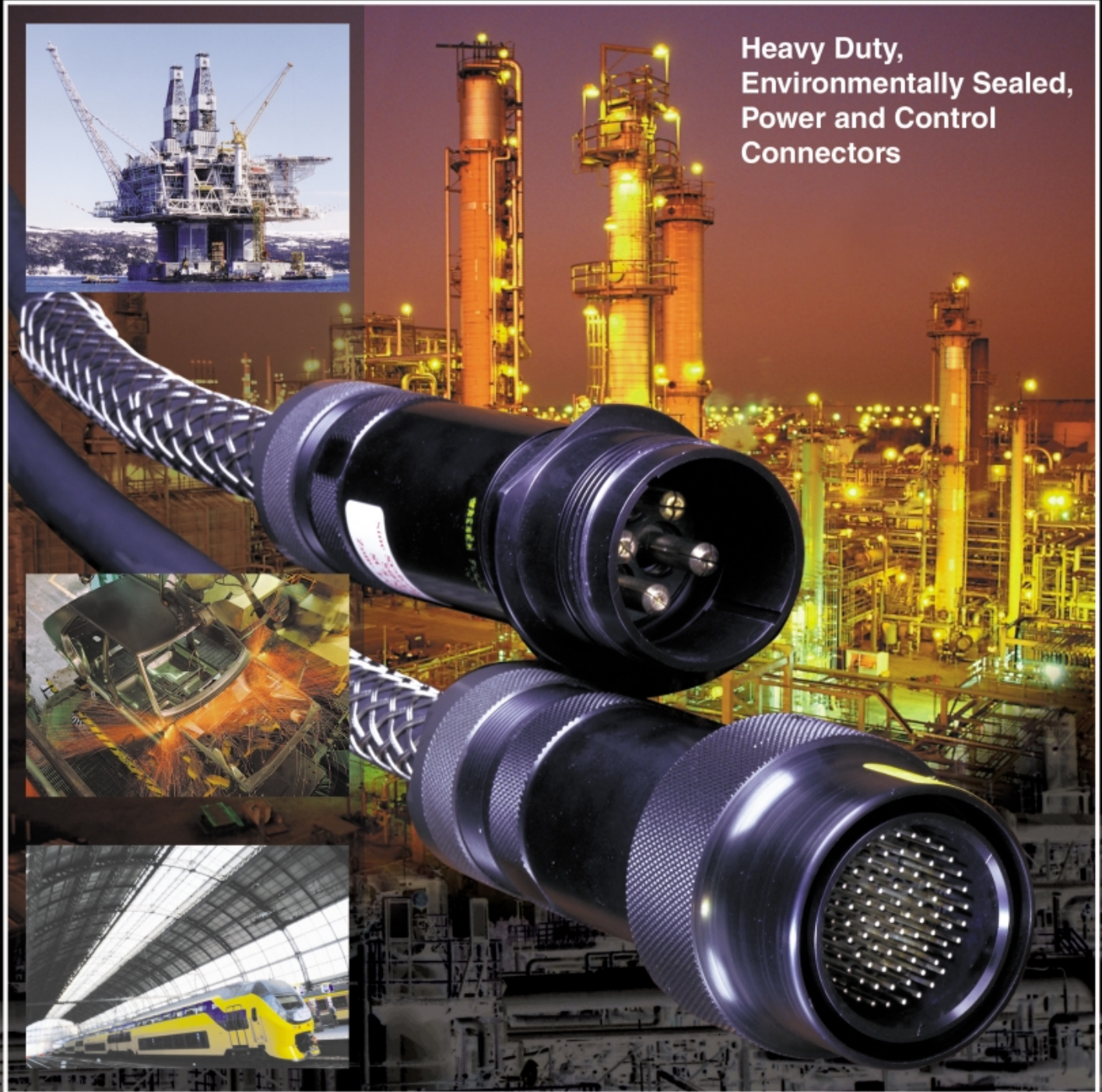


# Amphenol® Industrial Power Connectors Star-Line®, Star-Line EX®, Star-Lok®

12-054



Heavy Duty,  
Environmentally Sealed,  
Power and Control  
Connectors

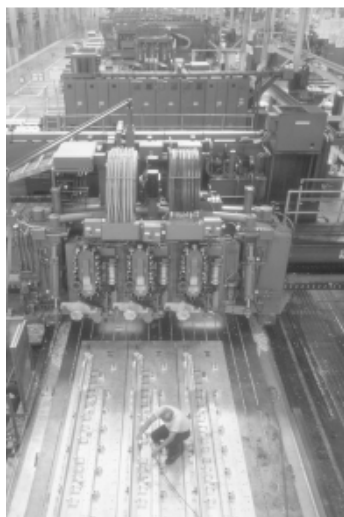
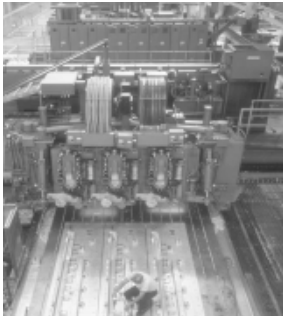
Amphenol





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## STAR-LINE® Series

Star-Line Series “ZP/ZR” connectors are heavy duty environmentally sealed plugs and receptacles and have been successfully used in all types of Industrial and Aerospace applications. These compact environmental connectors have provided outstanding performance in complex ground support cable networks, automatic and process control systems and instrumentation systems.

This family of connectors has made a major contribution to the successful interconnection of peak power generating systems as well as offshore petroleum production for power distribution and data acquisition.

Ample margins of safety and reliability have been designed into the Star-Line connectors to maintain capability levels which make them ideally suited for the broad spectrum of demands placed on them by industry.

The specific materials and design features incorporated in Star-Line connectors were originally selected to satisfy the stringent requirements of the Aerospace industry for heavy-duty connectors. These connectors combine electrical and mechanical capabilities that equal or exceed the performance parameters established by the Military Specification MIL-C-5015.

- **CIRCUIT BREAKING** – U/L & CSA listed power types have been thoroughly tested for capability to rupture current at ratings listed\*.
- **ENVIRONMENTAL RESISTANCE** – Design and materials withstand the most challenging operating conditions. Series has an IP 67 rating.
- **SOLDER, CRIMP AND PRESSURE TERMINALS** – Available in circuit-breaking power and control types as listed.
- **EASILY ACCESSIBLE WIRE TERMINALS** – Conductors are readily terminated to contacts. Cable housings are slipped over conductors or leads after terminating. Cumbersome handling and seating of inserts with conductors attached is eliminated.



*\*This connector series is currently being reviewed to change over to UL 1682 from the present UL 1977 specification.*

- **LARGE WIRING SPACE** – Ample wiring space is provided in cable housings and conduit fitting bodies. Hub of body mounts in any of four positions (except FS & FD box assemblies).
- **REVERSIBLE INSERTS** – A full range of contact inserts and application adapters are available. All are interchangeable and reversible to suit special needs.
- **DOUBLE-LEAD THREAD COUPLING** – Modified Acme Thread does not clog under adverse conditions of ice, snow, sand or mud and provides the quick coupling feature.
- **HARD ANODIC COATING** – All machine, aluminum parts finished to 40 Points on Rockwell C Scale. Dielectric strength 1800 volts. Heat resistance of 750° F.
- **HIGH TENSILE STRENGTH**  
\***ALUMINUM** – Bar Stock Components precision machined. Points of impact designed for extra strength.

# STAR-LINE® EX Series



The Star-Line EX Series is a hybrid form of the parent Starline product line. The series is certified for use in a Zone 1-IIc hazardous environment. Classified facilities such as petrochemical refineries, land and offshore drilling systems are but a few of the applications for this broad product series.

- **CENELEC CERTIFIED** – for Zone 1-IIc hazardous environment. Certificate number Ex97D1143X (file number 51A4467).

Listed under EEx d IIc T6.

- **HARD ANODIC COATING** – All machined aluminum parts finished to 40 Points on the Rockwell C Scale. Dielectric strength 1800 volts. Heat resistance of 750° F.
- **SOLDER, CRIMP AND PRESSURE TERMINALS** – Available in circuit breaking power and control types.
- **REVERSIBLE INSERTS** – A full range of contact inserts for power, signal and mixed applications are available. All are interchangeable and reversible to suit specific needs.
- **EASILY ACCESSIBLE WIRE TERMINALS** – Conductors are readily terminated to contacts. Cable housings are slipped over conductors or leads after terminating. Cumbersome handling and seating of inserts with conductors attached is eliminated.
- **LARGE WIRING SPACE** – Ample wiring space is provided in cable housings and hardware.
- **HIGH TENSILE STRENGTH ALUMINUM** – Bar Stock Components precision machined. Points of impact designed for extra strength.
- **CABLE OPTIONS** – Starline EX Series can be terminated onto unarmored or armored and sheathed cables built to IEEE-45 / UL1309, IEC, BS, DIN and JIC standards. Flexible cables like SOOW-A, W, G-GC and DLO constructions can also be used with this Series.
- **INSERT VARIETY** – A broad range of inserts are offered ranging from single-contact to 143 contacts. High amperage up to 1135 amps at 1000V / AC or DC. Contacts are high quality copper with silver plating. (Gold plating available as an option) Composite inserts for power, control and instrumentation service are available.



## STAR-LOK™ Series

The Star-Lok's unique swiftmate spring-loaded **reverse bayonette coupling mechanism**, creates a positive metal to metal lock-up between the plug and receptacle, with a simple push of the plug to mate and a simple eighth turn and pull to unmate.

- **CIRCUIT BREAKING** – U/L & CSA listed power types thoroughly tested for capability to rupture current at ratings listed.\*
- **ENVIRONMENTAL RESISTANCE** – Design and materials withstand the most challenging operating conditions. Series has an IP 67 rating.
- **HARD ANODIC COATING** – All machine, aluminum parts finished to 40 Points on Rockwell C Scale. Dielectric strength 1800 volts. Heat resistance of 750° F.
- **SOLDER, CRIMP AND PRESSURE TERMINALS** Available in circuit breaking power and control types.
- **REVERSIBLE INSERTS** – A full range of contact inserts for power, signal and mixed applications are available. All are interchangeable and reversible to suit specific needs.
- **EASILY ACCESSIBLE WIRE TERMINALS** – Conductors are readily terminated to contacts. Cable housings are slipped over conductors or leads after terminating. Cumbersome handling and seating of inserts with conductors attached is eliminated.
- **LARGE WIRING SPACE** – Ample wiring space is provided in cable housings and hardware.
- **HIGH TENSILE STRENGTH ALUMINUM** – Bar Stock Components precision machined. Points of impact designed for extra strength.



*\*This connector series is currently being reviewed to change over to UL 1682 from the present UL 1977 specification.*

Star-Lok's new innovative design features a patented coupling mechanism – a one-handed swift engagement provides a positive connection and consistent mating.

Star-Lok's coupling mechanism also eliminates the problems associated with threaded coupling (dirt, thread damage, many turns to fully mate, etc.), ensuring positive mating every time. The mechanism requires only a slight turn and pull to unmate and is engineered to resist vibration.

Star-Lok's resistance to axial wear offers true metal-to-metal bottoming of mated components. Star-Lok is developed from the proven Pyle Star-Line connector platform and offers: a large family of inserts, contacts and hardware options and an array of signal, power and mixed arrangement designs.



# Environmental Highlights

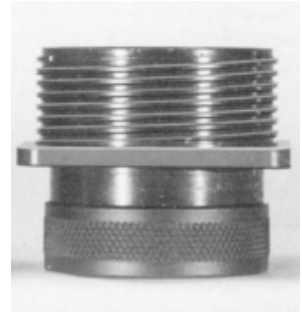
| PROPERTY                               | MIL-C-5015<br>REQUIREMENTS<br>CLASSES A, B, E<br>J & R                                                     | STAR-LINE, STAR-LOK<br>CONNECTORS                                                                                                  |
|----------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| TEMPERATURE                            | -67° F to 225° F                                                                                           | Temperature Classes A, B, E, J and R can withstand 257° F continuously. For short duration high-temperature life, consult factory. |
| PRESSURE                               | No requirement                                                                                             | 300 PSI external (coupled connectors)<br>200 PSI internal (with pin and socket inserts)                                            |
| AIR LEAKAGE                            | 1 cubic inch/<br>hour maximum                                                                              | Exceeds Classes E and R specifications                                                                                             |
| HUMIDITY AND<br>MOISTURE<br>RESISTANCE | 1 1/2 times A.C.<br>voltage rating after<br>14 days.<br>Exposure to<br>95% relative<br>humidity at 160° F. | Exceeds Classes<br>E and R.<br>MIL-C-5015<br>Meets MIL-STD-202B,<br>Method 106A                                                    |
| CORROSION<br>RESISTANCE                | 48 Hours –<br>Method 1001<br>MIL-STD-1344<br>No exposure of<br>base metal.                                 | Salt spray: 300 days<br>– No exposure of base metal.                                                                               |
| CHEMICAL<br>RESISTANCE                 | No requirement                                                                                             | Oil, most acids<br>and alkalis.                                                                                                    |
| DUST<br>RESISTANCE                     | No requirement                                                                                             | Meets MIL-STD-202B,<br>Method 110, Condition B                                                                                     |
| SHOCK<br>RESISTANCE                    | 50 G minimum                                                                                               | Exceeds 60 G's<br>Certain inserts available<br>to 200 G.                                                                           |
| VIBRATION                              | Method 2006<br>Method II<br>MIL-STD-1344                                                                   | Exceeds Method II &<br>MIL-STD-167-1 (Ships).                                                                                      |
| TEST PROBE<br>ABUSE                    | Contact size<br>No. 16 and No. 18                                                                          | Exceeds MIL-C-5015<br>on all contacts<br>No. 18 through 4/0.                                                                       |

## Why the Double-Lead Acme Thread?

The double-lead Acme thread is a moderate torque quick-coupling thread which permits complete coupling in approximately one turn of the coupling nut. In addition, there are actually two parallel threads having starting points 180 degrees apart. All of this ensures that plugs and receptacles are being mated or unmated axially. The thread contour makes it self-cleaning.



*Standard double-lead  
Acme. Two parallel threads.*



*One parallel thread removed  
to show actual thread angle.*

## Wire Limitation Guide

There are restrictions to the maximum diameter of wire as they relate to the rear or wire side of the connector insert as follows.

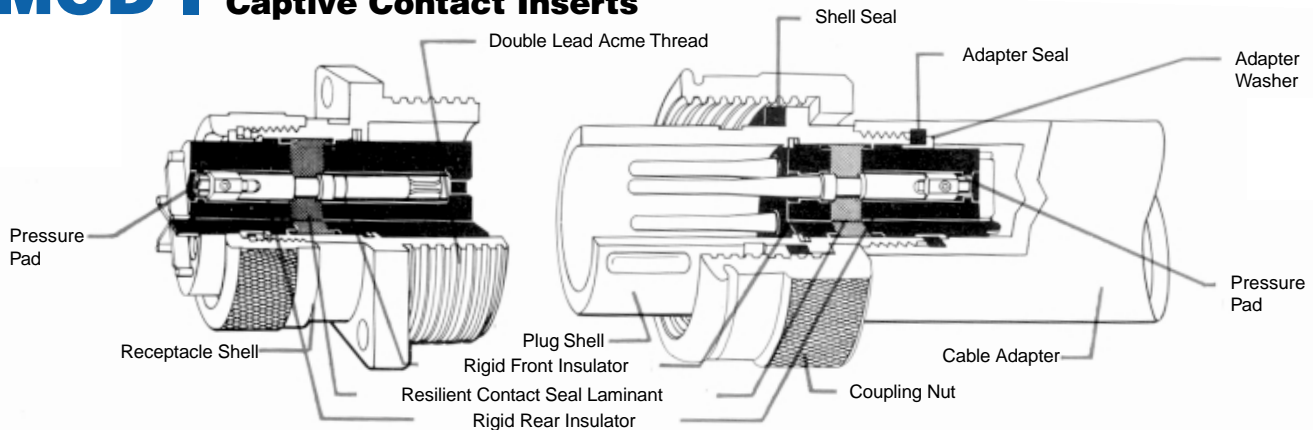
**Mod I.** When wires are passed through the rigid back insulation for ease of soldering:

| Wire size | Maximum diameter |
|-----------|------------------|
| #4/0      | .747"            |
| #2/0      | .555"            |
| #4        | .400"            |
| #8        | .262"            |
| #10       | .201"            |
| #12       | .150"            |
| #16       | .107"            |
| #18       | .086"            |

**Mod II & III**

|     |       |
|-----|-------|
| #10 | .248" |
| #12 | .193" |
| #16 | .130" |
| #18 | .110" |

## MOD I Captive Contact Inserts



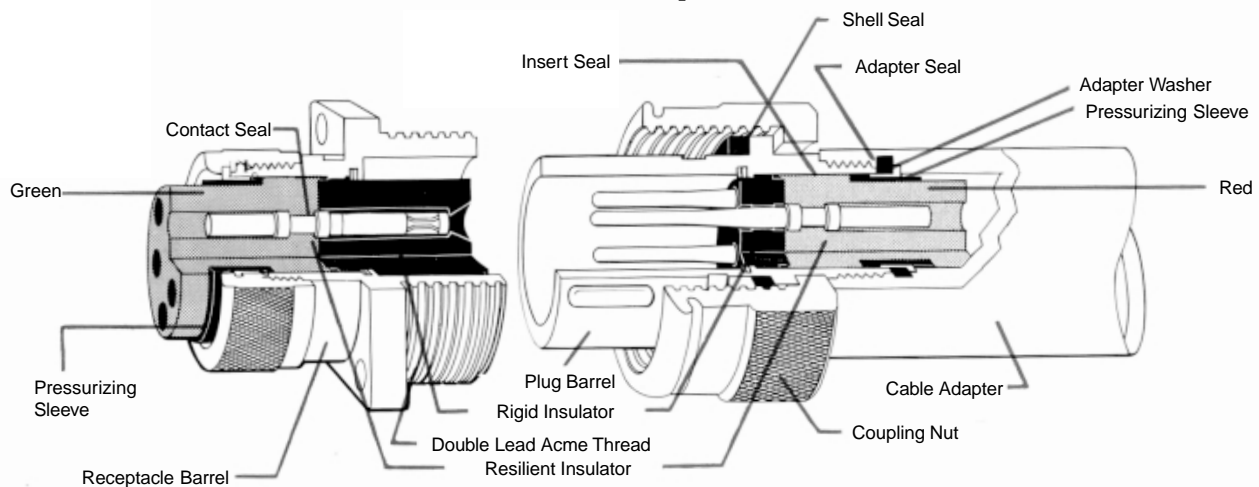
**Self-sealing Construction:** all MOD I captive contact inserts are capable of being terminated after assembly in the basic barrel and are completely self-sealing when pressurized by any selected adapter. Water, gas, vapor, moisture or dust positively cannot pass in either direction through or around the insulation.

The “sandwich” construction of MOD I inserts consists of a resilient silicone laminate between two rigid plastic insulators. The resilient laminate seals absorbs shock and vibration and allows the contacts to align themselves freely. The rigid faced plastic insulators impart just the right amount of restraint to retain the contacts in place.

The combined “sandwich” provides all the advantages of resilient mounting plus all the advantages of rigid mounting, with none of the shortcomings of either. Under pressure, between a shoulder and a thrust washer, the silicone reacts as a fluid and being non-compressible, flows against all surfaces to affect a reliable seal around the periphery of the insert and around all contacts where they penetrate the insulation.

Contact cavities are clearly numbered on the front and rear insert face to facilitate identification during assembly, inspection and maintenance. Socket insulator contact cavities are of a bellmouth guided entry design. These chamfered lead-ins insure easy and positive mating of male contacts.

## MOD II Insertable/Removable Crimp Contact Inserts



MOD II insulations have one less rigid disc than their MOD I counterparts.

Individual unmounted contacts are crimped to their respective wires outside of the connector where ample working space is available. The crimping operation can be by hand or power operated tool.

Contacts with crimped joint intact are inserted one by one, with a hand tool, into the insulation premounted within the connector barrel shell.

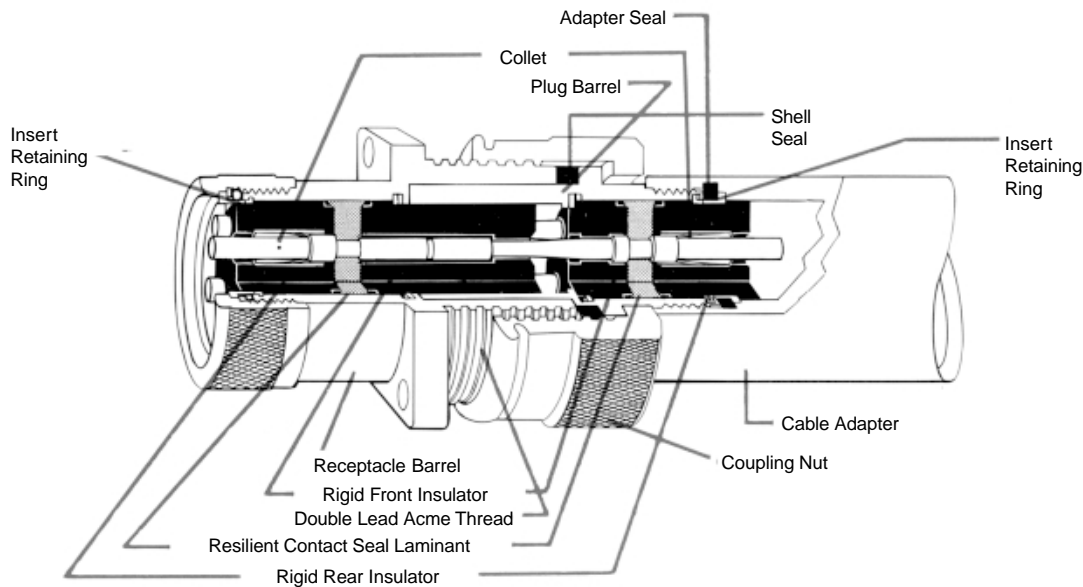
The resilient portion of the insert functions to seal around the contacts and prevent leakage through contact cavities, seal against leakage between the insert and shell, absorb

shock and vibration, provide electrical insulation between contacts and retain the contacts in the connector.

Contacts may be inserted and removed without degradation of the retention or environmental capability. The front rigid portion of the insert functions to stabilize and ensure positive alignment of the contacts.

Contact cavities are clearly numbered on the front and rear insert face to facilitate identification during assembling, inspection and maintenance. Socket insulator contact cavities are of a bellmouth guided entry design. These chamfered lead-ins ensure easy and positive mating of male contacts.

## MOD III Insertable/Removeable Crimp Collet Retained Contact



Three element contact inserts are factory installed and locked into position with a non-removable retaining ring. This "sandwich" assembled insert, for rear-insertable and released contacts consist of a resilient laminant seal interposed between two rigid plastic insulators. This proven design concept eliminates the potential failure possibilities normally found in all resilient or all rigid inserts by combining all the advantages of both the resilient and rigid mounting systems.

The resilient laminant insulator absorbs shock or vibration and allows contacts to adjust themselves freely. The resilient insulator affects a full and reliable seal around each contact when compressed by seating of the accessory hardware. In addition, the laminant also provides a seal between the connector insert and the internal bore of the plug or receptacle shell.

The rigid rear insulator supports and locks the beryllium copper collets. The rigid front insulator positions the forward contact-locating shoulder and the collet tines lock the rear shoulder of the contacts. The contacts are positively restrained against forward and rear movement. The main advantages of collet retention are lower insertion forces, eliminating need for insertion tools, and higher retention forces. Collet locking tines permit the contacts to be released and removed from the rear of the insert for quick and easy circuit changes.

Contact cavities are clearly numbered on the front and rear insert face to facilitate identification during assembly, inspection and maintenance. Socket insulator contact cavities are of a bellmouth guided entry design. These chamfered lead-ins ensure easy and positive mating of male contacts.

### Summary

The foregoing is a brief explanation of the three basic insert designs offered within this catalog. It offers different and distinct advantages for the cable terminator, electrician and production worker.

When the connector is in use, as a functional device the insert MOD design has no effect on the intermateability of the connector. When a configuration you have selected gives you a choice of MOD design, ask yourself the following questions:

1. Do you have a large quantity of connectors to apply? If you do, then the crimp removable series would be appropriate with its inherent timesaving advantages during terminations.
2. Are circuits likely to be changed often, i.e., would the connector function as a "patching device?" Here, too, the crimp versions with easily removed and installed contacts are advantageous.  
If a contact configuration is desired but is not shown, consult the factory. Insert arrangements are constantly being added to the line.

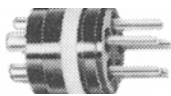


# Custom Build Your Own Connectors

**Power Connectors** – 20-30-60-100-200-325-700 Amperes, 1 thru 10 Contacts

**Control & Instrumentation Connectors** – 3 thru 143 Contacts

The following pages present connector sub-assemblies which are available and can be used in conjunction with the inserts listed.



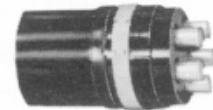
PIN INSERT  
CONFIGURATION



PLUG  
CONFIGURATION



RECEPTACLE  
CONFIGURATION



SOCKET INSERT  
CONFIGURATION

## Ordering Information

All plug and receptacle assemblies require two part numbers:

- A. The catalog number of the desired insert.
- B. The catalog number of the selected plug or receptacle hardware.

## To Order Complete Assemblies

1. Determine supply voltage, amperage and number of contacts desired.
2. Select insert configuration from pages 31-59. Write down Dash Number, Shell Size and MOD number of insert. Voltage and amperage information can be found on page 27. Example: 3#12 contacts – 27P (MALE) and 27S (FEMALE); MOD I; Shell Size 12 (page 32).
3. Select desired plug and receptacle hardware from pages 9-25. Make certain that the shell size of the hardware corresponds with the shell size of the desired insert. Determine outside diameter of cable. Example: Male Plug with Basket Weave. Cable is 3 conductor #12 (.635 outside diameter). ZPLK-1212-27P (page 15).

Female Receptacle mounted to Junction Box with 45° Angle Adapter and 1" Conduit Hub. ZRLBB-312-27S (page 21).

4. Order tools from pages 70-71.

## To Order Assemblies Without The Insert

(For large users stocking connector components in bulk)

1. If a MOD I insert will be used, order the hardware by the catalog number and eliminate the asterisk. Example: ZPLD-1212 (page 12).
2. If a MOD II insert will be used, order by the catalog number but substitute a 200 for the asterisk. Example: ZPLD-1212-200
3. MOD III inserts must be ordered assembled in their basic barrel (consult factory).

Please Read Carefully:

1.

Hardware with a longer cable housing should be used if the insert has:

A.

Any pressure contact – line or ground.

B.

More than 10 contacts-any size.

C.

More than 4 #10 or larger contacts.
2.

A jack coupling nut should be used if the insert has:

A.

A configuration with shorter relay contacts.

B.

A configuration of 37 or more contacts.

A JACK COUPLING NUT SHOULD NOT BE USED ON ANY POWER INSERT CONNECTOR THAT IS TO BE DISCONNECTED UNDER LOAD

3.

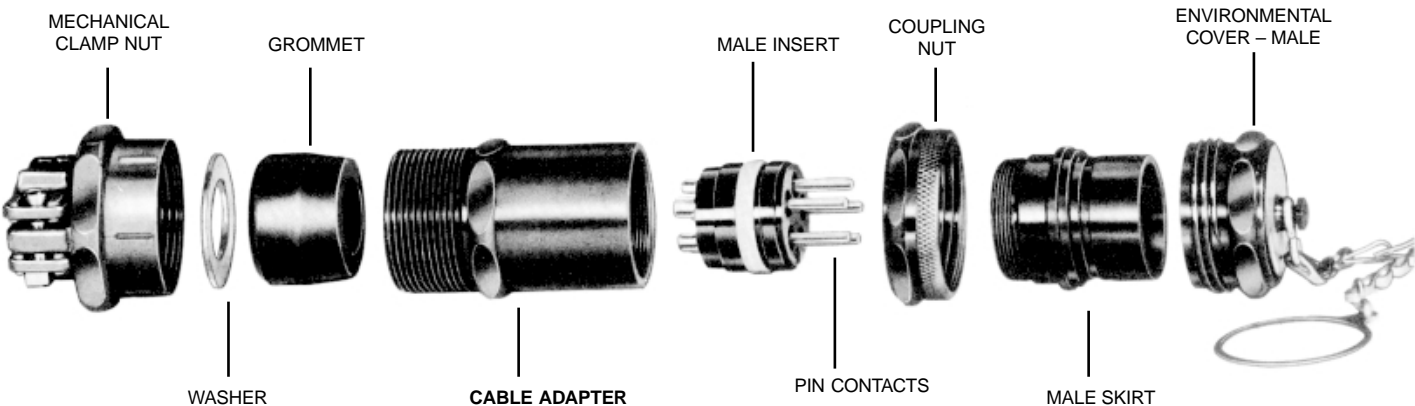
To insure proper coupling the following torque values should be used on the coupling nut:

| Shell Size | Torque Setting (lb. ft.) |
|------------|--------------------------|
| 12         | 11,0                     |
| 16         | 13.5                     |
| 20         | 15.5                     |
| C20        | 15.5                     |
| 24         | 23.0                     |
| C24        | 23.0                     |
| 28         | 31.0                     |
| C28        | 31.0                     |

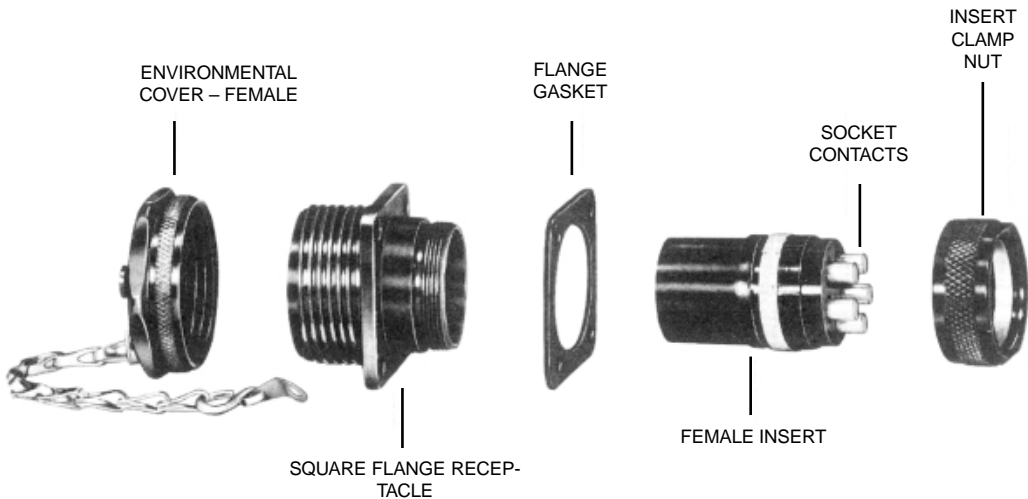
NOTE: The N.E.C. circuit breaking and non-circuit breaking ratings are based on test results of contacts and connectors. Consult the N.E.C. when selecting wire/cable for specific applications. Under certain conditions, a wire size may be rated higher or lower than our table indicates for a given contact size.

Connector Assemblies

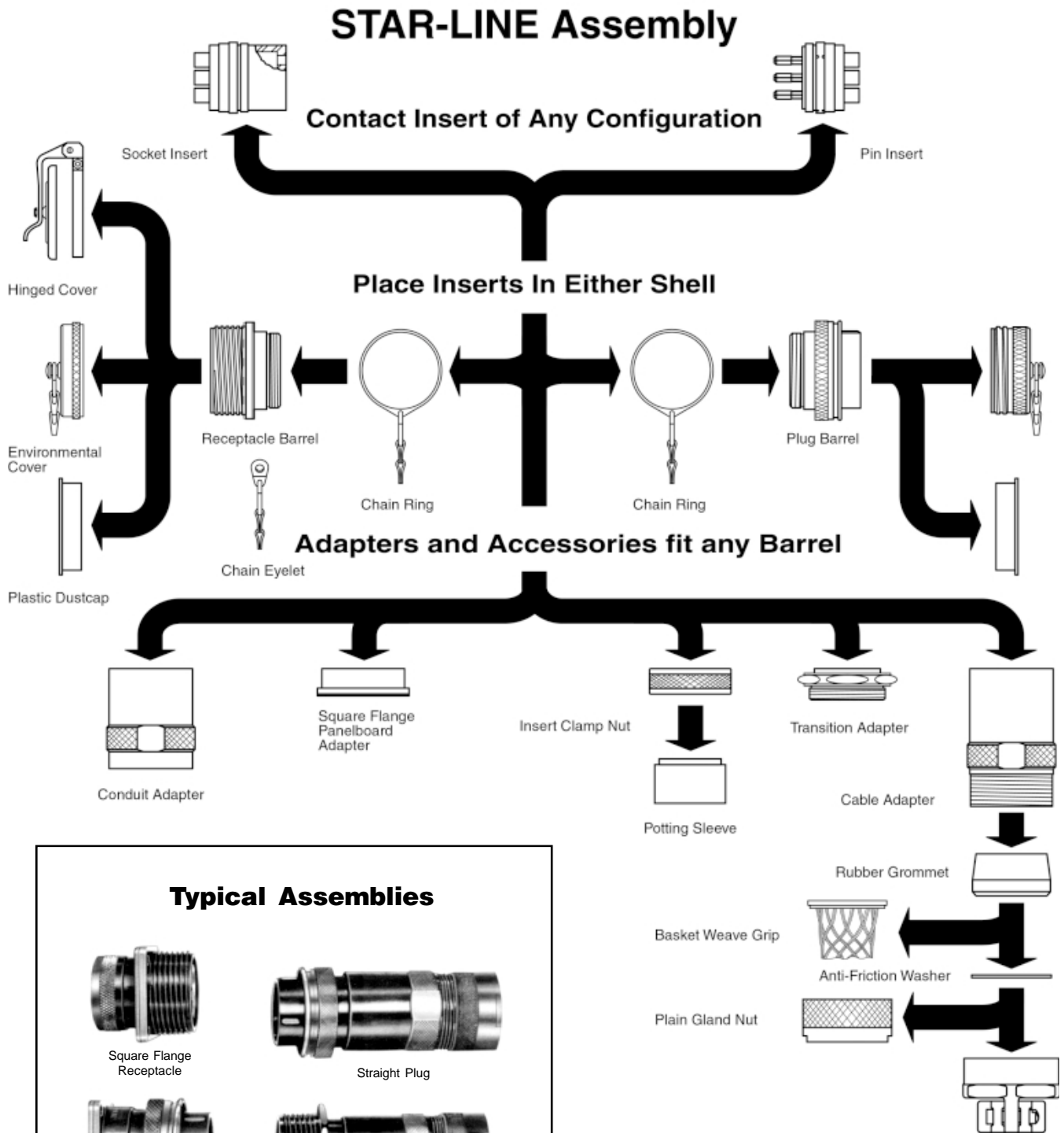
Typical MOD I Plug Components



Typical MOD I Receptacle Components



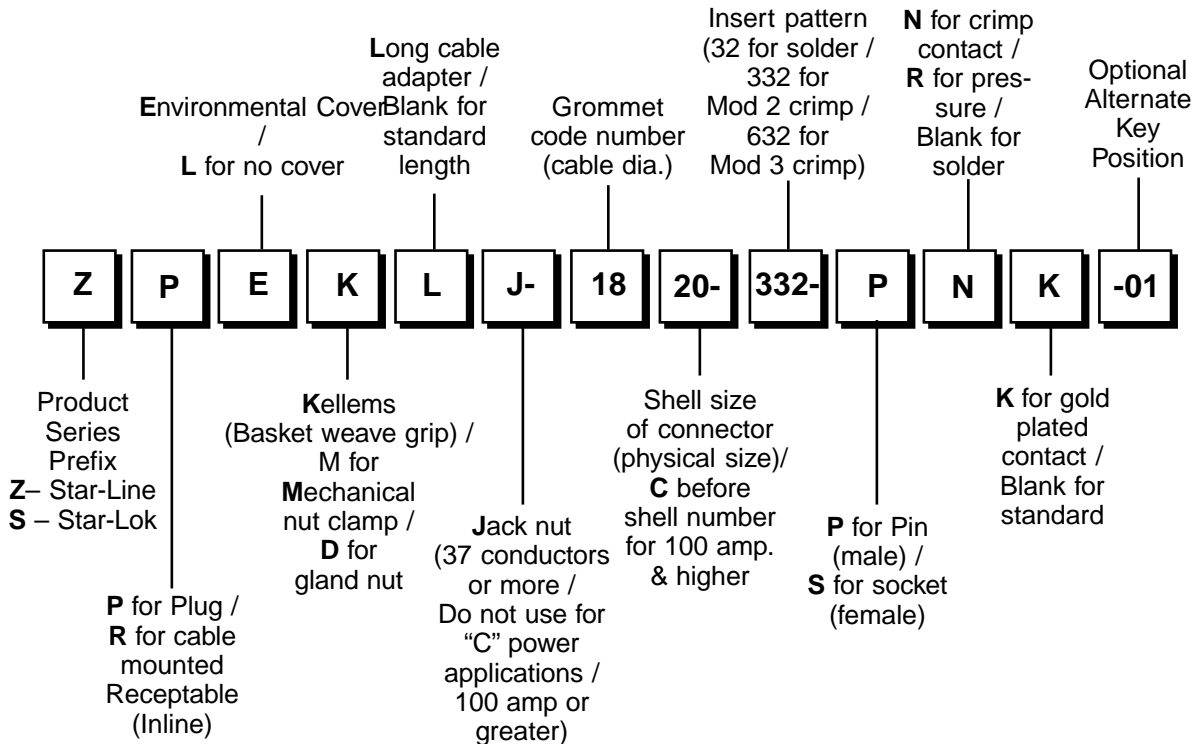
# Connector Basic Components



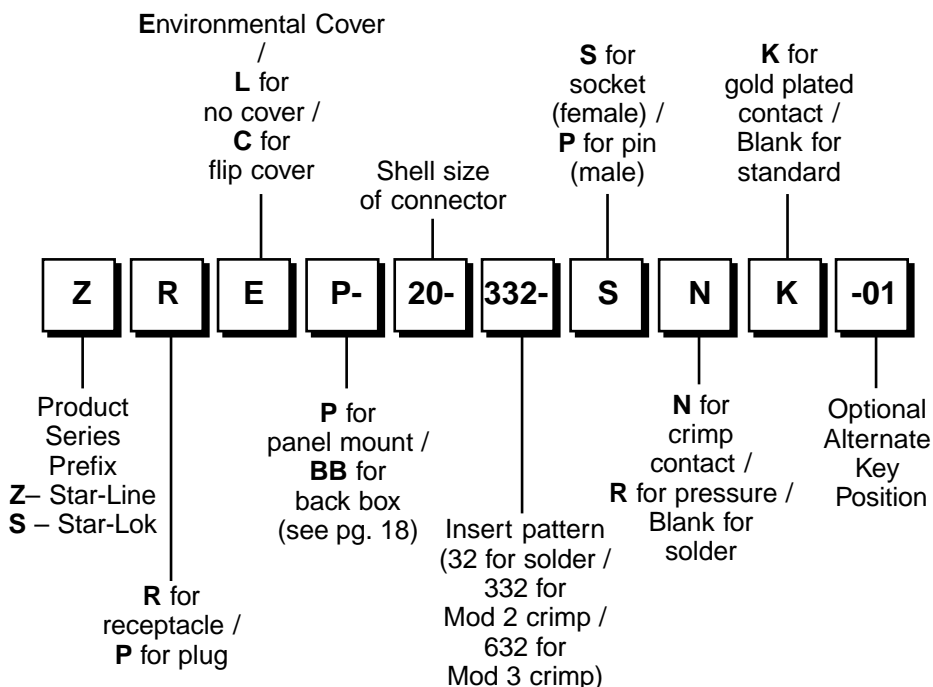


# Code Logic Star-Line & Star-Lok Series

## Cable Mounted Connectors

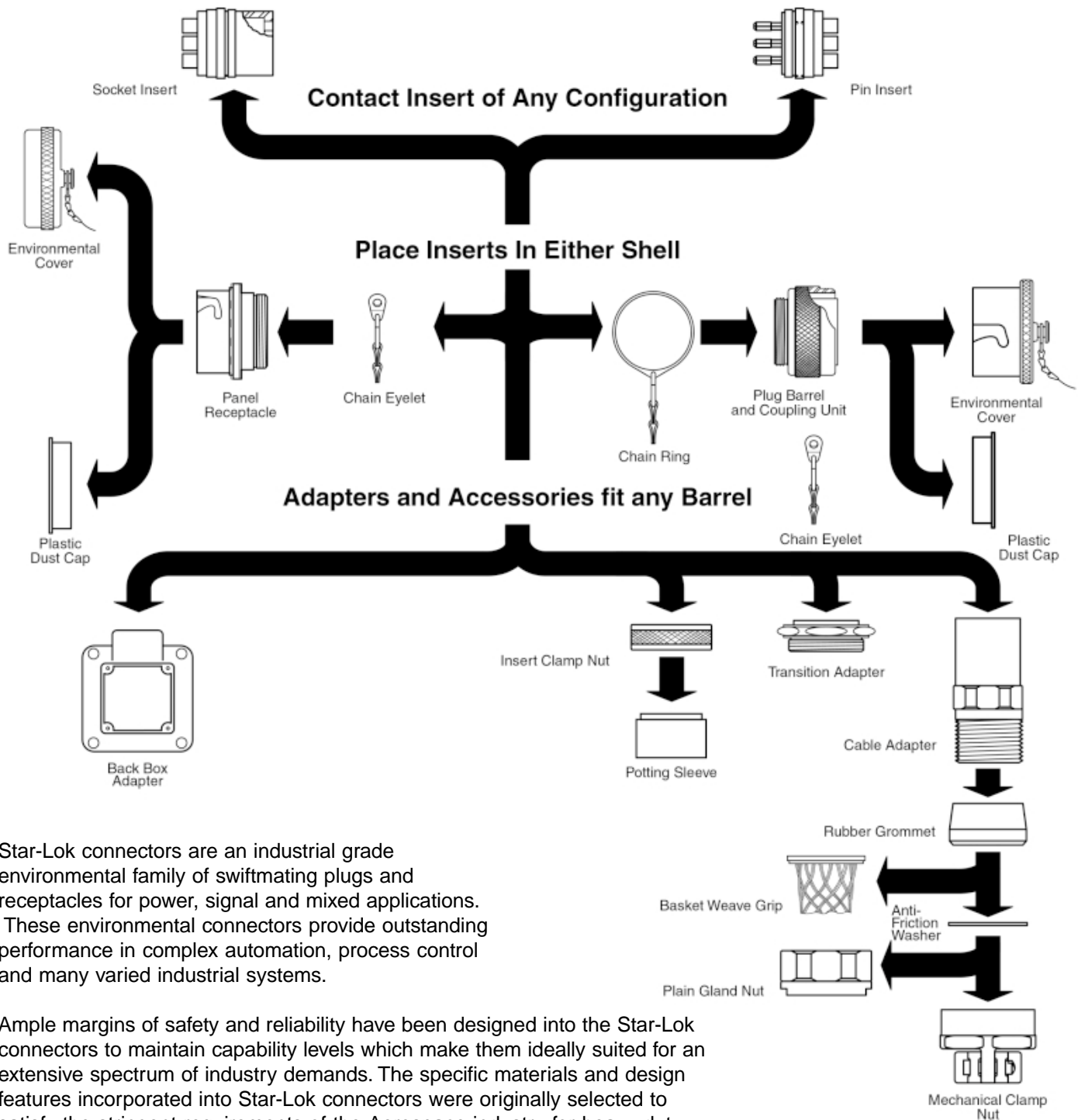


## Fixed Connectors



## Connector Basic Components

### STAR-LOK Assembly



Star-Lok connectors are an industrial grade environmental family of swiftmating plugs and receptacles for power, signal and mixed applications.

These environmental connectors provide outstanding performance in complex automation, process control and many varied industrial systems.

Ample margins of safety and reliability have been designed into the Star-Lok connectors to maintain capability levels which make them ideally suited for an extensive spectrum of industry demands. The specific materials and design features incorporated into Star-Lok connectors were originally selected to satisfy the stringent requirements of the Aerospace industry for heavy-duty connectors. These connectors combine electrical and mechanical capabilities that exceed the performance parameters established by the Military Specification MIL-C-5015.

# Straight Plug

## With Standard Compression Nut

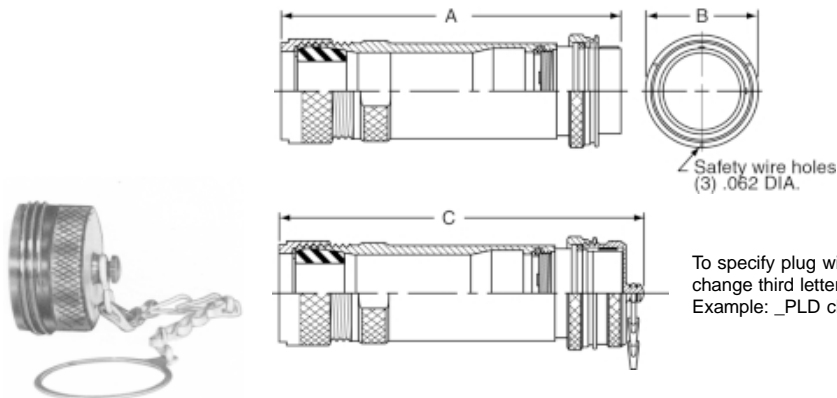
To specify a complete plug, substitute the Dash No. of the contact insert selected, for the Asterisk (\*) in the Catalog No. below .  
NOTE: The jack nut should not be used with current rupture insert configurations.

For Star-Line series add a "Z" to the beginning of catalog no. (Ex. ZPLD).  
For Star-Lok series add an "S" to the beginning of catalog no. (Ex. SPLD).



Types  
\_PLD \_PED

| Size<br>Cable                                                                  | Shell<br>Size           | Cat. No.<br>With Standard<br>Coupling Nut | DIMENSIONS<br>WITH STANDARD CABLE ADAPTER |         |         | Catalog No.<br>With Jack<br>Coupling Nut |
|--------------------------------------------------------------------------------|-------------------------|-------------------------------------------|-------------------------------------------|---------|---------|------------------------------------------|
|                                                                                |                         |                                           | A                                         | B       | C       |                                          |
| Select<br>from<br>Table Below<br>and<br>Substitute<br>Symbol No.<br>for Delta▲ | 12                      | _PLD-▲-12-*                               | 5-3/8                                     | 1-13/16 | 5-31/32 | ZPLDJ-▲-12-*                             |
|                                                                                | 16                      | _PLD-▲-16-*                               | 5-5/8                                     | 2-5/16  | 5-7/32  | ZPLDJ-▲-16-*                             |
|                                                                                | 20                      | _PLD-▲-20-*                               | 6-1/8                                     | 2-13/16 | 6-23/32 | ZPLDJ-▲-20-*                             |
|                                                                                | C20                     | _PLD-▲-C20-*                              | 6-5/8                                     | 2-13/16 | 7-7/32  | ZPLDJ-▲-C20-*                            |
|                                                                                | 24                      | _PLD-▲-24-*                               | 6-5/8                                     | 3-5/16  | 7-7/32  | ZPLDJ-▲-24-*                             |
|                                                                                | C24                     | _PLD-▲-C24-*                              | 7-1/8                                     | 3-5/16  | 7-23/32 | ZPLDJ-▲-C24-*                            |
|                                                                                | 28                      | ZPLD-▲-28-*                               | 7-1/8                                     | 3-13/16 | 7-23/32 | ZPLDJ-▲-28-*                             |
|                                                                                | C28                     | ZPLD-▲-C28-*                              | 7-5/8                                     | 3-13/16 | 8-7/32  | ZPLDJ-▲-C28-*                            |
|                                                                                | WITH LONG CABLE ADAPTER |                                           |                                           |         |         |                                          |
|                                                                                | 12                      | _PLDL-▲-12-*                              | 7-5/8                                     | 1-13/16 | 8-7/32  | ZPLDLJ-▲-12-*                            |
|                                                                                | 16                      | _PLDL-▲-16-*                              | 7-7/8                                     | 2-5/16  | 8-15/32 | ZPLDLJ-▲-16-*                            |
|                                                                                | 20                      | _PLDL-▲-20-*                              | 8-3/8                                     | 2-13/16 | 8-31/32 | ZPLDLJ-▲-20-*                            |
|                                                                                | C20                     | _PLDL-▲-C20-*                             | 8-7/8                                     | 2-13/16 | 9-15/32 | ZPLDLJ-▲-C20-*                           |
|                                                                                | 24                      | _PLDL-▲-24-*                              | 8-7/8                                     | 3-5/16  | 9-15/32 | ZPLDLJ-▲-24-*                            |
|                                                                                | C24                     | _PLDL-▲-C24-*                             | 9-3/8                                     | 3-5/16  | 9-31/32 | ZPLDLJ-▲-C24-*                           |
|                                                                                | 28                      | ZPLDL-▲-28-*                              | 9-1/8                                     | 3-13/16 | 9-23/32 | ZPLDLJ-▲-28-*                            |
|                                                                                | C28                     | ZPLDL-▲-C28-*                             | 9-5/8                                     | 3-13/16 | 10-7/32 | ZPLDLJ-▲-C28-*                           |



To specify plug with environmental cover,  
change third letter in Part No. "L" to "E".  
Example: \_PLD changes to \_PED.



**OIL-RESISTANT RUBBER GROMMETS—SYMBOL NUMBERS OF SIZES AVAILABLE** Substitute the symbol number for the Delta ▲  
in the catalog number of plug. Example: \_PLD-▲-12-\* for .500 to .625 Dia. Cable changes to \_PLD-10 12-\*

| Cable Dia.     | Shell<br>12 | Shell<br>16 | Shells<br>20 & C20 | Shells<br>24 & C24 | Shells<br>28 & C28 | Cable Dia.     | Shell<br>12 | Shell<br>16 | Shell<br>20 & C20 | Shells<br>24 & C24 | Shells<br>28 & C28 |
|----------------|-------------|-------------|--------------------|--------------------|--------------------|----------------|-------------|-------------|-------------------|--------------------|--------------------|
| .062 to .125   | 02          | —           | —                  | —                  | —                  | 1.500 to 1.625 | —           | —           | 26                | 26                 | 26                 |
| .125 to .250   | 04          | —           | —                  | —                  | —                  | 1.625 to 1.750 | —           | —           | 28                | 28                 | 28                 |
| .250 to .375   | 06          | 06          | —                  | —                  | —                  | 1.750 to 1.875 | —           | —           | 30                | 30                 | 30                 |
| .375 to .500   | 08          | 08          | —                  | —                  | —                  | 1.875 to 1.937 | —           | —           | 31                | —                  | —                  |
| .500 to .625   | 10          | 10          | 10                 | —                  | —                  | 1.937 to 2.000 | —           | —           | —                 | 32                 | 32                 |
| .625 to .750   | 12          | 12          | 12                 | —                  | —                  | 2.000 to 2.125 | —           | —           | —                 | 34                 | 34                 |
| .750 to .875   | 14          | 14          | 14                 | —                  | —                  | 2.125 to 2.250 | —           | —           | —                 | 36                 | 36                 |
| .875 to .937   | 15          | —           | —                  | —                  | —                  | 2.250 to 2.375 | —           | —           | —                 | 38                 | 38                 |
| .937 to 1.000  | —           | 16          | 16                 | 16                 | —                  | 2.375 to 2.437 | —           | —           | —                 | 39                 | —                  |
| 1.000 to 1.125 | —           | 18          | 18                 | 18                 | —                  | 2.437 to 2.500 | —           | —           | —                 | —                  | 40                 |
| 1.125 to 1.250 | —           | 20          | 20                 | 20                 | —                  | 2.500 to 2.625 | —           | —           | —                 | —                  | 42                 |
| 1.250 to 1.375 | —           | 22          | 22                 | 22                 | —                  | 2.625 to 2.750 | —           | —           | —                 | —                  | 44                 |
| 1.375 to 1.437 | —           | 23          | —                  | —                  | —                  | 2.750 to 2.875 | —           | —           | —                 | —                  | 46                 |
| 1.437 to 1.500 | —           | —           | 24                 | 24                 | 24                 |                |             |             |                   |                    |                    |



## Straight Plug

### With Mechanical Clamp Nut

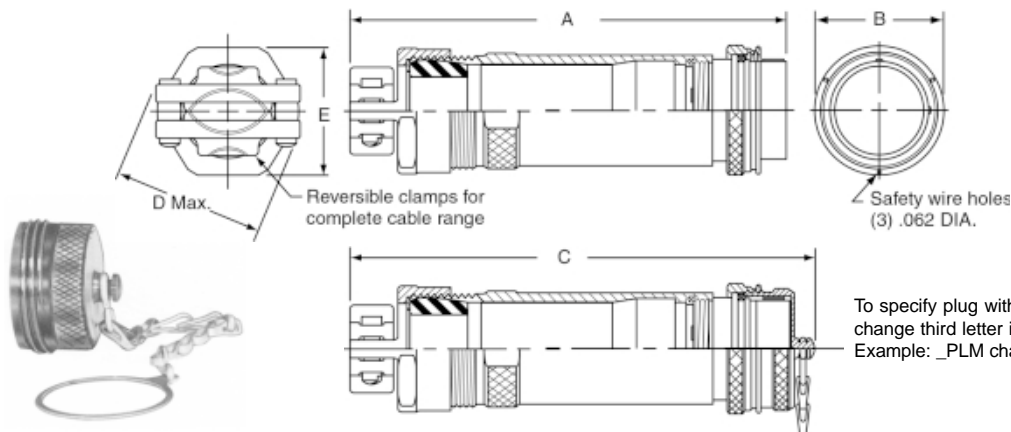
To specify a complete plug, substitute the Dash No. of the contact insert selected, for the Asterisk (\*) in the Catalog No. below.  
NOTE: The jack nut should not be used with current rupture insert configurations.



For Star-Line series add a "Z" to the beginning of catalog no. (Ex. ZPLD).  
For Star-Lok series add an "S" to the beginning of catalog no. (Ex. SPLD).

**Types**  
**\_PLM \_PEM**

| Size Cable                                                    | Shell Size              | Cat. No. With Standard Coupling Nut | DIMENSIONS WITH STANDARD CABLE ADAPTER |         |          |       |       | Catalog No. With Jack Coupling Nut |
|---------------------------------------------------------------|-------------------------|-------------------------------------|----------------------------------------|---------|----------|-------|-------|------------------------------------|
|                                                               |                         |                                     | A                                      | B       | C        | D     | E     |                                    |
| Select from Table Below and Substitute Symbol No. for Delta ▲ | 12                      | _PLM-▲-12-*                         | 6-1/8                                  | 1-13/16 | 6-23/32  | 2-3/8 | 1-3/4 | ZPLMJ-▲-12-*                       |
|                                                               | 16                      | _PLM-▲-16-*                         | 6-7/16                                 | 2-5/16  | 7-1/32   | 3     | 2-1/4 | ZPLMJ-▲-16-*                       |
|                                                               | 20                      | _PLM-▲-20-*                         | 7                                      | 2-13/16 | 7-19/32  | 3-3/4 | 2-3/4 | ZPLMJ-▲-20-*                       |
|                                                               | C20                     | _PLM-▲-C20-*                        | 7-1/2                                  | 2-13/16 | 8-3/32   | 3-3/4 | 2-3/4 | ZPLMJ-▲-C20-*                      |
|                                                               | 24                      | _PLM-▲-24-*                         | 7-9/16                                 | 3-5/16  | 8-5/32   | 4-1/2 | 3-1/4 | ZPLMJ-▲-24-*                       |
|                                                               | C24                     | _PLM-▲-C24-*                        | 8-1/16                                 | 3-5/16  | 8-21/32  | 4-1/2 | 3-1/4 | ZPLMJ-▲-C24-*                      |
|                                                               | 28                      | ZPLM-▲-28-*                         | 8-1/8                                  | 3-13/16 | 8-23/32  | 5-1/8 | 3-3/4 | ZPLMJ-▲-28-*                       |
|                                                               | C28                     | ZPLM-▲-C28-*                        | 8-5/8                                  | 3-13/16 | 9-7/32   | 5-1/8 | 3-3/4 | ZPLMJ-▲-C28-*                      |
|                                                               | WITH LONG CABLE ADAPTER |                                     |                                        |         |          |       |       |                                    |
|                                                               | 12                      | _PLML-▲-12-*                        | 8-3/8                                  | 1-13/16 | 8-31/32  | 2-3/8 | 1-3/4 | ZPLMLJ-▲-12-*                      |
|                                                               | 16                      | _PLML-▲-16-*                        | 8-11/16                                | 2-5/16  | 9-9/32   | 3     | 2-1/4 | ZPLMLJ-▲-16-*                      |
|                                                               | 20                      | _PLML-▲-20-*                        | 9-1/4                                  | 2-13/16 | 9-27/32  | 3-3/4 | 2-3/4 | ZPLMLJ-▲-20-*                      |
|                                                               | C20                     | _PLML-▲-C20-*                       | 9-3/4                                  | 2-13/16 | 10-11/32 | 3-3/4 | 2-3/4 | ZPLMLJ-▲-C20-*                     |
|                                                               | 24                      | _PLML-▲-24-*                        | 9-13/16                                | 3-5/16  | 10-13/32 | 4-1/2 | 3-1/4 | ZPLMLJ-▲-24-*                      |
|                                                               | C24                     | _PLML-▲-C24-*                       | 10-5/16                                | 3-5/16  | 10-29/32 | 4-1/2 | 3-1/4 | ZPLMLJ-▲-C24-*                     |
|                                                               | 28                      | ZPLML-▲-28-*                        | 10-1/8                                 | 3-13/16 | 10-23/32 | 5-1/8 | 3-3/4 | ZPLMLJ-▲-28-*                      |
|                                                               | C28                     | ZPLML-▲-C28-*                       | 10-5/8                                 | 3-13/16 | 11-7/32  | 5-1/8 | 3-3/4 | ZPLMLJ-▲-C28-*                     |



To specify plug with environmental cover, change third letter in Part No. 'L' to 'E'.  
Example: \_PLM changes to \_PEM.



**OIL-RESISTANT RUBBER GROMMETS—SYMBOL NUMBERS OF SIZES AVAILABLE** Substitute the symbol number for the Delta ▲ in the catalog number of plug. Example: \_PLM-▲-12-\* for .500 to .625 Dia. Cable changes to \_PLM-10 12-\*

| Cable Dia.     | Shell 12 | Shell 16 | Shells 20 & C20 | Shells 24 & C24 | Shells 28 & C28 | Cable Dia.     | Shell 12 | Shell 16 | Shell 20 & C20 | Shells 24 & C24 | Shells 28 & C28 |
|----------------|----------|----------|-----------------|-----------------|-----------------|----------------|----------|----------|----------------|-----------------|-----------------|
| .062 to .125   | 02       | —        | —               | —               | —               | 1.500 to 1.625 | —        | —        | 26             | 26              | 26              |
| .125 to .250   | 04       | —        | —               | —               | —               | 1.625 to 1.750 | —        | —        | 28             | 28              | 28              |
| .250 to .375   | 06       | 06       | —               | —               | —               | 1.750 to 1.875 | —        | —        | 30             | 30              | 30              |
| .375 to .500   | 08       | 08       | —               | —               | —               | 1.875 to 1.937 | —        | —        | 31             | —               | —               |
| .500 to .625   | 10       | 10       | 10              | —               | —               | 1.875 to 2.000 | —        | —        | —              | 32              | 32              |
| .625 to .750   | 12       | 12       | 12              | —               | —               | 2.000 to 2.125 | —        | —        | —              | 34              | 34              |
| .750 to .875   | 14       | 14       | 14              | —               | —               | 2.125 to 2.250 | —        | —        | —              | 36              | 36              |
| .875 to .937   | 15       | —        | —               | —               | —               | 2.250 to 2.375 | —        | —        | —              | 38              | 38              |
| .875 to 1.000  | —        | 16       | 16              | 16              | —               | 2.375 to 2.437 | —        | —        | —              | 39              | —               |
| 1.000 to 1.125 | —        | 18       | 18              | 18              | —               | 2.375 to 2.500 | —        | —        | —              | —               | 40              |
| 1.125 to 1.250 | —        | 20       | 20              | 20              | —               | 2.500 to 2.625 | —        | —        | —              | —               | 42              |
| 1.250 to 1.375 | —        | 22       | 22              | 22              | —               | 2.625 to 2.750 | —        | —        | —              | —               | 44              |
| 1.375 to 1.437 | —        | 23       | —               | —               | —               | 2.750 to 2.875 | —        | —        | —              | —               | 46              |
| 1.375 to 1.500 | —        | —        | 24              | 24              | 24              |                |          |          |                |                 |                 |

# Straight Plug

## With Conduit Adapter (for flexible conduit fittings)

To specify a complete plug, substitute the dash no. of the contact insert selected for the asterisk (\*) in the catalog no. below. NOTE: The jack nut should not be used with current rupture insert configurations.

**A PLUG WITH JACK COUPLING NUT SHOULD BE USED WITH INSERTS HAVING 37 OR MORE CONTACTS**

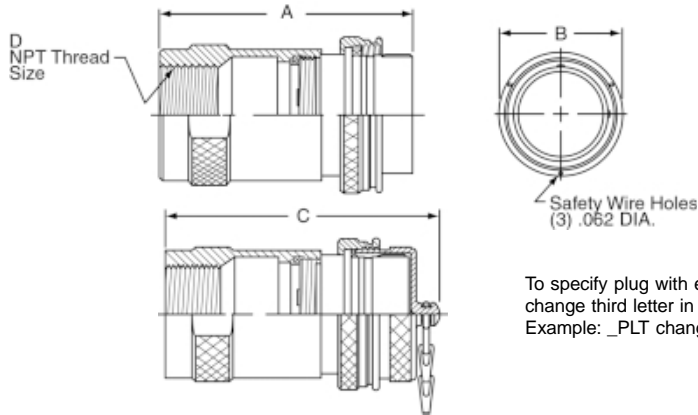
For Star-Line series add a "Z" to the beginning of catalog no. (Ex. ZPLT).

For Star-Lok series add an "S" to the beginning of catalog no. (Ex. SPLT).



**Types**  
**\_PLT \_PET**

| Shell Size | Size Conduit | Catalog No. With Standard Coupling Nut | DIMENSIONS |         |         |       | Catalog No. With Jack Coupling Nut |
|------------|--------------|----------------------------------------|------------|---------|---------|-------|------------------------------------|
|            |              |                                        | A          | B       | C       | D     |                                    |
| 12         | 3/4          | _PLT-2 12-*                            | 4-1/4      | 1-13/16 | 4-27-32 | 3/4   | ZPLTJ-2 12-*                       |
| 16         | 1-1/4        | _PLT-4 16-*                            | 4-3/8      | 2-5/16  | 4-31/32 | 1-1/4 | ZPLTJ-4 16-*                       |
| 20         | 1-1/2        | _PLT-5 20-*                            | 4-1/2      | 2-13/16 | 5-3/32  | 1-1/2 | ZPLTJ-5 20-*                       |
| C20        | 1-1/2        | _PLT-5 C20-*                           | 5          | 2-13/16 | 5-19/32 | 1-1/2 | ZPLTJ-5 C20-*                      |
| 24         | 2            | _PLT-6 24-*                            | 4-5/8      | 3-5/16  | 5-7/32  | 2     | ZPLTJ-6 24-*                       |
| C24        | 2            | _PLT-6 C24-*                           | 5-1/8      | 3-5/16  | 5-23/32 | 2     | ZPLTJ-6 C24-*                      |
| 28         | 2-1/2        | ZPLT-7 28-*                            | 5-3/32     | 3-13/16 | 5-11/16 | 2-1/2 | ZPLTJ-7 28-*                       |
| C28        | 2-1/2        | ZPLT-7 C28-*                           | 5-19/32    | 3-13/16 | 6-3/16  | 2-1/2 | ZPLTJ-7 C28-*                      |



To specify plug with environmental cover, change third letter in Part No. "L" to "E". Example: \_PLT changes to \_PET.

# Straight Male Plug

## PANEL MOUNT (Not available in Star-Lok)

To specify a complete plug, substitute the dash no. of the contact insert selected for the asterisk (\*) in the catalog no. below.

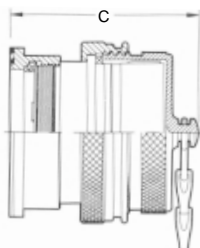
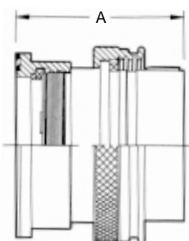
NOTE The jack nut should not be used with current rupture insert configurations

**A PLUG WITH JACK COUPLING NUT SHOULD BE USED WITH INSERTS HAVING 37 OR MORE CONTACTS**

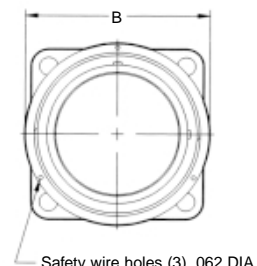
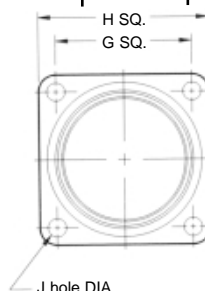


**Types**  
**ZPLP ZPEP**

| Shell Size | Open Back                          | Catalog No. With Standard Coupling Nut | DIMENSIONS |         |         |         |       |       | Catalog No. With Jack Coupling Nut |
|------------|------------------------------------|----------------------------------------|------------|---------|---------|---------|-------|-------|------------------------------------|
|            |                                    |                                        | A          | B       | C       | G       | H     | J     |                                    |
| 12         | Use with or without Potting Sleeve | ZPLP-12-*                              | 2-3/8      | 1-13/16 | 2-31/32 | 1-17/64 | 1-5/8 | 3/16  | ZPLPJ- 12-*                        |
| 16         |                                    | ZPLP-16-*                              | 2-13/32    | 2-5/16  | 3       | 1-11/16 | 2-1/8 | 7/32  | ZPLPJ- 16-*                        |
| 20         |                                    | ZPLP-20-*                              | 2-7/16     | 2-13/16 | 3-1/32  | 2-3/32  | 2-5/8 | 9/32  | ZPLPJ- 20-*                        |
| C20        |                                    | ZPLP-C20-*                             | 2-15/16    | 2-13/16 | 3-17/32 | 2-3/32  | 2-5/8 | 9/32  | ZPLPJ- C20-*                       |
| 24         |                                    | ZPLP-24-*                              | 2-15/32    | 3-5/16  | 3-1/16  | 2-17/32 | 3-1/8 | 11/32 | ZPLPJ- 24-*                        |
| C24        |                                    | ZPLP-C24-*                             | 2-31/32    | 3-5/16  | 3-9/16  | 2-17/32 | 3-1/8 | 11/32 | ZPLPJ- C24-*                       |
| 28         |                                    | ZPLP-28-*                              | 2-15/32    | 3-13/16 | 3-1/16  | 3-1/32  | 3-3/4 | 11/32 | ZPLPJ- 28-*                        |
| C28        |                                    | ZPLP-C28-*                             | 2-31/32    | 3-13/16 | 3-9/16  | 3-1/32  | 3-3/4 | 11/32 | ZPLPJ- C28-*                       |



To specify plug with environmental cover, change third letter in Part No. "L" to "E". Example: ZPLP changes to ZPEP.



# Straight Plug

## WITH BASKET WEAVE CABLE GRIP



Types  
\_PLK \_PEK

To specify a complete plug, substitute the Dash No. of the contact insert selected for the asterisk (\*) in the catalog no. below.

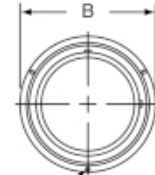
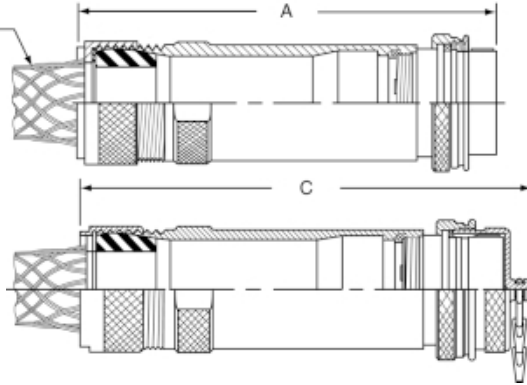
NOTE: The jack nut should not be used with current rupture insert configurations.

**A PLUG WITH JACK COUPLING NUT SHOULD BE USED WITH INSERTS HAVING 37 OR MORE CONTACTS**

For Star-Line series add a "Z" to the beginning of catalog no. (Ex. ZPLK).  
For Star-Lok series add an "S" to the beginning of catalog no. (Ex. SPLK).

| Size Shell<br>Cable                                                             | Catalog<br>No.<br>Size  | DIMENSIONS<br>With Standard<br>Coupling Nut | Catalog No.<br>WITH STANDARD CABLE ADAPTER |         |         | With Jack<br>Coupling Nut |
|---------------------------------------------------------------------------------|-------------------------|---------------------------------------------|--------------------------------------------|---------|---------|---------------------------|
|                                                                                 |                         |                                             | A                                          | B       | C       |                           |
| Select<br>from<br>Table Below<br>and<br>Substitute<br>Symbol No.<br>for Delta ▲ | 12                      | _PLK-▲-12-*                                 | 5-3/8                                      | 1-13/16 | 5-31/32 | ZPLKJ-▲-12-*              |
|                                                                                 | 16                      | _PLK-▲-16-*                                 | 5-5/8                                      | 2-5/16  | 6-7/32  | ZPLKJ-▲-16-*              |
|                                                                                 | 20                      | _PLK-▲-20-*                                 | 6-1/8                                      | 2-13/16 | 6-23/32 | ZPLKJ-▲-20-*              |
|                                                                                 | C20                     | _PLK-▲-C20-*                                | 6-5/8                                      | 2-13/16 | 7-7/32  | ZPLKJ-▲-C20-*             |
|                                                                                 | 24                      | _PLK-▲-24-*                                 | 6-5/8                                      | 3-5/16  | 7-7/32  | ZPLKJ-▲-24-*              |
|                                                                                 | C24                     | _PLK-▲-C24-*                                | 7-1/8                                      | 3-5/16  | 7-23/32 | ZPLKJ-▲-C24-*             |
|                                                                                 | 28                      | ZPLK-▲-28-*                                 | 7-1/8                                      | 3-13/16 | 7-23/32 | ZPLKJ-▲-28-*              |
|                                                                                 | C28                     | ZPLK-▲-C28-*                                | 7-5/8                                      | 3-13/16 | 8-7/32  | ZPLKJ-▲-C28-*             |
|                                                                                 | WITH LONG CABLE ADAPTER |                                             |                                            |         |         |                           |
|                                                                                 | 12                      | _PLKL-▲-12-*                                | 7-5/8                                      | 1-13/16 | 8-7/32  | ZPLKJ-▲-12-*              |
|                                                                                 | 16                      | _PLKL-▲-16-*                                | 7-7/8                                      | 2-5/16  | 8-15/32 | ZPLKJ-▲-16-*              |
|                                                                                 | 20                      | _PLKL-▲-20-*                                | 8-3/8                                      | 2-13/16 | 8-31/32 | ZPLKJ-▲-20-*              |
|                                                                                 | C20                     | _PLKL-▲-C20-*                               | 8-7/8                                      | 2-13/16 | 9-15/32 | ZPLKJ-▲-C20-*             |
|                                                                                 | 24                      | _PLKL-▲-24-*                                | 8-7/8                                      | 3-5/16  | 9-15/32 | ZPLKJ-▲-24-*              |
|                                                                                 | C24                     | _PLKL-▲-C24-*                               | 9-3/8                                      | 3-5/16  | 9-31/32 | ZPLKJ-▲-C24-*             |
|                                                                                 | 28                      | ZPLKL-▲-28-*                                | 9-1/8                                      | 3-13/16 | 9-23/32 | ZPLKJ-▲-28-*              |
|                                                                                 | C28                     | ZPLKL-▲-C28-*                               | 9-5/8                                      | 3-13/16 | 10-7/32 | ZPLKJ-▲-C28-*             |

See cable grip  
components page  
for basket weave  
grip lengths



Safety wire holes  
(3) .062 DIA.

To specify plug with environmental cover,  
change third letter in Part No. "L" to "E".  
Example: \_PLK changes to \_PEK.

### OIL-RESISTANT RUBBER GROMMETS—SYMBOL NUMBERS OF SIZES AVAILABLE

Substitute the symbol number for the Delta s in the Catalog Number of Plug.

Example: \_PLK-▲-12-\* for .500 to .625 Dia. Cable changes to \_PLD-10 12-\*

| Cable Dia.     | Shell<br>12 | Shell<br>16 | Shells<br>20 & C20 | Shells<br>24 & C24 | Shells<br>28 & C28 | Cable Dia.     | Shell<br>12 | Shell<br>16 | Shell<br>20 & C20 | Shells<br>24 & C24 | Shells<br>28 & C28 |
|----------------|-------------|-------------|--------------------|--------------------|--------------------|----------------|-------------|-------------|-------------------|--------------------|--------------------|
| .062 to .125   | 02          | —           | —                  | —                  | —                  | 1.500 to 1.625 | —           | —           | 26                | 26                 | 26                 |
| .125 to .250   | 04          | —           | —                  | —                  | —                  | 1.625 to 1.750 | —           | —           | 28                | 28                 | 28                 |
| .250 to .375   | 06          | 06          | —                  | —                  | —                  | 1.750 to 1.875 | —           | —           | 30                | 30                 | 30                 |
| .375 to .500   | 08          | 08          | —                  | —                  | —                  | 1.875 to 1.937 | —           | —           | 31                | —                  | —                  |
| .500 to .625   | 10          | 10          | 10                 | —                  | —                  | 1.875 to 2.000 | —           | —           | —                 | 32                 | 32                 |
| .625 to .750   | 12          | 12          | 12                 | —                  | —                  | 2.000 to 2.125 | —           | —           | —                 | 34                 | 34                 |
| .750 to .875   | 14          | 14          | 14                 | —                  | —                  | 2.125 to 2.250 | —           | —           | —                 | 36                 | 36                 |
| .875 to .937   | 15          | —           | —                  | —                  | —                  | 2.250 to 2.375 | —           | —           | —                 | 38                 | 38                 |
| .875 to 1.000  | —           | 16          | 16                 | 16                 | —                  | 2.375 to 2.437 | —           | —           | —                 | 39                 | —                  |
| 1.000 to 1.125 | —           | 18          | 18                 | 18                 | —                  | 2.437 to 2.500 | —           | —           | —                 | —                  | 40                 |
| 1.125 to 1.250 | —           | 20          | 20                 | 20                 | —                  | 2.500 to 2.625 | —           | —           | —                 | —                  | 42                 |
| 1.250 to 1.375 | —           | 22          | 22                 | 22                 | —                  | 2.625 to 2.750 | —           | —           | —                 | —                  | 44                 |
| 1.375 to 1.437 | —           | 23          | —                  | —                  | —                  | 2.750 to 2.875 | —           | —           | —                 | —                  | 46                 |
| 1.375 to 1.500 | —           | —           | 24                 | 24                 | 24                 |                |             |             |                   |                    |                    |



# In-Line Receptacle

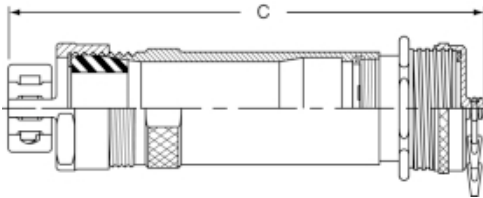
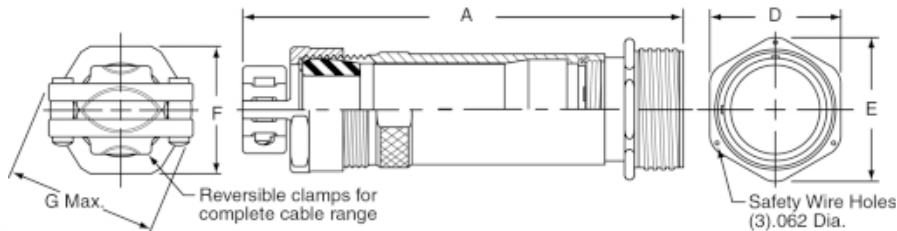
## With Mechanical Clamp Nut

To specify a complete receptacle, substitute the Dash No. of the contact insert selected for the Asterisk (\*) in the Catalog below.



Types  
**ZRLM ZREM**

| Size Cable                                                    | Shell Size                     | Cat. No. With Standard Coupling Nut | DIMENSIONS |          |       |         |       |       |
|---------------------------------------------------------------|--------------------------------|-------------------------------------|------------|----------|-------|---------|-------|-------|
|                                                               |                                |                                     | A          | C        | D     | E       | F     | G     |
| Select from Table Below and Substitute Symbol No. for Delta ▲ | 12                             | ZRLM-▲-12-*                         | 6-1/8      | 6-3/4    | 1-3/4 | 1-61/64 | 1-3/4 | 2-3/8 |
|                                                               | 16                             | ZRLM-▲-16-*                         | 6-7/16     | 7-1/16   | 2-1/4 | 2-31/64 | 2-1/4 | 3     |
|                                                               | 20                             | ZRLM-▲-20-*                         | 7          | 7-5/8    | 2-3/4 | 3-1/32  | 2-3/4 | 3-3/4 |
|                                                               | C20                            | ZRLM-▲-C20-*                        | 7-1/2      | 8-1/8    | 2-3/4 | 3-1/32  | 2-3/4 | 3-3/4 |
|                                                               | 24                             | ZRLM-▲-24-*                         | 7-9/16     | 8-3/16   | 3-1/4 | 3-9/16  | 3-1/4 | 4-1/2 |
|                                                               | C24                            | ZRLM-▲-C24-*                        | 8-1/16     | 8-11/16  | 3-1/4 | 3-9/16  | 3-1/4 | 4-1/2 |
|                                                               | 28                             | ZRLM-▲-28-*                         | 8-1/8      | 8-3/4    | 3-3/4 | 4-1/16  | 3-3/4 | 5-1/8 |
|                                                               | C28                            | ZRLM-▲-C28-*                        | 8-5/8      | 9-1/4    | 3-3/4 | 4-1/16  | 3-3/4 | 5-1/8 |
|                                                               | <b>WITH LONG CABLE ADAPTER</b> |                                     |            |          |       |         |       |       |
|                                                               | 12                             | ZRLML-▲-12-*                        | 8-3/8      | 9        | 1-3/4 | 1-61/64 | 1-3/4 | 2-3/8 |
|                                                               | 16                             | ZRLML-▲-16-*                        | 8-11/16    | 9-5/16   | 2-1/4 | 2-31/64 | 2-1/4 | 3     |
|                                                               | 20                             | ZRLML-▲-20-*                        | 9-1/4      | 9-7/8    | 2-3/4 | 3-1/32  | 2-3/4 | 3-3/4 |
|                                                               | C20                            | ZRLML-▲-C20-*                       | 9-3/4      | 10-3/8   | 2-3/4 | 3-1/32  | 2-3/4 | 3-3/4 |
|                                                               | 24                             | ZRLML-▲-24-*                        | 9-13/16    | 10-7/16  | 3-1/4 | 3-9/16  | 3-1/4 | 4-1/2 |
|                                                               | C24                            | ZRLML-▲-C24-*                       | 10-5/16    | 10-15/16 | 3-1/4 | 3-9/16  | 3-1/4 | 4-1/2 |
|                                                               | 28                             | ZRLML-▲-28-*                        | 10-1/8     | 10-3/4   | 3-3/4 | 4-1/16  | 3-3/4 | 5-1/8 |
|                                                               | C28                            | ZRLML-▲-C28-*                       | 10-5/8     | 11-1/4   | 3-3/4 | 4-1/16  | 3-3/4 | 5-1/8 |



To specify receptacle with threaded environmental cover, change third letter in Part No. "L" to "E".  
Example: ZRLM changes to ZREM.



### OIL-RESISTANT RUBBER GROMMETS—SYMBOL NUMBERS OF SIZES AVAILABLE

Substitute the symbol number for the Delta ▲ in the catalog number of plug.  
Example: ZRLM-▲-12-\* for .500 to .625 Dia. cable changes to ZRLM-10 12-\*

| Cable Dia.     | Shell 12 | Shell 16 | Shells 20 & C20 | Shells 24 & C24 | Shells 28 & C28 | Cable Dia.     | Shell 12 | Shell 16 | Shell 20 & C20 | Shells 24 & C24 | Shells 28 & C28 |
|----------------|----------|----------|-----------------|-----------------|-----------------|----------------|----------|----------|----------------|-----------------|-----------------|
| .062 to .125   | 02       | —        | —               | —               | —               | 1.500 to 1.625 | —        | —        | 26             | 26              | 26              |
| .125 to .250   | 04       | —        | —               | —               | —               | 1.625 to 1.750 | —        | —        | 28             | 28              | 28              |
| .250 to .375   | 06       | 06       | —               | —               | —               | 1.750 to 1.875 | —        | —        | 30             | 30              | 30              |
| .375 to .500   | 08       | 08       | —               | —               | —               | 1.875 to 1.937 | —        | —        | 31             | —               | —               |
| .500 to .625   | 10       | 10       | 10              | —               | —               | 1.875 to 2.000 | —        | —        | —              | 32              | 32              |
| .625 to .750   | 12       | 12       | 12              | —               | —               | 2.000 to 2.125 | —        | —        | —              | 34              | 34              |
| .750 to .875   | 14       | 14       | 14              | —               | —               | 2.125 to 2.250 | —        | —        | —              | 36              | 36              |
| .875 to .937   | 15       | —        | —               | —               | —               | 2.250 to 2.375 | —        | —        | —              | 38              | 38              |
| .875 to 1.000  | —        | 16       | 16              | 16              | —               | 2.375 to 2.437 | —        | —        | —              | 39              | —               |
| 1.000 to 1.125 | —        | 18       | 18              | 18              | —               | 2.437 to 2.500 | —        | —        | —              | —               | 40              |
| 1.125 to 1.250 | —        | 20       | 20              | 20              | —               | 2.500 to 2.625 | —        | —        | —              | —               | 42              |
| 1.250 to 1.375 | —        | 22       | 22              | 22              | —               | 2.625 to 2.750 | —        | —        | —              | —               | 44              |
| 1.375 to 1.437 | —        | 23       | —               | —               | —               | 2.750 to 2.875 | —        | —        | —              | —               | 46              |
| 1.375 to 1.500 | —        | —        | 24              | 24              | 24              |                |          |          |                |                 |                 |

# In-Line Receptacle

## With Standard Compression Nut

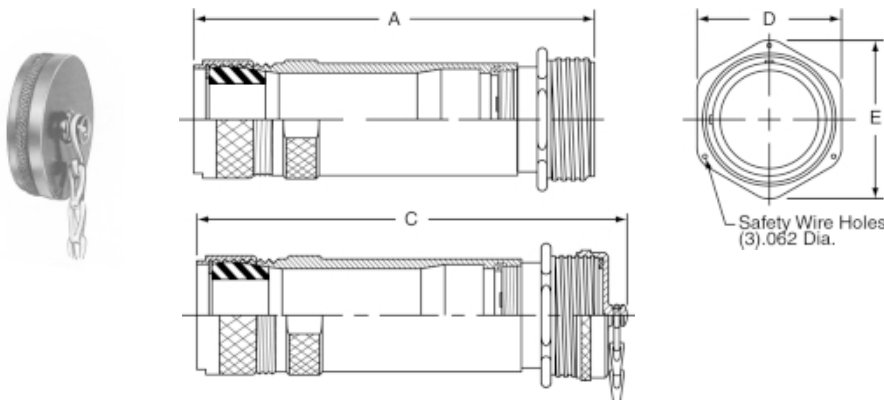
To specify a complete receptacle, substitute the dash no. of the contact insert selected for the asterisk (\*) in the catalog no. below.



**Types**  
**ZRLD ZRED**

| Size Cable                                                    | Shell Size                     | Cat. No. With Standard Coupling Nut | Dimensions |        |       |         |
|---------------------------------------------------------------|--------------------------------|-------------------------------------|------------|--------|-------|---------|
|                                                               |                                |                                     | A          | C      | D     | E       |
| Select from Table Below and Substitute Symbol No. for Delta ▲ | 12                             | ZRLD-▲-12-*                         | 5-3/8      | 6      | 1-3/4 | 1-61/64 |
|                                                               | 16                             | ZRLD-▲-16-*                         | 5-5/8      | 6-1/4  | 2-1/4 | 2-31/64 |
|                                                               | 20                             | ZRLD-▲-20-*                         | 6-1/8      | 6-3/4  | 2-3/4 | 3-1/32  |
|                                                               | C20                            | ZRLD-▲-C20-*                        | 6-5/8      | 7-1/4  | 2-3/4 | 3-1/32  |
|                                                               | 24                             | ZRLD-▲-24-*                         | 6-5/8      | 7-1/4  | 3-1/4 | 3-9/16  |
|                                                               | C24                            | ZRLD-▲-C24-*                        | 7-1/8      | 7-3/4  | 3-1/4 | 3-9/16  |
|                                                               | 28                             | ZRLD-▲-28-*                         | 7-1/8      | 7-3/4  | 3-3/4 | 4-1/16  |
|                                                               | C28                            | ZRLD-▲-C28-*                        | 7-5/8      | 8-1/4  | 3-3/4 | 4-1/16  |
|                                                               | <b>With Long Cable Adapter</b> |                                     |            |        |       |         |
|                                                               | 12                             | ZRLDL-▲-12-*                        | 7-5/8      | 8-1/4  | 1-3/4 | 1-61/64 |
|                                                               | 16                             | ZRLDL-▲-16-*                        | 7-7/8      | 8-1/2  | 2-1/4 | 2-31/64 |
|                                                               | 20                             | ZRLDL-▲-20-*                        | 8-3/8      | 9      | 2-3/4 | 3-1/32  |
|                                                               | C20                            | ZRLDL-▲-C20-*                       | 8-7/8      | 9-1/2  | 2-3/4 | 3-1/32  |
|                                                               | 24                             | ZRLDL-▲-24-*                        | 8-7/8      | 9-1/2  | 3-1/4 | 3-9/16  |
|                                                               | C24                            | ZRLDL-▲-C24-*                       | 9-3/8      | 10     | 3-1/4 | 3-9/16  |
|                                                               | 28                             | ZRLDL-▲-28-*                        | 9-1/8      | 9-3/4  | 3-3/4 | 4-1/16  |
|                                                               | C28                            | ZRLDL-▲-C28-*                       | 9-5/8      | 10-1/4 | 3-3/4 | 4-1/16  |

To specify receptacle with threaded environmental cover, change third letter in Part No. "L" to "E".  
Example: ZRLD changes to ZRED.



### OIL-RESISTANT RUBBER GROMMETS—SYMBOL NUMBERS OF SIZES AVAILABLE

Substitute the symbol number Delta in the catalog number of plug.

Example: ZRLD-▲-12-\* for .500 to .625 Dia. Cable changes to ZRLD-10 12-\*

| Cable Dia.     | Shell 12 | Shell 16 | Shells 20 & C20 | Shells 24 & C24 | Shells 28 & C28 | Cable Dia.     | Shell 12 | Shell 16 | Shell 20 & C20 | Shells 24 & C24 | Shells 28 & C28 |
|----------------|----------|----------|-----------------|-----------------|-----------------|----------------|----------|----------|----------------|-----------------|-----------------|
| .062 to .125   | 02       | —        | —               | —               | —               | 1.500 to 1.625 | —        | —        | 26             | 26              | 26              |
| .125 to .250   | 04       | —        | —               | —               | —               | 1.625 to 1.750 | —        | —        | 28             | 28              | 28              |
| .250 to .375   | 06       | 06       | —               | —               | —               | 1.750 to 1.875 | —        | —        | 30             | 30              | 30              |
| .375 to .500   | 08       | 08       | —               | —               | —               | 1.875 to 1.937 | —        | —        | 31             | —               | —               |
| .500 to .625   | 10       | 10       | 10              | —               | —               | 1.875 to 2.000 | —        | —        | —              | 32              | 32              |
| .625 to .750   | 12       | 12       | 12              | —               | —               | 2.000 to 2.125 | —        | —        | —              | 34              | 34              |
| .750 to .875   | 14       | 14       | 14              | —               | —               | 2.125 to 2.250 | —        | —        | —              | 36              | 36              |
| .875 to .937   | 15       | —        | —               | —               | —               | 2.250 to 2.375 | —        | —        | —              | 38              | 38              |
| .875 to 1.000  | —        | 16       | 16              | 16              | —               | 2.375 to 2.437 | —        | —        | —              | 39              | —               |
| 1.000 to 1.125 | —        | 18       | 18              | 18              | —               | 2.437 to 2.500 | —        | —        | —              | —               | 40              |
| 1.125 to 1.250 | —        | 20       | 20              | 20              | —               | 2.500 to 2.625 | —        | —        | —              | —               | 42              |
| 1.250 to 1.375 | —        | 22       | 22              | 22              | —               | 2.625 to 2.750 | —        | —        | —              | —               | 44              |
| 1.375 to 1.437 | —        | 23       | —               | —               | —               | 2.750 to 2.875 | —        | —        | —              | —               | 46              |
| 1.375 to 1.500 | —        | —        | 24              | 24              | 24              |                |          |          |                |                 |                 |

# In-Line Receptacle

## With Conduit Adapter

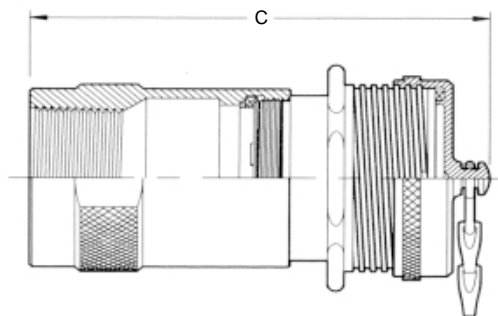
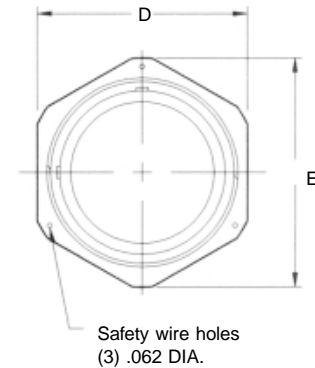
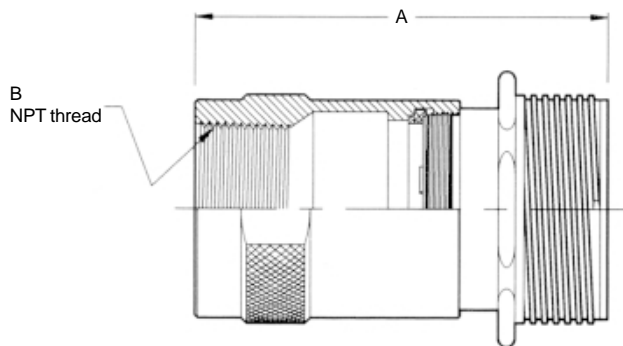
(for flexible conduit fittings)



**Types**  
**ZRLT ZRET**

To specify a complete receptacle, substitute the Dash No. of the contact insert selected, for the Asterisk (\*) in the Catalog No. below.  
To specify receptacle with threaded environmental cover, change third letter in Part NO. "L" to "E".

| Shell Size | Size Conduit | Cat. No.     | Dimensions |       |         |       |         |
|------------|--------------|--------------|------------|-------|---------|-------|---------|
|            |              |              | A          | B     | C       | D     | E       |
| 12         | 3/4          | ZRLT-2 12-*  | 4-1/4      | 3/4   | 4-7/8   | 1-3/8 | 1-61/64 |
| 16         | 1-1/4        | ZRLT-4 16-*  | 4-3/8      | 1-1/4 | 5       | 2-1/4 | 2-15/32 |
| 20         | 1-1/2        | ZRLT-5 20-*  | 4-1/2      | 1-1/2 | 5-1/8   | 2-3/4 | 3-1/32  |
| C20        | 1-1/2        | ZRLT-5 C20-* | 5          | 1-1/2 | 5-5/8   | 2-3/4 | 3-1/32  |
| 24         | 2            | ZRLT-6 24-*  | 4-5/8      | 2     | 5-1/4   | 3-1/4 | 3-9/16  |
| C24        | 2            | ZRLT-6 C24   | 5-1/8      | 2     | 5-3/4   | 3-1/4 | 3-9/16  |
| 28         | 2-1/2        | ZRLT-7 28-*  | 5-3/32     | 2-1/2 | 5-23/32 | 3-3/4 | 4-1/16  |
| C28        | 2-1/2        | ZRLT-7 C28-* | 5-19/32    | 2-1/2 | 6-7/32  | 3-3/4 | 4-1/16  |



To specify receptacle with threaded environmental cover, change third letter in Part No. "L" to "E".  
Example: ZRLT changes to ZRET.





## Square Flange Receptacle

To specify a complete receptacle, substitute the Dash No. of the contact insert selected, for the Asterisk (\*) in the Catalog No. below.

For Star-Line series add a "Z" to the beginning of catalog no. (Ex. ZRLP).  
For Star-Lok series add an "S" to the beginning of catalog no. (Ex. SRLP).



**Types**  
\_RLP \_RCP \_REP

| Shell Size | Open Back                           | Cat. No.    | DIMENSIONS<br>WITH STANDARD CABLE ADAPTER |         |       |       |         |         |       |         |         |       |
|------------|-------------------------------------|-------------|-------------------------------------------|---------|-------|-------|---------|---------|-------|---------|---------|-------|
|            |                                     |             | A                                         | B       | C*    | E     | F       | G       | J     | K       | L       | N     |
| 12         | Use with or without Potting Sleeves | _RLP- 12-*  | 1-3/4                                     | 1-3/8   | 1-1/2 | 11/64 | 2-15/16 | 2-1/8   | 1     | 1-11/32 | 2-15/16 | 2-1/8 |
| 16         |                                     | _RLP- 16-*  | 2-1/4                                     | 1-11/16 | 2     | 13/64 | 2-15/16 | 2-1/8   | 1     | 1-27/32 | 2-21/64 | 1/4   |
| 20         |                                     | _RLP- 20-*  | 2-3/4                                     | 2-3/32  | 2-1/2 | 7/32  | 2-15/16 | 2-3/16  | 1     | 2-11/32 | 2-21/64 | 1/4   |
| C20        |                                     | _RLP- C20-* | 2-3/4                                     | 2-3/32  | 2-1/2 | 7/32  | 2-7/16  | 2-11/16 | 1-1/2 | 2-11/32 | 2-53/64 | 3/4   |
| 24         |                                     | _RLP- 24-*  | 3-1/4                                     | 2-17/32 | 3     | 9/32  | 2-15/16 | 2-3/16  | 1     | 2-27/32 | 2-21/64 | 1/4   |
| C24        |                                     | _RLP- C24-* | 3-1/4                                     | 2-17/32 | 3     | 9/32  | 2-7/16  | 2-11/16 | 1-1/2 | 2-27/32 | 2-53/64 | 3/4   |
| 28         |                                     | ZRLP- 28-*  | 3-3/4                                     | 3-1/32  | 3-1/2 | 11/32 | 2-15/16 | 2-3/16  | 1     | 3-11/32 | 2-21/64 | 1/4   |
| C28        |                                     | ZRLP- C28-* | 3-3/4                                     | 3-1/32  | 3-1/2 | 11/32 | 2-7/16  | 2-11/16 | 1-1/2 | 3-11/32 | 2-53/64 | 3/4   |

To specify receptacle with threaded environmental cover, change third letter in part number from "L" to "E".  
Example: \_RLP changes to \_REP.

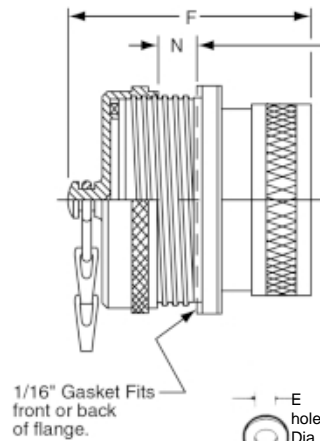
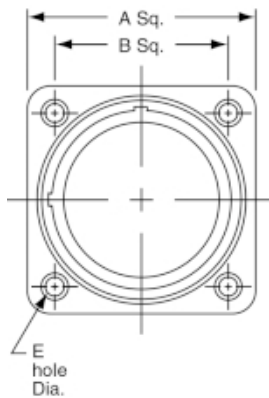


Threaded Environmental Cover with Sash Chain

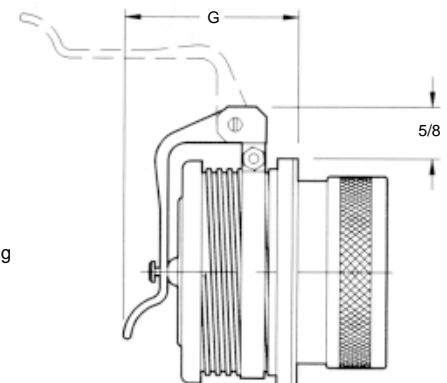
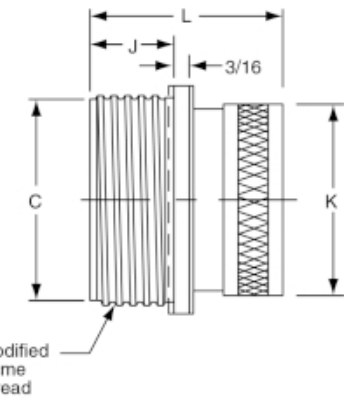
To specify receptacle with spring door cover, change third letter in part number from "L" to "C".  
Example: \_RLP changes to \_RCP.



Hinged Spring Door



Max panel thickness when back mounted using jack nut plugs.\*\*



Drill hole in panel 1/64" larger than Dimension "K" for front mounting or dimension "C" for back mounting  
\*\*Maximum panel thickness may be increased 1/8" when using Standard Coupling Nut Plugs.

# Receptacle Mounted to Junction Box

## With Angle Adapter



Types

\_RLBB \_RCBB \_REBB

To specify a complete receptacle, substitute the Dash No. of the contact insert selected for the Asterisk (\*) in the Catalog No. below.

For Star-Line series add a "Z" to the beginning of catalog no. (Ex. ZRLBB).  
For Star-Lok series add an "S" to the beginning of catalog no. (Ex. SRLBB).

| Size Cable | Hub Size† | Cat. No.      | DIMENSIONS        |       |        |        |       |         |         |      |
|------------|-----------|---------------|-------------------|-------|--------|--------|-------|---------|---------|------|
|            |           |               | A                 | B     | C      | D      | E     | F       | G       | H    |
| 12         | 3/4       | _RLBB- 2 12-* | 5-1/4             | 4-5/8 | 4-3/16 | 3-9/16 | 2-3/8 | 2-13/16 | 2-7/16  | 9/32 |
|            | 1         | _RLBB-3 12-*  | 5-1/4             | 4-5/8 | 4-3/16 | 3-9/16 | 2-3/8 | 2-13/16 | 2-7/16  | 9/32 |
| 16         | 1         | _RLBB-3 16-*  | 5-1/4             | 4-5/8 | 4-3/16 | 3-9/16 | 2-3/8 | 2-15/16 | 2-17/32 | 9/32 |
|            | 1-1/4     | _RLBB-4 16-*  | 5-1/4             | 4-5/8 | 4-3/16 | 3-9/16 | 2-5/8 | 2-15/16 | 2-17/32 | 9/32 |
|            | 1-1/2     | _RLBB-5 16-*  |                   |       |        |        |       |         |         |      |
| 20         | 1-1/4     | _RLBB-4 20-*  | 6                 | 5-1/4 | 4-1/2  | 3-7/8  | 3-3/4 | 3-39/64 | 3       | 9/32 |
|            | 1-1/2     | _RLBB-5 20-*  | 6                 | 5-1/4 | 4-1/2  | 3-7/8  | 3-3/4 | 3-39/64 | 3       | 9/32 |
|            | 2         | _RLBB-6 20-*  | 6                 | 5-1/4 | 4-1/2  | 3-7/8  | 3-3/4 | 3-39/64 | 3       | 9/32 |
| C20        | 1-1/4     | _RLBB-4 C20-* | 6                 | 5-1/4 | 4-1/2  | 3-7/8  | 3-3/4 | 3-39/64 | 3-3/8   | 9/32 |
|            | 1-1/2     | _RLBB-5 C20-* | 6                 | 5-1/4 | 4-1/2  | 3-7/8  | 3-3/4 | 3-39/64 | 3-3/8   | 9/32 |
|            | 2         | _RLBB-6 C20-* | 6                 | 5-1/4 | 4-1/2  | 3-7/8  | 3-3/4 | 3-39/64 | 3-3/8   | 9/32 |
| 24         | 2-1/2     | _RLBB-7 24-*  | See Drawing Below |       | 8      | 7      | 3-3/4 | 3-33/64 | 2-19/64 | 7/16 |
|            | 3         | _RLBB-8 24-*  |                   |       | 8      | 7      | 4-1/2 | 3-33/64 | 2-19/64 | 7/16 |
| C24        | 2-1/2     | _RLBB-7 C24-* |                   |       | 8      | 7      | 3-3/4 | 3-33/64 | 2-21-32 | 7/16 |
|            | 3         | _RLBB-8 C24-* |                   |       | 8      | 7      | 4-1/2 | 3-33-64 | 2-21-32 | 7/16 |
| 28         | 2-1/2     | ZRLBB-7 28-*  |                   |       | 8      | 7      | 3-3/4 | 3-1/2   | 2-7/64  | 7/16 |
|            | 3         | ZRLBB-8 28-*  |                   |       | 8      | 7      | 4-1/2 | 3-1/2   | 2-7/64  | 7/16 |
| C28        | 2-1/2     | ZRLBB-7 C28-* |                   |       | 8      | 7      | 3-3/4 | 3-1/2   | 2-15/32 | 7/16 |
|            | 3         | ZRLBB-8 C28-* |                   |       | 8      | 7      | 4-1/2 | 3-1/2   | 2-15/32 | 7/16 |

† Other Hub Sizes also available.

To specify receptacle with spring door cover, change third letter in part number from "L" to "C".

Example \_RLBB changes to \_RCBB

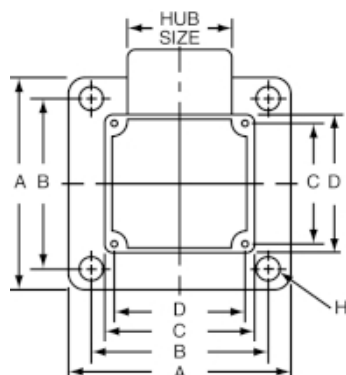


Hinged Spring Door

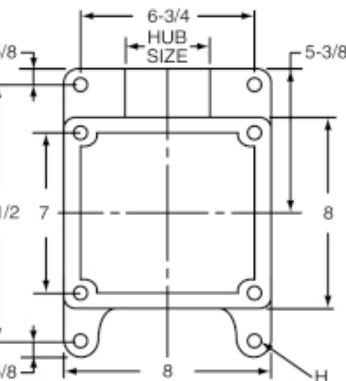
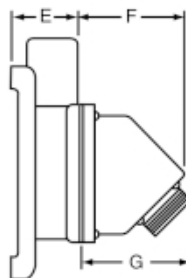
To specify receptacle with threaded environmental cover, change third letter in part number from "L" to "E". Example: \_RLBB changes to \_REBB.



Threaded Environmental Cover with Sash Chain



SHELL SIZES 12 - 16 - 20 - C20



SHELL SIZES 24 - C24 - 28 - C28

# Receptacle Mounted to Junction Box

## With Straight Adapter

To specify a complete receptacle, substitute the Dash No. of the contact insert selected, for the Asterisk (\*) in the Catalog No. below.



Types

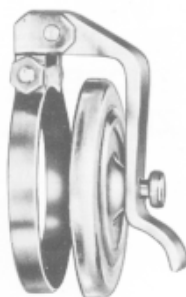
\_RLA \_RCA \_REA

For Star-Line series add a "Z" to the beginning of catalog no. (Ex. ZRLA).  
For Star-Lok series add an "S" to the beginning of catalog no. (Ex. SRLA).

| Size Cable | Shell Size | Cat. No. With Standard Coupling Nut | DIMENSIONS        |       |        |        |       |         |        |      |
|------------|------------|-------------------------------------|-------------------|-------|--------|--------|-------|---------|--------|------|
|            |            |                                     | A                 | B     | C      | D      | E     | F       | G      | H    |
| 12         | 3/4        | _RLA- 2 12-*                        | 5-1/4             | 4-5/8 | 4-3/16 | 3-9/16 | 2-3/8 | 1-27/32 | 1      | 9/32 |
|            | 1          | _RLA-3 12-*                         | 5-1/4             | 4-5/8 | 4-3/16 | 3-9/16 | 2-3/8 | 1-27/32 | 1      | 9/32 |
| 16         | 1          | _RLA-3 16-*                         | 5-1/4             | 4-5/8 | 4-3/16 | 3-9/16 | 2-3/8 | 1-27/32 | 1      | 9/32 |
|            | 1-1/4      | _RLA-4 16-*                         | 5-1/4             | 4-5/8 | 4-3/16 | 3-9/16 | 2-5/8 | 1/27/32 | 1      | 9/32 |
|            | 1-1/2      | _RLA-5 16-*                         | 5-1/4             | 4-5/8 | 4-3/16 | 3-9/16 | 2-5/8 | 1-27/32 | 1      | 9/32 |
| 20         | 1-1/4      | _RLA-4 20-*                         | 6                 | 5-1/4 | 4-1/2  | 3-7/8  | 3-3/4 | 3-1/16  | 1-7/32 | 9/32 |
|            | 1-1/2      | _RLA-5 20-*                         | 6                 | 5-1/4 | 4-1/2  | 3-7/8  | 3-3/4 | 2-1/16  | 1-7/32 | 9/32 |
|            | 2          | _RLA-6 20-*                         | 6                 | 5-1/4 | 4-1/2  | 3-7/8  | 3-3/4 | 2-1/16  | 1-7/32 | 9/32 |
| C20        | 1-1/4      | _RLA-4 C20-*                        | 6                 | 5-1/4 | 4-1/2  | 3-7/8  | 3-3/4 | 2-9/16  | 1-7/32 | 9/32 |
|            | 1-1/2      | _RLA-5 C20-*                        | 6                 | 5-1/4 | 4-1/2  | 3-7/8  | 3-3/4 | 2-9/16  | 1-7/32 | 9/32 |
|            | 2          | _RLA-6 C20-*                        | 6                 | 5-1/4 | 4-1/2  | 3-7/8  | 3-3/4 | 2-9/16  | 1-7/32 | 9/32 |
| 24         | 2-1/2      | _RLA-7 24-*                         | See Drawing Below |       | 8      | 7      | 3-3/4 | 2-11/32 | 1-1/2  | 7/16 |
|            | 3          | _RLA-8 24-*                         |                   |       | 8      | 7      | 4-1/2 | 2-11/32 | 1-1/2  | 7/16 |
| C24        | 2-1/2      | _RLA-7 C24-*                        |                   |       | 8      | 7      | 3-3/4 | 2-27/32 | 1-1/2  | 7/16 |
|            | 3          | _RLA-8 C24-*                        |                   |       | 8      | 7      | 4-1/2 | 3-33-64 | 1-1/2  | 7/16 |
| 28         | 2-1/2      | ZRLA-7 28-*                         |                   |       | 8      | 7      | 3-3/4 | 2-27/32 | 1-1/2  | 7/16 |
|            | 3          | ZRLA-8 28-*                         |                   |       | 8      | 7      | 4-1/2 | 2-9/32  | 1-1/2  | 7/16 |
| C28        | 2-1/2      | ZRLA-7 C28-*                        |                   |       | 8      | 7      | 3-3/4 | 2-25/32 | 1-1/2  | 7/16 |
|            | 3          | ZRLA-8 C28-*                        |                   |       | 8      | 7      | 4-1/2 | 2-25/32 | 1-1/2  | 7/16 |

Other Hub Sizes also available.

To specify receptacle with spring door cover change third letter in part number from "L" to "C".  
Example: \_RLBB changes to \_RCBB

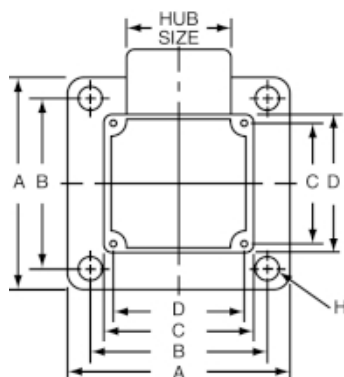


Hinged Spring Door

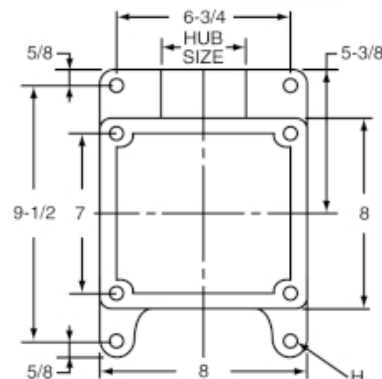
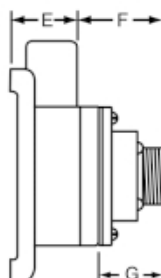
To specify receptacle with threaded environmental cover change third letter in part number from "L" to "E". Example: \_RLBB changes to \_REBB.



Threaded Environmental Cover with Sash Chain

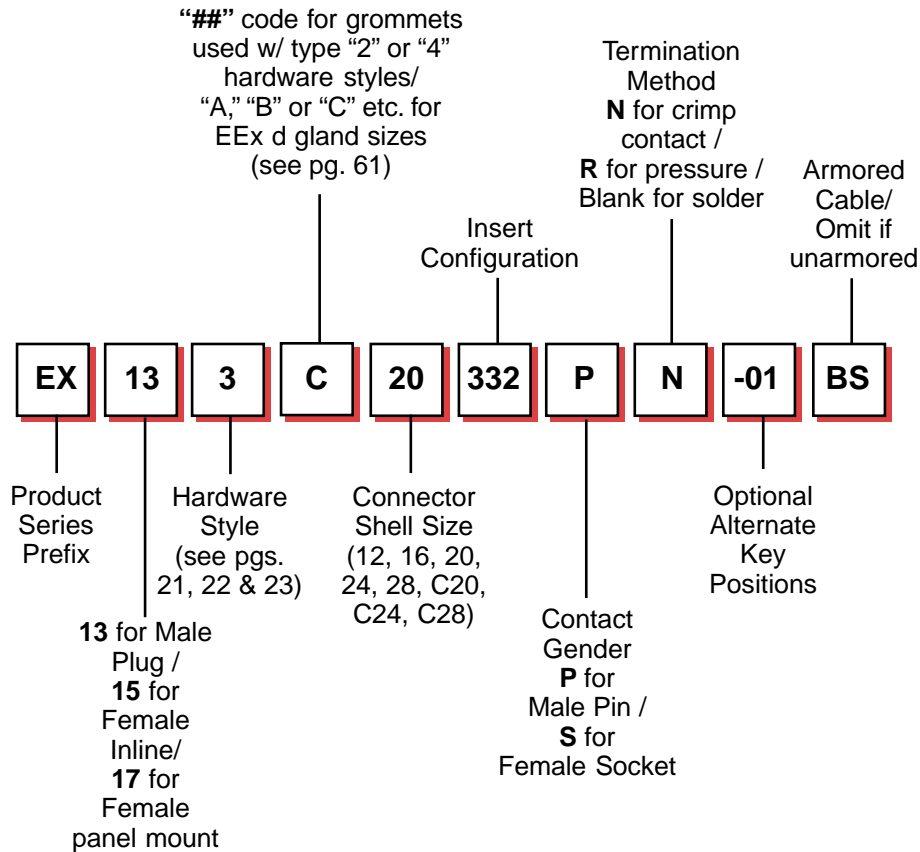


SHELL SIZES 12 - 16 - 20 - C20



SHELL SIZES 24 - C24 - 28 - C28

# Code Logic Star-Line EX



Example: EX-13-3-C-20-332PN  
Male Plug with EEX gland for a cable with 0.95"/24.1mm O.D.,  
20ea #12/4.0mm male contacts

EX-15-4-1620-332SN  
Female Inline with basket weave grip for a cable with 0.95"/24.1mm O.D.,  
20ea #12/4.0mm female contacts

EX-17-1-20-332SN  
Female Panel Mount. 20ea #12/4.0mm female contacts.

EX-13-3-C-16-22PR-BS  
Male Plug with EEX gland for an armored cable with  
1.25"/31.75mm O.D. 4ea #4/25.0mm male contacts

EX-17-3-C-16-22SR-BS  
Female Panel Mount with cable adapter with  
and EEX gland for an armored cable to match above.



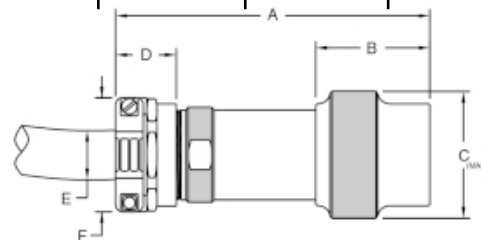
## Hardware

### Plug with Mechanical Clamp

### EX-13-2 Style



| Dimension<br>Shell | A               | B             | C              | D             | E              | F             | G   |
|--------------------|-----------------|---------------|----------------|---------------|----------------|---------------|-----|
| 12                 | 8-3/4 (222.3)   | 1-3/4 (44.5)  | 1-1/2 (38.1)   | 2 (50.8)      | 15/16 (23.8)   | 2-3/8 (60.3)  | N/A |
| 16                 | 8-13/16 (223.8) | 1-3/4 (44.5)  | 2 (50.8)       | 2-1/16 (52.4) | 1-7/16 (36.5)  | 3 (76.2)      | N/A |
| 20                 | 8-7/8 (225.4)   | 1-3/4 (44.5)  | 2-1/2 (63.5)   | 2-1/8 (54.0)  | 1-15/16 (49.2) | 3-3/4 (95.3)  | N/A |
| 24                 | 8-15/16 (227.0) | 1-3/4 (44.5)  | 3 (76.2)       | 2-3/16 (55.6) | 2-7/16 (61.9)  | 4-1/2 (114.3) | N/A |
| 28                 | 9 (228.6)       | 3 1/16 (77.8) | 4 3/16 (106.4) | 2 1/4 (57.2)  | 2-7/8 (73.0)   | 5-1/8 (130.2) | N/A |



### Plug with EEx d Gland

### EX-13-3 Style

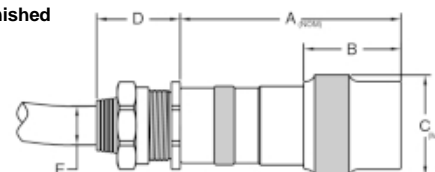
Note: Dimensions "D" and "E" are controlled by the gland manufacturer, gland is included with the connector.  
**POTTING IS NOT REQUIRED**



| Dimension<br>Shell | A             | B            | C*           | D** | E   | F   | G   |
|--------------------|---------------|--------------|--------------|-----|-----|-----|-----|
| 12                 | 7-5/8 (193.7) | 1-3/4 (44.5) | 1-1/2 (38.1) | N/A | N/A | N/A | N/A |
| 16                 | 7-5/8 (193.7) | 1-3/4 (44.5) | 2 (50.8)     | N/A | N/A | N/A | N/A |
| 20                 | 7-5/8 (193.7) | 1-3/4 (44.5) | 2-1/2 (63.5) | N/A | N/A | N/A | N/A |
| 24                 | 7-5/8 (193.7) | 1-3/4 (44.5) | 3 (76.2)     | N/A | N/A | N/A | N/A |
| 28                 | 7-5/8 (193.7) | 1-3/4 (44.5) | 3-1/2 (88.9) | N/A | N/A | N/A | N/A |

\*Notes: For "C" length inserts, add 1/2" to both dimensions "A" & "B".

\*\*Notes: For unarmored cable a Hawke 501/421 gland is furnished.  
For armored and sheathed cables a Hawke 501/453 gland is furnished  
(detailed cable dimensions required)

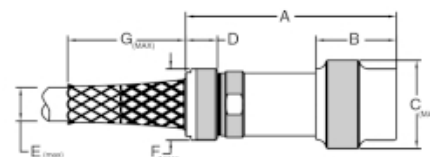


### Plug with Kellems Grip

### EX-13-4 Style



| DIMENSION<br>SHELL | A             | B            | C            | D            | E              | F            | G              |
|--------------------|---------------|--------------|--------------|--------------|----------------|--------------|----------------|
| 12                 | 7-3/8 (187.3) | 1-3/4 (44.5) | 1-1/2 (38.1) | 1-1/4 (31.8) | 15/16 (23.8)   | 1-1/2 (38.1) | 8 (203.2)      |
| 16                 | 7-3/8 (187.3) | 1-3/4 (44.5) | 2 (50.8)     | 1-1/4 (31.8) | 1-7/16 (36.5)  | 2 (50.8)     | 10-1/2 (266.7) |
| 20                 | 7-3/8 (187.3) | 1-3/4 (44.5) | 2-1/2 (63.5) | 1-1/4 (31.8) | 1-15/16 (49.2) | 2-1/2 (63.5) | 14-1/2 (368.3) |
| 24                 | 7-3/8 (187.3) | 1-3/4 (44.5) | 3 (76.2)     | 1-1/4 (31.8) | 2-7/16 (61.9)  | 3 (76.2)     | 17-1/2 (444.5) |
| 28                 | 7-3/8 (187.3) | 1-3/4 (44.5) | 3-1/2 (88.9) | 1-1/4 (31.8) | 2-7/8 (73.0)   | 3-1/2 (88.9) | 19 (482.6)     |

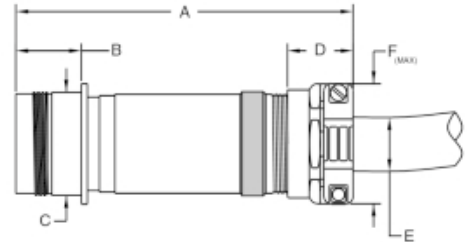


## In-line Receptacle with Mechanical Clamp

### EX-15-2 Style



| Dimension<br>Shell | A               | B            | C            | D             | E              | F             | G   |
|--------------------|-----------------|--------------|--------------|---------------|----------------|---------------|-----|
| 12                 | 8-3/4 (222.3)   | 1-3/4 (44.5) | 1-1/2 (38.1) | 2 (50.8)      | 15/16 (23.8)   | 2-3/8 (60.3)  | N/A |
| 16                 | 8-13/16 (223.8) | 1-3/4 (44.5) | 2 (50.8)     | 2-1/16 (52.4) | 1-7/16 (36.5)  | 3 (76.2)      | N/A |
| 20                 | 8-7/8 (225.4)   | 1-3/4 (44.5) | 2-1/2 (63.5) | 2-1/8 (54.0)  | 1-15/16 (49.2) | 3-3/4 (95.3)  | N/A |
| 24                 | 8-15/16 (227.0) | 1-3/4 (44.5) | 3 (76.2)     | 2-3/16 (55.6) | 2-7/16 (61.9)  | 4-1/2 (114.3) | N/A |
| 28                 | 9 (228.6)       | 1-3/4 (44.5) | 3-1/2 (88.9) | 2-1/4 (57.2)  | 2-7/8 (73.0)   | 5-1/8 (130.2) | N/A |



## In-line Receptacle with EEx d Gland

### EX-15-3 Style

POTTING IS NOT REQUIRED

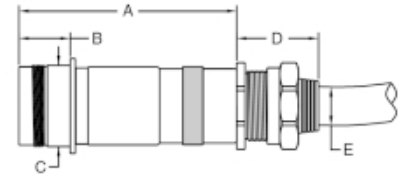


| Dimension<br>Shell | A             | B            | C            | D*  | E   | F   | G   |
|--------------------|---------------|--------------|--------------|-----|-----|-----|-----|
| 12                 | 7-5/8 (193.7) | 1-3/4 (44.5) | 1-1/2 (38.1) | N/A | N/A | N/A | N/A |
| 16                 | 7-5/8 (193.7) | 1-3/4 (44.5) | 2 (50.8)     | N/A | N/A | N/A | N/A |
| 20                 | 7-5/8 (193.7) | 1-3/4 (44.5) | 2-1/2 (63.5) | N/A | N/A | N/A | N/A |
| 24                 | 7-5/8 (193.7) | 1-3/4 (44.5) | 3 (76.2)     | N/A | N/A | N/A | N/A |
| 28                 | 7-5/8 (193.7) | 1-3/4 (44.5) | 3-1/2 (88.9) | N/A | N/A | N/A | N/A |

\*Notes: For "C" length inserts, add 1/2" to both dimensions "A" & "B".

\*\*Notes: For unarmored cable, a Hawke 501/421 gland is furnished.

For armored and sheathed cables, a Hawke 501/453 gland is furnished.  
(detailed cable dimensions required)

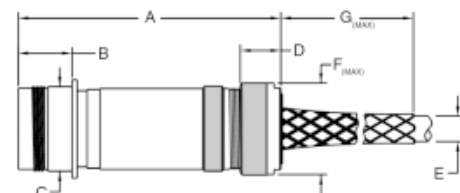


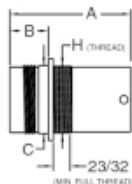
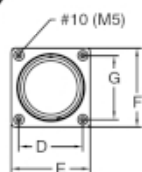
## In-line Receptacle with Kellems Grip

### EX-15-4 Style



| Dimension<br>Shell | A             | B            | C            | D            | E              | F            | G              |
|--------------------|---------------|--------------|--------------|--------------|----------------|--------------|----------------|
| 12                 | 7-3/8 (187.3) | 1-3/4 (44.5) | 1-1/2 (38.1) | 1-1/4 (31.8) | 15/16 (23.8)   | 1-1/2 (38.1) | 8 (203.2)      |
| 16                 | 7-3/8 (187.3) | 1-3/4 (44.5) | 2 (50.8)     | 1-1/4 (31.8) | 1-7/16 (36.5)  | 2 (50.8)     | 10-1/2 (266.7) |
| 20                 | 7-3/8 (187.3) | 1-3/4 (44.5) | 2-1/2 (63.5) | 1-1/4 (31.8) | 1-15/16 (49.2) | 2-1/2 (63.5) | 14-1/2 (368.3) |
| 24                 | 7-3/8 (187.3) | 1-3/4 (44.5) | 3 (76.2)     | 1-1/4 (31.8) | 2-7/16 (61.9)  | 3 (76.2)     | 17-1/2 (444.5) |
| 28                 | 7-3/8 (187.3) | 1-3/4 (44.5) | 3-1/2 (88.9) | 1-1/4 (31.8) | 2-7/8 (73.0)   | 3-1/2 (88.9) | 19 (482.6)     |

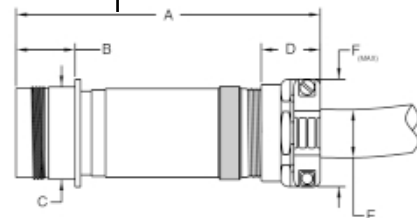


**Panel Mount Receptacle (Potting Required)**
**EX-17-1 Style**


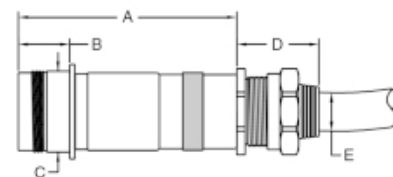
| Dimension<br>Shell | A             | B            | C            | D          | E            | H   |
|--------------------|---------------|--------------|--------------|------------|--------------|-----|
| 12                 | 4-3/4 (120.7) | 1-3/4 (44.5) | 1-1/2 (38.1) | 1.654 (42) | 2-1/4 (57.2) | M40 |
| 16                 | 4-3/4 (120.7) | 1-3/4 (44.5) | 2 (50.8)     | 2.047 (52) | 2-5/8 (66.7) | M50 |
| 20                 | 4-3/4 (120.7) | 1-3/4 (44.5) | 2-1/2 (63.5) | 2.441 (62) | 3 (76.2)     | M63 |
| 24                 | 4-3/4 (120.7) | 1-3/4 (44.5) | 3 (76.2)     | 2.835 (72) | 3-1/2 (88.9) | M75 |
| 28                 | 4-3/4 (120.7) | 1-3/4 (44.5) | 3-1/2 (88.9) | 3.228 (82) | 4 (101.6)    | M90 |

**Fixed In-line Receptacle with Mechanical Clamp**
**EX-17-2 Style**


| Dimension<br>Shell | A               | B            | C            | D             | E              | F             |
|--------------------|-----------------|--------------|--------------|---------------|----------------|---------------|
| 12                 | 8-3/4 (222.3)   | 1-3/4 (44.5) | 1-1/2 (38.1) | 2 (50.8)      | 5/16 (23.8)    | 2-3/8 (60.3)  |
| 16                 | 8-13/16 (223.8) | 1-3/4 (44.5) | 2 (50.8)     | 2-1/16 (52.4) | 1-7/16 (36.5)  | 3 (76.2)      |
| 20                 | 8-7/8 (225.4)   | 1-3/4 (44.5) | 2-1/2 (63.5) | 2-1/8 (54.0)  | 1-15/16 (49.2) | 3-3/4 (95.3)  |
| 24                 | 8-15/16 (227.0) | 1-3/4 (44.5) | 3 (76.2)     | 2-3/16 (55.6) | 2-7/16 (61.9)  | 4-1/2 (114.3) |
| 28                 | 9 (228.6)       | 1-3/4 (44.5) | 3-1/2 (88.9) | 2-1/4 (57.2)  |                |               |


**Fixed In-line Receptacle with EEx d Gland**
**EX-17-3 Style**


| Dimension<br>Shell | A             | B            | C            |
|--------------------|---------------|--------------|--------------|
| 12                 | 7-5/8 (193.7) | 1-3/4 (44.5) | 1-1/2 (38.1) |
| 16                 | 7-5/8 (193.7) | 1-3/4 (44.5) | 2 (50.8)     |
| 20                 | 7-5/8 (193.7) | 1-3/4 (44.5) | 2-1/2 (63.5) |
| 24                 | 7-5/8 (193.7) | 1-3/4 (44.5) | 3 (76.2)     |
| 28                 | 7-5/8 (193.7) | 1-3/4 (44.5) | 3-1/2 (88.9) |

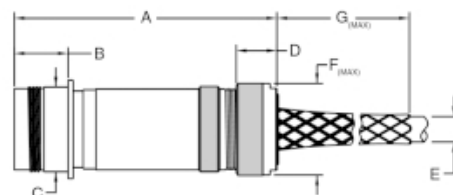


\*Notes: For "C" length inserts, add 1/2" to both dimensions "A" & "B".

\*\*Notes: For unarmored cable a Hawke 501/421 gland is furnished. For armored and sheathed cables a Hawke 501/453 gland is furnished (detailed cable dimensions required)

**Fixed In-line Receptacle with Kellems Grip**
**EX-17-4 Style**


| Dimension<br>Shell | A             | B            | C            | D            | E              | F            | G              |
|--------------------|---------------|--------------|--------------|--------------|----------------|--------------|----------------|
| 12                 | 7-3/8 (187.3) | 1-3/4 (44.5) | 1-1/2 (38.1) | 1-1/4 (31.8) | 15/16 (23.8)   | 1-1/2 (38.1) | 8 (203.2)      |
| 16                 | 7-3/8 (187.3) | 1-3/4 (44.5) | 2 (50.8)     | 1-1/4 (31.8) | 1-7/16 (36.5)  | 2 (50.8)     | 10-1/2 (266.7) |
| 20                 | 7-3/8 (187.3) | 1-3/4 (44.5) | 2-1/2 (63.5) | 1-1/4 (31.8) | 1-15/16 (49.2) | 2-1/2 (63.5) | 14-1/2 (368.3) |
| 24                 | 7-3/8 (187.3) | 1-3/4 (44.5) | 3 (76.2)     | 1-1/4 (31.8) | 2-7/16 (61.9)  | 3 (76.2)     | 17-1/2 (444.5) |
| 28                 | 7-3/8 (187.3) | 1-3/4 (44.5) | 3-1/2 (88.9) | 1-1/4 (31.8) | 2-7/8 (73.0)   | 3-1/2 (88.9) | 19 (482.6)     |

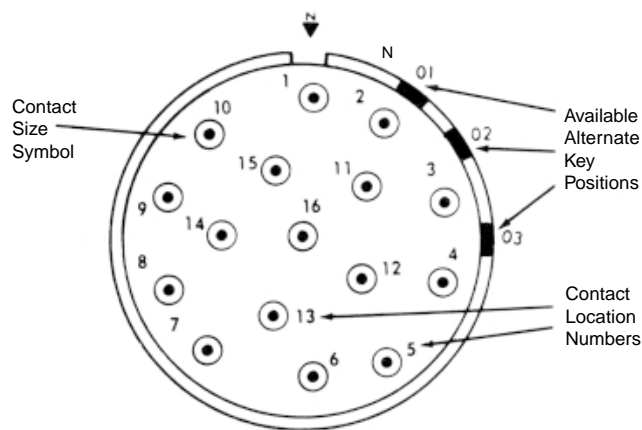


# Insert Configuration Listing

## For PYLE-STAR-LINE, STAR-LOK and STAR-LINE EX Connectors

### Introduction

The Pyle-Star-Line Insert Configuration Listing is issued primarily to identify various contact insert arrangements. For the engineer, it provides visual selection of the insert configuration needed to satisfy his requirements. For the end user, the list provides general information useful in the termination of plugs and receptacles. To aid the reader, the insert configurations are presented in numerical order, based on the number of contacts in each.



The male insert illustration shown left (and those on the following pages) is shown as it appears when viewed from the front. Contacts are shown by both physical position within the configuration and by contact number. The contact number corresponds to the contact position shown on the rear face of the insert illustrated as well as to both the front and rear faces of the mating insert. The symbol used to show contact location is indicative of contact size. For example, the contact symbol in this illustration represents a #8 contact. An explanation of contact symbols is presented on each page of the listing. Each drawing also provides data on normal and alternate key positions. Drawings are reduced from actual size of the insert configuration.

NOTE: Alternate keying or insert polarization is intended to resist improper intermating of plugs and receptacles of like shell sizes and like insert arrangements.

### Contact Insert Ordering

Plug and receptacle contact inserts are selected according to requirements for Service Voltage Rating, Number of Contacts, Wire Size and Ampere Rating.

Mod I and II inserts may be purchased separately for assembly into the basic barrel. The Catalog Number for each is shown on the chart accompanying each drawing. Pin or socket inserts are interchangeable in male and female barrels.

Mod III inserts, as a unit, cannot be purchased separately because contact inserts are factory assembled to, and sealed in, the basic barrel. The Dash Number given with each Mod III configuration must be shown as a suffix to the basic barrel Catalog Number to identify the insert desired.

# ELECTRICAL Ratings

## Service Voltage Ratings

The voltage to which contact inserts are limited is a function of the dielectric separation between adjacent contacts and between contacts and shell.

The voltage rating is designated by a service voltage rating letter which is shown in the service voltage rating table with each contact configuration listing.

| Service Voltage | Military Ratings<br>MIL-C-5015<br>Specifications<br>Non-Circuit Breaking |                | N.E.C. Ratings |                  | Over Surface Distance<br>Inches<br>Nominal | Thru Air Spacing<br>Inches<br>Nominal |
|-----------------|--------------------------------------------------------------------------|----------------|----------------|------------------|--------------------------------------------|---------------------------------------|
|                 |                                                                          |                | Non-Circuit    | Circuit Breaking |                                            |                                       |
|                 | D.C. Volts                                                               | A.C. Volts RMS | D.C.           | A.C. RMS         |                                            |                                       |
| Instrument      | 250                                                                      | 200            | ...            | ...              | 1/16                                       | ...                                   |
| A               | 700                                                                      | 500            | 250            | 240              | 1/8                                        | 1/16                                  |
| D               | 1250                                                                     | 900            | 600            | 600              | 3/16                                       | 1/8                                   |
| E               | 1750                                                                     | 1250           | 600            | 600              | 1/4                                        | 3/16                                  |
| B               | 2450                                                                     | 1750           | 600            | 600              | 5/16                                       | 1/4                                   |
| C               | 4200                                                                     | 3000           | 600            | 600              | 1                                          | 5/16                                  |

## Three Classifications of Ampere Ratings

### MS Ampere Ratings: (MIL-C-39029)

Based on the combination of the following:

The amount of current which an individual pin and socket contact may carry is a function of contact material and design efficiency of the pin and socket system as well as the ability of the primary conductor insulation to resist temperature rises due to inherent copper losses and bundling factors.

Total current carrying capacity of the connector is a function of the insert temperature which is rated at 225° F for continuous operation. The total operating temperature is the summation of the ambient temperature plus the temperature rise resulting from the thermal losses of each contact.

MIL-W-5088 specifications may be used as a general reference on the subject inasmuch as pertinent cable derating data is included.

### N.E.C. Non-Circuit-Breaking or Disconnect Ampere Ratings

The non-interrupting current ratings, shown in the table, are based on the temperature of the contacts being within the range specified by Underwriter's Laboratories, Inc. when wire sizes are selected in accordance with the National Electrical Code.

When multiple conductors are used, the load factor and temperature rise based on ambient and total insert temperature must be taken into consideration.

### N.E.C. Circuit-Breaking Ampere Ratings

N.E.C. circuit-breaking current ratings indicated in the ampere rating table are based on the ability to connect and disconnect the rated loads. Ratings shown are based on silver plated pin and socket contacts in terms of wire AWG as shown in the table.

| Contact Size<br>AWG/<br>MCM | Non-Circuit Breaking Ampere Rating |              | Circuit-Breaking Ampere Rating | †MV DROP        |                |
|-----------------------------|------------------------------------|--------------|--------------------------------|-----------------|----------------|
|                             | MS                                 | N.E.C.<br>** | N.E.C.<br>***                  | Solder Contacts | Crimp Contacts |
| #18                         | —                                  | 9            | —                              | 22              | 30             |
| #16                         | 13                                 | 16           | 10                             | 21              | 29             |
| #12                         | 23                                 | 30           | 20                             | 20              | 27             |
| #10                         | 33                                 | 40           | 30                             | 16              | 26             |
| # 8                         | 46                                 | 50           | 40                             | 12              | 23             |
| # 4                         | 80                                 | 90           | 60                             | 10              | 22             |
| #1/0                        | 150                                | 155          | 100                            | 10              | 22             |
| #4/0                        | 225                                | 225          | 200                            | 8               | 22             |
| 350 MCM                     | —                                  | 325          | —                              | 8               | —              |
| 500 MCM                     | —                                  | 750          | —                              | —               | 30             |
| 535 MCM                     | —                                  | 839          | —                              | —               | —              |
| 646 MCM                     | —                                  | 937          | —                              | —               | —              |
| 777 MCM                     | —                                  | 1048         | —                              | —               | —              |

NOTE: The N.E.C. circuit breaking and non-circuit breaking ratings are based on test results of contacts and connectors. Consult the N.E.C. when selecting wire/cable for specific applications. Under certain conditions, a wire size may be rated higher or lower than the table indicates for a given contact size.

† Measurements made at extreme ends of mated contacts with probe touching contact and wire (MIL-C-5015 specifications).

\*\* Based on temperature rise (National Electrical Code Requirement).

\*\*\* Based on Arcing Control (National Electrical Code Requirement).



# Spare/Replacement Contacts for MOD II and MOD III Inserts

Contacts are machined copper alloy ranging in size (AWG) from #18 to 500 MCM.

Standard line contacts are silver plated but can also be furnished with gold over silver, gold over nickel, and other combinations of plating systems available upon request.

Pin contacts are of blended geometry to provide extra strength and protection against damage. Socket contacts are the closed entry type.

Contacts for MOD I inserts are not listed because these inserts are factory assembled and damage may be done to the resilient center insulation if contacts are inserted or removed by inexperienced personnel in the field.

## MOD II

| Size Awg/MCM             | "W" Length                 | "C" Length                     | "W" Ground   | Polarizing Standard        | Polarizing "C" |
|--------------------------|----------------------------|--------------------------------|--------------|----------------------------|----------------|
| 18 Pin Socket            | ZP-4018-36L<br>ZP-4118-36L |                                |              |                            |                |
| 16 Pin Socket            | ZP-4016-36L<br>ZP-4116-36L |                                | ZP-4016-37LK |                            |                |
| 12 Pin Socket            | ZP-4012-36L<br>ZP-4112-36L |                                | ZP-4012-37L3 |                            |                |
| 10 Pin Socket            | ZP-4010-36L<br>ZP-4110-36L |                                | ZP-4010-37L2 |                            |                |
| 8 Pin Socket             | ZP-4008-66L<br>ZP-4108-66L |                                |              |                            |                |
| 4 Pin Socket             | ZP-4004-66L<br>ZP-4104-66L |                                |              | ZP-4804-66L<br>ZP-4904-66L |                |
| 1/0 Pin Socket           | ZP-4100-66L                | ZP-4000-66LB                   |              | ZP-4900-66LK               | ZP-4800-66LKB  |
| 4/0 Pin Socket           | ZP-4141-76L                | ZP-4041-76LB                   |              |                            |                |
| 500 MCM Pin & Socket     |                            | P-206053-CP<br>P-206053-CS     |              |                            |                |
| 535 MCM Pin & Socket     |                            | RIG-C24-535PN<br>RIG-C24-535SN |              |                            |                |
| 646-777 MCM Pin & Socket |                            | RIG-C24-386PN<br>RIG-C24-386SN |              |                            |                |

## MOD III

| Size Awg/MCM   | "W" Length                 | "C" Length    | "W" Ground   | Polarizing Standard          | Polarizing "C" |
|----------------|----------------------------|---------------|--------------|------------------------------|----------------|
| 18 Pin Socket  | ZP-4018-50L<br>ZP-4118-50L |               |              |                              |                |
| 16 Pin Socket  | ZP-4016-50L<br>ZP-4116-50L |               |              |                              |                |
| 12 Pin Socket  | ZP-4012-50L<br>ZP-4112-50L | ZP-4012-50LB  | ZP-4012-52LK |                              |                |
| 10 Pin Socket  | ZP-4010-50L<br>ZP-4110-50L |               | ZP-4010-52LK |                              |                |
| 8 Pin Socket   | ZP-4008-50L<br>ZP-4108-50L | ZP-4008-50LB  |              |                              |                |
| 4 Pin Socket   | ZP-4004-50L<br>ZP-4104-50L |               | ZP-4004-52LK | ZP-4804-50LK<br>ZP-4904-50LK |                |
| 1/0 Pin Socket | ZP-4000-50L<br>ZP-4100-50L | ZP-4000-50LKB | ZP-4800-52LB | ZP-4800-50LK<br>ZP-4900-50LK | ZP-4800-50LKB  |

"C" Length contacts are 1/2" longer than "W". Used in "C" inserts. Ground contact 1/8" longer than standard. Ground Clip is part of insert. "C" Length ground contact 1/8" longer than "C" length line.

## Termination Data

Amphenol – Pyle Connectors Corporation's tools for contact crimping, insertion and removal are required for terminating and assembling contacts.

| <b>Contact Dimensions</b>        |                             |                |                      |                |                       |                 |
|----------------------------------|-----------------------------|----------------|----------------------|----------------|-----------------------|-----------------|
| <b>Contact Size<br/>AWG (mm)</b> | <b>WIRE WELL DIMENSIONS</b> |                |                      |                |                       |                 |
|                                  | <b>Solder Mod I</b>         |                | <b>Crimp* Mod II</b> |                | <b>Crimp* Mod III</b> |                 |
|                                  | <b>Diameter</b>             | <b>Depth</b>   | <b>Diameter</b>      | <b>Depth</b>   | <b>Diameter</b>       | <b>Depth</b>    |
| #18 (0.75)                       | .060" (1.52)                | 13/64" (5.15)  | .059" (1.49)         | 3/8" (9.52)    | .058" (1.47)          | 3/8" (9.52)     |
| #16 (1.5)                        | .079" (2.00)                | 13/64" (5.15)  | .079" (2.00)         | 1/2" (12.70)   | .079" (2.00)          | 1/2" (12.70)    |
| #12 (4.0)                        | .117" (2.97)                | 17/64" (6.47)  | .113" (2.87)         | 17/32" (6.74)  | .113" (2.87)          | 17/32" (13.49 ) |
| #10 (6.0)                        | .142" (3.61)                | 25/64" (9.92)  | .142" (3.60)         | 19/32" (15.09) | .142" (3.60)          | 19/32" (15.08)  |
| #8 (10.0)                        | .210" (5.33)                | 23/64" (9.12)  | .189" (4.80)         | 3/4" (19.05)   | .188" (4.77)          | 3/4" (19.05)    |
| #4 (25.0)                        | .333" (8.45)                | 37/64" (14.63) | .289" (7.34)         | 53/64" (21.03) | .278" (7.06)          | 53/64" (21.03)  |
| 1/0 (50.0)                       | .470" (11.94)               | 41/64" (16.27) | .445" (11.30)        | 1-1/8" (28.58) | .455" (11.56)         | 15/16" (23.81)  |
| 4/0 (120.00)                     | .656" (16.7)                | 57/64" (22.62) |                      |                | .656" (16.7)          | 15/16" (23.81)  |
| 350MCM (185.00)                  | .798" (20.27)               | 1-1/8" (28.58) |                      |                |                       |                 |
| 500 MCM (240.00)                 |                             |                | 1.00" (25.40)        | 1-3/8" (34.93) |                       |                 |

\*Crimp contacts have inspection hole

| <b>Crimp Data</b>   |                                                                              |                                         |
|---------------------|------------------------------------------------------------------------------|-----------------------------------------|
| <b>Contact Size</b> | <b>Conductor Wire Size Crimped (AWG)</b>                                     | <b>Crimp Retention Min.Force lbs. N</b> |
| #18 (0.75)          | #18                                                                          | 38 (169.0)                              |
|                     | #20                                                                          | 19 (84.5)                               |
|                     | #22                                                                          | 15 (66.7)                               |
| #16 (1.5)           | #16                                                                          | 50 (22.4)                               |
|                     | #18                                                                          | 38 (169.0)                              |
|                     | #20                                                                          | 19 (84.5)                               |
| #12 (4.0)           | #12                                                                          | 110 (489.3)                             |
|                     | #14                                                                          | 70 (311.4)                              |
|                     | #16                                                                          | 50 (222.4)                              |
| #10 (6.0)           | #10                                                                          | 180** (800.7)                           |
|                     | #12                                                                          | 110 (489.2)                             |
|                     | #14                                                                          | 70 (311.4)                              |
| #8 (10.0)           | #8                                                                           | 225 (1000)                              |
|                     | to #10                                                                       | - 180 (800)                             |
| #4 (25.0)           | #4                                                                           | 400 (1779)                              |
|                     | to #6                                                                        | - 300 (1334)                            |
| 1/0 (50.0)          | #2                                                                           | 550 (2447)                              |
|                     | to 1/0                                                                       | - 700 (3114)                            |
| 4/0 (120.00)        | 4/0                                                                          | 875 (3892)                              |
|                     | 3/0                                                                          | 825 (3670)                              |
|                     | 2/0                                                                          | 750 (3336)                              |
| 500 (240.00)        | 500 MCM                                                                      | 2500 (11120)                            |
| 535<br>646<br>777   | Recommend using Thomas & Betts TBM 15 crimp tool with appropriate sized dies |                                         |

| <b>Torque Data for Pressure Contacts MOD I</b> |                                   |                                 |
|------------------------------------------------|-----------------------------------|---------------------------------|
| <b>Contact/Conductor Size</b>                  | <b>Torque Req. In./Lbs. (N•m)</b> | <b>Retention Force Lbs. (N)</b> |
| 4/0 (120.00)                                   | 120 (13.6)                        | 250 (113.4)                     |
| 1/0 (50.0)                                     | 70 (7.9)                          | 250 (113.4)                     |
| #4 (25.0)                                      | 26 (2.9)                          | 140 (63.5)                      |
| #8 (10.0)                                      | 26 (2.9)                          | 75 (34.0)                       |
| #10 (6.0)                                      | 26 (2.9)                          | 60 (27.2)                       |

# Thermocouple Contacts

Thermocouple contacts are available for use in all insert configurations. Contact can be either purchased separately or included in the insert/connector-please coordinate with the factory on this latter option. For crimp terminations-see tools shown on page 70. When soldering, please adhere to the following procedures: (1) clean wire and solder well with stainless scratch brush. (2) Use Handy and Harman Silver Solder Flux. (3) Use Handy and Harman AMS 2665 Silver Solder with flame torch. **IMPORTANT-Use** extreme care to prevent overheating the female contact, otherwise tension will be lost and result in poor contact. (4) Clean flux from all surfaces using boiling water or steam.

**Table Temperature Range  
of Thermocouple Material**

| Material*                        | Temperature Range  |            |
|----------------------------------|--------------------|------------|
|                                  | Degrees Continuous | Short Time |
| Electrolytic Copper & Constantan | 190-350° C         | to 600° C  |
| Chromel & Constantan             | 0-900° C           | to 1100° C |
| Iron & Constantan                | 0-1100° C          | to 1100° C |
| Chromel & Alumel                 | 0-1100° C          | to 1350° C |

## MOD I & MOD II

| Size | Gender        | Cat. No.                     | Color Code | Thermocouple Material* |
|------|---------------|------------------------------|------------|------------------------|
| #16  | Pin<br>Socket | ZP-4016-10MF<br>ZP-4116-10MF | Black      | Iron                   |
| #16  | Pin<br>Socket | ZP-4016-10NF<br>ZP-4116-10NF | Yellow     | Constantan             |
| #16  | Pin<br>Socket | ZP-4016-10PO<br>ZP-4116-10PO | White      | Chromel                |
| #16  | Pin<br>Socket | ZP-4016-10RO<br>ZP-4116-10RO | Green      | Alumel                 |
| #16  | Pin<br>Socket | ZP-4016-10CF<br>ZP-4116-10CF | Red        | Copper                 |

## MOD III

| Size | Gender        | Cat. No.                     | Color Code | Thermocouple Material* |
|------|---------------|------------------------------|------------|------------------------|
| #16  | Pin<br>Socket | ZP-4016-50MF<br>ZP-4116-50MF | Black      | Iron                   |
| #16  | Pin<br>Socket | ZP-4016-50NF<br>ZP-4116-50NF | Yellow     | Constantan             |
| #16  | Pin<br>Socket | ZP-4016-50PO<br>ZP-4116-50PO | White      | Chromel                |
| #16  | Pin<br>Socket | ZP-4016-50RO<br>ZP-4116-50RO | Green      | Alumel                 |
| #16  | Pin<br>Socket | ZP-4016-50CF<br>ZP-4116-50CF | Red        | Copper                 |
| #16  | Pin<br>Socket | ZP-4016-50SO<br>ZP-4116-50SO | None       | Alloy #11              |

| ISA Symbol | Nomenclature*          | ISA Color Coding |       |        | Military Color Coding |        | Conductor Identification |                              |
|------------|------------------------|------------------|-------|--------|-----------------------|--------|--------------------------|------------------------------|
|            |                        | (+)              | (-)   | Jacket | (+)                   | (-)    | Positive (+)             | Negative (-)                 |
| J          | Iron/Constantan        | White            | Red   | Black  | Black                 | Yellow | Magnetic                 | Non-Magnetic                 |
| K          | Chromel/Alumel         | Yellow           | Red   | Yellow | White                 | Green  | Non Magnetic             | Magnetic                     |
| T          | Copper/<br>Constantan  | Blue             | Red   | Blue   | Red                   | Yellow | Copper Color             | Non-Magnetic                 |
| E          | Chromel/<br>Constantan | Purple           | Red   | Purple | White                 | Yellow | Nonmagnetic              | Silver Color<br>Non-Magnetic |
| B          | Copper/Copper          | Black            | White | Black  | Red                   | Red    | Copper Color             | Non-Magnetic                 |
| S          | Alloy #11              |                  |       |        |                       |        |                          |                              |

\*Chromel and Alumel are registered trademarks of Hoskins Manufacturing Company

## Insert Configuration Index

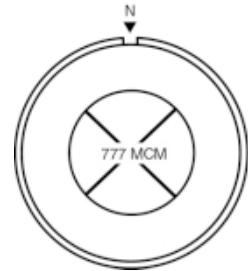
Front view of male insert is depicted on the following pages.

| Insert Number | Mod I | Mod II | Mod III | Page Number | Insert Number | Mod I | Mod II | Mod III | Page Number | Insert Number | Mod I | Mod II | Mod III | Page Number |
|---------------|-------|--------|---------|-------------|---------------|-------|--------|---------|-------------|---------------|-------|--------|---------|-------------|
| RIG-C24-535   |       | X      |         | 32          | ZP-16-371     |       | X      |         | 54          | ZP-20-686     |       |        | X       | 53          |
| RIG-C24-386   |       | X      |         | 32          | ZP-16-673     |       |        | X       | 52          | ZP-20-387     |       | X      |         | 51          |
| ZP-12-310     |       | X      |         | 42          | ZP-16-74      | X     |        |         | 33          | ZP-20-688     |       |        | X       | 50          |
| ZP-12-14      | X     |        |         | 34          | ZP-16-75      | X     |        |         | 37          | ZP-24-313     |       | X      |         | 58          |
| ZP-12-614     |       |        | X       | 34          | ZP-16-676     |       |        | X       | 46          | ZP-24-613     |       |        | X       | 58          |
| ZP-12-22      | X     |        |         | 34          | ZP-16-377     |       | X      |         | 49          | ZP-C24-26     | X     |        |         | 36          |
| ZP-12-323     |       | X      |         | 49          | ZP-16-677     |       |        | X       | 49          | ZP-24-331     |       | X      |         | 57          |
| ZP-12-623     |       |        | X       | 49          | ZP-16-378     |       | X      |         | 43          | ZP-C24-36     | X     |        |         | 53          |
| ZP-12-24      | X     |        |         | 37          | ZP-16-681     |       |        | X       | 46          | ZP-C24-38     | X     |        |         | 36          |
| ZP-12-624     |       |        | X       | 37          | ZP-20-313     |       | X      |         | 57          | ZP-24-40      | X     |        |         | 48          |
| ZP-12-326     |       | X      |         | 39          | ZP-20-613     |       |        | X       | 57          | ZP-C24-47     | X     |        |         | 48          |
| ZP-12-27      | X     |        |         | 32          | ZP-20-323     |       | X      |         | 54          | ZP-C24-48     | X     |        |         | 39          |
| ZP-12-33      | X     |        |         | 34          | ZP-20-623     |       |        | X       | 54          | ZP-C24-49     | X     |        |         | 38          |
| ZP-12-334     |       | X      |         | 45          | ZP-20-329     |       | X      |         | 57          | ZP-C24-50     | X     |        |         | 40          |
| ZP-12-648     |       |        | X       | 42          | ZP-20-331     |       | X      |         | 51          | ZP-24-352     |       | X      |         | 56          |
| ZP-12-649     |       |        | X       | 33          | ZP-20-32      | X     |        |         | 50          | ZP-C24-353    |       | X      |         | 44          |
| ZP-12-651     |       |        | X       | 33          | ZP-20-332     |       | X      |         | 50          | ZP-24-354     |       | X      |         | 58          |
| ZP-12-53      | X     |        |         | 37          | ZP-20-632     |       |        | X       | 50          | ZP-24-55      | X     |        |         | 44          |
| ZP-12-653     |       |        | X       | 37          | ZP-20-334     |       | X      |         | 51          | ZP-24-655     |       |        | X       | 44          |
| ZP-12-354     |       | X      |         | 42          | ZP-20-35      | X     |        |         | 56          | ZP-24-658     |       |        | X       | 43          |
| ZP-12-654     |       |        | X       | 42          | ZP-20-38      | X     |        |         | 38          | ZP-C24-59     | X     |        |         | 43          |
| ZP-12-355     |       | X      |         | 45          | ZP-C20-40     | X     |        |         | 35          | ZP-C24-659    |       |        | X       | 43          |
| ZP-12-655     |       |        | X       | 45          | ZP-C20-640    |       |        | X       | 35          | ZP-24-371     |       | X      |         | 53          |
| ZP-12-56      | X     |        |         | 33          | ZP-C20-42     | X     |        |         | 36          | ZP-C24-72     | X     |        |         | 41          |
| ZP-16-312     |       | X      |         | 50          | ZP-C20-342    |       | X      |         | 36          | ZP-24-673     |       |        | X       | 47          |
| ZP-16-16      | X     |        |         | 37          | ZP-C20-642    |       |        | X       | 36          | ZP-C24-675    |       |        | X       | 47          |
| ZP-16-316     |       | X      |         | 37          | ZP-20-43      | X     |        |         | 40          | ZP-C24-79     | X     |        |         | 38          |
| ZP-16-616     |       |        | X       | 37          | ZP-20-643     |       |        | X       | 40          | ZP-C24-680    |       |        | X       | 47          |
| ZP-16-321     |       | X      |         | 52          | ZP-20-344     |       | X      |         | 58          | ZP-C24-81     | X     |        |         | 48          |
| ZP-16-621     |       |        | X       | 52          | ZP-20-345     |       | X      |         | 58          | ZP-24-83      | X     |        |         | 36          |
| ZP-16-22      | X     |        |         | 35          | ZP-20-46      | X     |        |         | 40          | ZP-24-84      | X     |        |         | 56          |
| ZP-16-322     |       | X      |         | 35          | ZP-20-646     |       |        | X       | 40          | ZP-24-384     |       | X      |         | 56          |
| ZP-16-622     |       |        | X       | 35          | ZP-20-48      | X     |        |         | 40          | ZP-24-385     |       | X      |         | 59          |
| ZP-16-324     |       | X      |         | 49          | ZP-20-648     |       |        | X       | 40          | ZP-C24-687    |       |        | X       | 45          |
| ZP-16-624     |       |        | X       | 49          | ZP-20-49      | X     |        |         | 39          | ZP-C28-12     | X     |        |         | 54          |
| ZP-16-325     |       | X      |         | 48          | ZP-20-649     |       |        | X       | 39          | ZP-28-314     |       | X      |         | 59          |
| ZP-16-28      | X     |        |         | 34          | ZP-20-350     |       | X      |         | 53          | ZP-C28-15     | X     |        |         | 55          |
| ZP-16-628     |       |        | X       | 34          | ZP-20-650     |       |        | X       | 53          | ZP-C28-17     | X     |        |         | 41          |
| ZP-16-29      | X     |        |         | 45          | ZP-20-354     |       | X      |         | 55          | ZP-C28-18     | X     |        |         | 42          |
| ZP-16-333     |       | X      |         | 57          | ZP-20-55      | X     |        |         | 46          | ZP-C28-20     | X     |        |         | 38          |
| ZP-16-633     |       |        | X       | 57          | ZP-20-358     |       | X      |         | 49          | ZP-C28-21     | X     |        |         | 44          |
| ZP-16-335     |       | X      |         | 52          | ZP-20-659     |       |        | X       | 43          | ZP-28-322     |       | X      |         | 59          |
| ZP-16-635     |       |        | X       | 52          | ZP-20-672     |       |        | X       | 40          | ZP-C28-23     | X     |        |         | 39          |
| ZP-16-37      | X     |        |         | 51          | ZP-20-673     |       |        | X       | 55          | ZP-28-324     |       | X      |         | 56          |
| ZP-16-38      | X     |        |         | 35          | ZP-20-374     |       | X      |         | 52          | ZP-C28-327    |       | X      |         | 41          |
| ZP-16-638     |       |        | X       | 35          | ZP-20-674     |       |        | X       | 52          | ZP-C28-627    |       |        | X       | 41          |
| ZP-16-640     |       |        | X       | 55          | ZP-20-375     |       | X      |         | 47          | ZP-C28-328    |       | X      |         | 52          |
| ZP-16-344     |       | X      |         | 51          | ZP-20-676     |       |        | X       | 50          | ZP-C28-628    |       |        | X       | 52          |
| ZP-16-346     |       | X      |         | 45          | ZP-C20-379    |       | X      |         | 32          | ZP-C28-35     | X     |        |         | 41          |
| ZP-16-349     |       | X      |         | 48          | ZP-20-680     |       |        | X       | 46          | ZP-28-339     |       | X      |         | 54          |
| ZP-16-355     |       | X      |         | 50          | ZP-20-84      | X     |        |         | 37          | ZP-C28-42     | X     |        |         | 42          |
| ZP-16-655     |       |        | X       | 50          | ZP-20-384     |       | X      |         | 37          | ZP-C28-43     | X     |        |         | 44          |
| ZP-16-70      | X     |        |         | 33          | ZP-20-685     |       |        | X       | 46          |               |       |        |         |             |
|               |       |        |         |             | ZP-20-386     |       | X      |         | 53          |               |       |        |         |             |

# Insert Configurations

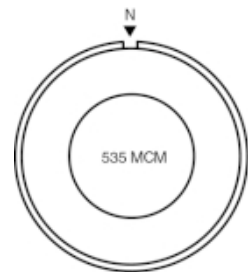
## 1 Contact (Dead Front Male Contact/Line Side)

| Style  | Wire Terminal Type | Shell Size | Insert Type   | Dash Number    | Catalog Number                 | Qty. | Size AWG.(mm)          | Current Rating |
|--------|--------------------|------------|---------------|----------------|--------------------------------|------|------------------------|----------------|
| Mod II | Crimp              | C24        | Pin<br>Socket | 386PN<br>386SN | RIG-C24-386PN<br>RIG-C24-386SN | 1    | 646 - 777<br>(300-400) | 1135           |



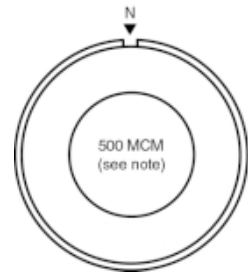
## 1 Contact (Dead Front Male Contact/Line Side)

| Style  | Wire Terminal Type | Shell Size | Insert Type   | Dash Number    | Catalog Number                 | Qty. | Size AWG.(mm)         | Current Rating |
|--------|--------------------|------------|---------------|----------------|--------------------------------|------|-----------------------|----------------|
| Mod II | Crimp              | C24        | Pin<br>Socket | 535PN<br>535SN | RIG-C24-535PN<br>RIG-C24-535SN | 1    | 444 - 535<br>(240.00) | 900            |



## 1 Contact

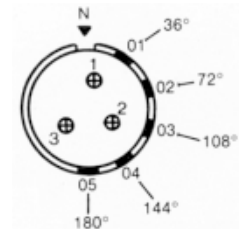
| Style  | Wire Terminal Type | Shell Size | Insert Type   | Dash Number    | Catalog Number               | Qty. | Size (AWG) | Service Voltage Rating |
|--------|--------------------|------------|---------------|----------------|------------------------------|------|------------|------------------------|
| Mod II | Crimp              | C20        | Pin<br>Socket | 379PN<br>379SN | ZP-C20-379PN<br>ZP-C20-379SN | 1    | 500MCM     | D                      |



NOTE: Will accept 535 standard stranding 500 MCM extra flexible cable.

## 3 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type   | Dash Number | Catalog Number         | Qty. | Size (AWG) | Service Voltage Rating |
|-------|--------------------|------------|---------------|-------------|------------------------|------|------------|------------------------|
| Mod I | Solder             | 12         | Pin<br>Socket | 27P<br>27S  | ZP-12-27P<br>ZP-12-27S | 3    | 12         | D                      |



| Contact Symbols |      |     |     |     |      |      |      |        |         |         |           |
|-----------------|------|-----|-----|-----|------|------|------|--------|---------|---------|-----------|
| Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0    | 350 MCM | 500 MCM | 646-777   |
| Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.00 | 185.00  | 240.00  | 300 - 400 |

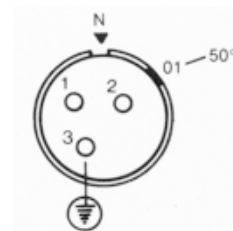


## Insert Configurations

### 3 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number |
|---------|--------------------|------------|-------------|----------------|----------------|
| Mod III | Crimp              | 12         | Pin Socket  | 651PN<br>651SN | ★<br>★         |

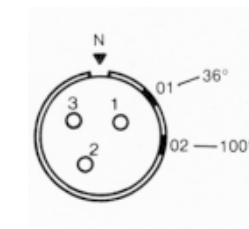
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 3    | 10         | D                      |



### 3 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number |
|---------|--------------------|------------|-------------|----------------|----------------|
| Mod III | Crimp              | 12         | Pin Socket  | 649PN<br>649SN | ★<br>★         |

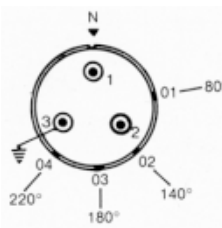
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 3    | 10         | D                      |



### 3 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number         |
|-------|--------------------|------------|-------------|-------------|------------------------|
| MOD I | Solder             | 12         | Pin Socket  | 56P<br>56S  | ZP-12-56P<br>ZP-12-56S |

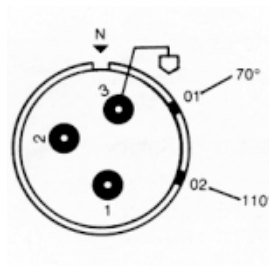
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 3    | 8          | ◆A                     |



### 3 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number  | Catalog Number           |
|-------|--------------------|------------|-------------|--------------|--------------------------|
| Mod I | Solder             | 16         | Pin Socket  | 74P<br>74S   | ZP-16-74P<br>ZP-16-74S   |
| Mod I | Pressure           | 16         | Pin Socket  | 74PR<br>74SR | ZP-16-74PR<br>ZP-16-74SR |

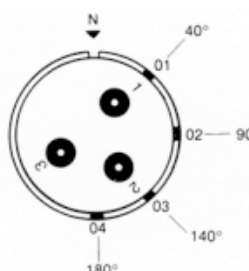
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 3    | 4          | D                      |



### 3 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number  | Catalog Number           |
|-------|--------------------|------------|-------------|--------------|--------------------------|
| Mod I | Solder             | 16         | Pin Socket  | 70P<br>70S   | ZP-16-70P<br>ZP-16-70S   |
| Mod I | Pressure           | 16         | Pin Socket  | 70PR<br>70SR | ZP-16-70PR<br>ZP-16-70SR |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 3    | 4          | D                      |



| Grounding Contact Termination Symbol |          |       | Contact Symbols | ○    | ●   | ⊕   | ⊙   | ⦿    | ⦿    | ⊕    | ⊕      | ⊕       | ⊕       | ⊕         | ⊕ |
|--------------------------------------|----------|-------|-----------------|------|-----|-----|-----|------|------|------|--------|---------|---------|-----------|---|
| Solder Well                          | Pressure | Crimp | Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0    | 350 MCM | 500 MCM | 646-777   |   |
|                                      |          |       | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.00 | 185.00  | 240.00  | 300 - 400 |   |

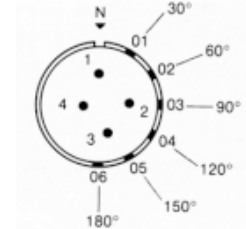
◆ For non-circuit breaking service only.  
 ◆ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ★ Pre-assembled insert should be ordered mounted in barrel.

# Insert Configurations

## 4 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number         |
|-------|--------------------|------------|-------------|-------------|------------------------|
| Mod I | Solder             | 12         | Pin Socket  | 33P<br>33S  | ZP-12-33P<br>ZP-12-33S |

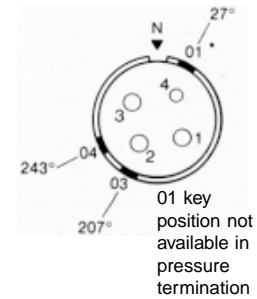
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 16         | D                      |



## 4 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number           |
|---------|--------------------|------------|-------------|----------------|--------------------------|
| Mod I   | Solder             | 12         | Pin Socket  | 14P<br>14S     | ZP-12-14P<br>ZP-12-14S   |
| Mod I   | Pressure           | 12         | Pin Socket  | 14PR<br>14SR   | ZP-12-14PR<br>ZP-12-14SR |
| Mod III | Crimp              | 12         | Pin Socket  | 614PN<br>614SN | ★<br>★                   |

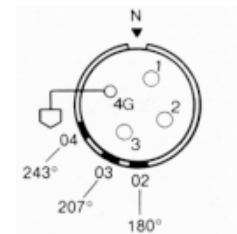
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 10         | D                      |



## 4 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number  | Catalog Number           |
|-------|--------------------|------------|-------------|--------------|--------------------------|
| Mod I | Solder             | 12         | Pin Socket  | 22P<br>22S   | ZP-12-22P<br>ZP-12-22S   |
| Mod I | Pressure           | 12         | Pin Socket  | 22PR<br>22SR | ZP-12-22PR<br>ZP-12-22SR |

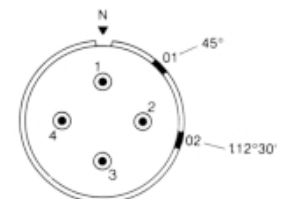
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 10         | D                      |



## 4 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number         |
|---------|--------------------|------------|-------------|----------------|------------------------|
| Mod I   | Solder             | 16         | Pin Socket  | 28P<br>28S     | ZP-16-28P<br>ZP-16-28S |
| Mod III | Crimp              | 16         | Pin Socket  | 628PN<br>628SN | ★<br>★                 |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 8          | D                      |



NOTE: Cannot be used with short cable adapter

| Grounding Contact Termination Symbol |          |       | Contact Symbols | Wire Size AWG. | Metric | 18 | 16 | 12 | 10 | 8 | 4 | 1/0 | 4/0 | 350 MCM | 500 MCM | 646-777 |
|--------------------------------------|----------|-------|-----------------|----------------|--------|----|----|----|----|---|---|-----|-----|---------|---------|---------|
| Solder Well                          | Pressure | Crimp |                 |                |        |    |    |    |    |   |   |     |     |         |         |         |
| ◆                                    | ◆        | ◆     | ◆               | ◆              | ◆      | ◆  | ◆  | ◆  | ◆  | ◆ | ◆ | ◆   | ◆   | ◆       | ◆       | ◆       |
| ◆                                    | ◆        | ◆     | ◆               | ◆              | ◆      | ◆  | ◆  | ◆  | ◆  | ◆ | ◆ | ◆   | ◆   | ◆       | ◆       | ◆       |
| ★                                    | ★        | ★     | ★               | ★              | ★      | ★  | ★  | ★  | ★  | ★ | ★ | ★   | ★   | ★       | ★       | ★       |

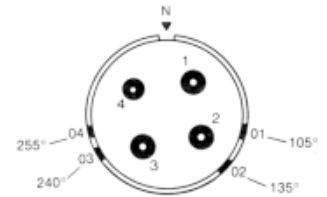
◆ For non-circuit breaking service only.  
 ◆ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ★ Pre-assembled insert should be ordered mounted in barrel.

## Insert Configurations

### 4 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod I   | Solder             | 16         | Pin Socket  | 22P<br>22S     | ZP-16-22P<br>ZP-16-22S     |
| Mod I   | Pressure           | 16         | Pin Socket  | 22PR<br>22SR   | ZP-16-22PR<br>ZP-16-22SR   |
| Mod II  | Crimp              | 16         | Pin Socket  | 322PN<br>322SN | ZP-16-322PN<br>ZP-16-322SN |
| Mod III | Crimp              | 16         | Pin Socket  | 622PN<br>622SN | ★<br>★                     |

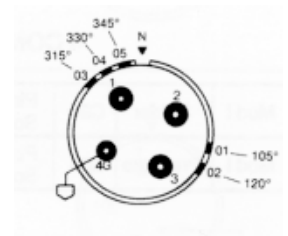
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 4          | D                      |



### 4 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number           |
|---------|--------------------|------------|-------------|----------------|--------------------------|
| Mod I   | Solder             | 16         | Pin Socket  | 38P<br>38S     | ZP-16-38P<br>ZP-16-38S   |
| Mod I   | Pressure           | 16         | Pin Socket  | 38PR<br>38SR   | ZP-16-38PR<br>ZP-16-38SR |
| Mod III | Crimp              | 16         | Pin Socket  | 638PN<br>638SN | ★<br>★                   |

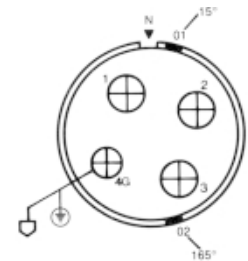
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 4          | D                      |














### 4 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod I   | Solder             | C20        | Pin Socket  | 40P<br>40S     | ZP-C20-40P<br>ZP-C20-40S   |
| Mod I   | Pressure           | C20        | Pin Socket  | 40PR<br>40SR   | ZP-C20-40PR<br>ZP-C20-40SR |
| Mod III | Crimp              | C20        | Pin Socket  | 640PN<br>640SN | ★<br>★                     |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 1/0        | D                      |



| Grounding Contact Termination Symbol |          |       | Contact Symbols |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------|----------|-------|-----------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Solder Well                          | Pressure | Crimp | Wire Size AWG.  | 18                                                                                  | 16                                                                                  | 12                                                                                  | 10                                                                                  | 8                                                                                   | 4                                                                                   | 1/0                                                                                   | 4/0                                                                                   | 350 MCM                                                                               | 500 MCM                                                                               | 646-777                                                                               |
|                                      |          |       | Metric          | 0.75                                                                                | 1.5                                                                                 | 4.0                                                                                 | 6.0                                                                                 | 10.0                                                                                | 25.0                                                                                | 50.0                                                                                  | 120.00                                                                                | 185.00                                                                                | 240.00                                                                                | 300 - 400                                                                             |

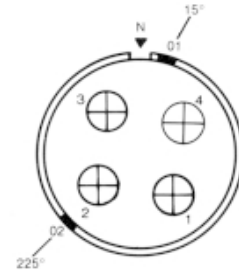
◆ For non-circuit breaking service only.  
● Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
★ Pre-assembled insert should be ordered mounted in barrel.

# Insert Configurations

## 4 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number               |
|---------|--------------------|------------|-------------|----------------|------------------------------|
| Mod I   | Solder             | C20        | Pin Socket  | 42P<br>42S     | ZP-C20-42P<br>ZP-C20-42S     |
| Mod I   | Pressure           | C20        | Pin Socket  | 42PR<br>42SR   | ZP-C20-42PR<br>ZP-C20-42SR   |
| Mod II  | Crimp              | C20        | Pin Socket  | 342PN<br>342SN | ZP-C20-342PN<br>ZP-C20-342SN |
| Mod III | Crimp              | C20        | Pin         | 642PN<br>642SN | ★<br>★                       |

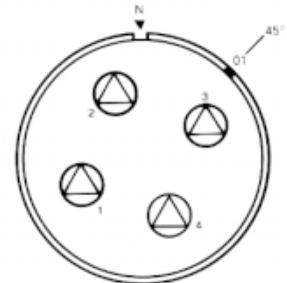
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 1/0        | D                      |



## 4 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number         |
|-------|--------------------|------------|-------------|-------------|------------------------|
| Mod I | Solder             | 24         | Pin Socket  | 83P<br>83S  | ZP-24-83P<br>ZP-24-83S |

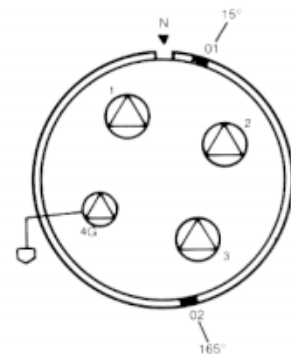
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 1/0        | ◆D                     |



## 4 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number  | Catalog Number             |
|-------|--------------------|------------|-------------|--------------|----------------------------|
| Mod I | Solder             | C24        | Pin Socket  | 26P<br>26S   | ZP-C24-26P<br>ZP-C24-26S   |
| Mod I | Pressure           | C24        | Pin Socket  | 26PR<br>26SR | ZP-C24-26PR<br>ZP-C24-26SR |

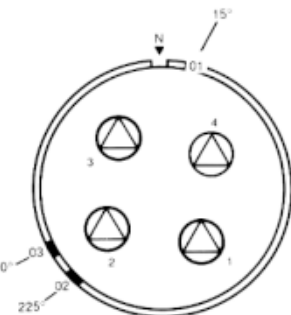
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 4/0        | D                      |



## 4 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number  | Catalog Number             |
|-------|--------------------|------------|-------------|--------------|----------------------------|
| Mod I | Solder             | C24        | Pin Socket  | 38P<br>38S   | ZP-C24-38P<br>ZP-C24-38S   |
| Mod I | Pressure           | C24        | Pin Socket  | 38PR<br>38SR | ZP-C24-38PR<br>ZP-C24-38SR |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 4/0        | D                      |



| Grounding Contact Termination Symbol |          |       | Contact Symbols |      |     |     |     |      |      |      |        |         |         |           |
|--------------------------------------|----------|-------|-----------------|------|-----|-----|-----|------|------|------|--------|---------|---------|-----------|
|                                      |          |       |                 |      |     |     |     |      |      |      |        |         |         |           |
| Solder Well                          | Pressure | Crimp | Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0    | 350 MCM | 500 MCM | 646-777   |
|                                      |          |       | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.00 | 185.00  | 240.00  | 300 - 400 |

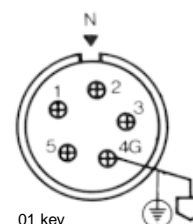
◆ For non-circuit breaking service only.  
 ◆ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ★ Pre-assembled insert should be ordered mounted in barrel.

## Insert Configurations

### 5 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number         |
|---------|--------------------|------------|-------------|----------------|------------------------|
| Mod I   | Solder             | 12         | Pin Socket  | 53P<br>53S     | ZP-12-53P<br>ZP-12-53S |
| Mod III | Crimp              | 12         | Pin Socket  | 653PN<br>653SN | ★<br>★                 |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 5    | 12         | D                      |

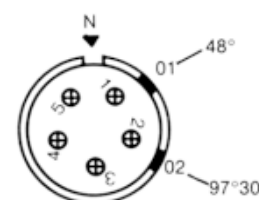


01 key position not available in pressure termination

### 5 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod I   | Solder             | 12         | Pin Socket  | 24P<br>24S     | ZP-12-24P<br>ZP-12-24S     |
| Mod III | Crimp              | 12         | Pin Socket  | 624PN<br>624SN | ZP-12-624PN<br>ZP-12-624SN |

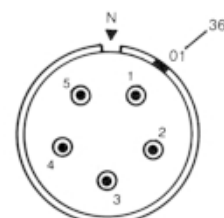
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 5    | 12         | D                      |



### 5 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod I   | Solder             | 16         | Pin Socket  | 16P<br>16S     | ZP-16-16P<br>ZP-16-16S     |
| Mod II  | Crimp              | 16         | Pin Socket  | 316PN<br>316SN | ZP-16-316PN<br>ZP-16-316SN |
| Mod III | Crimp              | 16         | Pin Socket  | 616PN<br>616SN | ★<br>★                     |

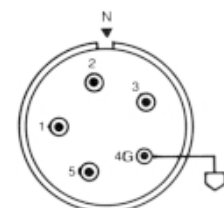
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 5    | 8          | D                      |



### 5 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number         |
|-------|--------------------|------------|-------------|-------------|------------------------|
| Mod I | Solder             | 16         | Pin Socket  | 75P<br>75S  | ZP-16-75P<br>ZP-16-75S |

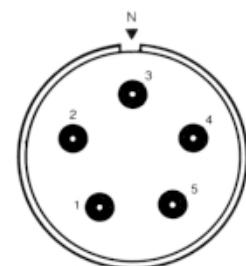
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 5    | 8          | D                      |



### 5 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod I  | Solder             | 20         | Pin Socket  | 84P<br>84S     | ZP-20-84P<br>ZP-20-84S     |
| Mod I  | Pressure           | 20         | Pin Socket  | 84PR<br>84SR   | ZP-20-84PR<br>ZP-20-84SR   |
| Mod II | Crimp              | 20         | Pin Socket  | 384PN<br>384SN | ZP-20-384PN<br>ZP-20-384SN |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 5    | 4          | D                      |



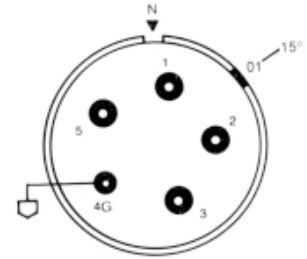


# Insert Configurations

## 5 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number  | Catalog Number           |
|-------|--------------------|------------|-------------|--------------|--------------------------|
| Mod I | Solder             | 20         | Pin Socket  | 38P<br>38S   | ZP-20-38P<br>ZP-20-38S   |
| Mod I | Pressure           | 20         | Pin Socket  | 38PR<br>38SR | ZP-20-38PR<br>ZP-20-38SR |

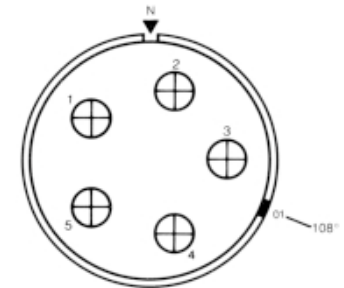
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 5    | 4          | D                      |



## 5 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number  | Catalog Number             |
|-------|--------------------|------------|-------------|--------------|----------------------------|
| Mod I | Solder             | C24        | Pin Socket  | 79P<br>79S   | ZP-C24-79P<br>ZP-C24-79S   |
| Mod I | Pressure           | C24        | Pin Socket  | 79PR<br>79SR | ZP-C24-79PR<br>ZP-C24-79SR |

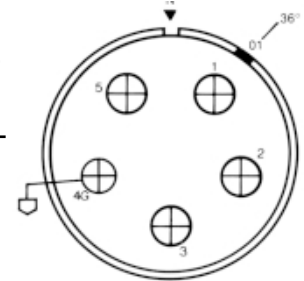
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 5    | 1/0        | E                      |



## 5 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number  | Catalog Number             |
|-------|--------------------|------------|-------------|--------------|----------------------------|
| Mod I | Solder             | C24        | Pin Socket  | 49P<br>49S   | ZP-C24-49P<br>ZP-C24-49S   |
| Mod I | Pressure           | C24        | Pin Socket  | 49PR<br>49SR | ZP-C24-49PR<br>ZP-C24-49SR |

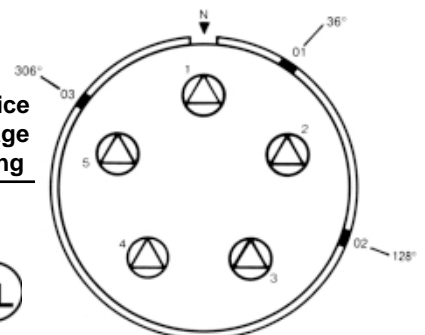
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 5    | 1/0        | E                      |



## 5 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number  | Catalog Number             |
|-------|--------------------|------------|-------------|--------------|----------------------------|
| Mod I | Solder             | C28        | Pin Socket  | 20P<br>20S   | ZP-C28-20P<br>ZP-C28-20S   |
| Mod I | Pressure           | C28        | Pin Socket  | 20PR<br>20SR | ZP-C28-20PR<br>ZP-C28-20SR |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 5    | 4/0        | D                      |



| Grounding Contact Termination Symbol |          |       | Contact Symbols |      |     |     |     |      |      |      |        |         |         |           |
|--------------------------------------|----------|-------|-----------------|------|-----|-----|-----|------|------|------|--------|---------|---------|-----------|
|                                      |          |       |                 |      |     |     |     |      |      |      |        |         |         |           |
| Solder Well                          | Pressure | Crimp | Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0    | 350 MCM | 500 MCM | 646-777   |
|                                      |          |       | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.00 | 185.00  | 240.00  | 300 - 400 |

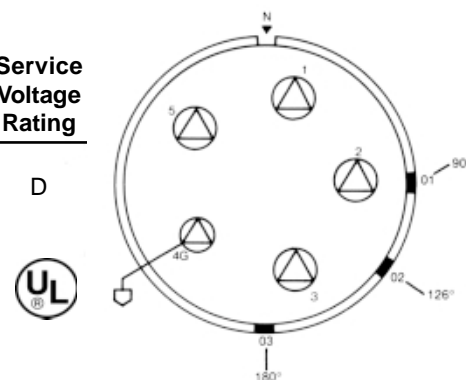
♦ For non-circuit breaking service only.  
 ● Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ★ Pre-assembled insert should be ordered mounted in barrel.

## Insert Configurations

### 5 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number  | Catalog Number             |
|-------|--------------------|------------|-------------|--------------|----------------------------|
| Mod I | Solder             | C28        | Pin Socket  | 23P<br>23S   | ZP-C28-23P<br>ZP-C28-23S   |
| Mod I | Pressure           | C28        | Pin Socket  | 23PR<br>23SR | ZP-C28-23PR<br>ZP-C28-23SR |

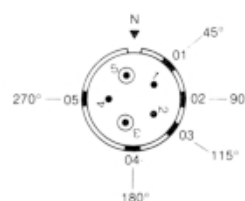
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 5    | 4/0        | D                      |



### 5 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 12         | Pin Socket  | 326PN<br>326SN | ZP-12-326PN<br>ZP-12-326SN |

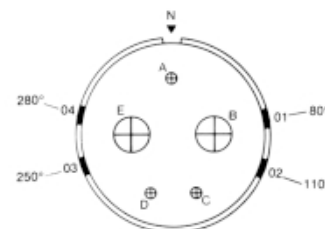
| Qty.   | Size (AWG) | Service Voltage Rating |
|--------|------------|------------------------|
| 2<br>3 | 8<br>16    | ◆ A<br>A               |



### 5 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number         |
|---------|--------------------|------------|-------------|----------------|------------------------|
| Mod I   | Solder             | 20         | Pin Socket  | 49P<br>49S     | ZP-20-49P<br>ZP-20-49S |
| Mod III | Crimp              | 20         | Pin Socket  | 649PN<br>649SN | ★<br>★                 |

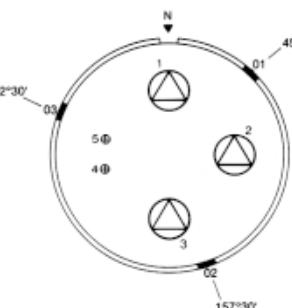
| Qty.   | Size (AWG) | Service Voltage Rating |
|--------|------------|------------------------|
| 2<br>3 | 1/0<br>12  | ◆ E<br>E               |

















### 5 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number           |
|-------|--------------------|------------|-------------|-------------|--------------------------|
| Mod I | Solder             | C24        | Pin Socket  | 48P<br>48S  | ZP-C24-48P<br>ZP-C24-48S |

| Qty.   | Size (AWG) | Service Voltage Rating |
|--------|------------|------------------------|
| 3<br>2 | 4/0<br>12  | ● D<br>A               |



| Grounding Contact Termination Symbol                                                |                                                                                     |                                                                                     | Contact Symbols                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |           |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------|
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |           |
| Solder Well                                                                         | Pressure                                                                            | Crimp                                                                               | Wire Size AWG.                                                                      | 18                                                                                  | 16                                                                                  | 12                                                                                  | 10                                                                                  | 8                                                                                     | 4                                                                                     | 1/0                                                                                   | 4/0                                                                                   | 350 MCM                                                                               | 500 MCM                                                                               | 646-777   |
|                                                                                     |                                                                                     |                                                                                     | Metric                                                                              | 0.75                                                                                | 1.5                                                                                 | 4.0                                                                                 | 6.0                                                                                 | 10.0                                                                                  | 25.0                                                                                  | 50.0                                                                                  | 120.00                                                                                | 185.00                                                                                | 240.00                                                                                | 300 - 400 |

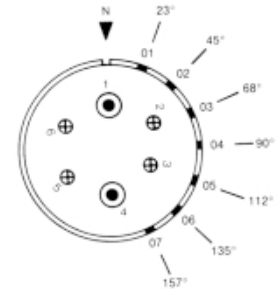
◆ For non-circuit breaking service only.  
● Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
★ Pre-assembled insert should be ordered mounted in barrel.

# Insert Configurations

## 6 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number |
|---------|--------------------|------------|-------------|----------------|----------------|
| Mod III | Crimp              | 20         | Pin Socket  | 672PN<br>672SN | ★<br>★         |

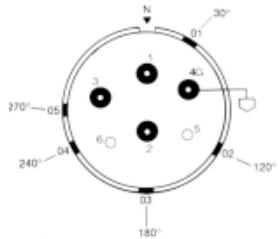
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 2    | 8          | E                      |
| 4    | 12         | E                      |



## 6 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number           |
|---------|--------------------|------------|-------------|----------------|--------------------------|
| Mod I   | Pressure           | 20         | Pin Socket  | 43PR<br>43SR   | ZP-20-43PR<br>ZP-20-43SR |
| Mod III | Crimp              | 20         | Pin Socket  | 643PN<br>643SN | ★<br>★                   |

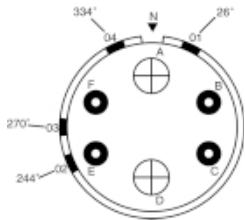
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 4          | D                      |
| 2    | 10         | D                      |



## 6 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number         |
|---------|--------------------|------------|-------------|----------------|------------------------|
| Mod I   | Solder             | 20         | Pin Socket  | 46P<br>46S     | ZP-20-46P<br>ZP-20-46S |
| Mod III | Crimp              | 20         | Pin Socket  | 646PN<br>646SN | ★<br>★                 |

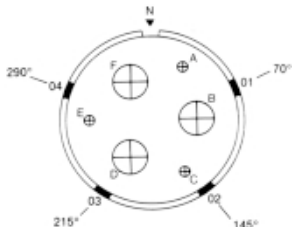
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 2    | 1/0        | A                      |
| 4    | 4          | A                      |



## 6 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number         |
|---------|--------------------|------------|-------------|----------------|------------------------|
| Mod I   | Solder             | 20         | Pin Socket  | 48P<br>48S     | ZP-20-48P<br>ZP-20-48S |
| Mod III | Crimp              | 20         | Pin Socket  | 648PN<br>648SN | ★<br>★                 |

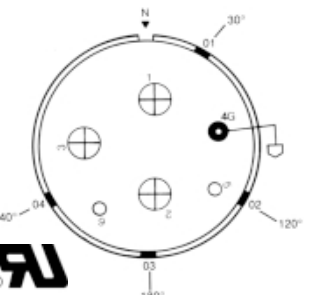
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 3    | 1/0        | D                      |
| 3    | 12         | D                      |

















## 6 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number  | Catalog Number             |
|-------|--------------------|------------|-------------|--------------|----------------------------|
| Mod I | Pressure           | C24        | Pin Socket  | 50PR<br>50SR | ZP-C24-50PR<br>ZP-C24-50SR |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 3    | 1/0        | D                      |
| 2    | 10 relay   | D                      |
| 1    | 4          | D                      |



| Grounding Contact Termination Symbol                                                |                                                                                     |                                                                                     | Contact Symbols   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  | Wire Size<br>AWG. |  |  |  |  |  |  |  |  |  |  |  |
| Solder Well                                                                         | Pressure                                                                            | Crimp                                                                               | Metric            | 18                                                                                  | 16                                                                                  | 12                                                                                  | 10                                                                                  | 8                                                                                   | 4                                                                                     | 1/0                                                                                   | 4/0                                                                                   | 350 MCM                                                                               | 500 MCM                                                                               | 646-777                                                                               |
|                                                                                     |                                                                                     |                                                                                     |                   | 0.75                                                                                | 1.5                                                                                 | 4.0                                                                                 | 6.0                                                                                 | 10.0                                                                                | 25.0                                                                                  | 50.0                                                                                  | 120.00                                                                                | 185.00                                                                                | 240.00                                                                                | 300 - 400                                                                             |

◆ For non-circuit breaking service only.

● Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.

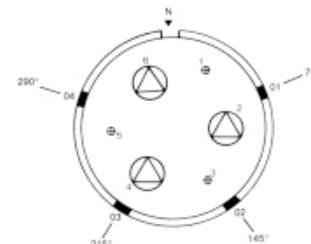
★ Pre-assembled insert should be ordered mounted in barrel.

## Insert Configurations

### 6 CONTACTS

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number           |
|-------|--------------------|------------|-------------|-------------|--------------------------|
| Mod I | Solder             | C24        | Pin Socket  | 72P<br>72S  | ZP-C24-72P<br>ZP-C24-72S |

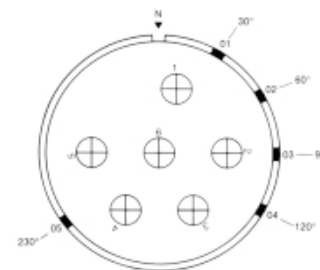
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 3    | 4/0        | D                      |
| 3    | 12         | D                      |



### 6 CONTACTS

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number               |
|---------|--------------------|------------|-------------|----------------|------------------------------|
| Mod II  | Crimp              | C28        | Pin Socket  | 327PN<br>327SN | ZP-C28-327PN<br>ZP-C28-327SN |
| Mod III | Crimp              | C28        | Pin Socket  | 627PN<br>627SN | ★<br>★                       |

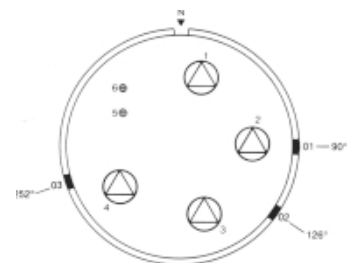
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 6    | 1/0        | D                      |



### 6 CONTACTS

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number           |
|-------|--------------------|------------|-------------|-------------|--------------------------|
| Mod I | Solder             | C28        | Pin Socket  | 17P<br>17S  | ZP-C28-17P<br>ZP-C28-17S |

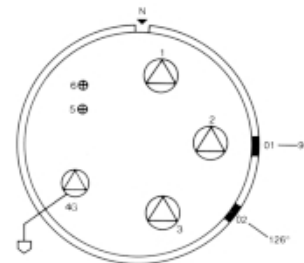
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 4/0        | D                      |
| 2    | 12 Relay   | A                      |



### 6 CONTACTS

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number           |
|-------|--------------------|------------|-------------|-------------|--------------------------|
| Mod I | Solder             | C28        | Pin Socket  | 35P<br>35S  | ZP-C28-35P<br>ZP-C28-35S |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 4/0        | D                      |
| 2    | 12 Relay   | A                      |



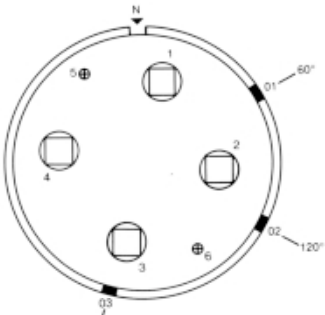
| Grounding Contact Termination Symbol                                                                                                                                                                                                                                     |          |       | Contact Symbols | Wire Size AWG. | Metric | 18 | 16 | 12 | 10 | 8 | 4 | 1/0 | 4/0 | 350 MCM | 500 MCM | 646-777 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------|-----------------|----------------|--------|----|----|----|----|---|---|-----|-----|---------|---------|---------|
|                                                                                                                                                                                                                                                                          |          |       |                 |                |        |    |    |    |    |   |   |     |     |         |         |         |
| Solder Well                                                                                                                                                                                                                                                              | Pressure | Crimp |                 |                |        |    |    |    |    |   |   |     |     |         |         |         |
| <ul style="list-style-type: none"> <li>◆ For non-circuit breaking service only.</li> <li>◆ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.</li> <li>★ Pre-assembled insert should be ordered mounted in barrel.</li> </ul> |          |       |                 |                |        |    |    |    |    |   |   |     |     |         |         |         |

# Insert Configurations

## 6 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|-------|--------------------|------------|-------------|-------------|----------------|
| Mod I | Solder             | C28        | Pin Socket  | 18P         | ZP-C28-18P     |
|       |                    |            |             | 18S         | ZP-C28-18S     |

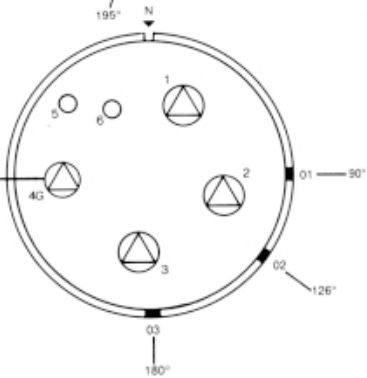
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 350 MCM    | D<br>E                 |
| 2    | 12 Relay   |                        |



## 6 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|-------|--------------------|------------|-------------|-------------|----------------|
| Mod I | Solder             | C28        | Pin Socket  | 42P         | ZP-C28-42P     |
|       |                    |            |             | 42S         | ZP-C28-42S     |
| Mod I | Pressure           | C28        | Pin Socket  | 42PR        | ZP-C28-42PR    |
|       |                    |            |             | 42SR        | ZP-C28-42SR    |

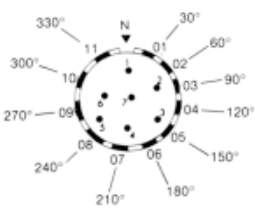
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 4/0        | D                      |
| 2    | 10 relay   |                        |



## 7 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|---------|--------------------|------------|-------------|-------------|----------------|
| Mod III | Crimp              | 12         | Pin Socket  | 648PN       | ★              |
|         |                    |            |             | 648SN       | ★              |

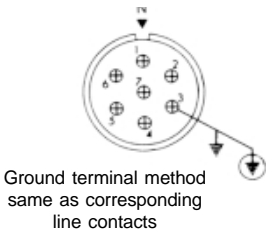
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 7    | 16         | A                      |



## 7 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|---------|--------------------|------------|-------------|-------------|----------------|
| Mod III | Crimp              | 12         | Pin Socket  | 310PN       | ZP-12-310PN    |
|         |                    |            |             | 310SN       | ZP-12-310SN    |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 7    | 12         | ◆ A                    |

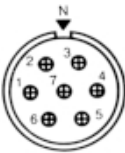


Ground terminal method same as corresponding line contacts

## 7 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|---------|--------------------|------------|-------------|-------------|----------------|
| Mod II  | Crimp              | 12         | Pin Socket  | 354PN       | ZP-12-354PN    |
|         |                    |            |             | 354SN       | ZP-12-354SN    |
| Mod III | Crimp              | 12         | Pin Socket  | 654PN       | ★              |
|         |                    |            |             | 654SN       | ★              |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 7    | 12         | ◆ A                    |



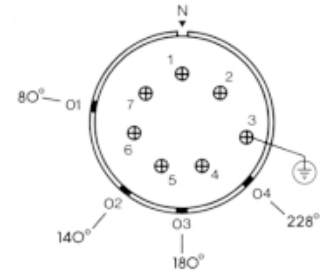
| Grounding Contact Termination Symbol                                                            |          |       | Contact Symbols | ○    | ●   | ⊕   | ○   | ⊙    | ⦿    | ⊕    | ⊗      | ⊗       | ⊗       | ⊗         | ⊗ |
|-------------------------------------------------------------------------------------------------|----------|-------|-----------------|------|-----|-----|-----|------|------|------|--------|---------|---------|-----------|---|
| Solder Well                                                                                     | Pressure | Crimp | Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0    | 350 MCM | 500 MCM | 646-777   |   |
|                                                                                                 |          |       | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.00 | 185.00  | 240.00  | 300 - 400 |   |
| ◆ For non-circuit breaking service only.                                                        |          |       |                 |      |     |     |     |      |      |      |        |         |         |           |   |
| ★ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit. |          |       |                 |      |     |     |     |      |      |      |        |         |         |           |   |
| ★ Pre-assembled insert should be ordered mounted in barrel.                                     |          |       |                 |      |     |     |     |      |      |      |        |         |         |           |   |

## Insert Configurations

### 7 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 16         | Pin Socket  | 378PN<br>378SN | ZP-16-378PN<br>ZP-16-378SN |

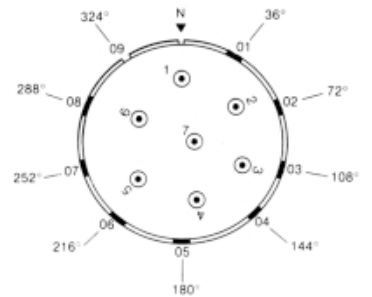
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 7    | 12         | D                      |



### 7 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number |
|---------|--------------------|------------|-------------|----------------|----------------|
| Mod III | Crimp              | 20         | Pin Socket  | 659PN<br>659SN | ★<br>★         |

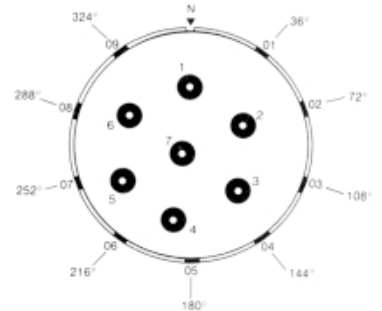
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 7    | 8          | E                      |



### 7 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number |
|---------|--------------------|------------|-------------|----------------|----------------|
| Mod III | Crimp              | 24         | Pin Socket  | 658PN<br>658SN | ★<br>★         |

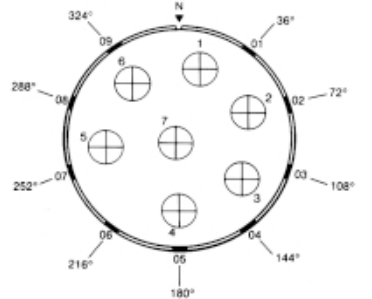
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 7    | 4          | E                      |



### 7 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number           |
|---------|--------------------|------------|-------------|----------------|--------------------------|
| Mod I   | Solder             | C24        | Pin Socket  | 59P<br>59S     | ZP-C24-59P<br>ZP-C24-59S |
| Mod III | Crimp              | C24        | Pin Socket  | 659PN<br>659SN | ★<br>★                   |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 7    | 1/0        | D                      |



| Grounding Contact Termination Symbol |          |       | Contact Symbols |      |     |     |     |      |      |      |       |         |         |           |
|--------------------------------------|----------|-------|-----------------|------|-----|-----|-----|------|------|------|-------|---------|---------|-----------|
|                                      |          |       |                 |      |     |     |     |      |      |      |       |         |         |           |
| Solder Well                          | Pressure | Crimp | Wire Size AWG   | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0   | 350 MCM | 500 MCM | 646-777   |
|                                      |          |       | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.0 | 185.0   | 240.0   | 300 - 400 |

♦ For non-circuit breaking service only.  
 ◆ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ★ Pre-assembled insert should be ordered mounted in barrel.

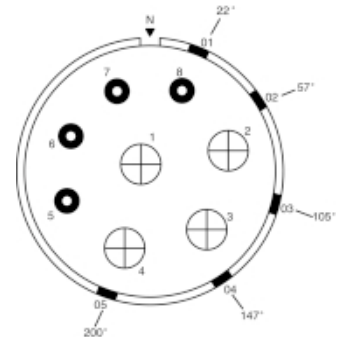


# Insert Configurations

## 8 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number         |
|---------|--------------------|------------|-------------|----------------|------------------------|
| Mod I   | Solder             | C24        | Pin Socket  | 55P<br>55S     | ZP-24-55P<br>ZP-24-55S |
| Mod III | Crimp              | C24        | Pin Socket  | 655PN<br>655SN | ★<br>★                 |

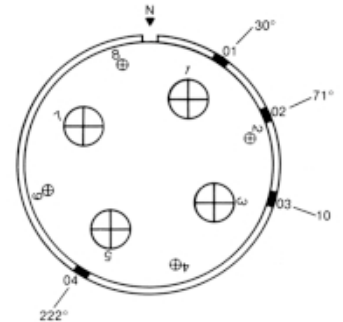
| Qty. | Max Size (AWG) | Service Voltage Rating |
|------|----------------|------------------------|
| 4    | 1/0            | ◆ D                    |
| 4    | 4              | D                      |



## 8 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number               |
|--------|--------------------|------------|-------------|----------------|------------------------------|
| Mod II | Crimp              | C24        | Pin Socket  | 353PN<br>353SN | ZP-C24-353PN<br>ZP-C24-353SN |

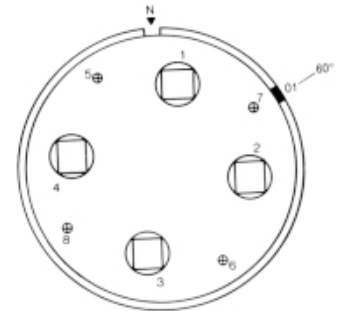
| Qty. | Max Size (AWG) | Service Voltage Rating |
|------|----------------|------------------------|
| 4    | 1/0            | ◆ B                    |
| 4    | 12             | A                      |



## 8 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number           |
|-------|--------------------|------------|-------------|-------------|--------------------------|
| Mod I | Solder             | C28        | Pin Socket  | 21P<br>21S  | ZP-C28-21P<br>ZP-C28-21S |

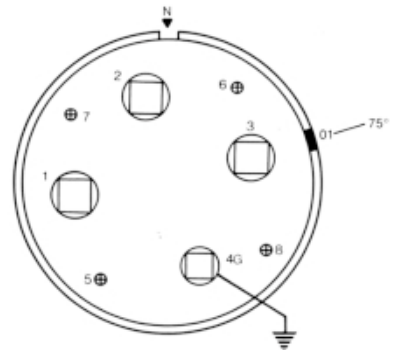
| Qty. | Max Size (AWG) | Service Voltage Rating |
|------|----------------|------------------------|
| 4    | 350 MCM        | ◆ D                    |
| 4    | 12 Relay       | E                      |



## 8 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number           |
|-------|--------------------|------------|-------------|-------------|--------------------------|
| Mod I | Solder             | C28        | Pin Socket  | 43P<br>43S  | ZP-C28-43P<br>ZP-C28-43S |

| Qty. | Max Size (AWG) | Service Voltage Rating |
|------|----------------|------------------------|
| 4    | 350 MCM        | ◆ D                    |
| 4    | 12 Relay       | E                      |



| Grounding Contact Termination Symbol |          |       | Contact Symbols | ○    | ●   | ⊕   | ⊖   | ⊙    | ⦿    | ⊕    | ⊖      | ⊙       | ⦿       | ⊕         | ⊖ | ⊙ | ⦿ |
|--------------------------------------|----------|-------|-----------------|------|-----|-----|-----|------|------|------|--------|---------|---------|-----------|---|---|---|
| Solder Well                          | Pressure | Crimp | Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0    | 350 MCM | 500 MCM | 646-777   |   |   |   |
|                                      |          |       | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.00 | 185.00  | 240.00  | 300 - 400 |   |   |   |

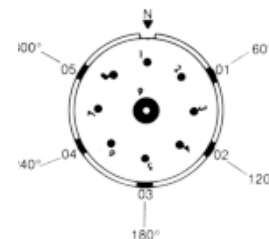
◆ For non-circuit breaking service only.  
 ● Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ★ Pre-assembled insert should be ordered mounted in barrel.

## Insert Configurations

### 9 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number         |
|-------|--------------------|------------|-------------|-------------|------------------------|
| Mod I | Solder             | 16         | Pin Socket  | 29P<br>29S  | ZP-16-29P<br>ZP-16-29S |

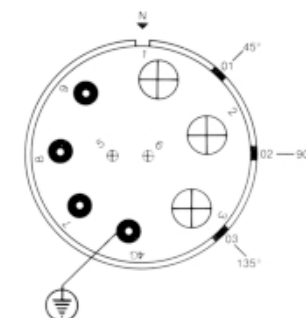
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 1    | 4          | D                      |
| 8    | 16         | D                      |



### 9 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number |
|---------|--------------------|------------|-------------|----------------|----------------|
| Mod III | Crimp              | C24        | Pin Socket  | 687PN<br>687SN | ★<br>★         |

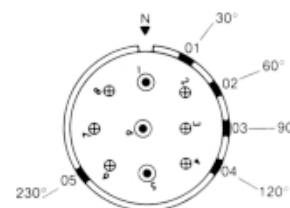
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 3    | 1/0        | D                      |
| 4    | 4          | D                      |
| 2    | 12         | D                      |



### 9 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 16         | Pin Socket  | 346PN<br>346SN | ZP-16-346PN<br>ZP-16-346SN |

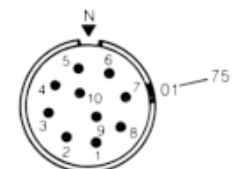
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 6    | 12         | A                      |
| 3    | 8          | A                      |



### 10 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II  | Crimp              | 12         | Pin Socket  | 355PN<br>355SN | ZP-12-355PN<br>ZP-12-355SN |
| Mod III | Crimp              | 12         | Pin Socket  | 655PN<br>655SN | ★<br>★                     |

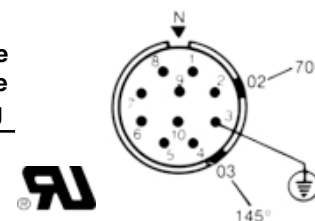
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 10   | 16         | A                      |



### 10 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 12         | Pin Socket  | 334PN<br>334SN | ZP-12-334PN<br>ZP-12-334SN |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 10   | 16         | A                      |



| Grounding Contact Termination Symbol |          |       | Contact Symbols |      |     |     |     |      |      |      |       |         |         |           |
|--------------------------------------|----------|-------|-----------------|------|-----|-----|-----|------|------|------|-------|---------|---------|-----------|
|                                      |          |       |                 |      |     |     |     |      |      |      |       |         |         |           |
| Solder Well                          | Pressure | Crimp | Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0   | 350 MCM | 500 MCM | 646-777   |
|                                      |          |       | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.0 | 185.00  | 240.00  | 300 - 400 |

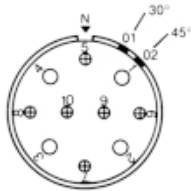
♦ For non-circuit breaking service only.  
 ◆ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ★ Pre-assembled insert should be ordered mounted in barrel.

# Insert Configurations

## 10 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|---------|--------------------|------------|-------------|-------------|----------------|
| Mod III | Crimp              | 16         | Pin Socket  | 681PN       | ★              |
|         |                    |            |             | 681SN       | ★              |

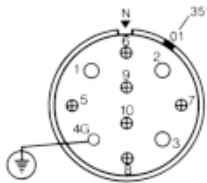
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 10         | D                      |
| 6    | 12         | D                      |



## 10 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|---------|--------------------|------------|-------------|-------------|----------------|
| Mod III | Crimp              | 16         | Pin Socket  | 676PN       | ★              |
|         |                    |            |             | 676SN       | ★              |

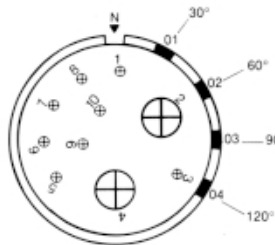
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 10         | D                      |
| 6    | 12         | D                      |



## 10 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|-------|--------------------|------------|-------------|-------------|----------------|
| Mod I | Solder             | 20         | Pin Socket  | 55P         | ZP-20-55P      |
|       |                    |            |             | 55S         | ZP-20-55S      |

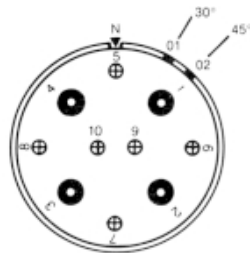
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 2    | 1/0        | D                      |
| 8    | 12         | D                      |



## 10 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|---------|--------------------|------------|-------------|-------------|----------------|
| Mod III | Crimp              | 20         | Pin Socket  | 680PN       | ★              |
|         |                    |            |             | 680SN       | ★              |

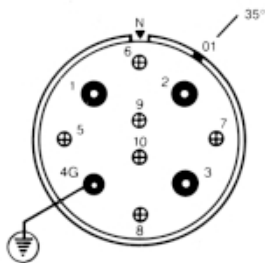
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 4          | D                      |
| 6    | 12         | D                      |



## 10 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|---------|--------------------|------------|-------------|-------------|----------------|
| Mod III | Crimp              | 20         | Pin Socket  | 685PN       | ★              |
|         |                    |            |             | 685SN       | ★              |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 4          | D                      |
| 6    | 12         | D                      |



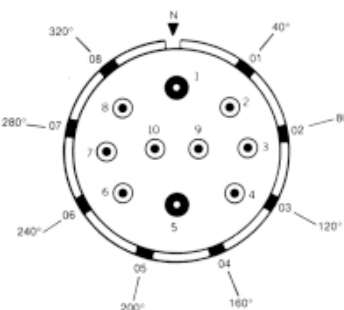
| Grounding Contact Termination Symbol                                                            |  |  | Contact Symbols |      |     |     |     |      |      |      |        |         |         |           |  |
|-------------------------------------------------------------------------------------------------|--|--|-----------------|------|-----|-----|-----|------|------|------|--------|---------|---------|-----------|--|
|                                                                                                 |  |  | Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0    | 350 MCM | 500 MCM | 646-777   |  |
|                                                                                                 |  |  | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.00 | 185.00  | 240.00  | 300 - 400 |  |
| ◆ For non-circuit breaking service only.                                                        |  |  |                 |      |     |     |     |      |      |      |        |         |         |           |  |
| ◆ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit. |  |  |                 |      |     |     |     |      |      |      |        |         |         |           |  |
| ★ Pre-assembled insert should be ordered mounted in barrel.                                     |  |  |                 |      |     |     |     |      |      |      |        |         |         |           |  |

## Insert Configurations

### 10 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|---------|--------------------|------------|-------------|-------------|----------------|
| Mod III | Crimp              | 24         | Pin Socket  | 673PN       | ★              |
|         |                    |            |             | 673SN       | ★              |

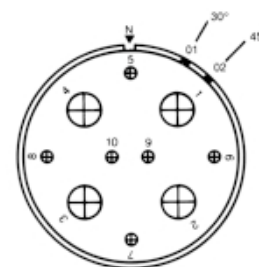
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 2    | 4          | D                      |
| 8    | 8          |                        |



### 10 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|---------|--------------------|------------|-------------|-------------|----------------|
| Mod III | Crimp              | C24        | Pin Socket  | 675PN       | ★              |
|         |                    |            |             | 675SN       | ★              |

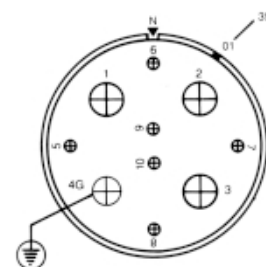
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 1/0        | D                      |
| 6    | 12         | D                      |



### 10 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|---------|--------------------|------------|-------------|-------------|----------------|
| Mod III | Crimp              | C24        | Pin Socket  | 680PN       | ★              |
|         |                    |            |             | 680SN       | ★              |

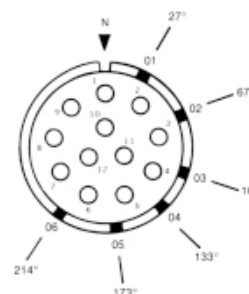
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 1/0        | D                      |
| 6    | 12         | D                      |



### 12 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|--------|--------------------|------------|-------------|-------------|----------------|
| Mod II | Crimp              | 20         | Pin Socket  | 375PN       | ZP-20-375PN    |
|        |                    |            |             | 375SN       | ZP-20-375SN    |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 12   | 10         | D                      |



| Grounding Contact Termination Symbol |          |       | Contact Symbols |      |     |     |     |      |      |      |        |         |         |           |
|--------------------------------------|----------|-------|-----------------|------|-----|-----|-----|------|------|------|--------|---------|---------|-----------|
|                                      |          |       |                 |      |     |     |     |      |      |      |        |         |         |           |
| Solder Well                          | Pressure | Crimp | Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0    | 350 MCM | 500 MCM | 646-777   |
|                                      |          |       | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.00 | 185.00  | 240.00  | 300 - 400 |

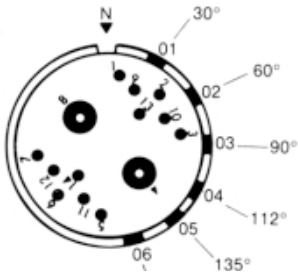
♦ For non-circuit breaking service only.  
 ◆ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ★ Pre-assembled insert should be ordered mounted in barrel.

# Insert Configurations

## 14 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 16         | Pin Socket  | 349PN<br>349SN | ZP-16-349PN<br>ZP-16-349SN |

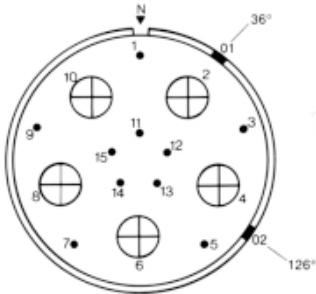
| Qty.    | Size (AWG) | Service Voltage Rating |
|---------|------------|------------------------|
| 2<br>12 | 4<br>16    | ◆ D<br>A               |



## 15 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number         |
|-------|--------------------|------------|-------------|-------------|------------------------|
| Mod I | Solder             | 24         | Pin Socket  | 40P<br>40S  | ZP-24-40P<br>ZP-24-40S |

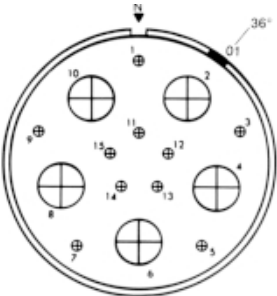
| Qty.    | Size (AWG) | Service Voltage Rating |
|---------|------------|------------------------|
| 5<br>10 | 1/0<br>16  | ◆ D<br>D               |



## 15 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number           |
|-------|--------------------|------------|-------------|-------------|--------------------------|
| Mod I | Solder             | C24        | Pin Socket  | 47P<br>47S  | ZP-C24-47P<br>ZP-C24-47S |

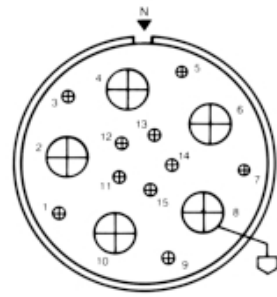
| Qty.    | Size (AWG) | Service Voltage Rating |
|---------|------------|------------------------|
| 5<br>10 | 1/0<br>12  | D<br>A                 |



## 15 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number           |
|-------|--------------------|------------|-------------|-------------|--------------------------|
| Mod I | Solder             | C24        | Pin Socket  | 81P<br>81S  | ZP-C24-81P<br>ZP-C24-81S |

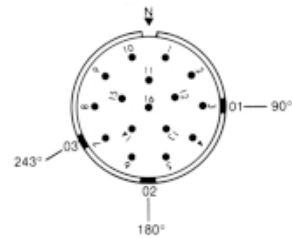
| Qty.    | Size (AWG) | Service Voltage Rating |
|---------|------------|------------------------|
| 5<br>10 | 1/0<br>12  | D<br>A                 |



## 16 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 16         | Pin Socket  | 325PN<br>325SN | ZP-16-325PN<br>ZP-16-325SN |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 16   | 16         | D                      |



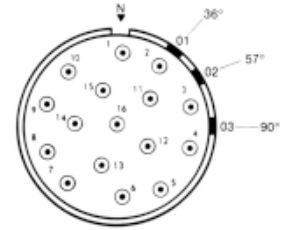
| Grounding Contact Termination Symbol                                                            |          |       | Contact Symbols |        |         |           |     |      |     |        |         |        |         |        |
|-------------------------------------------------------------------------------------------------|----------|-------|-----------------|--------|---------|-----------|-----|------|-----|--------|---------|--------|---------|--------|
|                                                                                                 |          |       |                 |        |         |           |     |      |     |        |         |        |         |        |
| Solder Well                                                                                     | Pressure | Crimp | Wire Size AWG.  | Metric | 18      | 0.75      | 16  | 1.5  | 12  | 4.0    | 10      | 6.0    | 8       | 10.0   |
|                                                                                                 |          |       |                 |        | 4       | 25.0      | 1/0 | 50.0 | 4/0 | 120.00 | 350 MCM | 185.00 | 500 MCM | 240.00 |
|                                                                                                 |          |       |                 |        | 646-777 | 300 - 400 |     |      |     |        |         |        |         |        |
| ◆ For non-circuit breaking service only.                                                        |          |       |                 |        |         |           |     |      |     |        |         |        |         |        |
| ◆ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit. |          |       |                 |        |         |           |     |      |     |        |         |        |         |        |
| ★ Pre-assembled insert should be ordered mounted in barrel.                                     |          |       |                 |        |         |           |     |      |     |        |         |        |         |        |

# Insert Configurations

## 16 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 20         | Pin Socket  | 358PN<br>358SN | ZP-20-358PN<br>ZP-20-358SN |

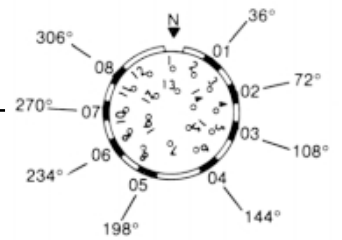
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 16   | 8          | ◆ A                    |



## 17 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II  | Crimp              | 12         | Pin Socket  |                | ZP-12-323PN<br>ZP-12-323SN |
| Mod III | Crimp              | 12         | Pin Socket  | 623PN<br>623SN | ★<br>★                     |

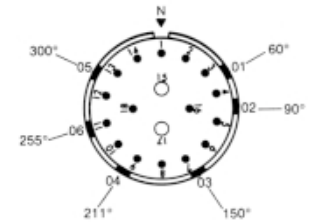
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 17   | 18         | ◆ A                    |



## 18 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II  | Crimp              | 16         | Pin Socket  | 324PN<br>324SN | ZP-16-324PN<br>ZP-16-324SN |
| Mod III | Crimp              | 16         | Pin Socket  | 624PN<br>624SN | ★<br>★                     |

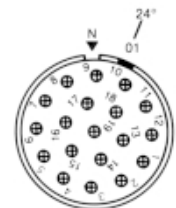
| Qty.    | Size (AWG) | Service Voltage Rating |
|---------|------------|------------------------|
| 2<br>16 | 10<br>16   | D                      |



## 19 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II  | Crimp              | 16         | Pin Socket  | 377PN<br>377SN | ZP-16-377PN<br>ZP-16-377SN |
| Mod III | Crimp              | 16         | Pin Socket  | 677PN<br>677SN | ★<br>★                     |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 19   | 12         | ◆ A                    |



| Grounding Contact Termination Symbol |          |       | Contact Symbols |      |     |     |     |      |      |      |        |         |         |           |
|--------------------------------------|----------|-------|-----------------|------|-----|-----|-----|------|------|------|--------|---------|---------|-----------|
| ⏏                                    | ⏏        | ⏏     | ○               | ●    | ⊕   | ○   | ⦿   | ⦿    | ⦿    | ⦿    | ⦿      | ⦿       | ⦿       | ⦿         |
| Solder Well                          | Pressure | Crimp | Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0    | 350 MCM | 500 MCM | 646-777   |
|                                      |          |       | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.00 | 185.00  | 240.00  | 300 - 400 |

◆ For non-circuit breaking service only.  
 ★ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ★ Pre-assembled insert should be ordered mounted in barrel.

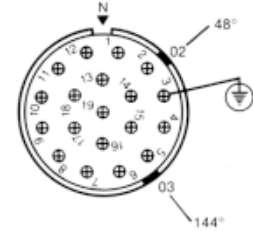


# Insert Configurations

## 19 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 16         | Pin Socket  | 312PN<br>312SN | ZP-16-312PN<br>ZP-16-312SN |

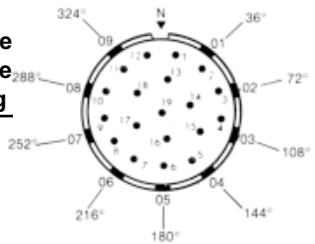
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 19   | 12         | ◆ A                    |



## 19 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II  | Crimp              | 16         | Pin Socket  | 355PN<br>355SN | ZP-16-355PN<br>ZP-16-355SN |
| Mod III | Crimp              | 16         | Pin Socket  | 655PN<br>655SN | ★<br>★                     |

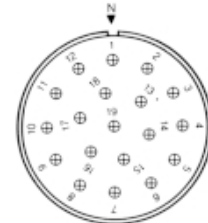
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 19   | 16         | A                      |



## 19 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number |
|---------|--------------------|------------|-------------|----------------|----------------|
| Mod III | Crimp              | 20         | Pin Socket  | 676PN<br>676SN | ★<br>★         |

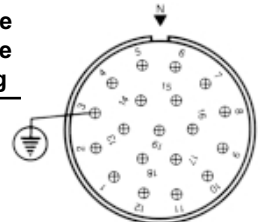
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 19   | 12         | D                      |



## 19 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number |
|---------|--------------------|------------|-------------|----------------|----------------|
| Mod III | Crimp              | 20         | Pin Socket  | 688PN<br>688SN | ★<br>★         |

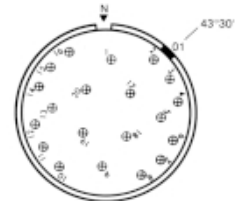
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 19   | 12         | D                      |



## 20 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod I   | Solder             | 20         | Pin Socket  | 32P<br>32S     | ZP-20-32P<br>ZP-20-32S     |
| Mod II  | Crimp              | 20         | Pin Socket  | 332PN<br>332SN | ZP-20-332PN<br>ZP-20-332SN |
| Mod III | Crimp              | 20         | Pin Socket  | 632PN<br>632SN | ★<br>★                     |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 20   | 12         | ◆ B Center<br>A Outer  |



| Grounding Contact Termination Symbol |  |  | Contact Symbols | Wire Size AWG. | Metric | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0    | 350 MCM | 500 MCM | 646-777   |
|--------------------------------------|--|--|-----------------|----------------|--------|------|-----|-----|-----|------|------|------|--------|---------|---------|-----------|
|                                      |  |  |                 |                |        | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.00 | 185.00  | 240.00  | 300 - 400 |

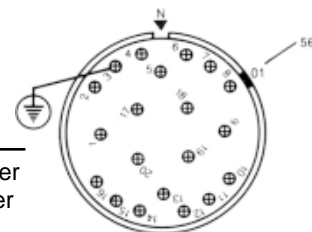
◆ For non-circuit breaking service only.  
 ★ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ★ Pre-assembled insert should be ordered mounted in barrel.

## Insert Configurations

### 20 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 20         | Pin Socket  | 387PN<br>387SN | ZP-20-387PN<br>ZP-20-387SN |

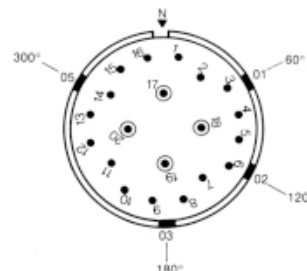
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 20   | 12         | ◆ B Center<br>A Outer  |



### 20 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 20         | Pin Socket  | 334PN<br>334SN | ZP-20-334PN<br>ZP-20-334SN |

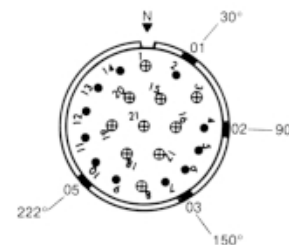
| Qty.    | Size (AWG) | Service Voltage Rating |
|---------|------------|------------------------|
| 4<br>16 | 8<br>16    | ◆ D<br>D               |



### 21 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 16         | Pin Socket  | 344PN<br>344SN | ZP-16-344PN<br>ZP-16-344SN |

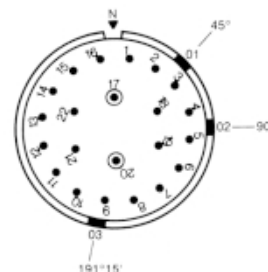
| Qty.     | Size (AWG) | Service Voltage Rating |
|----------|------------|------------------------|
| 10<br>11 | 12<br>16   | ◆ A<br>A               |



### 22 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 20         | Pin Socket  | 331PN<br>331SN | ZP-20-331PN<br>ZP-20-331SN |

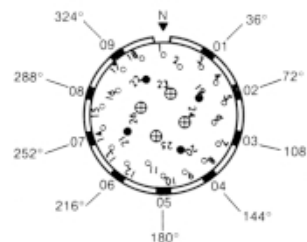
| Qty.    | Size (AWG) | Service Voltage Rating |
|---------|------------|------------------------|
| 2<br>20 | 8<br>16    | ◆ E<br>D               |



### 26 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number         |
|-------|--------------------|------------|-------------|-------------|------------------------|
| Mod I | Solder             | 16         | Pin Socket  | 37P<br>37S  | ZP-16-37P<br>ZP-16-37S |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 12         | A                      |
| 4    | 16         | ◆ A                    |
| 18   | 18         | A                      |



| Grounding Contact Termination Symbol |          |       | Contact Symbols |      |     |     |     |      |      |      |       |         |         |           |
|--------------------------------------|----------|-------|-----------------|------|-----|-----|-----|------|------|------|-------|---------|---------|-----------|
| ⏏                                    | ⏏        | ⏏     | ○               | ●    | ⊕   | ○   | ⊙   | ⊙    | ⊕    | ⊕    | ⊕     | ⊕       | ⊕       | ⊕         |
| Solder Well                          | Pressure | Crimp | Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0   | 350 MCM | 500 MCM | 646-777   |
|                                      |          |       | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.0 | 185.00  | 240.00  | 300 - 400 |

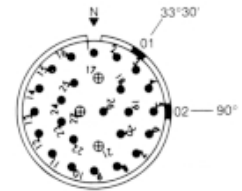
◆ For non-circuit breaking service only.  
 ● Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ★ Pre-assembled insert should be ordered mounted in barrel.

# Insert Configurations

## 27 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II  | Crimp              | 16         | Pin Socket  | 335PN<br>335SN | ZP-16-335PN<br>ZP-16-335SN |
| Mod III | Crimp              | 16         | Pin Socket  | 635PN<br>635SN | ★<br>★                     |

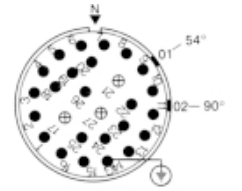
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 3    | 12         | ◆ A                    |
| 24   | 16         | ◆ A                    |



## 27 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number |
|---------|--------------------|------------|-------------|----------------|----------------|
| Mod III | Crimp              | 16         | Pin Socket  | 673PN<br>673SN | ★<br>★         |

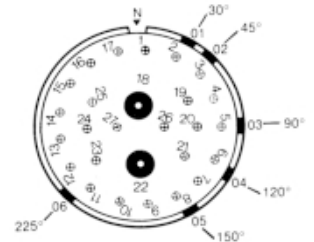
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 24   | 16         | A                      |
| 3    | 12         | A                      |



## 27 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II  | Crimp              | 20         | Pin Socket  | 374PN<br>374SN | ZP-20-374PN<br>ZP-20-374SN |
| Mod III | Crimp              | 20         | Pin Socket  | 674PN<br>674SN | ★<br>★                     |

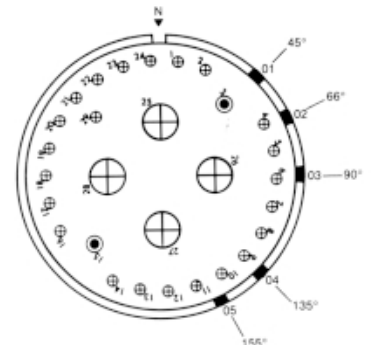
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 2    | 4          | ◆ D                    |
| 25   | 12         | ◆ A                    |



## 29 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number               |
|---------|--------------------|------------|-------------|----------------|------------------------------|
| Mod II  | Crimp              | C28        | Pin Socket  | 328PN<br>328SN | ZP-C28-328PN<br>ZP-C28-328SN |
| Mod III | Crimp              | C28        | Pin Socket  | 628PN<br>628SN | ★<br>★                       |

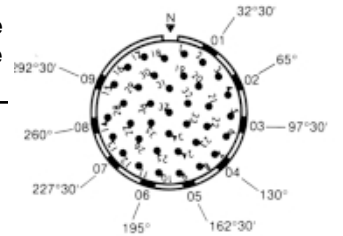
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 1/0        | D                      |
| 2    | 8          | ◆ D                    |
| 23   | 12         | A                      |

















## 37 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II  | Crimp              | 16         | Pin Socket  | 321PN<br>321SN | ZP-16-321PN<br>ZP-16-321SN |
| Mod III | Crimp              |            | Pin Socket  | 621PN<br>621SN | ★<br>★                     |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 37   | 16         | ◆ A                    |



| Grounding Contact Termination Symbol                                                |                                                                                     |                                                                                     | Contact Symbols   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  | Wire Size<br>AWG. |  |  |  |  |  |  |  |  |  |  |  |
| Solder Well                                                                         | Pressure                                                                            | Crimp                                                                               | Metric            | 18                                                                                  | 16                                                                                  | 12                                                                                  | 10                                                                                  | 8                                                                                   | 4                                                                                     | 1/0                                                                                   | 4/0                                                                                   | 350 MCM                                                                               | 500 MCM                                                                               | 646-777                                                                               |
|                                                                                     |                                                                                     |                                                                                     |                   | 0.75                                                                                | 1.5                                                                                 | 4.0                                                                                 | 6.0                                                                                 | 10.0                                                                                | 25.0                                                                                  | 50.0                                                                                  | 120.00                                                                                | 185.00                                                                                | 240.00                                                                                | 300 - 400                                                                             |

◆ For non-circuit breaking service only.

● Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.

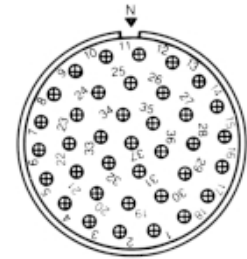
★ Pre-assembled insert should be ordered mounted in barrel.

# Insert Configurations

## 37 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II  | Crimp              | 20         | Pin Socket  | 386PN<br>386SN | ZP-20-386PN<br>ZP-20-386SN |
| Mod III | Crimp              | 20         | Pin Socket  | 686PN<br>686SN | ★<br>★                     |

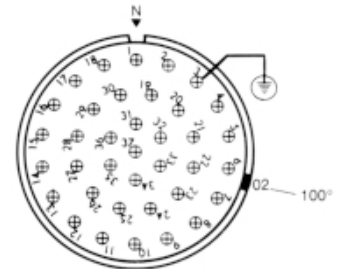
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 37   | 12         | ◆A                     |



## 37 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II  | Crimp              | 20         | Pin Socket  | 350PN<br>350SN | ZP-20-350PN<br>ZP-20-350SN |
| Mod III | Crimp              | 20         | Pin Socket  | 650PN<br>650SN | ★<br>★                     |

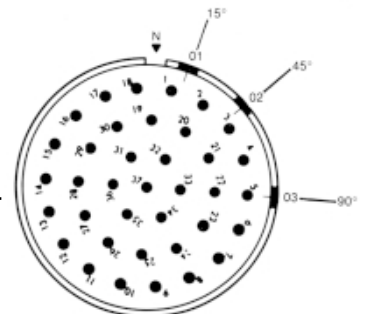
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 37   | 12         | A                      |



## 37 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 24         | Pin Socket  | 371PN<br>371SN | ZP-24-371PN<br>ZP-24-371SN |

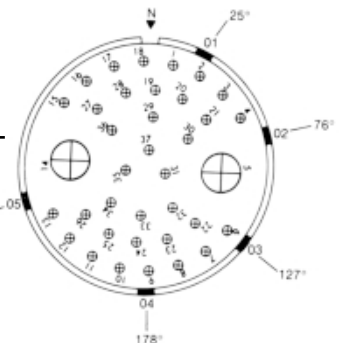
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 37   | 16         | D                      |



## 37 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number           |
|-------|--------------------|------------|-------------|-------------|--------------------------|
| Mod I | Solder             | C24        | Pin Socket  | 36P<br>36S  | ZP-C24-36P<br>ZP-C24-36S |

| Qty.    | Size (AWG) | Service Voltage Rating |
|---------|------------|------------------------|
| 2<br>35 | 1/0<br>12  | D<br>A                 |



| Grounding Contact Termination Symbol |          |       | Contact Symbols |      |     |     |     |      |      |      |        |         |         |           |
|--------------------------------------|----------|-------|-----------------|------|-----|-----|-----|------|------|------|--------|---------|---------|-----------|
| ⏏                                    | ⏏        | ⏏     | ○               | ●    | ⊕   | ○   | ⊙   | ⊙    | ⊕    | ⊕    | ⊕      | ⊕       | ⊕       | ⊕         |
| Solder Well                          | Pressure | Crimp | Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0    | 350 MCM | 500 MCM | 646-777   |
|                                      |          |       | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.00 | 185.00  | 240.00  | 300 - 400 |

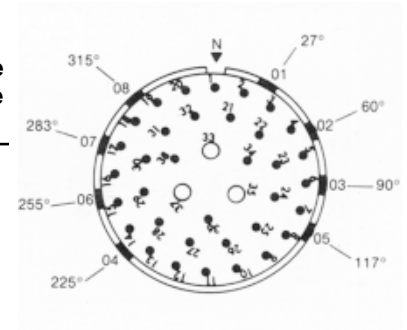
◆ For non-circuit breaking service only.  
 ● Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ★ Pre-assembled insert should be ordered mounted in barrel.

# Insert Configurations

## 38 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II  | Crimp              | 20         | Pin Socket  | 323PN<br>323SN | ZP-20-323PN<br>ZP-20-323SN |
| Mod III | Crimp              | 20         | Pin Socket  | 623PN<br>623SN | ★<br>★                     |

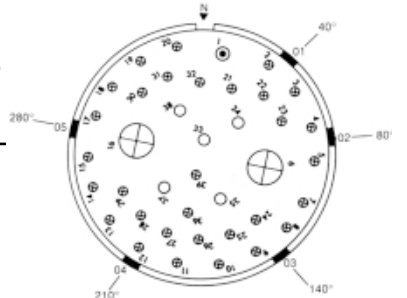
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 3    | 10         | A                      |
| 35   | 16         | A                      |



## 39 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number           |
|-------|--------------------|------------|-------------|-------------|--------------------------|
| Mod I | Solder             | C28        | Pin Socket  | 12P<br>12S  | ZP-C28-12P<br>ZP-C28-12S |

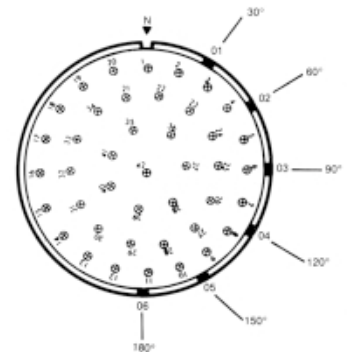
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 1    | 8          | D                      |
| 2    | 1/0        | D                      |
| 5    | 10         | S                      |
| 31   | 12         | A                      |



## 42 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 28         | Pin Socket  | 339PN<br>339SN | ZP-28-339PN<br>ZP-28-339SN |

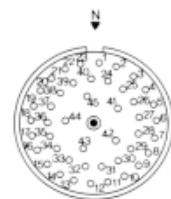
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 42   | 12         | D                      |














## 46 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 16         | Pin Socket  | 371PN<br>371SN | ZP-16-371PN<br>ZP-16-371SN |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 45   | 18         | A                      |
| 1    | 8          | A                      |



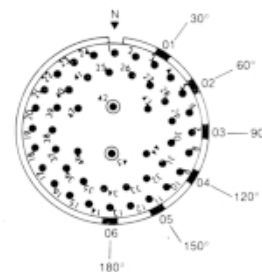
| Grounding Contact Termination Symbol                                                                                                                                                                                                  |          |       | Contact Symbols |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------|-----------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Solder Well                                                                                                                                                                                                                           | Pressure | Crimp | Wire Size AWG.  | 18                                                                                  | 16                                                                                  | 12                                                                                  | 10                                                                                  | 8                                                                                   | 4                                                                                   | 1/0                                                                                  | 4/0                                                                                   | 350 MCM                                                                               | 500 MCM                                                                               | 646-777                                                                               |
|                                                                                                                                                                                                                                       |          |       | Metric          | 0.75                                                                                | 1.5                                                                                 | 4.0                                                                                 | 6.0                                                                                 | 10.0                                                                                | 25.0                                                                                | 50.0                                                                                 | 120.00                                                                                | 185.00                                                                                | 240.00                                                                                | 300 - 400                                                                             |
| <div>◆ For non-circuit breaking service only.</div> <div>● Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.</div> <div>★ Pre-assembled insert should be ordered mounted in barrel.</div> |          |       |                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                                                                                       |                                                                                       |

## Insert Configurations

### 47 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 20         | Pin Socket  | 354PN<br>354SN | ZP-20-354PN<br>ZP-20-354SN |

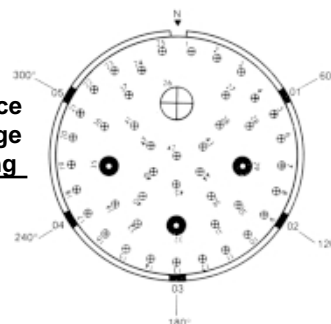
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 2    | 8          | D                      |
| 45   | 16         | A                      |



### 47 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number           |
|-------|--------------------|------------|-------------|-------------|--------------------------|
| Mod I | Solder             | C28        | Pin Socket  | 15P<br>15S  | ZP-C28-15P<br>ZP-C28-15S |

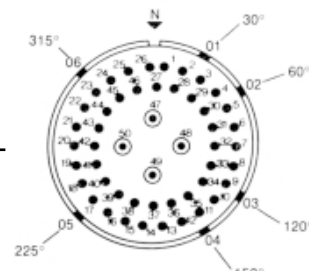
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 1    | 1/0        | D                      |
| 3    | 4          | D                      |
| 43   | 12         | A                      |



### 50 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number |
|---------|--------------------|------------|-------------|----------------|----------------|
| Mod III | Crimp              | 20         | Pin Socket  | 673PN<br>673SN | ★<br>★         |

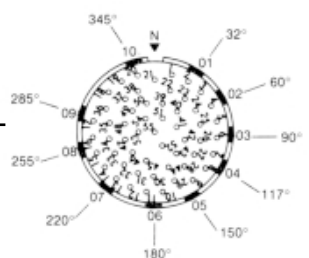
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 4    | 8          | D                      |
| 46   | 16         | A                      |



### 55 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number |
|---------|--------------------|------------|-------------|----------------|----------------|
| Mod III | Crimp              | 16         | Pin Socket  | 640PN<br>640SN | ★<br>★         |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 55   | 18         | ◆ Inst.                |



| Grounding Contact Termination Symbol                                                                                                                                                                       |          |       | Contact Symbols |      |     |     |     |      |      |      |        |         |         |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------|-----------------|------|-----|-----|-----|------|------|------|--------|---------|---------|-----------|
| ⏏                                                                                                                                                                                                          | ⏏        | ⏏     | ○               | ●    | ⊕   | ○   | ⊙   | ⊙    | ⊕    | ⊕    | ⊕      | ⊕       | ⊕       | ⊕         |
| Solder Well                                                                                                                                                                                                | Pressure | Crimp | Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0    | 350 MCM | 500 MCM | 646-777   |
|                                                                                                                                                                                                            |          |       | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.00 | 185.00  | 240.00  | 300 - 400 |
| ◆ For non-circuit breaking service only.<br>● Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.<br>★ Pre-assembled insert should be ordered mounted in barrel. |          |       |                 |      |     |     |     |      |      |      |        |         |         |           |

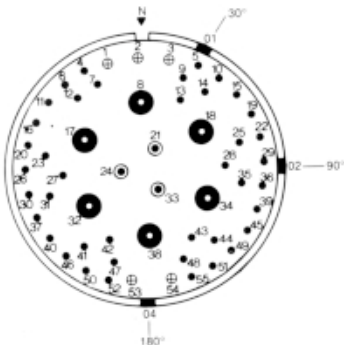


# Insert Configurations

## 55 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 28         | Pin Socket  | 324PN<br>324SN | ZP-28-324PN<br>ZP-28-324SN |

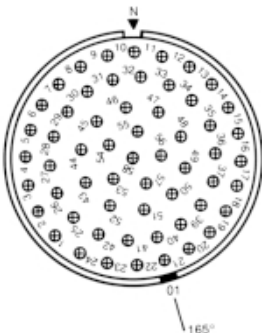
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 3    | 8          | D                      |
| 6    | 4          | D                      |
| 5    | 12         | ◆ A                    |
| 41   | 16         | A                      |



## 58 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod I  | Solder             | 24         | Pin Socket  | 84P<br>84S     | ZP-24-84P<br>ZP-24-84S     |
| Mod II | Crimp              | 24         | Pin Socket  | 384PN<br>384SN | ZP-24-384PN<br>ZP-24-384SN |

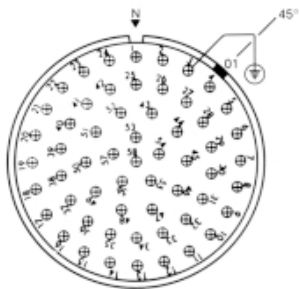
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 58   | 12         | ◆ A                    |



## 58 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 24         | Pin Socket  | 352PN<br>352SN | ZP-24-352PN<br>ZP-24-352SN |

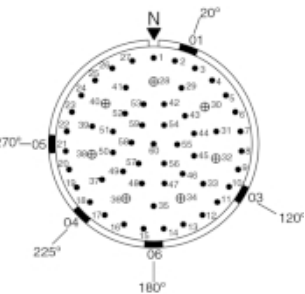
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 58   | 12         | ◆ A                    |



## 60 Contacts

| Style | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number         |
|-------|--------------------|------------|-------------|-------------|------------------------|
| Mod I | Solder             | 20         | Pin Socket  | 35P<br>35S  | ZP-20-35P<br>ZP-20-35S |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 60   | 16         | ◆ A                    |



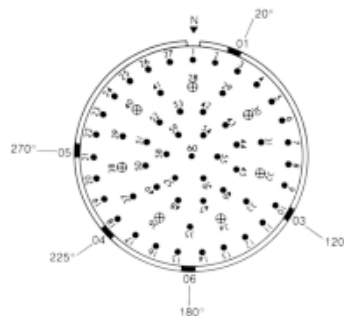
| Grounding Contact Termination Symbol                                                            |          |       | Contact Symbols | Wire Size AWG. | Metric | 18 | 16 | 12 | 10 | 8 | 4 | 1/0 | 4/0 | 350 MCM | 500 MCM | 646-777 |
|-------------------------------------------------------------------------------------------------|----------|-------|-----------------|----------------|--------|----|----|----|----|---|---|-----|-----|---------|---------|---------|
|                                                                                                 |          |       |                 |                |        |    |    |    |    |   |   |     |     |         |         |         |
| Solder Well                                                                                     | Pressure | Crimp |                 |                |        |    |    |    |    |   |   |     |     |         |         |         |
| ◆ For non-circuit breaking service only.                                                        |          |       |                 |                |        |    |    |    |    |   |   |     |     |         |         |         |
| ● Small contacts disengage 1/8" before large contacts to provide time delay in control circuit. |          |       |                 |                |        |    |    |    |    |   |   |     |     |         |         |         |
| ★ Pre-assembled insert should be ordered mounted in barrel.                                     |          |       |                 |                |        |    |    |    |    |   |   |     |     |         |         |         |

## Insert Configurations

### 60 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 24         | Pin Socket  | 331PN<br>331SN | ZP-24-331PN<br>ZP-24-331SN |

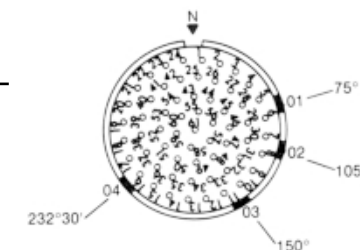
| Qty.    | Size (AWG) | Service Voltage Rating |
|---------|------------|------------------------|
| 7<br>53 | 12<br>16   | ◆ A<br>A               |



### 61 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II  | Crimp              | 16         | Pin Socket  | 333PN<br>333SN | ZP-16-333PN<br>ZP-16-333SN |
| Mod III | Crimp              | 16         | Pin Socket  | 633PN<br>633SN | ★<br>★                     |

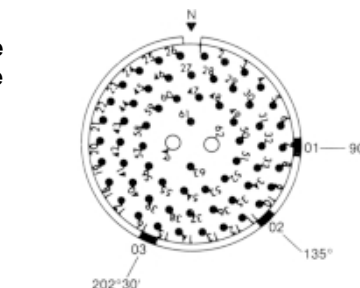
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 61   | 18         | Inst.                  |



### 64 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 20         | Pin Socket  | 329PN<br>329SN | ZP-20-329PN<br>ZP-20-329SN |

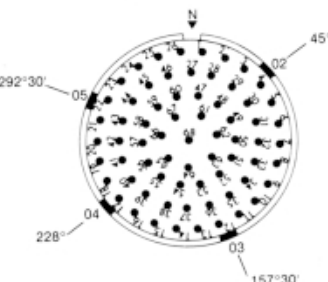
| Qty.    | Size (AWG) | Service Voltage Rating |
|---------|------------|------------------------|
| 2<br>62 | 10<br>16   | ◆ A<br>A               |



### 68 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II  | Crimp              | 20         | Pin Socket  | 313PN<br>313SN | ZP-20-313PN<br>ZP-20-313SN |
| Mod III | Crimp              | 20         | Pin Socket  | 613PN<br>613SN | ★<br>★                     |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 68   | 16         | ◆ A                    |



| Grounding Contact Termination Symbol |          |       | Contact Symbols |      |     |     |     |      |      |      |       |         |         |           |
|--------------------------------------|----------|-------|-----------------|------|-----|-----|-----|------|------|------|-------|---------|---------|-----------|
| ◆                                    | Pressure | Crimp | Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0   | 350 MCM | 500 MCM | 646-777   |
| ◆                                    | Pressure | Crimp | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.0 | 185.00  | 240.00  | 300 - 400 |

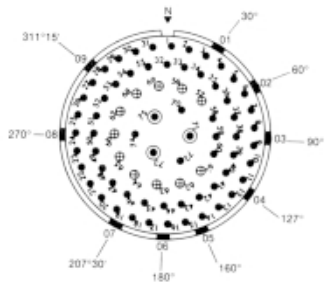
◆ For non-circuit breaking service only.  
 ◆ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ★ Pre-assembled insert should be ordered mounted in barrel.

# Insert Configurations

## 75 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|--------|--------------------|------------|-------------|-------------|----------------|
| Mod II | Crimp              | 24         | Pin Socket  | 354PN       | ZP-24-354PN    |
|        |                    |            |             | 354SN       | ZP-24-354SN    |

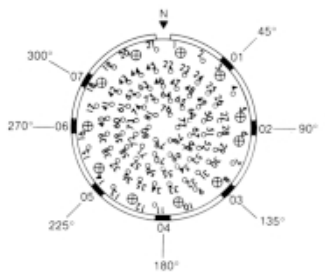
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 3    | 8          | A                      |
| 11   | 12         | ◆ A                    |
| 61   | 16         | A                      |



## 81 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|--------|--------------------|------------|-------------|-------------|----------------|
| Mod II | Crimp              | 20         | Pin Socket  | 344PN       | ZP-20-344PN    |
|        |                    |            |             | 344SN       | ZP-20-344SN    |

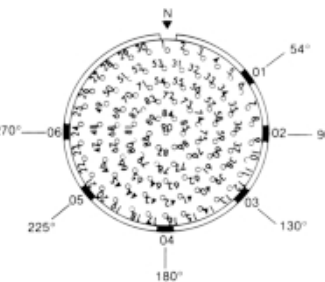
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 11   | 12         | ◆ A                    |
| 70   | 18         | A                      |



## 90 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number | Catalog Number |
|--------|--------------------|------------|-------------|-------------|----------------|
| Mod II | Crimp              | 20         | Pin Socket  | 345PN       | ZP-20-345PN    |
|        |                    |            |             | 345SN       | ZP-20-345SN    |

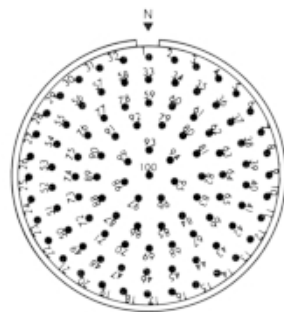
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 90   | 18         | ◆ A                    |



## 100 Contacts

| Style   | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|---------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II  | Crimp              | 24         | Pin Socket  | 313PN<br>313SN | ZP-24-313PN<br>ZP-24-313SN |
| Mod III | Crimp              | 24         | Pin Socket  | 613PN<br>613SN | ★<br>★                     |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 100  | 16         | ◆ A                    |



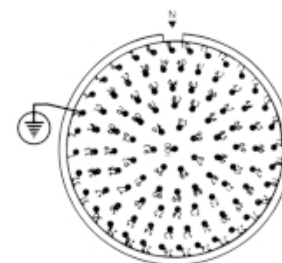
| Grounding Contact Termination Symbol                                                            |          |       | Contact Symbols | ○    | ●   | ⊕   | ○   | ⊙    | ⦿    | ⊕    | ⊗      | ⊠       | ⊡       | ⊢         | ⊣ |
|-------------------------------------------------------------------------------------------------|----------|-------|-----------------|------|-----|-----|-----|------|------|------|--------|---------|---------|-----------|---|
| Solder Well                                                                                     | Pressure | Crimp | Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0    | 350 MCM | 500 MCM | 646-777   |   |
|                                                                                                 |          |       | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.00 | 185.00  | 240.00  | 300 - 400 |   |
| ◆ For non-circuit breaking service only.                                                        |          |       |                 |      |     |     |     |      |      |      |        |         |         |           |   |
| ◆ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit. |          |       |                 |      |     |     |     |      |      |      |        |         |         |           |   |
| ★ Pre-assembled insert should be ordered mounted in barrel.                                     |          |       |                 |      |     |     |     |      |      |      |        |         |         |           |   |

# Insert Configurations

## 100 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 24         | Pin Socket  | 385PN<br>385SN | ZP-24-385PN<br>ZP-24-385SN |

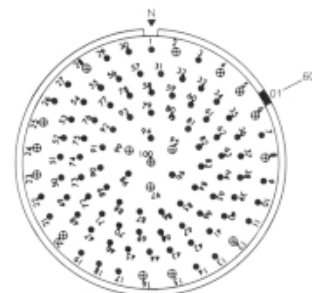
| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 100  | 16         | A                      |



## 100 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 28         | Pin Socket  | 314PN<br>314SN | ZP-28-314PN<br>ZP-28-314SN |

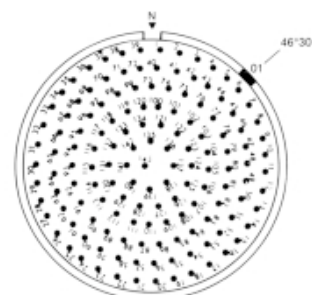
| Qty.     | Size (AWG) | Service Voltage Rating |
|----------|------------|------------------------|
| 17<br>83 | 12<br>16   | ◆ A<br>A               |



## 143 Contacts

| Style  | Wire Terminal Type | Shell Size | Insert Type | Dash Number    | Catalog Number             |
|--------|--------------------|------------|-------------|----------------|----------------------------|
| Mod II | Crimp              | 28         | Pin Socket  | 322PN<br>322SN | ZP-28-322PN<br>ZP-28-322SN |

| Qty. | Size (AWG) | Service Voltage Rating |
|------|------------|------------------------|
| 143  | 16         | ◆ A                    |



| Grounding Contact Termination Symbol |          |       | Contact Symbols |      |     |     |     |      |      |      |        |         |         |           |
|--------------------------------------|----------|-------|-----------------|------|-----|-----|-----|------|------|------|--------|---------|---------|-----------|
|                                      |          |       |                 |      |     |     |     |      |      |      |        |         |         |           |
| Solder Well                          | Pressure | Crimp | Wire Size AWG.  | 18   | 16  | 12  | 10  | 8    | 4    | 1/0  | 4/0    | 350 MCM | 500 MCM | 646-777   |
|                                      |          |       | Metric          | 0.75 | 1.5 | 4.0 | 6.0 | 10.0 | 25.0 | 50.0 | 120.00 | 185.00  | 240.00  | 300 - 400 |

◆ For non-circuit breaking service only.  
 ◆ Small contacts disengage 1/8" before large contacts to provide time delay in control circuit.  
 ★ Pre-assembled insert should be ordered mounted in barrel.

# Connector Components Spare Parts and Accessories

## Male Skirt for Straight Plug

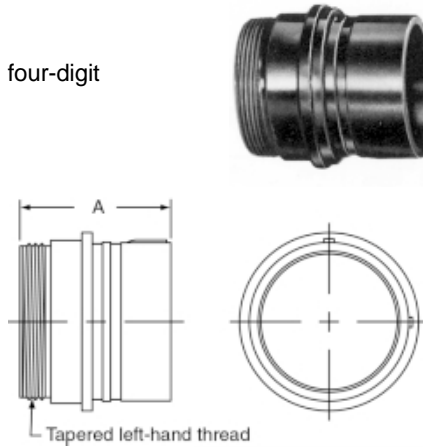
Male skirts only for Mod I are designated by a four-digit number.

**Example: ZP-W-1312** (Star-Line)

Male skirts only for Mod II are designated by a seven-digit number.

**Example: ZP-W-1312-200** (Star-Line)

Mod II inserts must not be used in Mod I shells or Mod I inserts in Mod II shells as the method of accomplishing environmental sealing differs



| Shell Size | Cat. No. Mod I | DIMENSIONS |  |
|------------|----------------|------------|--|
|            |                | A          |  |
| 12         | ZP-W-1312      | 2-1/64     |  |
| 16         | ZP-W-1316      | 2-1/64     |  |
| 20         | ZP-W-1320      | 2-1/64     |  |
| C20        | ZP-C-1320      | 2-33/64    |  |
| 24         | ZP-W-1324      | 2-1/64     |  |
| C24        | ZP-C-1324      | 2-33/64    |  |
| 28         | ZP-W-1328      | 2-1/64     |  |
| C28        | ZP-C-1328      | 2-33/64    |  |

## Plug Shell Assembly

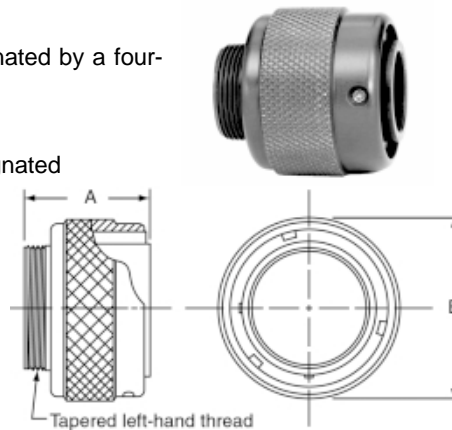
Plug shell assemblies only for Mod I are designated by a four-digit number.

**Example: SP-W-1012** (Star-Lok)

Plug shell assemblies only for Mod II are designated by a seven-digit number.

**Example: SP-W-1012-200** (Star-Lok)

Mod II inserts must not be used in Mod I plug shell assemblies or Mod I inserts in Mod II plug shell assemblies as the method of accomplishing environmental sealing differs



| Shell Size | Cat. No. Mod I | DIMENSIONS |         |
|------------|----------------|------------|---------|
|            |                | A          | B       |
| 12         | SP-W-1012      | 2-1/64     | 1-29/32 |
| 16         | SP-W-1016      | 2-1/64     | 2-13/32 |
| 20         | SP-W-1020      | 2-1/64     | 2-29/32 |
| C20        | SP-C-1020      | 2-33/64    | 2-29/32 |
| 24         | SP-W-1024      | 2-1/64     | 3-13/32 |
| C24        | SP-C-1024      | 2-33/64    | 3-13/32 |

## Female Skirt for In-Line Receptacle

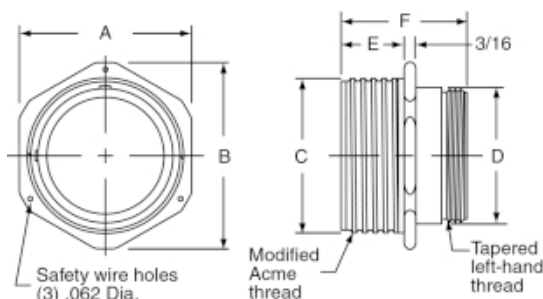
Female skirts only for Mod I are designated by a four-digit number.

**Example: ZP-WO-1512** (Star-Line)

Female skirts only for Mod II are designated by a seven-digit number.

**Example: ZP-WO-1512-200** (Star-Line)

Mod II inserts must not be used in Mod I shells or Mod I inserts in Mod II shells as the method of accomplishing environmental sealing differs.



| Shell Size | Cat. No. Mod I | DIMENSIONS |         |       |         |       |         |
|------------|----------------|------------|---------|-------|---------|-------|---------|
|            |                | A          | B       | C     | D       | E     | F       |
| 12         | ZP-WO-1512     | 1-3/4      | 1-61/64 | 1-1/2 | 1-3/32  | 1     | 2-1/64  |
| 16         | ZP-WO-1516     | 2-1/4      | 2-31/64 | 2     | 1-19/32 | 1     | 2-1/64  |
| 20         | ZP-WO-1520     | 2-3/4      | 3-1/32  | 2-1/2 | 2-3/32  | 1     | 2-1/64  |
| C20        | ZP-CO-1520     | 2-3/4      | 3-1/32  | 2-1/2 | 2-3/32  | 1-1/2 | 2-33/64 |
| 24         | ZP-WO-1524     | 3-1/4      | 3-9/16  | 3     | 2-19/32 | 1     | 2-1/64  |
| C24        | ZP-CO-1524     | 3-1/4      | 3-9/16  | 3     | 2-19/32 | 1-1/2 | 2-33/64 |
| 28         | ZP-WO-1528     | 3-3/4      | 4-1/16  | 3-1/2 | 3-3/32  | 1     | 2-1/64  |
| C28        | ZP-CO-1528     | 3-3/4      | 4-1/16  | 3-1/2 | 3-3/32  | 1-1/2 | 2-33/64 |

## Connector Components Spare Parts and Accessories

### Basic Barrel for Panel, Square Flange Receptacle

Square flange receptacles only for Mod I are designated by a four digit number.

**Example: ZP-WO-1712** (Star-Line)

Square flange receptacles only for Mod II are designated by a seven digit number.

**Example: ZP-WO-1712-200** (Star-Line)

Mod II inserts must not be used in Mod I shells or Mod I inserts in Mod II shells as the method of accomplishing environmental sealing differs.



| Shell Size | Cat. No. Mod I | DIMENSIONS |         |       |         |       |       |     |       |
|------------|----------------|------------|---------|-------|---------|-------|-------|-----|-------|
|            |                | A          | B       | C     | D       | E     | F     | G** | H     |
| 12         | ZP-WO-1712     | 1-3/4      | 1-3/8   | 1-1/2 | 2-1/64  | 1-3/8 | 1     | 1/4 | 11/64 |
| 16         | ZP-WO-1716     | 2-1/4      | 1-11/16 | 2     | 2-1/64  | 1-7/8 | 1     | 1/4 | 13/64 |
| 20         | ZP-WO-1720     | 2-3/4      | 2-3/32  | 2-1/2 | 2-1/64  | 2-3/8 | 1     | 1/4 | 7/32  |
| C20        | ZP-CO-1720     | 2-3/4      | 2-3/32  | 2-1/2 | 2-33/64 | 2-3/8 | 1-1/2 | 3/4 | 7/32  |
| 24         | ZP-WO-1724     | 3-1/4      | 2-17/32 | 3     | 2-1/64  | 2-7/8 | 1     | 1/4 | 9/32  |
| C24        | ZP-CO-1724     | 3-1/4      | 2-17/32 | 3     | 2-33/64 | 2-7/8 | 1-1/2 | 3/4 | 9/32  |
| 28         | ZP-WO-1728     | 3-3/4      | 3-1/32  | 3-1/2 | 2-1/64  | 3-3/8 | 1     | 1/4 | 11/32 |
| C28        | ZP-CO-1728     | 3-3/4      | 3-1/32  | 3-1/2 | 2-33/64 | 3-3/8 | 1-1/2 | 3/4 | 11/32 |

Drill hole on panel 1/64" larger than Dimension "E" for front mounting or Dimension "C" for back mounting.

\*\*Maximum panel thickness may be increased 1/8" when using Standard Coupling Nut Plugs.

### Basic Barrel for Panel, Square Flange Receptacle

Square flange receptacles only for Mod I are designated by a four digit number.

**Example: SP-WO-1712** (Star-Lok)

Square flange receptacles only for Mod II are designated by a seven digit number.

**Example: SP-WO-1712-200** (Star-Lok)

Mod II inserts must not be used in Mod I shells or Mod I inserts in Mod II shells as the method of accomplishing environmental sealing differs.



# Shell, ceptacle

y for Mod I are designated

(Lok)

y for Mod II are designated

(Star-Lok)

d in Mod I shells or Mod I

method of accomplishing

Top view diagram of a shell/ceptacle assembly. It shows a square flange with four mounting holes. Dimension A Sq. is the overall width, B Sq. is the width between mounting holes, and H hole Dia. is the diameter of the mounting holes.

Side view diagram of a shell/ceptacle assembly. It shows the internal structure and the gasket. Dimension C is the height of the shell, E is the height of the gasket, F is the thickness of the gasket, and D is the overall width. Labels include 'Tapered left-hand thread' and '1/18" Gasket'.

## DIMENSIONS

| Shell Size | Cat. No. Mod I | DIMENSIONS |         |       |         |       |         |       |
|------------|----------------|------------|---------|-------|---------|-------|---------|-------|
|            |                | A          | B       | C     | D       | E     | F       | H     |
| 12         | SP-WO-1712     | 1-3/4      | 1-3/8   | 1-1/2 | 2-3/32  | 1-3/8 | 1-3/32  | 3/16  |
| 16         | SP-WO-1716     | 2-1/4      | 1-11/16 | 2     | 2-3/32  | 1-7/8 | 1-3/32  | 13/64 |
| 20         | SP-WO-1720     | 2-3/4      | 2-3/32  | 2-1/2 | 2-3/32  | 2-3/8 | 1-3/32  | 17/64 |
| C20        | SP-CO-1720     | 2-3/4      | 2-3/32  | 2-1/2 | 2-19/32 | 2-3/8 | 1-19/32 | 17/64 |
| 24         | SP-WO-1724     | 3-1/4      | 2-17/32 | 3     | 2-3/32  | 2-7/8 | 1-3/32  | 17/64 |
| C24        | SP-CO-1724     | 3-1/4      | 2-17/32 | 3     | 2-19/32 | 2-7/8 | 1-19/32 | 17/64 |

When mounting two or more receptacles to a panel, a certain distance must be kept, one from the other, so that the coupling nut of one plug does not interfere with the coupling nut of another.

| Shell Size | Dim. "A" |
|------------|----------|
| 12         | 3        |
| 16         | 3-1/2    |
| 20/C20     | 4-1/4    |
| 24/C24     | 4-3/4    |
| 28/C28     | 5-1/4    |

For mixed-form sizes, add dimension "A" for each and divide by two.



## Cable Adapters Used on Types ZPLD & ZRLD



To order cable adapters complete with grommet, substitute the cable diameter code number for the delta ▲ (see page 63).

| Shell Size | Standard Style<br>Cat. No. | Long Style<br>Cat. No. | Extra Long Style<br>Cat No. |
|------------|----------------------------|------------------------|-----------------------------|
| 12         | ZP-W-2012-▲-00             | ZP-W-2412-▲-00         | ZP-W-2912-▲-00              |
| 16         | ZP-W-2016-▲-00             | ZP-W-2416-▲-00         | ZP-W-2916-▲-00              |
| 20 & C20   | ZP-W-2020-▲-00             | ZP-W-2420-▲-00         | ZP-W-2920-▲-00              |
| 24 & C24   | ZP-W-2024-▲-00             | ZP-W-2424-▲-00         | ZP-W-2924-▲-00              |
| 28 & C28   | ZP-W-2028-▲-00             | ZP-W-2428-▲-00         | ZP-W-2928-▲-00              |

## Cable Adapters Used on Types ZPLM & ZRLM



| Shell Size | Standard Style<br>Cat. No. | Long Style<br>Cat. No. | Extra Long Style<br>Cat No. |
|------------|----------------------------|------------------------|-----------------------------|
| 12         | ZP-W-2012-▲-53             | ZP-W-2412-▲-53         | ZP-W-2912-▲-53              |
| 16         | ZP-W-2016-▲-53             | ZP-W-2416-▲-53         | ZP-W-2916-▲-53              |
| 20 & C20   | ZP-W-2020-▲-53             | ZP-W-2420-▲-53         | ZP-W-2920-▲-53              |
| 24 & C24   | ZP-W-2024-▲-53             | ZP-W-2424-▲-53         | ZP-W-2924-▲-53              |
| 28 & C28   | ZP-W-2028-▲-53             | ZP-W-2428-▲-53         | ZP-W-2928-▲-53              |

## Cable Adapters Used on Types ZPLK & ZRLK

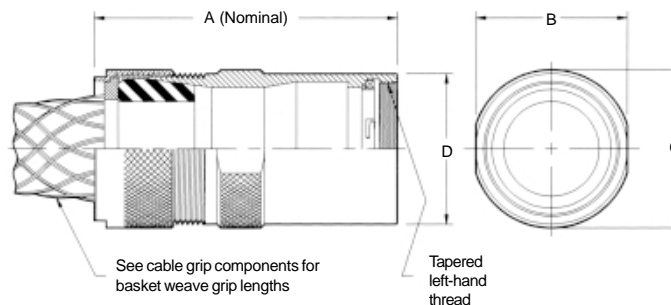


| Shell Size | Standard Style<br>Cat. No. | Long Style<br>Cat. No. | Extra Long Style<br>Cat No. |
|------------|----------------------------|------------------------|-----------------------------|
| 12         | ZP-W-2012-▲-50             | ZP-W-2412-▲-50         | ZP-W-2912-▲-50              |
| 16         | ZP-W-2016-▲-50             | ZP-W-2416-▲-50         | ZP-W-2916-▲-50              |
| 20 & C20   | ZP-W-2020-▲-50             | ZP-W-2420-▲-50         | ZP-W-2920-▲-50              |
| 24 & C24   | ZP-W-2024-▲-50             | ZP-W-2424-▲-50         | ZP-W-2924-▲-50              |
| 28 & C28   | ZP-W-2028-▲-50             | ZP-W-2428-▲-50         | ZP-W-2928-▲-50              |

## Dimensions

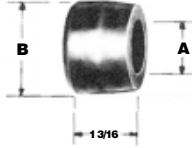
NOTE: Cable adapters with potting ports and molding accessories are also available in all shell sizes-consult factory.

| Shell<br>Size | A        |         |            | B       | C     | D     |
|---------------|----------|---------|------------|---------|-------|-------|
|               | Standard | Long    | Extra Long |         |       |       |
| 12            | 3-29/32  | 6-5/32  | 7-13/32    | 1-13/32 | 1-1/2 | 1-3/8 |
| 16            | 4-5/32   | 6-13/32 | 7-21/32    | 1-29/32 | 2     | 1-7/8 |
| 20 & C20      | 4-21/32  | 6-29/32 | 8-5/32     | 2-13/32 | 2-1/2 | 2-3/8 |
| 24 & C24      | 5-5/32   | 7-13/32 | 8-21/32    | 2-29/32 | 3     | 2-7/8 |
| 28 & C28      | 5-21/32  | 7-21/32 | 8-29/32    | 3-13/32 | 3-1/2 | 3-3/8 |



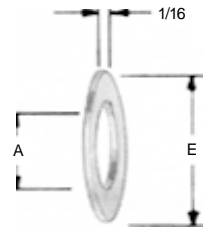
# Cable Grip Components

Gland washers are not required when grommets are used with basket weave cable grips.



**Grommets**

| Shell Size | Washer Dimensions          |        |
|------------|----------------------------|--------|
|            | A                          | B      |
| 12         | See cable dia.             | 1-7/32 |
| 16         | See cable dia.             | 1-3/4  |
| 20 & C20   | column "A" for cable range | 2-7/32 |
| 24 & C24   |                            | 2-3/4  |
| 28 & C28   |                            | 3-1/4  |



**Gland Washer**

| Shell Size | Washer Dimensions          |       |
|------------|----------------------------|-------|
|            | A                          | E     |
| 12         | See cable dia.             | 1-1/4 |
| 16         | See cable dia.             | 1-3/4 |
| 20 & C20   | column "A" for cable range | 2-1/4 |
| 24 & C24   |                            | 2-3/4 |
| 28 & C28   |                            | 3-1/4 |

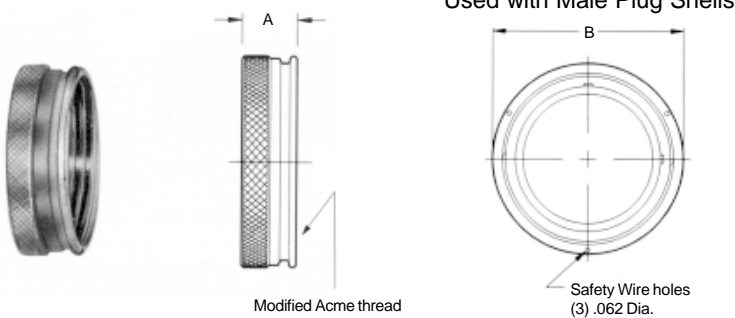
**Unarmored Cable EEx d Gland Cable Code**

| EEx d Gland Cable Code | Cable Range               |
|------------------------|---------------------------|
| A                      | 0.42 - 0.55 (11.0 - 14.3) |
| ASIS                   | 0.33 - 0.52 (8.5 - 13.4)  |
| B                      | 0.50 - 0.78 (13.0 - 20.0) |
| BSIS                   | 0.37 - 0.60 (9.5 - 15.4)  |
| C                      | 0.74 - 1.03 (18.8 - 26.2) |
| CSIS                   | 0.60 - 0.82 (15.4 - 20.8) |
| C2                     | 0.97 - 1.26 (24.6 - 32.0) |
| C2SIS                  | 0.86 - 1.09 (21.8 - 27.7) |
| D                      | 1.22 - 1.73 (31.5 - 44.4) |
| DSIS                   | 1.07 - 1.35 (27.5 - 34.8) |
| E                      | 1.65 - 2.19 (42.5 - 56.3) |
| ESIS                   | 1.52 - 1.81 (27.5 - 34.8) |

★Substitute Symbol No. for ▲ in Cable Adapter Catalog Number

| Shell<br>Size   | Cable Dia.<br>Dimension |       | Cable<br>Dia.<br>Code | Grommets                | Gland Washers | Basket Weave Grips |                             |       |
|-----------------|-------------------------|-------|-----------------------|-------------------------|---------------|--------------------|-----------------------------|-------|
|                 |                         |       |                       | Oil-Resistant<br>Rubber | Steel         | Stainless<br>Steel | Nominal<br>Length<br>Inches |       |
|                 | Min                     | Max   | No.H                  | Cat. No.                | Cat. No.      | Cat. No.           |                             |       |
| 12              | .062                    | .125  | 02                    | ZP-6312-2C              | ZP-8012-4E    | ZP-5012-4E         | 3                           |       |
|                 | .125                    | .250  | 04                    | ZP-6312-4C              |               |                    |                             |       |
|                 | .250                    | .375  | 06                    | ZP-6312-6C              | ZP-8012-8E    | ZP-5012-6E         | 4                           |       |
|                 | .375                    | .500  | 08                    | ZP-6312-8C              |               | ZP-5012-8E         | 5                           |       |
|                 | .500                    | .625  | 10                    | ZP-6312-10C             | ZP-8012-12E   | ZP-5012-10E        | 6                           |       |
|                 | .625                    | .750  | 12                    | ZP-6312-12C             |               | ZP-5012-12E        | 7                           |       |
|                 | .750                    | .875  | 14                    | ZP-6312-14C             | ZP-8012-15E   | ZP-5012-14E        | 7-1/2                       |       |
|                 | .875                    | .937  | 15                    | ZP-6312-15C             |               | ZP-5012-15E        | 8                           |       |
|                 | 16                      | .250  | .375                  | 06                      | ZP-6316-6C    | ZP-8016-8E         | ZP-5016-6E                  | 4     |
|                 |                         | .375  | .500                  | 08                      | ZP-6316-8C    |                    | ZP-5016-8E                  | 5     |
|                 |                         | .500  | .625                  | 10                      | ZP-6316-10C   | ZP-8016-12E        | ZP-5016-10E                 | 6     |
|                 |                         | .625  | .750                  | 12                      | ZP-6316-12C   |                    | ZP-5016-12E                 | 7     |
| .750            |                         | .875  | 14                    | ZP-6316-14C             | ZP-8016-16E   | ZP-5016-14E        | 7-1/2                       |       |
| .875            |                         | 1.000 | 16                    | ZP-6316-16C             |               | ZP-5016-16E        | 8-1/2                       |       |
| 1.000           |                         | 1.125 | 18                    | ZP-6316-18C             | ZP-8016-20E   | ZP-5016-18E        | 9                           |       |
| 1.125           |                         | 1.250 | 20                    | ZP-6316-20C             |               | ZP-5016-20E        | 10                          |       |
| 20<br>or<br>C20 | 1.250                   | 1.375 | 22                    | ZP-6316-22C             | ZP-8016-23E   | ZP-5016-23E        | 10-1/2                      |       |
|                 | 1.375                   | 1.437 | 23                    | ZP-6316-23C             |               |                    |                             |       |
|                 | .500                    | .652  | 10                    | ZP-6320-10C             | ZP-8020-12E   | ZP-5020-10E        | 6                           |       |
|                 | .625                    | .750  | 12                    | ZP-6320-12C             |               | ZP-5020-14E        | 7-1/2                       |       |
|                 | .750                    | .875  | 14                    | ZP-6320-14C             | ZP-8020-16E   | ZP-5020-14E        | 7-1/2                       |       |
|                 | .875                    | 1.000 | 16                    | ZP-6320-16C             |               | ZP-5020-18E        | 9                           |       |
|                 | 1.000                   | 1.125 | 18                    | ZP-6320-18C             | ZP-8020-20E   | ZP-5020-18E        | 9                           |       |
|                 | 1.125                   | 1.250 | 20                    | ZP-6320-20C             |               | ZP-5020-20E        | 10                          |       |
| 24<br>or<br>C24 | 1.250                   | 1.375 | 22                    | ZP-6320-22C             | ZP-8020-24E   | ZP-5020-24E        | 11                          |       |
|                 | 1.375                   | 1.500 | 24                    | ZP-6320-24C             |               |                    |                             |       |
|                 | 1.500                   | 1.625 | 26                    | ZP-6320-26C             | ZP-8020-28E   | ZP-5020-28E        | 13                          |       |
|                 | 1.625                   | 1.750 | 28                    | ZP-6320-28C             |               |                    |                             |       |
|                 | 1.750                   | 1.875 | 30                    | ZP-6320-30C             | ZP-8020-31E   | ZP-5020-31E        | 14-1/2                      |       |
|                 | 1.875                   | 1.937 | 31                    | ZP-6320-31C             |               |                    |                             |       |
|                 | 28<br>or<br>C28         | .875  | 1.000                 | 16                      | ZP-6324-16C   | ZP-8024-16E        | ZP-5024-16E                 | 8-1/2 |
|                 |                         | 1.000 | 1.125                 | 18                      | ZP-6324-18C   |                    |                             |       |
| 1.125           |                         | 1.250 | 20                    | ZP-6324-20C             | ZP-8024-20E   | ZP-5024-20E        | 10                          |       |
| 1.250           |                         | 1.375 | 22                    | ZP-6324-22C             |               |                    |                             |       |
| 1.375           |                         | 1.500 | 24                    | ZP-6324-24C             | ZP-8024-24E   | ZP-5024-24E        | 11                          |       |
| 1.500           |                         | 1.625 | 26                    | ZP-6324-26C             |               |                    |                             |       |
| 1.625           |                         | 1.750 | 28                    | ZP-6324-28C             | ZP-8024-28E   | ZP-5024-28E        | 13                          |       |
| 1.750           |                         | 1.875 | 30                    | ZP-6324-30C             |               |                    |                             |       |
| 1.875           |                         | 2.000 | 32                    | ZP-6324-32C             | ZP-8024-32E   | ZP-5024-32E        | 15                          |       |
| 2.000           |                         | 2.125 | 34                    | ZP-6324-34C             |               |                    |                             |       |
| 2.125           |                         | 2.250 | 36                    | ZP-6324-36C             | ZP-8024-36E   | ZP-5024-36E        | 16                          |       |
| 2.250           |                         | 2.375 | 38                    | ZP-6324-38C             |               |                    |                             |       |
| 2.375           | 2.437                   | 39    | ZP-6324-39C           | ZP-8024-39E             | ZP-5024-39E   | 17-1/2             |                             |       |
|                 | 1.375                   | 1.500 | 24                    | ZP-6328-24C             | ZP-8028-24E   | ZP-5028-28E        | 13                          |       |
|                 | 1.500                   | 1.625 | 26                    | ZP-6328-26C             | ZP-8028-28E   |                    |                             |       |
|                 | 1.625                   | 1.750 | 28                    | ZP-6328-28C             |               |                    |                             |       |
|                 | 1.750                   | 1.875 | 30                    | ZP-6328-30C             | ZP-8028-32E   | ZP-5028-32E        | 15                          |       |
|                 | 1.875                   | 2.000 | 32                    | ZP-6328-32C             |               |                    |                             |       |
|                 | 2.000                   | 2.125 | 34                    | ZP-6328-34C             | ZP-8028-36E   | ZP-5028-36E        | 16                          |       |
|                 | 2.125                   | 2.250 | 36                    | ZP-6328-36C             |               |                    |                             |       |
|                 | 2.250                   | 2.375 | 38                    | ZP-6328-38C             | ZP-8028-40E   | ZP-5028-40E        | 17-1/2                      |       |
|                 | 2.375                   | 2.500 | 40                    | ZP-6328-40C             |               |                    |                             |       |
|                 | 2.500                   | 2.625 | 42                    | ZP-6328-42C             | ZP-8028-44E   | ZP-5028-46E        | 19                          |       |
| 2.625           | 2.750                   | 44    | ZP-6328-44C           |                         |               |                    |                             |       |
|                 | 2.750                   | 2.875 | 46                    | ZP-6328-46C             | ZP-8028-46E   |                    |                             |       |

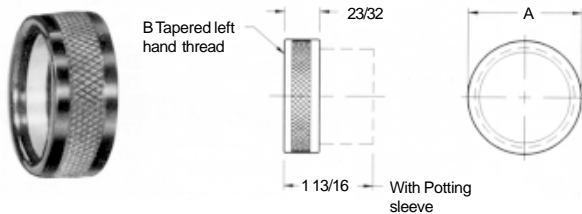
## Standard and Jacking Coupling Nuts (Star-Line only)



| Shell Size  | Cat. No. Std. | DIMENSIONS |         |
|-------------|---------------|------------|---------|
|             |               | A          | B       |
| 12          | ZP-7012-10A   | 47/64      | 1-13/16 |
| 16          | ZP-7016-10A   | 47/64      | 2-5/16  |
| 20 & C20    | ZP-7020-10A   | 47/64      | 2-13/16 |
| 24 & C24    | ZP-7024-10A   | 47/64      | 3-5/16  |
| 28 & C28    | ZP-7028-10A   | 47/64      | 3-13/16 |
| <b>JACK</b> |               |            |         |
| 12          | ZP-7012-30A   | 1-1/32     | 1-13/16 |
| 16          | ZP-7016-30A   | 1-1/32     | 2-5/16  |
| 20 & C20    | ZP-7020-30A   | 1-1/32     | 2-13/16 |
| 24 & C24    | ZP-7024-30A   | 1-1/32     | 3-5/16  |
| 28 & C28    | ZP-7028-30A   | 1-1/32     | 3-13/16 |

## Insert Clamp Nuts

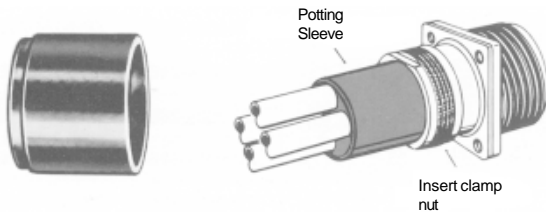
Used when open-back wiring is desired behind panelboards or within large junction boxes on which the basic barrel is mounted



| Shell Size | Without Potting Sleeve | With Type 8200 Potting Sleeve | DIMENSIONS |         |
|------------|------------------------|-------------------------------|------------|---------|
|            | Cat. No.               | Cat. No.                      | A          | B       |
| 12         | ZP-W-7512              | ZP-W-7512-B                   | 1-11/32    | 1-3/32  |
| 16         | ZP-W-7516              | ZP-W-7516-B                   | 1-27/32    | 1-19/32 |
| 20 & C20   | ZP-W-7520              | ZP-W-7520-B                   | 1-11/32    | 2-3/32  |
| 24 & C24   | ZP-W-7524              | ZP-W-7524-B                   | 2-27/32    | 2-19/32 |
| 28 & C28   | ZP-W-7528              | ZP-W-7528-B                   | 3-11/32    | 3-3/32  |

## Potting Sleeve

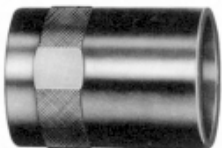
For use with insert clamp nut or panel board adapter to accept compound for sealing wire terminals. Potting sleeves are not for use with pressure-type contact units with insulator extension at back.



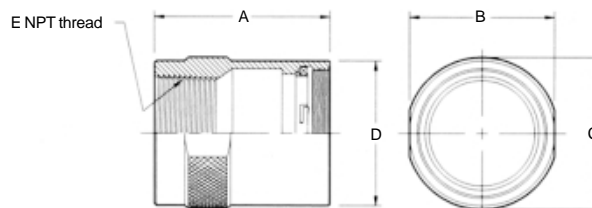
| Shell Size | Cat. No.   | DIMENSIONS     |         |         |
|------------|------------|----------------|---------|---------|
|            |            | Overall Length | O.D     | I.D     |
| 12         | ZP-8212-11 | 1-1/4          | 1-3/64  | 55/64   |
| 16         | ZP-8216-11 | 1-1/4          | 1-35/64 | 1-23/64 |
| 20 & C20   | ZP-8220-11 | 1-1/4          | 2-3/64  | 1-55/64 |
| 24 & C24   | ZP-8224-11 | 1-1/4          | 2-35/64 | 2-23/64 |
| 28 & C28   | ZP-8228-11 | 1-1/4          | 2-63/64 | 2-51/64 |

## Conduit Adapters Tapped for Conduit

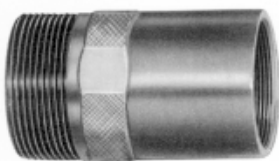
For use with all inserts other than those with pressure terminals. Internal tapered pipe thread takes various types of threaded connectors.



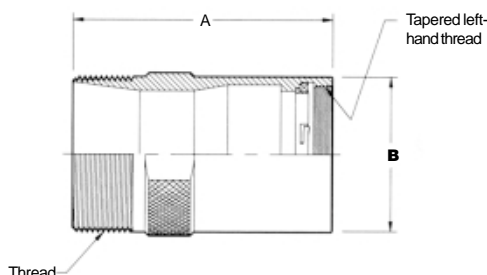
| Shell Size | Conduit Tap Size | Cat. No.  | DIMENSIONS |         |       |       |       |
|------------|------------------|-----------|------------|---------|-------|-------|-------|
|            |                  |           | A          | B       | C     | D     | E     |
| 12         | 3/4              | ZP-W-2812 | 2-5/8      | 1-13/32 | 1-1/2 | 1-3/8 | 3/4   |
| 16         | 1-1/4            | ZP-W-2816 | 2-3/4      | 1-29/32 | 2     | 1-7/8 | 1-1/4 |
| 20&C20     | 1-1/2            | ZP-W-2820 | 2-7/8      | 2-13/32 | 2-1/2 | 2-3/8 | 1-1/2 |
| 24&C24     | 2                | ZP-W-2824 | 3          | 2-29/32 | 3     | 2-7/8 | 2     |
| 28&C28     | 2-1/2            | ZP-W-2828 | 3-15/32    | 3-13/32 | 3-1/2 | 3-3/8 | 2-1/2 |



## Cable Adapter Components and Accessories



| Thread<br>Size | Shell<br>Size | Standard<br>Style<br>Cat. No. | Long Style<br>Cat. No. | Extra Long<br>Style<br>Cat. No. | DIMENSIONS |       |       | B     |
|----------------|---------------|-------------------------------|------------------------|---------------------------------|------------|-------|-------|-------|
|                |               |                               |                        |                                 | A          |       |       |       |
|                |               |                               |                        |                                 | Std.       | Lg.   | XLg.  |       |
| 1-3/8-12       | 12            | ZP-W-2012                     | ZP-W-2412              | ZP-W-2912                       | 3          | 5-1/4 | 6-1/2 | 1-3/8 |
| 1-7/8-12       | 16            | ZP-W-2016                     | ZP-W-2416              | ZP-W-2916                       | 3-1/4      | 5-1/2 | 6-3/4 | 1-7/8 |
| 2-3/8-12       | 20&C20        | ZP-W-2020                     | ZP-W-2420              | ZP-W-2920                       | 3-3/4      | 6     | 7-1/4 | 2-3/8 |
| 2-7/8-12       | 24&C24        | ZP-W-2024                     | ZP-W-2424              | ZP-W-2924                       | 4-1/4      | 6-1/2 | 7-3/4 | 2-7/8 |
| 3-3/8-12       | 28&C28        | ZP-W-2028                     | ZP-W-2428              | ZP-W-2928                       | 4-3/4      | 6-3/4 | 8     | 3-3/8 |

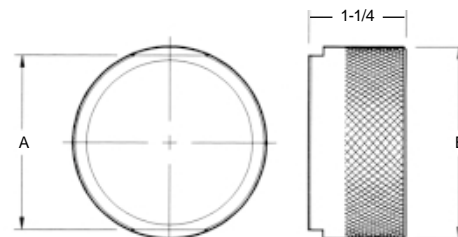


### Gland Nut

Use plain, or with basket weave cable grip



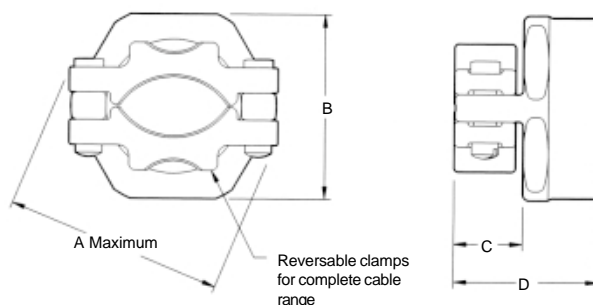
| Shell Size | Cat. No.    | DIMENSIONS |         |
|------------|-------------|------------|---------|
|            |             | A          | B       |
| 12         | ZP-7312-10A | 1-1/2      | 1-9/32  |
| 16         | ZP-7316-10A | 2          | 1-25/32 |
| 20 & C20   | ZP-7320-10A | 2-1/2      | 2-9/32  |
| 24 & C24   | ZP-7324-10A | 3          | 2-25/32 |
| 28 & C28   | ZP-7328-10A | 3-1/2      | 3-9/32  |



### Mechanical Clamp Nut



| Shell Size | Cat. No.  | DIMENSIONS |       |        |        |
|------------|-----------|------------|-------|--------|--------|
|            |           | A          | B     | C      | D      |
| 12         | ZP-W-5312 | 2-3/8      | 1-3/4 | 7/8    | 2      |
| 16         | ZP-W-5316 | 3          | 2-1/4 | 15/16  | 2-1/16 |
| 20 & C20   | ZP-W-5320 | 3-3/4      | 2-3/4 | 1      | 2-1/8  |
| 24 & C24   | ZP-W-5324 | 4-1/2      | 3-1/4 | 1-1/16 | 2-3/16 |
| 28 & C28   | ZP-W-5328 | 5-1/8      | 3-3/4 | 1-1/8  | 2-1/4  |

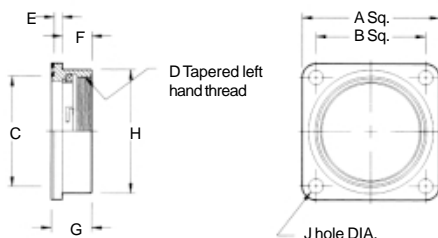


## Panelboard Adapters (Star-Line only)

For Basic Barrels. Used when a completely external mounting is required. Gasket furnished may be used for front panel mounting only.



| Shell<br>Size | Cat. No.  | DIMENSIONS |         |       |         |      |       |       |       |       |  |
|---------------|-----------|------------|---------|-------|---------|------|-------|-------|-------|-------|--|
|               |           | A          | B       | C     | D       | E    | F     | G     | H     | J     |  |
| 12            | ZP-W-2112 | 1-5/8      | 1-1/4   | 1-1/8 | 1-3/32  | 3/32 | 9/16  | 3/4   | 1-3/8 | 3/16  |  |
| 16            | ZP-W-2116 | 2-1/8      | 1-11/16 | 1-5/8 | 1-19/32 | 1/8  | 9/16  | 25/32 | 1-7/8 | 7/32  |  |
| 20 & C20      | ZP-W-2120 | 2-5/8      | 2-3/32  | 2-1/8 | 2-3/32  | 5/32 | 9/16  | 13/16 | 2-3/8 | 9/32  |  |
| 24 & C24      | ZP-W-2124 | 3-1/8      | 2-17/32 | 2-5/8 | 2-19/32 | 3/16 | 9/16  | 27/32 | 2-7/8 | 11/32 |  |
| 28 & C28      | ZP-W-2128 | 3-3/4      | 3-1/32  | 3-1/8 | 2-3/32  | 9/32 | 29/64 | 27/32 | 3-3/8 | 11/32 |  |

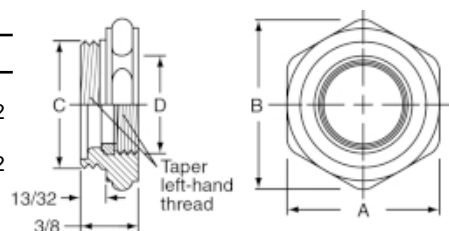


## Transition Adapters

Transition adapters provide for using cable adapters one shell size larger than that of the basic barrel selected. They are used when terminating shielded cables require an increase in adapter diameter for additional wiring space.



| Shell Size | Adapter Shell Size | Cat. No.     | DIMENSIONS |         |         |         |
|------------|--------------------|--------------|------------|---------|---------|---------|
|            |                    |              | A          | B       | C       | D       |
| 12         | 16                 | ZP-W-2316-40 | 2          | 2-15/64 | 1-19/32 | 1-3/32  |
| 16         | 20 & C20           | ZP-W-2320-40 | 2-1/2      | 2-49/64 | 2-3/32  | 1-19/32 |
| 20 & C20   | 24 & C24           | ZP-W-2324-40 | 3          | 3-9/32  | 2-19/32 | 2-3/32  |
| 24 & C24   | 28 & C28           | ZP-W-2328-40 | 3-1/2      | 3-15/16 | 3-3/32  | 2-19/32 |

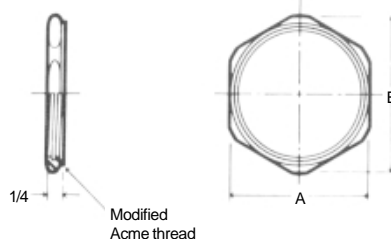


## Safety Jam Nuts

To securely lock plug coupling nut or threaded dust cap. Jam nut cannot be used on barrels with hinged spring cover.

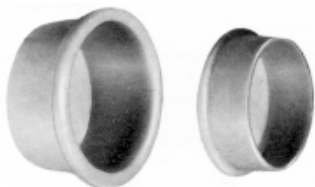


| Shell Size | Cat. No.    | DIMENSIONS |         |
|------------|-------------|------------|---------|
|            |             | A          | B       |
| 12         | ZP-7212-10A | 1-3/4      | 1-61/64 |
| 16         | ZP-7216-10A | 2-1/4      | 1-31/64 |
| 20 & C20   | ZP-7220-10A | 2-3/4      | 3-1/32  |
| 24 & C24   | ZP-7224-10A | 3-1/4      | 3-9/16  |

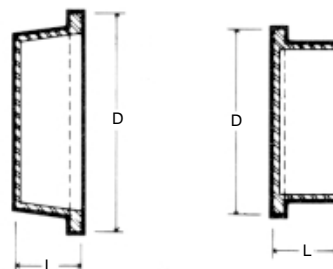


## Plastic Dust Caps

For temporary protection of assembled barrels while in storage and shipment.



| Shell Size      | Cat. No. for Plugs | DIMENSIONS |       |
|-----------------|--------------------|------------|-------|
|                 |                    | D          | L     |
| 12              | ZP-5512-11         | 1-13/32    | 11/16 |
| 16              | ZP-5516-11         | 1-29/32    | 11/16 |
| 20 & C20        | ZP-5520-11         | 2-3/8      | 11/16 |
| 24 & C24        | ZP-5524-11         | 2-29/32    | 11/16 |
| 28 & C28        | ZP-5528-11         | 3-11/16    | 1/2   |
| For Receptacles |                    |            |       |
| 12              | ZP-5612-11         | 1-3/4      | 5/8   |
| 16              | ZP-5616-11         | 2-1/4      | 11/16 |
| 20 & C20        | ZP-5620-11         | 2-22/32    | 21/32 |
| 24 & C24        | ZP-5624-11         | 3-7/32     | 21/32 |
| 28 & C28        | ZP-5628-11         | 3-15/16    | 1/2   |





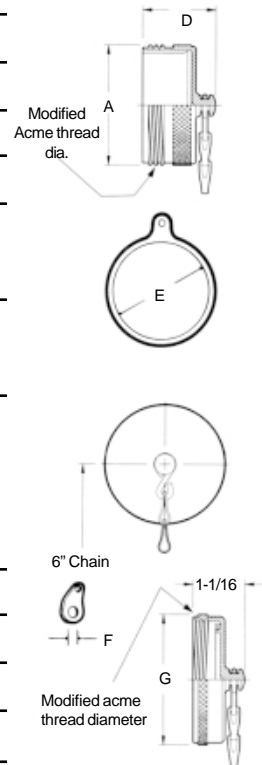


## Environmental Covers With Chain

Environmental covers are furnished with a six-inch length of stainless steel link chain. The chain is freely attached to a shouldered swivel post to avoid twisting when covers are applied or removed. The opposite end has a stainless steel ring for back of barrel attachment or a stainless steel eyelet for flange screw or separate screw attachment.

Example: **ZP-W-5512-A** (Starline) **SP-W-5512-A** (Star-Lok)

|                                                                                                   |                                                                                   |                                                                                   |                                                                                                                                                                                                                      |            |       |       |         |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------|-------|---------|
|                                                                                                   |  |  | APPLICATION<br><b>RING TYPE:</b> Slide ring over back end of barrel before applying cable adapter.<br><b>EYELET TYPE:</b> Attach eyelet to flange mounting screw or drill and tap hole in adjacent mounting surface. |            |       |       |         |
| Shell Size                                                                                        | Catalog No.<br>With Ring                                                          | Catalog No.<br>With Eyelet                                                        | DIMENSIONS                                                                                                                                                                                                           |            |       |       |         |
|                                                                                                   |                                                                                   |                                                                                   | A                                                                                                                                                                                                                    | D          | E     | F     | G       |
| Shell Size                                                                                        |                                                                                   |                                                                                   |                                                                                                                                                                                                                      |            |       |       |         |
| 12                                                                                                | _P-W-5512-A                                                                       | _P-WF-5512-A                                                                      | 1-1/2                                                                                                                                                                                                                | 1-1/2      | 1-1/4 | 11/64 | ...     |
| 16                                                                                                | _P-W-5516-A                                                                       | _P-WF-5516-A                                                                      | 2                                                                                                                                                                                                                    | 1-1/2      | 1-3/4 | 13/64 | ...     |
| 20<br>C20                                                                                         | _P-W-5520-A<br>_P-C-5520-A                                                        | _P-WF-5520-A<br>_P-CF-5520-A                                                      | 2-1/2                                                                                                                                                                                                                | 1-1/2<br>2 | 2-1/4 | 7/32  | ...     |
| 24<br>C24                                                                                         | _P-W-5524-A<br>_P-C-5524-A                                                        | _P-WF-5524-A<br>_P-CF-5524-A                                                      | 3                                                                                                                                                                                                                    | 1-1/2<br>2 | 2-3/4 | 9/32  | ...     |
| 28<br>C28                                                                                         | ZP-W-5528-A<br>ZP-C-5528-A                                                        | ZP-WF-5528-A<br>ZP-CF-5528-A                                                      | 3-1/2                                                                                                                                                                                                                | 1-1/2<br>2 | 3-1/4 | 11/32 | ...     |
| THREADED CAPS WITH CHAIN FOR USE WITH FEMALE RECEPTACLES<br>Cap has a captive gasket for sealing. |                                                                                   |                                                                                   |                                                                                                                                                                                                                      |            |       |       |         |
| 12                                                                                                | _P-W-5612-A                                                                       | _P-WF-5612-A                                                                      | ...                                                                                                                                                                                                                  | ...        | 1-1/4 | 11/64 | 1-23/32 |
| 16                                                                                                | _P-W-5616-A                                                                       | _P-WF-5616-A                                                                      | ...                                                                                                                                                                                                                  | ...        | 1-3/4 | 13/64 | 2-7/32  |
| 20 & C20                                                                                          | _P-W-5620-A                                                                       | _P-WF-5620-A                                                                      | ...                                                                                                                                                                                                                  | ...        | 2-1/4 | 7/32  | 2-23/32 |
| 24 & C24                                                                                          | ZP-W-5624-A                                                                       | ZP-WF-5624-A                                                                      | ...                                                                                                                                                                                                                  | ...        | 2-3/4 | 9/32  | 3-7/32  |
| 28 & C28                                                                                          | ZP-W-5628-A                                                                       | ZP-WF-5628-A                                                                      | ...                                                                                                                                                                                                                  | ...        | 3-1/4 | 11/32 | 3-23/32 |



## Hinged Spring Door Covers-Gasketed

Covers have a stainless steel band to clamp over the coupling thread of female receptacles. The cover plate with a captive rubber gasket is pressed aluminum. A self-aligning seal is assured by the floating action

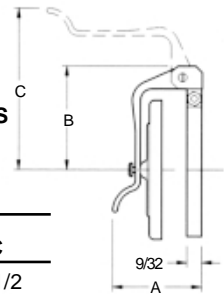
of the cover on the center stainless-steel shouldered post. The hinge arm and support are machined aluminum extrusions.

**SHORT HINGED TYPE TO CLEAR  
STANDARD COUPLING NUT –  
USE WITH SQUARE FLANGE RECEPTACLES  
WHEN FRONT OR BACK MOUNTED**

| Shell Size | Cat. No.  | DIMENSIONS |         |         |
|------------|-----------|------------|---------|---------|
|            |           | A          | B       | C       |
| 12         | ZP-C-5712 | 1-19/32    | 1-1/2   | 2-1/2   |
| 16         | ZP-C-5716 | 1-19/32    | 1-3/4   | 2-3/4   |
| 20 & C20   | ZP-C-5720 | 1-41/64    | 2-9/64  | 3-9/64  |
| 24 & C24   | ZP-C-5724 | 1-41/64    | 2-25/64 | 3-25/64 |
| 28 & C28   | ZP-C-5728 | 1-41/64    | 2-5/8   | 3-5/8   |

**LONG HINGED TYPE TO CLEAR  
COUPLING JACK NUT –  
USE WITH SQUARE FLANGE RECEPTACLES  
WHEN FRONT MOUNTED ONLY**

| Shell Size | Cat. No.     | DIMENSIONS |         |         |
|------------|--------------|------------|---------|---------|
|            |              | A          | B       | C       |
| 12†        | ZP-C-5712-14 | 1-23/32    | 1-1/2   | 2-1/2   |
| 16†        | ZP-C-5716-14 | 1-23/32    | 1-3/4   | 2-3/4   |
| 20†        | ZP-C-5720-14 | 1-49/64    | 2-9/64  | 3-9/64  |
| 24†        | ZP-C-5724-14 | 1-49/64    | 2-25/64 | 3-25/64 |
| 28†        | ZP-C-5728-14 | 1-41/64    | 2-5/8   | 3-5/8   |





# Conduit System Accessories

## FS and FD Conduit Fitting Bodies and Adapters

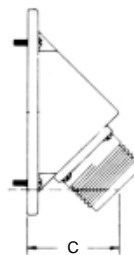
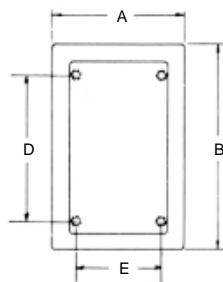


Adapter covers and Bodies have environmental resistance adequate for most general applications.

All adapter covers are supplied with screws and clips for mounting receptacle as well as bolts, washers and gasket for mounting cover to panel or conduit fitting body.

### Adapter Covers – Cast Aluminum Alloy Takes Type ZRLP Barrels

| Style     | Shell Size | Catalog No.  | DIMENSIONS (Including Barrels) |        |        |       |       |
|-----------|------------|--------------|--------------------------------|--------|--------|-------|-------|
|           |            |              | A                              | B      | C      | D     | E     |
| Straight  | 12         | ZP-C-2512-11 | 2-7/8                          | 4-5/16 | 1-1/2  | 3-1/4 | 1-7/8 |
|           | 16         | ZP-C-2516-11 |                                |        |        |       |       |
| 45 Degree | 12         | ZP-C-2512-13 | 2-7/8                          | 4-5/16 | 2-5/16 | 3-1/4 | 1-7/8 |
|           | 16         | ZP-C-2516-13 |                                |        |        |       |       |



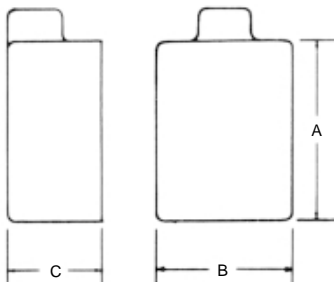
### Conduit Fitting Bodies – Die Cast Copper-Free Aluminum

| Type | Shell Size | Hub Size | Catalog No. | DIMENSIONS |         |        |
|------|------------|----------|-------------|------------|---------|--------|
|      |            |          |             | A          | B       | C      |
| FS   | 12         | 1/2      | N-FS18      | 4-9/16     | 2-13/16 | 2-1/16 |
|      |            | 3/4      | N-FS28      |            |         |        |
|      |            | 1        | N-FS38      |            |         |        |
|      |            |          |             |            |         |        |

### Conduit Fitting Bodies – Cadmium Plated Ferrous Alloy

|    |    |   |        |        |         |        |
|----|----|---|--------|--------|---------|--------|
| FD | 16 | 1 | N-FD38 | 4-9/16 | 2-13/16 | 3-1/16 |
|----|----|---|--------|--------|---------|--------|

NOTE: 1/2" and 3/4" hub deep junction boxes information available on request.



## Watertight Adapter Covers & Conduit Fitting Bodies

Adapter covers and conduit body fittings have environment resistance adequate for most general applications. All adapter covers are supplied with screws and clips for mounting receptacles as well as bolts, washers and gaskets for mounting cover to panel or conduit fitting body.

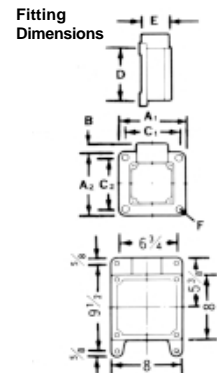
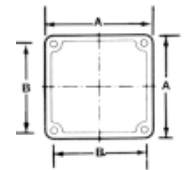
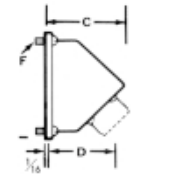
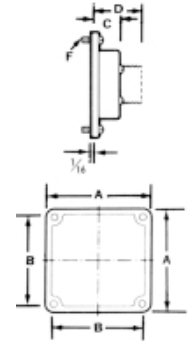
### Adapter Covers – Cast Aluminum Alloy Take ZRLP Basic Barrels



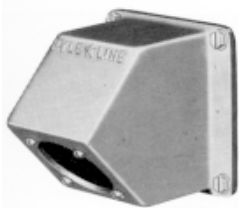
| Style    | Shell Size | Cat No.      | DIMENSIONS (With Barrel) |        |        |         |        |
|----------|------------|--------------|--------------------------|--------|--------|---------|--------|
|          |            |              | A                        | B      | C      | D       | F      |
| Straight | 12         | ZP-C-2512-10 | 4-3/16                   | 3-9/16 | 1      | 1-27/32 | 1/4-20 |
|          | 16         | ZP-C-2516-10 | 4-3/16                   | 3-9/16 | 1      | 1-27/32 | 1/4-20 |
|          | 20 & C20   | ZP-C-2520-10 | 4-1/2                    | 3-7/8  | 1-7/32 | 2-1/16  | 1/4-20 |
|          |            |              | 4-1/2                    | 3-7/8  | 1-7/32 | 2-1/16  | 1/4-20 |
|          | 24 & C24   | ZP-C-2524-10 | 8                        | 7      | 1-1/2  | 2-9/16  | 1/2-13 |
|          |            |              | 8                        | 7      | 1-1/2  | 2-27/32 | 1/2-13 |
|          | 28 & C28   | ZP-C-2528-10 | 8                        | 7      | 1-1/2  | 2-9/32  | 1/2-13 |
|          |            |              | 8                        | 7      | 1-1/2  | 2-25/32 | 1/2-13 |

Above should not be used with pressure-type contact inserts

| Shell Size | Catalog No.  |              | DIMENSIONS (With Barrel) |        |              |         |        |
|------------|--------------|--------------|--------------------------|--------|--------------|---------|--------|
|            | Standard     | Deep         | A                        | B      | C            | D       | F      |
| 12         | ZP-C-2512-12 |              | 4-3/16                   | 3-9/16 | 2-13/16      | 2-7/16  | 1/4-20 |
| 16         | ZP-C-2516-12 |              | <b>4-3/16</b>            | 3-9/16 | 2-15/16      | 2-17/32 | 1/4-20 |
| 16         |              | P-202704-16  | 4-3/16                   | 3-9/16 | 4-7/16       | 4-1/16  | 1/4-20 |
| 20<br>C20  | ZP-C-2520-12 |              | 4-1/2                    | 3-7/8  | 3-39/64      | 3       | 1/4-20 |
|            |              |              | 4-1/2                    | 3-7/8  | 3-39/64      | 3-3/8   | 1/4-20 |
| 20<br>C20  |              | ZP-C-2520-26 | 4-1/2                    | 3-7/8  | 5            | 4-1/2   | 1/4-20 |
|            |              |              | 4-1/2                    | 3-7/8  | 5            | 4-7/8   | 1/4-20 |
| 24<br>C24  | ZP-C-2524-12 |              | 8                        | 7      | 3-33/64      | 2-19/64 | 1/2-13 |
|            |              |              | 8                        | 7      | 3-33/64      | 2-21/32 | 1/2-13 |
| 24<br>C24  |              | P-202708-24  | 8                        | 7      | 5-3/4        | 4-9/16  | 1/2-13 |
|            |              |              | 8                        | 7      | 5-3/4        | 5       | 1/2-13 |
| 28<br>C28  | ZP-C-2528-12 |              | 8                        | 7      | 3-5/8        | 2-7/16  | 1/2-13 |
|            |              |              | 8                        | 7      | 3-5/8        | 2-3/4   | 1/2-13 |
| 28<br>C28  |              | P-202708-28  | 8                        | 7      | <b>5-3/4</b> | 4-9/16  | 1/2-13 |
|            |              |              | 8                        | 7      | 5-3/4        | 5       | 1/2-13 |



**STANDARD**



**DEEP**



MOUNT WITH  
HUB AT TOP,  
BOTTOM  
OR EITHER SIDE

### Conduit Fitting Bodies – Cadmium Plated Ferrous Alloy

| Shell Size             | Conduit Hub Size | Catalog No.                 | DIMENSIONS  |       |       |       |       |        |                |              |
|------------------------|------------------|-----------------------------|-------------|-------|-------|-------|-------|--------|----------------|--------------|
|                        |                  |                             | A1          | A2    | B     | C1    | C2    | D      | E              | F            |
| 12 or 16               | 3/4              | P-202760-42                 | 5-1/4       | 5-1/4 | 25/64 | 4-5/8 | 4-5/8 | 4-316  | 2-3/8          | 9/32         |
|                        | 1                | P-202760-43                 | 5-1/4       | 5-1/4 | 25/64 | 4-5/8 | 4-5/8 | 4-3/16 | 2-3/8          | 9/32         |
|                        | 1-1/4            | P-202760-64                 | 5-1/4       | 5-1/4 | 25/64 | 4-5/8 | 4-5/8 | 4-3/16 | 2-3/8          | 9/32         |
|                        | 1-1/2            | P-202760-65                 | 5-1/4       | 5-1/4 | 25/64 | 4-5/8 | 4-5/8 | 4-3/16 | 2-3/8          | 9/32         |
| 20 or C20              | 1-1/4            | JRZ-610064                  | 6           | 6     | 9/16  | 5-1/4 | 5-1/4 | 4-1/2  | 3-3/4          | 9/32         |
|                        | 1-1/2            | JRZ-610065                  | 6           | 6     | 9/16  | 5-1/4 | 5-1/4 | 4-1/2  | 3-3/4          | 9/32         |
|                        | 2                | JRZ-610066                  | 6           | 6     | 9/16  | 5-1/4 | 5-1/4 | 4-1/2  | 3-3/4          | 9/32         |
| 24 or C24<br>28 or C28 | 2-1/2<br>3       | JR-720036-A<br>JRZ-820036-A | SEE DRAWING |       |       |       |       |        | 3-3/4<br>4-1/2 | 7/16<br>7/16 |

Shell sizes 24-C24-28-C28

# Contact Crimping Tools

## TP-201411-AG-HAND CRIMP TOOL COMPLETE

This tool is complete with 3 contact locators and instructions, and will crimp all contacts #10 through #18 of the Mod II and Mod III design.

TP-201411-TO-Hand crimp tool only

TP-201411-16-18 – Locator only for #16 and #18 pins and sockets

TP-201411-10-12 – Locator only for #10 pin and sockets and #12 sockets

TP-201411-12P – Locator only for all #12 pins any length

## TP-201411-AG



## TP-201351-AG – HAND CRIMP TOOL

This tool is complete with carrying case, checking gage and complete instructions for crimping #10 through #18 contacts of MOD II or MOD III design.

## TP-201352 – HAND/FOOT PNEUMATIC CRIMP TOOL

This tool is complete with foot control, checking gage, wrench, and complete instructions for crimping #10 through #18 contacts of MOD II or MOD III design.

## TP-201351-TC – HAND CRIMP TOOL

This tool crimps #18 contacts utilizing thermocouple wire.

## TP-201351-TL – HAND CRIMP TOOL

This tool crimps #8 contacts only.

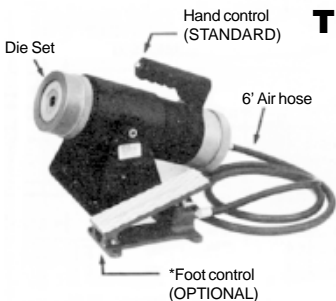
## T & B TOOL NUMBER 13642 AND DIE NUMBER 11747

To terminate 500 MCM contact.



## TP-201328 CRIMPING TOOL ONLY AND ACCESSORIES FOR CONTACTS #12 through #4/0

| Contact Size               | Wire Size  | Die Number                   | Check Gage                   | Color  | (Locator)                     |               |
|----------------------------|------------|------------------------------|------------------------------|--------|-------------------------------|---------------|
|                            |            |                              |                              |        | MOD II                        | MOD III       |
| 12 W Length<br>12 C Length | 12-14      | TP-201328-12D                | TP-201328-12G                | Yellow | TP-201328-12<br>TP-201328-12C | TP-201328-12L |
| 10 W Length<br>10 C Length | 10-12      | TP-201328-10G                | TP-201328-10G                | Black  | TP-201328-10<br>TP-201328-10C | TP-201328-10L |
| 8 W Length<br>8 C Length   | 8-10       | TP-201328-8D                 | TP-201328-8G                 | Red    | TP-201328-8<br>TP-201328-8C   | TP-201328-8L  |
| 4 W Length<br>4 C Length   | 4-6        | TP-201328-4D                 | TP-201328-4G                 | Brown  | TP-201328-4<br>TP-201328-4C   | TP-201328-4L  |
| 1/0                        | 1/0-1<br>2 | TP-201328-0D<br>TP-201328-2D | TP-201328-0G<br>TP-201328-2G | Blue   | TP-201328-0C                  | TP-201328-0L  |
| 4/0                        | 4/0-3/0    | TP-201328-41G                | TP-201328-41G                | Green  | TP-201328-41                  | TP-201328-41L |



## TP-201328-F

\*Foot control unit with 6 foot hose-Cat. No. TP-201328-F. Nominal operation-100 P.S.I.

## TP-201328-CRIMP TOOL

## TP-201328-PS-POWER SUPPLY

## TP-201328-BC-CARRYING CASE

NOTE: Carrying case will accommodate crimp tool.

NOTE: Power supply will include 5 dies and locators.

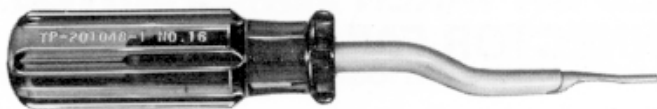


## Insertion and Removal Tools

### Crimp Type Contacts

Insertion tools are used for inserting contacts after they are terminated to conductor. Pin and socket contacts have identical terminal ends; the same tool is used for both.

Removal tools are used for extracting contacts from the inset assembly after contacts have been seated. Expanders and taper leads are required for sizes 8, 4, 1/0 MOD II contacts only.



| Size | Catalog No. |                                 | Replacement Tips |
|------|-------------|---------------------------------|------------------|
| 18   | TP-201047-1 | USE SAME TOOL FOR PIN OR SOCKET | TP 201047 PA     |
| 16   | TP-201048-1 |                                 | TP 201048 PA     |
| 12   | TP-201049-1 |                                 | TP 201049 PA     |
| 10   | TP-201046-1 |                                 | TP 201046 PA     |



| Size | Expander Barrel | Tapered Lead | T-Bar Handle |
|------|-----------------|--------------|--------------|
| 8    | TP-201007-A     | TP 201007-B  | .....        |
| 4    | TP-201033-A     | TP 201033-B  | .....        |
| 0    | TP-201000-EBL   | TP 201000-TL | TP 201000-TH |
| 0    | TP-201000-EBS   |              |              |

A separate expander barrel is required for each cavity of the contact inset.

An even number of long and short barrels should be used:  
Example: if the insert contains four cavities, use two long (EBL) and two short (EBS). Insert the short ones first and remove them last.

NOTE: EBS = Expander Barrel Short, EBL= Expander Barrel Long.

The T-Bar handle should be used in the insertion and extraction of the expander barrel for the 1/0 cavities – only one is required.

One tapered lead required only.

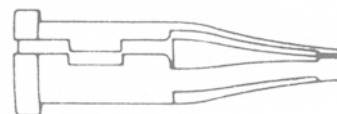
### Removal Tools for MOD II

| Size | Pin       | Socket      |
|------|-----------|-------------|
| 18   | TP-201459 | TP-201011-3 |
| 16   | TP-201459 | TP-201010-3 |
| 12   | TP-201459 | TP-201009-3 |
| 10   | TP-201459 | TP-201008-3 |



### MOD III Pin and Socket Removal Tools

| Contact Size | Tool No.    |
|--------------|-------------|
| 18           | TP201315-18 |
| 16           | TP201315-16 |
| 12           | TP201315-12 |
| 10           | TP201315-10 |
| 8            | TP201315-08 |
| 4            | TP201315-04 |
| 1/0          | TP201260-00 |



# Single Pole Power Connectors

## RIG-Power Connectors (1000v AC/DC)

| Ampacity<br>(Using<br>535 MCM) | Ampacity<br>(Using<br>777 MCM) | Wire<br>Range     | Connector<br>Style                          | Insert Gender              | Part Number* |
|--------------------------------|--------------------------------|-------------------|---------------------------------------------|----------------------------|--------------|
| 900                            | 1135                           | 444 -777<br>kcmil | Plug w/ Mech. Clamp                         | Dead Front Pin (Line side) | RIG-10P▲-M-◆ |
|                                |                                |                   | Plug w/ Mech. Clamp                         | Socket Contact (Load Side) | RIG-10S▲-M-◆ |
|                                |                                |                   | Cable Receptacle w/ Mech. Clamp             | Dead Front Pin (Line side) | RIG-15P▲-M-◆ |
|                                |                                |                   | Cable Receptacle w/ Mech. Clamp             | Socket Contact (Load Side) | RIG-15S▲-M-◆ |
|                                |                                |                   | Fixed Cable Receptacle w/ Mech. Clamp       | Dead Front Pin (Line side) | RIG-17P▲-M-◆ |
|                                |                                |                   | Fixed Cable Receptacle w/ Mech. Clamp       | Socket Contact (Load Side) | RIG-17S▲-M-◆ |
|                                |                                |                   | Panel Mount Receptacle (Bus Bar)            | Dead Front Pin (Line side) | RIG-17PR-▲   |
|                                |                                |                   | Panel Mount Receptacle (Bus Bar)            | Socket Contact (Load Side) | RIG-17SR-▲   |
|                                |                                |                   | Panel Mount Receptacle (Direct Cable Entry) | Dead Front Pin (Line side) | RIG-17PN-▲   |
|                                |                                |                   | Panel Mount Receptacle (Direct Cable Entry) | Socket Contact (Load Side) | RIG-17SN-▲   |

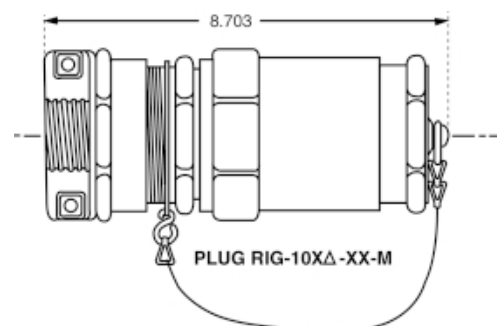
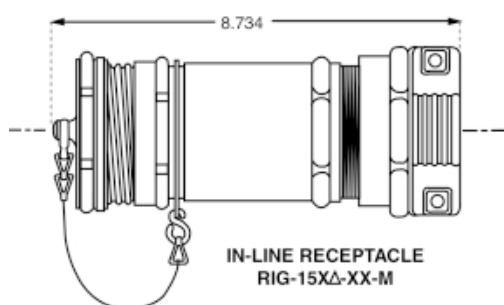


▲ Select Cable Size: (4=444 kcmil, 5=535 MCM, 6 = 646 MCM, 7=777 MCM)

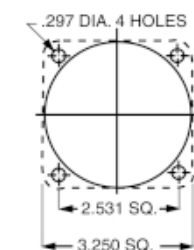
◆ Select Grommet Number from Chart Below

\* For Basketweave Grip substitute K for M

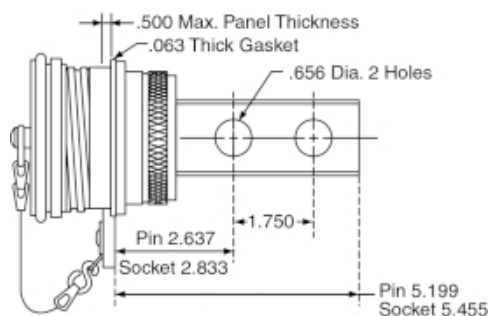
Use Crimp Tool: Anderson (Square D) Versa Crimp # VC8



NOTE:  
See page 19, shell size  
C24 for full mounting  
dimensions.



PANEL MOUNTING HOLES



PANEL MOUNT RECEPTACLE RIG-17X

## RIG-POWER Grommet Selection Guide

| Cable Diameter | 1.000-1.125 | 1.125-1.250 | 1.250-1.375 | 1.375-1.500 | 1.500-1.625 | 1.625-1.750 | 1.750-1.875 |
|----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Code No.(XX)   | 18          | 20          | 22          | 24          | 26          | 28          | 30          |

## Color Code Options

| Current Type                             | DC          |               |              |              | AC        |             |              |             |
|------------------------------------------|-------------|---------------|--------------|--------------|-----------|-------------|--------------|-------------|
| Standard Color Code<br>Part No. Suffix ◆ | Blue<br>-BL | Orange<br>-OR | Yellow<br>-Y | Brown<br>-BR | Red<br>-R | White<br>-W | Black<br>-BK | Green<br>-G |

### P-500™ / PD-501 POWER Connectors

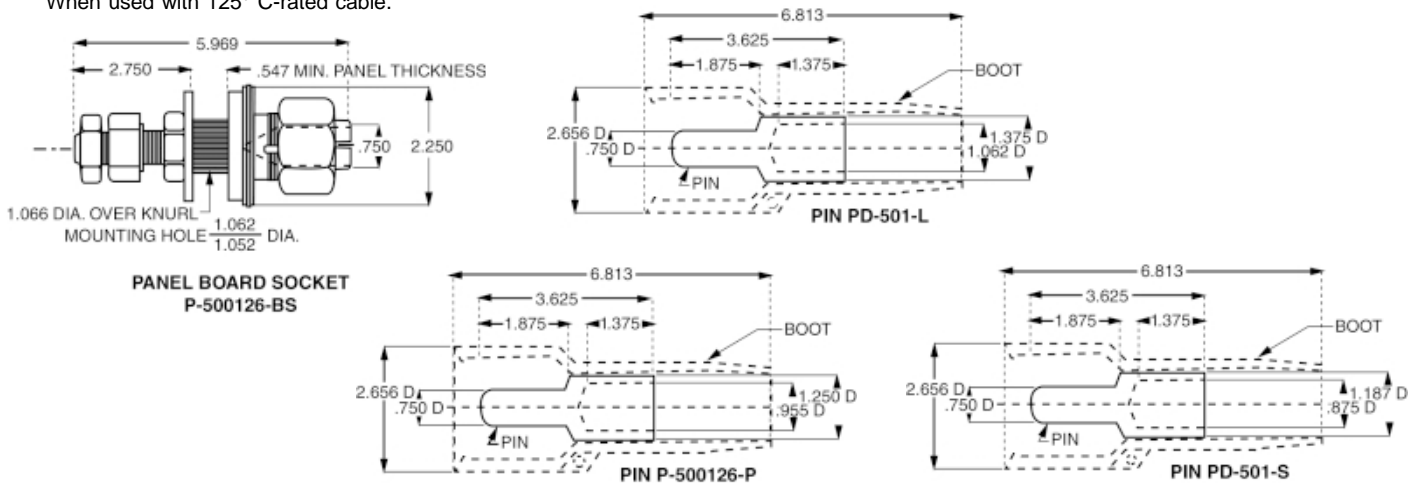
| Ampacity | Wire Size | Type of Termination | Gender | Part Number   | Boot Part #<br>(See Color Code) | Cable Sealing Range |
|----------|-----------|---------------------|--------|---------------|---------------------------------|---------------------|
| 900*     | —         | Stud                | Socket | P-500126-BS-◆ | —                               | —                   |
| 900*     | 535MCM    | Solder              | Pin    | PD-501-L      | TMPC-10-◆                       | 1.125 - 1.500       |
| 900•     | 535MCM    | Crimp               | Pin    | P-500126-P    | TMPC-10-◆                       | 1.125 - 1.500       |
| 325      | 313MCM    | Solder              | Pin    | PD-501-S      | TMPC-10-◆                       | 1.125 - 1.500       |

Note: Connectors are rated at 1000 Volts AC/DC when mounted on 5" centers.

Copper alloy, silver plated contacts for maximum conductivity.

Crimp tool required for P-500126-P is Thomas & Betts hex crimp using Tool # 13642M & Die #11747.

\* When used with 125° C-rated cable.



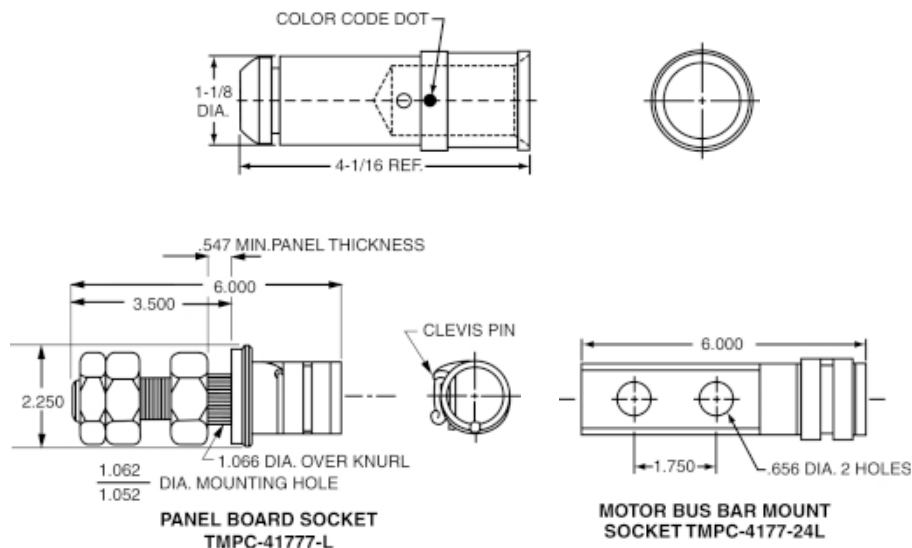
### TMPC™ Connectors

| Gender | Type of Termination   | Current Range | Part Number    | Wire Size       | Boot Part No. | Cable Sealing Range |
|--------|-----------------------|---------------|----------------|-----------------|---------------|---------------------|
| Socket | 7/8" Stud/Panel board | 900-1135 amps | TMPC-41777-L-◆ | n/a             | n/a           | n/a                 |
| Socket | 2 Hole Bus Bar        | 900-1135 amps | TMPC-41777-24L | n/a             | n/a           | n/a                 |
| Pin    | Crimp                 | 900 amps      | TPMC-40535-L   | 444 - 535 kcmil | TMPC-10-◆     | 1.125 - 1.500       |
| Pin    | Crimp                 | 900-1135 amps | TPMC-40777-L   | 646-777 kcmil   | TMPC-10-◆     | 1.125 - 1.500       |

Note: TPMC Connectors are rated at 1000 Volts AC/DC when mounted on 5" centers.

Material is Copper alloy, silver plated for maximum conductivity and corrosion resistance.

Recommended crimping tools are as follows: Anderson Versa Crimp VC8 (four indent).







### **A-Line® Series**

A low profile, quick-mate, bayonet coupling system designed for commercial and industrial environments. Used in heavy-duty control and signal applications.



### **Star-Line EX®**

Certified for use up to 1000V AC/DC in a Zone 1-IIC environment with IP65 rated sealing capabilities. This connector series offers solutions to harsh and potentially explosive environments.



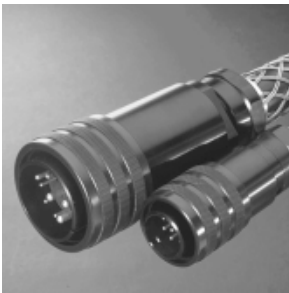
### **V-Line® Series**

A heavy-duty, multi-pin, metal shell, attachable electrical connector is designed for commercial and industrial control and signal applications. The one-piece five-keyed shell, coupling nut, cable adapter, gland and clamp nut are constructed of high-grade machined aluminum.



### **R-Line® Series**

A DIN43 652 rectangular style industrial connector, features heavy cast aluminum housings. They are manufactured in either top or side entry designs and finished with an epoxy polyester powder coating. Connector housings provide positive locking latches with rapid mating of the plug and receptacle.



### **P-Lok® Series**

A standard-duty commercial grade control and signal connector for use where MIL-C-5015 commercial connectors are specified. Constructed of a one-piece keyed aluminum shell. Features a coupling system that provides positive lock between the plug and receptacle with a simple one-handed push of the connector.



### **MIL-C-5015**

A medium to heavyweight connector offering five mounting styles, nineteen shell sizes and solder or crimp termination.





### Industria-Link™

An industrial multi-conductor cable assembly that is built to excel in a variety of industrial applications. Featuring vibration resistance, environmental sealing (IP65 rated) and resistance to most industrial fluids. Available in both static and continuous flexing cable versions and offered in the most popular pin configurations and lengths.



### Swiftmate™

These connectors feature robust construction and a unique push to mate / pull to unmate coupling system. They are a new member of the connector family and are compatible with connectors designed to MIL-C-5015 specifications.



### GT-Series

A heavy-duty rugged connector with quick reverse bayonet coupling. They provide environmental resistance with a wide variety of backshell options.



### MIL-C-26482

A medium size cylindrical connector featuring quick bayonet coupling, crimp, solder or printed circuit board termination. These connectors are offered in seven mounting styles and ten shell sizes.

