

# Amphenol AIB/GT Series MIL-DTL-5015



## IMPROVED COUPLING OVER THREADED MIL-DTL-5015

The AIB/GT Series replaces the threaded coupling used in MIL-DTL-5015 with a positive, quick-mating, three-point reverse bayonet lock for improved performance. These Amphenol connectors are an ideal cost-effective option for applications requiring reliability in harsh environments, and is the world-standard for rail, mass transit, and military ground vehicle applications. This series has the same shell dimensions, contact layouts, contacts, and performance characteristics as the MIL-DTL-5015 threaded connectors; however, the two series do not intermate. They are sealed to withstand moisture, condensation, vibration and flash-over. Over 180 contact layouts are available, in variations that allow for just power, just signal, or a mix of both contact types.

- Meets NATO specification VG95234

## COMMERCIAL & MILITARY

AIB/GT series connectors are made in accordance with German military specification VG95234 and MIL-DTL-5015. Originally designed for NATO combat vehicles, aircraft, and airborne equipment, these rugged connectors are now 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 that allows for mating and un-mating 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 design is easier to mate in cold weather, tight spaces, or on equipment which must be disassembled frequently.

### SHOCK AND VIBRATION RESISTANCE

AIB/GT series connectors are supplied with military-standard resistant sealing and a three-point bayonet coupling nut. The three-point bayonet coupling incorporates a wave spring and washer 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.

## FEATURES

**AUDIBLE, VISUAL, AND TACTILE CONFIRMATION OF MATING**

AIB/GT series connectors provide 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). The user can feel the bolts click into the grooves (tactile). Blue dots on the receptacle and coupling nut are aligned when the connector is properly mated (visual).

**ENVIRONMENTAL**

The sealing is not compromised by any of the operating conditions defined in MIL-DTL-5015 and 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. Contact us for ordering information.

**WIDE RANGE OF WIRE GAUGES AND CURRENT-CARRYING CAPABILITY**

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

**WIDE VARIETY OF CONTACTS**

High-reliability screw machine contacts with silver or gold plating are available in sizes from 20 to 0 to accommodate wire gauges from 26 to 0 AWG. Solder, crimp, PC, coax, and thermocouple contacts are available.

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

**INTERMATEABLE AND INTERMOUNTABLE WITH ALL VG95234 CONNECTORS**

The standard MIL-DTL-5015 layouts and dimensions ensure intermateability and intermountability with all connectors made in accordance with VG95234.

All AIB/GT connectors are intermountable with standard threaded MIL-DTL-5015 connectors, often making it possible to upgrade without changing panel cutouts or clearances.

TECHNICAL  
SPECIFICATIONS**MATERIALS & FINISHES**

|            |                                                                                                                                           |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Shell      | Aluminum alloy. (Can be grounded)                                                                                                         |
| Plating    | Olive drab chromate coating over cadmium plating, conductive black alloy, black alloy, 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. Contact us for information.

\*\*Viton® is a registered trademark of DuPont DOW Elastomers

# TECHNICAL SPECIFICATIONS

## ELECTRICAL DATA

Operating Voltage/Test Voltage according to MIL-DTL-5015H

The indicated values for the operating voltage are limits concerning the electrical function. 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 (60)*            |
| 8            | 46 (69)*            |
| 4            | 80 (120)*           |
| 0            | 150 (225)*          |

\*Test amps, multiconductor using Radsok contact

Altitude Voltage Derating\* Chart

| MS SERVICE RATING | NOMINAL DISTANCE |          | OPERATING VOLTAGE* |         | STANDARD SEA LEVEL CONDITIONS      |                       | PRESSURE ALTITUDE† 50,000 FEET     |                       | PRESSURE ALTITUDE† 70,000 FEET     |                       |
|-------------------|------------------|----------|--------------------|---------|------------------------------------|-----------------------|------------------------------------|-----------------------|------------------------------------|-----------------------|
|                   | 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                | 200     | 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                   |

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

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

Wire Range Sizes

26 AWG to 0 AWG (See contact selection on [pages 94-97](#))

Contact Resistance  
per MIL-DTL-5015H  
p 3.15

| 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-foot submersible

Sealed 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 used are according to MIL-W-5086 or within the listed ranges.

| CONTACT SIZE | SEALING RANGE |               |
|--------------|---------------|---------------|
|              | INCHES        | MM            |
| 16           | .064 - .130   | 1.62 - 3.30   |
| 12           | .114 - .170   | 2.89 - 4.31   |
| 8            | .164 - .255   | 4.16 - 6.47   |
| 4            | .272 - .370   | 6.90 - 9.30   |
| 0            | .415 - .550   | 10.50 - 13.97 |

## **Insulation Strip Lengths**

See Contact Selection Chart on [pages 94 and 97](#)

## **Mating Life**

2,000 cycles minimum (AIB/GT) 500 cycles minimum (AIBC/ACA-B)

## **Salt Spray**

Olive drab chromate over cadmium - 500 hours  
Black alloy - 48 to 200 hours  
Conductive black alloy - 48 to 200 hours  
Black anodized - 500+ hours  
Electroless nickel - 48 hours

## **Heat**

Neoprene low-smoke, zero-halogen (LSZH) 257°F (+125°C);  
Viton 392°F (+200°C)

## **Chemical Resistance**

Diesel Fuel 48-hour intermittent spray for each  
JP-4 chemical with no deterioration,  
Hydraulic Fluid followed by Contact Retention (CR),  
Gasoline Insulation Resistance (IR), Dielectric Withstanding  
Voltage tests (DWW)

## **Corrosion Resistance**

Olive Drab Cadmium-Plated 48 hours 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**

Pin and socket contacts are designed to resist severe vibration and repeated connection and disconnection. Contact retention and separation is tested according to MIL-DTL-5015H (4.6.6.1)

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

## TECHNICAL SPECIFICATIONS

|                    |                                                                                                   |
|--------------------|---------------------------------------------------------------------------------------------------|
| Number of Circuits | 1 to 85                                                                                           |
| Polarization       | Key and keyway plus three point bayonet with optional rotational polarization. See ➔ pages 83-93. |
| 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   |

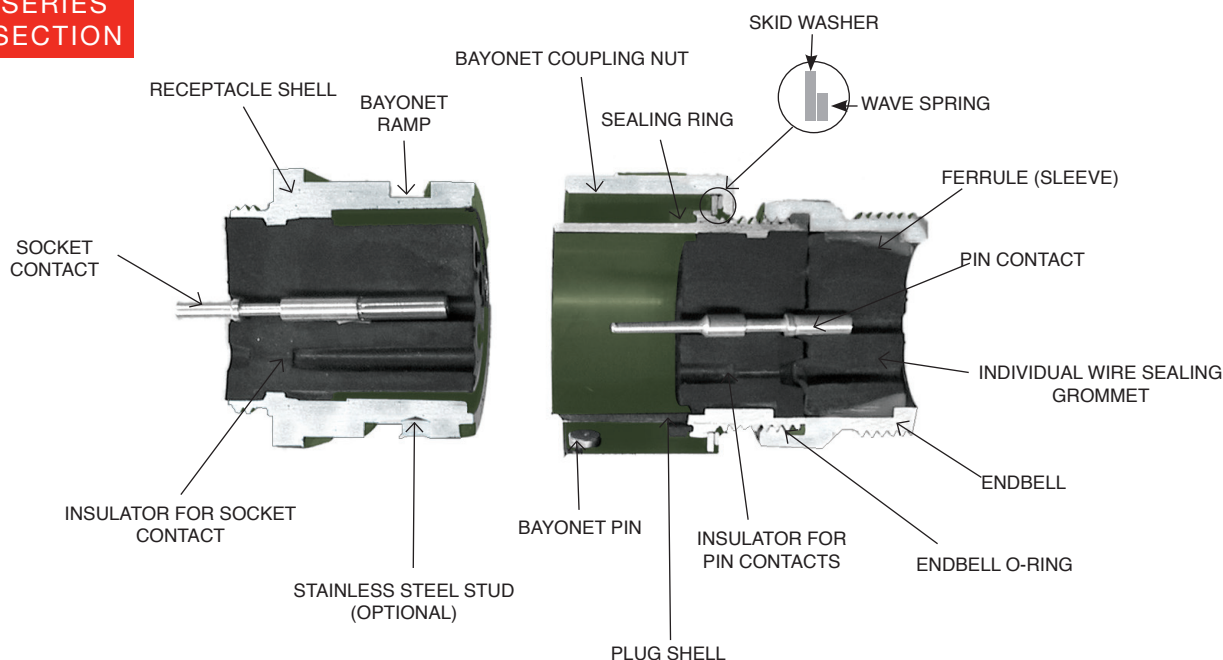
Color code is identified by small dot on wire well end of contact.

### 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

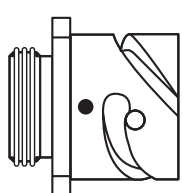
The next page shows all of the standard possibilities for AIB/GT series connectors. Follow the nine steps to create a description of the connector best suited to your application. This is not an Amphenol part number, but gives you a convenient way to select your connector. Contact us with the description for a valid Amphenol part number. If you prefer to select the Amphenol part number, see the How-To-Order Guide on ➔ pages 70-71.

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

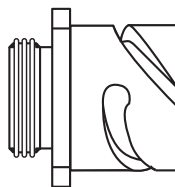
# CREATE YOUR PART NUMBER USING THESE NINE STEPS

| 1                 | 2           | 3                                              | 4                                  | 5            | 6        | 7                                | 8               | 9                        |
|-------------------|-------------|------------------------------------------------|------------------------------------|--------------|----------|----------------------------------|-----------------|--------------------------|
| <b>AIB</b>        | <b>6HD</b>  | <b>F</b>                                       | <b>A</b>                           | <b>24-28</b> | <b>P</b> | <b>W</b>                         | <b>S</b>        | <b>-472</b>              |
| CONNECTOR<br>TYPE | SHELL STYLE | END BELLS<br>(If omitting<br>endbell, enter -) | CABLE<br>CLAMP/BOOT<br>(If needed) | LAYOUT       | CONTACT  | ROTATION<br>(omit for<br>normal) | CONTACT<br>TYPE | PLATING/<br>MODIFICATION |

## 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.

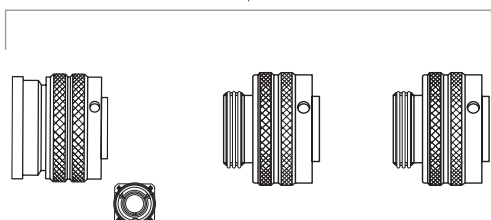
**Note:** AIBC are fully intermateable with all reverse bayonet connectors.

## STEP 2: SELECT SHELL STYLE, PLUG OR RECEPTACLE

**PLUGS**

Mates with

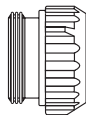
**RECEPTACLES**



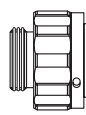
**6B** Box Mount

**6** Standard Plug

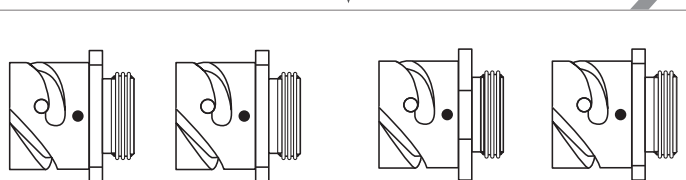
**G6** Shielded Plug



**4** Rubber-Covered



**6HD** Heavy-Duty

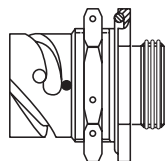


**0** Front Wall Mount with Accessory Threads

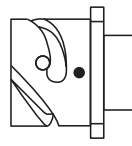
**30** Rear Wall Mount with Accessory Threads (Most Popular)

**1** Cable Mount with Accessory Threads

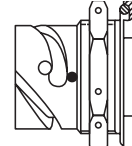
**20** Front Box Mount with Rear Accessory Threads



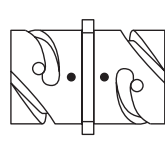
**70** Rear Mount Jam Nut with Accessory Threads



**2** Front Box Mount No Accessory Threads



**7** Rear Mount Jam Nut No Accessory Threads



**TB** Thru Bulkhead

## STANDARD SPECIALS — CALL WITH NPT THREAD SIZE, SEALTITE CONDUIT DIAMETER, OR CABLE OUTSIDE DIAMETER.

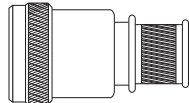
**SHIELDED CABLE/HEAT SHRINK**



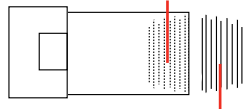
**LOW COST GLAND SEAL**



**SHIELDED CABLE BANDING**

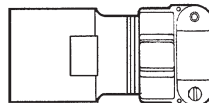


**INTERNAL THREAD VERSION**

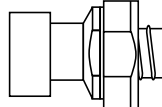


**EXTERNAL THREAD VERSION**

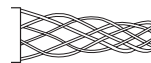
**GLAND SEAL**



**CONDUIT METAL**

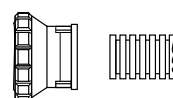


**MESH GRIP**



**CONDUIT PLASTIC**

➔ See pages 444-445

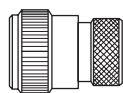


**STEP 3: SELECT CABLE CLAMP OR BOOT (IF APPLICABLE)**

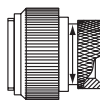
**TIP:** Order connector, backshell and all accessories as one part number! See [www.peigenesis.com/en/solution-guides.html](http://www.peigenesis.com/en/solution-guides.html)



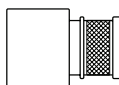
**RV**  
No Clamp



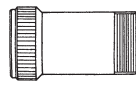
**G** Heat Shrink



**G2** Spin Coupling  
Heat Shrink



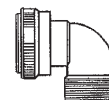
**U** Low-Cost  
Shielded



**L** Long Extender



**A** Unsealed  
(no grommet seal)



**F** Sealed  
(with grommet seal)

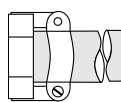


**T** MS Style  
(MS3108) 90°

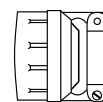
**P** Potting  
\*Potting  
Compound  
➔ See  
Page 443

**STEP 4: SELECT CABLE CLAMP OR BOOT (IF APPLICABLE)**

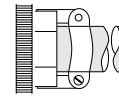
Heat Shrink Boot  
Call with cable outside  
diameter ➔ See pages  
440-441.



**A** MS3057-A  
Standard Cable Clamp



**C** MS3057-C  
Gland Seal ➔ See  
Page 112



**9767** 9767  
Gland Seal for smaller cable  
range. ➔ See Page 113

**STEP 5: SELECT LAYOUT**

➔ See pages 72-82

**STEP 6: SELECT CONTACT**

**P** = Pin **S** = Socket **PS** = Style TB Only

**STEP 7: SELECT ROTATION**

➔ See pages 83-93 (Omit for normal)  
**W, X, Y, Z**

**STEP 8: SELECT CONTACT TYPE**

**S** = Solder **C** = Crimp\*  
**H** = PC\*\* **O** = 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 94-96 indicate crimp contact. Please call for connectors with reduced or enlarged crimp barrel contacts.

➔ \*\* See page 99 for post diameters and lengths.

**STEP 9: SELECT PLATING****CONTACTS**

(Omit for silver contacts)

**B30** = Gold 30μ" Gold over Nickel  
**T** = Thermocouple (Solder only)  
**RDS** = RADSOK (Socket only) 12, 8, 4, 0

**SHELL PLATING**

(Omit for olive drab chromate over cadmium)

**023** = Nickel (RoHS with crimp or 116 contacts)  
**024** = Green Zinc Cobalt  
**025** = Black Zinc Alloy  
(RoHS with crimp or 116 contacts)  
**027** = Conductive Black Zinc Alloy  
(RoHS with crimp or 116 contacts)  
**G96** = Black Anodized  
**116** = Less Pre-tinned Solder Cups  
**472** = 116 & 025 mod codes (RoHS)  
**548** = 116 & 023 mod codes (RoHS)  
**553** = 116 & 027 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  $\oplus$ =16  $\bullet$ =12  $\bullet$ =8  $\circ$ =4  $\otimes$ =0  
Mating face view of pin inserts

SERIES KEY: AIB ( $\bullet$ =GT) AIT ( $\oplus$ =MS;  $\diamond$ =non QPL) 97 ( $\diamond$ =97)  
VG95234 ( $\blacksquare$ ) MS3450 ( $\nabla$ =MS;  $\nabla$ =non QPL) Thermocouple ( $\text{⌚}$ )

## 1 CONTACT

|                |             |              |              |             |              |             |              |             |
|----------------|-------------|--------------|--------------|-------------|--------------|-------------|--------------|-------------|
|                |             |              |              |             |              |             |              |             |
| <b>LAYOUT</b>  | <b>8S-1</b> | <b>10S-2</b> | <b>12S-4</b> | <b>12-5</b> | <b>14S-4</b> | <b>14-3</b> | <b>16S-3</b> | <b>16-2</b> |
| # 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           |

|                |              |             |             |              |                                            |             |             |                                            |
|----------------|--------------|-------------|-------------|--------------|--------------------------------------------|-------------|-------------|--------------------------------------------|
|                |              |             |             |              |                                            |             |             |                                            |
| <b>LAYOUT</b>  | <b>16-12</b> | <b>18-6</b> | <b>18-7</b> | <b>18-16</b> | <b>18-420</b>                              | <b>20-2</b> | <b>22-7</b> | <b>24-52</b>                               |
| # 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 KV <sub>ac</sub><br>24 KV <sub>dc</sub> | D           | E           | 21 KV <sub>ac</sub><br>30 KV <sub>dc</sub> |

## 2 CONTACTS

|                |                  |                 |              |                 |              |              |              |              |             |
|----------------|------------------|-----------------|--------------|-----------------|--------------|--------------|--------------|--------------|-------------|
|                |                  |                 |              |                 |              |              |              |              |             |
| <b>LAYOUT</b>  | <b>10SL-4*</b> ★ | <b>12S-3*</b> ★ | <b>12S-6</b> | <b>14S-9*</b> ★ | <b>16S-4</b> | <b>16A11</b> | <b>16-11</b> | <b>16-13</b> | <b>18-3</b> |
| # OF CONTACTS  | 2-#16            | 2-#16           | 2-#16        | 2-#16           | 2-#16        | 2-#12        | 2-#12        | 2-#12        | 2-#12       |
| SERIES         | ● ⊕ ◊ ▣ ▽ ⚡      | ⊕ ▽ ⚡           | ⊕            | ● ⊕ ▽ ⚡         | ● ⊕ ▣ ▽ ⚡    | ▣            | ● ⊕ ▽ ⚡      | ⊕ ▽ ⚡        | ● ⊕ ▽       |
| SERVICE RATING | A                | A               | Thermocouple | A               | D            | A            | A            | Thermocouple | D           |

|                |              |              |              |             |             |              |             |
|----------------|--------------|--------------|--------------|-------------|-------------|--------------|-------------|
|                |              |              |              |             |             |              |             |
| <b>LAYOUT</b>  | <b>18-14</b> | <b>20-12</b> | <b>20-23</b> | <b>22-1</b> | <b>22-8</b> | <b>22-11</b> | <b>24-1</b> |
| # OF CONTACTS  | 1-#16; 1-#4  | 1-#16; 1-#4  | 2-#8         | 2-#8        | 2-#12       | 2-#16        | 1-#12; 1-#0 |
| SERIES         | ⊕ ▽          | ⊕            | ● ⊕          | ● ⊕         | ● ⊕         | ● ⊕ ▽        | ▽           |
| SERVICE RATING | A            | A            | A            | D           | E           | B            | D           |

## 3 CONTACTS

|                |                                              |                      |                               |                                            |                             |                                        |                             |
|----------------|----------------------------------------------|----------------------|-------------------------------|--------------------------------------------|-----------------------------|----------------------------------------|-----------------------------|
|                |                                              |                      |                               |                                            |                             |                                        |                             |
| <b>LAYOUT</b>  | <b>24-9</b>                                  | <b>28-7</b>          | <b>32-5</b>                   | <b>10SL-3*</b>                             | <b>14S-1</b>                | <b>14S-7</b>                           | <b>16S-5</b>                |
| # OF CONTACTS  | 2-#4                                         | 2-#4                 | 2-#0                          | 3-#16                                      | 3-#16                       | 3-#16                                  | 3-#16                       |
| SERIES         | $\bullet$ $\oplus$ $\diamond$ $\blacksquare$ | $\bullet$ $\diamond$ | $\bullet$ $\oplus$ $\diamond$ | $\bullet$ $\oplus$ $\blacksquare$ $\nabla$ | $\oplus$ $\nabla$ $\bullet$ | $\bullet$ $\oplus$ $\nabla$ $\text{⌚}$ | $\bullet$ $\oplus$ $\nabla$ |
| SERVICE RATING | A                                            | D                    | D                             | A                                          | A                           | A                                      | A                           |

\* most popular \* Pins in receptacle, sockets in plug only for 97/AIT/MS series



# LAYOUTS BY NUMBER OF CONTACTS

CONTACT LEGEND ⊕ =16 ● =12 ⊙ =8 ○ =4 ⊗ =0 ◐ =2/0 SERIES KEY: AIB (●=GT) AIT (⊕=MS; ⊙=non QPL) 97 (⊕=97)  
Mating face view of pin inserts VG95234 (■) MS3450 (▼=MS; ▽=non QPL) Thermocouple (⊕)

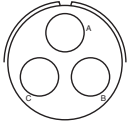
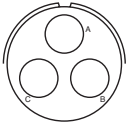
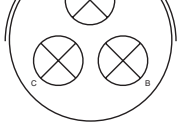
## 3 CONTACTS (CONT.)

|                |              |             |                        |              |              |             |             |              |
|----------------|--------------|-------------|------------------------|--------------|--------------|-------------|-------------|--------------|
|                |              |             |                        |              |              |             |             |              |
| <b>LAYOUT</b>  | <b>16S-6</b> | <b>16-7</b> | <b>16-10</b>           | <b>18-5</b>  | <b>18-22</b> | <b>20-3</b> | <b>20-6</b> | <b>20-19</b> |
| # OF CONTACTS  | 3-#16        | 2-#16; 1-#8 | 3-#12                  | 1-#16; 2-#12 | 3-#16        | 3-#12       | 3-#16       | 3-#8         |
| SERVICE RATING | ● ⊕ ⊕        | ● ⊕ ⊕ ▽     | ● ⊕ ⊕ ▽ B <sup>+</sup> | ● ⊕ ⊕ ▽      | ● ⊕ ⊕ ▽      | ● ⊕ ⊕       | ● ⊕ ⊕       | ● ⊕ ⊕ ▽      |
|                | A            | A           | A                      | D            | D            | D           | D           | A            |

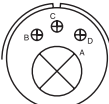
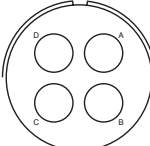
  

|                |              |                          |             |             |             |              |                         |             |
|----------------|--------------|--------------------------|-------------|-------------|-------------|--------------|-------------------------|-------------|
|                |              |                          |             |             |             |              |                         |             |
| <b>LAYOUT</b>  | <b>20-51</b> | <b>20-59</b>             | <b>22-2</b> | <b>22-6</b> | <b>22-9</b> | <b>22-21</b> | <b>22-80</b>            | <b>28-3</b> |
| # OF CONTACTS  | 3-#8         | 3-#8 for #10 or #12 wire | 3-#8        | 1-#16; 2-#8 | 3-#12       | 2-#16; 1-#0  | 3-#8 for #10 or 12 wire | 3-#8        |
| SERVICE RATING | ● ⊕          | ● ⊕                      | ● ⊕ ⊕ ▽     | ● ⊕ ▽       | ● ⊕ ⊕ ▽     | ● ⊕ ▽        | ● ⊕                     | ● ⊕ ⊕ ▽     |
|                | A            | A                        | D           | D           | E           | A            | A                       | E           |

## 4 CONTACTS

|                                                                                    |                                                                                    |                                                                                    |                                                                                     |                                                                                       |                                                                                       |                                                                                       |               |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------|
|  |  |  |  |  |  |  |               |
| <b>LAYOUT</b>                                                                      | <b>28-6</b>                                                                        | <b>28-72</b>                                                                       | <b>36-4</b>                                                                         | <b>40-AV</b>                                                                          | <b>12SL-844</b>                                                                       | <b>14S-2*</b>                                                                         | <b>14S-10</b> |
| # OF CONTACTS                                                                      | 3-#4                                                                               | 3-#4 (coax)                                                                        | 3-#0                                                                                | 3-#2/0                                                                                | 4-#16                                                                                 | 4-#16                                                                                 | 4-#16         |
| SERVICE RATING                                                                     | ● ⊕ ⊕                                                                              | ● ⊕                                                                                | ● ⊕                                                                                 | ● ⊕                                                                                   | ⊕                                                                                     | ● ⊕ ⊕ ▽                                                                               | ● ⊕ ⊕ ▽       |
|                                                                                    | D                                                                                  | (coax)                                                                             | D(A); A(B,C)                                                                        | D                                                                                     | I                                                                                     | I                                                                                     | I             |

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                                                                                       |              |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------|
|  |  |  |  |  |  |  |  |  |              |
| <b>LAYOUT</b>                                                                       | <b>16-9</b>                                                                         | <b>16-59</b>                                                                        | <b>18-4*</b>                                                                        | <b>18-10*</b>                                                                       | <b>18-13</b>                                                                         | <b>18-15</b>                                                                          | <b>20-4*</b>                                                                          | <b>20-20</b>                                                                          | <b>20-24</b> |
| # OF CONTACTS                                                                       | 2-#16; 2-#12                                                                        | 4-#12                                                                               | 4-#16                                                                               | 4-#12                                                                               | 3-#12; 1-#8                                                                          | 4-#12                                                                                 | 4-#12                                                                                 | 3-#12; 1-#4                                                                           | 2-#16; 2-#8  |
| SERVICE RATING                                                                      | ● ⊕ ⊕ ▽                                                                             | ● ⊕                                                                                 | ● ⊕ ⊕ ▽                                                                             | ● ⊕ ⊕ ▽                                                                             | ● ⊕ ⊕ ▽                                                                              | ● ⊕ ⊕ ▽                                                                               | ● ⊕ ⊕ ▽                                                                               | ● ⊕                                                                                   | ● ⊕ ⊕ ▽      |
|                                                                                     | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | A                                                                                    | Thermocouple                                                                          | D                                                                                     | A                                                                                     | A            |

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |              |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------|
|  |  |  |  |  |  |  |              |
| <b>LAYOUT</b>                                                                       | <b>22B22</b>                                                                        | <b>22-4</b>                                                                         | <b>22-10</b>                                                                        | <b>22-22*</b>                                                                        | <b>24-4</b>                                                                           | <b>24-22*</b>                                                                         | <b>32-17</b> |
| # OF CONTACTS                                                                       | 4-#8                                                                                | 2-#12; 2-#8                                                                         | 4-#16                                                                               | 4-#8                                                                                 | 3-#16; 1-#0                                                                           | 4-#8                                                                                  | 4-#4         |
| SERVICE RATING                                                                      | ■                                                                                   | ● ⊕ ⊕ ▽                                                                             | ● ⊕ ⊕ ▽                                                                             | ● ⊕ ⊕ ▽                                                                              | ▽                                                                                     | ● ⊕ ⊕ ▽                                                                               | ● ⊕ ⊕ ▽      |
|                                                                                     | A                                                                                   | A                                                                                   | E                                                                                   | A                                                                                    | D                                                                                     | D                                                                                     | D            |

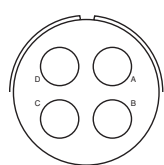
\* most popular

## LAYOUTS BY NUMBER OF CONTACTS

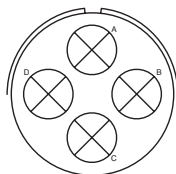
CONTACT LEGEND ⊕=16 ●=12 ⊙=8 ○=4 ⊗=0  
Mating face view of pin inserts

SERIES KEY: AIB (●=GT) AIT (⊕=MS; ⊙=non QPL) 97 (⬠=97)  
VG95234 (■) MS3450 (▼=MS; ▽=non QPL) Thermocouple (⊞)

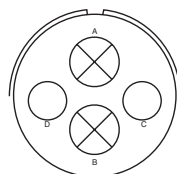
## 4 CONTACTS (CONT.)



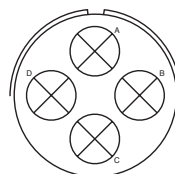
**LAYOUT**  
# OF CONTACTS 32-58  
4-#4 (coax) RG-161/U  
or RG-179/U  
SERIES ● ⊙  
SERVICE RATING (coax)



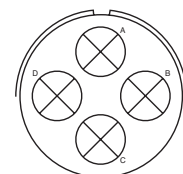
**LAYOUT**  
# OF CONTACTS 36-5  
4-#0  
SERIES ● ⊕ ⊙ ▼  
SERVICE RATING A



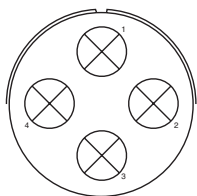
**LAYOUT**  
# OF CONTACTS 36-51  
2-#4; 2-#0  
SERIES ● ⊙  
SERVICE RATING D



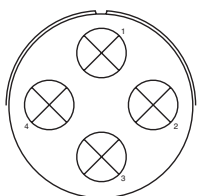
**LAYOUT**  
# OF CONTACTS 36-64  
4-#0 (coax) RG-11/U;  
RG-12/U or RG-13/U  
SERIES ● ⊙  
SERVICE RATING (coax)



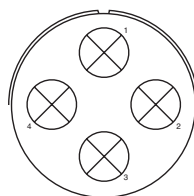
**LAYOUT**  
# OF CONTACTS 36-65  
4-#0 (coax) RG-59/U;  
RG-62/U or RG-71/U  
SERIES ● ⊙  
SERVICE RATING (coax)



**LAYOUT**  
# OF CONTACTS 40-57  
4-#0  
SERIES ● ⊙  
SERVICE RATING E



**LAYOUT**  
# OF CONTACTS 40-66  
4-#0 (coax) RG-63B/U  
SERIES ● ⊙  
SERVICE RATING (coax)



**LAYOUT**  
# OF CONTACTS 40-86  
4-#0 (coax) RG-115A/U  
SERIES ● ⊙  
SERVICE RATING E/ (coax)

## 5 CONTACTS



**LAYOUT**  
# OF CONTACTS 14S-5\*  
5-#16  
SERIES ● ⊕ ⊙ ▼  
SERVICE RATING I



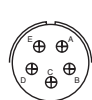
**LAYOUT**  
# OF CONTACTS 16S-8\*  
5-#16  
SERIES ● ⊕ ⊙ ▼  
SERVICE RATING A



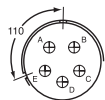
**LAYOUT**  
# OF CONTACTS 18-11\*  
5-#12  
SERIES ● ⊕ ⊙ ▼ ⊞  
SERVICE RATING A



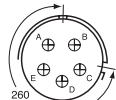
**LAYOUT**  
# OF CONTACTS 18-20  
5-#16  
SERIES ● ⊕ ⊙  
SERVICE RATING A



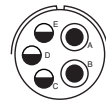
**LAYOUT**  
# OF CONTACTS 18-29  
5-#16  
SERIES ● ⊕ ⊙  
SERVICE RATING A



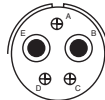
**LAYOUT**  
# OF CONTACTS 18-30  
5-#16  
SERIES ● ⊙ ⊕  
SERVICE RATING A



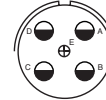
**LAYOUT**  
# OF CONTACTS 18-31  
5-#16  
SERIES ● ⊙ ⊕  
SERVICE RATING A



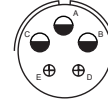
**LAYOUT**  
# OF CONTACTS 20-14  
3-#12; 2-#8  
SERIES ● ⊕ ⊙ ▼  
SERVICE RATING A



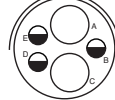
**LAYOUT**  
# OF CONTACTS 22-12  
3-#16; 2-#8  
SERIES ● ⊕ ⊙ ■  
SERVICE RATING D



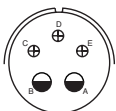
**LAYOUT**  
# OF CONTACTS 22-13  
1-#16; 4-#12  
SERIES ● ⊕ ⊙  
SERVICE RATING D(E) A(A,B,C,D)



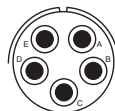
**LAYOUT**  
# OF CONTACTS 22-34  
2-#16; 3-#12  
SERIES ⊕ ⊙  
SERVICE RATING D



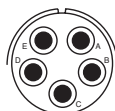
**LAYOUT**  
# OF CONTACTS 24-12  
3-#12; 2-#4  
SERIES ● ⊕ ⊙ ■ ▼  
SERVICE RATING A



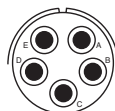
**LAYOUT**  
# OF CONTACTS 24-17  
3-#16; 2-#12  
SERIES ● ⊞  
SERVICE RATING D



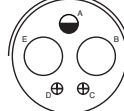
**LAYOUT**  
# OF CONTACTS 24-51  
5-#8  
SERIES ● ⊙  
SERVICE RATING A



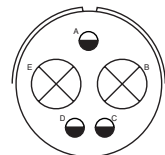
**LAYOUT**  
# OF CONTACTS 24-53  
5-#8  
SERIES ● ⊙  
SERVICE RATING A



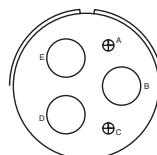
**LAYOUT**  
# OF CONTACTS 24-79  
5-#8  
SERIES ● ⊙  
SERVICE RATING A



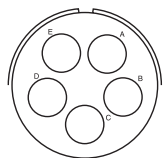
**LAYOUT**  
# OF CONTACTS 28-5  
2-#16; 1-#12; 2-#4  
SERIES ● ⊕ ⊙ ▼  
SERVICE RATING D



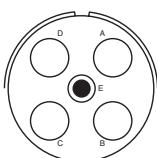
**LAYOUT**  
# OF CONTACTS 32-1  
3-#12; 2-#0  
SERIES ⊕ ⊙ ▼  
SERVICE RATING E(A); D(All others)



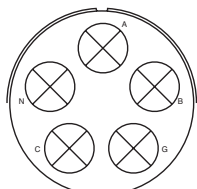
**LAYOUT**  
# OF CONTACTS 32-2  
2-#16; 3-#4  
SERIES ● ⊕ ▼  
SERVICE RATING E



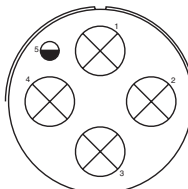
**LAYOUT**  
# OF CONTACTS 32-63  
5-#4  
SERIES ▼  
SERVICE RATING D



**LAYOUT**  
# OF CONTACTS 32-79  
1-#8; 4-#4  
SERIES ● ⊙  
SERVICE RATING D



**LAYOUT**  
# OF CONTACTS 40-5  
5-#0  
SERIES ● ⊙  
SERVICE RATING A



**LAYOUT**  
# OF CONTACTS 40-75  
4-#0; 1-#12  
SERIES ● ⊙  
SERVICE RATING E

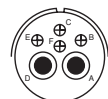
## 6 CONTACTS



**LAYOUT**  
# OF CONTACTS 14S-6\*  
6-#16  
SERIES ● ⊕ ⊙ ▼ ⊞  
SERVICE RATING I



**LAYOUT**  
# OF CONTACTS 18-12  
6-#16  
SERIES ⊕ ⊙ ▼ ⊞  
SERVICE RATING A



**LAYOUT**  
# OF CONTACTS 20-8  
4-#16; 2-#8  
SERIES ● ⊕ ⊙ ■ ▼  
SERVICE RATING I

\* most popular

## LAYOUTS BY NUMBER OF CONTACTS

CONTACT LEGEND  $\oplus$ =16  $\bullet$ =12  $\bullet$ =8  $\circ$ =4  $\otimes$ =0  
Mating face view of pin inserts

SERIES KEY: AIB ( $\bullet$ =GT) AIT ( $\oplus$ =MS;  $\diamond$ =non QPL) 97 ( $\diamond$ =97)  
VG95234 ( $\blacksquare$ ) MS3450 ( $\nabla$ =MS;  $\nabla$ =non QPL) Thermocouple ( $\text{⌚}$ )

## 6 CONTACTS (CONT.)

|                |                                  |                         |                           |                                  |                                      |                      |                                      |
|----------------|----------------------------------|-------------------------|---------------------------|----------------------------------|--------------------------------------|----------------------|--------------------------------------|
|                |                                  |                         |                           |                                  |                                      |                      |                                      |
| <b>LAYOUT</b>  | <b>20-17</b>                     | <b>20-22</b>            | <b>20-66</b>              | <b>22-5</b>                      | <b>22-15</b>                         | <b>22-24</b>         | <b>28-22</b>                         |
| # OF CONTACTS  | 1-#16; 5-#12                     | 3-#16; 3-#8             | 1-#16; 5-#12 for #10 wire | 4-#16; 2-#12                     | 1-#16; 5-#12                         | 4-#16; 2-#12         | 3-#16; 3-#4                          |
| SERIES         | $\bullet \oplus \diamond \nabla$ | $\bullet \oplus \nabla$ | $\bullet \diamond$        | $\bullet \oplus \diamond \nabla$ | $\bullet \oplus \blacksquare \nabla$ | $\bullet \oplus$     | $\bullet \oplus \blacksquare \nabla$ |
| SERVICE RATING | A                                | A                       | A                         | D                                | A(A, B, C, E, F); E(D)               | D(C, D, E)A(A, B, F) | D                                    |

## 7 CONTACTS

|                |                                  |                                               |                                                                |                    |                                      |                                      |
|----------------|----------------------------------|-----------------------------------------------|----------------------------------------------------------------|--------------------|--------------------------------------|--------------------------------------|
|                |                                  |                                               |                                                                |                    |                                      |                                      |
| <b>LAYOUT</b>  | <b>36-3</b>                      | <b>36-6</b>                                   | <b>40-74</b>                                                   | <b>14SA7</b>       | <b>16S-1*</b>                        | <b>18-9</b>                          |
| # OF CONTACTS  | 3-#12; 3-#0                      | 4-#4; 2-#0                                    | 1-#12; 1-#4 (coax) RG-62/U;<br>4-#0 (coax) RG-9B/U or RG-214/U | 7-#16              | 7-#16                                | 5-#16; 2-#12                         |
| SERIES         | $\bullet \oplus \diamond \nabla$ | $\bullet \oplus \diamond \blacksquare \nabla$ | $\bullet \diamond$                                             | $\bullet \diamond$ | $\bullet \oplus \blacksquare \nabla$ | $\bullet \oplus \blacksquare \nabla$ |
| SERVICE RATING | D                                | A                                             | A / coax                                                       | A                  | A                                    | I                                    |

|                |                                  |                          |              |                  |                           |                  |
|----------------|----------------------------------|--------------------------|--------------|------------------|---------------------------|------------------|
|                |                                  |                          |              |                  |                           |                  |
| <b>LAYOUT</b>  | <b>20-15*</b>                    | <b>20-57</b>             | <b>22-26</b> | <b>22-28</b>     | <b>22-33</b>              | <b>24-2</b>      |
| # OF CONTACTS  | 7-#12                            | 7-#12 for #14 or 16 wire | 5-#16; 2-#12 | 7-#12            | 7-#16                     | 7-#12            |
| SERIES         | $\bullet \oplus \diamond \nabla$ | $\bullet \diamond$       | $\oplus$     | $\bullet \oplus$ | $\bullet \oplus$          | $\bullet \oplus$ |
| SERVICE RATING | A                                | A                        | 1/8" spacing | D/A              | D(A, B, C, D); A(E, F, G) | D                |

|                |                                               |                                  |                                  |                    |                  |                               |
|----------------|-----------------------------------------------|----------------------------------|----------------------------------|--------------------|------------------|-------------------------------|
|                |                                               |                                  |                                  |                    |                  |                               |
| <b>LAYOUT</b>  | <b>24-10</b>                                  | <b>24-16</b>                     | <b>24-27</b>                     | <b>24-60</b>       | <b>24-66</b>     | <b>24-71</b>                  |
| # OF CONTACTS  | 7-#8                                          | 3-#16; 3-#12; 1-#8               | 7-#16                            | 7-#8 or 12 wire    | 7-#12            | 5-#8 for #10 or 12 wire, 2-#8 |
| SERIES         | $\bullet \oplus \diamond \blacksquare \nabla$ | $\bullet \oplus \diamond \nabla$ | $\bullet \oplus \diamond \nabla$ | $\bullet \diamond$ | $\bullet \oplus$ | $\bullet \diamond$            |
| SERVICE RATING | A                                             | D(A, B, F, G)<br>A(C, D, E)      | E                                | A                  | D                | A                             |

|                |                                  |                                    |                      |                    |                     |
|----------------|----------------------------------|------------------------------------|----------------------|--------------------|---------------------|
|                |                                  |                                    |                      |                    |                     |
| <b>LAYOUT</b>  | <b>28-10</b>                     | <b>32-10</b>                       | <b>36-73</b>         | <b>36-77</b>       | <b>36-83</b>        |
| # OF CONTACTS  | 3-#12; 2-#8; 2-#4                | 3-#16; 2-#8; 2-#4                  | 7-#4 (coax) RG-62B/U | 7-#4               | 7-#4 (coax) RG-58/U |
| SERIES         | $\bullet \oplus \diamond \nabla$ | $\bullet \oplus$                   | $\bullet \diamond$   | $\bullet \diamond$ | $\bullet \diamond$  |
| SERVICE RATING | D(G); A(All others)              | E(A, F); B(G);<br>D(B, E); A(C, D) | (coax)               | D                  | (coax)              |

\* most popular

## 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)  
VG95234 (■) MS3450 (▼=MS; ▽=non QPL) Thermocouple (⊖)

## 8 CONTACTS

| LAYOUT         | 18-8*        | 20-7*                        | 20-9                  | 20-79                     | 22-18                           | 22-23                  | 22-36                 | 22-65                    |
|----------------|--------------|------------------------------|-----------------------|---------------------------|---------------------------------|------------------------|-----------------------|--------------------------|
| # OF CONTACTS  | 7-#16; 1-#12 | 8-#16                        | 7-#16; 1-#12          | 7-#16; 1-#12 for #16 wire | 8-#16                           | 8-#12                  | 8-#12                 | 8-#12 for #14 or 16 wire |
| SERIES         | ● + + ▼      | ● + + ▼ ⊖                    | ⊕ + ▼                 | ⊕                         | ● + + ▼                         | ● + + ▼ ⊖              | ▽                     | ● ⊕                      |
| SERVICE RATING | A            | A (B,C,F,G)<br>I(all others) | DCH;<br>A(all others) | DCH;<br>A(all others)     | D(A, B, F, G, H);<br>A(C, D, E) | D(H);<br>A(all others) | D(H)<br>A(all others) | D(H); A(all others)      |

## 9 CONTACTS

| LAYOUT         | 24-6                         | 32-15       | 32-52       | 32-57                     | 40-AD      | 20A9                | 20-16        |
|----------------|------------------------------|-------------|-------------|---------------------------|------------|---------------------|--------------|
| # OF CONTACTS  | 8-#12                        | 6-#12; 2-#0 | 6-#12; 2-#0 | 6-#12; 2-#0 (coax) RG-7/U | 4-#8; 4-#0 | 9-#12               | 7-#16; 2-#12 |
| SERIES         | ● + + ▼                      | ● + ▼       | ● ⊕         | ● ⊕                       | ● ⊕        | ■                   | ● + + ▼      |
| SERVICE RATING | D(A, G, H);<br>A(all others) | D           | D           | (coax)                    | A          | D(J), I(all others) | A            |

| LAYOUT         | 20-18*       | 20-21        | 22-16        | 22-17               | 22-20 | 22-27               | 24-11       |
|----------------|--------------|--------------|--------------|---------------------|-------|---------------------|-------------|
| # OF CONTACTS  | 6-#16; 3-#12 | 8-#16; 1-#12 | 6-#16; 3-#12 | 8-#16; 1-#12        | 9-#16 | 8-#16; 1-#8         | 6-#12; 3-#8 |
| SERIES         | ● + + ▼      | ● + + ▼      | ● + + ▼      | ● + ▼               | ● + + | ● + + ■ ▽           | ● + + ■ ▼   |
| SERVICE RATING | A            | A            | A            | D(A); A(all others) | A     | D(J); A(all others) | A           |

| LAYOUT         | 28-1                         | 28-4                         | 28-84 | 28AY        | 32-3                     | 32-75                        |
|----------------|------------------------------|------------------------------|-------|-------------|--------------------------|------------------------------|
| # OF CONTACTS  | 6-#12; 3-#8                  | 7-#16; 2-#12                 | 9-#8  | 5-#16; 4-#4 | 4-#16; 2-#12; 2-#4; 1-#0 | 2-#12; 7-#8 (coax) RG-180B/U |
| SERIES         | ● + + ▼                      | ● + ▼                        | ● ⊕   | ● ⊕         | ● + ■ ▽                  | ● ⊕                          |
| SERVICE RATING | D(A, J, E);<br>A(all others) | E(G, P, S);<br>D(all others) | A     | A           | D                        | (coax)                       |

## 10 CONTACTS

| LAYOUT         | 18-1*                           | 18-19   | 18-24                        | 20-58        | 24-21       | 28-19                                   |
|----------------|---------------------------------|---------|------------------------------|--------------|-------------|-----------------------------------------|
| # OF CONTACTS  | 10-#16                          | 10-#16  | 10-#16                       | 5-#16; 5-#12 | 9-#16; 1-#8 | 6-#16; 4-#12                            |
| SERIES         | ● + + ■ ▼ ⊖                     | ● ⊕ + ▼ | ● ⊕ + ▼                      | ● ⊕          | ● + + ▼     | ● + + ▼                                 |
| SERVICE RATING | A (B, C, F, G)<br>I(all others) | A       | A(B, C, F, G);<br>I(balance) | A            | D           | B(H, M); D(A, B)<br>A(C, E, G, J, K, L) |

\* most popular

## LAYOUTS BY NUMBER OF CONTACTS

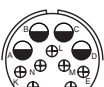
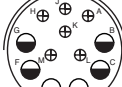
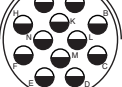
CONTACT LEGEND ⊕ =16 ● =12 ⊙ =8 ○ =4 ⊗ =0  
Mating face view of pin inserts

SERIES KEY: AIB (●=GT) AIT (⊕=MS; ⊙=non QPL) 97 (◆=97)  
VG95234 (■) MS3450 (▼=MS; ▽=non QPL) Thermocouple (⊞°)

## 11 CONTACTS

|                |              |              |                    |                             |                             |              |
|----------------|--------------|--------------|--------------------|-----------------------------|-----------------------------|--------------|
|                |              |              |                    |                             |                             |              |
| <b>LAYOUT</b>  | <b>20-33</b> | <b>24-20</b> | <b>36-14</b>       | <b>40-67</b>                | <b>40-72</b>                | <b>40-80</b> |
| # OF CONTACTS  | 11-#16       | 9-#16; 2-#12 | 6-#16; 5-#12; 5-#8 | 1-#16; 10-#4 (coax) RG-59/U | 1-#16; 10-#4 (coax) RG-9B/U | 10-#4; 1-#16 |
| SERIES         | ● ⊕ ◆ ▼      | ● ⊕ ◆ ▼ ⊞°   | ● ⊕                | ● ◆                         | ● ◆                         | ● ◆          |
| SERVICE RATING | A            | D            | D                  | A (coax)                    | A (coax)                    | A            |

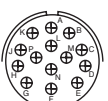
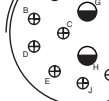
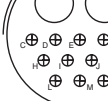
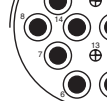
## 12 CONTACTS

|                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |              |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------|
|  |  |  |  |  |  |              |
| <b>LAYOUT</b>                                                                     | <b>22-63</b>                                                                      | <b>24-19</b>                                                                      | <b>28-8</b>                                                                        | <b>28-9</b>                                                                         | <b>28-18</b>                                                                        | <b>28-51</b> |
| # OF CONTACTS                                                                     | 8-#16; 4-#12                                                                      | 12-#16                                                                            | 10-#16; 2-#12                                                                      | 6-#16; 6-#12                                                                        | 12-#16                                                                              | 12-#12       |
| SERIES                                                                            | ● ◆                                                                               | ● ◆                                                                               | ● + ◆ ▽                                                                            | ● + ◆ ▼                                                                             | ● + ◆ ▽                                                                             | ● ◆          |
| SERVICE RATING                                                                    | A                                                                                 | A                                                                                 | E(L,M,); D(B) A(balance)                                                           | D                                                                                   | C(M); D(G, H, J, K, L)<br>A(A, B); I(C,D,E,F)                                       | A            |

## 13 CONTACTS

|                |        |        |        |              |                    |        |            |
|----------------|--------|--------|--------|--------------|--------------------|--------|------------|
|                |        |        |        |              |                    |        |            |
| LAYOUT         | 20-11  | 20-25  | 20-30  | 22-70        | 24-58              | 32-14● | 20-27*     |
| # OF CONTACTS  | 13-#16 | 13-#16 | 13-#16 | 5-#16; 8-#12 | 7-#16; 3-#12; 3-#8 | 13-#12 | 14-#16     |
| SERIES         | ● ⊕ ◆  | ● ◆ ◆  | ● ◆ ◆  | ● ◆          | ● ◆                | ◆      | ● ⊕ ◆ ▼ ⊞° |
| SERVICE RATING | I      | I      | I      | A            | A                  | D      | A          |

## 14 CONTACTS

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |              |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------|
|  |  |  |  |  |  |  |              |
| <b>LAYOUT</b>                                                                       | <b>22-19*</b>                                                                       | <b>24-59</b>                                                                        | <b>28-2</b>                                                                         | <b>28-20</b>                                                                         | <b>32-4</b>                                                                           | <b>32-9</b>                                                                           | <b>36-78</b> |
| # OF CONTACTS                                                                       | 14-#16                                                                              | 7-#16; 7-#12                                                                        | 12-#16; 2-#12                                                                       | 4-#16; 10-#12                                                                        | 12-#16; 2-#12                                                                         | 12-#16; 2-#4                                                                          | 12-#8; 2-#16 |
| SERIES                                                                              | ● ⊕ ◆ ▼ ⊞°                                                                          | ● ◆                                                                                 | ● ⊕ ◆ ▼                                                                             | ● ⊕ ◆ ▼ ■ ⊞°                                                                         | ● ⊕                                                                                   | ● ⊕ ▼                                                                                 | ● ◆          |
| SERVICE RATING                                                                      | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                    | A(F, J, K, N);<br>D(all others)                                                       | D                                                                                     | A            |

• different per 1651 STD: 5-#12; 2-#4

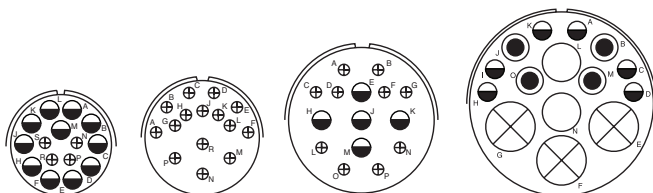
\* most popular

## LAYOUTS BY NUMBER OF CONTACTS

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

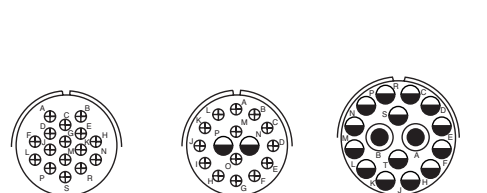
SERIES KEY: AIB (●=GT) AIT (⊕=MS; ⊙=non QPL) 97 (⬢=97)  
VG95234 (■) MS3450 (▼=MS; ▽=non QPL) Thermocouple (⊖)

## 15 CONTACTS

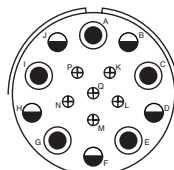
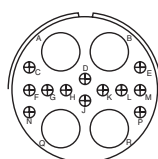
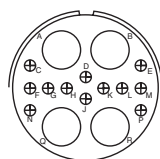


|                |               |                         |                                    |                         |
|----------------|---------------|-------------------------|------------------------------------|-------------------------|
| <b>LAYOUT</b>  | <b>24-65</b>  | <b>28-17*</b>           | <b>32-12</b>                       | <b>40-5□</b>            |
| # OF CONTACTS  | 4-#16; 11-#12 | 15-#16                  | 10-#16; 5-#12                      | 6-#12; 4-#8; 2-#4; 3-#0 |
| SERIES         | ● ⊙           | ● ⊕ ⊙ ▼                 | ● ⊕                                | ▽                       |
| SERVICE RATING | A             | B(R); D(M-P);<br>A(A-L) | A(C, D, E, F, G);<br>D(all others) | A                       |

## 16 CONTACTS

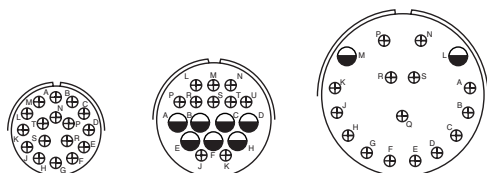


|                |             |               |              |
|----------------|-------------|---------------|--------------|
| <b>LAYOUT</b>  | <b>24-5</b> | <b>24-7*</b>  | <b>28-66</b> |
| # OF CONTACTS  | 16-#16      | 14-#16; 2-#12 | 14-#12; 2-#8 |
| SERIES         | ● ⊕ ⊙ ▼ ⊖   | ● ⊕ ⊙ ▼ ⊖     | ● ⊙          |
| SERVICE RATING | A           | A             | A            |



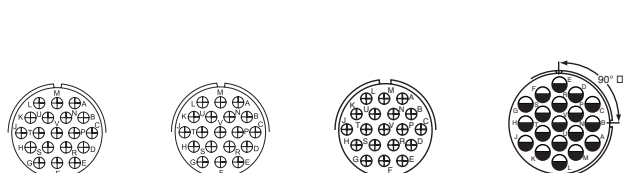
|                |                                |                          |              |                              |              |                    |
|----------------|--------------------------------|--------------------------|--------------|------------------------------|--------------|--------------------|
| <b>LAYOUT</b>  | <b>28-74</b>                   | <b>28-75</b>             | <b>28-79</b> | <b>32-68</b>                 | <b>32-82</b> | <b>36-14</b>       |
| # OF CONTACTS  | 9-#16; 4-#8; 3-#8 for #10 wire | 9-#16; 7-#8 for #10 wire | 7-#8; 9-#16  | 12-#12; 4-#4 (coax) RG-58C/U | 12-#16; 4-#4 | 6-#16; 5-#12; 5-#8 |
| SERIES         | ● ⊙                            | ● ⊙                      | ● ⊙          | ● ⊙                          | ● ⊙          | ● ⊕                |
| SERVICE RATING | A                              | A                        | A            | A (coax)                     | A            | D                  |

## 17 CONTACTS



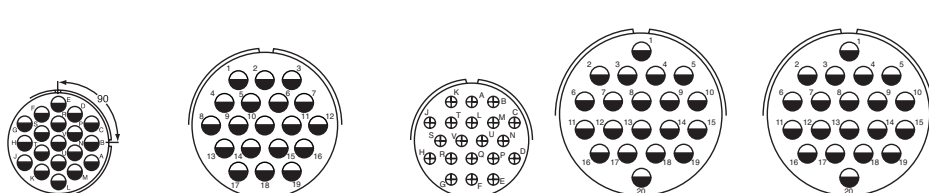
|                |               |               |                              |
|----------------|---------------|---------------|------------------------------|
| <b>LAYOUT</b>  | <b>20-29*</b> | <b>28-59</b>  | <b>36-13</b>                 |
| # OF CONTACTS  | 17-#16        | 10-#16; 7-#12 | 15-#16; 2-#12                |
| SERIES         | ● ⊕ ⊙ ▼ ⊖     | ● ⊙           | ● ⊙                          |
| SERVICE RATING | A             | A             | E(N, P, Q);<br>A(all others) |

## 19 CONTACTS



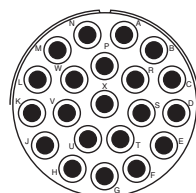
|                |              |              |               |              |
|----------------|--------------|--------------|---------------|--------------|
| <b>LAYOUT</b>  | <b>20A48</b> | <b>20-26</b> | <b>22-14*</b> | <b>24-67</b> |
| # OF CONTACTS  | 19-#16       | 19-#16       | 19-#16        | 19-#12       |
| SERIES         | ■            | ⊙ ●          | ● ⊕ ⊙ ▼ ⊖     | ● ⊙          |
| SERVICE RATING | I            | A            | A             | I            |

## 20 CONTACTS



|                |                                              |              |              |              |                     |              |
|----------------|----------------------------------------------|--------------|--------------|--------------|---------------------|--------------|
| <b>LAYOUT</b>  | <b>24-84</b>                                 | <b>32-76</b> | <b>28-16</b> | <b>36-79</b> | <b>36-80</b>        | <b>40-68</b> |
| # OF CONTACTS  | 1-#12; 18-#12 (coax)<br>RG-188/U or RG-174/U | 19-#12,      | 20-#16       | 20-#12       | 20-#12 for #10 wire | 21-#8        |
| SERIES         | ● ⊙                                          | ● ⊙          | ● ⊕ ⊙ ▼ ⊖    | ● ⊙          | ● ⊙                 | ● ⊙          |
| SERVICE RATING | A (coax)                                     | A            | A            | A            | A                   | A            |

## 21 CONTACTS



\* most popular

□ Special arrangement for MS3450 Series



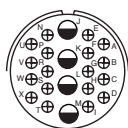
## LAYOUTS BY NUMBER OF CONTACTS

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

SERIES KEY: AIB (●=GT) AIT (⊕=MS; ⊙=non QPL) 97 (♦=97)  
VG95234 (■) MS3450 (▼=MS; ▽=non QPL) Thermocouple (⊞°)

## 22 CONTACTS

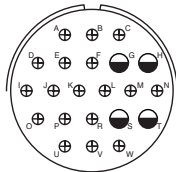
## 23 CONTACTS

**LAYOUT**

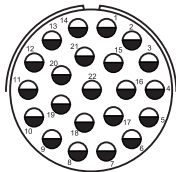
# OF CONTACTS  
SERIES  
SERVICE RATING

**28-11\***

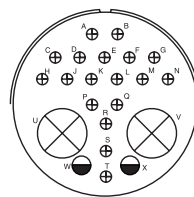
18-#16; 4-#12  
● ⊕ ■ ▼ ⊞°  
A

**36-1**

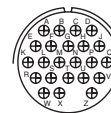
18-#16; 4-#12  
● ⊕ ♦  
D

**36-22**

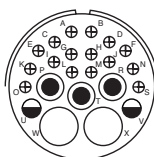
22-#12  
● ♦  
D

**40-7**

18-#16; 2-#12; 2-#0  
▽  
P, Q, U, V, W, X=A;  
D(balance)

**24-80**

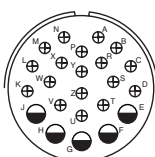
23-#16  
● ♦ ▽  
I

**LAYOUT**

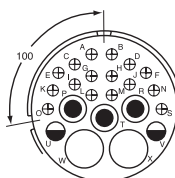
# OF CONTACTS  
SERIES  
SERVICE RATING

**32-6**

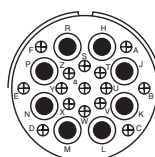
16-#16; 2-#12;  
3-#8; 2-#4  
● ⊕ ♦ ■ ▼  
A

**32-13**

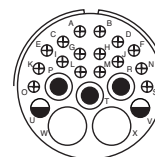
18-#16; 5-#12  
● ⊕ ♦ ▽  
D

**32-16**

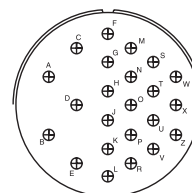
16-#16; 2-#12;  
3-#8; 2-#4  
● ♦ ▽  
A

**32-60**

15-#16; 8-#8 (coax)  
RG-124/U  
● ♦  
A (coax)

**32-62**

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

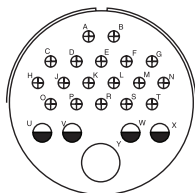
**40-2**

23-#16  
▽  
D

## 23 CONTACTS (CONT.)

## 24 CONTACTS

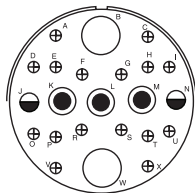
## 25 CONTACTS

**LAYOUT**

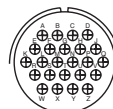
# OF CONTACTS  
SERIES  
SERVICE RATING

**40-3**

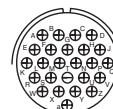
18-#16; 4-#12; 1-#4  
▽  
D

**40-4**

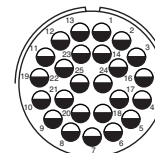
16-#16; 2-#12; 3-#8; 2-#4  
▽  
D

**24-28\***

24-#16  
● ⊕ ■ ▼ ⊞°  
I

**24-AJ**

25-#16  
● ♦  
A

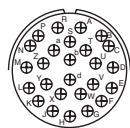
**32-25**

25-#12  
● ♦  
A

## 26 CONTACTS

## 28 CONTACTS

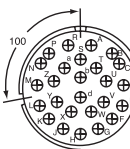
## 29 CONTACTS

**LAYOUT**

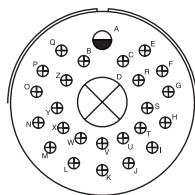
# OF CONTACTS  
SERIES  
SERVICE RATING

**28-12\***

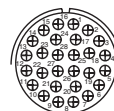
26-#16  
● ⊕ ♦ ▽ ⊞°  
A

**28-13**

26-#16  
● ♦ ⊕ ▽  
A

**40-6**

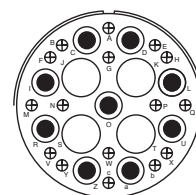
24-#16; 1-#12; 1-#0  
▽  
D

**24-96**

28-#16  
● ♦  
I

**28A63**

19-#16; 9-#12  
■  
A

**40-10**

16-#16; 9-#8; 4-#4  
● ⊕  
A

\* most popular

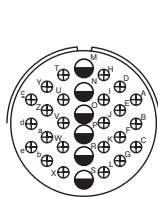


## LAYOUTS BY NUMBER OF CONTACTS

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

SERIES KEY: AIB (●=GT) AIT (⊕=MS; ⊙=non QPL) 97 (⬢=97)  
VG95234 (■) MS3450 (▼=MS; ▽=non QPL) Thermocouple (⊖)

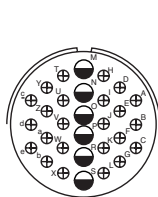
## 30 CONTACTS

**32-8**

24-#16; 6-#12

● ⊕ ⊖

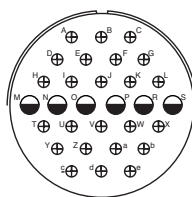
A

**32-56**

24-#16; 6-#12 for #10 wire

● ⊕

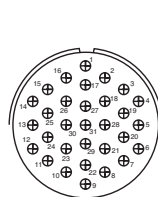
A

**40-1**

24-#16; 6-#12

● ⊕ ▼

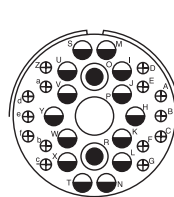
D

**32-31**

31-#16

● ⊕

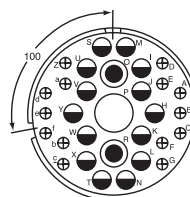
A

**36-9**

14-#16; 14-#12; 2-#8; 1-#4

● ⊕ ⊖ ▼

A

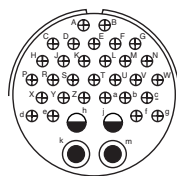
**36-18**

14-#16; 14-#12; 2-#8; 1-#4

● ⊕ ▽

A

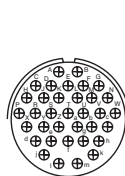
## 34 CONTACTS

**36-20**

30-#16; 2-#12; 2-#8

● ⊕

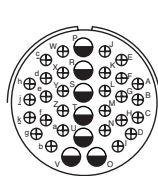
A

**28-15\***

35-#16

● ⊕ ⊖ ⊖

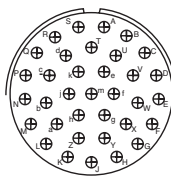
A

**32-7\***

28-#16; 7-#12

● ⊕ ⊕ ⊖ ▼

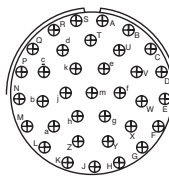
I(A, B, H, J); A(all others)

**36-15**

35-#16

● ⊕ ⊖ ⊖

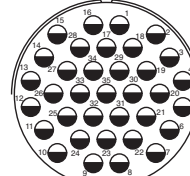
D(M); A(balance)

**36-85**

35-#16 for #12 wire

● ⊕

A/D

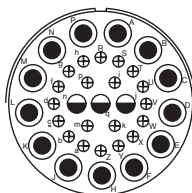
**40-35**

35-#12

● ⊕

D

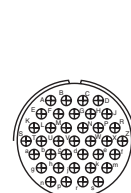
## 36 CONTACTS

**40-64**

20-#16; 3-#12; 13-#8 (coax) RG-124/U

● ⊕

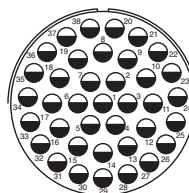
(coax)

**28-21\***

37-#16

● ⊕ ⊕ ⊖ ▼

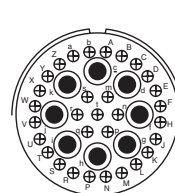
A

**40-AG**

38-#12

● ⊕

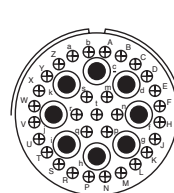
A

**36-54**

31-#16; 8-#8

● ⊕

A

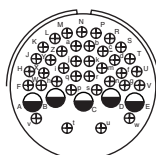
**36-55**

31-#16; 8-#8 for #6 wire

● ⊕

A

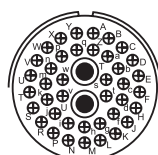
## 42 CONTACTS

**32-53**

37-#16; 5-#12

● ⊕

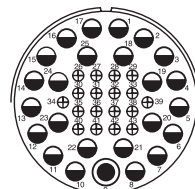
I/E

**32-59**

40-#16; 2-#8 (coax) RG-161/U

● ⊕

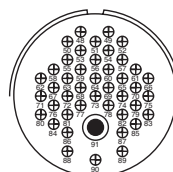
A (coax)

**40-AT**

18-#16; 24-#12; 1-#8

● ⊕

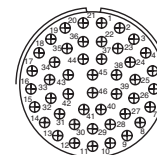
A

**36-74**

43-#16; 1-#8 (coax); RG-187B/U

● ⊕

A (coax)

**32-73**

46-#16

● ⊕ ▼

A

## 43 CONTACTS

## 44 CONTACTS

## 46 CONTACTS

**LAYOUT**  
# OF CONTACTS  
SERIES  
SERVICE RATING

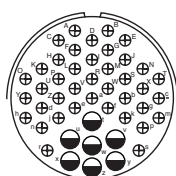
\* most popular

# 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)  
VG95234 (■) MS3450 (▼=MS; ▽=non QPL) Thermocouple (⊖)

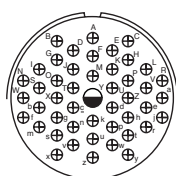
## 47 CONTACTS



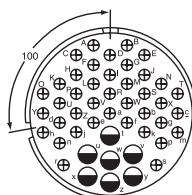
### LAYOUT

# OF CONTACTS  
SERIES  
SERVICE RATING

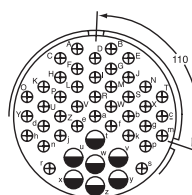
**36-7\***  
40-#16; 7-#12  
● ⊕ ▼ ▽ ⊖  
A



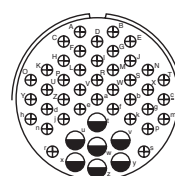
**36-8**  
46-#16; 1-#12  
● ⊕ ▼ ▽ ⊖  
A



**36-16**  
40-#16; 7-#12  
● ⊖ ▽  
A

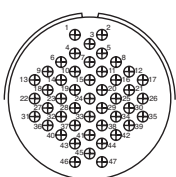


**36-17**  
40-#16; 7-#12  
● ⊖ ▽  
A



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

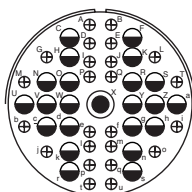
## 48 CONTACTS



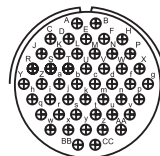
### LAYOUT

# OF CONTACTS  
SERIES  
SERVICE RATING

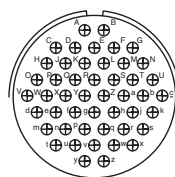
**36-76**  
47-#16  
● ⊖  
A



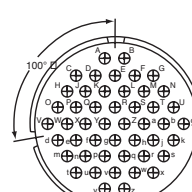
**40-9**  
24-#16; 22-#12; 1-#8  
● ⊕ ▼  
A



**32-48**  
48-#16  
● ⊖  
I

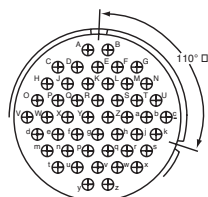


**36-10\***  
48-#16  
● ⊕ ⊕ ⊖ ▽ ⊖  
A



**36-11**  
48-#16  
● ⊕ ⊕ ▽  
A

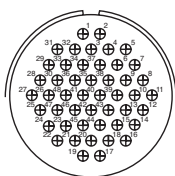
## 52 CONTACTS



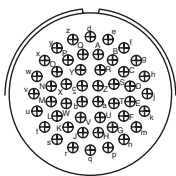
### LAYOUT

# OF CONTACTS  
SERIES  
SERVICE RATING

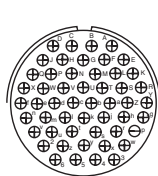
**36-12**  
48-#16  
● ⊕ ⊕ ▽  
A



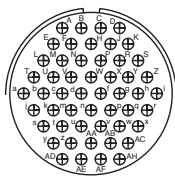
**36-75**  
48-#16 for #14 wire  
● ⊖  
A



**36-AF**  
48-#16  
● ⊖  
A

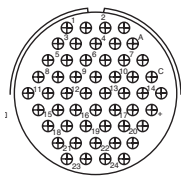


**32-414**  
52-#16  
⬠  
A



**36-52**  
52-#16  
● ⊕ ▼ ▽ ⊖  
A

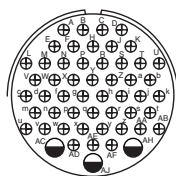
## 53 CONTACTS



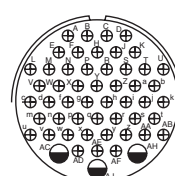
### LAYOUT

# OF CONTACTS  
SERIES  
SERVICE RATING

**36-403**  
52-#16  
⬠  
A



**36-59**  
50-#16; 3-#12 for #10 wire  
● ⊖  
A



**36-71**  
50-#16; 3-#12  
● ⊖  
A

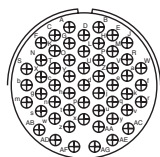
\* most popular

## LAYOUTS BY NUMBER OF CONTACTS

CONTACT LEGEND  $\odot$ =20  $\oplus$ =16  $\bullet$ =12  $\bullet$ =8  $\bigcirc$ =4  $\bigotimes$ =0  
Mating face view of pin inserts

SERIES KEY: AIB ( $\bullet$ =GT) AIT ( $\oplus$ =MS;  $\diamond$ =non QPL) 97 ( $\diamond$ =97)  
VG95234 ( $\blacksquare$ ) MS3450 ( $\nabla$ =MS;  $\nabla$ =non QPL) Thermocouple ( $\text{⌚}$ )

## 54 CONTACTS

**LAYOUT**

# OF CONTACTS  
SERIES  
SERVICE RATING

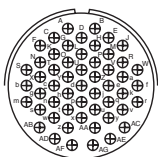
**32-22**

54-#16

 $\bullet$   $\diamond$   $\nabla$ 

A

## 55 CONTACTS

**32-64**

54-#16

 $\bullet$   $\diamond$ 

I

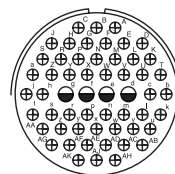
**32-AF**

55-#16

 $\bullet$   $\diamond$ 

A

## 56 CONTACTS

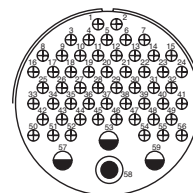
**36-66**

52-#16; 4-#12

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A

## 59 CONTACTS

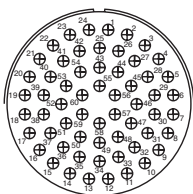
**40-61**

55-#16; 3-#12; 1-8

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A

## 60 CONTACTS

**LAYOUT**

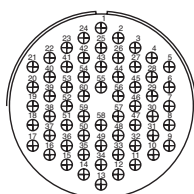
# OF CONTACTS  
SERIES  
SERVICE RATING

**40-53**

60-#16

 $\bullet$   $\diamond$   $\text{⌚}$ 

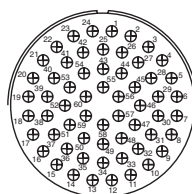
A

**40-62**

60-#16

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A

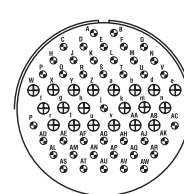
**40-85**

60-#16 for #14 wire

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A

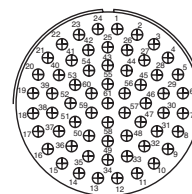
## 61 CONTACTS

**32A69**

41-#20; 20-#16

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I

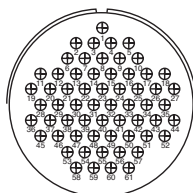
**40-63**

61-#16 for #14 wire

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A

## 62 CONTACTS

**LAYOUT**

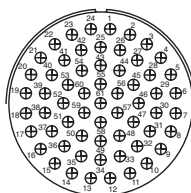
# OF CONTACTS  
SERIES  
SERVICE RATING

**40-70**

61-#16

 $\bullet$   $\diamond$ 

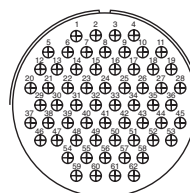
A

**40-73**

61-#16

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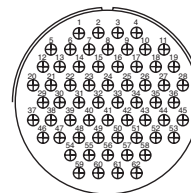
A

**40-81**

62-#16 for #14 wire

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A

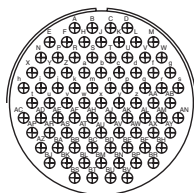
**40-82**

62-#16

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A

## 85 CONTACTS

**LAYOUT**

# OF CONTACTS  
SERIES  
SERVICE RATING

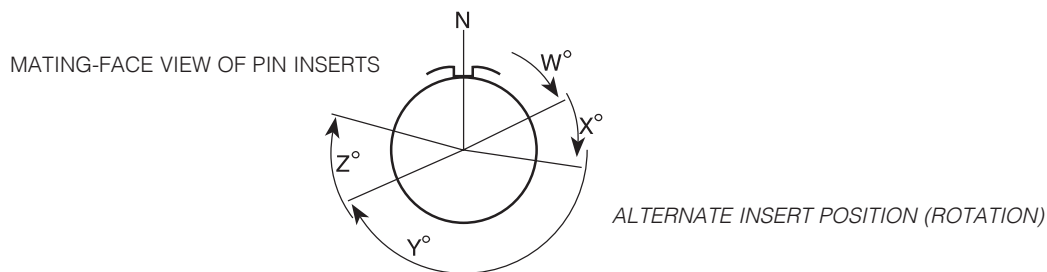
**40-56**

85-#16

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A

\* most popular



SERIES KEY: 97 (◆=97) AIT (⊕=MS; ◆=non QPL) AIB (●=GT) VG95234 (■) MS3450 (▼=MS; ▽=non QPL) Thermocouple (⊖)  
 CONTACT METALLURGY KEY: Alumel (Al.) Chromel (Ch.) Constantan (Con.) Copper (Cu) Iron (Ir.)

| LAYOUT  | 97 Series | AIT Series | AIB/GT | VG95234 | MS3450 | TOTAL | CONTACTS SIZES |    |    |   |   |   | ° | DEGREES OF ROTATION        |     |     |     | SERVICE RATING |
|---------|-----------|------------|--------|---------|--------|-------|----------------|----|----|---|---|---|---|----------------------------|-----|-----|-----|----------------|
|         |           |            |        |         |        |       | 20             | 16 | 12 | 8 | 4 | 0 |   | W                          | X   | Y   | Z   |                |
| 8S-1    | ◆         | ⊕          |        |         | ▼      | 1     |                | 1  |    |   |   |   |   | -                          | -   | -   | -   | A              |
| 10S-2   |           | ⊕^         |        |         | ▼      | 1     |                | 1  |    |   |   |   |   | -                          | -   | -   | -   | A              |
| 10SL-3  | ◆         | ⊕          | ●      | ■       | ▼      | 3     |                | 3  |    |   |   |   |   | -                          | -   | -   | -   | A              |
| 10SL-4  | ◆         | ⊕^         | ●      | ■       | ▼      | 2     |                | 2  |    |   |   |   |   | 63#                        | -   | -   | -   | A              |
| 10SL-51 |           | ◆          | ●      |         | ▽      | 2     |                | 2  |    |   |   |   | ⊖ | 10SL-4 45° A=Ir.; B=Con.   |     |     |     |                |
| 10SL-52 |           | ◆          | ●      |         | ▽      | 2     |                | 2  |    |   |   |   | ⊖ | 10SL-4 45° A=Cu; B=Con.    |     |     |     |                |
| 10SL-53 |           | ◆          | ●      |         | ▽      | 2     |                | 2  |    |   |   |   | ⊖ | 10SL-4 45° 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-3 100°                 |     |     |     | A              |
| 12S-2   | ◆         | ◆          |        |         | ▽      | 2     |                | 2  |    |   |   |   |   | 12S-3 250°                 |     |     |     | A              |
| 12S-3   | ◆         | ⊕          |        |         | ▼      | 2     |                | 2  |    |   |   |   |   | 70                         | 145 | 215 | 290 | A              |
| 12S-4   |           | ⊕          |        |         | ▼      | 1     |                | 1  |    |   |   |   |   | -                          | -   | -   | -   | D              |
| 12S-6   | ◆         |            |        |         |        | 2     |                | 2  |    |   |   |   | ⊖ | 12S-3 A=Con.; B=Ir.        |     |     |     |                |
| 12S-51  |           | ◆          |        |         | ▽      | 2     |                | 2  |    |   |   |   | ⊖ | 12S-3 315° A=Ch.; B=Al.    |     |     |     |                |
| 12S-54  |           | ◆          |        |         | ▽      | 2     |                | 2  |    |   |   |   | ⊖ | 12S-3 315° A = Ir.; B=Con. |     |     |     |                |
| 12S-55  |           | ◆          |        |         | ▽      | 2     |                | 2  |    |   |   |   | ⊖ | 12S-3 45° A=Cu; B=Con.     |     |     |     |                |
| 12S-56  |           | ◆          |        |         | ▽      | 2     |                | 2  |    |   |   |   | ⊖ | 12S-3 A=Al.; B=Ch.         |     |     |     |                |
| 12S-57  |           | ◆          |        |         | ▽      | 2     |                | 2  |    |   |   |   | ⊖ | 12S-3 60° A=Ch.; B=Al.     |     |     |     |                |
| 12S-58  |           | ◆          |        |         | ▽      | 2     |                | 2  |    |   |   |   | ⊖ | 12S-3 120° 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              |

\*Pins in receptacle, sockets in plug only ^ 5015 QPL not all configurations #Rotation commercial only, not MS-approved

**NOTE:** 16S contacts are used in shell sizes 8S, 10S, 10SL, 12S, 14S, & 16S

## LAYOUTS BY SHELL SIZE

SERIES KEY: 97 (◆=97) AIT (⬢=MS; ⬢=non QPL) AIB (●=GT) VG95234 (■) MS3450 (▼=MS; ▽=non QPL) Thermocouple (⌚°)

CONTACT METALLURGY KEY: Alumel (Al.) Chromel (Ch.) Constantan (Con.) Copper (Cu) Iron (Ir.)

| LAYOUT | 97 Series | AIT Series | AIB/GT | VG95234 | MS3450 | TOTAL | CONTACTS SIZES |    |    |   |   |   | ⌚° | DEGREES OF ROTATION |                                          |     |     | SERVICE RATING |
|--------|-----------|------------|--------|---------|--------|-------|----------------|----|----|---|---|---|----|---------------------|------------------------------------------|-----|-----|----------------|
|        |           |            |        |         |        |       | 20             | 16 | 12 | 8 | 4 | 0 |    | W                   | X                                        | Y   | Z   |                |
| 14S-6  | ◆         | ⬢          | ●      | ■       | ▼      | 6     |                | 6  |    |   |   |   |    | 90#                 | -                                        | -   | -   | I              |
| 14S-7  | ◆         | ⬢          | ●      |         | ▼      | 3     |                | 3  |    |   |   |   |    | 90                  | 180                                      | 270 | -   | A              |
| 14S-9  | ◆         | ⬢          | ●      |         | ▼      | 2     |                | 2  |    |   |   |   |    | 70                  | 145                                      | 215 | 290 | A              |
| 14S-10 | ◆         | ⬢          | ●      |         | ▽      | 4     |                | 4  |    |   |   |   |    | 14S-2               | 100°                                     |     |     | I              |
| 14S-11 | ◆         | ⬢          | ●      |         | ▽      | 4     |                | 4  |    |   |   |   |    | 14S-2               | 250°                                     |     |     | I              |
| 14S-12 | ◆         | ⬢          | ●      |         | ▽      | 3     |                | 3  |    |   |   |   |    | 14S-1               | 100°                                     |     |     | 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              |
| 16S-8  | ◆         | ⬢          | ●      |         | ▼      | 5     |                | 5  |    |   |   |   |    | -                   | 170                                      | 265 | -   | A              |
| 16S-14 | ◆         | ⬢          | ●      |         |        | 3     |                | 3  |    |   |   |   |    | 16S-5               | 110°                                     |     |     | A              |
| 16S-15 | ◆         | ⬢          | ●      |         |        | 2     |                | 2  |    |   |   |   |    | 16S-4               | 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                   |     |     |                |

**NOTE:** 16S contacts are used in shell sizes 8S, 10S, 10SL, 12S, 14S, & 16S. #Rotation commercial only. Not MS-approved. Not used for 97 series.

# LAYOUTS BY SHELL SIZE

SERIES KEY: 97 (◆=97) AIT (◆=MS; ◆=non QPL) AIB (●=GT) VG95234 (■) MS3450 (▼=MS; ▼=non QPL) Thermocouple (⌚)

CONTACT METALLURGY KEY: Alumel (Al.) Chromel (Ch.) Constantan (Con.) Copper (Cu) Iron (Ir.)

| LAYOUT | 97 Series | AIT Series | AIB/GT | VG95234 | MS3450 | TOTAL | CONTACTS SIZES |    |    |   |   |   | ⌚ | DEGREES OF ROTATION |                           |     |     | SERVICE RATING             |
|--------|-----------|------------|--------|---------|--------|-------|----------------|----|----|---|---|---|---|---------------------|---------------------------|-----|-----|----------------------------|
|        |           |            |        |         |        |       | 20             | 16 | 12 | 8 | 4 | 0 |   | W                   | X                         | Y   | Z   |                            |
| 16S-55 |           | ◆          | ●      |         | ▼      | 7     |                | 7  |    |   |   |   | ⌚ | 16S-1               | A=Con.; Balance=Cu        |     |     |                            |
| 16A11  |           |            |        | ■       |        | 2     |                |    | 2  |   |   |   |   | 35                  | 110                       | 250 | 125 | A                          |
| 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  |           | ◆          | ●      |         | ▼      | 3     |                |    | 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  |   |   |   |   | 80                  | -                         | -   | 280 | 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) |
| 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                          |

† Socket only for 97 Series

^ 5015 QPL not all configurations

\*\*\*Socket only for MS3450 series

\*\*\*Pin only for MS3450

**NOTE:** 16S contacts are used in shell sizes 8S, 10S, 10SL, 12S, 14S, & 16S



## LAYOUTS BY SHELL SIZE

SERIES KEY: 97 (◆=97) AIT (◆=MS; ◆=non QPL) AIB (●=GT) VG95234 (■) MS3450 (▼=MS; ▼=non QPL) Thermocouple (⊞)

CONTACT METALLURGY KEY: Alumel (Al.) Chromel (Ch.) Constantan (Con.) Copper (Cu) Iron (Ir.)

| LAYOUT | 97 Series | AIT Series | AIB/GT | VG95234 | MS3450 | TOTAL | CONTACTS SIZES |    |      |   |   |   | ⊞ | DEGREES OF ROTATION |                                           |     |     | SERVICE RATING           |
|--------|-----------|------------|--------|---------|--------|-------|----------------|----|------|---|---|---|---|---------------------|-------------------------------------------|-----|-----|--------------------------|
|        |           |            |        |         |        |       | 20             | 16 | 12   | 8 | 4 | 0 |   | W                   | X                                         | Y   | Z   |                          |
| 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  |                |    | 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.      |     |     |                          |
| 20A9   |           |            |        | ■       |        | 9     |                |    | 9    |   |   |   |   | -                   | 110                                       | 250 | -   | D(J), I(all others)      |
| 20A16  | ◆         | ◆          | ●      |         |        | 13    |                | 13 |      |   |   |   |   | 20-11               | 182°                                      |     |     | I                        |
| 20A37  | ◆         | ◆          | ●      |         |        | 4     |                |    | 4    |   |   |   |   | 20-4                | 250°                                      |     |     | D                        |
| 20A48  |           |            |        | ■       |        | 19    |                | 19 |      |   |   |   |   | 80                  | 280                                       | -   | -   | I                        |
| 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                        |
| 20-9   |           | ◆          |        |         | ▼      | 8     |                | 7  | 1    |   |   |   |   | 80                  | 110                                       | 250 | 280 | D(H), A(all others)      |
| 20-11  | ◆         | ◆          | ●      |         |        | 13    |                | 13 |      |   |   |   |   | -                   | -                                         | -   | -   | I                        |
| 20-12  |           | ◆^         |        |         |        | 2     |                | 1  |      |   | 1 |   |   | 80                  | 110                                       | 250 | 280 | A                        |
| 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                        |

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CONTACT METALLURGY KEY: Alumel (Al.) Chromel (Ch.) Constantan (Con.) Copper (Cu) Iron (Ir.)

| LAYOUT | 97 Series | AIT Series | AIB/GT | VG95234 | MS3450 | TOTAL | CONTACTS SIZES |    |    |    |   |   | ⊞ | DEGREES OF ROTATION                                                 |     |     |      | SERVICE RATING            |
|--------|-----------|------------|--------|---------|--------|-------|----------------|----|----|----|---|---|---|---------------------------------------------------------------------|-----|-----|------|---------------------------|
|        |           |            |        |         |        |       | 20             | 16 | 12 | 8  | 4 | 0 |   | W                                                                   | X   | Y   | Z    |                           |
| 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                         |
| 20-26  |           | ⬢          | ●      |         |        | 19    |                | 19 |    |    |   |   |   | -                                                                   | 90  | 280 | -    | A                         |
| 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‡    |                | 1  | 5‡ |    |   |   |   | -                                                                   | -   | -   | -    | 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‡ |    |   |   |   | -                                                                   | -   | -   | -    | D(H); A (all others)      |
| 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  |     |     |      |                           |
| 22B22  |           |            |        | ■       |        | 4     |                |    |    | 4  |   |   |   | -                                                                   | 110 | 250 | -    | 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                         |
| 22-11  | ◆         | +          | ●      |         | ▽      | 2     |                | 2  |    |    |   |   |   | 35                                                                  | 110 | 250 | 325  | B                         |
| 22-12  | ◆         | ⬢^         | ●      | ■       |        | 5     |                | 3  |    | 2  |   |   |   | 80                                                                  | 110 | 250 | 280  | D                         |
| 22-13  | ◆         | ⬢^         | ●      |         |        | 5     |                | 1  | 4  |    |   |   |   | 35                                                                  | 110 | 250 | 325  | A(A-D) D(E)               |

#Rotation commercial only, not MS-approved ‡ Reduced contact crimp pot ^ 5015 QPL not all configurations

\*\*\* Socket only for MS3450 series \*\*\* Pin only for MS3450 series

## LAYOUTS BY SHELL SIZE

SERIES KEY: 97 (◆=97) AIT (⬢=MS; ⬢=non QPL) AIB (●=GT) VG95234 (■) MS3450 (▼=MS; ▽=non QPL) Thermocouple (⊞)

CONTACT METALLURGY KEY: Alumel (Al.) Chromel (Ch.) Constantan (Con.) Copper (Cu) Iron (Ir.)

| LAYOUT | 97 Series | AIT Series | AIB/GT | VG95234 | MS3450 | TOTAL | CONTACTS SIZES |    |    |   |   |                                                                                     |  | DEGREES OF ROTATION                                                     |      |     |                        | SERVICE RATING        |
|--------|-----------|------------|--------|---------|--------|-------|----------------|----|----|---|---|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------|------|-----|------------------------|-----------------------|
|        |           |            |        |         |        |       | 20             | 16 | 12 | 8 | 4 | 0                                                                                   |                                                                                   | W                                                                       | X    | Y   | Z                      |                       |
| 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(A-D): A(E-G)        |
| 22-24  |           | ⬢          | ●      |         |        | 6     |                | 4  | 2  |   |   |                                                                                     |                                                                                   | 80                                                                      | 110  | 250 | 280                    | D(C, D, E) A(A, B, F) |
| 22-26  | ◆         |            |        |         |        | 7     |                | 5  | 2  |   |   |                                                                                     |                                                                                   | -                                                                       | -    | -   | -                      | 1/8" spacing          |
| 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                     |
| 22-33  |           | ⬢^         | ●      |         |        | 7     |                | 7  |    |   |   |                                                                                     |                                                                                   | 80                                                                      | 110  | 250 | 280                    | D(A-D) A(E-G)         |
| 22-34  | ◆         | ⬢          |        |         |        | 5     |                | 2  | 3  |   |   |                                                                                     |                                                                                   | 80                                                                      | 110  | 250 | 280                    | D                     |
| 22-36  |           |            |        | ▽       |        | 8     |                |    | 8  |   |   |                                                                                     |                                                                                   | 90                                                                      | -    | 270 | -                      | D(H); A(all others)   |
| 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  |    |   |   |                                                                                     | 20                                                                                | -                                                                       | -    | -   | A                      |                       |
| 22-65  |           | ❖          | ●      |         | 8†     |       |                | 8† |    |   |   |                                                                                     | -                                                                                 | -                                                                       | -    | -   | D(H); A(all others)    |                       |
| 22-68  |           | ❖          | ●      | ▽       | 14     | 14    |                |    |    |   |   |  | 22-19                                                                             | 45° A, C, E, G, J, L, M=Ir.; B, D, F, H, K, P, N=Con.                   |      |     |                        |                       |
| 22-69  |           | ❖          | ●      | ▽       | 14     | 14    |                |    |    |   |   |  | 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     | 19    |                |    |    |   |   |  | 22-14                                                                             | V=Al.; U=Ch.; Balance=Cu                                                |      |     |                        |                       |
| 22-72  |           | ❖          | ●      | ▽       | 6      |       | 4              | 2  |    |   |   |  | 22-5                                                                              | B=Al.; E=Ch.; Balance=Cu                                                |      |     |                        |                       |
| 22-73  |           | ❖          | ●      | ▽       | 6      |       | 4              | 2  |    |   |   |  | 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      |       |                | 8  |    |   |   |  | 22-23                                                                             | A=Al.; B, D, G, H=Cu; C=Ch.; E=Ir.; F=Con.                              |      |     |                        |                       |
| 22-76  |           | ❖          | ●      |         | 21     | 21    |                |    |    |   |   |  |                                                                                   | W=Con.; Balance=Cu                                                      |      |     |                        |                       |
| 22-77  |           | ❖          | ●      | ▽       | 14     | 14    |                |    |    |   |   |  | 22-19                                                                             | B, D, F, H, J, K, M, P=Cu; A, E, L=Ir.; C, G, N=Con.                    |      |     |                        |                       |
| 22-78  |           | ❖          | ●      | ▽       | 19     | 19    |                |    |    |   |   |  | 22-14                                                                             | A, C, E, G, H, K, M, P, R, T=Con.; Balance=Cu                           |      |     |                        |                       |
| 22-79  |           | ❖          | ●      | ▽       | 4      | 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                      |                       |
| 24-4   |           |            |        | ▽       | 4      |       | 3              |    |    |   | 1 |                                                                                     | 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                      |                       |

^ 5015 QPL not all configurations

# LAYOUTS BY SHELL SIZE

SERIES KEY: 97 (◆=97) AIT (⬢=MS; ⬢=non QPL) AIB (●=GT) VG95234 (■) MS3450 (▼=MS; ▽=non QPL) Thermocouple (⊞°)

CONTACT METALLURGY KEY: Alumel (Al.) Chromel (Ch.) Constantan (Con.) Copper (Cu) Iron (Ir.)

| LAYOUT | 97 Series | AIT Series | AIB/GT | VG95234 | MS3450 | TOTAL | CONTACTS SIZES |    |        |    |   |   | ⊞° | DEGREES OF ROTATION                                                                  |     |     |     | SERVICE RATING           |
|--------|-----------|------------|--------|---------|--------|-------|----------------|----|--------|----|---|---|----|--------------------------------------------------------------------------------------|-----|-----|-----|--------------------------|
|        |           |            |        |         |        |       | 20             | 16 | 12     | 8  | 4 | 0 |    | W                                                                                    | X   | Y   | Z   |                          |
| 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  |   |   |    | -                                                                                    | 108 | -   | -   | A                        |
| 24-52  |           | ⬢          | ●      |         |        | 1 HV  |                |    | 1HV    |    |   |   |    | 30 KVdc, 21 KVac                                                                     |     |     |     |                          |
| 24-53  |           | ⬢          | ●      |         |        | 5‡    |                |    |        | 5‡ |   |   |    | -                                                                                    | 108 | -   | -   | 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 |        |    |   |   | ⊞° | 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    |                | 16 |        |    |   |   | ⊞° | 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     |    |   |   |    | 16                                                                                   | -   | -   | -   | I                        |
| 24-68  |           | ⬢          | ●      | ▽       |        | 24    |                | 24 |        |    |   |   | ⊞° | 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 |        |    |   |   |    | 35                                                                                   | 145 | 240 | 300 | I                        |
| 24-81  |           | ⬢          | ●      |         |        | 16    |                | 14 | 2      |    |   |   | ⊞° | 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 |        |    |   |   |    | 65                                                                                   | -   | -   | -   | I                        |
| 24-AJ  |           | ⬢          | ●      |         |        | 25    |                | 25 |        |    |   |   |    | 80                                                                                   | 110 | 250 | 280 | A                        |
| 28A63  |           |            |        | ■       |        | 28    |                | 19 | 9      |    |   |   |    | -                                                                                    | 110 | 260 | -   | A                        |
| 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                        |

‡ Reduced contact crimp pot    ^ 5015 QPL not all configurations    () Number of contacts that are coax

## LAYOUTS BY SHELL SIZE

SERIES KEY: 97 (◆=97) AIT (◆=MS; ◆=non QPL) AIB (●=GT) VG95234 (■) MS3450 (▼=MS; ▼=non QPL) Thermocouple (⊞)

CONTACT METALLURGY KEY: Alumel (Al.) Chromel (Ch.) Constantan (Con.) Copper (Cu) Iron (Ir.)

| LAYOUT | 97 Series | AIT Series     | AIB/GT | VG95234 | MS3450 | TOTAL           | CONTACTS SIZES |    |    |                |      |   | ⊞ | DEGREES OF ROTATION                                                                                          |     |     |     | SERVICE RATING                                 |
|--------|-----------|----------------|--------|---------|--------|-----------------|----------------|----|----|----------------|------|---|---|--------------------------------------------------------------------------------------------------------------|-----|-----|-----|------------------------------------------------|
|        |           |                |        |         |        |                 | 20             | 16 | 12 | 8              | 4    | 0 |   | W                                                                                                            | X   | Y   | Z   |                                                |
| 28-8   | ◆         | ◆ <sup>+</sup> | ●      |         | ▼      | 12              |                | 10 | 2  |                |      |   |   | 80                                                                                                           | 110 | 250 | 280 | E (L, M) D(B) 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                                              |
| 28-15  | ◆         | ◆              | ●      |         | ▼      | 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 | C(M) D(G, H, J, K, L)<br>A(A, B) I(C, D, E, F) |
| 28-19  | ◆         | ◆              | ●      |         | ▼      | 10              |                | 6  | 4  |                |      |   |   | 80                                                                                                           | 110 | 250 | 280 | A(C, E, G, J, K, L)<br>B(H, M) D(A, B)         |
| 28-20  | ◆         | ◆ <sup>+</sup> | ●      | ■       | ▼      | 14              |                | 4  | 10 |                |      |   |   | 80                                                                                                           | 110 | 250 | 280 | A                                              |
| 28-21  | ◆         | ◆              | ●      | ■       | ▼      | 37              |                | 37 |    |                |      |   |   | 80                                                                                                           | 110 | 250 | 280 | A                                              |
| 28-22  |           | ◆ <sup>+</sup> | ●      | ■       | ▼      | 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,<br>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,<br>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,<br>K, M, P, S, U, W=Con.; Y, a=Ch.; b, d=Cu    |     |     |     |                                                |
| 28-66  |           | ◆              | ●      |         |        | 16              |                |    | 14 | 2              |      |   |   | 50                                                                                                           | 100 | 165 | -   | A                                              |
| 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                                                                               |     |     |     |                                                |
| 28-72  |           | ◆              | ●      |         |        | 3               |                |    |    |                | 3(3) |   |   | -                                                                                                            | -   | -   | -   | Coax                                           |
| 28-74  |           | ◆              | ●      |         |        | 16 <sup>‡</sup> |                | 9  |    | 7 <sup>‡</sup> |      |   |   | 70                                                                                                           | 133 | 227 | 290 | A                                              |
| 28-75  |           | ◆              | ●      |         |        | 16 <sup>‡</sup> |                | 9  |    | 7 <sup>‡</sup> |      |   |   | 70                                                                                                           | 133 | 227 | 290 | A                                              |
| 28-79  |           | ◆              | ●      |         |        | 16              |                | 9  |    | 7              |      |   |   | 70                                                                                                           | 133 | 227 | 290 | A                                              |
| 28-82  |           | ◆              | ●      |         |        | 6               |                |    | 4  | 2              |      |   |   | -                                                                                                            | -   | -   | -   | D                                              |
| 28-84  |           | ◆              | ●      |         |        | 9               |                |    |    | 9              |      |   |   | 45                                                                                                           | 157 | 90  | 135 | A                                              |
| 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,<br>e, j=Al.; F, H, T, X, h, k=Ch.; Balance=Cu |     |     |     |                                                |
| 28-AY  |           | ◆              | ●      |         |        | 9               |                | 5  |    |                | 4    |   |   | 80                                                                                                           | 110 | 250 | 280 | A                                              |
| 32A29  |           | ◆              | ●      |         |        | 23              |                | 16 | 2  | 3              | 2    |   |   | 32-6 250°                                                                                                    |     |     |     | A                                              |
| 32A30  |           | ◆              | ●      |         |        | 5               |                |    | 3  |                |      | 2 |   | 32-1 100°                                                                                                    |     |     |     | E(A) D(all others)                             |
| 32A69  |           |                |        | ■       |        | 61              | 41             | 20 |    |                |      |   |   | -                                                                                                            | 110 | 250 | -   | I                                              |
| 32-1   |           | ◆              |        | ■       | ▼      | 5               |                |    | 3  |                |      | 2 |   | 80                                                                                                           | 110 | 250 | 280 | E(A) D(all others)                             |
| 32-2   |           | ◆              | ●      |         | ▼      | 5               |                | 2  |    |                | 3    |   |   | 70                                                                                                           | 145 | 215 | 290 | E                                              |

‡ Reduced contact crimp pot ^ 5015 QPL not all configurations () Number of contacts that are coax

# LAYOUTS BY SHELL SIZE

SERIES KEY: 97 (◆=97) AIT (⊕=MS; ◆=non QPL) AIB (●=GT) VG95234 (■) MS3450 (▼=MS; ▽=non QPL) Thermocouple (⊞)

CONTACT METALLURGY KEY: Alumel (Al.) Chromel (Ch.) Constantan (Con.) Copper (Cu) Iron (Ir.)

| LAYOUT | 97 Series | AIT Series | AIB/GT | VG95234 | MS3450 | TOTAL | CONTACTS SIZES |    |    |      |      |      | ° | DEGREES OF ROTATION |                                    |     |     | SERVICE RATING                      |
|--------|-----------|------------|--------|---------|--------|-------|----------------|----|----|------|------|------|---|---------------------|------------------------------------|-----|-----|-------------------------------------|
|        |           |            |        |         |        |       | 20             | 16 | 12 | 8    | 4    | 0    |   | W                   | X                                  | Y   | Z   |                                     |
| 32-3   |           | ⊕          | ●      | ■       | ▼      | 9     |                | 4  | 2  |      | 2    | 1    |   | 80                  | 110                                | 250 | 280 | D                                   |
| 32-4   |           | ⊕^         | ●      |         |        | 14    |                | 12 | 2  |      |      |      |   | 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)<br>D(E) A(D)         |
| 32-12  |           | ⊕^         | ●      |         |        | 15    |                | 10 | 5  |      |      |      |   | 80                  | 110                                | 250 | 280 | A (C, D, E, F, G)<br>D (all others) |
| 32-13  | ◆         | ⊕          | ●      |         | ▼      | 23    |                | 18 | 5  |      |      |      |   | 80                  | 110                                | 250 | 280 | D                                   |
| 32-14  |           | ◆          |        |         |        | 13    |                |    | 13 |      |      |      |   | 65                  | 130                                | 230 | 295 | D                                   |
| 32-15  |           | ⊕^         | ●      |         | ▼      | 8     |                |    | 6  |      |      | 2    |   | 35                  | 110                                | 250 | 280 | D                                   |
| 32-16  |           | ◆          | ●      |         | ▽      | 23    |                | 16 | 2  | 3    | 2    |      |   | 32-6                | 100°                               |     |     | 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                                   |
| 32-48  |           | ◆          | ●      |         |        | 48    |                | 48 |    |      |      |      |   | 80                  | -                                  | -   | -   | I                                   |
| 32-51  |           | ◆          | ●      |         |        | 30    |                | 24 | 6  |      |      |      | ⊞ | 32-8                | 90°M=Ch.; N=Al.; Balance=Cu        |     |     |                                     |
| 32-52  |           | ◆          | ●      |         |        | 8     |                |    | 6  |      |      | 2    |   | 32-15               | 90°                                |     |     | 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                                |
| 32-59  |           | ◆          | ●      |         |        | 42    |                | 40 |    | 2(2) |      |      |   | -                   | -                                  | -   | -   | Coax                                |
| 32-60  |           | ◆          | ●      |         |        | 23    |                |    | 15 | 8(8) |      |      |   | 72                  | 145                                | 215 | 200 | A/Coax                              |
| 32-62  |           | ◆          | ●      |         |        | 23    |                | 16 | 2  | 3(2) | 2    |      |   | -                   | -                                  | -   | -   | A/Coax                              |
| 32-63  |           |            |        | ▼       |        | 5     |                |    |    |      | 5    |      |   | -                   | -                                  | -   | -   | D                                   |
| 32-64  |           | ◆          | ●      |         |        | 54    |                | 54 |    |      |      |      |   | 80                  | 100                                | 110 | 250 | I                                   |
| 32-68  |           | ◆          | ●      |         |        | 16    |                | 12 |    |      | 4(4) |      |   | 30                  | -                                  | -   | -   | A/Coax                              |
| 32-73  |           | ◆          | ●      | ▼       |        | 46    |                | 46 |    |      |      |      |   | 36                  | -                                  | -   | -   | A                                   |
| 32-75  |           | ◆          | ●      |         |        | 9     |                |    | 2  | 7(7) |      |      |   | -                   | -                                  | -   | -   | Coax                                |
| 32-76  |           | ◆          | ●      |         |        | 19    |                |    | 19 |      |      |      |   | 44                  | 147                                | 254 | -   | A                                   |
| 32-79  |           | ◆          | ●      |         |        | 5     |                |    |    | 1    | 4    |      |   | -                   | -                                  | -   | -   | D                                   |
| 32-82  |           | ◆          | ●      |         |        | 16    |                | 12 |    |      | 4    |      |   | 30                  | -                                  | -   | -   | A                                   |
| 32-414 | ◆         |            |        |         |        | 52    |                | 52 |    |      |      |      |   | -                   | -                                  | -   | -   | A                                   |
| 32-AF  |           | ◆          | ●      |         |        | 55    |                | 55 |    |      |      |      |   | 80                  | 110                                | 250 | 280 | A                                   |
| 36-1   | ◆         | ⊕^         | ●      |         |        | 22    |                | 18 | 4  |      |      |      |   | 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    |   | -                   | 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                                   |

‡ Reduced contact crimp pot    ^ 5015 QPL not all configurations    () Number of contacts that are coax

## LAYOUTS BY SHELL SIZE

SERIES KEY: 97 (◆=97) AIT (⬢=MS; ⬢=non QPL) AIB (●=GT) VG95234 (■) MS3450 (▼=MS; ▽=non QPL) Thermocouple (⌚)

CONTACT METALLURGY KEY: Alumel (Al.) Chromel (Ch.) Constantan (Con.) Copper (Cu) Iron (Ir.)

| LAYOUT | 97 Series | AIT Series | AIB/GT | VG95234 | MS3450 | TOTAL | CONTACTS SIZES |     |      |    |      |      | ° | DEGREES OF ROTATION                                                                           |     |     |     | SERVICE RATING         |
|--------|-----------|------------|--------|---------|--------|-------|----------------|-----|------|----|------|------|---|-----------------------------------------------------------------------------------------------|-----|-----|-----|------------------------|
|        |           |            |        |         |        |       | 20             | 16  | 12   | 8  | 4    | 0    |   | W                                                                                             | X   | Y   | Z   |                        |
| 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                      |
| 36-13  |           | ⬢^         | ●      |         |        | 17    |                | 15  | 2    |    |      |      |   | 80                                                                                            | 110 | 250 | 280 | E(N,P,Q) A(all others) |
| 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                      |
| 36-22  |           | ⬢          | ●      |         |        | 22    |                |     | 22   |    |      |      |   | -                                                                                             | -   | -   | -   | D                      |
| 36-51  |           | ⬢          | ●      |         |        | 4     |                |     |      |    | 2    | 2    |   | -                                                                                             | 127 | -   | -   | D                      |
| 36-52  |           | ⬢^         | ●      |         | ▼      | 52    |                | 52  |      |    |      |      |   | 72                                                                                            | 144 | 216 | 288 | A                      |
| 36-53  |           | ⬢          | ●      |         | ▽      | 47    |                | 40  | 7    |    |      |      | ⌚ | 36-7 45° u, v, w=Al.; x, y, z=Ch.; Balance=Cu                                                 |     |     |     |                        |
| 36-54  |           | ⬢          | ●      |         |        | 39    |                | 31  |      | 8  |      |      |   | -                                                                                             | -   | -   | -   | A                      |
| 36-55  |           | ⬢          | ●      |         |        | 39‡   |                | 31  |      | 8‡ |      |      |   | -                                                                                             | -   | -   | -   | A                      |
| 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 |     |     |     |                        |
| 36-59  |           | ⬢          | ●      |         |        | 53‡   |                | 50  | 3‡   |    |      |      |   | -                                                                                             | -   | -   | -   | A                      |
| 36-60  |           | ⬢          | ●      |         |        | 47‡   |                | 40  | 7‡   |    |      |      |   | -                                                                                             | -   | -   | -   | A                      |
| 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                                                    |     |     |     |                        |
| 36-64  |           | ⬢          | ●      |         |        | 4     |                |     |      |    |      | 4(4) |   | -                                                                                             | -   | -   | -   | Coax                   |
| 36-65  |           | ⬢          | ●      |         |        | 4     |                |     |      |    |      | 4(4) |   | -                                                                                             | -   | -   | -   | Coax                   |
| 36-66  |           |            |        |         | ▽      | 56    |                | 52  | 4    |    |      |      |   | 110                                                                                           | 250 | 260 | 280 | A                      |
| 36-71  |           | ⬢          | ●      |         |        | 53    |                | 50  | 3    |    |      |      |   | -                                                                                             | -   | -   | -   | A                      |
| 36-73  |           | ⬢          | ●      |         |        | 7     |                |     |      |    | 7(7) |      |   | 81                                                                                            | 279 | -   | -   | Coax                   |
| 36-74  |           | ⬢          | ●      |         |        | 44    |                | 43  | 1(1) |    |      |      |   | -                                                                                             | -   | -   | -   | A                      |
| 36-75  |           | ⬢          | ●      |         |        | 48‡   |                | 48‡ |      |    |      |      |   | -                                                                                             | -   | -   | -   | A                      |
| 36-76  |           | ⬢          | ●      |         |        | 47    |                | 47  |      |    |      |      |   | -                                                                                             | -   | -   | -   | A                      |
| 36-77  |           | ⬢          | ●      |         |        | 7     |                |     |      |    | 7    |      |   | 81                                                                                            | 279 | -   | -   | D                      |
| 36-78  |           | ⬢          | ●      |         |        | 14    |                | 2   |      | 12 |      |      |   | 35                                                                                            | 106 | 254 | 325 | A                      |
| 36-79  |           | ⬢          | ●      |         |        | 20    |                |     | 20   |    |      |      |   | 30                                                                                            | 110 | 250 | 330 | A                      |
| 36-80  |           | ⬢          | ●      |         |        | 20‡   |                |     | 20‡  |    |      |      |   | 30                                                                                            | 110 | 250 | 330 | A                      |
| 36-82  |           | ⬢          | ●      |         | ▽      | 52    |                | 52  |      |    |      |      | ⌚ | 36-52 v, g=Ir.; p, y, c=Con. x=Ch.; Balance=Cu                                                |     |     |     |                        |
| 36-83  |           | ⬢          | ●      |         |        | 7     |                |     |      |    | 7(7) |      |   | 81                                                                                            | 279 | -   | -   | Coax                   |
| 36-85  |           | ⬢          | ●      |         |        | 35‡   |                | 35‡ |      |    |      |      |   | -                                                                                             | -   | -   | -   | A/D                    |
| 36-403 | ◆         |            |        |         |        | 52    |                | 52  |      |    |      |      |   | -                                                                                             | -   | -   | -   | A                      |
| 36-57  |           | ⬢          | ●      |         | ▽      | 47    |                | 46  | 1    |    |      |      | ⌚ | 36-8 W=Al.; f=Ch.; Balance=Cu                                                                 |     |     |     |                        |
| 36-58  |           | ⬢          | ●      |         | ▽      | 35    |                | 35  |      |    |      |      | ⌚ | 36-15 H=Al.; G=Ch.; Balance=Cu                                                                |     |     |     |                        |
| 36-AF  |           | ⬢          | ●      |         |        | 48    |                | 48  |      |    |      |      |   | 65                                                                                            | -   | -   | -   | A                      |
| 40-1   |           | ⬢          | ●      |         | ▼      | 30    |                | 24  | 6    |    |      |      |   | 65                                                                                            | 130 | 235 | 300 | D                      |
| 40-2   |           |            |        |         | ▽      | 23    |                | 23  |      |    |      |      |   | 80                                                                                            | 110 | 250 | 280 | D                      |
| 40-3   |           |            |        |         | ▽      | 23    |                | 18  | 4    |    | 1    |      |   | 80                                                                                            | 110 | 250 | 280 | D                      |

‡ Reduced contact crimp pot ^ 5015 QPL not all configurations () Number of contacts that are coax



# LAYOUTS BY SHELL SIZE

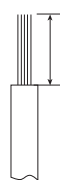
SERIES KEY: 97 (◆=97) AIT (◆=MS; ◆=non QPL) AIB (●=GT) VG95234 (■) MS3450 (▼=MS; ▼=non QPL) Thermocouple (⊞)

CONTACT METALLURGY KEY: Alumel (Al.) Chromel (Ch.) Constantan (Con.) Copper (Cu) Iron (Ir.)

| LAYOUT | 97 Series | AIT Series | AIB/GT | VG95234 | MS3450 | TOTAL | CONTACTS SIZES |     |    |        |    |        |      | DEGREES OF ROTATION                                                                                                                                                        |     |     |     | SERVICE RATING      |
|--------|-----------|------------|--------|---------|--------|-------|----------------|-----|----|--------|----|--------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|---------------------|
|        |           |            |        |         |        |       | 20             | 16  | 12 | 8      | 4  | 0      |      | W                                                                                                                                                                          | X   | Y   | Z   |                     |
| 40-4   |           |            |        | ▽       | 23     |       |                | 16  | 2  | 3      | 2  |        |      | 80                                                                                                                                                                         | 110 | 250 | 280 | D                   |
| 40-5## |           |            |        | ▽       | 15     |       |                |     | 6  | 4      | 2  | 3      |      | 80                                                                                                                                                                         | 110 | 250 | 280 | A                   |
| 40-5   |           | ❖          | ●      |         | 5      |       |                |     |    |        |    | 5      |      | 33                                                                                                                                                                         | -   | -   | 270 | A                   |
| 40-6   |           |            |        | ▽       | 26     |       |                | 24  | 1  |        |    | 1      |      | 80                                                                                                                                                                         | 110 | 250 | 280 | D                   |
| 40-7   |           |            |        | ▽       | 22     |       |                | 18  | 2  |        |    | 2      |      | 80                                                                                                                                                                         | 110 | 250 | 280 | P,Q,U,V,W,X=A; Bd=D |
| 40-9   |           | ⊕          | ●      | ▼       | 47     |       |                | 24  | 22 | 1      |    |        |      | 65                                                                                                                                                                         | 125 | 225 | 310 | A                   |
| 40-10  |           | ⊕^         | ●      |         | 29     |       |                | 16  |    | 9      | 4  |        |      | 65                                                                                                                                                                         | 125 | 225 | 310 | 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                   |
| 40-58  |           | ❖          | ●      | ▽       | 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                                                                                                                                            |     |     |     |                     |
| 40-61  |           | ❖          | ●      |         | 59     |       |                | 55  | 3  | 1      |    |        |      | -                                                                                                                                                                          | -   | -   | -   | A                   |
| 40-62  |           | ⊕          | ●      | ▽       | 60     |       |                | 60  |    |        |    |        |      | 30                                                                                                                                                                         | 130 | 220 | 290 | 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                   |
| 40-77  |           | ❖          | ●      |         | 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                                               |     |     |     |                     |
| 40-80  |           | ❖          | ●      |         | 11     |       |                | 1   |    |        | 10 |        |      | 72                                                                                                                                                                         | 144 | 210 | 288 | A                   |
| 40-81  |           | ❖          | ●      |         | 62‡    |       |                | 62‡ |    |        |    |        |      | -                                                                                                                                                                          | -   | -   | -   | A                   |
| 40-82  |           | ❖          | ●      |         | 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-AD  |           | ❖          | ●      |         | 8      |       |                |     |    | 4      |    | 4      |      | 45                                                                                                                                                                         | -   | -   | -   | A                   |
| 40-AG  |           | ❖          | ●      |         | 38     |       |                |     | 38 |        |    |        |      | 37                                                                                                                                                                         | 74  | 285 | 322 | A                   |
| 40-AT  |           | ❖          | ●      |         | 43     |       |                | 18  | 24 | 1      |    |        |      | 80                                                                                                                                                                         | 110 | 250 | 280 | A                   |
| 40-AV  |           | ❖          | ●      |         | 3      |       |                |     |    |        |    | 3#2/0  |      | 90                                                                                                                                                                         | 180 | 270 | -   | D                   |

‡ Reduced contact crimp pot    ^ 5015 QPL not all configurations    () Number of contacts that are coax

## PIN &amp; SOCKET CRIMP CONTACTS

|                  |               | PIN CONTACT                                                                       |              | SOCKET CONTACT                                                                     |              |     | WIRE STRIP LENGTHS                                                                  | 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 <sup>†</sup> | 16-18-20      | AIC16S-16P                                                                        | AIC16S-16PG  | AIC16S-16S                                                                         | AIC16S-16SG  | -   | .312<br>(7.9)                                                                       | .090 - .118<br>(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   | -   |                                                                                     |                                                                                     | .312<br>(7.9) | .090 - .118<br>(2.3-3.0) |
|                  | 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<br>(7.9)                                                                       | .126 - .177<br>(3.2-4.5)                                                            |               |                          |
|                  | 12 High-Power | -                                                                                 | -            | AIC12-12SRAD                                                                       | -            | -   |                                                                                     |                                                                                     |               |                          |
|                  | 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<br>(14.3)                                                                      | .150 - .256<br>(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<br>(12.7)                                                                      | .279 - .366<br>(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<br>(19.0)                                                                      | .394 - .539<br>(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.

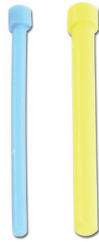
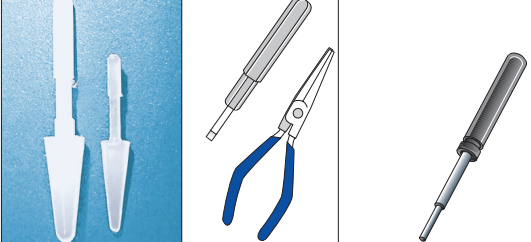
| SOLDER THERMOCOUPLE CONTACTS |            |                |                |
|------------------------------|------------|----------------|----------------|
|                              | TYPE       | PINS           | SOCKETS        |
| <b>16S<sup>†</sup></b>       | Alumel     | 10-040799-02P* | 10-040799-02S* |
|                              | Chromel    | 10-040799-01P* | 10-040799-01S* |
|                              | Iron       | 10-040799-03P* | 10-040799-03S* |
|                              | Constantan | 10-040799-04P* | 10-040799-04S* |
| <b>16</b>                    | 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        |
| <b>12</b>                    | 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

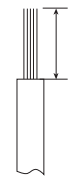
\*Contact us for availability

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

| ACCESSORIES                                                                       |                          | TOOLS                                                                             |                                                                         |                          |                                                                                    |                |                                    |
|-----------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------|----------------|------------------------------------|
|  |                          |  |                                                                         |                          |  |                |                                    |
| CONTACT SIZE                                                                      | WIRE HOLE FILLER COLOR   | CRIMP TOOLS                                                                       | CRIMP LOCATOR & DIE SETS                                                | LOCATOR COLOR            | PILOT PIN/INSERTION GUIDE FOR SOCKETS                                              | INSERTION TOOL | EXTRACTION TOOL                    |
| <b>16S†</b>                                                                       | MS27488-16-3<br>(Blue)   | AF8-(hand)<br>WA27F-(pneumatic)<br>††                                             | TH29-1                                                                  | Red                      | 10-242758-016                                                                      | DAK168-16      | DRK59<br>Kit with<br>Multiple Tips |
| <b>16</b>                                                                         |                          |                                                                                   |                                                                         | Pin-Blue<br>Socket-Green |                                                                                    |                |                                    |
| <b>12</b>                                                                         | MS27488-12-3<br>(Yellow) |                                                                                   |                                                                         | Green                    | 10-242758-012                                                                      | DAK168-12      |                                    |
| <b>8</b>                                                                          | MS27488-8-3<br>(Red)     | 400BHD                                                                            | <b>Die Set</b><br>414DA-8N<br><b>Locator</b><br>4025-Pin<br>4026-Socket | -                        | 10-242758-008                                                                      | DAK282         | AIC4EXT<br><br>AIC0EXT             |
| <b>4</b>                                                                          | MS27488-4-3<br>(Blue)    |                                                                                   | <b>Die Set</b><br>414DA-4N<br><b>Locator</b><br>4043-2                  | -                        | -                                                                                  | AIC4INS        |                                    |
| <b>0</b>                                                                          | MS27488-0-3<br>(Yellow)  |                                                                                   | <b>Die Set</b><br>414DA-0N<br><b>Locator</b><br>4042                    | -                        | -                                                                                  | AIC0INS        |                                    |

†† Contact us for additional tool accessories.

## PIN &amp; SOCKET COAX CONTACTS

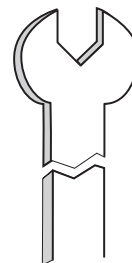
|                   |                                                                    | PIN CONTACT                                                                       |                                                                 | SOCKET CONTACT                                                                    |                                                                 | 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                                                                           |                                                                 |                                                                                     | MIN.                                                                                | MAX.        |                                                                                     |
|                   |                                                                    | SILVER                                                                            | GOLD                                                            | SILVER                                                                            | GOLD                                                            |                                                                                     |                                                                                     |             |                                                                                     |
| 12                | RG161/U<br>RG174A/U<br>RG179B/U<br>RG187A/U<br>RG188A/U<br>RG316/U | 21-33034-1                                                                        | 21-33014-21<br>21-33048-1()<br>21-33130-1()                     | 21-33033-1                                                                        | 21-33013-21<br>21-33047-1()<br>21-33129-1()                     | Contact us for details                                                              | 0.126 (3.2)                                                                         | 0.177 (4.5) | Yellow<br>10-405996-12                                                              |
|                   | RG178B/U<br>RG196A/U                                               | -                                                                                 | 21-33014-22                                                     | -                                                                                 | 21-33013-22                                                     |                                                                                     |                                                                                     |             |                                                                                     |
| 8                 | RG58C/U<br>RG141A/U<br>RG303/U                                     | 21-33034-2(1)                                                                     | 21-33014-1(5)<br>21-33016-5(3)<br>21-33130-2()                  | 21-33033-2(1)<br>21-33048-2()                                                     | 21-33013-1(5)<br>21-33047-2()<br>21-33015-5(3)<br>21-33129-2()  | Contact us for details                                                              | 0.150 (3.8)                                                                         | 0.256 (6.5) | White<br>10-405996-8                                                                |
|                   | RG59B/U<br>RG62A/U<br>RG62B/U<br>RG210/U                           | 21-33034-5(1)                                                                     | 21-33014-5(5)<br>21-33016-2(3)<br>21-33130-5()<br>21-33064-21() | 21-33033-5(1)                                                                     | 21-33013-5(5)<br>21-33015-2(3)<br>21-33129-3()<br>21-33063-21() |                                                                                     |                                                                                     |             |                                                                                     |
|                   | RG161/U<br>RG174A/U<br>RG179B/U<br>RG187A/U<br>RG188A/U<br>RG316/U | 21-33034-3(1)                                                                     | 21-33014-3(5)<br>21-33016-1(3)<br>21-33130-3()<br>21-33064-20() | 21-33033-3(1)                                                                     | 21-33013-3(5)<br>21-33015-1(3)<br>21-33129-3()<br>21-33063-20() |                                                                                     |                                                                                     |             |                                                                                     |
|                   | RG180B/U<br>RG195A/U                                               | 21-33034-6                                                                        | 21-33014-6(5)<br>21-33048-3()<br>21-33130-6()                   | 21-33033-6                                                                        | 21-33013-6()<br>21-33047-3()<br>21-33129-6()                    |                                                                                     |                                                                                     |             |                                                                                     |
|                   | RG140/U<br>RG302/U                                                 | 21-33034-8                                                                        | 21-33014-8(5)<br>21-33033-8<br>21-33130-8()                     | 21-33033-8                                                                        | 21-33013-8(5)<br>21-33129-8()                                   |                                                                                     |                                                                                     |             |                                                                                     |
|                   | RG55B/U<br>RG142A/U<br>RG142B/U<br>RG223/U                         | 21-33034-4                                                                        | 21-33014-5(5)<br>21-33130-4()                                   | 21-33033-4                                                                        | 21-33013-5(5)<br>21-33129-4()                                   |                                                                                     |                                                                                     |             |                                                                                     |
| 4                 | RG59B/U<br>RG62A/U<br>RG62B/U<br>RG210/U                           |                                                                                   | 21-33060-10()                                                   |                                                                                   | 21-33059-10()                                                   | Contact us for details                                                              | 0.279 (7.1)                                                                         | 0.366 (9.3) | Blue<br>10-405996-4                                                                 |
|                   | RG212/U                                                            | -                                                                                 | 21-33060-11()                                                   | -                                                                                 | 21-33059-11()                                                   |                                                                                     |                                                                                     |             |                                                                                     |
|                   | RG55B/U<br>RG142A/U<br>RG142B/U<br>RG223/U                         |                                                                                   | 31-33060-12()                                                   |                                                                                   | 21-33059-12()                                                   |                                                                                     |                                                                                     |             |                                                                                     |

( ) Various platings available. Availability of coax contacts varies widely. Contact us for details.  
All dimensions in inches (millimeters in parenthesis)

## TOOLS

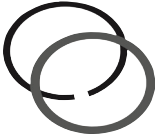
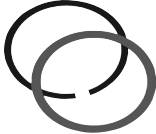
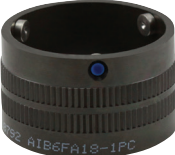
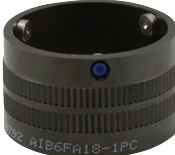


Crimp Dies



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

All dimensions in inches (millimeters in parenthesis)

|                                        | 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          |  |  |                                                                                     |                                                                                     |

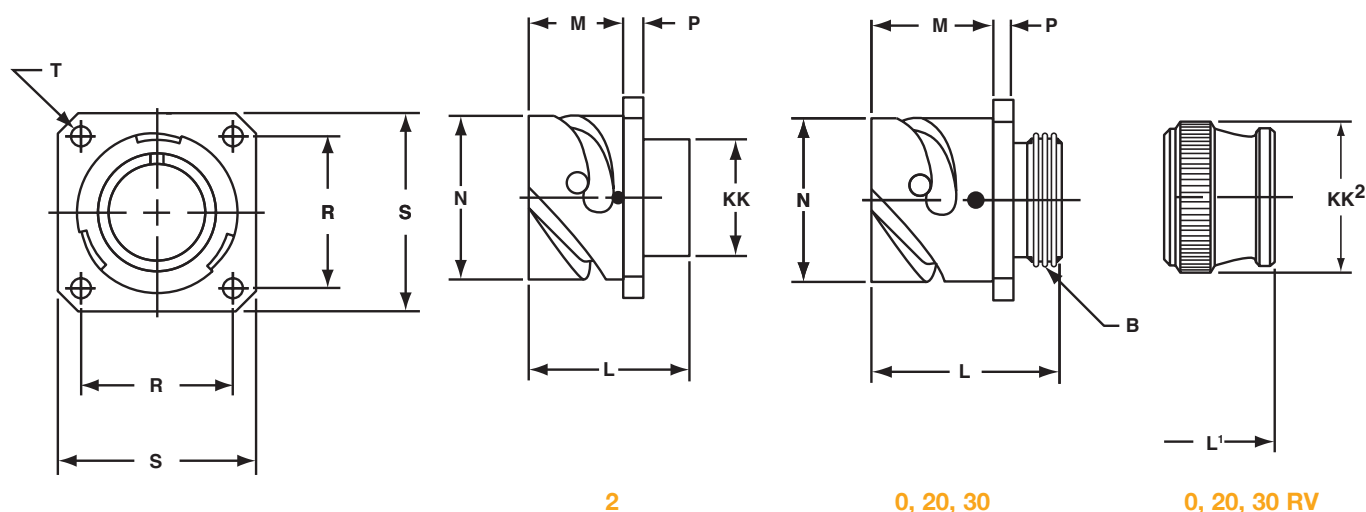
| CONTACT SIZE | D             | P              |
|--------------|---------------|----------------|
| 12           | .134<br>(3.4) | .070<br>(1.78) |
| 16           | .063<br>(1.6) | .030<br>(0.76) |

99



## DIMENSIONS

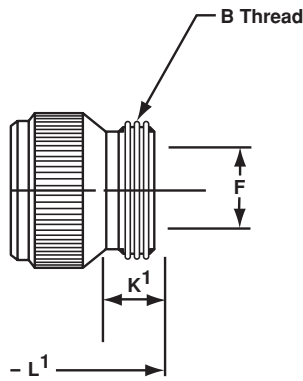
## STYLE 0, 2, 20, 30 RECEPTACLES



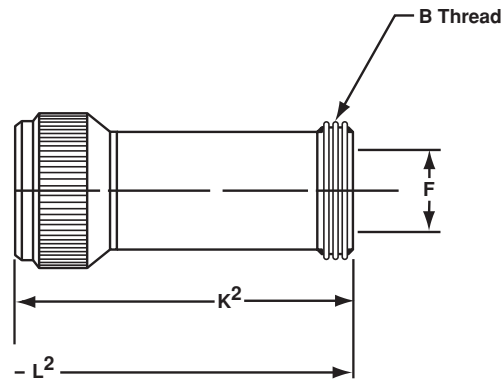
| SHELL SIZE | M<br>+.016-.000<br>(+0.4-0.0) | N<br>+.000-.006<br>(+0.00-0.15) | P<br>± .008<br>(±0.2) | R<br>± .004<br>(±0.1) | S<br>± .012<br>(±0.3) | T<br>+.004-.000<br>(+0.1-0.0) | KK<br>MAX.      | B<br>THREAD<br>CLASS 2A | L<br>+ .012<br>(+ 0.3) | L <sup>1</sup><br>MAX. | KK <sup>2</sup><br>MAX. |
|------------|-------------------------------|---------------------------------|-----------------------|-----------------------|-----------------------|-------------------------------|-----------------|-------------------------|------------------------|------------------------|-------------------------|
| 10SL       | .717<br>(18.2)                | .717<br>(18.2)                  | .110<br>(2.8)         | .717<br>(18.2)        | 1.000<br>(25.4)       | .126<br>(3.2)                 | .626<br>(15.9)  | .6250-24 UNEF           | 1.087<br>(27.6)        | 1.890<br>(48.0)        | .787<br>(20.0)          |
| 14S        | .717<br>(18.2)                | .969<br>(24.6)                  | .126<br>(3.2)         | .906<br>(23.0)        | 1.181<br>(30.0)       | .126<br>(3.2)                 | .756<br>(19.2)  | .7500-20 UNEF           | 1.087<br>(27.6)        | 1.890<br>(48.0)        | .945<br>(24.0)          |
| 16S        | .717<br>(18.2)                | 1.079<br>(27.4)                 | .126<br>(3.2)         | .969<br>(24.6)        | 1.280<br>(32.5)       | .126<br>(3.2)                 | .882<br>(22.4)  | .8750-20 UNEF           | 1.087<br>(27.6)        | 1.890<br>(48.0)        | 1.024<br>(26.0)         |
| 16         | .846<br>(21.5)                | 1.079<br>(27.4)                 | .126<br>(3.2)         | .969<br>(24.6)        | 1.280<br>(32.5)       | .126<br>(3.2)                 | .882<br>(22.4)  | .8750-20 UNEF           | 1.331<br>(33.8)        | 2.205<br>(56.0)        | 1.024<br>(26.0)         |
| 18         | .907<br>(23.1)                | 1.213<br>(30.8)                 | .157<br>(4.0)         | 1.063<br>(27.0)       | 1.378<br>(35.0)       | .126<br>(3.2)                 | 1.008<br>(25.6) | 1.0000-20 UNEF          | 1.331<br>(33.8)        | 2.244<br>(57.0)        | 1.161<br>(29.5)         |
| 20         | .907<br>(23.1)                | 1.346<br>(34.2)                 | .157<br>(4.0)         | 1.157<br>(29.4)       | 1.496<br>(38.0)       | .126<br>(3.2)                 | 1.142<br>(29.0) | 1.1250-18 UNEF          | 1.331<br>(33.8)        | 2.244<br>(57.0)        | 1.299<br>(33.0)         |
| 22         | .907<br>(23.1)                | 1.472<br>(37.4)                 | .157<br>(4.0)         | 1.252<br>(31.8)       | 1.614<br>(41.0)       | .126<br>(3.2)                 | 1.268<br>(32.2) | 1.2500-18 UNEF          | 1.331<br>(33.8)        | 2.244<br>(57.0)        | 1.417<br>(36.0)         |
| 24         | .907<br>(23.1)                | 1.610<br>(40.9)                 | .157<br>(4.0)         | 1.374<br>(34.9)       | 1.752<br>(44.5)       | .146<br>(3.7)                 | 1.390<br>(35.3) | 1.3750-18 UNEF          | 1.331<br>(33.8)        | 2.244<br>(57.0)        | 1.575<br>(40.0)         |
| 28         | .947<br>(24.1)                | 1.839<br>(46.7)                 | .157<br>(4.0)         | 1.563<br>(39.7)       | 2.000<br>(50.8)       | .146<br>(3.7)                 | 1.630<br>(41.4) | 1.6250-18 UNEF          | 1.406<br>(35.7)        | 2.244<br>(57.0)        | 1.811<br>(46.0)         |
| 32         | .947<br>(24.1)                | 2.102<br>(53.4)                 | .157<br>(4.0)         | 1.752<br>(44.5)       | 2.244<br>(57.0)       | .169<br>(4.3)                 | 1.882<br>(47.8) | 1.8750-16 UN            | 1.469<br>(37.3)        | 2.362<br>(60.0)        | 2.028<br>(51.5)         |
| 36         | .947<br>(24.1)                | 2.346<br>(59.6)                 | .157<br>(4.0)         | 1.937<br>(49.2)       | 2.500<br>(63.5)       | .169<br>(4.3)                 | 2.063<br>(52.4) | 2.0625-16 UN            | 1.469<br>(37.3)        | 2.362<br>(60.0)        | 2.283<br>(58.0)         |
| 40         | .947<br>(24.1)                | 2.579<br>(65.5)                 | .157<br>(4.0)         | 2.185<br>(55.5)       | 2.752<br>(69.9)       | .169<br>(4.3)                 | 2.323<br>(59.0) | 2.3125-16 UN            | 1.469<br>(37.3)        | 2.362<br>(60.0)        | 2.539<br>(64.5)         |

All dimensions in inches (millimeters in parenthesis)

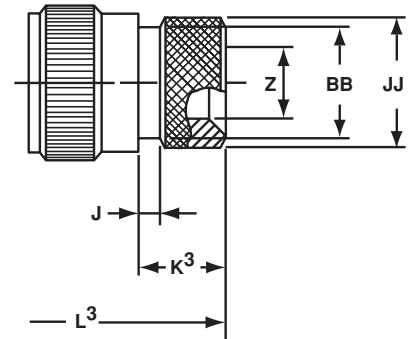
STYLE 0, 20, 30 RECEPTACLES



F



L



G

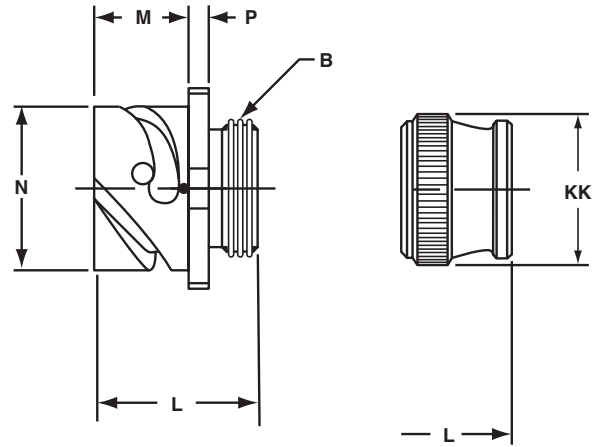
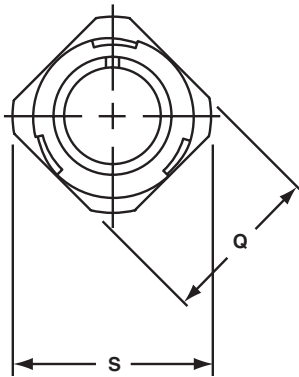
| B<br>THREAD<br>CLASS 2A | F<br>MIN.       | K <sup>1</sup><br>MIN. | K <sup>2</sup><br>MIN. | L <sup>2</sup><br>MAX. | L <sup>3</sup><br>MAX. |
|-------------------------|-----------------|------------------------|------------------------|------------------------|------------------------|
| .6250-24 UNEF           | .409<br>(10.4)  | .374<br>(9.5)          | 2.110<br>(53.6)        | 1.969<br>(50.0)        | 3.197<br>(81.2)        |
| .7500-20 UNEF           | .520<br>(13.2)  | .374<br>(9.5)          | 2.145<br>(54.5)        | 1.969<br>(50.0)        | 3.232<br>(82.1)        |
| .8750-20 UNEF           | .638<br>(16.2)  | .374<br>(9.5)          | 2.145<br>(54.5)        | 1.969<br>(50.0)        | 3.232<br>(82.1)        |
| .8750-20 UNEF           | .638<br>(16.2)  | .374<br>(9.5)          | 2.240<br>(56.9)        | 2.362<br>(60.0)        | 3.571<br>(90.7)        |
| 1.0000-20 UNEF          | .756<br>(19.2)  | .374<br>(9.5)          | 2.315<br>(58.8)        | 2.362<br>(60.0)        | 3.646<br>(92.6)        |
| 1.1875-18 UNEF          | .867<br>(22.0)  | .374<br>(9.5)          | 2.300<br>(58.4)        | 2.362<br>(60.0)        | 3.631<br>(92.2)        |
| 1.1875-18 UNEF          | .965<br>(24.5)  | .374<br>(9.5)          | 2.305<br>(58.5)        | 2.362<br>(60.0)        | 3.636<br>(92.4)        |
| 1.4375-18 UNEF          | 1.094<br>(27.8) | .374<br>(9.5)          | 2.320<br>(58.9)        | 2.560<br>(65.0)        | 3.651<br>(92.7)        |
| 1.4375-18 UNEF          | 1.228<br>(31.2) | .374<br>(9.5)          | 2.490<br>(63.2)        | 2.560<br>(65.0)        | 3.896<br>(99.0)        |
| 1.7500-18 UNS           | 1.488<br>(37.8) | .433<br>(11.0)         | 2.635<br>(66.9)        | 2.560<br>(65.0)        | 4.104<br>(104.2)       |
| 2.0000-18 UNS           | 1.780<br>(45.2) | .465<br>(11.8)         | 2.680<br>(68.1)        | 3.150<br>(80.0)        | 4.149<br>(105.4)       |
| 2.2500-16 UN            | 2.016<br>(51.2) | .465<br>(11.8)         | 2.680<br>(68.1)        | 3.150<br>(80.0)        | 4.149<br>(105.4)       |

| J<br>± .008<br>(±0.2) | K <sup>3</sup><br>+ .020<br>(±0.5) | L <sup>4</sup><br>MAX. | Z<br>MIN.       | BB<br>MAX.      | JJ<br>+ .008<br>(+0.2) |
|-----------------------|------------------------------------|------------------------|-----------------|-----------------|------------------------|
| .138<br>(3.5)         | .461<br>(11.7)                     | 1.969<br>(50.0)        | .303<br>(7.7)   | .524<br>(13.3)  | .610<br>(15.5)         |
| .138<br>(3.5)         | .461<br>(11.7)                     | 1.969<br>(50.0)        | .417<br>(10.6)  | .669<br>(17.0)  | .752<br>(19.1)         |
| .138<br>(3.5)         | .461<br>(11.7)                     | 1.969<br>(50.0)        | .531<br>(13.5)  | .862<br>(21.9)  | .941<br>(23.9)         |
| .138<br>(3.5)         | .453<br>(11.5)                     | 2.362<br>(60.0)        | .531<br>(13.5)  | .862<br>(21.9)  | .941<br>(23.9)         |
| .138<br>(3.5)         | .453<br>(11.5)                     | 2.362<br>(60.0)        | .575<br>(14.6)  | .862<br>(21.9)  | .941<br>(23.9)         |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | .736<br>(18.7)  | 1.031<br>(26.2) | 1.165<br>(29.6)        |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | .819<br>(20.8)  | 1.031<br>(26.2) | 1.165<br>(29.6)        |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | .969<br>(24.6)  | 1.358<br>(34.5) | 1.488<br>(37.8)        |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | 1.063<br>(27.0) | 1.358<br>(34.5) | 1.488<br>(37.8)        |
| .138<br>(3.5)         | .598<br>(15.2)                     | 2.756<br>(70.0)        | 1.311<br>(33.3) | 1.717<br>(43.6) | 1.882<br>(47.8)        |
| .138<br>(3.5)         | .598<br>(15.2)                     | 3.150<br>(80.0)        | 1.516<br>(38.5) | 1.717<br>(43.6) | 1.882<br>(47.8)        |
| .138<br>(3.5)         | .610<br>(15.5)                     | 3.150<br>(80.0)        | 1.898<br>(48.2) | 2.071<br>(52.6) | 2.276<br>(57.8)        |

All dimensions in inches (millimeters in parenthesis)

## DIMENSIONS

## STYLE 1 CABLE RECEPTACLE



RV

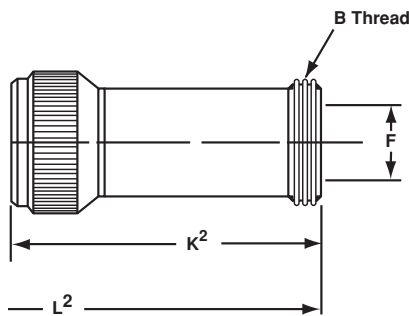
| SHELL SIZE | M<br>+.016 -.000<br>(+0.4 - 0.0) | N<br>+.000 -.006<br>(+0.00-0.15) | P<br>± .008<br>(±0.2) | Q<br>± .008<br>(±0.2) | S<br>MAX.       |
|------------|----------------------------------|----------------------------------|-----------------------|-----------------------|-----------------|
| 10SL       | .717<br>(18.2)                   | .717<br>(18.2)                   | .110<br>(2.8)         | .811<br>(20.6)        | .992<br>(25.2)  |
| 14S        | .717<br>(18.2)                   | .969<br>(24.6)                   | .126<br>(3.2)         | 1.000<br>(25.4)       | 1.173<br>(29.8) |
| 16S        | .717<br>(18.2)                   | 1.079<br>(27.4)                  | .126<br>(3.2)         | 1.126<br>(28.6)       | 1.272<br>(32.3) |
| 16         | .846<br>(21.5)                   | 1.079<br>(27.4)                  | .126<br>(3.2)         | 1.126<br>(28.6)       | 1.272<br>(32.3) |
| 18         | .907<br>(23.0)                   | 1.213<br>(30.8)                  | .157<br>(4.0)         | 1.248<br>(31.7)       | 1.370<br>(34.8) |
| 20         | .907<br>(23.0)                   | 1.346<br>(34.2)                  | .157<br>(4.0)         | 1.374<br>(34.9)       | 1.488<br>(37.8) |
| 22         | .907<br>(23.0)                   | 1.472<br>(37.4)                  | .157<br>(4.0)         | 1.500<br>(38.1)       | 1.618<br>(41.1) |
| 24         | .907<br>(23.0)                   | 1.610<br>(40.9)                  | .157<br>(4.0)         | 1.626<br>(41.3)       | 1.756<br>(44.6) |
| 28         | .947<br>(24.1)                   | 1.839<br>(46.7)                  | .157<br>(4.0)         | 1.874<br>(47.6)       | 2.004<br>(50.9) |
| 32         | .947<br>(24.1)                   | 2.102<br>(53.4)                  | .157<br>(4.0)         | 2.126<br>(54.0)       | 2.248<br>(57.1) |
| 36         | .947<br>(24.1)                   | 2.346<br>(59.6)                  | .157<br>(4.0)         | 2.386<br>(60.6)       | 2.504<br>(63.6) |
| 40         | .947<br>(24.1)                   | 2.579<br>(65.5)                  | .157<br>(4.0)         | 2.618<br>(66.5)       | 2.756<br>(70.0) |

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

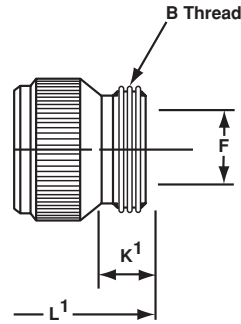
| L <sup>1</sup><br>MAX. | KK<br>MAX.      |
|------------------------|-----------------|
| 1.890<br>(48.0)        | .787<br>(20.0)  |
| 1.890<br>(48.0)        | .945<br>(24.0)  |
| 1.890<br>(48.0)        | 1.024<br>(26.0) |
| 2.205<br>(56.0)        | 1.024<br>(26.0) |
| 2.244<br>(57.0)        | 1.161<br>(29.5) |
| 2.244<br>(57.0)        | 1.299<br>(33.0) |
| 2.244<br>(57.0)        | 1.417<br>(36.0) |
| 2.244<br>(57.0)        | 1.575<br>(40.0) |
| 2.244<br>(57.0)        | 1.811<br>(46.0) |
| 2.362<br>(60.0)        | 2.028<br>(51.5) |
| 2.362<br>(60.0)        | 2.283<br>(58.0) |
| 2.362<br>(60.0)        | 2.539<br>(64.5) |

All dimensions in inches (millimeters in parenthesis)

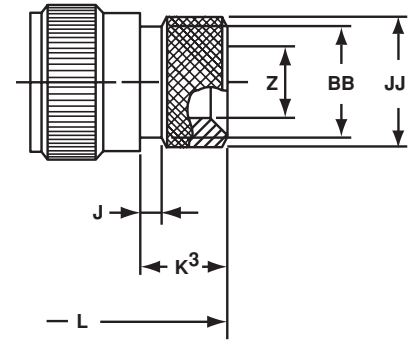
STYLE 1 CABLE RECEPTACLE



L



F



G

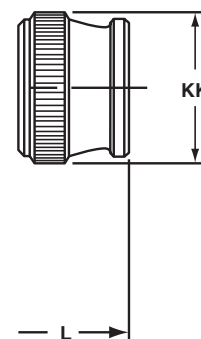
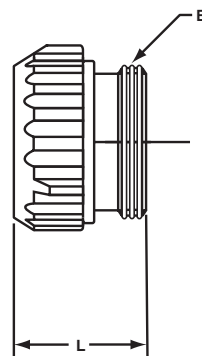
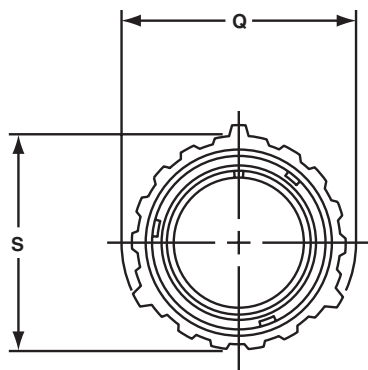
| B<br>THREAD<br>CLASS 2A | F<br>MIN.       | K <sup>1</sup><br>MIN. | K <sup>2</sup><br>MAX. | L <sup>3</sup><br>MAX. | L <sup>2</sup><br>MAX. |
|-------------------------|-----------------|------------------------|------------------------|------------------------|------------------------|
| .6250-24 UNEF           | .409<br>(10.4)  | .374<br>(9.5)          | 2.110<br>(53.6)        | 1.969<br>(50.0)        | 3.197<br>(81.2)        |
| .7500-20 UNEF           | .520<br>(13.2)  | .374<br>(9.5)          | 2.145<br>(54.5)        | 1.969<br>(50.0)        | 3.232<br>(82.1)        |
| .8750-20 UNEF           | .638<br>(16.2)  | .374<br>(9.5)          | 2.145<br>(54.5)        | 1.969<br>(50.0)        | 3.232<br>(82.1)        |
| .8750-20 UNEF           | .638<br>(16.2)  | .374<br>(9.5)          | 2.240<br>(56.9)        | 2.362<br>(60.0)        | 3.571<br>(90.7)        |
| 1.0000-20 UNEF          | .756<br>(19.2)  | .374<br>(9.5)          | 2.315<br>(58.8)        | 2.362<br>(60.0)        | 3.646<br>(92.6)        |
| 1.1875-18 UNEF          | .867<br>(22.0)  | .374<br>(9.5)          | 2.300<br>(58.4)        | 2.362<br>(60.0)        | 3.631<br>(92.2)        |
| 1.1875-18 UNEF          | .965<br>(24.5)  | .374<br>(9.5)          | 2.305<br>(58.5)        | 2.362<br>(60.0)        | 3.636<br>(92.4)        |
| 1.4375-18 UNEF          | 1.094<br>(27.8) | .374<br>(9.5)          | 2.320<br>(58.9)        | 2.560<br>(65.0)        | 3.651<br>(92.7)        |
| 1.4375-18 UNEF          | 1.228<br>(31.2) | .374<br>(9.5)          | 2.490<br>(63.2)        | 2.560<br>(65.0)        | 3.896<br>(99.0)        |
| 1.7500-18 UNS           | 1.488<br>(37.8) | .433<br>(11.0)         | 2.635<br>(66.9)        | 2.560<br>(65.0)        | 4.104<br>(104.2)       |
| 2.0000-18 UNS           | 1.780<br>(45.2) | .465<br>(11.8)         | 2.680<br>(68.1)        | 3.150<br>(80.0)        | 4.149<br>(105.4)       |
| 2.2500-16 UN            | 2.016<br>(51.2) | .465<br>(11.8)         | 2.680<br>(68.1)        | 3.150<br>(80.0)        | 4.149<br>(105.4)       |

| J<br>± .008<br>(±0.2) | K <sup>3</sup><br>+ .020<br>(±0.5) | L <sup>4</sup><br>MAX. | Z<br>MIN.       | BB<br>MAX.      | JJ<br>+ .008<br>(+0.2) |
|-----------------------|------------------------------------|------------------------|-----------------|-----------------|------------------------|
| .138<br>(3.5)         | .461<br>(11.7)                     | 1.969<br>(50.0)        | .303<br>(7.7)   | .524<br>(13.3)  | .610<br>(15.5)         |
| .138<br>(3.5)         | .461<br>(11.7)                     | 1.969<br>(50.0)        | .417<br>(10.6)  | .669<br>(17.0)  | .752<br>(19.1)         |
| .138<br>(3.5)         | .461<br>(11.7)                     | 1.969<br>(50.0)        | .531<br>(13.5)  | .862<br>(21.9)  | .941<br>(23.9)         |
| .138<br>(3.5)         | .453<br>(11.5)                     | 2.362<br>(60.0)        | .531<br>(13.5)  | .862<br>(21.9)  | .941<br>(23.9)         |
| .138<br>(3.5)         | .453<br>(11.5)                     | 2.362<br>(60.0)        | .575<br>(14.6)  | .862<br>(21.9)  | .941<br>(23.9)         |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | .736<br>(18.7)  | 1.031<br>(26.2) | 1.165<br>(29.6)        |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | .819<br>(20.8)  | 1.031<br>(26.2) | 1.165<br>(29.6)        |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | .969<br>(24.6)  | 1.358<br>(34.5) | 1.488<br>(37.8)        |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | 1.063<br>(27.0) | 1.358<br>(34.5) | 1.488<br>(37.8)        |
| .138<br>(3.5)         | .598<br>(15.2)                     | 2.756<br>(70.0)        | 1.311<br>(33.3) | 1.717<br>(43.6) | 1.882<br>(47.8)        |
| .138<br>(3.5)         | .598<br>(15.2)                     | 3.150<br>(80.0)        | 1.516<br>(38.5) | 1.717<br>(43.6) | 1.882<br>(47.8)        |
| .138<br>(3.5)         | .610<br>(15.5)                     | 3.150<br>(80.0)        | 1.898<br>(48.2) | 2.071<br>(52.6) | 2.276<br>(57.8)        |

All dimensions in inches (millimeters in parenthesis)

## DIMENSIONS

## STYLE 4 RUBBER-COVERED PLUGS



RV

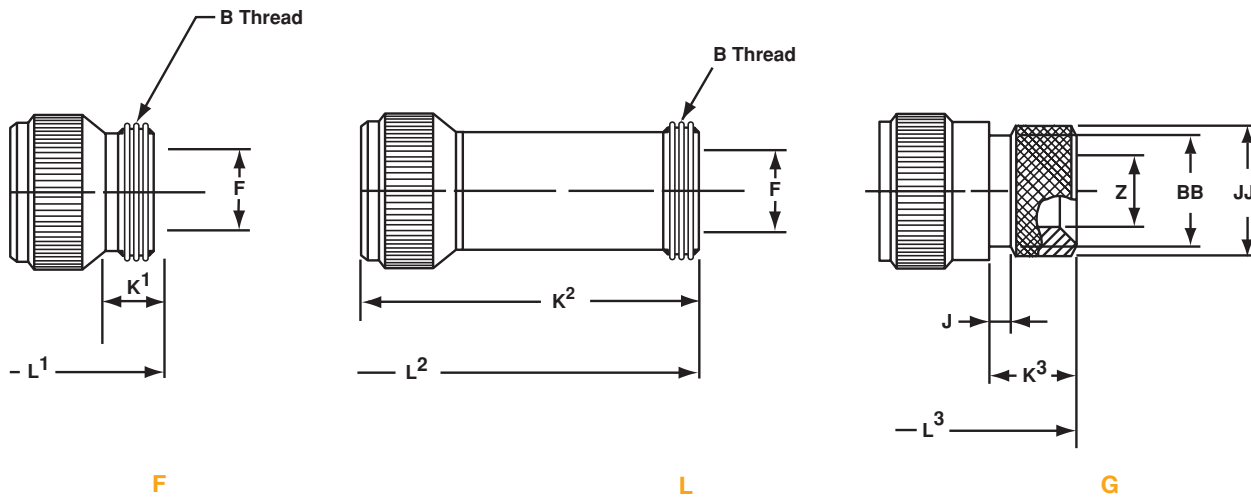
| SHELL SIZE | Q<br>MAX.       | S<br>MAX.       |
|------------|-----------------|-----------------|
| 10SL       | 1.319<br>(33.5) | 1.122<br>(28.5) |
| 18         | 1.929<br>(49.0) | 1.713<br>(43.5) |
| 20         | 2.028<br>(51.5) | 1.811<br>(46.0) |
| 22         | 2.224<br>(56.5) | 1.988<br>(50.5)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

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

| L <sup>1</sup><br>MAX. | KK<br>MAX.      |
|------------------------|-----------------|
| 1.417<br>(36.0)        | .787<br>(20.0)  |
| 1.929<br>(49.0)        | 1.161<br>(29.5) |
| 1.969<br>(50.0)        | 1.299<br>(33.0) |
| 1.969<br>(50.0)        | 1.417<br>(36.0) |
| 2.008<br>(51.0)        | 1.575<br>(40.0) |
| 2.008<br>(51.0)        | 1.811<br>(46.0) |
| 2.087<br>(53.0)        | 2.028<br>(51.5) |
| 2.106<br>(53.5)        | 2.283<br>(58.0) |
| 2.126<br>(54.0)        | 2.539<br>(64.5) |

All dimensions in inches (millimeters in parenthesis)

STYLE 4 RUBBER-COVERED PLUGS



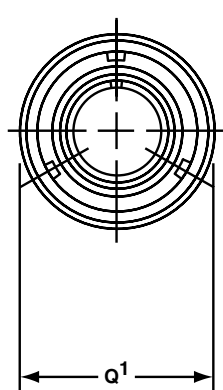
| B<br>THREAD<br>CLASS 2A | F<br>MIN.       | K <sup>1</sup><br>MIN. | K <sup>2</sup><br>MIN. | L <sup>2</sup><br>MAX. | L <sup>3</sup><br>MAX. |
|-------------------------|-----------------|------------------------|------------------------|------------------------|------------------------|
| .6250-24 UNEF           | .409<br>(10.4)  | .374<br>(9.5)          | 2.110<br>(53.6)        | 1.969<br>(50.0)        | 3.197<br>(81.2)        |
| 1.0000-20 UNEF          | .756<br>(19.2)  | .374<br>(9.5)          | 2.315<br>(58.8)        | 2.362<br>(60.0)        | 3.646<br>(92.6)        |
| 1.1875-18 UNEF          | .867<br>(22.0)  | .374<br>(9.5)          | 2.300<br>(58.4)        | 2.362<br>(60.0)        | 3.631<br>(92.2)        |
| 1.1875-18 UNEF          | .965<br>(24.5)  | .374<br>(9.5)          | 2.305<br>(58.5)        | 2.362<br>(60.0)        | 3.636<br>(92.4)        |
| 1.4375-18 UNEF          | 1.094<br>(27.8) | .374<br>(9.5)          | 2.320<br>(58.9)        | 2.560<br>(65.0)        | 3.651<br>(92.7)        |
| 1.4375-18 UNEF          | 1.228<br>(31.2) | .374<br>(9.5)          | 2.490<br>(63.2)        | 2.560<br>(65.0)        | 3.896<br>(99.0)        |
| 1.7500-18 UNS           | 1.488<br>(37.8) | .433<br>(11.0)         | 2.635<br>(66.9)        | 2.560<br>(65.0)        | 4.104<br>(104.2)       |
| 2.0000-18 UNS           | 1.780<br>(45.2) | .465<br>(11.8)         | 2.680<br>(68.1)        | 3.150<br>(80.0)        | 4.149<br>(105.4)       |
| 2.2500-16 UN            | 2.016<br>(51.2) | .465<br>(11.8)         | 2.680<br>(68.1)        | 3.150<br>(80.0)        | 4.149<br>(105.4)       |

| J<br>± .008<br>(±0.2) | K <sup>3</sup><br>+ .020<br>(±0.5) | L <sup>4</sup><br>MAX. | Z<br>MIN.       | BB<br>MAX.      | JJ<br>+ .008<br>(+0.2) |
|-----------------------|------------------------------------|------------------------|-----------------|-----------------|------------------------|
| .138<br>(3.5)         | .461<br>(11.7)                     | 1.969<br>(50.0)        | .303<br>(7.7)   | .524<br>(13.3)  | .610<br>(15.5)         |
| .138<br>(3.5)         | .453<br>(11.5)                     | 2.362<br>(60.0)        | .575<br>(14.6)  | .862<br>(21.9)  | .941<br>(23.9)         |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | .736<br>(18.7)  | 1.031<br>(26.2) | 1.165<br>(29.6)        |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | .819<br>(20.8)  | 1.031<br>(26.2) | 1.165<br>(29.6)        |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | .969<br>(24.6)  | 1.358<br>(34.5) | 1.488<br>(37.8)        |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | 1.063<br>(27.0) | 1.358<br>(34.5) | 1.488<br>(37.8)        |
| .138<br>(3.5)         | .598<br>(15.2)                     | 2.756<br>(70.0)        | 1.311<br>(33.3) | 1.717<br>(43.6) | 1.882<br>(47.8)        |
| .138<br>(3.5)         | .598<br>(15.2)                     | 3.150<br>(80.0)        | 1.516<br>(38.5) | 1.717<br>(43.6) | 1.882<br>(47.8)        |
| .138<br>(3.5)         | .610<br>(15.5)                     | 3.150<br>(80.0)        | 1.898<br>(48.2) | 2.071<br>(52.6) | 2.276<br>(57.8)        |

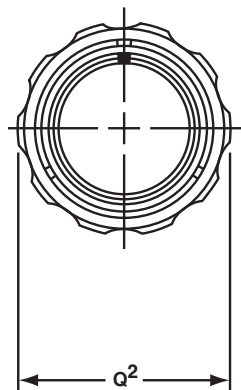
All dimensions in inches (millimeters in parenthesis)

## DIMENSIONS

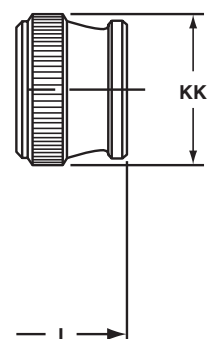
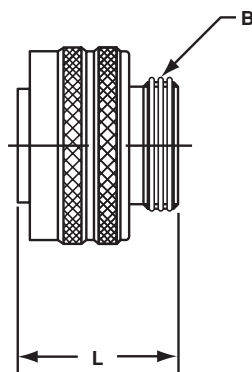
## STYLE 6, 6HD PLUGS



6



6HD



RV

| SHELL SIZE | $Q^1$ MAX.      | $Q^2$ MAX.      |
|------------|-----------------|-----------------|
| 10SL       | .898<br>(22.8)  | 1.007<br>(25.5) |
| 14S        | 1.150<br>(29.2) | 1.259<br>(31.9) |
| 16S        | 1.260<br>(32.0) | 1.410<br>(35.8) |
| 16         | 1.260<br>(32.0) | 1.410<br>(35.8) |
| 18         | 1.437<br>(36.5) | 1.547<br>(39.2) |
| 20         | 1.571<br>(39.9) | 1.681<br>(42.6) |
| 22         | 1.697<br>(43.1) | 1.847<br>(46.9) |
| 24         | 1.835<br>(46.6) | 1.965<br>(49.9) |
| 28         | 2.102<br>(53.4) | 2.222<br>(56.4) |
| 32         | 2.366<br>(60.1) | 2.482<br>(63.0) |
| 36         | 2.610<br>(66.3) | 2.721<br>(69.1) |
| 40         | 2.850<br>(72.4) | 2.953<br>(75.0) |

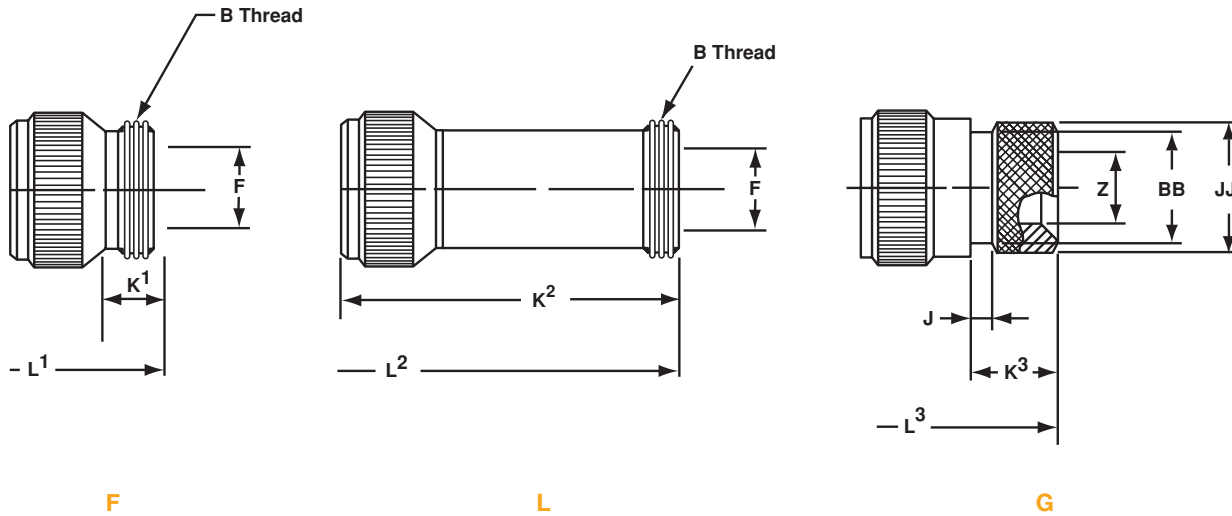
| B<br>THREAD<br>CLASS 2A | L<br>+ .012<br>(+ 0.3) |
|-------------------------|------------------------|
| .6250-24 UNEF           | 1.087<br>(27.6)        |
| .7500-20 UNEF           | 1.087<br>(27.6)        |
| .8750-20 UNEF           | 1.087<br>(27.6)        |
| .8750-20 UNEF           | 1.331<br>(33.8)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

| $L^1$ MAX.      | KK MAX.         |
|-----------------|-----------------|
| 1.417<br>(36.0) | .787<br>(20.0)  |
| 1.437<br>(36.5) | .945<br>(24.0)  |
| 1.437<br>(36.5) | 1.024<br>(26.0) |
| 1.929<br>(49.0) | 1.024<br>(26.0) |
| 1.929<br>(49.0) | 1.161<br>(29.5) |
| 1.969<br>(50.0) | 1.299<br>(33.0) |
| 1.969<br>(50.0) | 1.417<br>(36.0) |
| 2.008<br>(51.0) | 1.543<br>(39.2) |
| 2.008<br>(51.0) | 1.811<br>(46.0) |
| 2.087<br>(53.0) | 2.028<br>(51.5) |
| 2.106<br>(53.5) | 2.283<br>(58.0) |
| 2.126<br>(54.0) | 2.539<br>(64.5) |

All dimensions in inches (millimeters in parenthesis)



STYLE 6, 6HD PLUGS

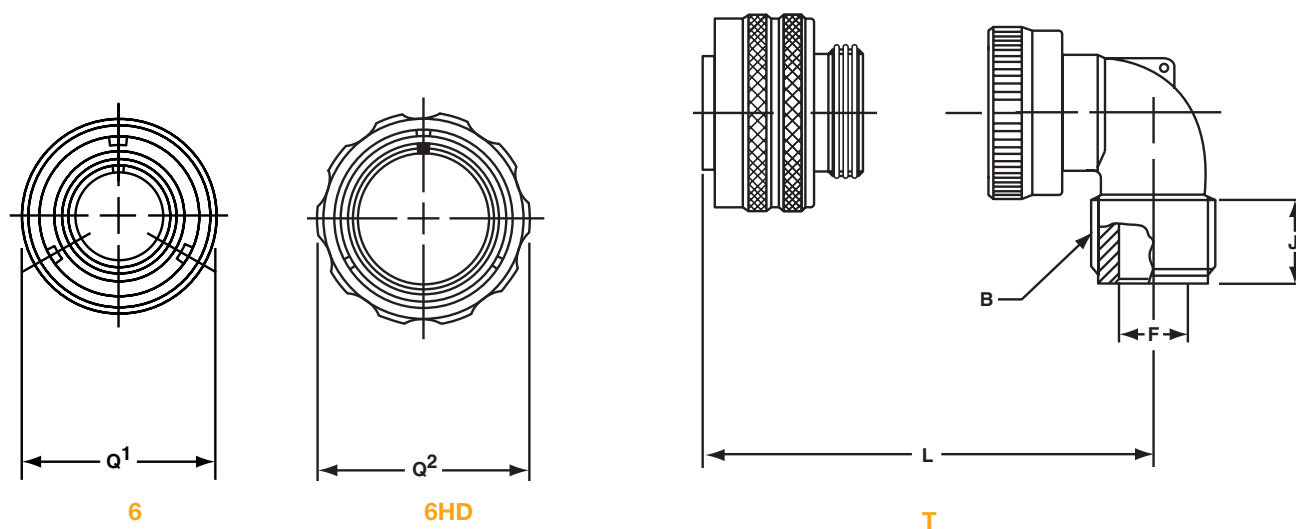


| B<br>THREAD<br>CLASS 2A | F<br>MIN.       | K <sup>1</sup><br>MIN. | K <sup>2</sup><br>MIN. | L <sup>2</sup><br>MAX. | L <sup>3</sup><br>MAX. |
|-------------------------|-----------------|------------------------|------------------------|------------------------|------------------------|
| .6250-24 UNEF           | .409<br>(10.4)  | .374<br>(9.5)          | 2.110<br>(53.6)        | 1.969<br>(50.0)        | 3.197<br>(81.2)        |
| .7500-20 UNEF           | .520<br>(13.2)  | .374<br>(9.5)          | 2.145<br>(54.5)        | 1.969<br>(50.0)        | 3.232<br>(82.1)        |
| .8750-20 UNEF           | .638<br>(16.2)  | .374<br>(9.5)          | 2.145<br>(54.5)        | 1.969<br>(50.0)        | 3.232<br>(82.1)        |
| .8750-20 UNEF           | .638<br>(16.2)  | .374<br>(9.5)          | 2.240<br>(56.9)        | 2.362<br>(60.0)        | 3.571<br>(90.7)        |
| 1.0000-20 UNEF          | .756<br>(19.2)  | .374<br>(9.5)          | 2.315<br>(58.8)        | 2.362<br>(60.0)        | 3.646<br>(92.6)        |
| 1.1875-18 UNEF          | .867<br>(22.0)  | .374<br>(9.5)          | 2.300<br>(58.4)        | 2.362<br>(60.0)        | 3.631<br>(92.2)        |
| 1.1875-18 UNEF          | .965<br>(24.5)  | .374<br>(9.5)          | 2.305<br>(58.5)        | 2.362<br>(60.0)        | 3.636<br>(92.4)        |
| 1.4375-18 UNEF          | 1.094<br>(27.8) | .374<br>(9.5)          | 2.320<br>(58.9)        | 2.560<br>(65.0)        | 3.651<br>(92.7)        |
| 1.4375-18 UNEF          | 1.228<br>(31.2) | .374<br>(9.5)          | 2.490<br>(63.2)        | 2.560<br>(65.0)        | 3.896<br>(99.0)        |
| 1.7500-18 UNS           | 1.488<br>(37.8) | .433<br>(11.0)         | 2.635<br>(66.9)        | 2.560<br>(65.0)        | 4.104<br>(104.2)       |
| 2.0000-18 UNS           | 1.780<br>(45.2) | .465<br>(11.8)         | 2.680<br>(68.1)        | 3.150<br>(80.0)        | 4.149<br>(105.4)       |
| 2.2500-16 UN            | 2.016<br>(51.2) | .465<br>(11.8)         | 2.680<br>(68.1)        | 3.150<br>(80.0)        | 4.149<br>(105.4)       |

| J<br>± .008<br>(±0.2) | K <sup>3</sup><br>+ .020<br>(±0.5) | L <sup>4</sup><br>MAX. | Z<br>MIN.       | BB<br>MAX.      | JJ<br>+ .008<br>(+0.2) |
|-----------------------|------------------------------------|------------------------|-----------------|-----------------|------------------------|
| .138<br>(3.5)         | .461<br>(11.7)                     | 1.969<br>(50.0)        | .303<br>(7.7)   | .524<br>(13.3)  | .610<br>(15.5)         |
| .138<br>(3.5)         | .461<br>(11.7)                     | 1.969<br>(50.0)        | .417<br>(10.6)  | .669<br>(17.0)  | .752<br>(19.1)         |
| .138<br>(3.5)         | .461<br>(11.7)                     | 1.969<br>(50.0)        | .531<br>(13.5)  | .862<br>(21.9)  | .941<br>(23.9)         |
| .138<br>(3.5)         | .453<br>(11.5)                     | 2.362<br>(60.0)        | .531<br>(13.5)  | .862<br>(21.9)  | .941<br>(23.9)         |
| .138<br>(3.5)         | .453<br>(11.5)                     | 2.362<br>(60.0)        | .575<br>(14.6)  | .862<br>(21.9)  | .941<br>(23.9)         |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | .736<br>(18.7)  | 1.031<br>(26.2) | 1.165<br>(29.6)        |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | .819<br>(20.8)  | 1.031<br>(26.2) | 1.165<br>(29.6)        |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | .969<br>(24.6)  | 1.358<br>(34.5) | 1.488<br>(37.8)        |
| .138<br>(3.5)         | .500<br>(12.7)                     | 2.559<br>(65.0)        | 1.063<br>(27.0) | 1.358<br>(34.5) | 1.488<br>(37.8)        |
| .138<br>(3.5)         | .598<br>(15.2)                     | 2.756<br>(70.0)        | 1.311<br>(33.3) | 1.717<br>(43.6) | 1.882<br>(47.8)        |
| .138<br>(3.5)         | .598<br>(15.2)                     | 3.150<br>(80.0)        | 1.516<br>(38.5) | 1.717<br>(43.6) | 1.882<br>(47.8)        |
| .138<br>(3.5)         | .610<br>(15.5)                     | 3.150<br>(80.0)        | 1.898<br>(48.2) | 2.071<br>(52.6) | 2.276<br>(57.8)        |

All dimensions in inches (millimeters in parenthesis)

## PLUG STYLE 6, 6HD RIGHT ANGLE

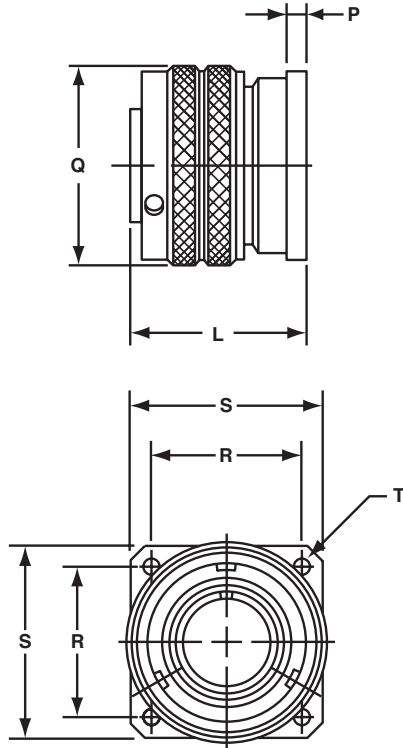


| SHELL SIZE | Q <sup>1</sup> MAX. | Q <sup>2</sup> MAX. |
|------------|---------------------|---------------------|
| 10SL       | .898<br>(22.8)      | 1.007<br>(25.5)     |
| 14S        | 1.150<br>(29.2)     | 1.259<br>(31.9)     |
| 16S        | 1.260<br>(32.0)     | 1.410<br>(35.8)     |
| 16         | 1.260<br>(32.0)     | 1.410<br>(35.8)     |
| 18         | 1.437<br>(36.5)     | 1.547<br>(39.2)     |
| 20         | 1.571<br>(39.9)     | 1.681<br>(42.6)     |
| 22         | 1.697<br>(43.1)     | 1.847<br>(46.9)     |
| 24         | 1.835<br>(46.6)     | 1.965<br>(49.9)     |
| 28         | 2.102<br>(53.4)     | 2.222<br>(56.4)     |
| 32         | 2.366<br>(60.1)     | 2.482<br>(63.0)     |
| 36         | 2.610<br>(66.3)     | 2.721<br>(69.1)     |
| 40         | 2.850<br>(72.4)     | 2.953<br>(75.0)     |

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

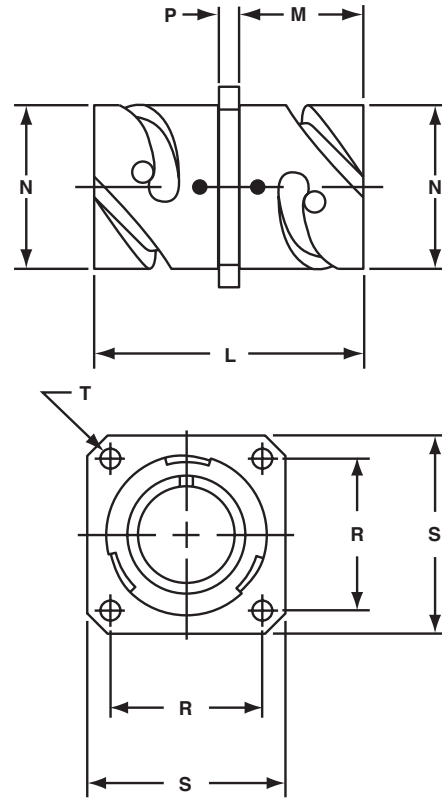
All dimensions in inches (millimeters in parenthesis)

## 6B PANEL PLUG



6B

## STYLE TB THRU-BULKHEAD RECEPTACLE



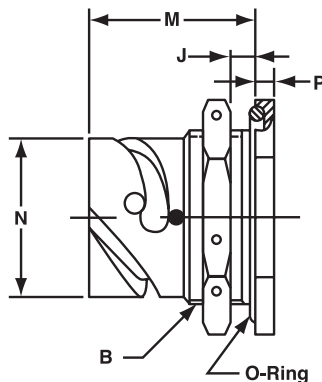
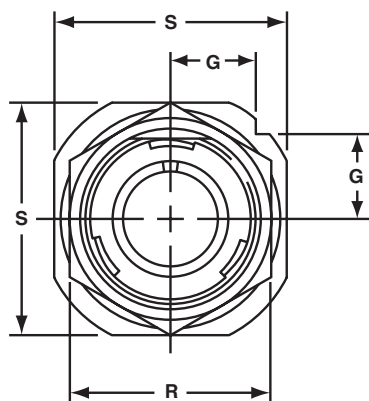
TB

| SHELL SIZE | L APPROX.       | Q MAX.          | P<br>±.008<br>(±0.2) | R<br>±.004<br>(±0.1) | S<br>±.012<br>(±0.3) | T<br>+.004-.000<br>(+0.1-0.0) | L<br>MAX.       | M<br>+.016-.000<br>(+0.4-0.0) | N<br>+.000-.006<br>(+0.00-0.15) | P<br>±.008<br>(±0.2) | R<br>±.004<br>(±0.1) | S<br>±.012<br>(±0.3) | T<br>+.004-.000<br>(+0.1-0.0) |
|------------|-----------------|-----------------|----------------------|----------------------|----------------------|-------------------------------|-----------------|-------------------------------|---------------------------------|----------------------|----------------------|----------------------|-------------------------------|
| 10SL       | 1.087<br>(27.6) | .898<br>(22.8)  | .110<br>(2.8)        | .717<br>(18.2)       | 1.000<br>(25.4)      | .126<br>(3.2)                 | 1.488<br>(37.7) | .717<br>(18.2)                | .717<br>(18.2)                  | .110<br>(2.8)        | .717<br>(18.2)       | 1.000<br>(25.4)      | .126<br>(3.2)                 |
| 14S        | 1.091<br>(27.7) | 1.150<br>(29.2) | .126<br>(3.2)        | .906<br>(23.0)       | 1.181<br>(30.0)      | .126<br>(3.2)                 | 1.488<br>(37.7) | .717<br>(18.2)                | .969<br>(24.6)                  | .126<br>(3.2)        | .906<br>(23.0)       | 1.181<br>(30.0)      | .126<br>(3.2)                 |
| 16S        | 1.091<br>(27.7) | 1.260<br>(32.0) | .126<br>(3.2)        | .969<br>(24.6)       | 1.280<br>(32.5)      | .126<br>(3.2)                 | 1.488<br>(37.7) | .717<br>(18.2)                | 1.079<br>(27.4)                 | .126<br>(3.2)        | .969<br>(24.6)       | 1.280<br>(32.5)      | .126<br>(3.2)                 |
| 16         | 1.469<br>(37.3) | 1.260<br>(32.0) | .126<br>(3.2)        | .969<br>(24.6)       | 1.280<br>(32.5)      | .126<br>(3.2)                 | 2.049<br>(52.0) | .846<br>(21.5)                | 1.079<br>(27.4)                 | .126<br>(3.2)        | .969<br>(24.6)       | 1.280<br>(32.5)      | .126<br>(3.2)                 |
| 18         | 1.500<br>(38.1) | 1.437<br>(36.5) | .157<br>(4.0)        | 1.063<br>(27.0)      | 1.378<br>(35.0)      | .126<br>(3.2)                 | 2.049<br>(52.0) | .907<br>(23.0)                | 1.213<br>(30.8)                 | .157<br>(4.0)        | 1.063<br>(27.0)      | 1.378<br>(35.0)      | .126<br>(3.2)                 |
| 20         | 1.500<br>(38.1) | 1.571<br>(39.9) | .157<br>(4.0)        | 1.157<br>(29.4)      | 1.496<br>(38.0)      | .126<br>(3.2)                 | 2.049<br>(52.0) | .907<br>(23.0)                | 1.346<br>(34.2)                 | .157<br>(4.0)        | 1.157<br>(29.4)      | 1.496<br>(38.0)      | .126<br>(3.2)                 |
| 22         | 1.500<br>(38.1) | 1.697<br>(43.1) | .157<br>(4.0)        | 1.252<br>(31.8)      | 1.614<br>(41.0)      | .126<br>(3.2)                 | 2.049<br>(52.0) | .907<br>(23.0)                | 1.472<br>(37.4)                 | .157<br>(4.0)        | 1.252<br>(31.8)      | 1.614<br>(41.0)      | .126<br>(3.2)                 |
| 24         | 1.598<br>(40.6) | 1.835<br>(46.6) | .157<br>(4.0)        | 1.374<br>(34.9)      | 1.752<br>(44.5)      | .146<br>(3.7)                 | 2.049<br>(52.0) | .907<br>(23.0)                | 1.610<br>(40.9)                 | .157<br>(4.0)        | 1.374<br>(34.9)      | 1.752<br>(44.5)      | .146<br>(3.7)                 |
| 28         | 1.626<br>(41.3) | 2.102<br>(53.4) | .157<br>(4.0)        | 1.563<br>(39.7)      | 2.000<br>(50.8)      | .146<br>(3.7)                 | 2.049<br>(52.0) | .947<br>(24.0)                | 1.839<br>(46.7)                 | .157<br>(4.0)        | 1.563<br>(39.7)      | 2.000<br>(50.8)      | .146<br>(3.7)                 |
| 32         | 1.764<br>(44.8) | 2.366<br>(60.1) | .157<br>(4.0)        | 1.752<br>(44.5)      | 2.244<br>(57.0)      | .169<br>(4.3)                 | 2.049<br>(52.0) | .947<br>(24.0)                | 2.102<br>(53.4)                 | .157<br>(4.0)        | 1.752<br>(44.5)      | 2.244<br>(57.0)      | .169<br>(4.3)                 |
| 36         | 1.764<br>(44.8) | 2.610<br>(66.3) | .157<br>(4.0)        | 1.937<br>(49.2)      | 2.500<br>(63.5)      | .169<br>(4.3)                 | 2.049<br>(52.0) | .947<br>(24.0)                | 2.346<br>(59.6)                 | .157<br>(4.0)        | 1.937<br>(49.2)      | 2.500<br>(63.5)      | .169<br>(4.3)                 |
| 40         | 1.764<br>(44.8) | 2.850<br>(72.4) | .157<br>(4.0)        | 2.185<br>(55.5)      | 2.752<br>(69.9)      | .169<br>(4.3)                 | 2.049<br>(52.0) | .947<br>(24.0)                | 2.579<br>(65.5)                 | .157<br>(4.0)        | 2.185<br>(55.5)      | 2.752<br>(69.9)      | .169<br>(4.3)                 |

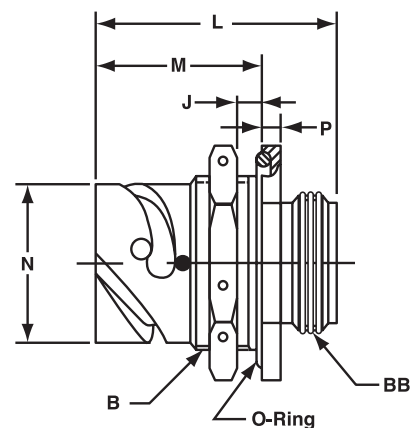
All dimensions in inches (millimeters in parenthesis)

## DIMENSIONS

## STYLE 7, 70 JAM NUT RECEPTACLES



7

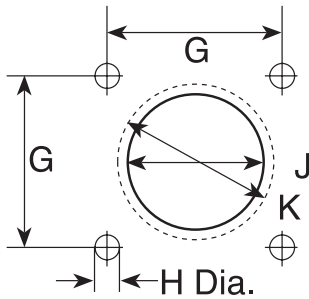


70

| SHELL SIZE | B<br>THREAD<br>CLASS 2A | G<br>±.012<br>(±0.3) | J<br>WALL THICKNESS |                | L<br>± .010<br>(±0.3) | M<br>± .012<br>(±0.3) | N<br>+.000-.1006<br>(+0.00-0.15) | P<br>± .007<br>(±0.2) | R<br>± .016<br>(±0.4) | S<br>± .12<br>(±0.3) | BB<br>THREAD<br>CLASS 2A |
|------------|-------------------------|----------------------|---------------------|----------------|-----------------------|-----------------------|----------------------------------|-----------------------|-----------------------|----------------------|--------------------------|
|            |                         |                      | MIN.                | MAX.           |                       |                       |                                  |                       |                       |                      |                          |
| 10SL       | .8750-20 UNEF           | .441<br>(11.2)       | .094<br>(2.4)       | .205<br>(5.2)  | 1.425<br>(36.2)       | .965<br>(24.5)        | .717<br>(18.2)                   | .157<br>(4.0)         | 1.062<br>(27.0)       | 1.252<br>(31.8)      | .6250-24 UNEF            |
| 14S        | 1.1250-18 UNEF          | .575<br>(14.6)       | .094<br>(2.4)       | .295<br>(7.5)  | 1.531<br>(38.9)       | 1.055<br>(26.8)       | .969<br>(24.6)                   | .189<br>(4.8)         | 1.312<br>(33.3)       | 1.626<br>(41.3)      | .7500-20 UNEF            |
| 16S        | 1.2500-18 UNEF          | .618<br>(15.7)       | .094<br>(2.4)       | .295<br>(7.5)  | 1.531<br>(38.9)       | 1.055<br>(26.8)       | 1.079<br>(27.4)                  | .189<br>(4.8)         | 1.500<br>(38.1)       | 1.748<br>(44.4)      | .8750-20 UNEF            |
| 16         | 1.2500-18 UNEF          | .618<br>(15.7)       | .094<br>(2.4)       | .295<br>(7.5)  | 1.909<br>(48.5)       | 1.264<br>(32.1)       | 1.079<br>(27.4)                  | .189<br>(4.8)         | 1.500<br>(38.1)       | 1.748<br>(44.4)      | .8750-20 UNEF            |
| 18         | 1.3750-18 UNEF          | .661<br>(16.8)       | .094<br>(2.4)       | .354<br>(9.0)  | 1.941<br>(49.3)       | 1.327<br>(33.7)       | 1.213<br>(30.8)                  | .189<br>(4.8)         | 1.562<br>(39.7)       | 1.874<br>(47.6)      | 1.0000-20 UNEF           |
| 20         | 1.5000-18 UNEF          | .709<br>(18.0)       | .094<br>(2.4)       | .358<br>(9.1)  | 1.941<br>(49.3)       | 1.327<br>(33.7)       | 1.346<br>(34.2)                  | .189<br>(4.8)         | 1.750<br>(44.5)       | 2.000<br>(50.8)      | 1.1250-18 UNEF           |
| 22         | 1.6250-18 UNEF          | .795<br>(20.2)       | .094<br>(2.4)       | .358<br>(9.1)  | 1.941<br>(49.3)       | 1.327<br>(33.7)       | 1.472<br>(37.4)                  | .189<br>(4.8)         | 2.000<br>(50.8)       | 2.134<br>(54.2)      | 1.2500-18 UNEF           |
| 24         | 1.7500-18 UNEF          | .795<br>(20.2)       | .094<br>(2.4)       | .358<br>(9.1)  | 1.953<br>(49.6)       | 1.327<br>(33.7)       | 1.610<br>(40.9)                  | .189<br>(4.8)         | 2.000<br>(50.8)       | 2.252<br>(57.2)      | 1.3750-18 UNEF           |
| 28         | 2.0000-18 UNS           | .886<br>(22.5)       | .094<br>(2.4)       | .394<br>(10.0) | 2.043<br>(51.9)       | 1.386<br>(35.2)       | 1.839<br>(46.7)                  | .220<br>(5.6)         | 2.188<br>(55.6)       | 2.500<br>(63.5)      | 1.6250-18 UNEF           |
| 32         | 2.2500-16 UN            | .972<br>(24.7)       | .094<br>(2.4)       | .394<br>(10.0) | 2.043<br>(51.9)       | 1.386<br>(35.2)       | 2.102<br>(53.4)                  | .220<br>(5.6)         | 2.438<br>(61.9)       | 2.748<br>(69.8)      | 1.8750-16 UN             |
| 36         | 2.5000-16 UN            | 1.059<br>(26.9)      | .094<br>(2.4)       | .327<br>(8.3)  | 2.043<br>(51.9)       | 1.386<br>(35.2)       | 2.346<br>(59.6)                  | .220<br>(5.6)         | 2.812<br>(71.4)       | 3.000<br>(76.2)      | 2.0625-16 UN             |
| 40         | 2.7500-16 UN            | 1.165<br>(29.6)      | .094<br>(2.4)       | .327<br>(8.3)  | 2.043<br>(51.9)       | 1.386<br>(35.2)       | 2.579<br>(65.5)                  | .220<br>(5.6)         | 2.953<br>(75.0)       | 3.248<br>(82.5)      | 2.3125-16 UN             |

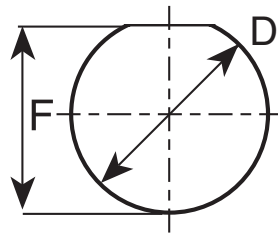
All dimensions in inches (millimeters in parenthesis)

## PANEL CUTOUTS



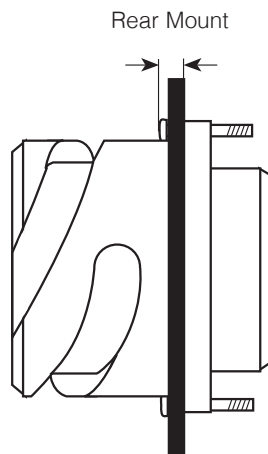
Dim. J-flange in front of panel  
Dim. K-flange at rear of panel  
See sealing screws on ➔ page 439.

| SHELL SIZE | STYLE 0, 2, 20, 30, TB FLANGE |                          |              |              |
|------------|-------------------------------|--------------------------|--------------|--------------|
|            | G (TP)                        | MOUNTING HOLE DIAMETER H | J FRONT      | K REAR       |
| 10SL       | 0.717 (18.2)                  | 0.126 (3.2)              | 0.688 (17.5) | 0.750 (19.1) |
| 14S        | 0.906 (23.0)                  | 0.126 (3.2)              | 0.813 (20.7) | 1.000 (25.4) |
| 16S        | 0.969 (24.6)                  | 0.126 (3.2)              | 0.938 (23.8) | 1.125 (28.6) |
| 16         | 0.969 (24.6)                  | 0.126 (3.2)              | 0.938 (23.8) | 1.125 (28.6) |
| 18         | 1.063 (27.0)                  | 0.126 (3.2)              | 1.063 (27.0) | 1.250 (26.7) |
| 20         | 1.157 (29.4)                  | 0.126 (3.2)              | 1.188 (30.2) | 1.375 (35.0) |
| 22         | 1.252 (31.8)                  | 0.126 (3.2)              | 1.313 (33.4) | 1.500 (38.1) |
| 24         | 1.374 (34.9)                  | 0.146 (3.7)              | 1.438 (36.5) | 1.625 (41.3) |
| 28         | 1.563 (39.7)                  | 0.146 (3.7)              | 1.688 (42.9) | 1.875 (47.6) |
| 32         | 1.752 (44.5)                  | 0.169 (4.3)              | 1.938 (49.2) | 2.125 (54.0) |
| 36         | 1.937 (49.2)                  | 0.169 (4.3)              | 2.125 (54.0) | 2.375 (60.3) |
| 40         | 2.185 (55.5)                  | 0.169 (4.3)              | 2.375 (60.3) | 2.625 (66.7) |



| 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) |

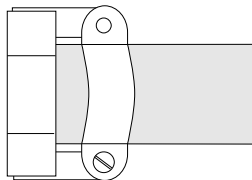
## PANEL THICKNESS



| 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

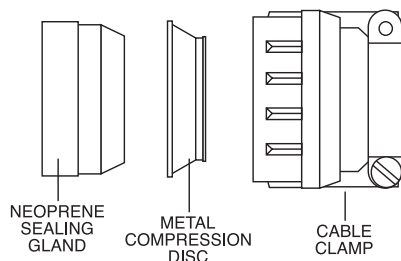


Standard MS3057 cable clamps have dual-clamping action to provide a balanced, positive hold on the wires and greatly reduce moisture transmission. This cable clamp accepts MS3420 bushings. MS3420 bushings can be nested to reduce the inside diameter to more closely match the diameter of the cable or wire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

| SHELL SIZE | THREAD CLASS 2B | STANDARD CLAMP     |                          |                                    |                                  | STANDARD CLAMP AND TELESCOPIC BUSHING |                           |                      |
|------------|-----------------|--------------------|--------------------------|------------------------------------|----------------------------------|---------------------------------------|---------------------------|----------------------|
|            |                 | LOW-COST CAST ZINC | ALUMINUM W/ BRASS SCREWS | ALUMINUM W/ STAINLESS STEEL SCREWS | MAXIMUM CABLE DIAMETER INCH (MM) | ZINC WITH BUSHING                     | LOW-COST BUSHING INCLUDED | BUSHING ID INCH (MM) |
| 10SL       | 5/8-24UNEF      | 97-3057-1004**     | MS3057-4A                | M85049/41-4A                       | 0.312 (7.92)                     | 97-3057-1004-1                        | MS3420-4                  | 0.220 (5.6)          |
| 14S        | 3/4-20UNEF      | 97-3057-1007**     | MS3057-6A                | M85049/41-6A                       | 0.438 (11.10)                    | 97-3057-1007-1                        | MS3420-6                  | 0.312 (7.9)          |
| 16/16S     | 7/8-20UNEF      | 97-3057-1008**     | MS3057-8A                | M85049/41-8A                       | 0.562 (14.27)                    | 97-3057-1008-1                        | MS3420-8                  | 0.437 (11.1)         |
| 18         | 1-20UNEF        | 97-3057-1010**     | MS3057-10A               | M85049/41-10A                      | 0.625 (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                      | 0.750 (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                      | 0.938 (23.80)                    | 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 1/4-16UNS     | -                  | MS3057-28A               | M85049/41-28A                      | 1.625 (41.28)                    | -                                     | -                         | -                    |

\*\* Other platings are available. ➡ See page 17 for alternate platings.

## MS3057-C WATERPROOF CABLE CLAMP

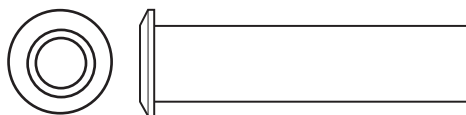


Standard MS3057-C waterproof cable clamp with mechanical strain relief for use with styles F, L and T endbells. Internal neoprene gland and compression ring will seal a broad range of round cable diameters as listed below. For reduction of cable diameters, order the appropriate MS3420A bushing in table.

| SHELL SIZE | PART NUMBER | WIRE DIAMETER INCHES (MM) |               | OPTIONAL BUSHINGS |                     |
|------------|-------------|---------------------------|---------------|-------------------|---------------------|
|            |             | MAX.                      | MIN.          | PART NUMBER       | MAX. WIRE DIA. (MM) |
| 10SL       | MS3057-4C   | 0.312 (7.93)              | 0.188 (4.80)  | MS3420-4A         | 0.219 (5.56)        |
| 14S        | MS3057-6C   | 0.438 (11.12)             | 0.281 (7.10)  | MS3420-6A         | 0.312 (7.93)        |
|            |             |                           |               | MS3420-4A         | 0.219 (5.56)        |
| 16/16S     | MS3057-8C   | 0.530 (13.48)             | 0.312 (7.90)  | MS3420-8A         | 0.438 (11.10)       |
|            |             |                           |               | MS3420-6A         | 0.312 (7.93)        |
| 18         | MS3057-10C  | 0.625 (15.87)             | 0.375 (9.50)  | MS3420-10A        | 0.438 (11.10)       |
|            |             |                           |               | MS3420-6A         | 0.312 (7.93)        |
| 20/22      | MS3057-12C  | 0.750 (19.00)             | 0.500 (12.70) | MS3420-12A        | 0.540 (13.74)       |
|            |             |                           |               | MS3420-8A         | 0.438 (11.10)       |
| 24/28      | MS3057-16C  | 0.940 (23.8)              | 0.625 (15.90) | MS3420-16A        | 0.750 (19.00)       |
|            |             |                           |               | MS3420-12A        | 0.540 (13.74)       |
|            |             |                           |               | MS3420-8A         | 0.438 (11.10)       |
| 32         | MS3057-20C  | 1.25 (31.75)              | 0.921 (23.40) | MS3420-20A        | 0.938 (23.80)       |
|            |             |                           |               | MS3420-16A        | 0.750 (19.00)       |
|            |             |                           |               | MS3420-12A        | 0.540 (13.74)       |
| 36         | MS3057-24C  | 1.38 (35.00)              | 1.00 (25.40)  | MS3420-24A        | 1.12 (28.5)         |
|            |             |                           |               | MS3420-18A        | 0.938 (23.80)       |
|            |             |                           |               | MS3420-16A        | 0.750 (19.00)       |
| 40         | MS3057-28C  | 1.62 (41.25)              | 1.25 (31.80)  | MS3420-28A        | 1.25 (31.75)        |
|            |             |                           |               | MS3420-20A        | 0.940 (23.80)       |
|            |             |                           |               | MS3420-16A        | 0.750 (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 resist dust, dirt and oil. 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<br>PART NUMBER | INSIDE<br>DIAMETER | 2ND NESTED<br>BUSHING | INSIDE<br>DIAMETER | FITS IN<br>CABLE CLAMP |
|------|----------------------------|--------------------|-----------------------|--------------------|------------------------|
| 10SL | 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.



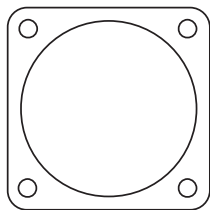
## 9767 CABLE CLAMPS

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<br>PART NUMBER | MAX. CABLE OD |         | MIN. CABLE OD |         | THREAD<br>CLASS 2B |
|------------|----------------------------|---------------|---------|---------------|---------|--------------------|
|            |                            | INCHES        | (mm)    | INCHES        | (mm)    |                    |
| 10SL       | 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)

## GASKETS



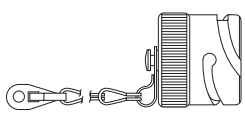
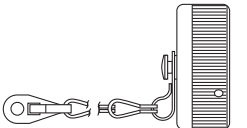
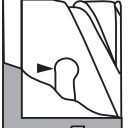
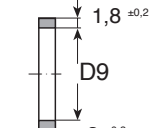
Synthetic rubber gaskets are used to ensure a moisture-tight seal between a receptacle and the panel. Gaskets are available for front or rear-panel mounting of styles 0, 2, 20, 30 and TB connectors. Gasket thickness is approximately .031 inches (1 mm), for nonconductive and low-temperature types.

Conductive shielding gaskets contain an embedded metal screen for EMI/RFI shielding in addition to moisture sealing. Gaskets are available for front or rear-panel mounting of styles 30 and TB connectors. Gasket thickness is .020 inches (.5 mm).

| SHELL SIZE | FRONT MOUNT    |               |                 | REAR MOUNT     |
|------------|----------------|---------------|-----------------|----------------|
|            | 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   | 10-580649-028  |
| 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. Contact us for ordering information.

| SHELL SIZE | DUST CAPS                                                                           |                                                                                     |                                                                                      |                                                                                       |
|------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|            | PLUG CAP                                                                            | RECEPTACLE                                                                          | DUMMY RECEPTACLES                                                                    | PLUG SEAL RING                                                                        |
|            |  |  |  |  |
| 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

**Y** = Black alloy



## SOLDER CONTACTS

**STEP 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.

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

**STEP 3:** Solder wires to appropriate contacts on the rear of the connector. Information on standard soldering practices is available upon request. Please contact us.

**STEP 4:** Fixture the connector for reassembly using the endbell assembly tools on [page 122](#)

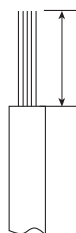
**STEP 5:** Slide the grommet down the wires (lubricating the grommet with isopropyl alcohol will help).

**STEP 6:** Fill all unused grommet cavities with a wire hole filler to maintain the sealing integrity of the connector.

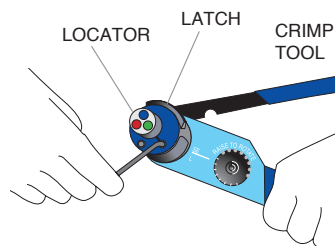
**STEP 7:** Slide coupling nut, ferrule, and endbell accessories over rear of the connector and tighten. For tooling, [see page 122](#).

## CRIMP TOOL OPERATION

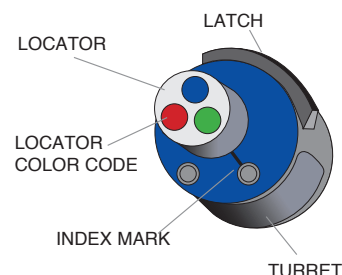
**NOTE:** Hand-crimp tools can be used with size 16S, 16 & 12 contacts. Size 8, 4 and 0 contacts require the use of air-powered crimp tools. Contact us for assistance in the use of these tools.



**STEP 1:** Strip the wires to the appropriate length. See strip lengths on the Contact Selection Guide, [see page 94](#).

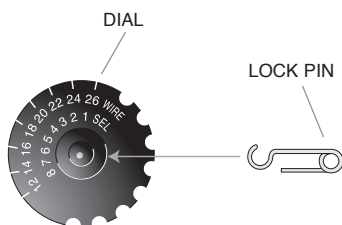


**STEP 2:** Open the crimp tool by squeezing the handles. Push the latch on the turret to pop up the locator. Attach the turret to the crimp tool using the two captive hex bolts in the turret.

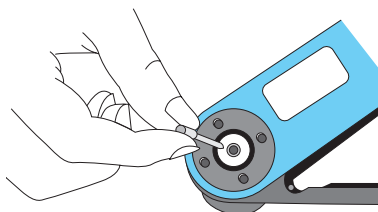


**STEP 3:** Select the proper locator position for your contact by rotating the locator until the proper color is aligned with the index mark. Push locator back down until it snaps into position.

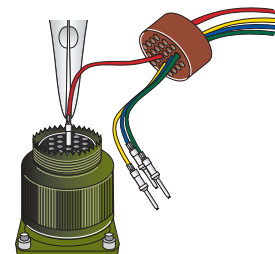
| CONTACT SIZE | PIN LOCATOR COLOR | SOCKET LOCATOR COLOR |
|--------------|-------------------|----------------------|
| 16S          | Red               | Red                  |
| 16           | Blue              | Green                |
| 12           | Green             | Green                |



**STEP 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.

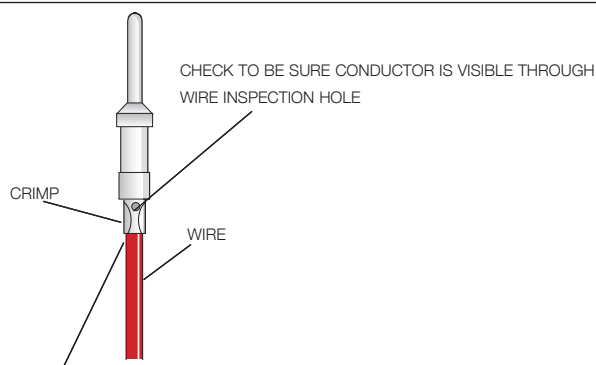


**STEP 5:** Cycle the tool before inserting the contact to be sure the tool is in the open position. Drop the contact, mating end first, into the crimp cavity of the tool. Squeeze the tool handle just enough to grip the contact without actually crimping it.



**STEP 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)



INSULATION SHOULD PRESS UP AGAINST THE END OF THE CONTACT.

**STEP 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.

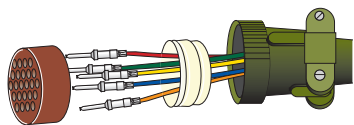
**MICRO-SECTIONS:** Enlargement of micro-section permits a final inspection of crimp quality. This test is recommended whenever new tools or new types of wire or contacts are used.

## CRIMP TENSILE STRENGTH

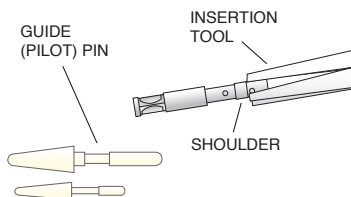
Initial minimum pullout force in lbs. (before conditioning)

| 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 |

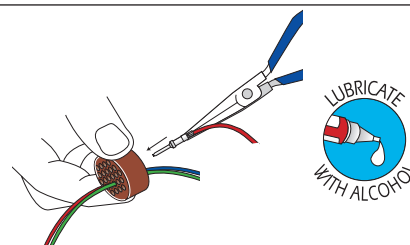
## INSERTION OF CONTACTS



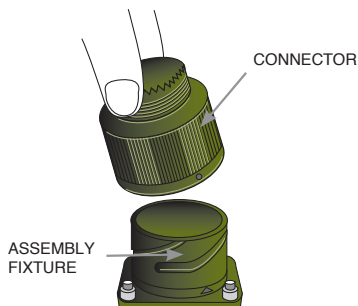
**STEP 1:** Slide the rear accessories over the wire bundle in the proper sequence for re-assembly: cable clamp and/or endbell first, then ferrule, and coupling nut.



**STEP 2:** Use the proper insertion tool from the Contact Selection Chart on [page 94](#). Place the contact in the tool. The tool should press 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.



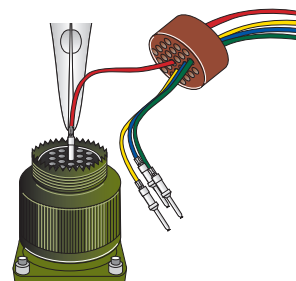
**STEP 3:** Lubricate the grommet with isopropyl alcohol (do not use any lubricant other than isopropyl alcohol). Insert the contact through the appropriate cavity in the grommet. Sizes 16S, 16 and 12 socket contacts must be installed using guide (pilot) pins. See the Contact Selection Guide on [page 94](#) for Insertion Guide (Pilot) Pin part numbers.



**STEP 4:** Place the connector into an assembly fixture (fixtures are available for production use, contact 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.

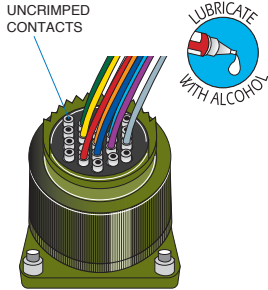


**STEP 5:** Lubricate the contact cavities of the connector insulator with isopropyl alcohol (do not use any other type of lubricant).



**STEP 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.

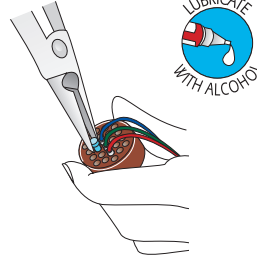
## INSERTION OF CONTACTS (CONTINUED)



**STEP 7:** Fill any unused cavities with contacts.



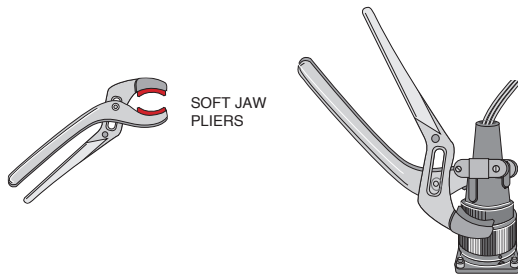
**STEP 8:** Check the mating face of the connector to ensure that all the same size contacts are on the same plane (fully inserted). If not, the contact is not fully inserted. Remove the contact using the proper extraction tool and procedure and reinsert. Do not attempt to reinsert the insertion tool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



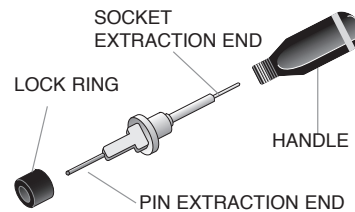
**STEP 9:** A wire hole filler must be inserted into the grommet behind the unused contacts to maintain the sealing integrity of the connector. See the Contact Selection Chart on [page 94](#) for wire hole fillers.

**STEP 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 122](#).

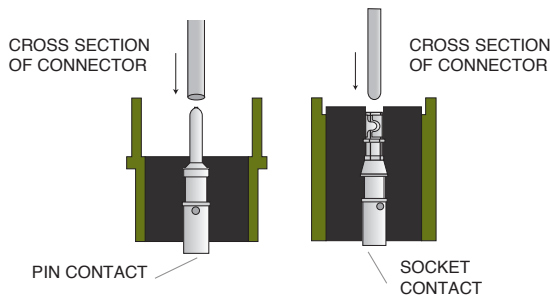
## EXTRACTION OF CONTACTS



**STEP 1:** Remove the endbell accessories and slide them back over the wires. Use the appropriate endbell tools as shown on [page 122](#).



**STEP 2:** Use the proper extraction tool from the Contact Selection Chart on [page 94](#). 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.



**STEP 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.

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

## 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 alloy (RoHS with crimp only)  
027 Conductive black alloy (RoHS with crimp only)  
024 Green zinc  
B30 Gold  
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)  
553 116 & 027 mod codes (RoHS)

## ALTERNATE INSERT ROTATION

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

See ➞ pages 83-93.

## CONTACT STYLE

P pin contacts  
S socket contacts

## SHELL SIZE &amp; LAYOUT

See ➞ pages 72-82.

## 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 440-441  
G2 Two-piece, heat shrink endbell adaptor, with grommet (use with heat shrink boot – see Accessories).  
➞ pages 440-441  
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 440-441  
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 445  
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             |

\*Viton® is a registered trademark of DuPont DOW Elastomers

## 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*)
- Contact us for other modifications

#### REVERSE BAYONET COUPLING

#### ALTERNATE ROTATION

W, X, Y, and Z  
No suffix required for normal position  
⇒ See pages 83-93 for valid alternate insert position (*rotation*)

#### CONTACTTYPE

P - Pin  
S - Socket

#### CONNECTOR ARRANGEMENT

⇒ See pages 72-82 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 70-71 whenever possible.**

## VG95234 NATO SPECIFICATIONS

## VG95234- A 20-29 P 1 N

VG SPEC PREFIX \_\_\_\_\_

SHELLSTYLE \_\_\_\_\_

See chart below

SHELL SIZE - LAYOUT \_\_\_\_\_

⇒ See pages 72-82.

CONTACT STYLE \_\_\_\_\_

P = Pin contacts  
S = Socket contacts

TERMINATION \_\_\_\_\_

1 = AWG crimp  
Blank = metric crimp

POLARIZATION \_\_\_\_\_

⇒ See pages 83-93.

## SHELLSTYLE

## PLUGS

- D Straight plug with cable clamp
- E Right angle plug with cable clamp
- E1 Right angle plug for conduit termination
- G Straight plug with heat shrink endbell
- H Straight plug for conduit termination
- K Right angle plug for conduit termination with grounding fingers
- L Straight plug for conduit termination with grounding fingers
- M Straight plug with shielded heat shrink endbell and grounding fingers
- R1 Straight plug with shielded heat shrink endbell and grounding fingers
- T Straight plug with heat shrink endbell and grounding fingers

Mates  
with

## RECEPTACLES

- A Front panel mount box receptacle
- B1 Rear panel mount box receptacle, metric mounting holes
- B2 Rear panel mount box receptacle, through mounting holes
- F In-line receptacle with cable clamp
- J1 Rear panel mount wall receptacle with cable clamp, metric mounting holes
- J2 Rear panel mount wall receptacle with cable clamp, through mounting holes
- N1 Rear panel mount wall receptacle with shielded heat shrink endbell, metric mounting holes
- N2 Rear panel mount wall receptacle with shielded heat shrink endbell, through mounting holes
- S1 Rear panel mount wall receptacle with heat shrink endbell, metric mounting holes
- S2 Rear panel mount wall receptacle with heat shrink endbell, through mounting holes
- U1 Rear panel mount wall receptacle with heat shrink endbell, metric mounting holes
- U2 Rear panel mount wall receptacle with heat shrink endbell, through mounting holes
- V In-Line receptacle with conduit termination



VG95234 SHELL STYLES

|                                                                                     |                                                                                     |                                                                                      |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| VG95234 STYLE A                                                                     | VG95234 STYLE B1/B2                                                                 | VG95234 STYLE D                                                                      | VG95234 STYLE E                                                                       |
|    |    |    |    |
| VG95234 STYLE F                                                                     | VG95234 STYLE G                                                                     | VG95234 STYLE H                                                                      | VG95234 STYLE J1/J2                                                                   |
|    |    |    |    |
| VG95234 STYLE K                                                                     | VG95234 STYLE L                                                                     | VG95234 STYLE M                                                                      | VG95234 STYLE N1/N2                                                                   |
|  |  |  |  |
| VG95234 STYLE R1                                                                    | VG95234 STYLE S1/S2                                                                 | VG95234 STYLE T                                                                      | VG95234 STYLE U1/U2                                                                   |
|  |  |  |  |

## 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.



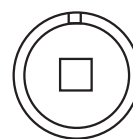
## TG69P NON-MARRING ADJUSTABLE ENDBELL PLIERS FOR FIELD SERVICE

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.

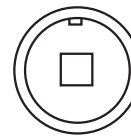


The 600 Series is a complete system for the proper assembly and torquing of connector endbells. The system includes a bench-mounted or hand-held torque wrench, plug and receptacle holders, and a range of endbell tightening tools. When used together, these tools provide the user with consistent endbell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

## Plug and Receptacle Holders



600B005-R

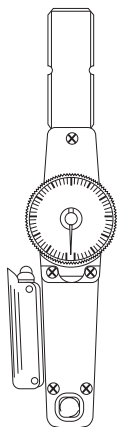


600B005-P



600-007

Bench-mounted  
torque wrench



600-004

Hand-held  
torque wrench

| SIZE   | MIL-DTL-5015        |             |
|--------|---------------------|-------------|
|        | FOR AIT/MS & AIB/GT |             |
|        | RECEPTACLES         | PLUGS       |
| 8/8S   | 600B005-8R          | 600B005-8P  |
| 10S/SL | 600B005-10R         | 600B005-10P |
| 12/12S | 600B005-12R         | 600B005-12P |
| 14/14S | 600B005-14R         | 600B005-14P |
| 16/16S | 600B005-16R         | 600B005-16P |
| 18     | 600B005-18R         | 600B005-18P |
| 20     | 600B005-20R         | 600B005-20P |
| 22     | 600B005-22R         | 600B005-22P |
| 24     | 600B005-24R         | 600B005-24P |
| 28     | 600B005-28R         | 600B005-28P |
| 32     | 600B005-32R         | 600B005-32P |
| 36     | 600B005-36R         | 600B005-36P |

## TORQUE VALUES

### IMPORTANT NOTE:

If barrel/shell has 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          |

| ROTATIONS |        |
|-----------|--------|
| PIN       | SOCKET |
| W = G     | W = H  |
| X = I     | X = J  |
| Y = K     | Y = L  |
| Z = M     | Z = N  |