4	12mm	CALL	CALL	CALL	CALL
SM5-12mm	M5	12mm	CALL	CALL	CALL	CALL

Additional threads, lengths, and styles available. Call for ordering information.

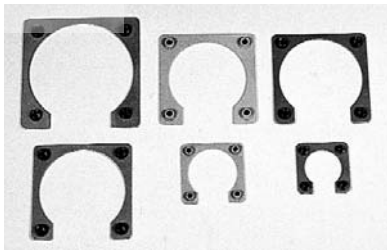
Phillips Pan Head (meets MS3212 & MS3213)						
Part Number	Thread	Length	C MAX	D MAX	Clear Hole MIN	Clear Hole MAX
R-440-3/8	4-40NC-2A	3/8"	.238"	.080"	.125"	.129"
R-440-1/2		1/2"				
R-440-5/8		5/8"				
R-440-3/4		3/4"				
R-632-3/8	6-32NC-2A	3/8"	.294"	.097"	.147"	.152"
R-632-1/2		1/2"				
R-632-5/8		5/8"				
R-632-3/4		3/4"				

Material: Passivated stainless steel screws, silicone rubber O-rings

Nut Plates

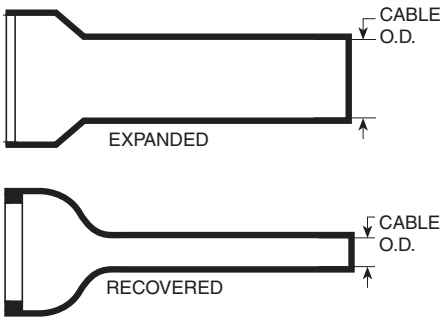
Nut plates are flat metal brackets containing four captive nuts that are used to mount flanged receptacles to a panel. They eliminate the nightmare of working with loose nuts in a confined area and effectively distribute the screw tension across the back of the panel. These cost effective devices are "self-wrenching", drawing the bracket up to be automatically aligned. Our plates are a "C" shape design which allows you to slip the nut plate over the wire bundle just prior to mounting. The bracket is aluminum alloy with Alodine plating and the nuts are steel alloy plated with cadmium. Nut plates mate with above sealing screws.

Connector Styles		MIL-DTL-5015	MIL-DTL-26482		MIL-DTL-38999		
Part Number	Thread	97, AIT, MS AIB/GT	PT/PTSE, 62GB, MB10, MS3470	MB12, MS3472	LJT Series I	SJT, JT Series II	TV-CTV Series III
M85528/2-8A	4-40	8/8S	8			8	
M85528/2-10A	4-40	10S/10SL	10		9	10	A
M85528/2-10B	6-32			10			
M85528/2-12A	4-40	12/12S	12	10	11	12	B
M85528/2-12B	6-32			12			
M85528/2-14A	4-40	14/14S	14		13	14	C
M85528/2-14B	6-32			14			
M85528/2-16A	4-40	16/16S/RJF544	16		15	14	D
M85528/2-16B	6-32			16			
M85528/2-18A	4-40	18	18/RJF/RJFTV		17	18	E
M85528/2-18B	6-32			18			
M85528/2-20A	4-40	20	20		19	20	F
M85528/2-20B	6-32			20			
M85528/2-22A	4-40	22	22		21	22	G
M85528/2-22B	6-32			22			
M85528/2-24A	6-32			24	25		J
M85528/2-24B	6-32	24	24		23	24	H
M85528/2-25A	6-32				25		
M85528/2-28A	6-32	28	24				
M85528/2-32A	6-32	32					
M85528/2-36A	6-32	36					
AT283-40	8-32	40					



Torque	MAX IN/LB	MAX NM
4-40	6.3	.71
6-32	10	1.12

Standard Heat Shrink Boots



Standard Heat Shrink Boots are supplied in flame retardant polyolefin with an adhesive inner liner. A High Shrink Ratio version for sealing smaller wire bundles is also available. The adhesive liner is heat-activated and bonds to the underlying surface filling any small voids that might exist. When cool, the adhesive forms a barrier against water, moisture, dirt and other environmental contaminants. The lip on the connector end of the recovered boot fits into the sealing groove. Operating temperature is -67° F to 275° F (-55° C to 135° C). These boots are also available in halogen-free polyolefin, semi-rigid polyolefin, silicone, or Viton, with or without adhesive liner.

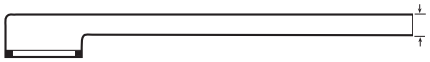
Heat Shrink Boot Part Number	Cable O.D.		Length ± 10%	AIT, AIB/GT G Style (MIL-DTL-5015) Shell Size										
	MAX	MIN		10SL	12S	14S	16S/16	18	20	22	24	28	32	36
HSB1	0.25 (6.4)	0.08 (2.0)	2.37 (60.2)	●	●									
HSB2	0.30 (7.6)	0.10 (2.5)	2.92 (74.2)			●	●	●						
HSB3	0.38 (9.7)	0.12 (3.0)	3.32 (84.3)						●	●				
HSB4	0.45 (11.4)	0.14 (3.6)	3.92 (99.6)								●	●		
SB1	0.88 (22.4)	0.25 (6.4)	4.17 (105.9)	●	●	●								
SB2	1.01 (25.7)	0.29 (7.4)	4.77 (121.2)	●	●	●	●	●						
SB3	1.16 (29.5)	0.33 (8.4)	5.46 (138.7)			●	●	●						
SB4	1.34 (34.0)	0.39 (9.9)	6.28 (159.5)				●	●	●	●				
SB5	1.47 (37.3)	0.41 (10.4)	7.00 (177.8)						●	●				
SB6	1.72 (43.7)	0.48 (11.2)	8.00 (203.2)								●	●		
SB7	1.97 (50.0)	0.51 (13.0)	8.00 (203.2)										●	●
SB8	2.47 (62.7)	0.69 (17.5)	8.00 (203.2)										●	●

Heat Shrink Boot Part Number	Cable O.D.		Length ± 10%	MB M85049/60 (MIL-DTL-26482 Style) Shell Size									LJT/SJT/JT M85049/62 & TV-CTV M85049/69 (MIL-DTL-38999 Style) Shell Size							
	MAX	MIN		8	10	12	14	16	18	20	22	24	8/9	10/11	12/13	14/15	16/17	18/19	20/21	22/23	24/25
HSB1	0.25 (6.4)	0.08 (2.0)	2.37 (60.2)	●	●								●	●							
HSB2	0.30 (7.6)	0.10 (2.5)	2.92 (74.2)			●	●	●							●	●	●				
HSB3	0.38 (9.7)	0.12 (3.0)	3.32 (84.3)						●	●								●	●		
HSB4	0.45 (11.4)	0.14 (3.6)	3.92 (99.6)								●	●								●	●
SB1	0.88 (22.4)	0.25 (6.4)	4.17 (105.9)	●	●	●	●						●	●	●	●					
SB2	1.01 (25.7)	0.29 (7.4)	4.77 (121.2)		●	●	●	●						●	●	●	●				
SB3	1.16 (29.5)	0.33 (8.4)	5.46 (138.7)			●	●	●	●						●	●	●	●			
SB4	1.34 (34.0)	0.39 (9.9)	6.28 (159.5)					●	●	●							●	●	●		
SB5	1.47 (37.3)	0.41 (10.4)	7.00 (177.8)							●	●	●							●	●	●
SB6	1.72 (43.7)	0.48 (11.2)	8.00 (203.2)								●	●								●	●

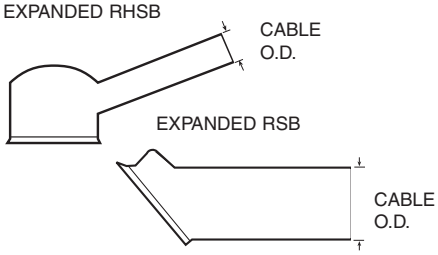
All dimensions in inches (millimeters in parenthesis)

Right Angle Heat Shrink Boots

RECOVERED RSB and RHSB



EXPANDED RHSB



Right Angle Heat Shrink Boots are supplied in flame retardant polyolefin with an adhesive inner liner. A High Shrink Ratio version for sealing smaller wire bundles is also available. The adhesive liner is heat-activated and bonds to the underlying surface filling any small voids that might exist. When cool, the adhesive forms a barrier against water, moisture, dirt and other environmental contaminants. The lip on the connector end of the recovered boot fits into the sealing groove. Operating temperature is -67° F to 275° F (-55° C to 135° C). These boots are also available in halogen-free polyolefin, semi-rigid polyolefin, silicone, or Viton, with or without adhesive liner.

Heat Shrink Boot Part Number	Cable O.D.		Length ± 10%	AIT, AIB/GT G Style (MIL-DTL-5015 Style) Shell Size										
	MAX	MIN		10SL	12S	14S	16S/16	18	20	22	24	28	32	36
RHSB1	0.24 (6.1)	0.08 (2.0)	1.77 (45.0)	●	●									
RHSB2	0.30 (7.6)	0.10 (2.5)	2.64 (67.1)			●	●	●						
RHSB3	0.37 (9.4)	0.12 (3.0)	3.17 (81.0)						●	●				
RHSB4	0.45 (11.4)	0.14 (3.6)	4.57 (116.1)							●	●	●	●	
RSB1	0.88 (22.4)	0.23 (5.8)	4.14 (105.2)	●	●									
RSB2	1.01 (25.7)	0.26 (6.6)	4.88 (124.0)	●	●	●	●	●						
RSB3	1.16 (29.5)	0.30 (7.6)	5.76 (146.3)			●	●	●						
RSB4	1.34 (34.0)	0.35 (8.9)	6.78 (172.2)				●	●	●	●				
RSB5	1.47 (37.3)	0.37 (9.4)	7.29 (185.2)						●	●				
RSB6	1.72 (43.7)	0.44 (11.2)	7.93 (201.4)								●	●		
RSB7	1.97 (50.0)	0.51 (13.0)	8.84 (224.5)								●	●	●	●
RSB8	2.47 (62.7)	0.69 (17.5)	8.95 (227.3)										●	●

Heat Shrink Boot Part Number	Cable O.D.		Length ± 10%	MB M85049/60 (MIL-DTL-26482 Style) Shell Size									LJT/SJT/JT M85049/62 & TV-CTV M85049/69 (MIL-DTL-38999 Style) Shell Size								
	MAX	MIN		8	10	12	14	16	18	20	22	24	8/9	10/11	12/13	14/15	16/17	18/19	20/21	22/23	24/25
RHSB1	0.24 (6.1)	0.08 (2.0)	1.77 (45.0)	●	●								●	●							
RHSB2	0.30 (7.6)	0.10 (2.5)	2.64 (67.1)			●	●	●							●	●	●				
RHSB3	0.37 (9.4)	0.12 (3.0)	3.17 (81.0)						●	●								●	●		
RHSB4	0.45 (11.4)	0.14 (3.6)	4.57 (116.1)								●	●								●	●
RSB1	0.88 (22.4)	0.23 (5.8)	4.14 (105.2)	●	●	●	●						●	●	●	●					
RSB2	1.01 (25.7)	0.26 (6.6)	4.88 (124.0)		●	●	●	●						●	●	●	●				
RSB3	1.16 (29.5)	0.30 (7.6)	5.76 (146.3)			●	●	●	●						●	●	●	●			
RSB4	1.34 (34.0)	0.35 (8.9)	6.78 (172.2)					●	●	●	●						●	●	●	●	
RSB5	1.47 (37.3)	0.37 (9.4)	7.29 (185.2)							●	●	●							●	●	●
RSB6	1.72 (43.7)	0.44 (11.2)	7.93 (201.4)								●	●								●	●

All dimensions in inches (millimeters in parenthesis)

Black Polyolefin Convoluted Boots

Convoluted boots are used in applications that require various cable outlet angles or if the cable harness requires quick access to connector wiring. When held in place on an angle while cooling, these boots will maintain their bend. If maximum connector serviceability is require, a two-piece spin coupling endbell should be used. The convoluted boot are used in conjunction with this spin coupling endbell, which allows the user to unthread and push the endbell back out of the way by heating the boot until it becomes flexible. Then make the required repair, reheat the boot and rethread the backshell onto the connector. The whole process is completed without having to cut off and replace the boot.

Convoluted Boots	Cable O.D.		Length	Max 90° Length	AIT, AIB/GT G Style (MIL-DTL-5015 Style) Shell Size										
	MAX	MIN			10SL	12S	14S	16S/16	18	20	22	24	28	32	36
CSB2	0.70 (17.8)	0.32 (8.1)	5.25 (133.4)	2.67 (67.8)	●	●	●								
CSB3	1.06 (26.9)	0.50 (12.7)	5.75 (146.1)	2.89 (73.4)			●	●	●	●	●				
CSB4	1.44 (36.6)	0.69 (17.5)	6.25 (158.8)	3.08 (78.2)				●	●	●	●	●	●		
CSB5	1.80 (45.7)	0.88 (22.4)	6.75 (171.5)	3.26 (82.8)						●	●	●	●	●	●
CSB6	2.15 (54.6)	0.90 (22.9)	9.30 (236.2)	5.45 (138.4)										●	●

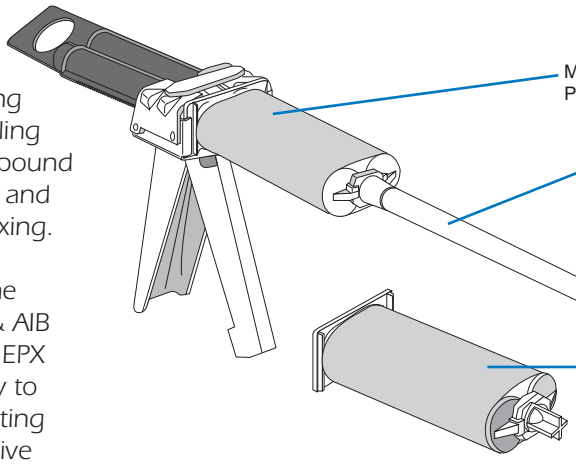
Convoluted Boots	Cable O.D.		Length	Max 90° Length	MB M85049/60 (MIL-DTL-26482 Style) Shell Size									LJT/SJT/JT M85049/62 & TV-CTV M85049/69 (MIL-DTL-38999 Style) Shell Size								
	MAX	MIN			8	10	12	14	16	18	20	22	24	8/9	10/11	12/13	14/15	16/17	18/19	20/21	22/23	24/25
CSB2	0.70 (17.8)	0.32 (8.1)	5.25 (133.4)	2.67 (67.8)	●	●								●	●							
CSB3	1.06 (26.9)	0.50 (12.7)	5.75 (146.1)	2.89 (73.4)			●	●	●	●					●	●	●	●				
CSB4	1.44 (36.6)	0.69 (17.5)	6.25 (158.8)	3.08 (78.2)					●	●	●	●	●					●	●	●	●	●
CSB5	1.80 (45.7)	0.88 (22.4)	6.75 (171.5)	3.26 (82.8)							●	●	●			●	●	●				

Note allow 20% recovery for proper bonding of adhesive liner.

All dimensions in inches (millimeters in parenthesis)

Potting System

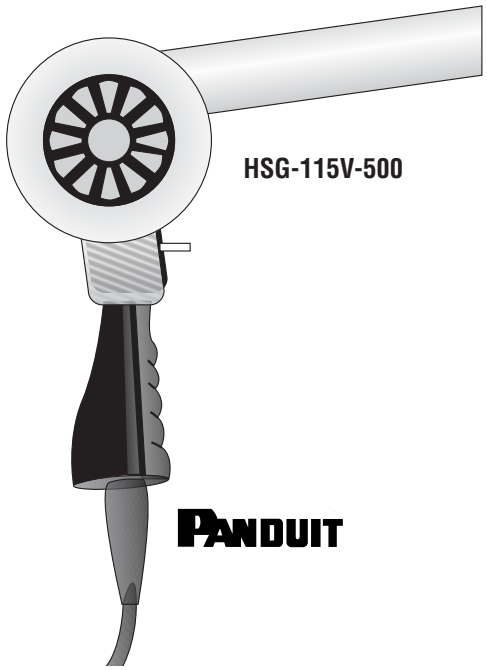
3M Scotch-Weld™ EPX Potting Systems consist of a self leveling Duo-Pak epoxy potting compound cartridge, an EPX applicator, and an EPX nozzle for precise mixing. 3M's two-part epoxy potting compound is for use with the PT/PTSE and MS-E/F/R, AIT & AIB series "P" style endbells. The EPX system provides an easy way to meter, mix and dispense potting compound. 3M's non-corrosive epoxy potting compound is specially formulated for electronic applications. Available in Black and Clear.



Potting Compound:
DP270-BLACK
DP270-CLEAR
DP125 TRANSLUSCENT
20 Minute work life with excellent wetting properties allows same day shipping of assemblies
DP100 PLUS-CLEAR
4-minute work life; Rapid setup for automotive applications

Heat Gun

The Panduit HSG-115V-500 heat gun is a general purpose tool designed for all types of heat shrink boots and tubing. The air intake adjustment varies the temperature from 500°F (260°C) to 650°F (344°C). The unit operates on 115 Vac at 11 amps. The tools comes with an adjustable stand and a neoprene AC cord. The bearings, brushes and heating element are replaceable.



Part Number	Description
HSG-115V-500	• General purpose tool - For use on all types of heat shrink tubing and boots • Air intake regulator varies temperature from 500°F (260°C) to 650°F (344°C) 115 Volt, 11 amp. • Neoprene jacketed cord with molded strain relief • Adjustable stand • Replaceable bearings, brushes and heating elements

Call for European versions

PMA Adapters

PMAFIX Adapters are manufactured from specially formulated polyamids that are self-extinguishing, free of halogen and cadmium and are extremely shock resistant. The simple mounting with locking clips ensures high pullout values and a vibration free connection to PMAFLEX conduit. Using a snap-to-close clip fastening, PMAFIX connectors feature a unique safety mechanism that can only be released with a screwdriver. These connectors are ideal for use in applications where the cable protection system requires a high degree of sealing and safety.

= Sealed to IP68 all others IP67

For MIL-DTL-5015, MS310-, AIT, AIB, GT & 97 Styles

Shell Size	Connector Barrel	Threaded A/B Endbell	PMA Conduit Size 10	12	17	23	29	36	48
8S		●	CALL	CALL					
10S	●		BFIBM-U120T	CALL					
10SL		●	BVIRA-U150	BVIRA-U152					
12S/12	●	●	BVIRA-U150	BVIRA-U152					
12SL		●	BVIRA-U180	BVIRA-U182	BVIRA-U187				
14S/14	●	●	BVIRA-U180	BVIRA-U182	BVIRA-U187				
16S/16	●	●		BVIVG-U212	BVIVG-U217				
18	●	●		BVIVG-U242	BVIVG-U247	BVIVG-U243			
20	●	●		BVIVG-U292	BVIVG-U297	BVIVG-U293	BVIVG-U299		
22		●		BVIVG-U292	BVIVG-U297	BVIVG-U293	BVIVG-U299		
24		●		BVIVG-U352	BVIVG-U357	BVIVG-U353	BVIVG-U359	BVIVG-U356	
28		●		BVIVG-U352	BVIVG-U357	BVIVG-U353	BVIVG-U359	BVIVG-U356	
32		●			BVIVG-U437	BVIVG-U433	BVIVG-U439	BVIVG-U436	
36		●				BVIVG-U503	BVIVG-U509	BVIVG-U506	BVIVG-U508
40		●				BVIVG-U563	BVIVG-U569	BVIVG-U566	BVIVG-U568

For MIL-DTL-26482 Series 1 Styles

Shell Size	PT/PTSE Connector Barrel	PT A Endbell	PMA CONDUIT SIZE 10	12	17	23	29	36	48
8		●	CALL	CALL					
10	●		BFIBM-U120T	CALL					
		●	BVIRA-U150	BVIRA-U152					
12	●			BVIRB-U162					
		●	BVIRA-U180	BVIRA-U182	BVIRA-U187				
14		●		BVIVG-U212	BVIVG-U217				
	●			BVIVB-U202					
16	●			BVIRB-U232	BVIRB-U237				
18	●			BVIRB-U262	BVIRB-U267				
20	●	●			BVIVG-U297	BVIVG-U293	BVIVG-U299	BVIVG-U296***	
22	●					BVIRB-U323			
		●			BVIRB-U357	BVIRB-U353	BVIRB-U359		
24	●	●			BVIVG-U357	BVIVG-U353	BVIVG-U359		

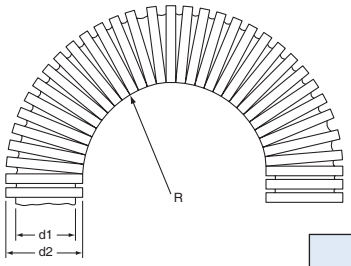
*** Uses an additional thread adapter

For MIL-DTL-26482 Series 2 Styles

Shell Size	MB/MS347_ Connector Barrel	PMA CONDUIT SIZE 10	12	17	23	29	36	48
8	●		BVIVG-U242	BVIVG-U247	BVIVG-U243			
10	●	BVIRA-U150	BVIRA-U152					
12	●	BVIRA-U180	BVIRA-U182	BVIRA-U187				
14	●		BVIVG-U212	BVIVG-U217				
16	●		BVIVG-U242	BVIVG-U242				
18	●		BVIRB-U262††	BFIVB-U267				
20	●		BVIVG-U292	BVIVG-U297	BVIVG-U293	BVIVG-U299		
22	●				BFILB-U323			
24	●			BVIVG-U357	BVIVG-U353	BVIVG-U359	BVIVG-U356	

†† Special please call

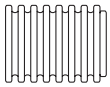
PMAFLEX PCS



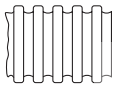
PMAFLEX PCS heavy-duty cable conduits are manufactured using modified polyamides that are free of halogen and cadmium. These impact resistant conduits are rugged, easy to install and provide excellent resistance to UV rays and environmental corrosion.

They are CSA approved (227.3) and UL recognized: file # E-80294.

Temperature range -58°F to 221°F (-50°C to 105°C)



T-Profile

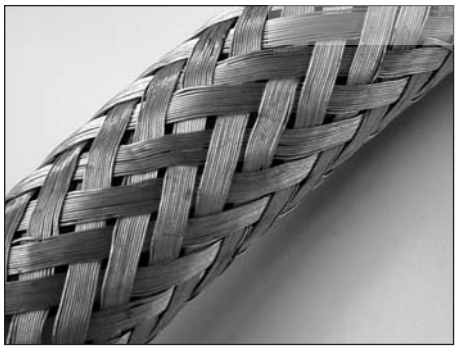


G-Profile

Conduit Size	Part Number	Put up Feet (Meters)	D1	D2	Static Non-Flexing Bend Radius	Dynamic Flexing Bend Radius
T (Thin profile) Tight Bend Radius						
10	**PCST-10B**	164 (50)	0.362 (9.2)	0.512 (13.0)	0.787 (20.0)	1.969 (50.0)
12	**PCST-12B**	164 (50)	0.465 (11.8)	0.622 (15.8)	0.984 (25.0)	2.756 (70.0)
17	**PCST-17B**	164 (50)	0.630 (16.0)	0.835 (21.2)	1.378 (35.0)	3.150 (80.0)
G (Large Profile) High Pull-out Strength						
17	**PCSG-17B**	164 (50)	0.598 (15.2)	0.835 (21.2)	1.378 (35.0)	3.346 (85.0)
23	**PCSG-23B**	164 (50)	0.866 (22.0)	1.122 (28.5)	1.575 (40.0)	4.331 (110.0)
29	**PCSG-29B**	164 (50)	1.091 (27.7)	1.354 (34.4)	1.969 (50.0)	5.118 (130.0)
36	**PCSG-36B**	98 (30)	1.409 (35.8)	1.669 (42.4)	2.362 (60.0)	7.087 (180.0)
48	**PCSG-48B**	98 (30)	1.843 (46.8)	2.142 (54.4)	2.756 (70.0)	8.661 (220.0)

Note: A wide array of conduits are available for special application like high temperature or ultraflexible for robotics.

F.CK Screening Braid



F.CK Screening Braid is made of tin-plated copper and is supplied on a tube former. The tube former prevents the material from folding and greatly simplifies installation. This product is used in applications that require shielding from electromagnetic fields. F.CK Screening Braid is used over wires or cables but inside of conduit. Temperature range -103°F to 842°F (-75°C to 450°C). With up to 95% electrical coverage.

Note: Call for EMI Endbell Adapters

Part Number	Wiring	Cross Section inch^2 (mm^2)	Operating Range Inch (mm)		Weight per 100 m lbs. (kg)	PCS Conduit Size
			Min	Max		
F.CK 03	16x5x0.12	.035 (0.9)	.098 (2.5)	.138 (3.5)	2.86 (1.3)	-
F.CK 04	16x7x0.12	.050 (1.3)	.118 (3.0)	.196 (5.0)	3.74 (1.7)	-
F.CK 06	24x7x0.12	.075 (1.9)	.177 (4.5)	.354 (9.0)	4.62 (2.1)	07
F.CK 10	24x9x0.14	.131 (3.3)	.275 (7.0)	.472 (12.0)	11.00 (5.5)	10
F.CK 12.5	24x10x0.14	.145 (3.7)	.433 (11.0)	.551 (14.0)	16.06 (7.3)	12
F.CK 15	24x11x0.20	.326 (8.3)	.512 (13.0)	.708 (18.0)	25.30 (11.5)	17
F.CK 20	48x16x0.12	.342 (8.7)	.630 (16.0)	1.500 (38.0)	33.70 (15.3)	23
F.CK 25	48x18x0.14	.524 (13.3)	.866 (22.0)	1.570 (40.0)	45.50 (20.7)	23, 29
F.CK 30	48x20x0.15	.667 (16.9)	1.06 (27.0)	1.690 (43.0)	68.20 (31.0)	29, 36
F.CK 35	48x20x0.15	.667 (16.9)	1.30 (33.0)	1.850 (47.0)	93.50 (42.5)	36, 48

All dimensions in inches (millimeters in parenthesis)

Connector Tools

TG70 Strap Wrench

The strap wrench is used to connect or disconnect coupling nuts in a confined space, or to tighten or loosen endbells without damaging the connector plating. A strap wrench also increases torque, allowing you to more easily mate or unmate a connector pair. Substitute tools, such as a pipe wrench or pliers, should never be used because of the high probability of severe damage to the connector plating or the coupling mechanism.

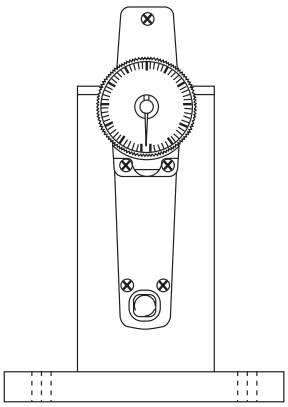
TG69P Non-Marring Adjustable Endbell Pliers For Field Service

The TG69P pliers have resilient jaws and are used to tighten or remove endbells without damaging the connector plating. The pliers are adjustable and will accommodate all of the connector sizes in this catalog. Substitute tools, such as a pipe wrench or metal jaw pliers, should never be used due to the high probability of severe damage to the connector plating. Replacement jaws, Part No. G77015, are available.

600 Series Production System

The 600 Series is a complete system for the proper assembly and torquing of connector endbells. The system includes a bench mounted or hand-held torque wrench, plug and receptacle holders, and a range of endbell tightening tools. When used together, these tools provide the user with consistent endbell installations. Each item is shipped with detailed assembly instructions.

600-007

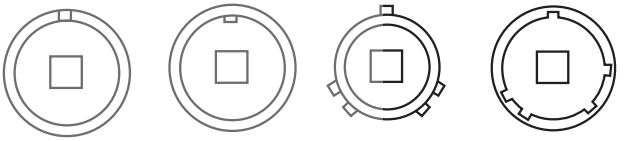


Bench Mounted Torque Wrench

600-004

Hand Held Torque Wrench

Plug and Receptacle Holders



600B005-R 600B005-P 600D005-R 600D005-P

Size	MIL-DTL-5015 for 97, MS310_, AIT, AIB, GT		MIL-DTL-26482 for PT, PTSE, MB, 62GB, MS311_, MS312_, MS347_	
	Receptacles	Plugs	Receptacles	Plugs
8/8S	600B005-8R	600B005-8P	600D005-8R	600D005-8P
10S/SL	600B005-10R	600B005-10P	600D005-10R	600D005-10P
12/12S	600B005-12R	600B005-12P	600D005-12R	600D005-12P
14/14S	600B005-14R	600B005-14P	600D005-14R	600D005-14P
16/16S	600B005-16R	600B005-16P	600D005-16R	600D005-16P
18	600B005-18R	600B005-18P	600D005-18R	600D005-18P
20	600B005-20R	600B005-20P	600D005-20R	600D005-20P
22	600B005-22R	600B005-22P	600D005-22R	600D005-22P
24	600B005-24R	600B005-24P	600D005-24R	600D005-24P
28	600B005-28R	600B005-28P	-	-
32	600B005-32R	600B005-32P	-	-
36	600B005-36R	600B005-36P	-	-

Size	MIL-DTL-38999 Series I for LJT		MIL-DTL-38999 Series II for JT		MIL-DTL-38999 Series III for TV-CTV			
	Receptacles	Plugs	Receptacles	Plugs	Shell Size		Receptacles	Plugs
9	600F005-9R	600F005-9P	600FF005-8R	600FF005-8P	A	9	600H005-9R#	600H005-9P#
11	600F005-11R	600F005-11P	600FF005-10R	600FF005-10P	B	11	600H005-11R#	600H005-11P#
13	600F005-13R	600F005-13P	600FF005-12R	600FF005-12P	C	13	600H005-13R#	600H005-13P#
15	600F005-15R	600F005-15P	600FF005-14R	600FF005-14P	D	15	600H005-15R#	600H005-15P#
17	600F005-17R	600F005-17P	600FF005-16R	600FF005-16P	E	17	600H005-17R#	600H005-17P#
19	600F005-19R	600F005-19P	600FF005-18R	600FF005-18P	F	19	600H005-19R#	600H005-19P#
21	600F005-21R	600F005-21P	600FF005-20R	600FF005-20P	G	21	600H005-21R#	600H005-21P#
23	600F005-23R	600F005-23P	600FF005-22R	600FF005-22P	H	23	600H005-23R#	600H005-23P#
25	600F005-25R	600F005-25P	600FF005-24R	600FF005-24P	J	25	600H005-25R#	600H005-25P#

Add polarizations: N, A, B, C, D, E

Glossary of Terms

ACCELERATED AGING - A connector test in which temperature, voltage, current, or other parameters are increased beyond the normal operating values to observe deterioration in a relatively short period of time.

ACCESSORIES - Auxiliary devices such as cable clamps, endbells, gaskets, or any number of mechanical hardware devices that can be added to a connector.

ADAPTER - A device which enables the interconnection of two dissimilar connectors and/or mechanically allows the connection of unique accessories. Some adapters are actually connectors in themselves and allow the user to mate the adapter with one half of a connector and then mate a different type of connector to the adapter effecting a transition. These types of adapters are common in RF and audio connectors. Other adapters are purely mechanical and allow the use of unique accessories or allow for special mounting configurations.

AEM - A connector insulating material which will not emit halogen (toxic) gases when exposed to flame. Referred to as a ZERO HALOGEN insulator. See HALOGEN.

ALLOY - A composition of two or more elements, of which at least one is a metal. In connector applications it is usually a combination of metals which is used to create an alloy superior in performance to any of its individual components.

ALTERNATE INSERT POSITION - See ROTATION.

ALTERNATING CURRENT- A flow of electricity which reaches a maximum in one direction, decreases to zero, then reverses itself and reaches maximum in the opposite direction. This cycle is repeated continuously. The number of such cycles per second is the frequency. The average value of the voltage during any cycle is zero. Abbreviated ac.

AMBIENT TEMPERATURE - The temperature of the environment surrounding the connector. Usually the air. Normally used as the reference when specifying the OPERATING TEMPERATURE range of the connector.

AMP - Abbreviation for ampere.

AMPERE - A unit of electrical current or rate of flow of electrons. One volt across one ohm of resistance causes a current of 1 ampere.

ANODIZE - A protective, insulating oxide layer formed on a metal by electrolytic action. Occasionally used as the outer most layer in connector plating, anodize is a very tough, non-conductive plating.

APIN CONTACT - (See Pizza Bone)

ARC - A luminous discharge of electricity through a gas. In connector usage, this is an extremely undesirable discharge through the air across two or more contacts or the contacts and the shell. This is usually the result of operating the connector beyond it's capabilities. Arc discharge is characterized by a relatively low voltage drop, a high current density, and the high probability that the connector and related circuitry will be damaged as a result.

ATMOSPHERE - The unit of pressure defined as the pressure of 760 mm mercury at 0o C. Approximately 14.7 pounds per square inch.

AWG - American Wire Gauge. A standard for wire diameters based on the approximate circular mil area of the wire. As numbers get larger, wire diameters decrease in size (a size 16 AWG wire has a larger diameter than a size 22 AWG).

BACK MOUNTING - See REAR MOUNTING.

BACK-END TERMINATION - See ENDBELL.

BACKSHELL MOLD - See POTTING CUP

BAR - A centimeter-gram-second unit of pressure (force exerted on a unit of area) equal to 1,000,00 dynes per square centimeter. Formerly known as microbar. Its symbol is b.

BASE METAL - The metal which the connector or connector component is made and over which various platings will be deposited.

BAYONET COUPLING - A quick coupling mechanism for mechanically mating and unmating connector halves. The plug half has a coupling nut with internal ramps and the receptacle has three "bayonet" pins. The two halves are mated and unmated by rotating the coupling nut. A REVERSE BAYONET COUPLING reverses this arrangement, with the ramps on the receptacle and the bayonet pins or roller bolts under the coupling nut.

BERYLLIUM COPPER - An alloy of copper used to make contacts. It is relatively expensive, but has superior spring quantities, is resistant to fatigue, and can operate at higher temperatures than other materials such as phosphor bronze. It is used when numerous insertion and extraction cycles are required.

BEZEL - A holder or flange designed to receive and position a lens or window in an electronic component such as an indicator assembly.

BIFURCATED CONTACT - A contact design in which the metal of the mating tube is slotted lengthwise to create two independent spring elements.

BODY - The main portion of the connector made of the shell, insulator, and contacts.

BOOT - A rear accessory, usually made of a resilient material, which is used around a multiconductor cable to add additional insulation, strength, abrasion resistance, or sealing. Also see SHRINK BOOT.

BRAID - A woven metal tube used as shielding around a wire or a group of wires. In a flattened form, it is used as a grounding strap.

BRASS - metal alloy of copper and zinc used for contacts. It is low cost, an excellent conductor, and resists fatigue.

BREAKDOWN - An electrical discharge through a connector insulator or insulation on a wire. A catastrophic failure mode.

BREAKDOWN VOLTAGE - The voltage at which an insulator ruptures.

BREAKOUT - The point at which wires are separated from a multi-conductor cable or wire bundle for routing to other points.

BS - Prefix for a performance specification of the British Standards Institution. See BSI.

BSI - Abbreviation for British Standards Institution which deals with general, electrical, and telecommunication standards in Britain. BSI has a deliberate policy of republishing European standards in the English language as British standards. These usually bear the prefix BS EN. Specifications are based upon those of the CEN, CENELEC, ETSI, or international specifications of ISO, IEC, and ITU.

BUNDLE - See WIRE BUNDLE.

C - Abbreviation for centigrade, or more properly Celsius, since the term centigrade was officially abandoned by international agreement in 1948. See CELSIUS.

CABLE ASSEMBLY - A cable (or bundle of cables) with plugs and/or receptacles on each end.

CABLE CLAMP - A rear connector clamping accessory which tightens over a cable or wire bundle to provide strain relief to the cable. The cable clamp may be part of a more elaborate endbell or it may be used alone. Some cable clamps also provide cable jacket sealing using a resilient gland; for example the MS3057-C, others provide only strain relief.

CABLE CONNECTING RECEPTACLE - Unlike most receptacles which are designed for panel mounting, a cable connecting receptacle is for in-line use. It does not have a flange or jam nut for panel mounting, but does have rear threads to accept an endbell.

CABLE RECEPTACLE - See CABLE CONNECTING RECEPTACLE.

CABLE SEAL - An endbell or cable clamp that is used to seal a round jacketed cable as it enters the rear of the connector. Examples would be a Gland Seal Endbell or an MS3057-C cable clamp.

CABLE SEALING RANGE - See SEALING RANGE.

CADMIUM - A metallic element chemically related to zinc and mercury, widely used for plating. It has an extraordinary ability to resist outdoor corrosion. It is especially resistant to alkali. Cadmium is electrically conductive and it is easy to solder. It's symbol is Cd.

CANADIAN STANDARDS ASSOCIATION - In Canada, a body that issues standards and specifications prepared by various voluntary committees of government and industry. Abbreviated CSA.

CECC - Abbreviation for Electronic Components Committee of CENELEC, the European committee for Electrotechnical Standardization. CECC uses the IEC test methods, and thus is based upon worldwide standards.

CELSIUS - A temperature scale in which the freezing point of water is 0 degrees and the boiling point is 100 degrees at normal atmospheric pressure. Formerly known as Centigrade, but officially changed to Celsius by international agreement in 1948. See the conversion table for converting Celsius to Fahrenheit

CEN - Abbreviation for European Committee for Standardization. A European standards group corresponding to the ISO at the European level.

CENELEC - Abbreviation for European Committee for Electrical Standardization. A European standards group corresponding to the IEC at the European level.

CHAMFER - A bevel cut on the inside edge of an insulator contact cavity or a mounting hole. In a contact cavity the chamfer is intended to guide the mating pin into the cavity. In a mounting hole it is a countersink to accept a cone shaped bolt.

CIRCUIT - An electronic path between two or more points capable of carrying an electrical current.

CIRCULAR MIL - The international term used to define the cross-sectional area of a wire, equal to the area of a circle one mil (.001 inch) in diameter.

CIRCULAR MIL AREA - The square of the diameter of a round conductor measured in thousandths of an inch (.001).

CLEARANCE HOLE - A mounting hole without threads. Also known as a through hole.

CLOCKING - See INSULATOR ROTATION.

CLOSED ENTRY - An insulator design which limits the diameter of the mating contacts.

CLOSED SOCKET CONTACT - A socket contact in which the mating cavity limits the entry of a contact or probe having a diameter larger than the mating pin.

COEFFICIENT OF EXPANSION - The average expansion per degree of temperature over a specified range expressed as a fraction of the original dimension. The coefficient may be linear or volumetric.

COMPONENT - An essential functional part of the connector.

CONTACT - The conductive element in a connector which makes the actual connection between the wire and the mating connector for the purpose of transferring electrical energy. Ideally the contact should add nothing to the circuit. In the real world, however, contacts typically have a small CONTACT RESISTANCE and associated POTENTIAL DROP. Contacts come in many styles such as solder, crimp, printed circuit (PC), wire-wrap, first-make last-break, and thermocouple, to name just those found in this catalog. Also see SOLDER CONTACT, CRIMP CONTACT, PC CONTACT, THERMO-COUPLE CONTACT, FIRST-MAKE LAST-BREAK CONTACT, WIRE WRAP CONTACT, STAMPED AND FORMED CONTACT, SCREW MACHINE CONTACT, PIN CONTACT, and SOCKET CONTACT.

CONTACT ALIGNMENT - The overall play that a contact has in the insulator cavity to allow the mating contacts to self align. Also called contact float.

CONTACT ARRANGEMENT - See LAYOUT.

CONTACT CAVITY - A defined hole in the connector insulator into which the contacts fit. The cavities are generally marked with a unique designation or number for ease of identification.

CONTACT INSPECTION HOLE - See INSPECTION HOLE.

CONTACT RESISTANCE - The maximum amount of resistance which a contact introduces into the connection when carrying a specified current (usually stated in milliohms). When not stated, values are typically given for "Initial" or new contacts. Most specifications also limit the maximum resistance during or after each of a series of extreme tests, such as "Contact Resistance After Corrosion Test". These figures are typically slightly higher than "Initial". Also see POTENTIAL DROP.

CONTACT RETENTION - The maximum allowable axial load which can be applied to a contact from either direction without it being dislodged from the insulator. Usually stated in Newtons or pounds of force.

CONTACT SEPARATION FORCE - The force required to separate a pair of mated contacts. Usually stated in Newtons or pounds of force.

CONTACT SIZE - This usually relates to the maximum size wire this contact can nominally accommodate. It is based on that AWG size most closely corresponding to the circular mil area of the engaging end of a pin contact. For example, a size 16 contact can accommodate a size 16 AWG wire maximum and the pin corresponds to the CMA of a size 16 AWG. Note, however, that oversized crimp pots are available for some crimp contacts which will allow, for example, a size 16 contact to accommodate a size 14 AWG wire.

Glossary of Terms

CONTACT SPACING - The distance between two centers of adjacent contacts.

CONTINUITY - An unbroken conductive path for electrical energy.

COUPLING - There are three common methods of mechanically coupling circular connectors, all three are represented in this catalog. Coupling can be made with threads (as in the CT series), three pin bayonet (as in TRIDENT and KPT/ KPSE) or ramps (as in the CB and CR series).

COUPLING NUT - The rotating ring on plug style connectors which mechanically locks the two connector halves together. Coupling nuts may function by means of internal threads, roller wheels, pins, or internal bayonet ramps. Also known as a coupling ring.

COUPLING RING - See COUPLING NUT.

COUPLING TORQUE - Torque is rotational force, usually stated in Newton-meters or Foot-pounds. In the coupling of connectors it is normally used to give the maximum or minimum force which should be applied to the coupling nut when mating and unmating the two connector halves.

CPS - Cycles per second.

CREEPAGE - The conduction of electricity across the surface of an insulator.

CREEPAGE DISTANCE - The shortest distance between contacts of opposite polarities, or between a live contact and ground, measured over the surface of the insulator.

CREEPAGE PATH - A path across the surface of the insulator between two conductors. lengthening the path reduces the possibility of arc damage.

CRIMP - A method of attaching a contact to a wire through the application of pressure.

CRIMP CONTACT - A contact which is terminated to a wire by means of crimping with an appropriate die and tool. After termination, an insertion tool is normally used to insert the crimped contact into the connector. Removable crimp contacts can be FRONT RELEASE or REAR RELEASE. A removal tool is usually required to remove the contact.

CSA - Abbreviation for Canadian Standards Association.

CURRENT - The movement of electrons through a conductor. Current is measured in amperes. It's symbol is I.

CURRENT RATING - The maximum current that a particular wire, contact, or connector can accommodate. NOTE: When several wires are used in a single connector or elevated temperature or altitude is involved, derating curves must be applied to these ratings. A typical derating system is MIL-W-5088 which allows the user to calculate the derating effects of current, ambient temperature, number of wires in the bundle, and altitude.

DB - Abbreviation for DECIBEL.

DEAD FACE - See DEAD FRONT.

DEAD FRONT - The mating surface of a connector which is designed so that the conductive elements, such as the contacts, are physically recessed in the insulator to avoid shorting or shock hazard.

DECIBEL - A standard unit of measure for transmission gain or loss. It expresses the ratio of power input to power output. Abbreviated DB. The term DBm is used when 1 milliwatt is the reference level.

DERATING - To reduce the voltage, current, or power rating of a connector to improve its reliability or to permit operation at high ambient temperatures or altitudes.

DERATING CURVE - A graph of the change in power handling capability of a connector as a function of ambient temperature or altitude. Typically the graphed function is curved, hence the name.

DIALLYL PHTHALATE - A thermosetting plastic used for insulators and some types of connector housings. It has outstanding resistance to chemicals, excellent dimensional stability, and superior electrical insulating properties.

DIELECTRIC - An insulator used to isolate two conductors.

DIN - Abbreviation for Deutsche Industrie Norm, A German standards organization.

DIRECT CURRENT - An essentially constant value of current that flows in only one direction. Abbreviated dc.

DRAIN WIRE - In a foil shielded cable, the drain wire is an uninsulated wire which runs the length of the cable making intimate electrical contact with the inside of the foil. Since it would be difficult to directly terminate the fragile foil shield, the drain wire is used to terminate the shield by either soldering or crimping the drain wire to a ground termination.

DUMMY RECEPTACLE - A receptacle shell which takes the place of a working receptacle and is used to fill an empty connector mounting hole or to provide a location to mate an unused connector. A dummy receptacle has no contacts and no insulator and thus provides no electrical function.

DUST CAP - A cover used in place of a mating connector to seal it against dirt and moisture. Usually secured to the connector by a captive chain, wire, or rope.

DYNE - The standard centimeter-gram-second unit of force, equal to the force that produces an acceleration of one centimeter per second per second on a mass of one gram. Its abbreviation is dyn.

ELECTROPLATNG - To deposit a metal on the surface of a conductor using electrolysis.

EMI/RFI - Electro-Magnetic Interference and Radio Frequency Interference. This is unwanted stray electronic radiation which may enter, and/or be emitted by a electronic system. The most common method of shielding interconnections against this radiation is to use wires with a metallic braided shield and a connector system which will extend the shield through the interconnection. This type of design will keep radiation from entering, or being emitted by the system. Endbells for shielded cable and connectors with threads or grounding fingers are typically used for this purpose. Call for the specific EMI/RFI accommodations of the connectors in this catalog.

EN - Abbreviation for Euro Norm. A European market-wide product standard.

ENDBELL (also know as BACKSHELL) - The outer rear end of the connector which is attached by means of internal threads or screws. It adapts the connector to its wire connections in a variety of ways. Typical endbells might have cable clamps to secure a wire bundle, ridges for heat shrink tubing, pipe threads, or shield termination mechanisms. Endbells may be straight, right angle, or 45 degree.

ENVIRONMENTALLY SEALED - A connector which uses seals, gaskets, O-rings, potting, or other devices to prevent moisture, dirt, air, or other contaminants from entering and degrading its performance.

ETSI - Abbreviation for European Telecommunications Standards Institute. A group which deals with telecommunications standards at the European level, corresponding to the ITU at the international level.

EU - Abbreviation for European Union. A group of European community nations. In practice, they typically adopt standards set by the ISO, IEC, and ITU.

EXTRACTION TOOL - A device used to remove a (removable) contact from a connector insulator. The extraction tool may be inserted into the mating face of the insulator (FRONT RELEASE) or the wire side (REAR RELEASE). In either case, the contact comes out the rear, or wire side, of the connector.

F - Abbreviation for Fahrenheit.

FAHRENHEIT - A temperature scale in which the freezing point of water is defined as 32 degrees and the boiling point is 212 degrees at normal atmospheric pressure. See the conversion tables for converting Fahrenheit to Celsius.

FAILURE MODE - The manner in which a failure occurs, including the operating conditions of the connector at the time of failure.

FEMALE CONTACT - See SOCKET CONTACT.

FERRULE: A bell shaped ring which is placed over a WIRE SEALING GROMMET to provide uniform axial compression of the grommet and to minimize the transmission of torque to the grommet when the endbell is screwed on to the rear of the connector. Ferrules are a part of the sealing mechanism at the rear of a connector. Ferrules are normally a separate component part of the connector although some endbells have integrated ferrules. Ferrules are usually made from a thermoplastic material, but occasionally ferrules are made of metal.

FINISH - See PLATING.

FIRST-MAKE LAST-BREAK CONTACT - A contact which is longer than a standard contact or which sits in the insulator in such a way that it mates with the opposing connector half before any of the other contacts. Used to insure that a ground connection between the connector halves mates before, and breaks after, any of the other contacts.

FLANGE - A square mounting flange with four mounting holes for bolting the connector to a panel. The mounting holes may be clearance holes or threaded.

FLANGED RECEPTACLE - The shell of this connector has a square flange with mounting holes at each corner. Mounting holes are usually clearance holes, but may be threaded. Flanged receptacles can usually be front or rear panel mounted depending upon panel thickness. Some connectors have two different versions, one for front mounting, and one for rear panel mounting. As known as a Box Mount or Wall Mount.

FLASH - 1. As commonly used in connector terminology, flash refers to extremely thin platings of metal, for example: gold flash is a very thin plating of gold. So thin, that the thickness is generally not specified. 2. A defect in the molding process or omission of a secondary operation such that undesirable rough edges remain on the connector from the mold gate or seam.

FLASH PLATING - See FLASH (1).

FOLLOWER - See FERRULE.

FOOT-POUND - A unit of measurement equivalent to the work of raising one pound vertically a distance of one foot.

FRONT MOUNTING - A receptacle that can only be mounted to the front of a panel with it's mounting FLANGE outside the equipment.

FRONT RELEASE - For crimp type removable contacts, front release means that the appropriate extraction tool is inserted from the front, or mating face, of the connector. The contact is then pushed out the rear (wire side) of the connector.

g - The international unit for the acceleration of a falling body in the earth's gravitational field, inversely proportional to the square of the distance from the body to the center of the earth. 1g = 32.17 feet per second per second. Connectors are frequently tested by subjecting them to very short duration shocks which are several times the force of gravity while simultaneously confirming electrical continuity.

GAS TIGHT - The mating of two contact surfaces which are so tight that corrosive gasses can not enter the joint.

GEESC - General Electrotechnical Engineering Standards Committee. A European organization which sets standards for electrical devices.

GLAND SEAL - Usually part of an endbell, a gland seal is a resilient element which is compressed around a cable jacket by means of a compression ring. When the proper diameter wire is used and the compression ring is tightened to specifications, the gland creates an air and moisture tight seal around the cable jacket.

GOLD - A precious metal which is more conductive than silver or copper. Because it does not corrode and is highly conductive, it is used as a plating for contacts. It's chemical symbol is Au.

GROMMET - See WIRE SEALING GROMMET.

GROMMET CAVITY - A defined hole in the WIRE SEALING GROMMET through which the wires are passed. The cavities are generally marked with a unique designation or number for ease of use.

GROMMET SEAL - See WIRE SEALING GROMMET.

GUIDE PIN - A special pin which is inserted into a socket contact before the contact can be inserted into the connector insulator. Guide pins provide a rounded surface at the front of the socket and greatly aid in pushing the contact into the insulator thus avoiding damage to both the insulator and the contact. Typically, small size socket contacts require the use of guide pins while larger sizes can be inserted without them.

HALOGEN - A general name applied to four chemical elements, fluorine, chlorine, bromine, and iodine, that have similar chemical properties. As it applies to connector insulating materials, these elements are all high toxic to humans when burned.

HARNESS - A group of wires or cables bundled together with attached connectors and/or components in a preshaped assembly.

HEAT SHRINK ENDBELL - An endbell specifically designed to allow heat shrink boots or heat shrink tubing to be applied over it and insure a good bond.

HERTZ - International unit of frequency equal to one cycle per second. That is, 20,000 Hz is 20,000 cycles per second.

Hz - Symbol for Hertz, an International unit of frequency

equal to one cycle per second. That is, 20,000 Hz is 20,000 cycles per second.

I.D. - Abbreviation for inside diameter.

IEC - Abbreviation for the International Electrotechnical Commission. An international organization that develops standards exclusively for electrical engineering. CENELEC is the equivalent organization at the European level.

INITIAL - A test result taken prior to any other environmental testing. For example, contact resistance is frequently specified "Initial" , that is, with "new" contacts. Most specifications also limit the maximum resistance during or after each of a series of extreme tests, such as "Contact Resistance After Corrosion Test". These figures are typically slightly higher than "Initial".

IN-LINE RECEPTACLE - See CABLE CONNECTING RECEPTACLE.

INDENTOR - The part of a crimping die which indents the contact barrel to form the actual crimp. Indentors normally make six or eight multiple indention's for each crimp.

INDIVIDUAL WIRE SEALING GROMMET - See WIRE SEALING GROMMET.

INSERT - See INSULATOR.

INSERT ARRANGEMENT - See LAYOUT.

INSERT RETENTION FORCE - The maximum allowable force which should be applied to the face of the insulator without dislodging it from the shell or causing any change in connector performance specifications. Usually stated in Newtons or pounds of force.

INSERTION FORCE - The effort, usually stated ounces or Newtons, required to engage two contacts or connector halves.

INSERTION TOOL - A device used to insert a contact into a connector insulator.

INSPECTION HOLE - A small hole in a crimp contact barrel. A properly crimped contact will allow the user to see the bare wire through the inspection hole. This is verification that the wire is fully seated in the crimp barrel.

INSULATION - A material which has high electrical resistance and is suitable for covering or encasing electrical components to prevent a short circuit.

INSULATION DISPLACEMENT CONNECTOR (IDC) - A connector contact with sharp tines which pierce and displace the wire insulation and make direct electrical connection with the conductor. Normally used with multipin connectors which must be terminated to flat cable. This is a fast, low cost method to terminate many conductors simultaneously.

INSULATION GRIP - See INSULATION SUPPORT.

INSULATION RESISTANCE - The minimum resistance (usually stated in Megohms) between adjacent contacts and between the contacts and the shell at a specific voltage. When not stated, values are typically given for new insulators. Most specifications also specify minimum resistance figures during or after each of a series of extreme tests, such as "Insulation Resistance During Dry Heat".

INSULATION SUPPORT - An extended portion at the rear of a crimp contact that is crimped around the wire insulation to provide extra strain relief. This crimp is in addition to the crimp over the conductor which provides the actual electrical termination.

INSULATOR - The insulating element into which the contacts are mounted in a connector. This can be a resilient material, thermoplastic, or a thermoset compound, among other materials.

INSULATOR POLARIZATION - See INSULATOR ROTATION.

INSULATOR ROTATION - A method of differentiating a circular connector if more than one connector with the same sex and layout is to be used in a system. The insulator is permanently positioned in the shell so that only a connector with the same degree of rotation can be mated with it. Possible rotations are specific to each layout with some layouts having many possible rotations and others having none. A chart of valid rotations is listed by layout for connectors capable of being rotated. Most connector series use the military convention of assigning letter designations for specific degrees of rotation (for example: W, X, Y, Z). Also see KEYING.

INTERCHANGEABLE - The characteristic of connectors in which a connector half of one manufacturer or series will directly replace that of another manufacturer and provide the same electrical and mechanical function.

INTERFACIAL SEAL - The sealing of mated connectors over the entire face of the mating insulators when the two connector halves are mated. Usually done by employing resilient insulators.

INTERMATEABLE - The characteristic of connectors in which a connector half of one manufacturer or series will mate directly with the connector half of another manufacturer.

INTERMITTENT - Occurring at intervals. A connection which passes electrical current only in random or undesirable intervals.

INTERMOUNTABLE - The characteristic of connectors in which one manufacturer's connector or series will mount in exactly the same panel space and mounting holes as another manufacturer's.

IP65 - One classification from a rating system used in Europe covering the environmental sealing capability of a connector or enclosure. The system uses two digits, the first digit relates to the degrees of protection the connector has from dirt and dust under the conditions defined in the specification. The second digit relates to the degrees of protection it has against moisture. The degree of protection against dirt ranges from 1 (no protection), to 6 (dust tight). Moisture sealing in the specification ranges from 1 (no protection), to 8 (protected against continuous submersion). The classification IP65 states that the connector is "dust-tight" (6), allowing no ingress of dust what-so-ever, and "protected against water jets" (5), water projected by a nozzle against the connector from any direction shall have no harmful effect.

IP67 - One classification from a rating system used in Europe covering the environmental sealing capability of a connector or enclosure. The system uses two digits, the first digit relates to the degrees of protection the connector has from dirt and dust under the conditions defined in the specification. The second digit relates to the degrees of protection it has against moisture. The degree of protection against dirt ranges from 1 (no protection), to 6 (dust tight). Moisture sealing in the specification ranges from 1 (no protection), to 8 (protected against continuous submersion). The classification IP67 states that the connector is "dust-tight" (6), allowing no ingress of dust what-so-ever, and "protected against the effects of immersion" (7), the ingress of water in harmful quantity shall not be possible when the connector is immersed in water under defined conditions of pressure and time.

IP69 - One classification from a rating system used in Europe covering the environmental sealing capability of a connector or enclosure. The system uses two digits, the first digit relates to the degrees of protection the connector has from dirt and dust under the conditions defined in the specification. The second digit relates to the degree of protection it has against moisture. The degree of protection against dirt ranges from 1 (no protection), to 6 (dust tight). Moisture sealing in the specification ranges from 1 (no protection), to 8 (protected against continuous submersion). The classification IP69 states that the connector is "dust-tight" (6), allowing no ingress of dust whatsoever, and "protected against the effects of high pressure steam washing" (9), the ingress of water in harmful quantity shall not be possible when the connector is subjected to high pressure steam washing under defined conditions of pressure and time.

ISO - Abbreviation for the International Organization for Standards. A group that operates at the international level and sets most standards for industry, with the exception of electrical engineering and telecommunications which are set by the IEC and ITU respectively. CEN is the equivalent organization at the European level.

ITU - Abbreviation for International Telecommunications Union. A group which sets international standards for telecommunications. ETSI is the equivalent organization at the European level.

JACKET - The outermost layer of insulation in a cable composed of several wires.

JACKSCREW - A screw attached to one half of a connector pair used to mechanically align, draw them together, and lock them in place.

JAM NUT - See JAM NUT RECEPTACLE.

JAM NUT RECEPTACLE - A top-hat shaped connector (the top of the hat being the mating surface). It is mounted into a round panel hole from the rear. The "brim of the hat" prevents the connector from falling through the hole. A large hex nut (jam nut) is screwed on to the front of the connector to secure it to the panel. Typically, the upper "brim" of the hat contains an O-ring which seals the connector to the panel.

KEY - A mechanism used to polarize connectors by the user. See KEYING.

KEYING - A method of differentiating a connector if more than one connector with the same sex and layout is to be used in a system. The key is usually a pin or other projection which can be located in a contact cavity or slot. The key will prevent a connector without a matching orifice from mating. Keying and POLARIZATION serve the same function, but keying can be done by the user, while polarization is manufactured into the connector and normally can not be altered by the user.

LACING CORD - Several types of cord or ribbon which can be used to tie a group of wires into a bundle or harness.

LAMBDA - Greek letter used to designate wavelength measured in meters.

LANYARD RELEASE - A plug connector with a wire or cable handle (lanyard). The plug can be separated from the receptacle by an axial pull on the lanyard.

LAYOUT: The number, size, and geometric arrangement of the contacts in a connector. When a connector is said to have a certain "layout" it refers to a specific contact configuration. For example, the KPT/KPSE series has a page of drawings showing the arrangement of the contacts in the insulator. Each of these arrangements can be referred to as a layout.

L.E.D. - Abbreviation for light emitting diode. A solid state light source which may emit visible light or light of a higher or lower frequency. One application is for very long life, shock resistant lighted indicators.

LEVELS OF INTERCONNECTION - A system of classifying interconnection devices into one of six categories. Level 1 is chip to lead. It covers interconnections used inside of integrated circuits and passive devices to connect the internal elements to the leads on the device package. Level 2 is device to board. It covers the interconnection of PC mounted parts to the printed circuit board. Level 3 is Board to Backplane. It covers the direct interconnection of PC boards. Level 4 is Board to board. It covers interconnections between circuit boards within the same enclosure. Level 5 is board to box. It covers interconnection of circuit board to the I/O of the equipment. It forms the system interconnection to the outside world. Level 6 is System to System. It covers external connections of one system to another, for example an interconnection of a computer to it's CRT terminal would be a Level 6 interconnect.

LOCATOR - A part of a crimping tool TURRET. Rotation of the locator sets the tool for a particular size or sex contact. Also see TURRET.

LOCK WIRE - A mechanical means of securing a mated pair of threaded connectors. A wire is passed through a hole in the coupling nut and then secured to the shell, endbell, or other surface. Using this technique, the coupling nut can not be removed without cutting the lock wire. Lock wires are used to provide additional vibration resistance or to minimize the possibility of tampering with the connector. Lock wires are unnecessary with bayonet style connectors.

MALE CONTACT - See PIN CONTACT.

MATING LIFE - The minimum number of times a connector can be mated and unmated and still meet all of its design specifications. The maximum life may be much higher than this figure.

MEAN TIME BETWEEN FAILURES - The limit of the ratio of operating time of a connector to the number of observed failures as the failures approach infinity. Abbreviated MTBF.

MICRON - A unit of length equal to 10-6 meters (.001 millimeters).

MIL - One thousandth of an inch (.001). Used in the United States as unit of length in wire diameters and linear dimensions.

MIL-SPEC - Abbreviation for Military Specification.

MILLI - Prefix meaning one-thousandth (1/1000, .001, or 10-3) Abbreviated m.

MILLIAMP - Abbreviation for milliampere.

MILLIAMPERE - One one-thousandth (.001) of an ampere. Abbreviated mA.

MILLIMETER - Metric unit of linear measure. 1 millimeter = .03937 inches.

MILLIOHM - One one-thousandth (.001) of an ohm.

MILLISECOND - One thousandth of a second (.001).

Glossary of Terms

Abbreviated ms.

MILLIVOLT - One thousandth of a volt (.001). Abbreviated mV.

mm - millimeter. See MILLIMETER.

mm2 - Millimeters squared. A standard for wire diameters used in Europe instead of AWG. As numbers get larger, wire diameters increase in size. The relationship between mm2 and AWG is reverse logarithmic. 1 mm2 = 1973 circular mils. A conversion graph is needed to make accurate comparisons between AWG and mm2. Call for assistance.

MOUNTING CLIP: Any of a variety of mounting accessories used to secure a connector or connector pair to a rigid surface.

MOUNTING FLANGE - See FLANGE and FLANGED RECEPTACLE.

MS - 1. Abbreviation for Millisecond. 2. Abbreviation for Military Specification.

MTBF - Abbreviation for mean time between failures.

MULTI-CONDUCTOR CABLE - Two or more individual wires surrounded by a jacketing material.

N - See NEWTON.

NANO - One billionth (10-9). Abbreviated n.

NAPKIN RING- One of several designs used for screw machine socket contacts. A band of plated conductive metal is formed around a circumferential cut or opening in the mating portion of contact. This creates a zone of mechanical and electrical continuity between the mated contacts.

NEC - National Electrical Code which contains regulations governing construction and installation of electrical wiring apparatus in the United States.

NEMA - Abbreviation for National Electrical Manufacturer's Association. An organization of manufacturers of electrical products that sets various standards for electrical devices. NEMA ratings for degrees of protection against environmental contamination for electrical devices is roughly equivalent to the IP rating system in Europe.

NEST - The portion of a crimping die that supports the contact barrel during crimping.

NEWTON - A unit of acceleration. One Newton is the force capable of accelerating 1 kilogram to one meter per second per second. 1 pound force = 4.448221 Newtons.

NEWTON-METERS - A unit of measure for rotational acceleration. 1 Nm = .7376 Foot Pounds.

Nm - See NEWTON-METERS.

NPT - National Pipe Thread. A standard system of threads used for pipe.

O.D. - Abbreviation for outside diameter.

OHM - The unit of electrical resistance. One ohm is the value of resistance through which a potential difference of one volt will maintain a current of one ampere. Its symbol is the Greek letter omega.

O-RING - A donut shaped ring of rubber used as a seal around the periphery of connectors and connector accessories to form an air, dirt, and moisture tight seal.

OPERATING TEMPERATURE - The range of AMBIENT TEMPERATUREs over which the connector can operate and still meet all of it's design specifications.

OPERATING VOLTAGE - The range of voltages over which the connector can be operated. Safety precautions must be taken anytime a voltage in excess of 50V is to be used in a circuit. Check your local and national codes for guidelines.

OUTGASSING - The circumstance in which an insulator releases gasses trapped within it under a vacuum or conditions of decreased pressure, high heat, or both.

PANEL - The outside surface of a piece of equipment on to which connectors are mounted. The panel is usually made of metal.

PANEL MOUNT - A connector designed to be mounted on a panel by means of screws or jam nut.

PAIRED CABLE - A cable in which all of the conductors are arranged in the form of twisted pairs.

PC CONNECTOR - A connector with PC contacts.

PC CONTACT - A pin or socket contact that has a post opposite the mating end which is intended to be soldered directly to a printed circuit (PC) board instead of being terminated to a wire. The solder post may come in a variety of diameters and lengths.

PC PIN - See PC CONTACT.

PERIPHERAL SEAL - A resilient seal used to keep moisture from entering the connector at the point where the plug and receptacle shells meet. A common method is to use flat gaskets on receptacles and O-rings on plugs.

PHOSPHOR BRONZE - An alloy of copper, tin, and phosphorus used to make spring contacts. It typically used in lower cost contacts where frequent insertions and withdrawals and high temperatures are not a factor.

PIN - A male contact. See PIN CONTACT.

PIN CONTACT - The contact which has a long shaft at the engagement end which enters the socket contact.

PIZZA BONE - The uneaten, discarded pieces of crust from the outside edge of a slice of pizza.

PLATING - The metallic coatings used on contacts and metal connectors. These are thin layers of metal designed to improve conductivity, solderability, or to resist corrosion. Typical contact finishes are gold or silver. Typical shell finishes are olive drab over cadmium, electroless nickel, or black anodize.

PLUG - The male portion of the connector pair usually employing a coupling nut to secure it to the receptacle half. A Plug may have either pin or socket contacts.

POLARIZATION - A mechanical mechanism that allows connector halves to intermate in only one specific orientation. This can be accomplished by asymmetrical shapes of the two halves as in a D-Subminiature connector, insulator rotation, keys, keyways, ramps, or other means. Polarization prevents connectors of the same size and/or same layout from intermating when this is undesirable, such as when two otherwise identical connectors are used on the same panel. Polarization is typically done by the assembler and can not be changed by the user, while keying is typically done by the user with an auxiliary keying device.

POLARIZING PIN - See KEY.

POLARIZED BACKSHELL - An ENDBELL with "TEETH" for positioning the endbell.

POSITION - See INSULATOR ROTATION

POTENTIAL - The difference in voltage between two points in a circuit. Frequently one point is assumed to be ground, which has zero potential.

POTENTIAL DROP - The difference in potential between two ends of a resistance with a current flowing through it. In connector specifications it is the maximum amount of voltage drop in millivolts (or resistance in milliohms) which a contact introduces into the connection. When not stated, values are typically given for "Initial" or new contacts. Most specifications also limit maximum voltage drop (or resistance) during or after each of a series of extreme tests. These figures are typically slightly higher than "Initial".

POT LIFE - The period after the addition of a catalyst during which the compound can be used.

POTTING - The permanent sealing of a cable to a connector using an insulating material such as potting compound to exclude moisture or provide stain relief. See POTTING CUP.

POTTING COMPOUND - A sealing material used in potting to fill a potting cup.

POTTING CUP - A bell-shaped (plastic) endbell with an enlarged opening for the wires. After the connector is loaded with wired contacts, the potting cup is attached to the rear of the connector. The inside of the cup is then filled with a potting compound. When the compound hardens, it forms a solid, permanent, watertight mass around the wires.

POTTING RING - A portion of the POTTING CUP which secures the bell shaped cup to the rear of the connector, usually by means of internal threads.

PRE-TIN- To apply tin-lead solder to contact solder cup and/or conductor prior to soldering the two together.

RACK & PANEL CONNECTOR - A connector made to mount inside a cabinet (rack) which contains electronic modules. These modules have a mating connector half mounted on their rear panels. The modules slide into and out of the rack like a drawer. When fully pushed into the rack, the connector halves self align and mate, connecting the module to the rack system. This arrangement of rack mounted modules makes it easy to quickly interchange modules.

RAMP - A sloped channel that accepts the bayonet pins or roller wheels in a bayonet or reverse bayonet connector. The ramp is part of the mechanism which mechanically locks the two connector halves together.

RANGE - See SEALING RANGE and WIRE RANGE.

RATCHET CRIMP TOOL - A crimping tool with a ratchet mechanism in the handle which will not allow the jaws to open until the crimp dies have closed completely insuring a complete crimp.

REAR MOUNTING - A receptacle that mounts through the panel from the rear, with it's mounting flange inside the equipment. Typically, rear mount receptacles are slightly longer than front mount types to allow for the thickness of the panel. Flange mount receptacles usually come in front and rear mount versions. All Jam nut receptacles are rear mount.

REAR RELEASE - For crimp type removable contacts, rear release means that the appropriate extraction tool is inserted from the rear, or wire side, of the connector. The contact is then pulled out the rear of the connector.

RECEPTACLE - The connector half that mates with the plug. The receptacle has threads, pins or ramps which engage the coupling nut on the plug, locking the two halves together. A receptacle may have either pin or socket contacts.

REDUCTION SLEEVE - A method of crimping a wire on to a crimp contact when the wire diameter is smaller than that accommodated by contact. The sleeve is inserted into the contact crimp barrel and then the wire is inserted into the sleeve. The contact is then crimped. The sleeve increases the diameter of the wire such that standard crimping tools and contacts can be used.

REMOVABLE CONTACT - A contact which can be inserted and removed from the insulator by the user. Insertion tool and extraction tool are normally required to insert and remove the contact.

REMOVAL TOOL - See EXTRACTION TOOL.

RESISTANCE - That property of a substance which impedes current and results in the dissipation of power in the form of heat. The unit of resistance is the ohm.

REVERSE BAYONET COUPLING - A quick coupling mechanism for mechanically mating and unmating connector halves. The plug half has internal roller bolts or pins and the receptacle has ramps. The two halves are mated and unmated by rotating the coupling nut.

RFI - See EMI/RFI.

RING - See COUPLING NUT.

RMS - Abbreviation for root-mean-squared.

ROOT MEAN SQUARE - The square root, of the average of the squares, of the values of a periodic quantity (like alternating current), taken through one complete period. It is the effective quantity of a periodic quantity. Abbreviated rms.

ROTATION - See INSULATOR ROTATION.

SAFETY WIRE - See LOCK WIRE.

SALT SPRAY TEST - A test, or series of tests, in which mated and/or unmated connectors are subjected to salt water under specified conditions. Used to test the connector's resistance to corrosion and any associated degradation in electrical function.

SASH CHAIN - A style of metal chain used to secure a DUST CAP to a connector or panel.

SCOOP PROOF - A connector design which includes an elongated shell to prevent the pin contacts from contacting the mating connector face before they are properly aligned for mating. This eliminates the possibility of damaged pins during mating.

SCREW MACHINE CONTACT - A contact made from a solid bar or rod using screw machine operations. Some screw machine contacts include secondary elements which are welded, crimped, or formed around the basic screw machined part to complete the contact.

SEAL - There are generally four types of seals associated with connectors. See PERIPHERAL SEAL, INTERFACIAL SEAL, WIRE SEALING GROMMET, and CABLE SEAL.

SEAL PLUG - See WIRE HOLE FILLER.

SEALING RANGE - The sizes of wire insulation diameter accommodated by a connector's individual wire sealing grommet. Also the diameter of a cable jacket accommodated by a gland seal endbell.

SELECTIVE PLATING - The application of metal PLATING to selective areas of the contact, particularly those areas subject to wear. Precious metal platings may be applied selectively to those contact surfaces responsible for the electrical connection, reducing the contact cost without sacrificing electrical performance.

SERRATIONS - See TEETH.

SERVICE RATING - The service rating is determined by

the amount of insulation or creepage distance between contacts. Each layout has a service rating associated with it based upon the operating voltages which can be safely handled by that specific arrangement of contacts.

SHELL - The outside case of a connector into which the insulator and contacts are situated.

SHELL SIZE - A standard system developed for military circular connectors for indicating the diameter of the shell. The system is based upon 1/16" increments, that is, a size 16 shell is one inch in diameter.

SHIELDED CABLE - A cable or group of wires enclosed within a conductive shield. The shield is normally terminated to ground and minimizes the effects of unwanted electrical energy entering or leaving the cable. Shields are made of braided copper, copper foil, or other conductive overlays. The shield is usually enclosed in an insulating jacket. Also See EMI/RFI. Some connector and connector endbells allow the termination and continuation of the shielding effect through the connector. See SHIELDED CABLE ENDBELL.

SHIELDED CABLE ENDBELL - Endbell with a threaded rear ring designed to captivate the braid of a shielded cable and continue the shielding through the connector.

SHOCK - An abrupt impact applied to a stationary object. It is usually expressed in gravities (g).

SHRINK BOOT - A rear accessory made from various types of insulating materials which shrink when specific temperatures are applied to them. Shrink boots are used to add additional insulation, strength, abrasion resistance, or sealing properties to the connector. Boots are supplied to the user in an expanded form, but return to a predefined shape and size when the appropriate amount of heat is applied to them. Various materials and options are available to meet specific user requirements, such as boots with meltable inner adhesive liners which form a moisture tight mass inside the boot after it has been shrunk.

SILICONE - A group of polymers which are rubbery and extremely stable in high temperatures. silicone is an insulator and is water repellent by nature.

SILVER - A precious metal which is more conductive than copper. Because it does not readily corrode, it is used for contact plating. It's chemical symbol is Ag.

SKID WASHER - A smooth flat washer used to protect the WAVE SPRING from damage.

SLEEVE - A bell-shaped ring that is placed over a WIRE SEALING GROMMET to provide uniform axial compression of the grommet and to minimize the transmission of torque to the grommet when the endbell is screwed onto the rear of the connector. Sleeves are a part of the sealing mechanism at the rear of a connector. Sleeves are normally a separate part of the connector although some endbells have integrated ferrules. Sleeves are usually made from a thermoplastic material but are occasionally made of metal.

SOCKET - A female contact. See SOCKET CONTACT.

SOCKET CONTACT - The contact which has a opening at the engagement end to accept the pin contact.

SOLDER CONTACT - A contact which is terminated to the wire with solder. Solder contacts are normally bonded into the insulator and can not be removed by the user. The alternative is crimp contacts to which a wire is attached by crimping. Crimp contacts can usually be inserted and removed by the user.

SOLDER CUP - The end of a SOLDER CONTACT designed to accept a wire which will be then soldered to the contact.

STAMPED AND FORMED CONTACT - Contacts made by stamping and forming a sheet of metal rather than by machining metal stock. Also see SCREW MACHINE CONTACTS.

STAR CLIP - One of several designs used for screw machine socket contacts. A tiny plated star shaped clip is captivated inside a solid barrel into which the pin contact fits. The clip creates a multi-point area of mechanical and electrical continuity between the mated contacts.

STEPPED PLANE - A polarization technique where one half of the insulator face is set back below the level of the other half. This creates a stair step front face which fits into the mating connector only when the two stepped planes match. Typically a pin contact is used in the recessed plane while a socket contact is used is the forward plane. The Sure Seal connector makes use of this type of polarization.

STRANDED CONDUCTOR - A conductor composed of several smaller independent strands.

STRIP - To remove insulation from a conductor.

STRIP FORM CONTACTS - Stamped and formed crimp contacts supplied on a continuous metal strip for use in automated or semi-automated crimping machines.

STRIP LENGTH - The length of conductor which should be exposed from the insulation at the end of the wire prior to terminating to a contact. Using the appropriate strip length guarantees a connection with maximum mechanical strength and a minimum of exposed conductor. NOTE: Correct strip lengths are typically quite short. Care should be taken to use the strip length data in this catalog to prepare wires for termination.

STRIPPER - A tool to remove insulation from a wire.

TEETH- A serrated edge on the rear of a connector shell and/or front of an endbell which allows the endbell to be positioned at a specific angle before tightening on to the connector. Used particularly with right angle endbells to position them at a specific angle.

TEST PROD - A sharp metal point with an insulated handle used with various types of test equipment for making an electrical connection between the circuit and the test gear.

TEST VOLTAGE - The range of voltages over which the connector has been tested per the parameters in the applicable specification.

THERMOCOUPLE CONTACT - A contact made of a special material for use with thermocouple probes. Typical contact materials are Alumel, chromel, constantan, or iron.

THERMOPLASTIC - A plastic material that can be softened by heat and rehardened into a solid state by cooling. This process can be accomplished using a variety of techniques.

THERMOSET - A plastic material which hardens when heat and pressure are applied. Unlike thermoplastic, it cannot be remelted or remolded.

THREADED COUPLING - A method of mechanically coupling connector halves which makes use of a threaded coupling nut on the plug which threads into a mating thread on the receptacle.

THRU-BULKHEAD RECEPTACLE - Flange mounted on a panel, the TBR connector has a mating end on each side of the panel, one with pin contacts, and the other with socket contacts. This provides a transition through a panel (or bulkhead). Standard plug style connectors can be mated with the TBR from each side of the panel. TBR's are used when a disconnect is needed from each side of the panel. They are particularly useful when air leakage through the panel must be eliminated.

THROUGH HOLE - See CLEARANCE HOLE.

TORQUE - A force which produces rotation. See ROTATIONAL TORQUE.

TORQUE WRENCH - A device which makes use of an integrated gauge which allows you to tighten coupling nuts, endbells, and bolts to a specific force.

TURRET - An interchangeable device which is attached to a CRIMP TOOL that allows the tool to crimp a range of contacts. Each turret is made to crimp a specific style contact or a range of contacts and/or wire gauges. Also see LOCATOR.

TWISTED PAIR - A cable in which the two insulated conductors are twisted together beneath the jacket. A group of wires in a jacket may also be twisted together in pairs.

UL - Abbreviation for Underwriter's Laboratories, a corporation supported by a group of underwriters for the purpose of establishing safety standards covering certain types of equipment and components in the United States.

V - Symbol for volt.

UL94V0 - A flammability performance rating set by Underwriter's Laboratories for plastics.

Vac - Volts, alternating current.

Vdc - Volts, direct current.

VDE - A German rating covering performance specifications of a device.

VIBRATION - A continuously reversing change in the magnitude of a given force.

VG 95 234 - A military specification used by the German government and NATO covering reverse bayonet connectors. VG is the equivalent of an MS specification in the United States, in translation from the German, literally meaning Defense (V), Equipment (G).

VOLT - The unit of measurement of electromotive force. It is equivalent to the force required to produce a current of 1 ampere through a resistance of one ohm.

VOLTAGE - The force which causes current to flow through an electrical conductor. Its symbol is E. The greatest effective difference in potential between and two conductors of a circuit.

VOLTAGE DROP - The difference in voltage between two points in a circuit due to the loss of electrical pressure as a current flows through an impedance.

VOLTAGE RATING - The maximum voltage which a connector can sustain without breaking down or varying from design specifications.

W - 1. In circular connectors, a degree of INSULATOR ROTATION. 2. Symbol for watt, work, or energy.

WASH OUT - A defect in the mold used to make molded connector components that manifests itself as a blurred or deformed surface around the area on the component where the mold is gated. It is the result of mold age and wear. It is typically a cosmetic issue that rarely results in any decreased connector performance.

WAVE SPRING - A wavy metal washer mounted inside a coupling nut. When the connector halves are mated, the wavespring applies a reverse pressure on the two mated halves. This is intended to improve vibration performance or peripheral sealing.

WAVE WASHER - See WAVE SPRING.

WIRE BUNDLE - A group of individual wires held together by a wire accessory such as cable ties, lacing cord, tubing, or clamps.

WIRE INSULATION DIAMETER - The outside diameter of the insulation on an insulated wire.

WIRE RANGE - The sizes of wire conductors accommodated by a particular contact.

WIRE HOLE FILLER (also know as a seal plug): A plug which is inserted into an unused GROMMET CAVITY in a connector to retain the sealing capability of the connector. They can be inserted into unused cavities in the grommet, insulator, or both, however, contacts are always recommended for filling unused insulator cavities. Fillers are usually made of plastic and are commonly found in two shapes, one which resembles a blunt nail and the other shaped like a barbell.

WIRE SEALING GROMMET: A resilient disc with holes in it to accommodate the individual wires entering the rear of the connector. Each cavity forms a tight seal against the wire insulation (as long as wires within the specified diameter are used). The grommet seals the back of the connector against moisture, dirt, and air. The grommet is normally held in place and compressed by an endbell and/or ferrule. It is usually a separate component, but may be part of the insulator itself. Also see GROMMET CAVITY.

WIRE SIZE - A numerical designation for conductor diameter. This catalog uses American Wire Gauge (AWG) which is based on the approximate circular mil area of the wire. Also see AWG and mm2.

WIRE STRIP LENGTH - See STRIP LENGTH.

WIRE WRAP CONTACT - A type of contact which is terminated by wrapping wire around a post in a manner that deforms the wire and creates a gas tight connection between the wire and the post. This method is slow and labor intensive. If used at all, it is employed in prototype work.

WORK - The magnitude of a force times the distance through which that force is applied.

X - 1. In circular connectors, a degree of INSULATOR ROTATION. 2. Symbol for reactance.

Y - 1. In circular connectors, a degree of INSULATOR ROTATION. 2. Symbol for admittance.

Z - 1. In circular connectors, a degree of INSULATOR ROTATION. 2. Symbol for impedance.

ZERO HALOGEN - In connector terminology, an insulating material that will not emit halogen gasses when burned. See HALOGEN and AEM..

ZERO INSERTION FORCE CONNECTOR (ZIF) - A connector designed in such a way that the contacts do not mechanically touch until the two connector halves have been jointed and a compression mechanism has forced the contacts together. A ZIF connector has extremely low insertion and removal forces making it possible to easily mate very large numbers of contacts with virtually no wear.

Temperature Conversion Table

If center column value is ˚F, the ˚C equivalent is to the left. If center column value is ˚C, the ˚F equivalent is to the right.

˚C		˚F	˚C		˚F	˚C		˚F	˚C		˚F	˚C		˚F
-40.00	-40	-40.0	-2.22	28	82.4	35.56	96	204.8	73.33	164	327.2	111.11	232	449.6
-39.44	-39	-38.2	-1.67	29	84.2	36.11	97	206.6	73.89	165	329.0	111.67	233	451.4
-38.89	-38	-36.4	-1.11	30	86.0	36.67	98	208.4	74.44	166	330.8	112.22	234	453.2
-38.33	-37	-34.6	-0.56	31	87.8	37.22	99	210.2	75.00	167	332.6	112.78	235	455.0
-37.78	-36	-32.8	0.00	32	89.6	37.78	100	212.0	75.56	168	334.4	113.33	236	456.8
-37.22	-35	-31.0	0.56	33	91.4	38.33	101	213.8	76.11	169	336.2	113.89	237	458.6
-36.67	-34	-29.2	1.11	34	93.2	38.89	102	215.6	76.67	170	338.0	114.44	238	460.4
-36.11	-33	-27.4	1.67	35	95.0	39.44	103	217.4	77.22	171	339.8	115.00	239	462.2
-35.56	-32	-25.6	2.22	36	96.8	40.00	104	219.2	77.78	172	341.6	115.56	240	464.0
-35.00	-31	-23.8	2.78	37	98.6	40.56	105	221.0	78.33	173	343.4	116.11	241	465.8
-34.44	-30	-22.0	3.33	38	100.4	41.11	106	222.8	78.89	174	345.2	116.67	242	467.6
-33.89	-29	-20.2	3.89	39	102.2	41.67	107	224.6	79.44	175	347.0	117.22	243	469.4
-33.33	-28	-18.4	4.44	40	104.0	42.22	108	226.4	80.00	176	348.8	117.78	244	471.2
-32.78	-27	-16.6	5.00	41	105.8	42.78	109	228.2	80.56	177	350.6	118.33	245	473.0
-32.22	-26	-14.8	5.56	42	107.6	43.33	110	230.0	81.11	178	352.4	118.89	246	474.8
-31.67	-25	-13.0	6.11	43	109.4	43.89	111	231.8	81.67	179	354.2	119.44	247	476.6
-31.11	-24	-11.2	6.67	44	111.2	44.44	112	233.6	82.22	180	356.0	120.00	248	478.4
-30.56	-23	-9.4	7.22	45	113.0	45.00	113	235.4	82.78	181	357.8	120.56	249	480.2
-30.00	-22	-7.6	7.78	46	114.8	45.56	114	237.2	83.33	182	359.6	121.11	250	482.0
-29.44	-21	-5.8	8.33	47	116.6	46.11	115	239.0	83.89	183	361.4	121.67	251	483.8
-28.89	-20	-4.0	8.89	48	118.4	46.67	116	240.8	84.44	184	363.2	122.22	252	485.6
-28.33	-19	-2.2	9.44	49	120.2	47.22	117	242.6	85.00	185	365.0	122.78	253	487.4
-27.78	-18	-0.4	10.00	50	122.0	47.78	118	244.4	85.56	186	366.8	123.33	254	489.2
-27.22	-17	1.4	10.56	51	123.8	48.33	119	246.2	86.11	187	368.6	123.89	255	491.0
-26.67	-16	3.2	11.11	52	125.6	48.89	120	248.0	86.67	188	370.4	124.44	256	492.8
-26.11	-15	5.0	11.67	53	127.4	49.44	121	249.8	87.22	189	372.2	125.00	257	494.6
-25.56	-14	6.8	12.22	54	129.2	50.00	122	251.6	87.78	190	374.0	125.56	258	496.4
-25.00	-13	8.6	12.78	55	131.0	50.56	123	253.4	88.33	191	375.8	126.11	259	498.2
-24.44	-12	10.4	13.33	56	132.8	51.11	124	255.2	88.89	192	377.6	126.67	260	500.0
-23.89	-11	12.2	13.89	57	134.6	51.67	125	257.0	89.44	193	379.4	127.22	261	501.8
-23.33	-10	14.0	14.44	58	136.4	52.22	126	258.8	90.00	194	381.2	127.78	262	503.6
-22.78	-9	15.8	15.00	59	138.2	52.78	127	260.6	90.56	195	383.0	128.33	263	505.4
-22.22	-8	17.6	15.56	60	140.0	53.33	128	262.4	91.11	196	384.8	128.89	264	507.2
-21.67	-7	19.4	16.11	61	141.8	53.89	129	264.2	91.67	197	386.6	129.44	265	509.0
-21.11	-6	21.2	16.67	62	143.6	54.44	130	266.0	92.22	198	388.4	130.00	266	510.8
-20.56	-5	23.0	17.22	63	145.4	55.00	131	267.8	92.78	199	390.2	130.56	267	512.6
-20.00	-4	24.8	17.78	64	147.2	55.56	132	269.6	93.33	200	392.0	131.11	268	514.4
-19.44	-3	26.6	18.33	65	149.0	56.11	133	271.4	93.89	201	393.8	131.67	269	516.2
-18.89	-2	28.4	18.89	66	150.8	56.67	134	273.2	94.44	202	395.6	132.22	270	518.0
-18.33	-1	30.2	19.44	67	152.6	57.22	135	275.0	95.00	203	397.4	132.78	271	519.8
-17.78	0	32.0	20.00	68	154.4	57.78	136	276.8	95.56	204	399.2	133.33	272	521.6
-17.22	1	33.8	20.56	69	156.2	58.33	137	278.6	96.11	205	401.0	133.89	273	523.4
-16.67	2	35.6	21.11	70	158.0	58.89	138	280.4	96.67	206	402.8	134.44	274	525.2
-16.11	3	37.4	21.67	71	159.8	59.44	139	282.2	97.22	207	404.6	135.00	275	527.0
-15.56	4	39.2	22.22	72	161.6	60.00	140	284.0	97.78	208	406.4	135.56	276	528.8
-15.00	5	41.0	22.78	73	163.4	60.56	141	285.8	98.33	209	408.2	136.11	277	530.6
-14.44	6	42.8	23.33	74	165.2	61.11	142	287.6	98.89	210	410.0	136.67	278	532.4
-13.89	7	44.6	23.89	75	167.0	61.67	143	289.4	99.44	211	411.8	137.22	279	534.2
-13.33	8	46.4	24.44	76	168.8	62.22	144	291.2	100.00	212	413.6	137.78	280	536.0
-12.78	9	48.2	25.00	77	170.6	62.78	145	293.0	100.56	213	415.4	138.33	281	537.8
-12.22	10	50.0	25.56	78	172.4	63.33	146	294.8	101.11	214	417.2	138.89	282	539.6
-11.67	11	51.8	26.11	79	174.2	63.89	147	296.6	101.67	215	419.0	139.44	283	541.4
-11.11	12	53.6	26.67	80	176.0	64.44	148	298.4	102.22	216	420.8	140.00	284	543.2
-10.56	13	55.4	27.22	81	177.8	65.00	149	300.2	102.78	217	422.6	140.56	285	545.0
-10.00	14	57.2	27.78	82	179.6	65.56	150	302.0	103.33	218	424.4	141.11	286	546.8
-9.44	15	59.0	28.33	83	181.4	66.11	151	303.8	103.89	219	426.2	141.67	287	548.6
-8.89	16	60.8	28.89	84	183.2	66.67	152	305.6	104.44	220	428.0	142.22	288	550.4
-8.33	17	62.6	29.44	85	185.0	67.22	153	307.4	105.00	221	429.8	142.78	289	552.2
-7.78	18	64.4	30.00	86	186.8	67.78	154	309.2	105.56	222	431.6	143.33	290	554.0
-7.22	19	66.2	30.56	87	188.6	68.33	155	311.0	106.11	223	433.4	143.89	291	555.8
-6.67	20	68.0	31.11	88	190.4	68.89	156	312.8	106.67	224	435.2	144.44	292	557.6
-6.11	21	69.8	31.67	89	192.2	69.44	157	314.6	107.22	225	437.0	145.00	293	559.4
-5.56	22	71.6	32.22	90	194.0	70.00	158	316.4	107.78	226	438.8	145.56	294	561.2
-5.00	23	73.4	32.78	91	195.8	70.56	159	318.2	108.33	227	440.6	146.11	295	563.0
-4.44	24	75.2	33.33	92	197.6	71.11	160	320.0	108.89	228	442.4	146.67	296	564.8
-3.89	25	77.0	33.89	93	199.4	71.67	161	321.8	109.44	229	444.2	147.22	297	566.6
-3.33	26	78.8	34.44	94	201.2	72.22	162	323.6	110.00	230	446.0	147.78	298	568.4
-2.78	27	80.6	35.00	95	203.0	72.78	163	325.4	110.56	231	447.8	148.33	299	570.2
												148.89	300	572.0
												149.44	301	573.8
												150.00	302	575.6

Conversion Charts

Conduit Capacity*

CONDUIT TRADE SIZE		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
INTERNAL DIA. INCHES		0.622	0.824	1.047	1.388	1.610	2.067	2.469	3.068	3.548	4.026
PERMISSIBLE AREA		0.12	0.21	0.34	0.60	0.82	1.34	1.92	2.95	3.96	5.09
CABLE O.D.	CABLE AREA SQ. IN.										
0.125	0.0123	9	17	27	48	66	108	156	239	321	413
0.150	0.0177	6	11	19	33	46	75	108	166	223	287
0.175	0.0241	4	8	14	24	34	55	79	122	164	211
0.200	0.0315	3	6	10	19	26	42	61	93	126	162
0.225	0.0398	3	5	8	15	20	33	48	74	99	127
0.250	0.0491	2	4	6	12	16	27	39	60	89	103
0.275	0.0594	2	3	5	10	13	22	32	49	66	85
0.300	0.0707	1	2	4	8	11	18	27	41	56	71
0.325	0.0830	1	2	4	7	9	16	23	35	47	61
0.350	0.0963	1	2	3	6	8	13	19	30	41	52
0.375	0.1105	1	1	3	5	7	12	17	26	35	46
0.400	0.1257	-	1	2	4	6	10	15	23	31	40
0.425	0.1419	-	1	2	4	5	9	13	20	27	35
0.450	0.1591	-	1	2	3	5	8	12	18	24	32
0.475	0.1773	-	1	1	3	4	7	10	16	22	28
0.500	0.1964	-	1	1	3	4	6	9	15	20	25
0.525	0.2165	-	-	1	2	3	6	8	13	18	23
0.550	0.2376	-	-	1	2	3	5	8	12	16	21
0.575	0.2597	-	-	1	2	3	5	7	11	15	19
0.600	0.2828	-	-	1	2	2	4	6	10	14	18
0.625	0.3068	-	-	1	1	2	4	6	9	12	16
0.650	0.3319	-	-	-	1	2	4	5	8	11	15
0.675	0.3579	-	-	-	1	2	3	5	8	11	14
0.700	0.3849	-	-	-	1	2	3	4	7	10	13
0.725	0.4129	-	-	-	1	1	3	4	7	9	12
0.750	0.4418	-	-	-	1	1	3	4	6	8	11
0.775	0.4718	-	-	-	1	1	2	4	6	8	10
0.800	0.5027	-	-	-	1	1	2	3	5	7	10
0.825	0.5346	-	-	-	1	1	2	3	5	7	9
0.850	0.5675	-	-	-	1	1	2	3	5	6	8
0.875	0.6014	-	-	-	-	1	2	3	4	6	8
0.900	0.6362	-	-	-	-	1	2	3	4	6	8
0.925	0.6721	-	-	-	-	1	1	3	4	6	8
0.950	0.7089	-	-	-	-	1	1	2	4	5	7
0.975	0.7467	-	-	-	-	1	1	2	3	5	6
1.000	0.7854	-	-	-	-	1	1	2	3	5	6
1.025	0.8252	-	-	-	-	-	1	2	3	4	6
1.050	0.8660	-	-	-	-	-	1	2	3	4	5
1.075	0.9077	-	-	-	-	-	1	2	3	4	5
1.100	0.9504	-	-	-	-	-	1	2	3	4	5
1.125	0.9941	-	-	-	-	-	1	1	2	3	5
1.150	1.0387	-	-	-	-	-	1	1	2	3	4
1.175	1.0844	-	-	-	-	-	1	1	2	3	4
1.200	1.1310	-	-	-	-	-	1	1	2	3	4
1.225	1.1786	-	-	-	-	-	1	1	2	3	4
1.250	1.2272	-	-	-	-	-	1	1	2	3	4
1.275	1.2768	-	-	-	-	-	1	1	2	3	3
1.300	1.3274	-	-	-	-	-	1	1	2	2	3
1.325	1.3789	-	-	-	-	-	-	1	2	2	3
1.350	1.4314	-	-	-	-	-	-	1	2	2	3
1.375	1.4849	-	-	-	-	-	-	1	1	2	3
1.400	1.5394	-	-	-	-	-	-	1	1	2	3
1.425	1.5949	-	-	-	-	-	-	1	1	2	3
1.450	1.6513	-	-	-	-	-	-	1	1	2	2
1.475	1.7088	-	-	-	-	-	-	1	1	2	2
1.500	1.7672	-	-	-	-	-	-	1	1	2	2
1.525	1.8266	-	-	-	-	-	-	1	1	2	2
1.550	1.8870	-	-	-	-	-	-	1	1	2	2
1.575	1.9483	-	-	-	-	-	-	-	1	2	2
1.600	2.0107	-	-	-	-	-	-	-	1	1	2
1.625	2.0740	-	-	-	-	-	-	-	1	1	2
1.650	2.1383	-	-	-	-	-	-	-	1	1	2
1.675	2.2036	-	-	-	-	-	-	-	1	1	2
1.700	2.2699	-	-	-	-	-	-	-	1	1	2
1.725	2.3371	-	-	-	-	-	-	-	1	1	2
1.750	2.4053	-	-	-	-	-	-	-	1	1	2
1.775	2.4745	-	-	-	-	-	-	-	1	1	2
1.800	2.5447	-	-	-	-	-	-	-	1	1	2

Figures shown indicate number of cables of a given size O.D. that can be pulled through conduit size listed.

*Based on National Electrical Code for non-lead sheathed cables when 3 or more wires occupy the same conduit (40% fill).

Wire Gauge

AWG	DIAMETER INCHES	DIAMETER MM	CMA
4/0	0.460	(11.68)	212000
3/0	0.410	(10.41)	168000
2/0	0.365	(9.27)	133000
1/0	0.325	(8.26)	106000
1	0.289	(7.34)	83700
2	0.258	(6.55)	66400
3	0.229	(5.82)	52600
4	0.204	(5.18)	41700
5	0.182	(4.62)	33100
6	0.162	(4.11)	26300
7	0.144	(3.66)	20800
8	0.128	(3.25)	16500
9	0.114	(2.90)	13100
10	0.102	(2.59)	10400
11	0.091	(2.31)	8230
12	0.081	(2.06)	6530
13	0.072	(1.83)	5180
14	0.062	(1.57)	4110
15	0.057	(1.45)	3260
16	0.051	(1.30)	2580
17	0.045	(1.14)	2050
18	0.040	(1.02)	1620
19	0.036	(0.91)	1290
20	0.032	(0.81)	1020
21	0.0285	(0.72)	810
22	0.0253	(0.643)	642
23	0.0226	(0.574)	509
24	0.0201	(0.511)	404
25	0.0179	(0.45)	320
26	0.0159	(0.404)	254
27	0.0142	(0.361)	202
28	0.0126	(0.320)	106
29	0.0113	(0.29)	127
30	0.0100	(0.254)	101
31	0.0089	(0.23)	79.7
32	0.0080	(0.20)	63.2
33	0.0071	(0.18)	50.1
34	0.0063	(0.16)	39.8
35	0.0056	(0.14)	31.5
36	0.0050	(0.13)	25.0
37	0.0045	(0.114)	19.8
38	0.0040	(0.10)	15.7
39	0.0035	(0.09)	12.5
40	0.0031	(0.079)	9.9

Use to Convert American Wire Gage to Diameter and Circular Mil Area.

Conversion Factors

MULTIPLY	BY	OBTAIN
acres	0.4047	hectares
atmospheres	1.10133	bars
atmospheres	0.0001033	kg per square meter
atmospheres	760	mm of mercury at 0°C
atmospheres	0.000010133	newtons per square meter
atmospheres	14.7	pounds per square inch
bars	0.9869	atmospheres
bars	100000	newtons per square meter
Btu	778.3	foot-pounds
Btu	0.000293	kilowatt-hours
Btu per hour	12.96	foot-pounds per minute
Btu per minute	17.58	watts
centimeters	0.03281	feet
centimeters	0.3937	inches
centimeters per second	1.969	feet per minute
centimeters per second	0.6	meters per minute
circular mils	0.000005067	square centimeters
circular mils	7.854E-07	square inches
circular mils	0.0005067	square millimeters
circular mils	0.7854	square mils
cubic centimeters	0.06102	cubic inches
cubic centimeters	0.001	liters
cubic feet	1728	cubic inches
cubic feet	0.02832	cubic meters
cubic feet	7.481	gallons (US liquid)
cubic feet	28.32	liters
cubic inches	16.393	cubic centimeters
cubic inches	0.0005787	cubic feet
cubic inches	0.00001639	cubic meters
cubic inches	0.01639	liters
cubic meters	35.31	cubic feet
cubic meters	1000	liters
dynes	0.00102	grams
dynes	0.00001	newtons
dynes	0.000002248	pounds
feet	30.48	centimeters
feet	12	inches
feet	0.0003048	kilometers
feet	0.06061	rods
feet of water (4°C)	0.8826	inches of mercury (0°C)
feet of water (4°C)	304.8	kg per square meter
feet of water (4°C)	62.43	pounds per square foot
feet per minute	0.508	centimeters per second
feet per minute	0.3048	meters per minute

MULTIPLY	BY	OBTAIN
feet per minute	0.01136	miles per hour
foot-pounds	0.001285	Btu
foot-pounds	1.356	joules
foot -pounds	0.1383	kilogram-meters
foot -pounds	3.766E-07	kilowatt-hours
foot-pounds	1.3557	newton-meters
foot-pounds per minute	0.07716	Btu per hour
foot-pounds per minute	0.0226	watts
gallons (US liquid)	0.1337	cubic feet
gallons (US liquid)	0.003785	cubic meters
gallons (US liquid)	4	quarts
grams	980.7	dynes
grams	0.03527	ounce
grams per cm	0.0056	pounds per inch
grams per cubic cm	0.03613	pounds per cubic inch
grams per sq cm	2.0481	pounds per square foot
hectares	2.471	acres
hectares	10000	square meters
horsepower	1.014	horsepower (metric)
horsepower (metric)	0.9863	horsepower
inches	2.54	centimeters
inches	0.08333	feet
inches	0.0254	meters
inches	25.4	millimeters
inches	1000	mils
inches	0.02778	yards
inches of mercury (0°C)	1.133	feet of water (4°C)
inches of mercury (0°C)	0.4912	pounds per square inch
inches of mercury (32°F)	33.86	millibars
inches of water (4°C)	0.07355	inches of mercury
inches of water (4°C)	25.4	kg per square meter
inches of water (4°C)	0.5782	ounces per square inch
inches of water (4°C)	5.202	pounds per square foot
joules	0.7376	foot-pounds
joules	9.81	kilogram-meters
kilograms	9.807	newtons
kilograms	2.2046	pounds
kilogram-calories per min.	69.77	watts
kilogram-force	9.81	newtons
kilogram-meters	7.233	foot -pounds
kilogram-meters	0.102	joules
kilograms per meter	0.672	pounds per foot
kilograms per meter	0.056	pounds per inch
kilograms per sq. meter	0.00009678	atmospheres

Conversion Factors

MULTIPLY	BY	OBTAIN
kilograms per sq. meter	0.003281	feet of water (4°C)
kilograms per sq. meter	0.2048	pounds per square foot
kilograms per sq. meter	0.001422	pounds per square inch
kilometers	3281	feet
kilometers	0.62137	miles
kilometers per hour	0.9113	feet per second
kilometers per hour	16.67	meters per minute
kilometers per minute	37.28	miles per hour
kilowatt-hours	3413	Btu
kilowatt-hours	0.000002655	foot -pounds
liters	1000	cubic centimeters
liters	0.03531	cubic feet
liters	61.02	cubic inches
liters	0.001	cubic meters
liters	0.908	quarts (dry)
liters	1.0567	quarts (US liquid)
meters	39.37	inches
meters	0.000394	mils
meters	1.0936	yards
meters per minute	1.667	centimeters per second
meters per minute	3.281	feet per minute
meters per minute	0.06	kilometers per hour
metric tons	0.9842	English long ton (2240 lbs)
metric tons	1.102	tons, short (2000 lbs)
miles (statute)	1.6094	kilometers
miles per hour	88	feet per minute
miles per hour	0.02682	kilometers per minute
millibars	0.02953	inches of mercury (32°F)
millibars	2.089	pounds per square foot
millimeters	0.03937	inches
millimeters	0.3937	mils
mm of mercury at 0°C	0.001316	atmospheres
mils	0.001	inches
mils	0.0000254	meters
mils	0.0254	millimeters
newtons	100000	dynes
newtons	0.102	kilograms
newtons	0.22481	pounds force
newton-meters	0.7376	foot-pounds
newton-meters	8.8512	inch-pounds
newtons per sq meter	0.00009678	atmospheres
newtons per sq meter	0.00001	bars
ounce	28.35	grams
ounces per square inch	1.729	inches of water (4°C)

MULTIPLY	BY	OBTAIN
pints	0.5	quarts
pounds	0.00004448	dynes
pounds	0.4536	kilogram
pounds force	4.44822	newtons
pounds per cubic foot	0.0005787	pounds per cubic inch
pounds per cubic inch	27.68	gram per cubic cm
pounds per cubic inch	1728	pounds per cubic foot
pounds per foot	1.488	kg per meter
pounds per inch	178.6	grams per cm
pounds per inch	17.86	kg per meter
pounds per square foot	0.01602	feet of water (4°C)
pounds per square foot	0.4883	grams per sq cm
pounds per square foot	0.1922	inches of water (4°C)
pounds per square foot	4.882	kg per square meter
pounds per square foot	4.882	kg per square meter
pounds per square foot	0.4788	millibars
pounds per square foot	0.006944	pounds per sq inch
pounds per square inch	0.06804	atmospheres
pounds per square inch	2.036	inches mercury (0°C)
pounds per square inch	703.1	kg per square meter
pounds per square inch	144	pounds per sq foot
quarts	0.25	gallons (US liquid)
quarts (dry)	1.1	liters
quarts (US liquid)	0.9463	liters
quarts	2	pints
rods	16.5	feet
square centimeters	0.00001973	circular mils
square centimeters	0.155	square inches
square feet	0.0929	square meters
square inches	0.000001273	circular mils
square inches	6.452	square centimeters
square kilometers	0.386	square miles
square meters	0.0001	hectares
square meters	10.76	square feet
square miles	2.59	square kilometers
square millimeters	1973	circular mils
square mils	1.273	circular mils
tons, English long (2240 lbs)		1.016 metric tons
tons, short (2000 lbs)	0.9072	metric tons
watts	0.05689	Btu per minute
watts	44.26	foot-pound per minute
watts	0.01433	kg-calories per minute
yards	0.02778	inches
yards	1.0936	meters

Part Number Index

Part Numbers that are Blue and in BOLD face are RoHS Compliant.

Please check www.Amphenol.com for confirmation of other part numbers.

Part Number Index

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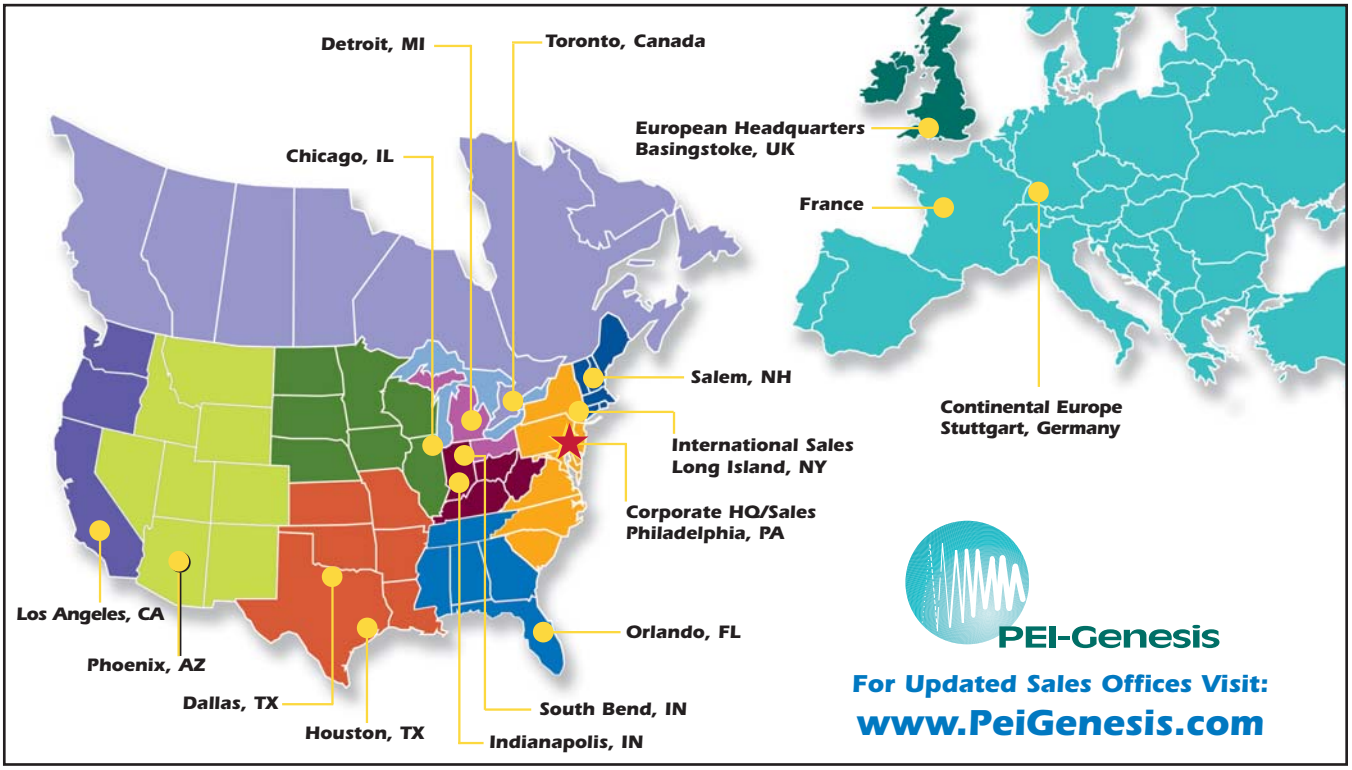

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PEI-Genesis

Warranty & Product Safety Information

Limited Warranty

Amphenol manufactures some of the highest quality products available; however, these products are intended for use in strict accordance with the specifications in this catalog.

a. If any of the products in this catalog are electrical components, components thereof, or electrical connectors accessories, then the warranty terms set forth in this subparagraph (a) apply to them. Amphenol Corporation, Amphenol Aerospace and PEI-Genesis warrant each new product sold by Amphenol or PEI-Genesis to be free from defects in materials and workmanship under normal use and service. The obligation and liability of Amphenol and PEI-Genesis under this warranty is limited to the repair or replacement at its factory, at the option of Amphenol or PEI-Genesis, of any such product which proves defective within ninety (90) days after delivery to the first end user, and is found to be defective in materials and workmanship by Amphenol inspection. Neither Amphenol nor PEI-Genesis shall be obligated or liable under this warranty for apparent defects which examination discloses are due to tampering, misuse, abuse, neglect, improper storage, normal wear and tear and all cases where the products are disassembled by other than authorized Amphenol or PEI-Genesis representatives. In addition, neither Amphenol nor PEI-Genesis shall be obligated or liable under this warranty unless the date of delivery to the first end user is within six (6) months of the date of delivery to the original purchaser, if different from the first end user, and further provided that written notice of any defect must be given to Amphenol or PEI-Genesis within thirty (30) days from the date such defect is first discovered.

Products covered by this warranty must be returned with all transportation charges prepaid to Amphenol Corporation, Amphenol Aerospace or PEI-Genesis in shipping containers that are adequate to prevent loss or damage in shipment. Products repaired or replaced under this warranty are warranted for the unexpired portion of the original warranty or for thirty (30) days, whichever is greater.

b. The purchaser's SOLE AND EXCLUSIVE REMEDY, and the SOLE OBLIGATION of Amphenol and PEI-Genesis, under the foregoing warranty shall be to repair or replace any defective or nonconforming products, provided that Amphenol or PEI-Genesis may, in their sole discretion, elect instead to refund the purchase price of the affected products. All replaced products shall become the property of Amphenol or PEI-Genesis.

c. AMPHENOL AND PEI-GENESIS EXPRESSLY DISCLAIM ANY LIABILITY, WHETHER UNDER THIS WARRANTY OR OTHERWISE, FOR ANY FAILURE OF ANY PRODUCT WHICH IS CAUSED, IN WHOLE OR IN PART, BY THE USE OF THAT PRODUCT WITH OR IN ANY COMPONENT PARTS THAT WERE NOT MANUFACTURED BY AMPHENOL.

d. THE ABOVE WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, USE OR APPLICATION, AND ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF AMPHENOL OR PEI-GENESIS.

e. THE AGGREGATE LIABILITY OF AMPHENOL AND PEI-GENESIS TO ANY PURCHASER IN DAMAGES OR OTHERWISE SHALL NOT EXCEED THE AGGREGATE PURCHASE PRICE OF THE PRODUCTS THAT ARE THE SUBJECT OF THE CLAIM OR DISPUTE. IN NO EVENT SHALL AMPHENOL OR PEI-GENESIS BE LIABLE FOR ANY INCIDENTAL, INDIRECT, CONSEQUENTIAL, PUNITIVE OR SPECIAL LOSSES OR DAMAGES OF ANY KIND, HOWSOEVER CAUSED. All such damages are expressly excluded and disclaimed, it being understood that the products sold to the purchaser are not consumer products. No action, regardless of form, arising out of, or in any way connected with any products furnished by PEI-Genesis may be brought by a purchaser more than one (1) year after the cause of action accrued.

Product Safety Information

This information sheet should be read in conjunction with the Product Data Sheet/Catalog distributed by PEI-Genesis. Failure to observe the advice in this information sheet and the operating conditions specified in the Product Data Sheet/Catalog could result in hazardous situations. None of the connectors in this catalog are meant to be mated or unmated under load.

1. MATERIAL CONTENT AND PHYSICAL FORM

Electrical connectors do not usually contain hazardous materials. They contain conducting and nonconducting materials and can be divided into two groups:

a) Printed circuit types and low cost audio types which employ all plastic insulators and casings; and

b) Rugged, Fire Barrier and High Reliability types with metal casings and either natural rubber, synthetic rubber, plastic or glass insulating materials.

Contact materials vary with type of connector and application and are usually manufactured from copper alloys, nickel, alumel, chromel or steel. In special applications, other alloys may be specified.

2. FIRE CHARACTERISTICS AND ELECTRIC SHOCK HAZARD

There is no fire hazard when the connector is correctly wired and used within the specified parameters.

Incorrect wiring or assembly of the connector or careless use of metal tools or conductive fluids, or transit damage to any of the component parts may cause electric shock or burns. Live circuits must not be broken by separating mated connectors as this may cause arcing, ionization and burning.

Heat dissipation is greater at maximum resistance in a circuit. Hot spots may occur when resistance is raised locally by damage, e.g., cracked or deformed contacts, or broken strands of wire. Local overheating may also result from the use of incorrect application tools or from poor quality soldering or slack screw terminals. Overheating may occur if the ratings in the Product Data Sheet/Catalog are exceeded and can cause breakdown of insulation and, hence, electric shock.

If heating is allowed to continue, it intensifies by further increasing the local resistance through loss of temper of spring contacts, formation of oxide film on contacts and wires, and leakage currents through carbonization of insulation and tracking paths. Fire can then result in the presence of combustible materials and this may release noxious fumes. Overheating may not be visually apparent. Burns may result from touching overheated components.

3. HANDLING

Care must be taken to avoid damage to any component parts of electrical connectors during installation and use. Although there are normally no sharp edges, care must be taken when handling certain components to avoid injury to fingers.

Electrical connectors may be damaged in transit to customers and such damage may result in creation of hazards. Products should therefore be examined prior to installation or use and rejected if found to be damaged in any respect.

4. DISPOSAL

Dispose of all products properly. The incineration of some products may release noxious or even toxic fumes.

5. APPLICATION

Connectors with exposed contacts should not be selected for use on the current supply side of an electrical circuit, because an electric shock could result from touching exposed contacts on an unmated connector. Voltages in excess of 30 Vac or 42.5 Vdc are potentially hazardous and care should be taken to ensure that such voltages can not be transmitted in any way to exposed metal parts of the connector body. The connector and wiring should be inspected, before making live, to ensure there is no damage to metal parts or insulators, no solder blobs, loose strands, conducting lubricants, swarf, or any other undesired conducting particles. Circuit resistance and continuity checks should be made to make certain that there are no low resistance joints or spurious conducting paths. Always use the correct application tools as specified in the Data Sheet/Catalog.

Do not permit untrained personnel to wire, assemble or tamper with connectors. For operation voltage please see appropriate national regulations.

IMPORTANT GENERAL INFORMATION

1. Air and Creepage Paths/Operating Voltage

The admissible operating voltages depend on the individual applications, and the valid national and other applicable safety regulations. For this reason, the air and creepage path data are only reference values. Observe reduction of air and creepage paths due to PC board and/or harnessing.

2. Temperature

All information given are temperature limits. The operating temperature depends on the individual application.

3. Other important information

Amphenol and PEI-Genesis continuously endeavor to improve products. Therefore, products may deviate from the description, technical data or specifications and/or shape as shown in this catalog. Amphenol and PEI-Genesis reserve the right to change the description, technical data or specifications and/or shape of any products at any time.

4. Harnessing and Assembly Instructions

If applicable, our special harnessing and/or assembly instruction must be adhered to. - This information can be provided on request.