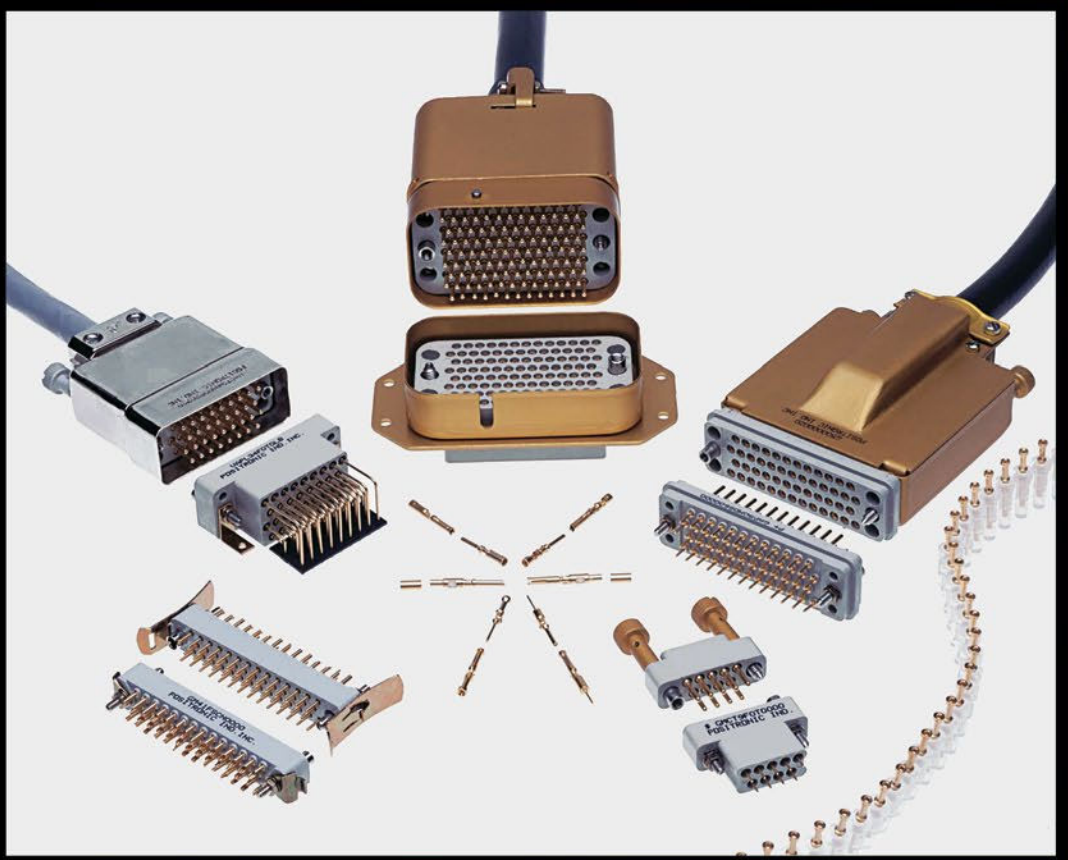




**Positronic®**  
an Amphenol company

# Standard Density Rectangular Connectors



**For Direct Current, Low Frequency Analog  
and Digital High Speed Data Applications**



**RoHS Compliant  
options available!**



**Positronic®**

## About Us

Founded in 1966, Positronic Industries is a vertically integrated manufacturer of high quality interconnect products. Positronic has earned the worldwide reputation as a service oriented, quick-reaction, top quality connector supplier. We are committed to maintaining this reputation by continuous implementation of our **Complete Capability** concept.

## Complete Capability

### Design & Development

- Designs new connectors and modifies existing connectors to meet industry requirements
- Continuously conducts marketing studies to identify industry needs for new products
- Ongoing interest in unique connector designs

### Tooling

- Tooling support for all manufacturing areas within company
- Provides 80% of new tooling, punch press dies, molds, jigs and fixtures used at Positronic factory locations worldwide

### Machining

- Automatic screw machines produce finely crafted contacts and hardware for connector bodies
- Trained technicians operate machines from Tornos, Bechler and Brown & Sharpe

### Molding

- Molds all plastic connector components such as insulators, hoods, angle brackets and more
- Overmold capability available

### Plating

- Applies gold and other metal finishes to connector components to any required thickness
- Plating conforms to all military specifications

### Quality Assurance

- Select factories certified to ISO 9001:2000, AS9100 Rev.B 2004 and ISO 14001 (Singapore)
- Maintains aggressive TQM program
- Able to test to IEC, EIA, UL, MIL-DTL-24308, MIL-DTL-28748, SAE AS 39029 and MIL-C-85049 requirements

### Finished Stock Inventory

- Same day shipments available from PosiShop on many standard connector products
- Stocking agreements available for qualified customers

### Worldwide Sales & Service

- Responsive attitude toward customer needs
- Fully trained sales staff located worldwide
- Facilities located in USA, France, India, Puerto Rico, and Singapore.



Machining



Molding



Finished Stock Inventory

Products described within this catalog may be protected by one or more of the following US. patents:

#4,900,261 #5,255,580 #5,329,697  
#6,260,268 #6,835,079 #7,115,002

Patented in Canada, 1992 Other Patents Pending

Unless otherwise specified, **dimensional tolerances** are:

- 1)  $\pm 0.001$  inches [0.03 mm] for male contact mating diameters.
- 2)  $\pm 0.003$  inches [0.08 mm] for contact termination diameters.
- 3)  $\pm 0.005$  inches [0.13 mm] for all other diameters.
- 4)  $\pm 0.015$  inches [0.38 mm] for all other dimensions.

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Positronic Industries' FEDERAL SUPPLY CODE (Cage Code) FOR MANUFACTURERS is 28198

**POSITRONIC IS AN ITAR REGISTERED COMPANY**



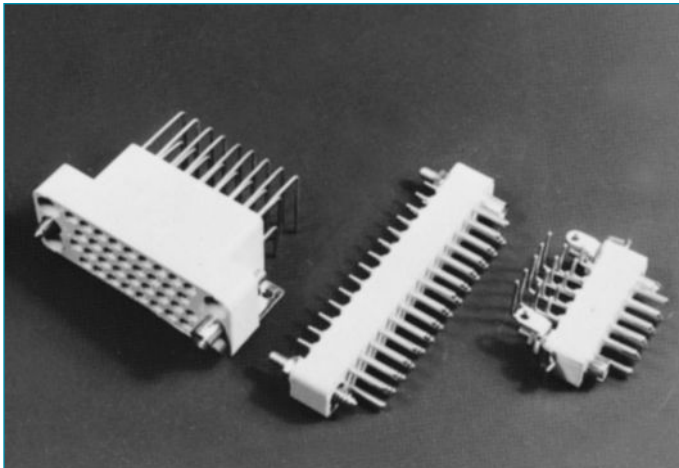
## CONNECTOR DESCRIPTIONS

### GMCT SERIES CONNECTORS

Heavy duty, rectangular connectors with removable contacts. Multipurpose connectors offering power, signal and shielded contacts. Thirteen connector variants, 9 through 104 poles, qualified to MIL-DTL-28748.

### GMCT SERIES CONTACTS

Size 16 contacts, 13 ampere nominal rated, and size 20 contacts, 7.5 ampere nominal rated, qualified to SAE AS 39029. Terminations are crimp 14 AWG [2.5mm<sup>2</sup>] through 32 AWG [0.03mm<sup>2</sup>], solder cup, printed board, press-fit and shielded.

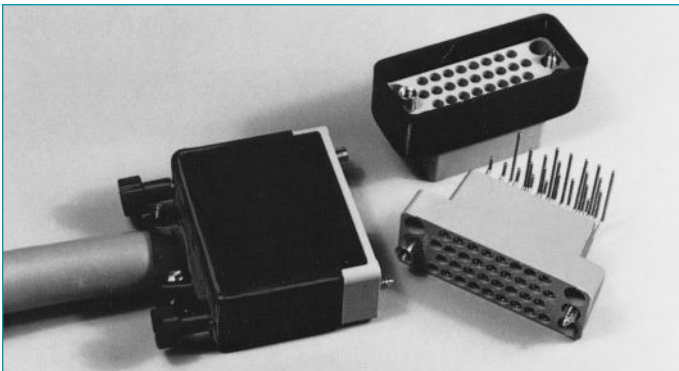


### GAP SERIES CONNECTORS

Heavy duty, rectangular, printed board connectors with straight solder, size 16 contacts, 7.5 ampere nominal rated. Eight connector variants, 9 through 50 poles.

### GAPL SERIES CONNECTORS

Heavy duty, rectangular, printed board mount connectors with size 16, right angle solder cup contacts, 7.5 ampere nominal rated. Seven connector variants, 9 through 50 poles.

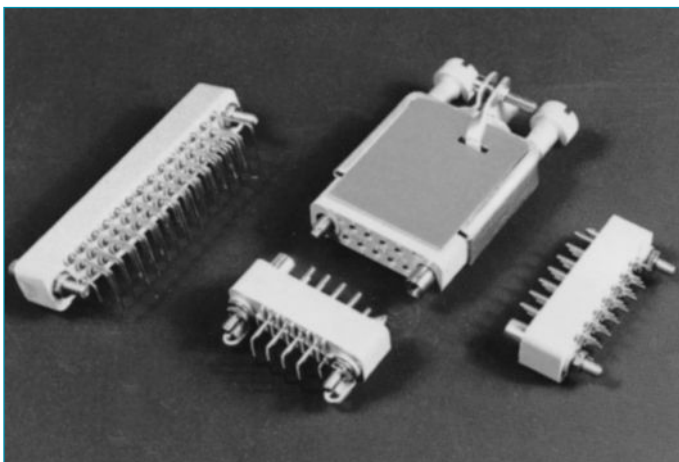


### VMCT AND VAPL SERIES CONNECTORS

Heavy duty, rectangular, CCITT V.35 recommended interface connectors with size 16 contacts, 13 ampere nominal rated. Terminations are crimp, solder cup, right angle printed board mount and press-fit.

### GM SERIES CONNECTORS

Rectangular connectors with size 20 fixed solder contacts, 7.5 ampere nominal rated. Solder cup and printed board terminations. Eleven connector variants, 7 through 50 poles. Qualified to MIL-DTL-28748.



**RoHS Compliant  
options available!**



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Standard  
Density  
Rectangular

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# HEAVY-DUTY RECTANGULAR CONNECTORS WITH REMOVABLE CONTACTS

Standard  
Density  
Rectangular

## Size 16 and 20 Contacts

Connectors Qualified to  
MIL-DTL-28748

Contacts Qualified to  
SAE AS 39029

IEC Publication 807-7

U.L. Recognized,  
File #E49351

Telecommunication  
U.L. File #E140980



GMCT Series connectors are heavy-duty, multi-pole, high reliability connectors qualified to MIL-DTL-28748 specifications. Termination styles are crimp, solder cup, straight solder, press-fit, and crimp shielded. According to contact size selected, GMCT Series connectors are intermateable with Positronic GAP and GAPL series connectors.

Thirteen contact variants, 9 through 104 poles, are offered. Contacts can have 0.062 inch [1.57mm] diameters, rated to 13 amperes per contact, or have 0.040 inch [1.02mm] diameters, rated to 7.5 amperes per contact. GMCT Series crimp contacts

are qualified to SAE AS 39029.

A wide array of mounting, locking, shrouding and polarizing accessories is available for this series. For details, see the Heavy-Duty Rectangular Connector Accessories section.

Due to its many termination styles, its wide range of contact variants, and an array of cable support accessories, GMCT Series connectors are widely utilized in navigational systems, robotics, mainframe and peripheral computers, medical equipment, telecommunications, instrumentation and process control applications.

## GMCT SERIES TECHNICAL CHARACTERISTICS

### MILITARY SPECIFICATIONS:

Qualified to MIL-DTL-28748/3 and MIL-DTL-28748/4. Contacts qualified to SAE AS 39029/34 and SAE AS 39029/35.

### UNDERWRITERS LABORATORY RECOGNIZED:

File No. E49351.

### INTERNATIONAL STANDARDS:

IEC 807-7.  
U.L. Recognized.

### MATERIALS AND FINISHES:

|                               |                                                                                                                                                      |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Insulator:</b>             | Glass filled DAP per ASTM-D-5948 type SDG-F. Grey color is standard, black available. Size 66 insulators are black PPS                               |
| <b>Removable Contacts:</b>    | Copper alloy, gold flash over nickel. Military contacts plated 0.000050 inch [1.27 microns] gold over copper. Other finishes available upon request. |
| <b>Hoods, Cable Adapters:</b> | Aluminum with yellow or black anodize.                                                                                                               |
| <b>Shells:</b>                | Aluminum with yellow or black anodize.                                                                                                               |
| <b>Jackscrew System:</b>      | Passivated stainless steel.                                                                                                                          |
| <b>Polarizing Guides:</b>     | Copper alloy with nickel plate or passivated stainless steel.                                                                                        |
| <b>Vibration Locks:</b>       | Copper alloy with zinc plate and chromate seal.                                                                                                      |

### MECHANICAL CHARACTERISTICS:

|                                        |                                                                                                                                                                                                                     |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Removable Contacts:</b>             | Insert contact to rear face of insulator, release from front face of insulator. Both size 16 [13 amps] and size 20 [7.5 amps] contacts available. Female contact has "closed entry" design for highest reliability. |
| <b>Contact Retention in Insulator:</b> | 20 lbs. [89N] after 10 cycles of contact insertion/extraction.                                                                                                                                                      |
| <b>Contact Termination:</b>            | Crimp all wire sizes from 14 AWG [2.5 mm <sup>2</sup> ] through 28 AWG [0.08 mm <sup>2</sup> ]. Also, solder cup, press-fit, and solder printed board terminations. Also, crimp and shielded contacts.              |

### Locking Systems:

Friction, vibration locks and jackscrews.

### Polarization:

Polarized guides, polarized shells and jackscrew system.

### Mechanical Operations:

1000 operations per IEC 512-5.

### Jackscrews:

Standard threads, 6-32 UNC on all sizes, except 60 and 104 connector variant, which uses 8-32 UNC. Metric threads, M3X0.5 available.

### ELECTRICAL CHARACTERISTICS:

#### Contact Current Rating (maximum):

Size 16: 0.062 inch [1.57 mm] diameter.  
- 13 amps maximum.  
Size 20: 0.040 inch [1.02 mm] diameter.  
- 7.5 amps maximum.

#### Initial Contact Resistance:

Size 16 – 0.003 ohms.  
Size 20 – 0.007 ohms.

#### Flash over Voltage:

2700 V.AC [rms].

#### Test Voltage:

Size 16 – 2000 V.AC [rms].  
Size 20 – 1200 V.AC [rms].

#### Insulation Resistance (minimum):

5 G ohms.

#### Clearance and Creepage Distance (minimum):

0.080 inch [2.03 mm].

#### Working Temperature:

-65°C to 150°C.

#### Working Voltage:

500 V.AC [rms].

#### Coaxial Contacts:

Characteristic Impedance: 50 ohms.

Initial Contact Resistance: 0.012 ohms max.



**For RoHS options  
see page 21.**

## TYPICAL MATING ASSEMBLIES

PICTURES ARE 80% OF ACTUAL SIZE

GMCT26F0E100JB



GAP26MDS4T0000

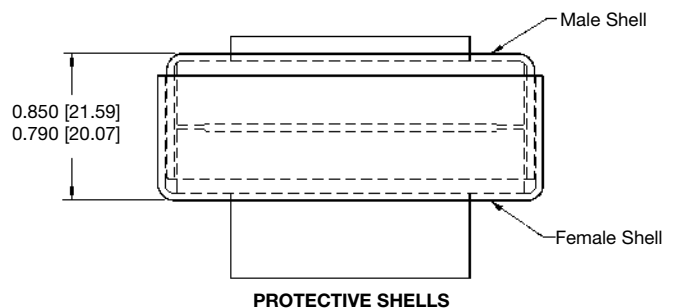
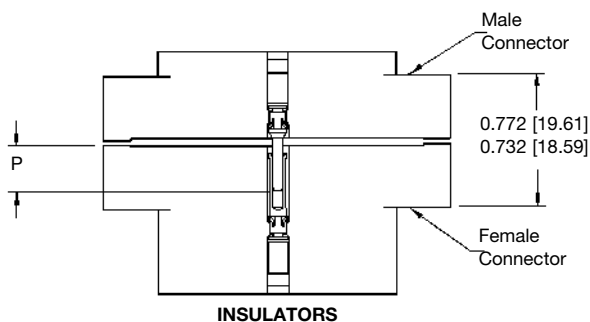


GMCT34F00RAZ0



GMCT34M0TWA00

## CONNECTOR MATING DIMENSIONS



P: 0.276 [7.01] MINIMUM PENETRATION OF MALE CONTACT  
IN "CLOSED ENTRY" DESIGN FEMALE CONTACT TO  
ENSURE MINIMUM CONTACT RESISTANCE.

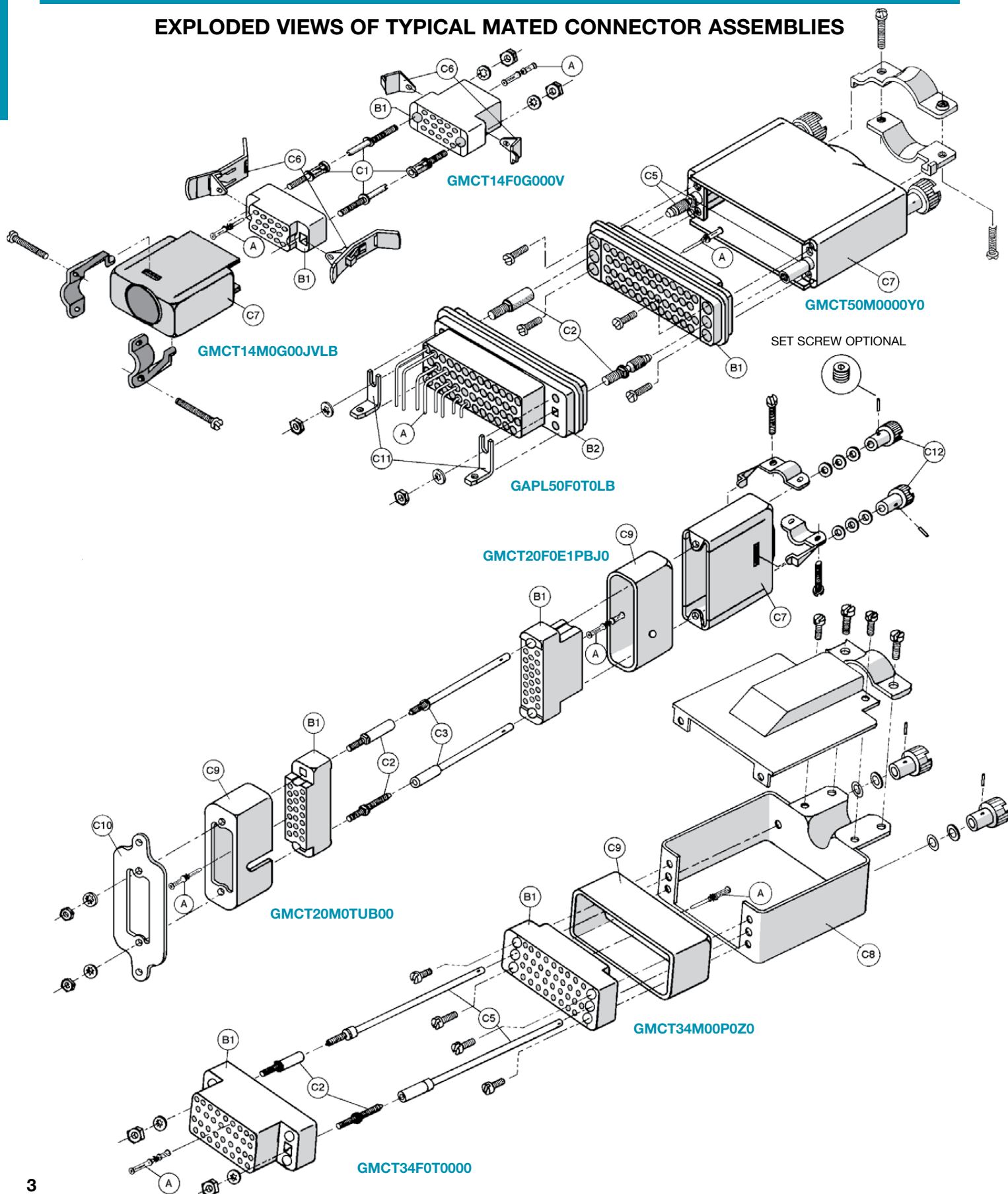


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# HEAVY-DUTY RECTANGULAR CONNECTORS WITH REMOVABLE CONTACTS

Standard  
Density  
Rectangular

## EXPLODED VIEWS OF TYPICAL MATED CONNECTOR ASSEMBLIES

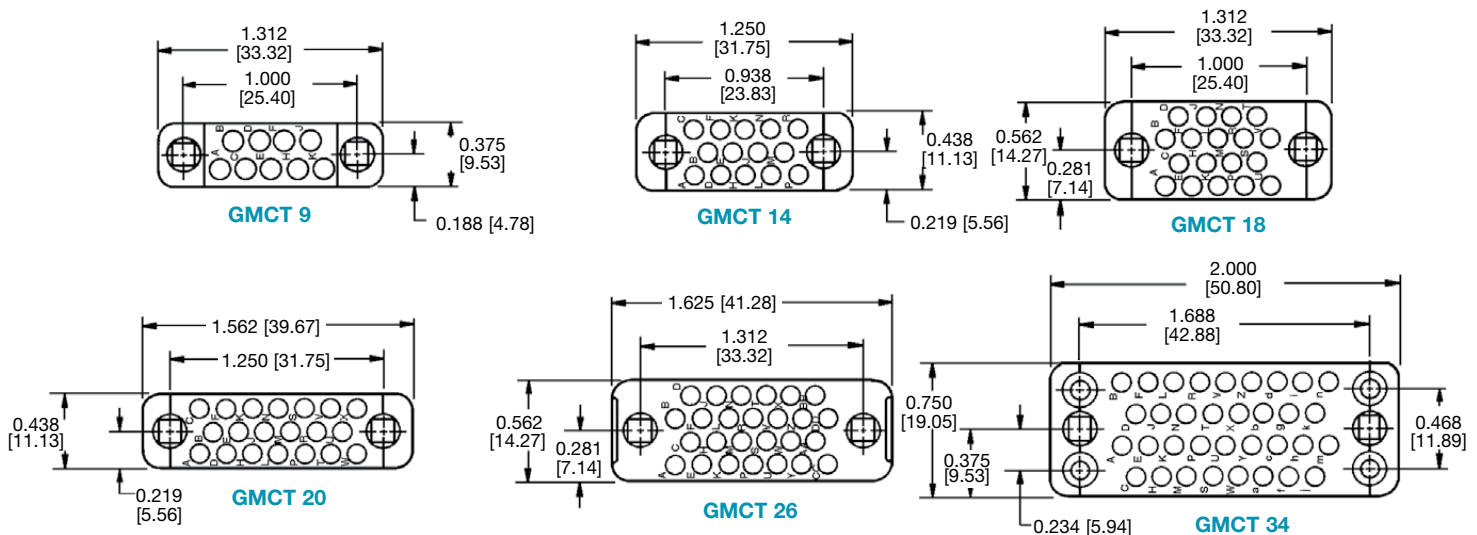


## CONNECTOR COMPONENT DESCRIPTION AND TERMINOLOGY

- A** - Male and female contacts, size 16 and size 20. Power, signal and shielded. Terminations are crimp, solder cup, printed board straight solder and press-fit.
- B1** - Unloaded connector insulators, male and female. Insulator retention system retains all contact termination types. Insulator may be used as a free or fixed connector.
- B2** - Loaded connector insulators, male and female. Insulators may be preloaded per customer requirements with contacts having terminations of 90° or straight solder printed board mount, and press-fit. Insulator contact positions may be selectively loaded with contacts. Unloaded insulator contact positions remain unloaded and reserved for future use. Connectors are normally fixed panel or printed board connectors.
- C1** - Polarizing guides, male and female, ensure correct alignment and coupling of male and female connectors. They may also be used for keying when used in corner positions of connector variants 34, 42, 50, 60, 66, 75 and 104 poles.
- C2** - Fixed jackscrews are the stationary threaded members of the jackscrew system. Threaded pilots and sockets of the jackscrew system also provide connector polarization to ensure correct connector coupling.
- C3** - Long turnable jackscrews, the rotating threaded members of the jackscrew system, are used with a free connector having a hood for cable support. Used on connector variants 9, 14, 18, 20, 21, 26 and 41 poles. Knobs, C-12, may be affixed to turnable jackscrews using either roll pins or set screws.
- C4** - Short turnable jackscrews are used to polarize and mechanically assist with the coupling of the male and female connectors when the free connector is not equipped with a hood.
- C5** - Long turnable jackscrews, factory assembled to hood (cable adapter) for polarization and mechanical assistance in the coupling of the free connector to the fixed connector. Used on connector variants with 34, 42, 50, 60, 66, 75 and 104 poles.
- C6** - Vibration locking system consists of lock tabs on fixed connector and locking levers on free cable connectors. Normally used on connector variants 7, 9, 14, 18, 20, 21 and 26 poles. Locks connectors in coupled position.
- C7** - Hoods (cable adapters) are used on the free connector to provide cable support and contact protection. May also mechanically support either the turnable or fixed members of the jackscrew system.
- C8** - Side access hoods (cable adapters). Extra strength, quick cable assembly to connector, fixed or free, to provide cable support and relieve stress on contact termination. Supplied with both turnable and fixed jackscrew systems.
- C9** - Shells (shrouds), both male and female, protect male and female contacts from damage. Also used to provide additional polarization combinations.
- C10** - Mounting plates, with or without float bushings, provide a stronger mechanical method of mounting the fixed connector to a panel. May be used with shells.
- C11** - Mounting angle brackets provide a means of mechanically affixing the fixed connector to the printed board.
- C12** - Knobs of turnable jackscrews may be affixed to the jackscrews by using either the roll pin or set screw method. Specify method desired in step 9 of order numbering system.

## INSULATOR DIMENSIONS

### MATING FACE OF FEMALE CONNECTOR OR REAR FACE OF MALE CONNECTOR





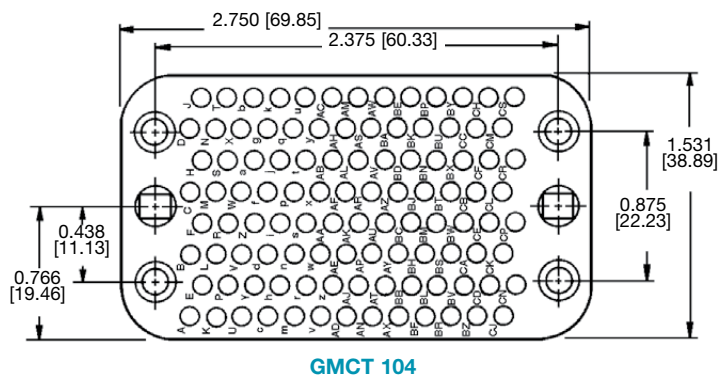
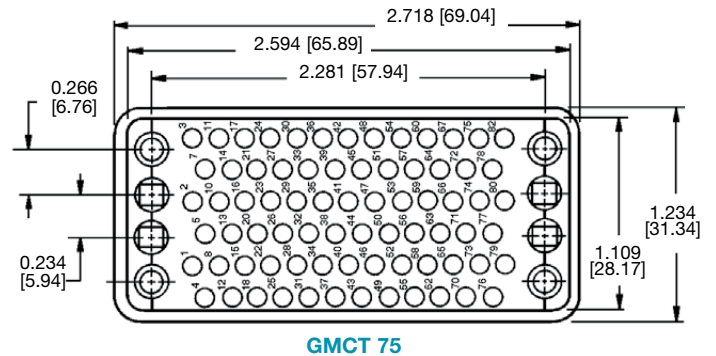
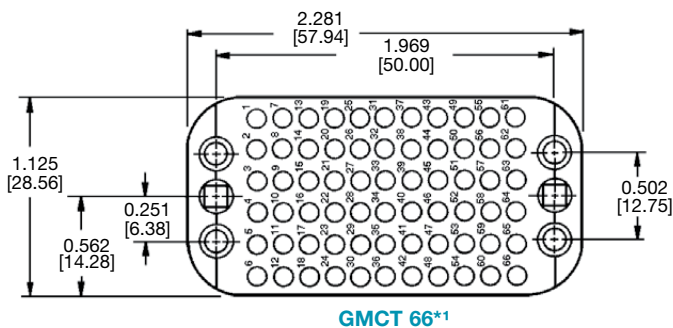
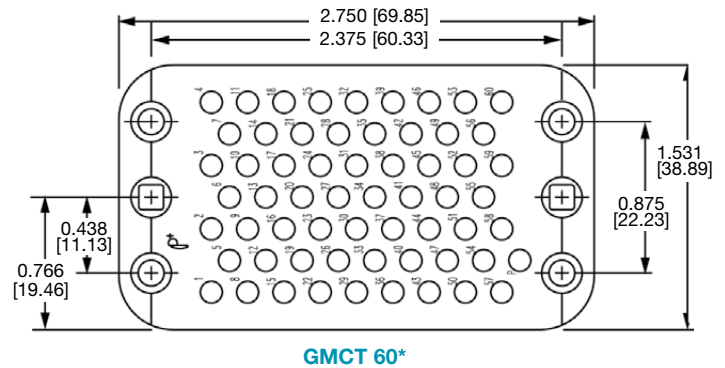
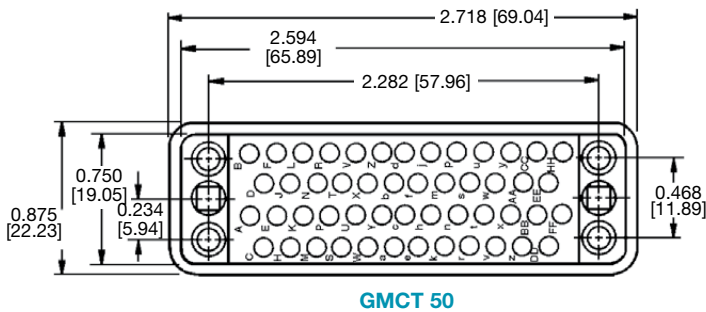
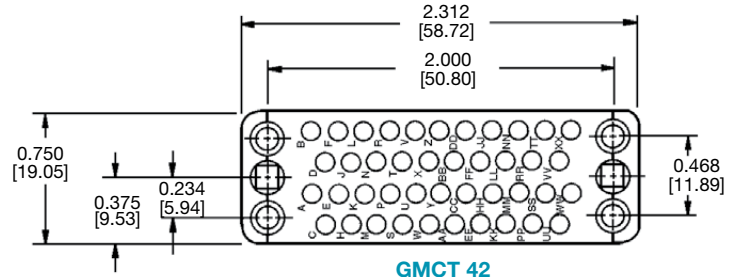
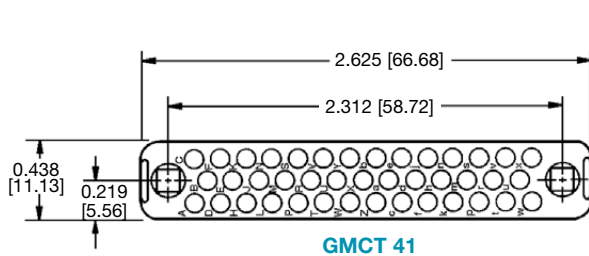
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# HEAVY-DUTY RECTANGULAR CONNECTORS WITH REMOVABLE CONTACTS

Standard  
Density  
Rectangular

## INSULATOR DIMENSIONS

MATING FACE OF FEMALE CONNECTOR OR REAR FACE OF MALE CONNECTOR



\*CONTACT TECHNICAL SALES FOR U.L.  
APPROVAL STATUS OF GMCT60 VARIANT.

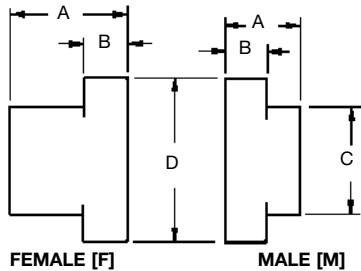
MATERIAL: GLASS FILLED DIALYL PHTHALATE PER  
ASTM-D-5948 TYPE SDG-F

\*1Size 66 insulators are black PPS

SEE GMCT SERIES PRINTED BOARD HOLE PATTERN PAGE  
FOR CONNECTOR VARIANT CONTACT HOLE POSITIONS

## INSULATOR DIMENSIONS

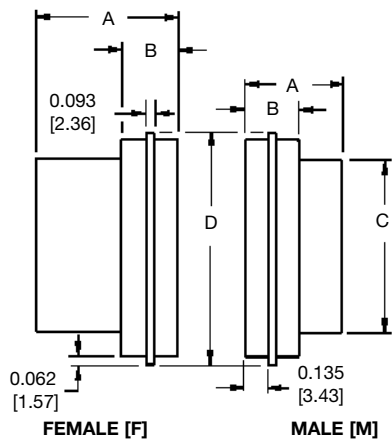
FIGURE 1



FEMALE [F]

MALE [M]

FIGURE 2



FEMALE [F]

MALE [M]



| CATALOG NUMBER | FIGURE | A                | B               | C                | D                |
|----------------|--------|------------------|-----------------|------------------|------------------|
| GMCT9F         | 1      | 0.856<br>[21.74] | 0.370<br>[9.40] | 0.810<br>[20.57] | 1.312<br>[33.32] |
| GMCT9M         | 1      | 0.511<br>[12.98] | 0.370<br>[9.40] | 0.810<br>[20.57] | 1.312<br>[33.32] |
| GMCT14F        | 1      | 0.856<br>[21.74] | 0.370<br>[9.40] | 0.778<br>[19.76] | 1.250<br>[31.75] |
| GMCT14M        | 1      | 0.511<br>[12.98] | 0.370<br>[9.40] | 0.778<br>[19.76] | 1.250<br>[31.75] |
| GMCT18F        | 1      | 0.856<br>[21.74] | 0.370<br>[9.40] | 0.772<br>[19.61] | 1.312<br>[33.32] |
| GMCT18M        | 1      | 0.511<br>[12.98] | 0.370<br>[9.40] | 0.772<br>[19.61] | 1.312<br>[33.32] |
| GMCT20F        | 1      | 0.856<br>[21.74] | 0.370<br>[9.40] | 1.072<br>[27.23] | 1.562<br>[39.67] |
| GMCT20M        | 1      | 0.511<br>[12.98] | 0.370<br>[9.40] | 1.072<br>[27.23] | 1.562<br>[39.67] |
| GMCT26F        | 1      | 0.856<br>[21.74] | 0.370<br>[9.40] | 1.072<br>[27.23] | 1.625<br>[41.28] |
| GMCT26M        | 1      | 0.511<br>[12.98] | 0.370<br>[9.40] | 1.072<br>[27.23] | 1.625<br>[41.28] |
| GMCT34F        | 1      | 0.856<br>[21.74] | 0.370<br>[9.40] | 1.375<br>[34.93] | 2.000<br>[50.80] |
| GMCT34M        | 1      | 0.511<br>[12.98] | 0.370<br>[9.40] | 1.375<br>[34.93] | 2.000<br>[50.80] |
| GMCT41F        | 1      | 0.856<br>[21.74] | 0.370<br>[9.40] | 2.125<br>[53.98] | 2.625<br>[66.68] |
| GMCT41M        | 1      | 0.511<br>[12.98] | 0.370<br>[9.40] | 2.125<br>[53.98] | 2.625<br>[66.68] |
| GMCT42F        | 1      | 0.866<br>[22.00] | 0.370<br>[9.40] | 1.672<br>[42.47] | 2.312<br>[58.72] |
| GMCT42M        | 1      | 0.525<br>[13.34] | 0.370<br>[9.40] | 1.672<br>[42.47] | 2.312<br>[58.72] |
| GMCT50F        | 2      | 0.856<br>[21.74] | 0.370<br>[9.40] | 1.972<br>[50.09] | 2.718<br>[69.04] |
| GMCT50M        | 2      | 0.511<br>[12.98] | 0.370<br>[9.40] | 1.972<br>[50.09] | 2.718<br>[69.04] |
| GMCT60F        | 1      | 0.856<br>[21.74] | 0.370<br>[9.40] | 2.048<br>[52.02] | 2.750<br>[69.85] |
| GMCT60M        | 1      | 0.511<br>[12.98] | 0.370<br>[9.40] | 2.048<br>[52.02] | 2.750<br>[69.85] |
| GMCT66F**1     | 1      | 0.856<br>[21.74] | 0.370<br>[9.40] | 1.673<br>[42.49] | 2.281<br>[57.94] |
| GMCT66M**1     | 1      | 0.525<br>[13.34] | 0.370<br>[9.40] | 1.673<br>[42.49] | 2.281<br>[57.94] |
| GMCT75F        | 2      | 0.856<br>[21.74] | 0.370<br>[9.40] | 1.980<br>[50.29] | 2.718<br>[69.04] |
| GMCT75M        | 2      | 0.511<br>[12.98] | 0.370<br>[9.40] | 1.980<br>[50.29] | 2.718<br>[69.04] |
| GMCT104F       | 1      | 0.856<br>[21.74] | 0.370<br>[9.40] | 2.048<br>[52.02] | 2.750<br>[69.85] |
| GMCT104M       | 1      | 0.511<br>[12.98] | 0.370<br>[9.40] | 2.048<br>[52.02] | 2.750<br>[69.85] |

\*\*Size 66 insulators are black PPS



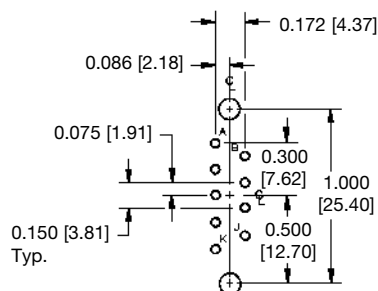
Positronic Industries  
connectpositronic.com

# HEAVY-DUTY RECTANGULAR CONNECTORS WITH REMOVABLE CONTACTS

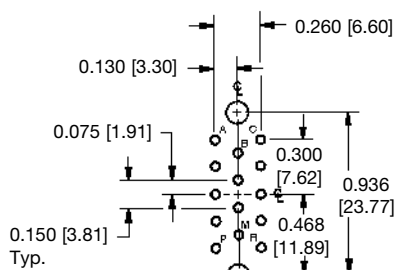
Standard  
Density  
Rectangular

## CONTACT HOLE POSITION DIMENSIONS AND PRINTED BOARD HOLE PATTERN

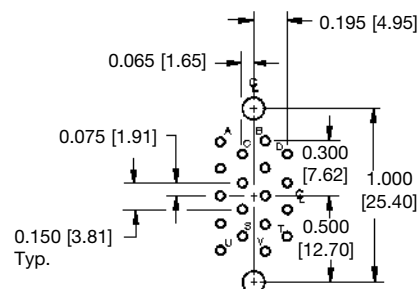
FOR STRAIGHT SOLDER CONTACTS AND COMPLIANT TERMINATION PRESS-FIT CONTACTS  
MATING FACE OF FEMALE CONNECTOR OR REAR FACE OF MALE CONNECTOR



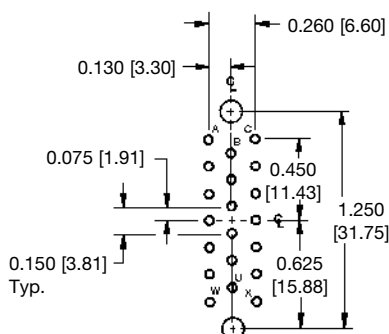
SIZE 9



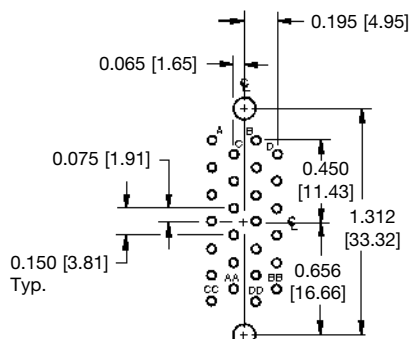
SIZE 14



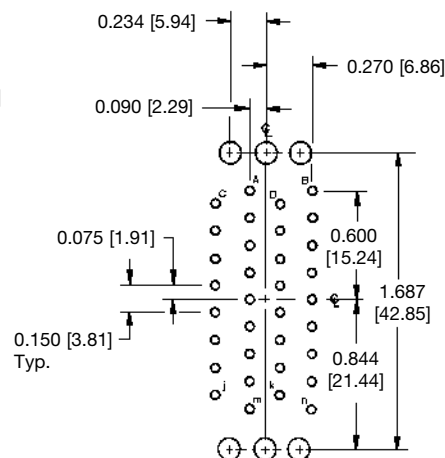
SIZE 18



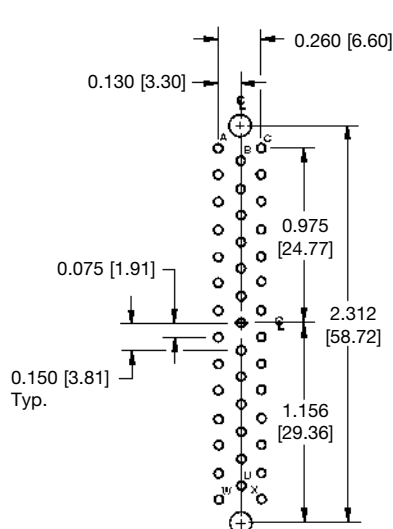
SIZE 20



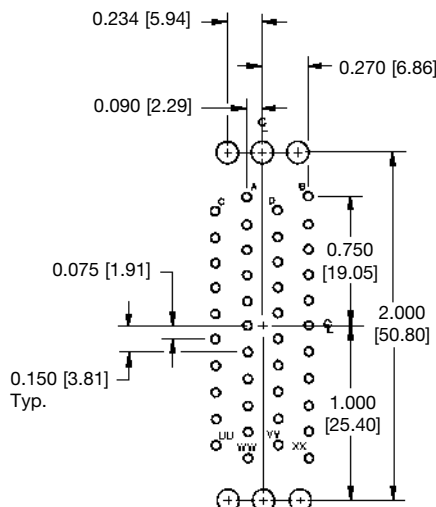
SIZE 26



SIZE 34



SIZE 41



SIZE 42

### HOLE IDENTIFICATION FOR REFERENCE ONLY

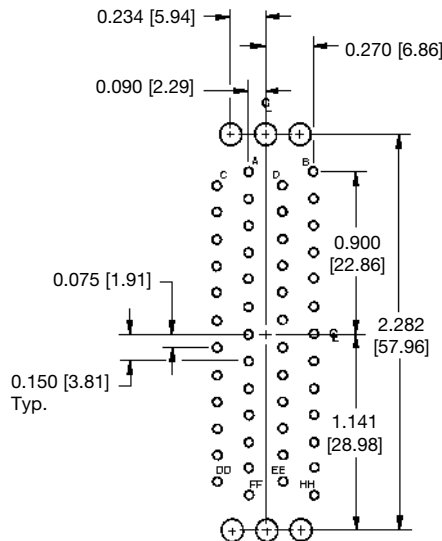
SUGGEST 0.120 [3.05] Ø HOLES IN PRINTED BOARD FOR CONNECTOR MOUNTING HOLES FOR CONNECTOR VARIANTS 9 THROUGH 50, 66 AND 75. SUGGEST 0.149 [3.78] Ø HOLES IN PRINTED BOARD FOR CONNECTOR MOUNTING HOLES FOR CONNECTOR VARIANTS 60 AND 104.

SUGGEST 0.040 [1.02] Ø HOLES IN PRINTED BOARD FOR GMCT SERIES STRAIGHT SOLDER CONTACTS

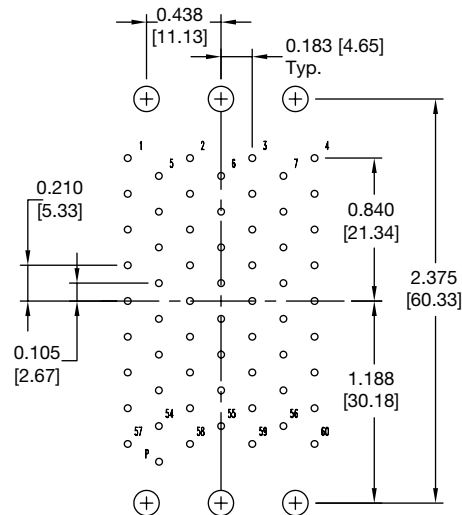
SUGGESTED PRINTED BOARD HOLE SIZES FOR COMPLIANT TERMINATION PRESS-FIT CONTACTS, SEE PAGE 13.

## CONTACT HOLE POSITION DIMENSIONS AND PRINTED BOARD HOLE PATTERN

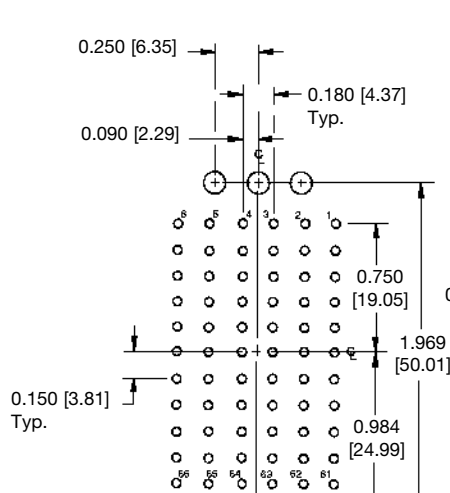
FOR STRAIGHT SOLDER CONTACTS AND COMPLIANT TERMINATION PRESS-FIT CONTACTS  
MATING FACE OF FEMALE CONNECTOR OR REAR FACE OF MALE CONNECTOR



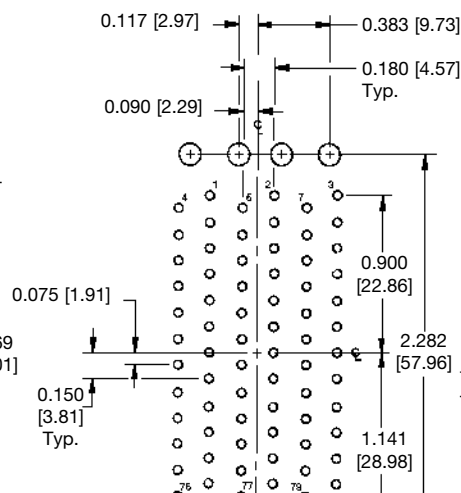
SIZE 50



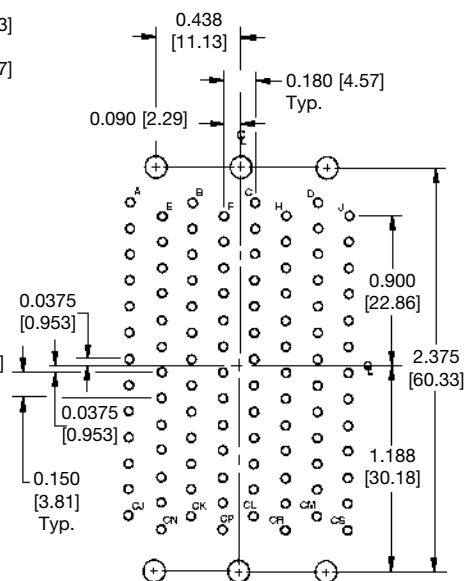
SIZE 60



SIZE 66



SIZE 75



SIZE 104

HOLE IDENTIFICATION FOR REFERENCE ONLY

SUGGEST 0.120 [3.05] Ø HOLES IN PRINTED BOARD FOR CONNECTOR MOUNTING HOLES FOR CONNECTOR VARIANTS 9 THROUGH 50, 66 AND 75. SUGGEST 0.149 [3.78] Ø HOLES IN PRINTED BOARD FOR CONNECTOR MOUNTING HOLES FOR CONNECTOR VARIANTS 60 AND 104.

SUGGEST 0.040 [1.02] Ø HOLES IN PRINTED BOARD FOR GMCT SERIES STRAIGHT SOLDER CONTACTS

SUGGESTED PRINTED BOARD HOLE SIZES FOR COMPLIANT TERMINATION PRESS-FIT CONTACTS, SEE PAGE 13.



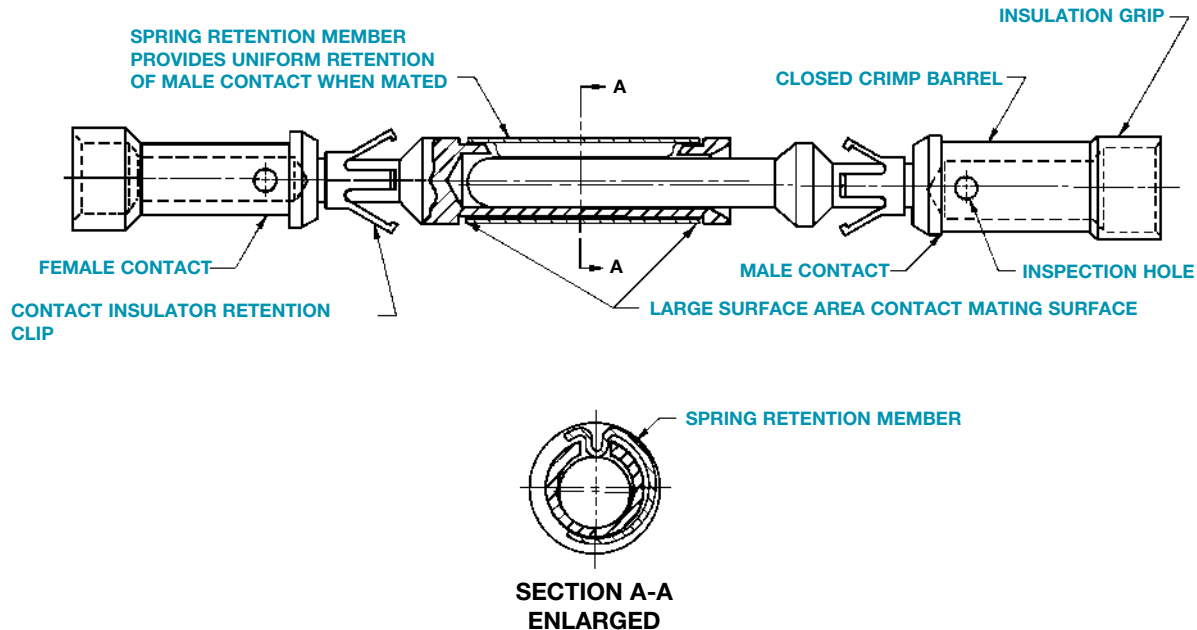
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connectpositronic.com

# HEAVY-DUTY RECTANGULAR CONNECTORS WITH REMOVABLE CONTACTS

Standard  
Density  
Rectangular

## “LARGE SURFACE AREA CONTACT MATING SYSTEM” HIGH RELIABILITY “CLOSED ENTRY” DESIGN

PRECISION MACHINED, SOLID COPPER ALLOY

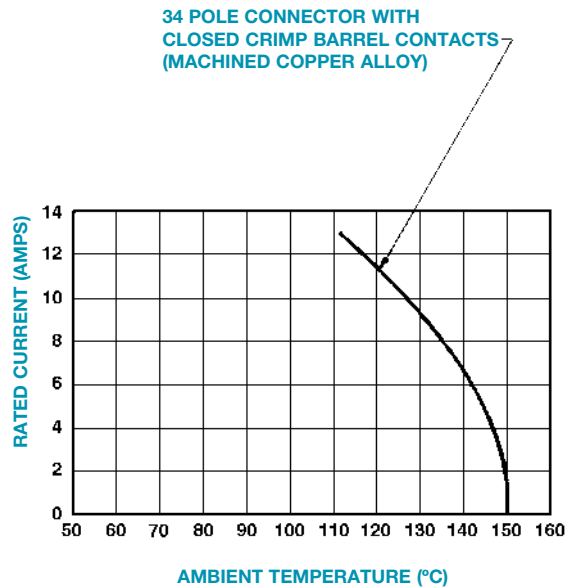


All contacts of the GMCT series connector family utilize the “Large Surface Area (L.S.A.) Contact Mating System.” The “L.S.A. Contact Mating System” insures the lowest level of contact resistance during mechanical endurance tests of 1000 coupling cycles or more. Contact insertion/withdrawal forces remain substantially the same during the life of the connector. † The GMCT series uses only “Closed Entry” design female contacts. The “Closed Entry” design prevents probe damage to the female contacts, and will not allow the female contact to accept misaligned or bent male contacts. † All GMCT series contacts are precision machined from solid, copper alloy barstock. They are durable, smooth in construc-

tion, and have greater amperage capacities than hollow, sheet metal style contacts. This is graphically illustrated by the amperage-temperature rise curves developed for the 34 pole GMCT insulator using 16 AWG [1.5 mm<sup>2</sup>] wire [see diagram page 10]. The precision machined, removable contact also has a more durable insulator retention system than the hollow, sheet metal style contact. After ten removal cycles from its insulator, the precision machined contact will withstand axial forces in excess of 20 lbs. [89N]. In comparison, the hollow, sheet metal style contact is limited to 10 lbs. [44.5N] after ten removal cycles from its insulator retention system.

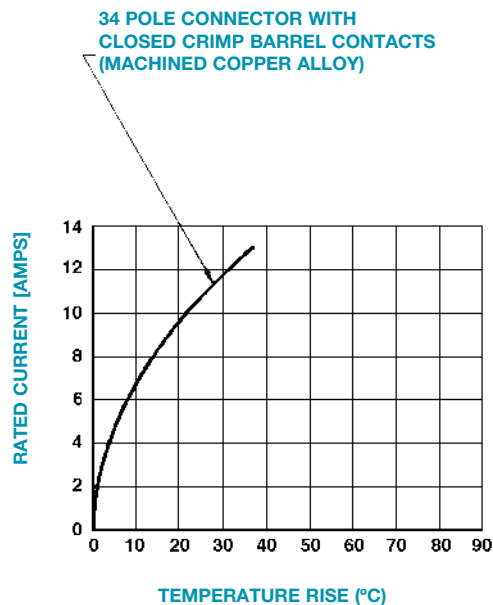
## CURRENT-TEMPERATURE DERATING CURVE

(TESTED PER IEC PUBLICATION 512-3, TEST 5b)



CURVE DEVELOPED USING SIZE 16 CONTACT WITH 16 AWG (1.5 mm<sup>2</sup>) SIZE WIRE

## TEMPERATURE RISE CURVE





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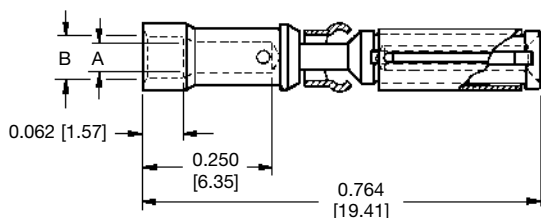
# HEAVY-DUTY RECTANGULAR CONNECTORS WITH REMOVABLE CONTACTS

Standard  
Density  
Rectangular

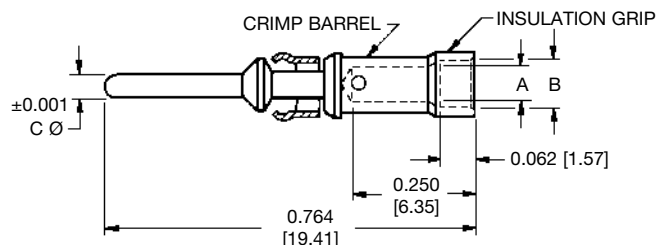
## CRIMP CONTACTS

### CLOSED CRIMP BARREL WITH INSULATION GRIP (SUPPORT) PRECISION MACHINED, SOLID COPPER ALLOY

#### FEMALE CONTACT "CLOSED ENTRY" DESIGN



#### MALE CONTACT



## POWER AND SIGNAL CONTACTS

| PART NUMBER | WIRE SIZE<br>AWG/[mm <sup>2</sup> ] | A               | B               | NOMINAL<br>RATING |
|-------------|-------------------------------------|-----------------|-----------------|-------------------|
| FC114N2     | 14 / 16<br>[2.5/1.5]                | 0.081<br>[2.06] | 0.105<br>[2.67] | 13 AMP            |
| FC116N2     | 16 / 18<br>[1.5/1.0]                | 0.067<br>[1.70] | 0.093<br>[2.36] | 13 AMP            |
| FC120N2     | 20 / 22 / 24<br>[0.5/0.3/0.25]      | 0.045<br>[1.14] | 0.065<br>[1.65] | 13 AMP            |
| FC124N2     | 24 / 26 / 28<br>[0.25/0.12/0.08]    | 0.027<br>[0.69] | 0.055<br>[1.40] | 13 AMP            |
| FC126N2     | 26 / 28 / 30 / 32<br>[0.12-0.03]    | 0.025<br>[0.64] | 0.046<br>[1.17] | 13 AMP            |
| FC216N2     | 16 / 18<br>[1.5/0.8]                | 0.067<br>[1.70] | 0.093<br>[2.36] | 7.5 AMP           |
| FC220N2     | 20 / 22 / 24<br>[0.5/0.3/0.25]      | 0.045<br>[1.14] | 0.065<br>[1.65] | 7.5 AMP           |
| FC224N2     | 24 / 26 / 28<br>[0.25/0.12/0.08]    | 0.027<br>[0.69] | 0.055<br>[1.40] | 7.5 AMP           |

| PART NUMBER | WIRE SIZE<br>AWG/[mm <sup>2</sup> ] | A               | B               | C               | NOMINAL<br>RATING |
|-------------|-------------------------------------|-----------------|-----------------|-----------------|-------------------|
| MC114N      | 14 / 16<br>[2.5/1.5]                | 0.081<br>[2.06] | 0.105<br>[2.67] | 0.062<br>[1.57] | 13 AMP            |
| MC116N      | 16 / 18<br>[1.5/1.0]                | 0.067<br>[1.70] | 0.093<br>[2.36] | 0.062<br>[1.57] | 13 AMP            |
| MC120N      | 20 / 22 / 24<br>[0.5/0.3/0.25]      | 0.045<br>[1.14] | 0.065<br>[1.65] | 0.062<br>[1.57] | 13 AMP            |
| MC124N      | 24 / 26 / 28<br>[0.25/0.12/0.08]    | 0.027<br>[0.69] | 0.055<br>[1.40] | 0.062<br>[1.57] | 13 AMP            |
| MC126N      | 26 / 28 / 30 / 32<br>[0.12-0.03]    | 0.025<br>[0.64] | 0.046<br>[1.17] | 0.062<br>[1.57] | 13 AMP            |
| MC216N      | 16 / 18<br>[1.5/0.8]                | 0.067<br>[1.70] | 0.093<br>[2.36] | 0.040<br>[1.02] | 7.5 AMP           |
| MC220N      | 20 / 22 / 24<br>[0.5/0.3/0.25]      | 0.045<br>[1.14] | 0.065<br>[1.65] | 0.040<br>[1.02] | 7.5 AMP           |
| MC224N      | 24 / 26 / 28<br>[0.25/0.12/0.08]    | 0.027<br>[0.69] | 0.055<br>[1.40] | 0.040<br>[1.02] | 7.5 AMP           |

MATERIAL: COPPER ALLOY FINISH:  
GOLD FLASH OVER NICKEL

CONTACTS ARE NOT SUPPLIED WITH CONNECTOR  
AND MUST BE ORDERED SEPARATELY

For GMCT crimping information, see page 16 and 17.

Additional plating options available by adding suffix to part number  
add -14 for 0.000030 [0.76 microns] gold over nickel. Example: FC220N2-14  
add -50 for 0.000050 [1.27 microns] gold over copper. Example: MC120N-50



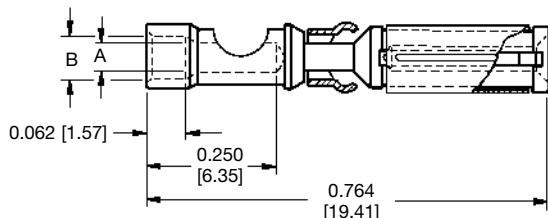
FC120N2



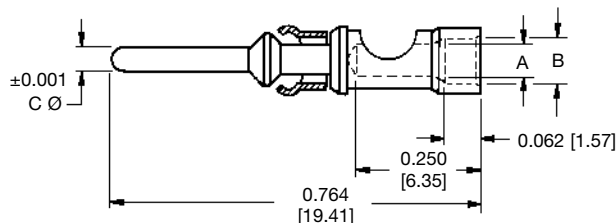
MC120N

## SOLDER CUP CONTACTS

**FEMALE CONTACT**  
"CLOSED ENTRY" DESIGN



**MALE CONTACT**



| PART NUMBER | WIRE SIZE MAX.                    | A               | B               | NOMINAL RATING |
|-------------|-----------------------------------|-----------------|-----------------|----------------|
| FS114N2     | 14 AWG<br>[2.5 mm <sup>2</sup> ]  | 0.081<br>[2.06] | 0.105<br>[2.67] | 13 AMP         |
| FS116N2     | 16 AWG<br>[1.5 mm <sup>2</sup> ]  | 0.067<br>[1.70] | 0.093<br>[2.36] | 13 AMP         |
| FS120N2     | 20 AWG<br>[0.5 mm <sup>2</sup> ]  | 0.045<br>[1.14] | 0.065<br>[1.65] | 13 AMP         |
| FS124N2     | 24 AWG<br>[0.25 mm <sup>2</sup> ] | 0.027<br>[0.69] | 0.055<br>[1.40] | 13 AMP         |
| FS216N2     | 16 AWG<br>[1.5 mm <sup>2</sup> ]  | 0.067<br>[1.70] | 0.093<br>[2.36] | 7.5 AMP        |
| FS220N2     | 20 AWG<br>[0.5 mm <sup>2</sup> ]  | 0.045<br>[1.14] | 0.065<br>[1.65] | 7.5 AMP        |
| FS224N2     | 24 AWG<br>[0.25 mm <sup>2</sup> ] | 0.027<br>[0.69] | 0.055<br>[1.40] | 7.5 AMP        |

| PART NUMBER | WIRE SIZE MAX.                    | A               | B               | C               | NOMINAL RATING |
|-------------|-----------------------------------|-----------------|-----------------|-----------------|----------------|
| MS114N      | 14 AWG<br>[2.5 mm <sup>2</sup> ]  | 0.081<br>[2.06] | 0.105<br>[2.67] | 0.062<br>[1.57] | 13 AMP         |
| MS116N      | 16 AWG<br>[1.5 mm <sup>2</sup> ]  | 0.067<br>[1.70] | 0.093<br>[2.36] | 0.062<br>[1.57] | 13 AMP         |
| MS120N      | 20 AWG<br>[0.5 mm <sup>2</sup> ]  | 0.045<br>[1.14] | 0.065<br>[1.65] | 0.062<br>[1.57] | 13 AMP         |
| MS124N      | 24 AWG<br>[0.25 mm <sup>2</sup> ] | 0.027<br>[0.69] | 0.055<br>[1.40] | 0.062<br>[1.57] | 13 AMP         |
| MS216N      | 16 AWG<br>[1.5 mm <sup>2</sup> ]  | 0.067<br>[1.70] | 0.093<br>[2.36] | 0.040<br>[1.02] | 7.5 AMP        |
| MS220N      | 20 AWG<br>[0.5 mm <sup>2</sup> ]  | 0.045<br>[1.14] | 0.065<br>[1.65] | 0.040<br>[1.02] | 7.5 AMP        |
| MS224N      | 24 AWG<br>[0.25 mm <sup>2</sup> ] | 0.027<br>[0.69] | 0.055<br>[1.40] | 0.040<br>[1.02] | 7.5 AMP        |

**MATERIAL:** COPPER ALLOY  
**FINISH:** GOLD FLASH OVER NICKEL

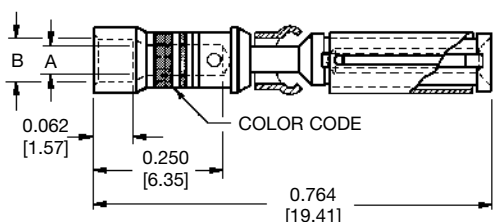
**CONTACTS ARE NOT SUPPLIED WITH CONNECTORS  
AND MUST BE ORDERED SEPARATELY**

Additional plating options available by adding suffix to part number  
add -14 for 0.000030 [0.76 microns] gold over nickel. Example: FS220N2-14  
add -50 for 0.000050 [1.27 microns] gold over copper. Example: MS120N-50

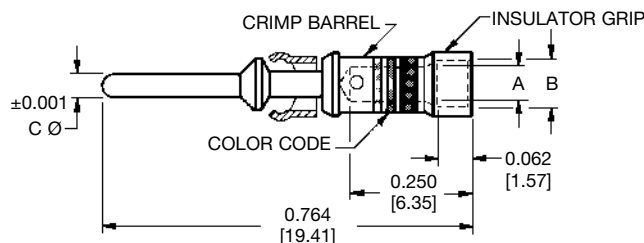
## MILITARY CRIMP CONTACTS

QUALIFIED TO SAE AS 39029/34 AND SAE AS 39029/35

**FEMALE CONTACT**  
"CLOSED ENTRY" DESIGN



**MALE CONTACT**



| PART NUMBER   | A               | B               | COLOR CODE          |
|---------------|-----------------|-----------------|---------------------|
| M39029/35-274 | 0.045<br>[1.14] | 0.068<br>[1.73] | RED/ VIOLET/ YELLOW |
| M39029/35-275 | 0.045<br>[1.14] | 0.068<br>[1.73] | RED/ VIOLET/ GREEN  |
| M39029/35-276 | 0.067<br>[1.70] | 0.093<br>[2.36] | RED/ VIOLET/ BLUE   |

| PART NUMBER   | A               | B               | C               | COLOR CODE          |
|---------------|-----------------|-----------------|-----------------|---------------------|
| M39029/34-271 | 0.045<br>[1.14] | 0.068<br>[1.73] | 0.040<br>[1.02] | RED/ VIOLET/ BROWN  |
| M39029/34-272 | 0.045<br>[1.14] | 0.068<br>[1.73] | 0.062<br>[1.57] | RED/ VIOLET/ RED    |
| M39029/34-273 | 0.067<br>[1.70] | 0.093<br>[2.36] | 0.062<br>[1.57] | RED/ VIOLET/ ORANGE |

**MATERIAL:** COPPER ALLOY  
**FINISH:** 0.000050 [1.27 MICRONS] GOLD OVER COPPER

**DIMENSIONS ARE IN INCHES [MILLIMETERS].  
ALL DIMENSIONS ARE SUBJECT TO CHANGE. 12**



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# HEAVY-DUTY RECTANGULAR CONNECTORS WITH REMOVABLE CONTACTS

Standard  
Density  
Rectangular

**MATERIAL:** COPPER  
ALLOY

**FINISH:** GOLD FLASH  
OVER NICKEL

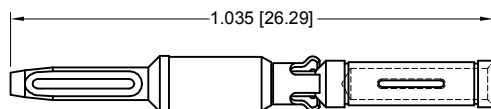
**CONTACTS ARE NOT  
SUPPLIED WITH  
CONNECTORS AND  
MUST BE ORDERED  
SEPARATELY.**

**SEE PAGE 7 FOR PRINTED  
BOARD CONTACT HOLE  
POSITIONS.**

## COMPLIANT TERMINATION PRESS-FIT CONTACTS

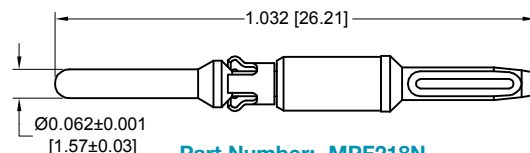
PRECISION MACHINED, COPPER ALLOY

### FEMALE CONTACT "CLOSED ENTRY" DESIGN



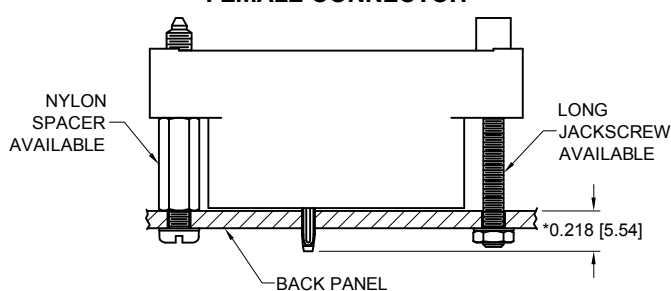
**Part Number: FPF218N2**

### MALE CONTACT

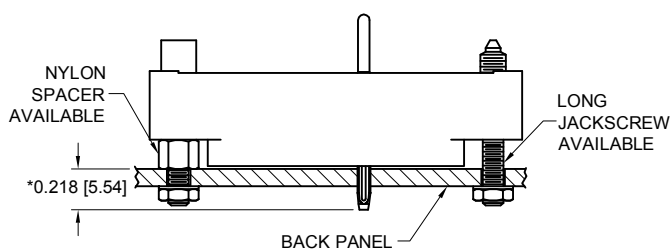


**Part Number: MPF218N**

### FEMALE CONNECTOR



### MALE CONNECTOR



Additional plating options available by adding suffix to part number  
add -14 for 0.000030 [0.76 microns] gold over nickel.  
Example: FPF218N2-14  
add -50 for 0.000050 [1.27 microns] gold over copper.  
Example: MPF218N-50

CONSULT TECHNICAL SALES FOR PRESS-FIT INSTALLATION TOOL.

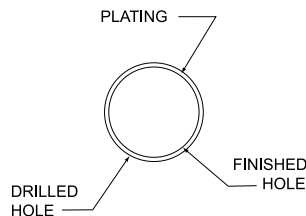
CONSULT TECHNICAL SALES FOR PART NUMBERS FOR THE LONG JACKSCREW  
OR NYLON SPACER.

\*ADDITIONAL CONTACT EXTENSION LENGTHS AVAILABLE.

CONSULT TECHNICAL SALES FOR AVAILABILITY OF SOLID PRESS-FIT CONTACTS.

## SUGGESTED PRINTED BOARD HOLE SIZES FOR COMPLIANT PRESS-FIT CONNECTORS

Traditionally, tin-lead has been a popular plating for PBC holes. However, many PCB hole platings must now be RoHS Compliant. Positronic is pleased to offer **PCB HOLE SIZE FOR RoHS** PCB plating as shown below.



### PRESS-FIT CONTACT HOLE

**Note: For PCB plating  
compositions not shown,  
consult Technical Sales.**

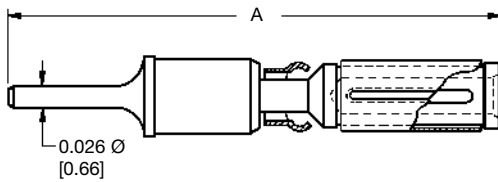
### BI-SPRING COMPLIANT PRESS-FIT CONTACT HOLE

| BOARD TYPE                              | CONTACT SIZE / TYPE | RECOMMENDED DRILL HOLE SIZE                          | RECOMMENDED PLATING                                                                                                                                                | FINISHED HOLE SIZES                                                 |
|-----------------------------------------|---------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| TIN-LEAD SOLDER PCB                     | 16 BI-SPRING        | $\phi 0.069 \pm 0.001$<br>[ $\phi 1.750 \pm 0.025$ ] | 0.0006 [15 $\mu$ ] minimum solder over 0.0010 [25 $\mu$ ] min. copper                                                                                              | $\phi 0.0630 + 0.0035 - 0.0024$<br>[ $\phi 1.600 + 0.090 - 0.060$ ] |
| <b>RoHS PCB PLATING OPTIONS</b>         |                     |                                                      |                                                                                                                                                                    |                                                                     |
| COPPER PCB                              | 16 BI-SPRING        | $\phi 0.069 \pm 0.001$<br>[ $\phi 1.750 \pm 0.025$ ] | 0.0010 [25 $\mu$ ] min. copper                                                                                                                                     | $\phi 0.0630 + 0.0035 - 0.0024$<br>[ $\phi 1.600 + 0.090 - 0.060$ ] |
| IMMERSION TIN PCB                       | 16 BI-SPRING        | $\phi 0.069 \pm 0.001$<br>[ $\phi 1.750 \pm 0.025$ ] | 0.000033 $\pm$ 0.000006<br>[0.85 $\pm$ 0.15 $\mu$ ] immersion tin over 0.0010 [25 $\mu$ ] min. copper                                                              | $\phi 0.0630 + 0.0035 - 0.0024$<br>[ $\phi 1.600 + 0.090 - 0.060$ ] |
| IMMERSION SILVER PCB                    | 16 BI-SPRING        | $\phi 0.069 \pm 0.001$<br>[ $\phi 1.750 \pm 0.025$ ] | 0.000013 $\pm$ 0.000007<br>[0.34 $\pm$ 0.17 $\mu$ ] immersion silver over 0.0010 [25 $\mu$ ] min. copper                                                           | $\phi 0.0630 + 0.0035 - 0.0024$<br>[ $\phi 1.600 + 0.090 - 0.060$ ] |
| ELECTROLESS NICKEL / IMMERSION GOLD PCB | 16 BI-SPRING        | $\phi 0.069 \pm 0.001$<br>[ $\phi 1.750 \pm 0.025$ ] | 0.000002 [0.05 $\mu$ ] min. immersion gold over 0.000177 $\pm$ 0.000059 [4.5 $\pm$ 1.5 $\mu$ ] electroless nickel per IPC-4552 over 0.0010 [25 $\mu$ ] min. copper | $\phi 0.0630 + 0.0035 - 0.0024$<br>[ $\phi 1.600 + 0.090 - 0.060$ ] |

## STRAIGHT SOLDER CONTACTS

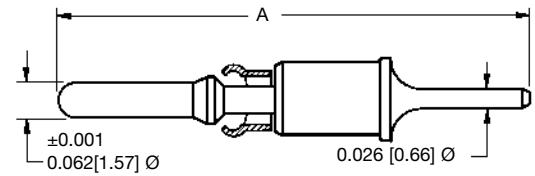
PRECISION MACHINED, SOLID COPPER ALLOY

### FEMALE CONTACT "CLOSED ENTRY" DESIGN



MATERIAL: COPPER ALLOY  
FINISH: GOLD FLASH OVER NICKEL

### MALE CONTACT



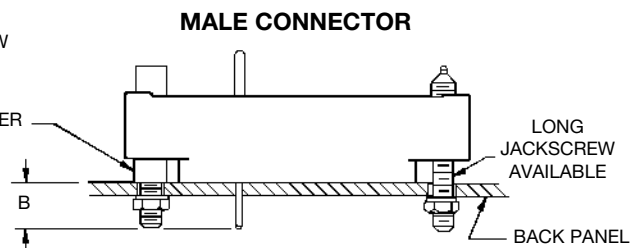
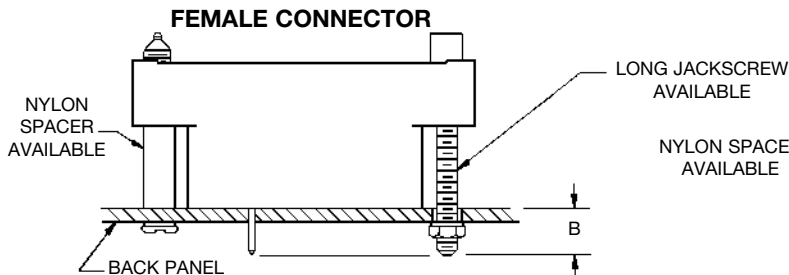
| PART NUMBER | A                | B               |
|-------------|------------------|-----------------|
| FDS125N2    | 0.950<br>[24.13] | 0.125<br>[3.18] |
| FDS156N2    | 0.981<br>[24.92] | 0.156<br>[3.96] |
| FDS187N2    | 1.012<br>[25.70] | 0.187<br>[4.75] |

CONSULT TECHNICAL SALES FOR  
CONTACTS OF DIFFERENT  
LENGTHS AND TAIL DIAMETERS

UNLESS SPECIFIED OTHERWISE,  
STRAIGHT SOLDER CONTACTS ARE  
NOT SUPPLIED WITH CONNECTORS  
AND MUST BE ORDERED SEPARATELY

CONTACTS MAY BE INSTALLED IN  
CONNECTOR TO CUSTOMER ORDER

| PART NUMBER | A                | B               |
|-------------|------------------|-----------------|
| MDS125N     | 0.950<br>[24.13] | 0.125<br>[3.18] |
| MDS156N     | 0.981<br>[24.92] | 0.156<br>[3.96] |
| MDS187N     | 1.012<br>[25.70] | 0.187<br>[4.75] |



Additional plating options available by adding suffix to part number  
add -14 for 0.000030 [0.76 microns] gold over nickel. Example: FDS156N2-14  
add -50 for 0.000050 [1.27 microns] gold over copper. Example: MDS187N-50

CONSULT TECHNICAL SALES FOR PART NUMBERS FOR THE  
LONG JACKSCREW OR NYLON SPACER



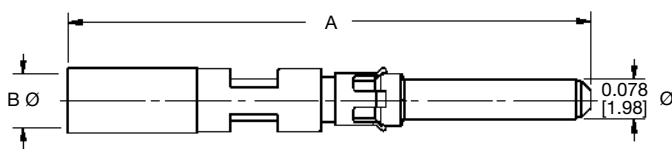
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# HEAVY-DUTY RECTANGULAR CONNECTORS WITH REMOVABLE CONTACTS

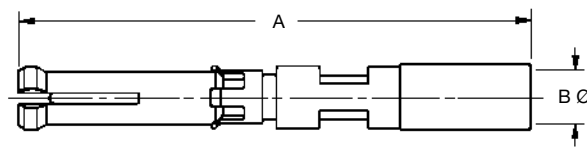
Standard  
Density  
Rectangular

## CRIMP SHIELDED CONTACTS

### MALE CONTACT



### FEMALE CONTACT



FCS126N2



MCS126N

| CONTACT DESIGNATION | PART NUMBER | A                | B Ø             | CABLE SIZE            |
|---------------------|-------------|------------------|-----------------|-----------------------|
| MALE                | MCS126N     | 0.993<br>[25.22] | 0.045<br>[1.14] | RG 178 B/U RG 196 A/U |
| FEMALE              | FCS126N2    | 0.967<br>[24.56] | 0.045<br>[1.14] | RG 178 B/U RG 196 A/U |
| MALE                | MCS226N     | 1.048<br>[26.62] | 0.070<br>[1.78] | RG 179 B/U RG 316 /U  |
| FEMALE              | FCS226N2    | 1.022<br>[25.96] | 0.070<br>[1.78] | RG 179 B/U RG 316 /U  |

## TECHNICAL CHARACTERISTICS

### MATERIALS AND FINISHES:

|                             |                                                                                            |
|-----------------------------|--------------------------------------------------------------------------------------------|
| <b>Insulating Material:</b> | (Dielectric) PCTFE.                                                                        |
| <b>Inner Contacts:</b>      | Phosphor bronze, 0.000030 inch [0.75 microns] gold over nickel.                            |
| <b>Outer Contacts:</b>      | Brass and beryllium copper, gold flash over nickel. Other finishes available upon request. |

### MECHANICAL CHARACTERISTICS:\*

|                                        |                                   |
|----------------------------------------|-----------------------------------|
| <b>Contact Retention In Insulator:</b> | 20 lbs. [89N].                    |
| <b>Removable Contacts:</b>             | Rear insertion, front removable.  |
| <b>Insertion Force Per Contact:</b>    | 8 oz. [2.2N] per contact maximum. |
| <b>Durability:</b>                     | 100 cycles minimum.               |
| <b>Vibration:</b>                      | 20g from 10 HZ to 500 HZ.         |
| <b>Shock:</b>                          | 30g - 11 ms.                      |

### ELECTRICAL CHARACTERISTICS:

| MICRO-COAXIAL CONTACTS          | Contact/Wire Combinations |       |        |       |
|---------------------------------|---------------------------|-------|--------|-------|
|                                 | 126N                      |       | 226N   |       |
|                                 | RG178                     | RG196 | RG179  | RG316 |
| Characteristic Impedance (ohms) | 50                        | 50    | 75     | 50    |
| Frequency Range                 | 0-500 MHz                 |       |        |       |
| <b>VSWR</b>                     |                           |       |        |       |
| 0 to 200 MHz                    | 1.25                      |       |        |       |
| 200 to 500 MHz                  | 1.70                      |       | 2.25   |       |
| Insertion Loss @ 500 MHz        | 0.2 dB                    |       | 1.0 dB |       |

|                                          |                     |
|------------------------------------------|---------------------|
| <b>Dielectric Strength At Sea Level:</b> | 600 V rms.          |
| <b>Initial Contact Resistance:</b>       | 0.012 ohms maximum. |
| <b>Insulator Resistance:</b>             | 5 G ohms.           |

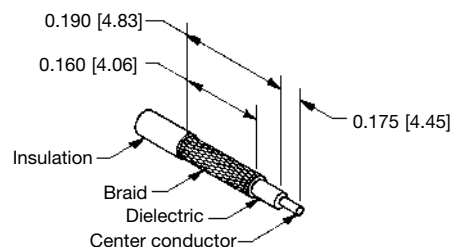
### CLIMATIC CHARACTERISTICS:

|                           |                  |
|---------------------------|------------------|
| <b>Temperature Range:</b> | -55°C to +125°C. |
|---------------------------|------------------|



9506-0 CRIMP TOOL

### SHIELDED CABLE STRIP LENGTH

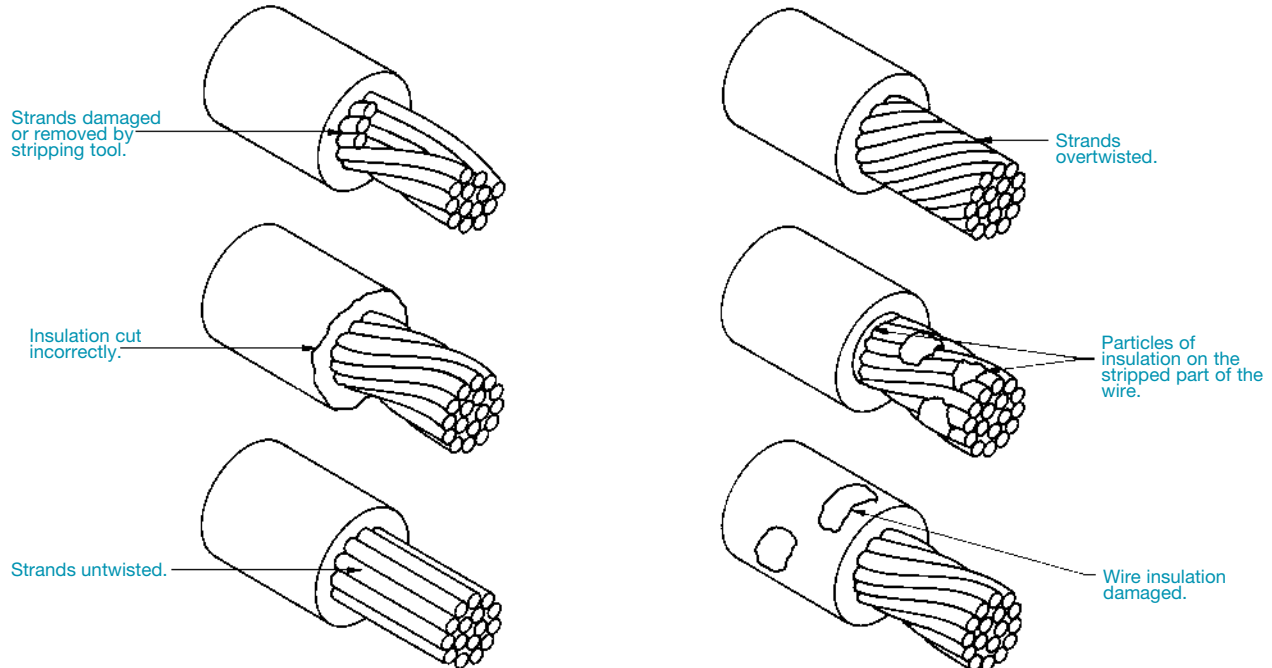
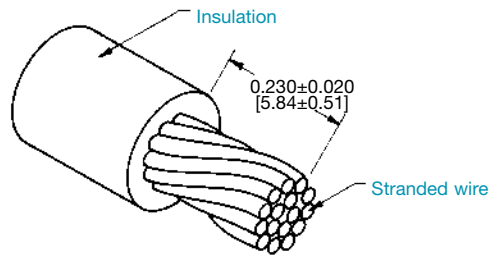


## CRIMPING INFORMATION FOR GMCT SERIES CRIMP CONTACTS

USE INDICATED POSITRONIC TOOLS FOR BEST RESULTS

### Step 1: Strip wire to indicated length.

- Take Care Not To:
- Damage or remove strands.
  - Untwist or overtighten strands.
  - Leave insulation particles on strands.
  - Damage insulation.



Examples of Stripping Faults

### Step 2: Crimp wire to contact.

- For Hand Crimp Tool:
- Place contact into crimping tool.
  - Insert wire into contact.
  - Center contact by slowly closing the crimping tool until the crimp indenters make contact with the crimp barrel.
  - Complete the cycle of the crimping tool in one smooth motion.
  - Remove the crimped contact.



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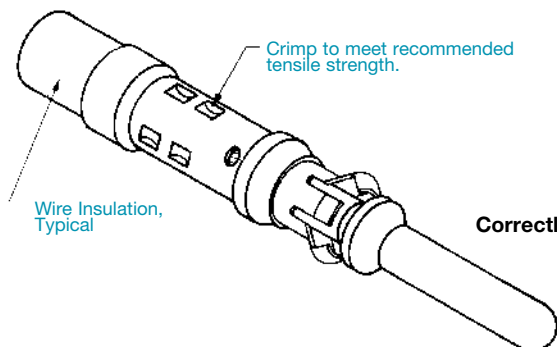
# HEAVY-DUTY RECTANGULAR CONNECTORS WITH REMOVABLE CONTACTS

Standard  
Density  
Rectangular

## CRIMPING INFORMATION FOR GMCT SERIES CRIMP CONTACTS

### Step 3: Inspect the crimp.

- For All Tools:
- Strands to be visible through the inspection hole.
  - Strands not to be visible beyond the insulation support.
  - Crimped contact to meet recommended conductor tensile force shown in chart.
  - Check for peeled gold and bent contacts.

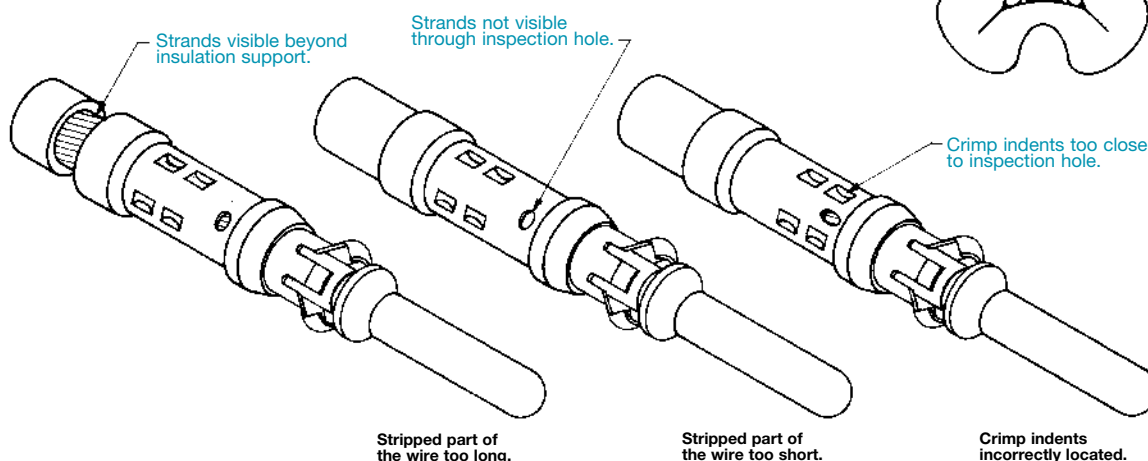


Correctly Crimped Contact

Cross Section  
of Correctly Crimped Contact

Stripped wires compressed  
for improved conduction.

8 Crimp  
Indents



Examples of Crimping Faults

| Positronic Recommended<br>Conductor Tensile Strength |                          |
|------------------------------------------------------|--------------------------|
| WIRE SIZE<br>AWG/[mm <sup>2</sup> ]                  | AXIAL LOAD<br>POUNDS/[N] |
| 14<br>[2.5]                                          | 70<br>[311]              |
| 16<br>[1.5]                                          | 50<br>[222]              |
| 18<br>[1.0]                                          | 28<br>[125]              |
| 20<br>[0.5]                                          | 20<br>[89]               |
| 22<br>[0.3]                                          | 12<br>[53]               |
| 24<br>[0.25]                                         | 8<br>[36]                |
| 26<br>[0.12]                                         | 5<br>[22]                |
| 28<br>[0.08]                                         | 3<br>[13]                |

| POSITRONIC RECOMMENDED TOOLS |                                        |                                        |
|------------------------------|----------------------------------------|----------------------------------------|
| TOOL TYPE                    | CONTACT SIZE<br>AWG [mm <sup>2</sup> ] | TOOL NUMBERS                           |
| HAND CRIMP TOOL:             | 14-24 [2.5-0.25]                       | 9501-0-0-0 WITH 9502-1-0-0 POSITIONER  |
|                              | 26-28 [0.12-0.08]                      | 9507-0-0-0 WITH 9502-18-0-0 POSITIONER |
| INSERTION TOOL:              | N/A                                    | 9099-0-0-0                             |
| EXTRACTION TOOL:             | N/A                                    | 9081-0-0-0                             |

Conductor tensile strength values are derived using silver-tin plated copper wires.  
Values may change depending upon what type of wire is used.

## CYCLE-CONTROLLED STEP ADJUSTABLE HAND CRIMP TOOL

**\*\*M22520/1-01**

**\*\*Part No. 9501-0-0-0**

Features of this positive ratchet action tool include accommodations for wire sizes 14 AWG [2.5 mm<sup>2</sup>] through 28 AWG [0.08 mm<sup>2</sup>] and eight (8) impression crimp on wires and contacts of various compositions. Required for use with this basic tool is the turret head part number 9502-1-0-0.





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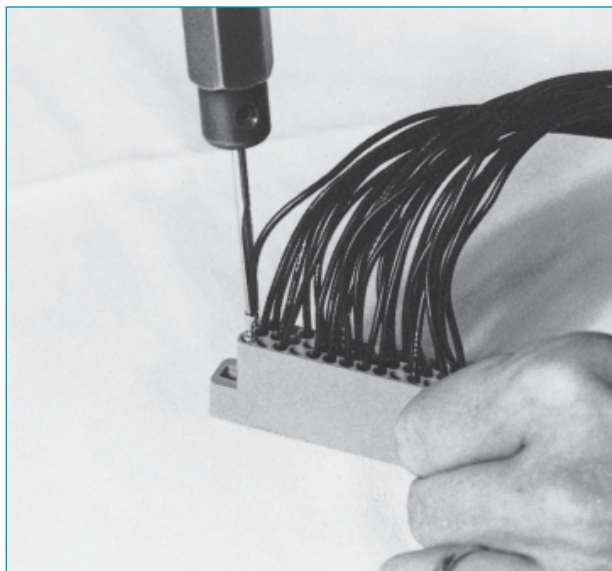
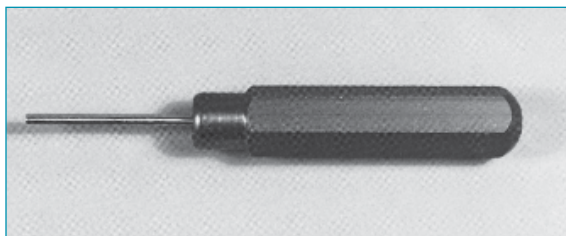
# HEAVY-DUTY RECTANGULAR CONNECTORS WITH REMOVABLE CONTACTS

Standard  
Density  
Rectangular

## CONTACT INSERTION TOOL

Part No. 9099-0-0-0

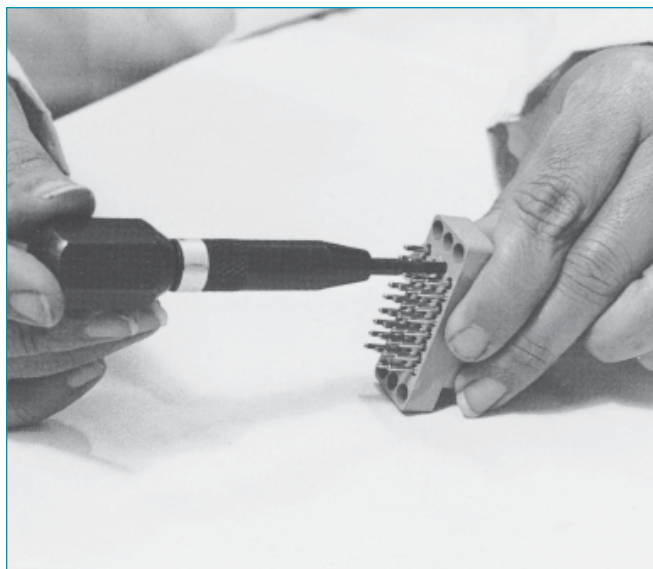
An easy-to-use contact insertion tool for 14 AWG [2.5 mm<sup>2</sup>] and smaller wires. See photographic demonstration shown below for recommended insertion procedure.



## CONTACT EXTRACTION TOOL

Part No. 9081-0-0-0

The spring loaded contact extraction tool simplifies the extraction of removable contacts from the connector insulators. Simply insert the hollow tool tip over the male or female contact from the front face of the insulator, rotate the tool slightly while increasing the pushing force against the butt of the extraction tool. The contact will be released from the insulator retention system and "pop out" of the rear face of the insulator. See photo below for recommended removal procedure.



## REMOVABLE CONTACT ORDERING ASSISTANCE CHART

## GMCT SERIES CRIMP AND SOLDER CUP CONTACT TERMINATIONS

| TERMINATION TYPE | CONTACT FUNCTION | CONTACT SIZE | WIRE SIZE                                                       | MALE PART NUMBER | FEMALE PART NUMBER |
|------------------|------------------|--------------|-----------------------------------------------------------------|------------------|--------------------|
| CRIMP            | POWER            | 16           | 14 AWG [2.5 mm <sup>2</sup> ] - 16 AWG [1.5 mm <sup>2</sup> ]   | MC114N           | FC114N2            |
|                  |                  |              | 16 AWG [1.5 mm <sup>2</sup> ] - 18 AWG [1.0 mm <sup>2</sup> ]   | MC116N           | FC116N2            |
|                  |                  | 20           | 16 AWG [1.5 mm <sup>2</sup> ] - 18 AWG [1.0 mm <sup>2</sup> ]   | MC216N           | FC216N2            |
|                  | SIGNAL           | 16           | 20 AWG [0.5 mm <sup>2</sup> ] - 24 AWG [0.25 mm <sup>2</sup> ]  | MC120N           | FC120N2            |
|                  |                  |              | 24 AWG [0.25 mm <sup>2</sup> ] - 28 AWG [0.08 mm <sup>2</sup> ] | MC124N           | FC124N2            |
|                  |                  |              | 26 AWG [0.12 mm <sup>2</sup> ] - 28 AWG [0.08 mm <sup>2</sup> ] | MC126N           | FC126N2            |
|                  |                  | 20           | 20 AWG [0.5 mm <sup>2</sup> ] - 24 AWG [0.25 mm <sup>2</sup> ]  | MC220N           | FC220N2            |
|                  |                  |              | 24 AWG [0.25 mm <sup>2</sup> ] - 28 AWG [0.08 mm <sup>2</sup> ] | MC224N           | FC224N2            |
|                  | MILITARY         | 16           | 16 AWG [1.5 mm <sup>2</sup> ] - 20 AWG [0.5 mm <sup>2</sup> ]   | M39029/34-273    | M39029/35-276      |
|                  |                  |              | 20 AWG [0.5 mm <sup>2</sup> ] - 24 AWG [0.25 mm <sup>2</sup> ]  | M39029/34-272    | M39029/35-275      |
|                  |                  | 20           | 20 AWG [0.5 mm <sup>2</sup> ] - 24 AWG [0.25 mm <sup>2</sup> ]  | M39029/34-271    | M39029/35-274      |
|                  | COAX             | --           | RG 178 B/U, RG 196 A/U                                          | MCS126N          | FCS126N2           |
|                  |                  |              | RG 179 A/U, RG 316 /U                                           | MCS226N          | FCS226N2           |
| SOLDER CUP       | POWER            | 16           | 14 AWG [2.5 mm <sup>2</sup> ] max.                              | MS114N           | FS114N2            |
|                  |                  |              | 16 AWG [1.5 mm <sup>2</sup> ] max.                              | MS116N           | FS116N2            |
|                  |                  | 20           | 16 AWG [1.5 mm <sup>2</sup> ] max.                              | MS216N           | FS216N2            |
|                  | SIGNAL           | 16           | 20 AWG [0.5 mm <sup>2</sup> ] max.                              | MS120N           | FS120N2            |
|                  |                  |              | 24 AWG [0.25 mm <sup>2</sup> ] max.                             | MS124N           | FS124N2            |
|                  |                  | 20           | 20 AWG [0.5 mm <sup>2</sup> ] max.                              | MS220N           | FS220N2            |
|                  |                  |              | 24 AWG [0.25 mm <sup>2</sup> ] max.                             | MS224N           | FS224N2            |

## GMCT SERIES PRINTED BOARD MOUNT CONTACT TERMINATIONS

| TERMINATION TYPE    | CONTACT SIZE | USABLE TERMINATION LENGTH | TERMINATION DIMENSION    | MALE PART NUMBER | FEMALE PART NUMBER |
|---------------------|--------------|---------------------------|--------------------------|------------------|--------------------|
| STRAIGHT            | 16           | <u>0.125</u><br>[3.18]    | <u>0.026 Ø</u><br>[0.66] | MDS125N          | FDS125N2           |
|                     |              | <u>0.156</u><br>[3.96]    | <u>0.026 Ø</u><br>[0.66] | MDS156N          | FDS156N2           |
|                     |              | <u>0.187</u><br>[4.75]    | <u>0.026 Ø</u><br>[0.66] | MDS187N          | FDS187N2           |
| COMPLIANT PRESS FIT | 16           | <u>0.218</u><br>[5.54]    |                          | MPF218N          | FPF218N2           |



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# HEAVY-DUTY RECTANGULAR CONNECTORS WITH REMOVABLE CONTACTS

Standard  
Density  
Rectangular

## ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 9

| STEP    | 1    | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10  | 11 |
|---------|------|----|---|---|---|---|---|---|---|-----|----|
| EXAMPLE | GMCT | 34 | F | 0 | 0 | R | A | Z | 0 | /AA |    |

### STEP 11 - SPECIAL OPTIONS

**CONTACT TECHNICAL SALES  
FOR SPECIAL OPTIONS**

### STEP 1 - BASIC SERIES

GMCT Series

### STEP 2 - CONNECTOR VARIANTS

9, 14, 18, 20, 26, 34, 41, 42,  
50, 60, 66, 75, 104

### STEP 3 - CONNECTOR GENDER

M - Male Insulator  
F - Female Insulator

### STEP 4 - CONTACT TERMINATION TYPE

All Female contacts "closed entry" design.  
0 - Contacts to be ordered separately,  
see Contact ordering charts.

### \*STEP 5 - POLARIZING GUIDES AND JACKSCREW SYSTEM

G - Polarizing grounding guides.  
N - Polarizing guides.  
NSS - Stainless steel polarizing guides.  
T - Fixed jackscrews.  
E - Short turnable jackscrews, offered with set screw  
option.  
EL - Long turnable jackscrews, offered with set screw  
option.  
E1 - Turnable jackscrews used on 9, 14, 18, 20, 26 and 41  
variant hoods, offered with set screw option.  
0 - If no polarizing guides or jackscrews are required. Also,  
use "0" if ordering hoods equipped with jackscrews, for  
variants 34, 42, 50, 60, 66, 75 and 104, see STEP 8.

### \*STEP 6 - SHELLS AND MOUNTING PLATES

P - Male shell, not available on 41 variant.  
R - Female shell, not available on 41 variant.  
H - Mounting plate, not available on 41 variant.  
W - Male shell with mounting plate.  
U - Female shell with mounting plate.  
0 - If no shells or mounting plates are required.

### \*STEP 7 - POLARIZATION POSITIONS OF SHELLS

Select letter to designate position of male pin and female  
slot for polarization system.

A, B, C, D, E, F, G  
0 - If no polarization is required or if no shells are required.

### STEP 10 - ENVIRONMENTAL COMPLIANCE OPTIONS

/AA - Compliant per EU Directive  
2002/95/EC (RoHS)



**NOTE:** If compliance to environmental  
legislation is not required, this step will not be  
used. Example: GMCT34F00RAZ0

### \*STEP 9 - ADDITIONAL FEATURES

B - For black anodized aluminum parts.  
C - Set screw option, offered on the E, EL and E1.  
R - For chemical conversion coating on aluminum  
parts.  
V - Lock tab, offered on 9, 14, 18, 20, 26, 34, 41 and  
42 variants.  
VL - Lock lever, offered on 9, 14, 18, 20, 26, 34, 41 and  
42 variants.  
FB - Floating bushings for mounting plate.  
0 - If no additional options are required.

### \*STEP 8 - CABLE ADAPTERS (HOODS)

J - Top opening hood (formed), not offered on 60, 66 and 104  
variants.  
L - Side opening hood (formed), not offered on 60, 66 and  
104 variants.  
Q - Top opening hood (drawn), offered on 60, 66 and 104  
variants.  
S - Side opening hood (drawn), offered on 60, 66 and 104  
variants.  
Y - Top opening hood (formed), equipped with stainless steel  
jackscrew system, offered on 34, 42, 50 and 75 variants.  
I - Side opening hood (formed), equipped with stainless steel  
jackscrew system, offered on 34, 42, 50 and 75 variants.  
Z - Top opening hood (drawn), equipped with stainless steel  
jackscrew system, offered on 34, 50, 60, 66, 75 and 104  
variants.  
V - Side opening hood (drawn), equipped with stainless steel  
jackscrew system, offered on 34, 50, 60, 66, 75 and 104  
variants.  
0 - If no hoods are required.

**\*Note:** For details of items listed in steps 5 through 9, see  
heavy-duty rectangular connector accessories section on  
pages 44-59.

Standard  
Density  
Rectangular

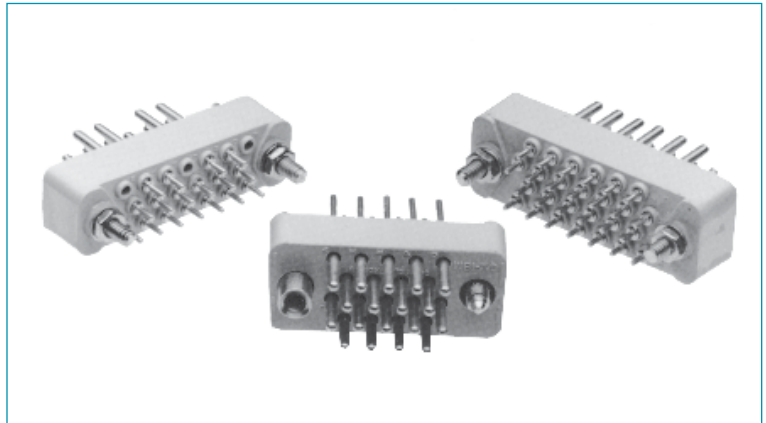
# HEAVY-DUTY RECTANGULAR PRINTED BOARD CONNECTORS WITH STRAIGHT SOLDER CONTACTS



Positronic Industries  
connectpositronic.com

Size 16 Contacts  
Conforms to  
MIL-DTL-28748  
IEC Publication 807-1

U.L. Recognized,  
File #E49351  
Telecommunication  
U.L. File #E140980



GAP SERIES

GAP Series connectors are heavy-duty, multi-pole, low profile, high reliability connectors. Contacts are male only with 0.062 inch [1.57mm] diameters, rated to 7.5 amperes per contact. Termination style is straight solder printed board mount. GAP Series connectors are intermateable with Positronic GMCT Series connectors.

A wide array of mounting, locking and polarizing accessories

is available for this series. For details, see the Heavy-Duty Rectangular Connector Accessories section.

Due to its printed board mount termination style, and its 0.062 inch [1.57mm] diameter contacts, the GAP Series is ideal for heavy-duty applications found in avionics, medical equipment, telecommunications, instrumentation and process control applications.

## GAP SERIES TECHNICAL CHARACTERISTICS

### MILITARY SPECIFICATIONS:

Conforms to MIL-DTL-28748.

### INTERNATIONAL STANDARDS:

IEC 807-1.  
U.L. Recognized.

### MATERIALS AND FINISHES:

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Insulator:</b>         | Glass filled DAP per ASTM-D-5948 type SDG-F. Grey color is standard, black available. |
| <b>Fixed Contacts:</b>    | Copper alloy with gold flash over nickel. Other finishes available upon request.      |
| <b>Jackscrew System:</b>  | Passivated stainless steel.                                                           |
| <b>Polarizing Guides:</b> | Copper alloy with nickel plate or passivated stainless steel.                         |
| <b>Vibration Locks:</b>   | Copper alloy with zinc plate and chromate seal.                                       |

### MECHANICAL CHARACTERISTICS:

|                                        |                                                               |
|----------------------------------------|---------------------------------------------------------------|
| <b>Fixed Contacts:</b>                 | <b>Male</b> – Size 16: 0.062 inch [1.57 mm] diameter.         |
| <b>Contact Retention in Insulator:</b> | 10 lbs. [44.5N] minimum.                                      |
| <b>Contact Termination:</b>            | Straight printed board mounted.                               |
| <b>Locking Systems:</b>                | Friction, vibration locks and jackscrews.                     |
| <b>Polarization:</b>                   | Guide pins and guide sockets, and jack-screw system.          |
| <b>Mechanical Operations:</b>          | 1000 operations per IEC 512-5.                                |
| <b>Jackscrews:</b>                     | Standard threads, 6-32 UNC. Metric threads, M3X0.5 available. |

### ELECTRICAL CHARACTERISTICS:

|                                                   |                                                      |
|---------------------------------------------------|------------------------------------------------------|
| <b>Contact Current Rating (maximum):</b>          | 7.5 amperes limited at contact termination diameter. |
| <b>Initial Contact Resistance:</b>                | 0.003 ohms.                                          |
| <b>Flash over Voltage:</b>                        | 2500 V.AC [rms].                                     |
| <b>Test Voltage:</b>                              | 1200 V.AC [rms].                                     |
| <b>Insulation Resistance (minimum):</b>           | 5 G ohms.                                            |
| <b>Clearance and Creepage Distance (minimum):</b> | 0.047 inch [1.19 mm].                                |
| <b>Working Temperature:</b>                       | -55°C to 125°C.                                      |
| <b>Working Voltage:</b>                           | 250 V.AC [rms].                                      |



For RoHS options  
see page 25.



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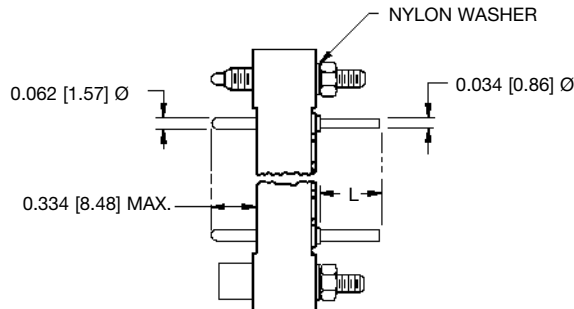
# HEAVY-DUTY RECTANGULAR PRINTED BOARD CONNECTORS WITH STRAIGHT SOLDER CONTACTS

Standard  
Density  
Rectangular

## STRAIGHT SOLDER CONTACTS

MALE ONLY

CONTACT MATERIAL: COPPER ALLOY  
CONTACT FINISH: GOLD FLASH OVER NICKEL



| CONTACT CODE | L            |
|--------------|--------------|
| DS3          | 0.093 [2.36] |
| DS4          | 0.125 [3.18] |
| DS5          | 0.156 [3.96] |
| DS6          | 0.187 [4.75] |

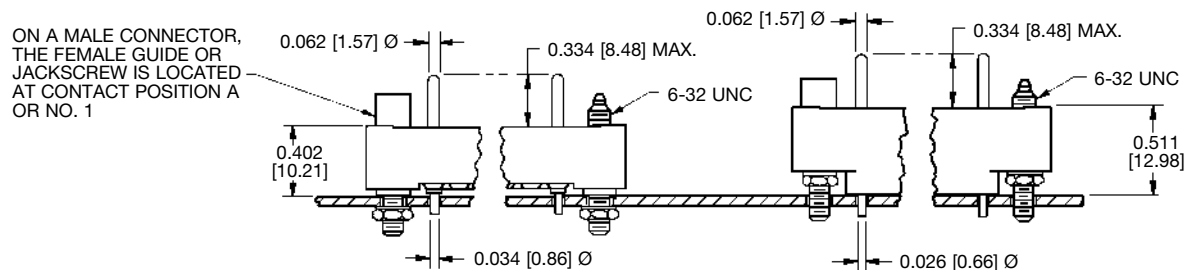
Typical Part Number: GAP34MDS6T0000

SEE GMCT SERIES PRINTED BOARD  
HOLE PATTERN PAGE FOR CONNECTOR  
VARIANT CONTACT HOLE POSITIONS

SPECIFY CONTACT CODE IN STEP 4 OF  
ORDERING INFORMATION FOR DESIRED  
LENGTH OF CONTACT TERMINATION

### GAP SERIES, LOW PROFILE, PRINTED BOARD MOUNT CONNECTOR

### GMCT SERIES, HIGH PROFILE, PRINTED BOARD MOUNT CONNECTOR

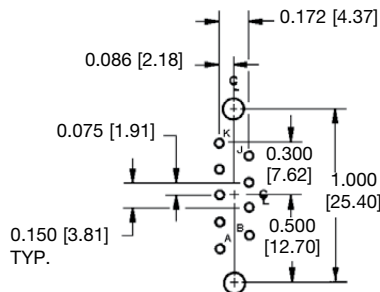


GAP34MDS4T0000

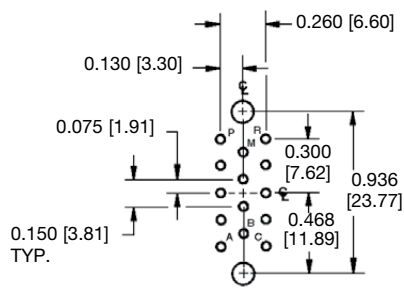
GMCT34M0T0000 WITH  
MDS125N CONTACTS INSTALLED

## CONTACT HOLE POSITION DIMENSIONS AND PRINTED BOARD HOLE PATTERN

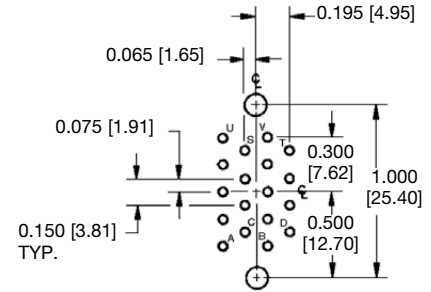
### MATING FACE OF MALE CONNECTOR



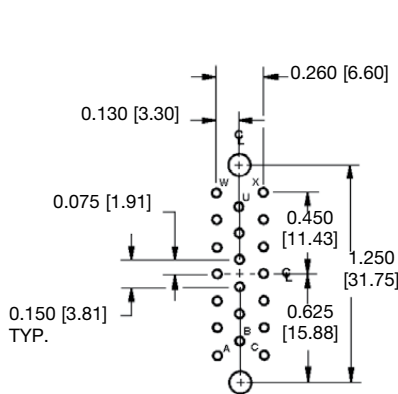
SIZE 9



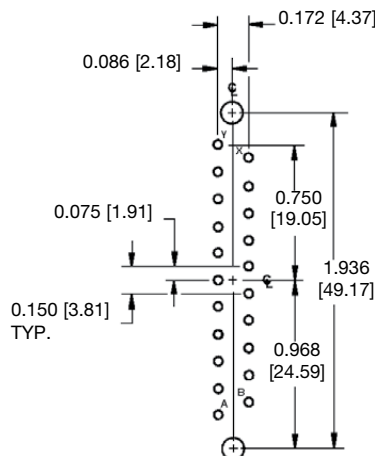
SIZE 14



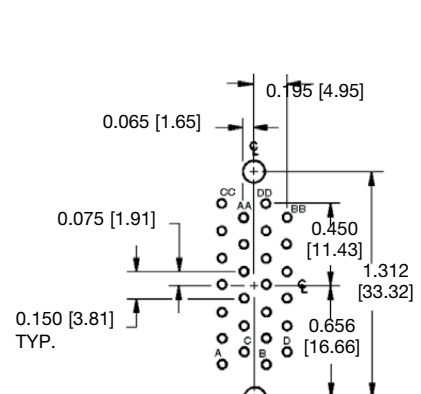
SIZE 18



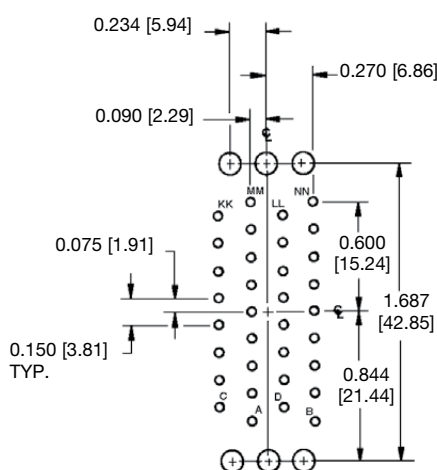
SIZE 20



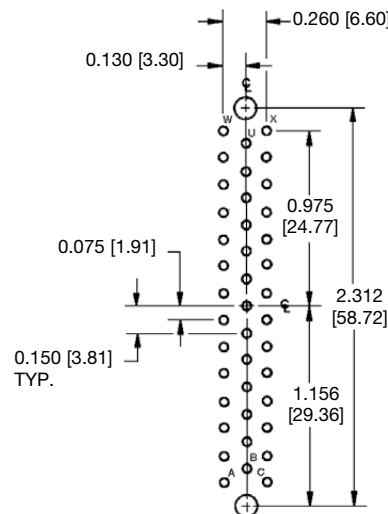
SIZE 21



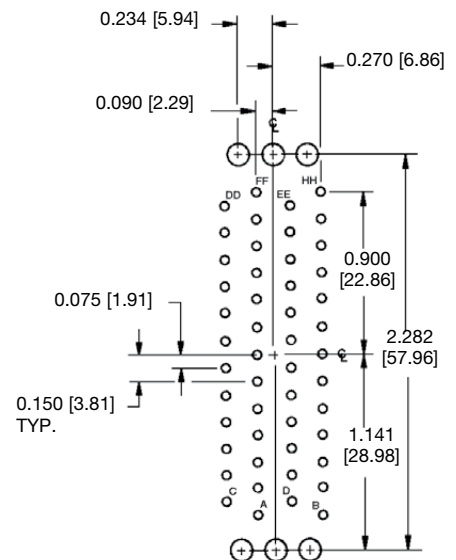
SIZE 26



SIZE 34



SIZE 41



SIZE 50

HOLE IDENTIFICATION FOR REFERENCE ONLY

SUGGEST 0.120 [3.05] Ø HOLES IN PRINTED BOARD FOR CONNECTOR MOUNTING HOLES

SUGGEST 0.052 [1.32] Ø HOLES IN PRINTED BOARD FOR GAP SERIES CONNECTOR CONTACT TERMINATIONS

DIMENSIONS ARE IN INCHES [MILLIMETERS]. ALL DIMENSIONS ARE SUBJECT TO CHANGE. 24



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# HEAVY-DUTY RECTANGULAR PRINTED BOARD CONNECTORS WITH STRAIGHT SOLDER CONTACTS

Standard  
Density  
Rectangular

## ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 9

| STEP    | 1   | 2  | 3 | 4   | 5 | 6 | 7 | 8 | 9 | 10  | 11  |
|---------|-----|----|---|-----|---|---|---|---|---|-----|-----|
| EXAMPLE | GAP | 26 | M | DS4 | T | 0 | 0 | 0 | 0 | /AA | -14 |

### STEP 1 - BASIC SERIES

GAP Series  
(Male Connector Only).

### STEP 2 - CONNECTOR VARIANTS

9, 14, 18, 20, 21, 26, 34, 41, 50

### STEP 3 - CONNECTOR GENDER

M - Male insulator only

### STEP 4 - CONTACT TERMINATION TYPE

DS3 - Straight solder 0.093 [2.36]  
DS4 - Straight solder 0.125 [3.18]  
DS5 - Straight solder 0.156 [3.96]  
DS6 - Straight solder 0.187 [4.75]

### \*STEP 5 - POLARIZING GUIDES AND JACKSCREW SYSTEM

G - Polarizing grounding guides.  
N - Polarizing guides.  
NSS - Stainless steel polarizing guides.  
T - Fixed jackscrews.  
0 - If no polarizing guides or jackscrews are required.

### \*STEP 6 - SHELLS

P - Male shell, not available on 41 variant.  
R - Female shell, not available on 41 variant.  
0 - If no shells or mounting plates are required.

### STEP 11 - SPECIAL OPTIONS

-14 - Contacts plated 0.000030  
[0.76µ] gold over nickel.  
-50 - Contacts plated 0.000050  
[1.27µ] gold over copper.

**CONTACT TECHNICAL SALES  
FOR SPECIAL OPTIONS**

### STEP 10 - ENVIRONMENTAL COMPLIANCE OPTIONS

/AA - Compliant per EU Directive  
2002/95/EC (RoHS)



**NOTE:** If compliance to environmental  
legislation is not required, this step will not  
be used. Example: GAP26MDS4T0000

### \*STEP 9 - ADDITIONAL FEATURES

B - For black anodized aluminum parts.  
R - For chemical conversion coating on  
aluminum parts.  
V - Lock tab, offered on 9, 14, 18, 20, 21, 26, 34  
and 41 variants.  
0 - If no additional options are required.

### \*STEP 8 - CABLE ADAPTERS (HOODS)

0 - Not offered for GAP series.

### \*STEP 7 - POLARIZATION POSITIONS OF SHELLS

Select letter to designate position of male pin or  
female slot for polarization system.

A, B, C, D, E, F, G  
0 - If no polarization is required or if no shells are required.

**\*NOTE:** For details of items listed in steps 5 through 9, see  
heavy-duty rectangular connector accessories section  
on pages 44-59.

Standard  
Density  
Rectangular

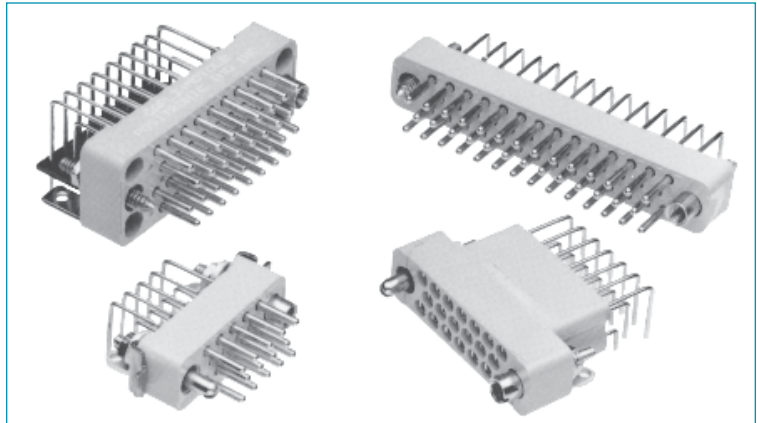
# HEAVY-DUTY RECTANGULAR RIGHT ANGLE PRINTED BOARD CONNECTORS



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Size 16 Contacts  
Conforms to  
MIL-DTL-28748  
IEC Publication 807-1

U.L. Recognized,  
File #E49351  
Telecommunication  
U.L. File #E140980



GAPL Series connectors are heavy-duty, multi-pole, high reliability connectors conforming to MIL-DTL-28748 specifications. Termination style is right angle printed board mount. GAPL Series connectors are intermateable with Positronic GMCT Series connectors. GAPL Series connectors are offered with a variety of mounting, locking and polarizing accessories. For details, see the

Heavy-Duty Rectangular Connector Accessories section. GAPL Series connectors are ideal for high reliability, heavy-duty applications which require a printed board mounted connector. They are widely utilized in navigational systems, robotics, mainframe and peripheral computers, medical equipment, telecommunications, instrumentation and process control applications.

## GAPL SERIES TECHNICAL CHARACTERISTICS

### MILITARY SPECIFICATIONS:

Conforms to MIL-DTL-28748.

### INTERNATIONAL STANDARDS:

IEC 807-1.  
U.L. Recognized.

### MATERIALS AND FINISHES:

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Insulator:</b>         | Glass filled DAP per ASTM-D-5948 type SDG-F. Grey color is standard, black available. |
| <b>Fixed Contacts:</b>    | Copper alloy with gold over nickel. Other finishes available upon request.            |
| <b>Jackscrew System:</b>  | Passivated stainless steel.                                                           |
| <b>Polarizing Guides:</b> | Copper alloy with nickel plate or passivated stainless steel.                         |
| <b>Vibration Locks:</b>   | Copper alloy with zinc plate and chromate seal.                                       |

### MECHANICAL CHARACTERISTICS:

|                                        |                                                                                                                         |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>Fixed Contacts:</b>                 | <b>Male</b> – Size 16: 0.062 inch [1.57 mm] diameter.<br><b>Female</b> – “Closed entry” design for highest reliability. |
| <b>Contact Retention in Insulator:</b> | 10 lbs. [44.5N] minimum.                                                                                                |
| <b>Contact Termination:</b>            | Right angle printed board mounted.                                                                                      |
| <b>Locking Systems:</b>                | Friction, vibration locks and jackscrews.                                                                               |
| <b>Polarization:</b>                   | Guide pins and guide sockets, and jackscrew system.                                                                     |
| <b>Mechanical Operations:</b>          | 1000 operations per IEC 512-5.                                                                                          |
| <b>Jackscrews:</b>                     | Standard threads, 6-32 UNC. Metric threads, M3X0.5 available.                                                           |

### ELECTRICAL CHARACTERISTICS:

|                                                   |                                                      |
|---------------------------------------------------|------------------------------------------------------|
| <b>Contact Current Rating (maximum):</b>          | 7.5 amperes limited at contact termination diameter. |
| <b>Initial Contact Resistance:</b>                | 0.003 ohms.                                          |
| <b>Flash over Voltage:</b>                        | 2500 V.AC [rms].                                     |
| <b>Test Voltage:</b>                              | 1200 V.AC [rms].                                     |
| <b>Insulation Resistance (minimum):</b>           | 5 G ohms.                                            |
| <b>Clearance and Creepage Distance (minimum):</b> | 0.047 inch [1.19 mm].                                |
| <b>Working Temperature:</b>                       | -55°C to 125°C.                                      |
| <b>Working Voltage:</b>                           | 250 V.AC [rms].                                      |



For RoHS options  
see page 31.



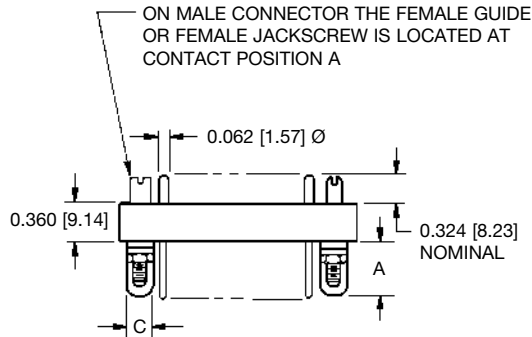
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# HEAVY-DUTY RECTANGULAR RIGHT ANGLE PRINTED BOARD CONNECTORS

Standard  
Density  
Rectangular

## RIGHT ANGLE PRINTED BOARD MOUNT CONNECTORS

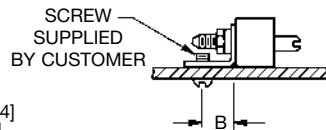
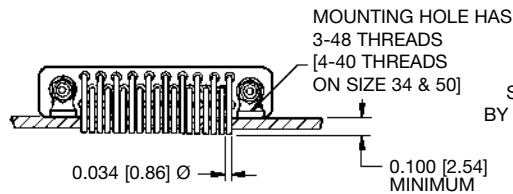
### MALE CONNECTOR



| SIZE | A                | B               | C               |
|------|------------------|-----------------|-----------------|
| 9    | 0.290<br>[7.37]  | 0.212<br>[5.38] | 0.156<br>[3.96] |
| 14   | 0.290<br>[7.37]  | 0.212<br>[5.38] | 0.156<br>[3.96] |
| 18   | 0.290<br>[7.37]  | 0.212<br>[5.38] | 0.156<br>[3.96] |
| 20   | 0.290<br>[7.37]  | 0.212<br>[5.38] | 0.156<br>[3.96] |
| 26   | 0.290<br>[7.37]  | 0.212<br>[5.38] | 0.156<br>[3.96] |
| 34   | 0.417<br>[10.59] | 0.303<br>[7.70] | 0.220<br>[5.59] |
| 41   | 0.290<br>[7.37]  | 0.212<br>[5.38] | 0.156<br>[3.96] |
| 50   | 0.417<br>[10.59] | 0.303<br>[7.70] | 0.220<br>[5.59] |

ADD 0.030 [0.76] TO  
"B" DIMENSION WHEN  
MOUNTING BRACKET  
(LB) AND VIBRATION  
LOCK TAB (V) ARE USED  
IN COMBINATION ON  
CONNECTOR

(V) TAB NOT AVAILABLE  
ON SIZE 50



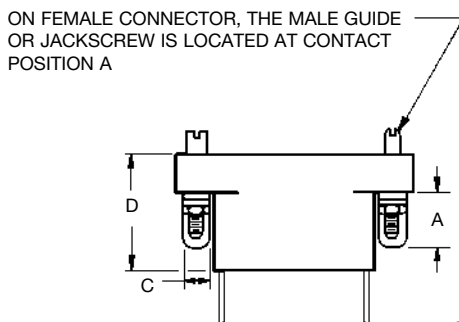
CONTACTS NOW SHOWN  
FOR CLARITY

STANDARD POSITION OF INSULATOR REQUIRES  
CONTACT "A" TO BE ADJACENT TO THE PRINTED BOARD

FOR FACE DIMENSIONS OF INSULATOR VARIANT  
DESIRED, SEE GM SERIES INSULATOR DIMENSION PAGE

## RIGHT ANGLE PRINTED BOARD MOUNT CONNECTORS

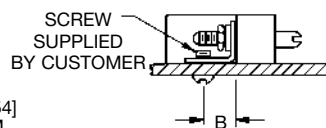
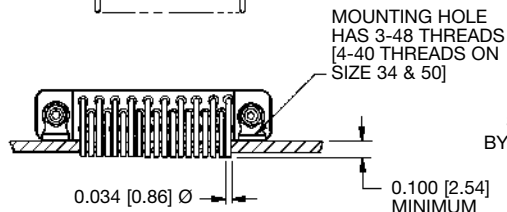
### FEMALE CONNECTOR



| SIZE | A                | B               | C               | D                |
|------|------------------|-----------------|-----------------|------------------|
| 9    | 0.290<br>[7.37]  | 0.212<br>[5.38] | 0.156<br>[3.96] | 0.856<br>[21.74] |
| 14   | 0.290<br>[7.37]  | 0.212<br>[5.38] | 0.156<br>[3.96] | 0.877<br>[22.28] |
| 18   | 0.290<br>[7.37]  | 0.212<br>[5.38] | 0.156<br>[3.96] | 0.877<br>[22.28] |
| 20   | 0.290<br>[7.37]  | 0.212<br>[5.38] | 0.156<br>[3.96] | 0.856<br>[21.74] |
| 26   | 0.290<br>[7.37]  | 0.212<br>[5.38] | 0.156<br>[3.96] | 0.877<br>[22.28] |
| 34   | 0.417<br>[10.59] | 0.303<br>[7.70] | 0.220<br>[5.59] | 0.856<br>[21.74] |
| 41   | 0.290<br>[7.37]  | 0.212<br>[5.38] | 0.156<br>[3.96] | 0.877<br>[22.28] |
| 50   | 0.417<br>[10.59] | 0.303<br>[7.70] | 0.220<br>[5.59] | 0.856<br>[21.74] |

ADD 0.030 [0.76] TO  
"B" DIMENSION WHEN  
MOUNTING BRACKET  
(LB) AND VIBRATION  
LOCK TAB (V) ARE USED  
IN COMBINATION ON  
CONNECTOR

(V) TAB NOT AVAILABLE  
ON SIZE 50



CONTACTS NOW SHOWN  
FOR CLARITY

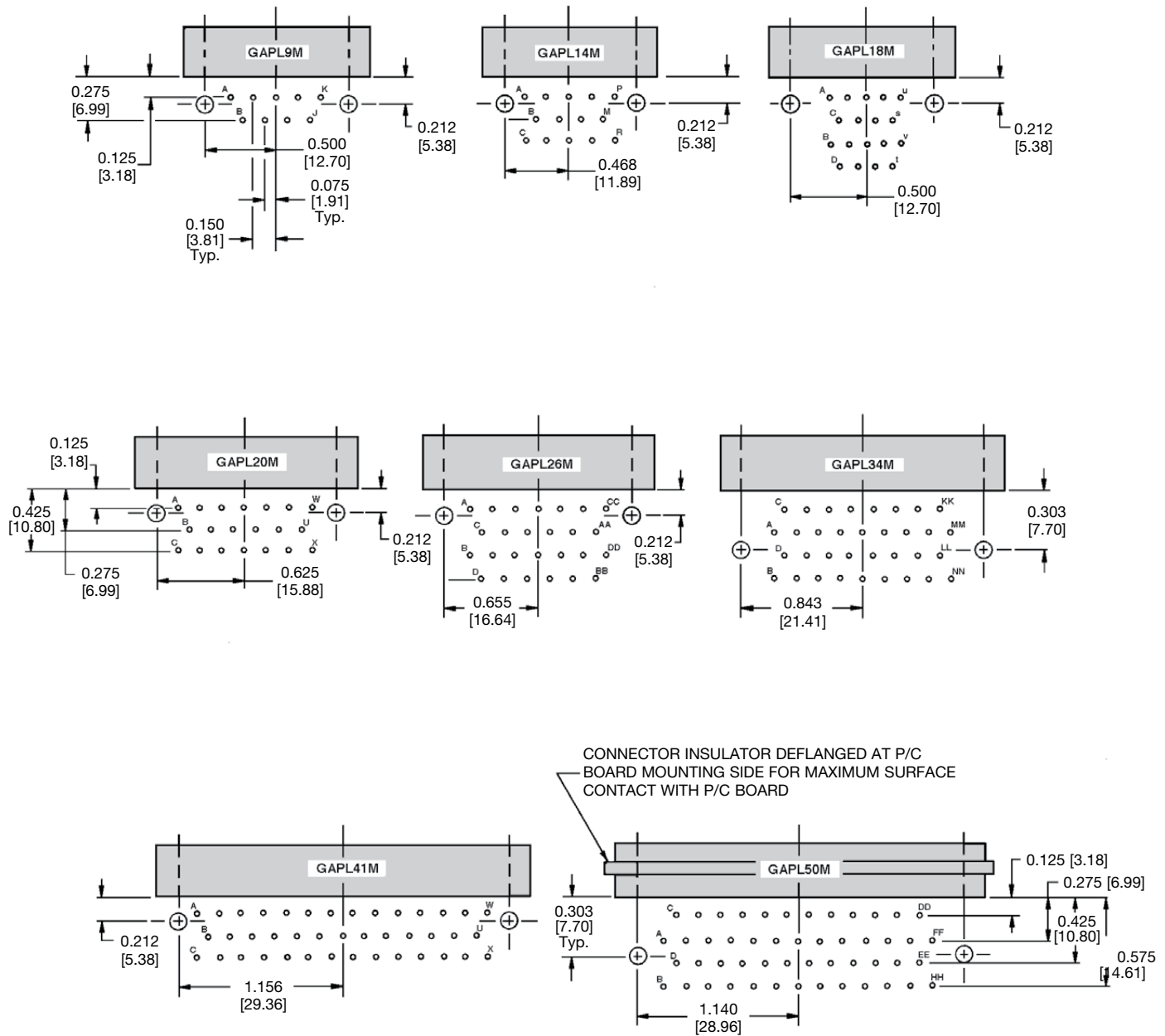
STANDARD POSITION OF INSULATOR REQUIRES  
CONTACT "A" TO BE ADJACENT TO THE PRINTED BOARD

FOR FACE DIMENSIONS OF INSULATOR VARIANT DESIRED,  
SEE GMCT SERIES INSULATOR DIMENSION PAGE

CONTACT MATERIAL: COPPER ALLOY

CONTACT FINISH: GOLD FLASH OVER NICKEL

## MALE RIGHT ANGLE PRINTED BOARD HOLE PATTERN



SUGGEST 0.109 [2.77] Ø HOLES IN PRINTED BOARD FOR CONNECTOR MOUNTING HOLES FOR VARIANTS 9, 14, 18, 20, 26 AND 41

SUGGEST 0.125 [3.18] Ø HOLES IN PRINTED BOARD FOR CONNECTOR MOUNTING HOLES FOR VARIANTS 34 AND 50

SUGGEST 0.052 [1.32] Ø HOLES IN PRINTED BOARD FOR CONTACT TERMINATIONS

ADD 0.030 [0.76] TO THE MOUNTING HOLE POSITION WHEN MOUNTING BRACKET (LB) AND VIBRATION LOCK TAB (V) ARE USED IN COMBINATION ON CONNECTOR

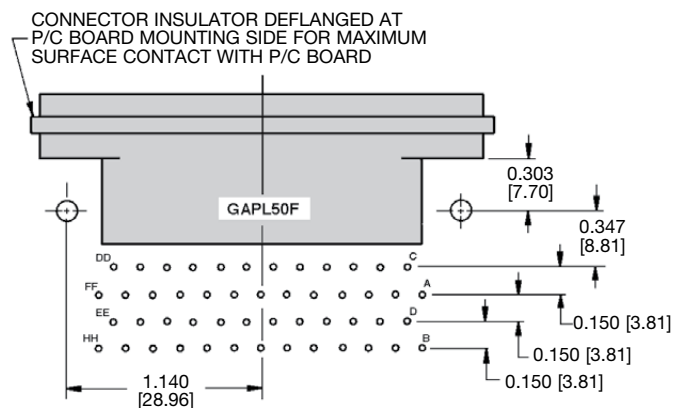
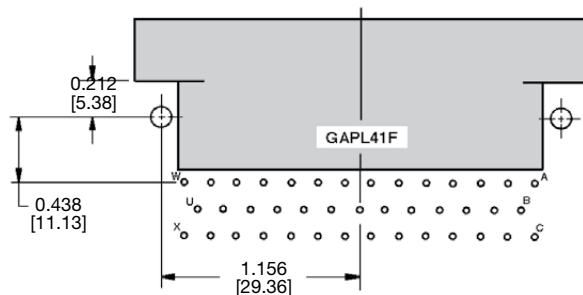
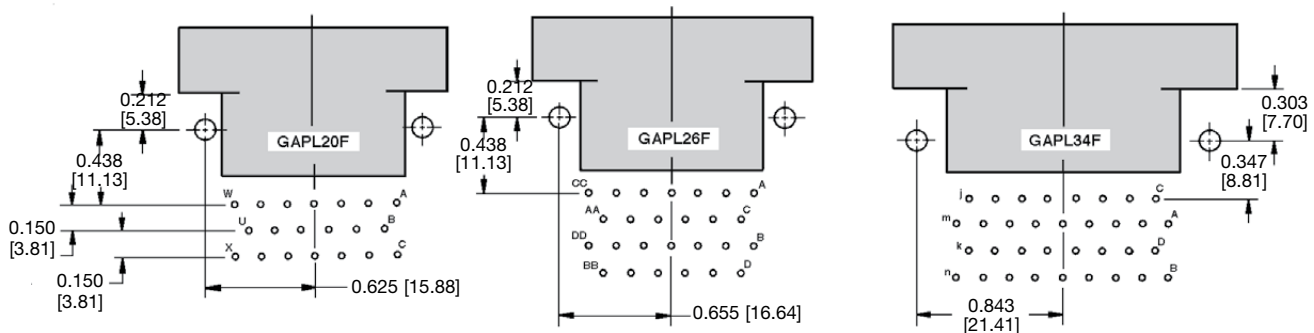
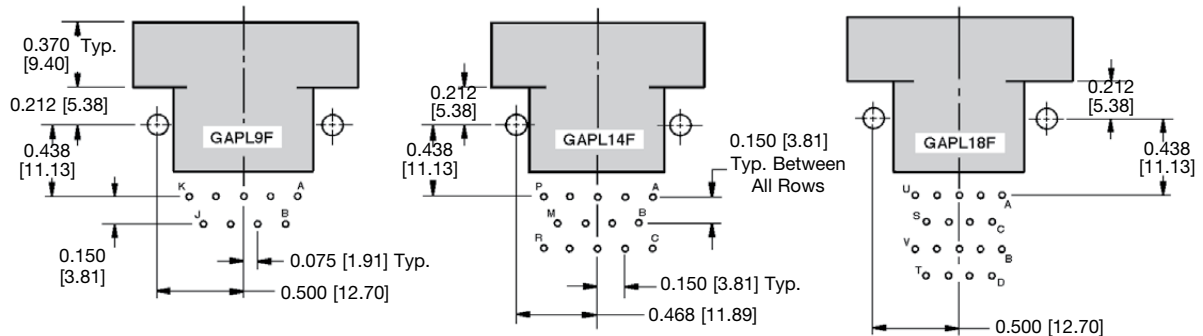


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# HEAVY-DUTY RECTANGULAR RIGHT ANGLE PRINTED BOARD CONNECTORS

Standard  
Density  
Rectangular

## FEMALE RIGHT ANGLE PRINTED BOARD HOLE PATTERN



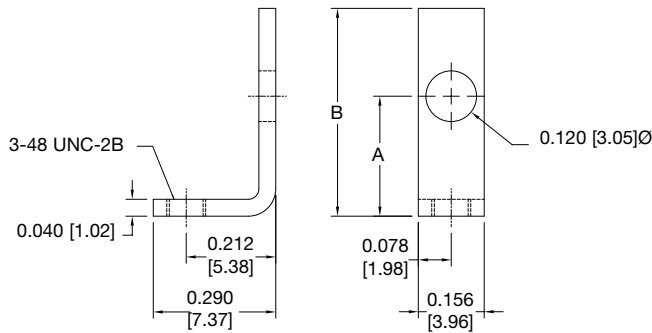
SUGGEST 0.109 [2.77] Ø HOLES IN PRINTED BOARD FOR CONNECTOR MOUNTING HOLES FOR VARIANTS 9, 14, 18, 20, 26 AND 41

SUGGEST 0.125 [3.18] Ø HOLES IN PRINTED BOARD FOR CONNECTOR MOUNTING HOLES FOR VARIANTS 34 AND 50

SUGGEST 0.052 [1.32] Ø HOLES IN PRINTED BOARD FOR CONTACT TERMINATIONS

ADD 0.030 [0.76] TO THE MOUNTING HOLE POSITION WHEN MOUNTING BRACKET (LB) AND VIBRATION LOCK TAB (V) ARE USED IN COMBINATION ON CONNECTOR

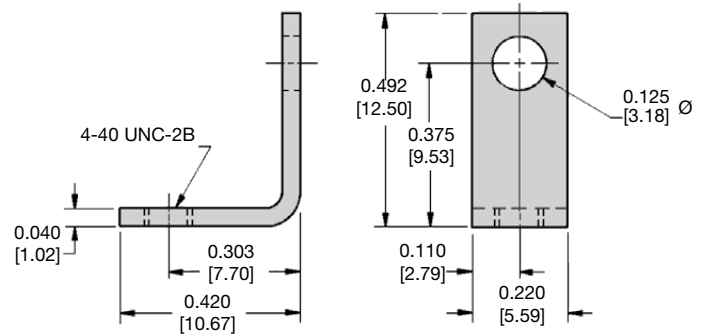
## MOUNTING BRACKET (LB)



| SIZE | A             | B             |
|------|---------------|---------------|
| 9    | 0.188 [4.78]  | 0.299 [7.59]  |
| 14   | 0.219 [5.56]  | 0.330 [8.38]  |
| 18   | 0.284 [7.21]  | 0.395 [10.03] |
| 20   | 0.219 [5.56]  | 0.330 [8.38]  |
| 26   | 0.284 [7.21]  | 0.395 [10.03] |
| 41   | 0.219 [5.556] | 0.330 [8.38]  |

**USE ON CONNECTOR VARIANTS**  
9, 14, 18, 20, 26 AND 41

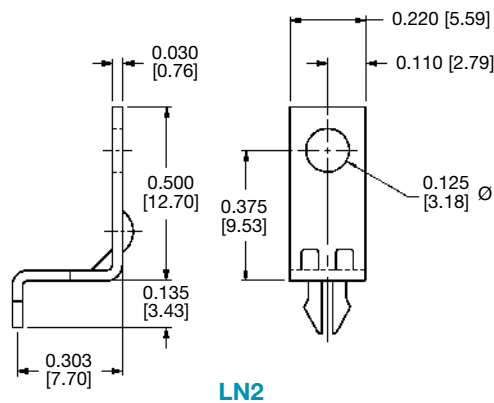
**MATERIAL: COPPER ALLOY**  
**FINISH: ZINC PLATE WITH CHROMATE SEAL**



**USE ON CONNECTOR VARIANTS**  
34 AND 50

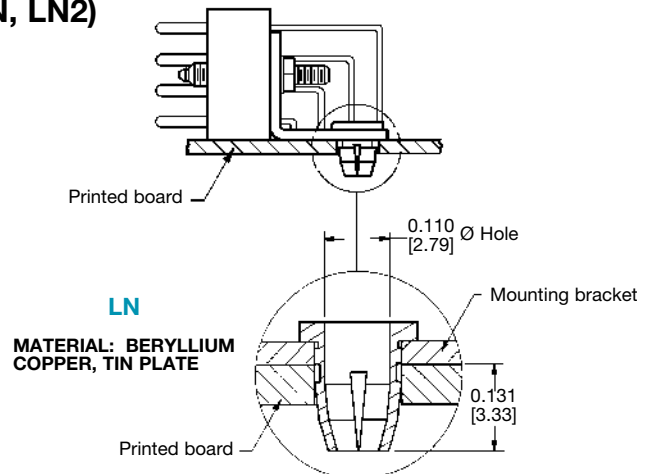
**MATERIAL: COPPER ALLOY**  
**FINISH: ZINC PLATE WITH CHROMATE SEAL**

## PUSH-ON FASTENER FOR RIVETED ON RIGHT ANGLE MOUNTING BRACKETS (LN, LN2)



**LN2**

**MATERIAL: COPPER ALLOY, TIN PLATE**  
**SUGGEST 0.123 ±0.003 [3.12] Ø HOLE FOR MOUNTING CONNECTOR WITH PUSH-ON FASTENER**



**LN**

**MATERIAL: BERYLLIUM  
COPPER, TIN PLATE**

| SAMPLE # | PRINTED BRD. HOLE Ø | INSERTION FORCE (lbs.) | RETENTION FORCE (lbs.) |
|----------|---------------------|------------------------|------------------------|
| 1        | 0.120 [3.05]        | 7 1/4                  | 5 3/4                  |
| 2        | 0.123 [3.12]        | 5 3/4                  | 5 1/2                  |
| 3        | 0.125 [3.18]        | 2 3/4                  | 2 1/2                  |
| 4        | 0.128 [3.25]        | 1 3/4                  | 2 1/4                  |
| 5        | 0.126 [3.20] PLATED | 1 3/4                  | 2 1/4                  |



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# HEAVY-DUTY RECTANGULAR RIGHT ANGLE PRINTED BOARD CONNECTORS

Standard  
Density  
Rectangular

## ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 7

| STEP    | 1    | 2  | 3 | 4 | 5 | 6 | 7  | 8   | 9   |
|---------|------|----|---|---|---|---|----|-----|-----|
| EXAMPLE | GAPL | 14 | M | 0 | N | V | LB | /AA | -14 |

### STEP 1 - BASIC SERIES

GAPL Series.

### STEP 2 - CONNECTOR VARIANTS

9, 14, 18, 20, 26, 34, 41, 50

### STEP 3 - CONNECTOR GENDER

M - Male Insulator  
F - Female Insulator

### STEP 4 - CONTACT TERMINATION TYPE

0 - Standard termination.

### \*STEP 5 - POLARIZING GUIDES AND JACKSCREW SYSTEM

G - Polarizing grounding guides.  
N - Polarizing guides.  
NSS - Stainless steel polarizing guides.  
T - Fixed jackscrews.  
0 - If no polarizing guides or jackscrews are required.

### STEP 9 - SPECIAL OPTIONS

-14 - Contacts plated 0.000030  
[0.76μ] gold over nickel.  
-50 - Contacts plated 0.000050  
[1.27μ] gold over copper.

**CONTACT TECHNICAL SALES  
FOR SPECIAL OPTIONS**



### STEP 8 - ENVIRONMENTAL COMPLIANCE OPTIONS

/AA - Compliant per EU Directive 2002/95/EC (RoHS)

**NOTE:** If compliance to environmental legislation is not required, this step will not be used. Example: GAPL14M0NVLB

### \*STEP 7 - MOUNTING BRACKET

LB - Mounting bracket.  
LN - Mounting bracket with push-on fastener, offered on size 34 and 50 only.  
LN2 - Mounting bracket with push-on fastener, offered on size 34 and 50 only.  
0 - If no mounting bracket is required.

### \*STEP 6 - LOCKING DEVICES

V - Lock tab.  
VL - Lock lever.  
0 - If no locking devices are required.

**\*NOTE:** For details of items listed in steps 5 through 7, see heavy-duty rectangular connector accessories section on pages 44-59.

Standard  
Density  
Rectangular

# HEAVY-DUTY RECTANGULAR CCITT V.35 INTERFACE CONNECTORS



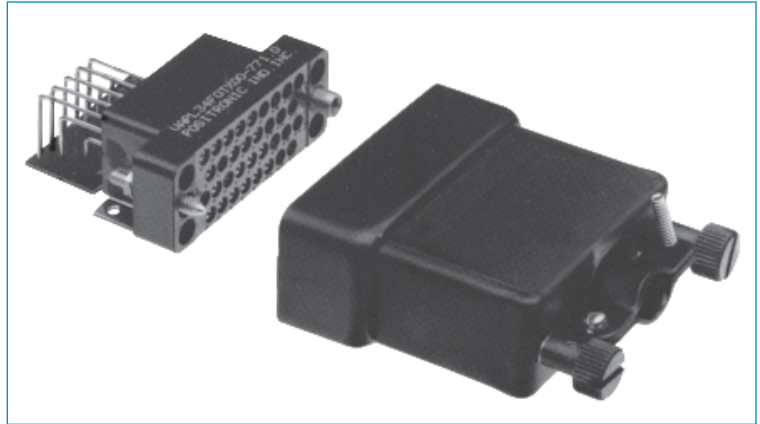
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**Size 16 Contacts  
Connectors Qualified to  
MIL-DTL-28748**

**Contacts Qualified to  
SAE AS 39029**

**IEC Publication 807-7  
ISO International  
Standard 2593**

**U.L. Recognized, File #E49351  
Telecommunication U.L. File #E140980**



VMCT and VAPL series connectors are high reliability connectors meeting international standards for CCITT V.35 interfacing. To meet these specifications, VMCT and VAPL series connectors come in 34 position glass filled DAP insulators with 0.062 inch [1.57mm] diameters, size 16 contacts rated to 13 amperes.

VMCT Series connectors are offered in crimp, solder cup, printed board mount and press-fit terminations. VAPL Series connectors have right angle printed board mount terminations. VMCT and VAPL series connectors meet performance requirements for MIL-DTL-28748 and SAE AS 39029.

A wide array of mounting, locking, shrouding and polarizing accessories is available for these connectors. For details, see the Heavy-Duty Rectangular Connector Accessories section, GMCT 34 variant.

VMCT and VAPL series connectors were specifically designed to satisfy requirements for V.35 interfacing and high speed data transmission found in the telecommunications, modem and computer industries. These connectors fully comply with the contact and jackscrew system requirements of ISO standard 2593, as revised by ISO TC 97/SC6 N 2599 and 3236.

## V.35 SERIES TECHNICAL CHARACTERISTICS

### VMCT SERIES CONNECTORS WITH REMOVABLE CONTACTS

#### MILITARY SPECIFICATIONS:

Qualified to MIL-DTL-28748/3 and MIL-DTL-28748/4. Contacts qualified to SAE AS 39029/34 and SAE AS 39029/35.

#### INTERNATIONAL STANDARDS:

IEC 807-1 and IEC 807-7.  
U.L. Recognized.

#### MATERIALS AND FINISHES:

|                               |                                                                                                                                                          |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Insulator:</b>             | Glass filled DAP per ASTM-D-5948 type SDG-F. Grey color is standard, black available.                                                                    |
| <b>Removable Contacts:</b>    | Copper alloy with gold flash over nickel. Military contacts plated 0.000050 inch [1.27 microns] gold over copper. Other finishes available upon request. |
| <b>Hoods, Cable Adapters:</b> | Aluminum with yellow or black anodize. Steel with zinc plate and chromate seal.                                                                          |
| <b>Shells:</b>                | Aluminum with yellow or black anodize.                                                                                                                   |
| <b>Jackscrew System:</b>      | Passivated stainless steel.                                                                                                                              |
| <b>Polarizing Guides:</b>     | Copper alloy with nickel plate or passivated stainless steel.                                                                                            |
| <b>Vibration Locks:</b>       | Copper alloy with zinc plate and chromate seal.                                                                                                          |

#### MECHANICAL CHARACTERISTICS:

|                                        |                                                                                                                                                                                          |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Removable Contacts:</b>             | Insert contact to rear face of insulator, release from front face of insulator. Size 16 [13 amps.] contacts available. Female contact has "closed entry" design for highest reliability. |
| <b>Contact Retention in Insulator:</b> | 20 lbs. [89N] after 10 cycles of contact insertion extraction.                                                                                                                           |

|                               |                                                                                                                                                |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contact Termination:</b>   | Crimp all wire sizes from 14 AWG [2.5 mm <sup>2</sup> ] through 32 AWG [0.03 mm <sup>2</sup> ]. Solder cup, press-fit and printed board mount. |
| <b>Locking Systems:</b>       | Friction, vibration locks and jackscrews.                                                                                                      |
| <b>Polarization:</b>          | Polarized guides, polarized shells and jackscrew system.                                                                                       |
| <b>Mechanical Operations:</b> | 1000 operations per IEC 512-5.                                                                                                                 |
| <b>Jackscrews:</b>            | Standard threads, 6-32 UNC. Metric threads, M3X0.5 available.                                                                                  |

#### ELECTRICAL CHARACTERISTICS:

|                                                   |                                                           |
|---------------------------------------------------|-----------------------------------------------------------|
| <b>Contact Current Rating:</b>                    | Size 16: 0.062 inch [1.57 mm] diameter – 13 amps nominal. |
| <b>Initial Contact Resistance:</b>                | Size 16 – 0.003 ohms.                                     |
| <b>Flash over Voltage:</b>                        | 2700 V.AC [rms].                                          |
| <b>Test Voltage:</b>                              | Size 16 – 2000 V.AC [rms].                                |
| <b>Insulation Resistance (minimum):</b>           | 5 G ohms.                                                 |
| <b>Clearance and Creepage Distance (minimum):</b> | 0.080 inch [2.03 mm].                                     |
| <b>Working Temperature:</b>                       | -55°C to 125°C.                                           |
| <b>Working Voltage:</b>                           | 250 V.AC [rms].                                           |



**For RoHS options  
see page 36.**

**DIMENSIONS ARE IN INCHES [MILLIMETERS].  
ALL DIMENSIONS ARE SUBJECT TO CHANGE. 32**



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# HEAVY-DUTY RECTANGULAR CCITT V.35 INTERFACE CONNECTORS

Standard  
Density  
Rectangular

## VAPL SERIES TECHNICAL CHARACTERISTICS

### MILITARY SPECIFICATIONS:

Conforms to MIL-DTL-28748.

### INTERNATIONAL STANDARDS:

IEC 807-1 and IEC 807-7.  
U.L. Recognized.

### MATERIALS AND FINISHES:

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Insulator:</b>         | Glass filled DAP per ASTM-D-5948 type SDG-F. Grey color is standard, black available. |
| <b>Fixed Contacts:</b>    | Copper alloy, gold flash over nickel.                                                 |
| <b>Jackscrew System:</b>  | Passivated stainless steel.                                                           |
| <b>Polarizing Guides:</b> | Copper alloy with nickel plate or passivated stainless steel.                         |
| <b>Vibration Locks:</b>   | Copper alloy with zinc plate and chromate seal.                                       |

### MECHANICAL CHARACTERISTICS:

|                                        |                                                                                                                         |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>Fixed Contacts:</b>                 | <b>Male</b> – Size 16: 0.062 inch [1.57 mm] diameter.<br><b>Female</b> – “Closed entry” design for highest reliability. |
| <b>Contact Retention in Insulator:</b> | 10 lbs. [44.5N] minimum.                                                                                                |
| <b>Contact Termination:</b>            | Right angle printed board mounted.                                                                                      |
| <b>Locking Systems:</b>                | Friction, vibration locks and jackscrews.                                                                               |
| <b>Polarization:</b>                   | Polarized guides and jackscrew system.                                                                                  |
| <b>Mechanical Operations:</b>          | 1000 operations per IEC 512-5.                                                                                          |
| <b>Jackscrews:</b>                     | Standard threads, 6-32 UNC. Metric threads, M3X0.5 available.                                                           |

### ELECTRICAL CHARACTERISTICS:

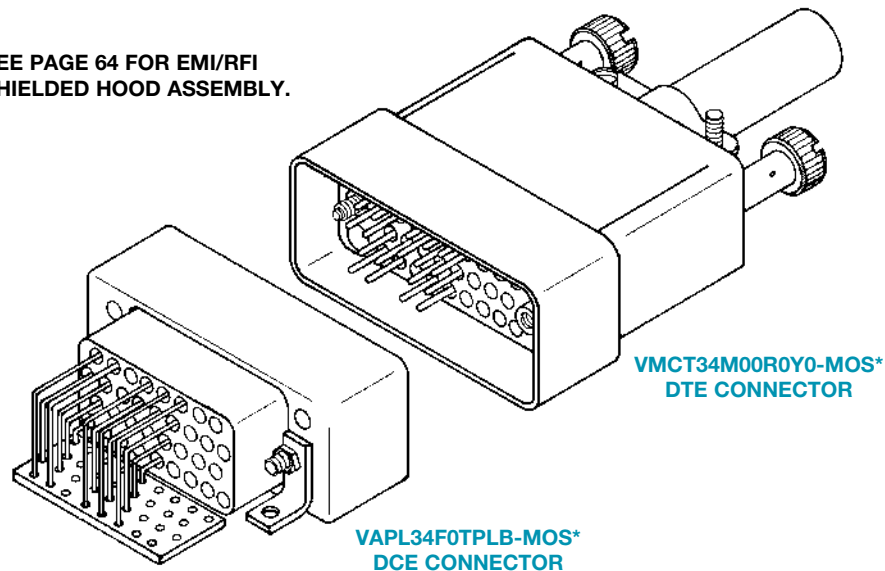
|                                                   |                                                    |
|---------------------------------------------------|----------------------------------------------------|
| <b>Contact Current Rating:</b>                    | 7.5 amps. limited at contact termination diameter. |
| <b>Initial Contact Resistance:</b>                | 0.003 ohms.                                        |
| <b>Flash over Voltage:</b>                        | 2500 V.AC [rms].                                   |
| <b>Test Voltage:</b>                              | 1200 V.AC [rms].                                   |
| <b>Insulation Resistance (minimum):</b>           | 5 G ohms.                                          |
| <b>Clearance and Creepage Distance (minimum):</b> | 0.047 inch [1.19 mm].                              |
| <b>Working Temperature:</b>                       | -55°C to 125°C.                                    |
| <b>Working Voltage:</b>                           | 250 V.AC [rms].                                    |



For RoHS options  
see page 37.

## VMCT/VAPL SERIES TYPICAL CONNECTOR MATING ASSEMBLY

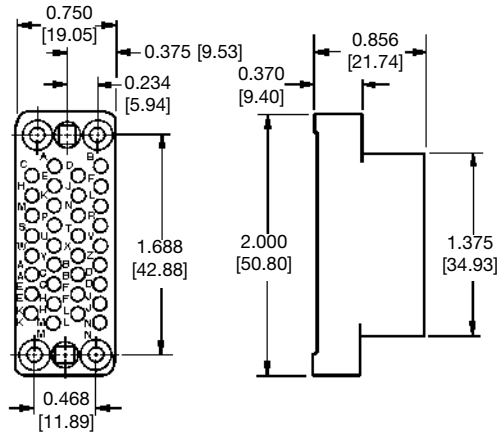
SEE PAGE 64 FOR EMI/RFI  
SHIELDED HOOD ASSEMBLY.



\* MOS DESIGNATES THE NUMBERING SYSTEM FOR SPECIAL CUSTOMER REQUIREMENTS. SELECTIVE LOADING OF CONTACTS FOR V.35 CONNECTORS IS ACHIEVED THROUGH THIS SYSTEM. PLEASE CONTACT TECHNICAL SALES FOR DETAILS.

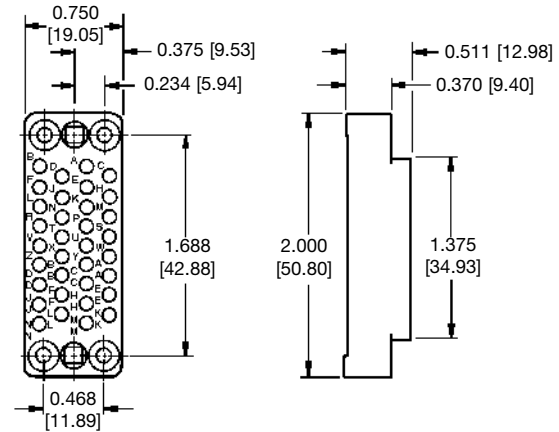
## VMCT SERIES CONNECTOR INSULATOR DIMENSIONS

### FEMALE CONNECTOR



FOR VMCT [V.35] SERIES CONTACTS,  
SEE GMCT SERIES CONTACT SECTION

### MALE CONNECTOR

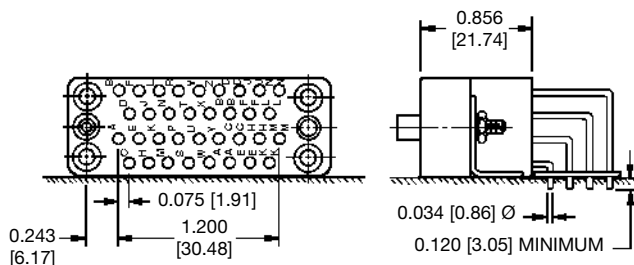


FOR VMCT SERIES CONTACT HOLE POSITIONS,  
SEE GMCT SERIES CONTACT HOLE POSITIONS, PAGE 7

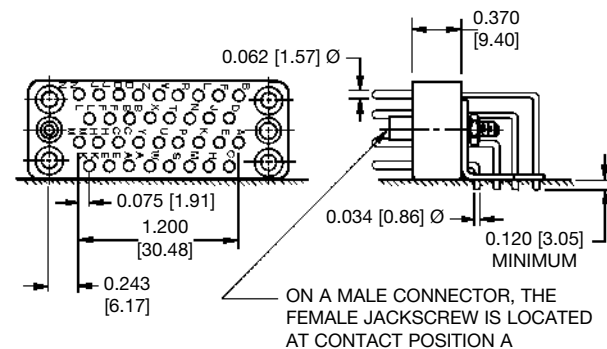
MATERIAL: GLASS FILLED DIALLYL PHTHALATE  
PER ASTM-D-5948 TYPE SDG-F

## VAPL SERIES RIGHT ANGLE PRINTED BOARD MOUNT CONNECTORS

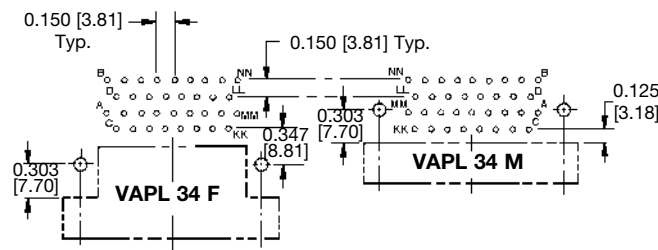
### FEMALE CONNECTOR



### MALE CONNECTOR



## VAPL SERIES RIGHT ANGLE PRINTED BOARD HOLE PATTERN



FOR MOUNTING BRACKET DIMENSIONS SEE GAPL SERIES, GAPL 34 VARIANT, PAGE 30

DIMENSIONS ARE IN INCHES [MILLIMETERS].  
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

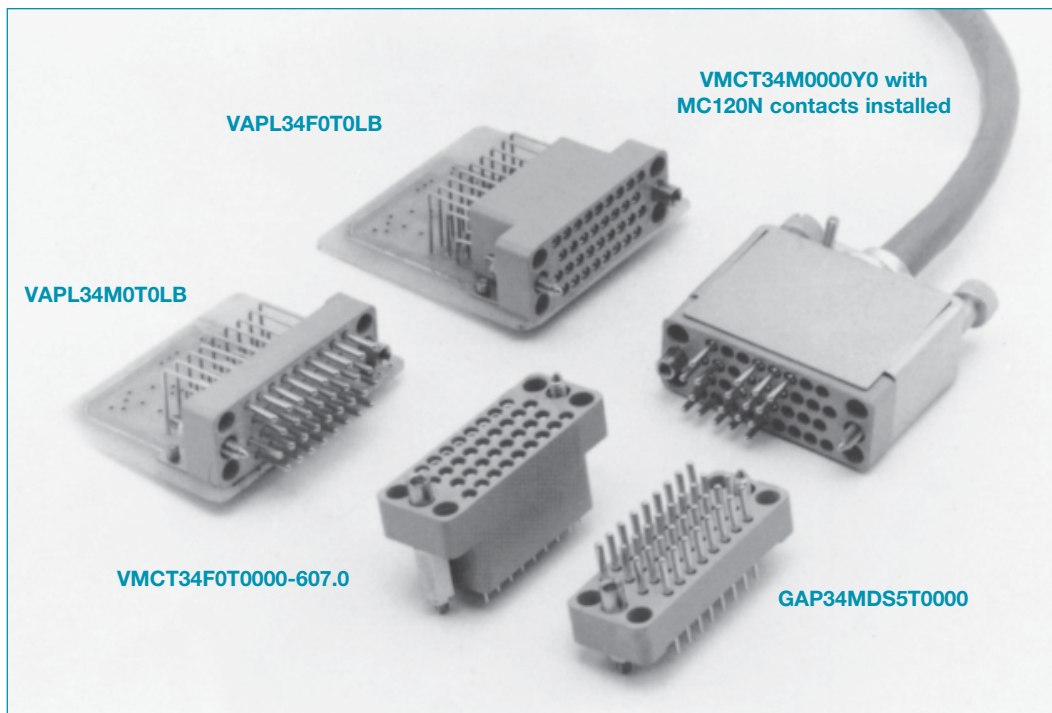
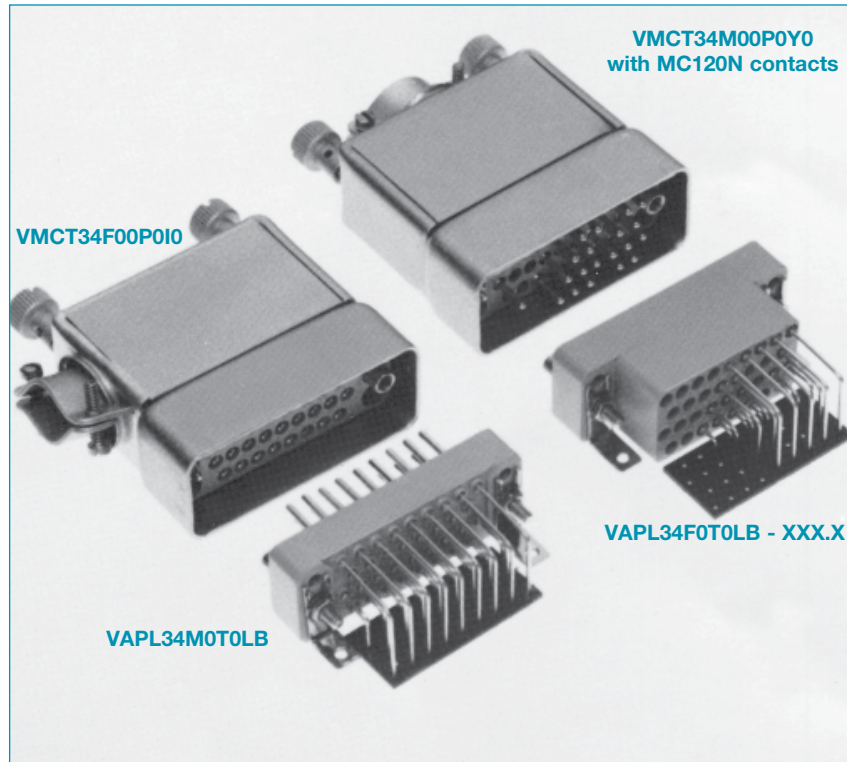
SUGGEST 0.052 [1.32] Ø HOLES IN PRINTED BOARD FOR CONTACT TERMINATIONS  
SUGGEST 0.125 [3.18] Ø HOLES IN PRINTED BOARD FOR CONNECTOR MOUNTING HOLES



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# HEAVY-DUTY RECTANGULAR CCITT V.35 INTERFACE CONNECTORS

Standard  
Density  
Rectangular





## ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 9

### VMCT SERIES

| STEP                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1    | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10  | 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----|---|---|---|---|---|---|---|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EXAMPLE                                                                                                                                                                                                                                                                                                                                                                                                                                                       | VMCT | 34 | F | 0 | 0 | R | B | Z | 0 | /AA |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>STEP 1 - BASIC SERIES</b><br>VMCT Series (V.35).                                                                                                                                                                                                                                                                                                                                                                                                           |      |    |   |   |   |   |   |   |   |     | <b>STEP 11 - SPECIAL OPTIONS</b><br>CONTACT TECHNICAL SALES<br>FOR SPECIAL OPTIONS                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>STEP 2 - CONNECTOR VARIANTS</b><br>34                                                                                                                                                                                                                                                                                                                                                                                                                      |      |    |   |   |   |   |   |   |   |     |  <b>STEP 10 - ENVIRONMENTAL COMPLIANCE OPTIONS</b><br>/AA - Compliant per EU Directive 2002/95/EC (RoHS)<br><br><b>NOTE:</b> If compliance to environmental legislation is not required, this step will not be used. Example: VMCT34F00RBZ0                                                                                                                                                                                  |
| <b>STEP 3 - CONNECTOR GENDER</b><br>M - Male Insulator<br>F - Female Insulator                                                                                                                                                                                                                                                                                                                                                                                |      |    |   |   |   |   |   |   |   |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>STEP 4 - CONTACT TERMINATION TYPE</b><br>All Female contacts "closed entry" design.<br>0 - Contacts to be ordered separately, see contact ordering charts.                                                                                                                                                                                                                                                                                                 |      |    |   |   |   |   |   |   |   |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>*STEP 5 - POLARIZING GUIDES AND JACKSCREW SYSTEM</b><br>G - Polarizing grounding guides.<br>N - Polarizing guides.<br>NSS - Stainless steel polarizing guides.<br>T - Fixed jackscrews.<br>E - Short turnable jackscrews, offered with set screw option.<br>EL - Long turnable jackscrews, offered with set screw option.<br>0 - If no polarizing guides or jackscrews are required. Also, use "0" if ordering hoods equipped with jackscrews, see STEP 8. |      |    |   |   |   |   |   |   |   |     | <b>*STEP 9 - ADDITIONAL FEATURES</b><br>B - For black anodized aluminum parts.<br>C - Set screw option, offered on the E and EL jackscrew systems.<br>R - For chemical conversion coating on aluminum parts.<br>V - Lock tab.<br>VL - Lock lever.<br>FB - Floating bushings for mounting plate.<br>0 - If no additional options are required.                                                                                                                                                                   |
| <b>*STEP 6 - SHELLS AND MOUNTING PLATES</b><br>P - Male shell.<br>R - Female shell.<br>H - Mounting plate.<br>W - Male shell with mounting plate.<br>U - Female shell with mounting plate.<br>0 - If no shells or mounting plates are required.                                                                                                                                                                                                               |      |    |   |   |   |   |   |   |   |     | <b>*STEP 8 - CABLE ADAPTERS (HOODS)</b><br>J - Top opening hood (formed).<br>L - Side opening hood (formed).<br>Y - Top opening hood (formed), equipped with stainless steel jackscrew system.<br>I - Side opening hood (formed), equipped with stainless steel jackscrew system.<br>Z - Top opening hood (drawn, side access), equipped with stainless steel jackscrew system.<br>V - Side opening hood (drawn, side access), equipped with stainless steel jackscrew system.<br>0 - If no hoods are required. |
| <b>*STEP 7 - POLARIZATION POSITIONS OF SHELLS</b><br>Select letter to designate position of male pin and female slot for polarization system.<br><br>A, B, C, D, E, F, G<br>0 - If no polarization is required or if no shells are required.                                                                                                                                                                                                                  |      |    |   |   |   |   |   |   |   |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

**\*NOTE:** For details of items listed in steps 5 through 9, see heavy-duty rectangular connector accessories section, gmct 34 variant, pages 44-59.



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# HEAVY-DUTY RECTANGULAR CCITT V.35 INTERFACE CONNECTORS

Standard  
Density  
Rectangular

## ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 7

### VAPL SERIES

| STEP    | 1    | 2  | 3 | 4 | 5 | 6 | 7  | 8   | 9   |
|---------|------|----|---|---|---|---|----|-----|-----|
| EXAMPLE | VAPL | 34 | F | 0 | T | 0 | LB | /AA | -14 |

#### STEP 1 - BASIC SERIES

VAPL Series (V.35).

#### STEP 2 - CONNECTOR VARIANTS

34

#### STEP 3 - CONNECTOR GENDER

M - Male Insulator  
F - Female Insulator

#### STEP 4 - CONTACT TERMINATION TYPE

0 - Standard termination.

#### \*STEP 5 - POLARIZING GUIDES AND JACKSCREW SYSTEM

G - Polarizing grounding guides.  
N - Polarizing guides.  
NSS - Stainless steel polarizing guides.  
T - Fixed jackscrews.  
0 - If no polarizing guides or jackscrews are required.

#### STEP 9 - SPECIAL OPTIONS

-14 - Contacts plated 0.000030  
[0.76μ] gold over nickel.  
-50 - Contacts plated 0.000050  
[1.27μ] gold over copper.

**CONTACT TECHNICAL SALES  
FOR SPECIAL OPTIONS**



#### STEP 8 - ENVIRONMENTAL COMPLIANCE OPTIONS

/AA - Compliant per EU Directive  
2002/95/EC (RoHS)

**NOTE:** If compliance to environmental  
legislation is not required, this step will not be  
used. Example: VAPL34F0T0LB

#### \*STEP 7 - MOUNTING BRACKET

LB - Mounting bracket.  
LN - Mounting bracket with push-on fastener.  
LN2 - Mounting bracket with one-piece bracket  
and push-on fastener.  
0 - If no mounting bracket is required.

#### \*STEP 6 - LOCKING DEVICES

V - Lock tab.  
VL - Lock lever.  
0 - If no locking devices are required.

**\*NOTE:** For details of items listed in steps 5 through 7,  
see heavy-duty rectangular connector accessories  
section, GMCT 34 variant on pages 44-59.

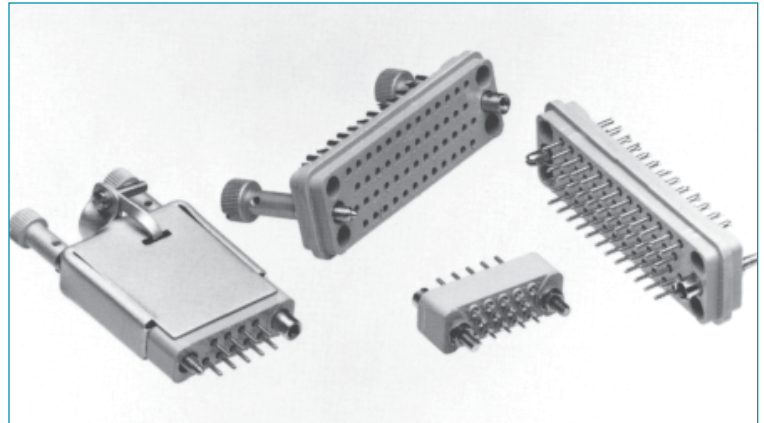
**FOR MOUNTING BRACKET DIMENSIONS,  
SEE GAPL SERIES, GAPL 34 VARIANT**

## Size 20 Contacts

Qualified to  
MIL-DTL-28748

IEC Publication 807-6

U.L. Recognized  
File #E49351



GM Series connectors are multi-pole, high reliability connectors qualified to MIL-DTL-28748 specifications. Contacts are 0.040 inch [1.02mm] diameters, rated to 7.5 amperes per contact. Termination styles are solder cup and straight solder printed board mount. Eleven connector variants, seven through 50 poles, are offered.

A wide array of mounting, locking, shrouding and polarizing accessories is available for this series. For details, see the

Heavy-Duty Rectangular Connector Accessories section.

The GM Series is a popular choice of engineers in all areas of electronics and is widely utilized in navigational systems, robotics, mainframe and peripheral computers, medical equipment, telecommunications, instrumentation and process control applications.

GM Series connectors may not be mateable with GMCT Series connectors and contacts, contact Technical Sales.

## GM SERIES TECHNICAL CHARACTERISTICS

### MILITARY SPECIFICATIONS:

Qualified to MIL-DTL-28748/5 and MIL-DTL-28748/6.

### INTERNATIONAL STANDARDS:

IEC 807-6.  
U.L. Recognized.

### MATERIALS AND FINISHES:

|                               |                                                                                                                                                                                                                                                        |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Insulator:</b>             | Glass filled DAP per ASTM-D-5948 type SDG-F. Grey color is standard, black available.                                                                                                                                                                  |
| <b>Fixed Contacts:</b>        | <b>Solder</b> - Copper alloy, gold flash over nickel.<br><b>Printed Board Mounted</b> - Copper alloy, gold flash over nickel.<br><b>Military</b> - Copper alloy, 0.000050 inch [1.27 microns] gold over nickel. Other finishes available upon request. |
| <b>Hoods, Cable Adapters:</b> | Aluminum with yellow or black anodize.                                                                                                                                                                                                                 |
| <b>Shells:</b>                | Aluminum with yellow or black anodize.                                                                                                                                                                                                                 |
| <b>JackscREW System:</b>      | Passivated stainless steel.                                                                                                                                                                                                                            |
| <b>Polarizing Guides:</b>     | Copper alloy with nickel plate or passivated stainless steel.                                                                                                                                                                                          |
| <b>Vibration Locks:</b>       | Copper alloy with zinc plate and chromate seal.                                                                                                                                                                                                        |

### MECHANICAL CHARACTERISTICS:

|                                        |                                                                                                                                                                                                |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Fixed Contacts:</b>                 | <b>Male</b> - Size 20: 0.040 inch [1.02 mm <sup>2</sup> ] diameter.<br><b>Female</b> - Open entry is standard. "Closed entry" available on solder cup style for high reliability applications. |
| <b>Contact Retention in Insulator:</b> | 10 lbs. [44.5N] minimum.                                                                                                                                                                       |
| <b>Contact Termination:</b>            | 0.046 inch [1.17 mm] internal diameter on solder cup style contact for 20 AWG [0.5 mm <sup>2</sup> ] wire maximum.<br>0.025 inch [0.64 mm] diameter printed board mount style contact.         |
| <b>Locking Systems:</b>                | Friction, vibration locks and jackscrews.                                                                                                                                                      |
| <b>Polarization:</b>                   | Polarized guides, polarized shells and jackscrew system.                                                                                                                                       |
| <b>Mechanical Operations:</b>          | With "closed entry" female contacts, 500 operations per IEC 512-5.                                                                                                                             |
| <b>JackscREWS:</b>                     | Standard threads, 6-32 UNC. Metric threads, M3X0.5 available.                                                                                                                                  |

### ELECTRICAL CHARACTERISTICS:

|                                                   |                       |
|---------------------------------------------------|-----------------------|
| <b>Contact Current Rating (maximum):</b>          | 7.5 amps.             |
| <b>Initial Contact Resistance:</b>                | 0.010 ohms.           |
| <b>Flash over Voltage:</b>                        | 2500 V.AC [rms].      |
| <b>Test Voltage:</b>                              | 1200 V.AC [rms].      |
| <b>Insulation Resistance (minimum):</b>           | 5 G ohms.             |
| <b>Clearance and Creepage Distance (minimum):</b> | 0.047 inch [1.19 mm]. |
| <b>Working Temperature:</b>                       | -55°C to 125°C.       |
| <b>Working Voltage:</b>                           | 300 V.AC [rms].       |



For RoHS options  
see page 50.



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# RECTANGULAR CONNECTORS WITH FIXED SOLDER CONTACTS

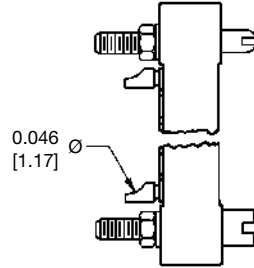
Standard  
Density  
Rectangular

## SOLDER CUP CONTACTS

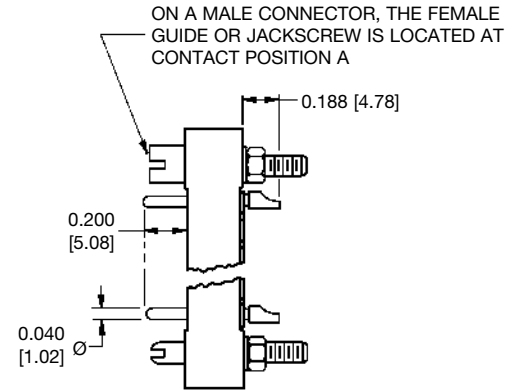
CONTACT MATERIAL: COPPER ALLOY

CONTACT FINISH: GOLD FLASH OVER  
NICKEL  
"CLOSED ENTRY" FEMALE CONTACT  
AVAILABLE

SPECIFY CODE "CE" IN STEP 10 OF  
ORDERING INFORMATION



Typical Part Number: GM14FSCN0000

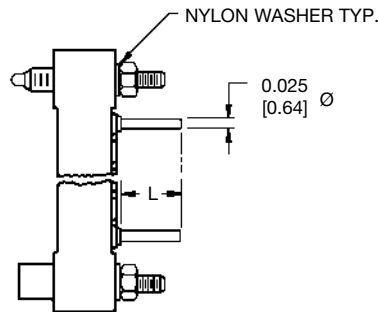


Typical Part Number: GM14MSCN0000

## STRAIGHT SOLDER CONTACTS FOR PRINTED BOARD MOUNT

CONTACT MATERIAL: COPPER ALLOY

CONTACT FINISH: GOLD FLASH OVER  
NICKEL



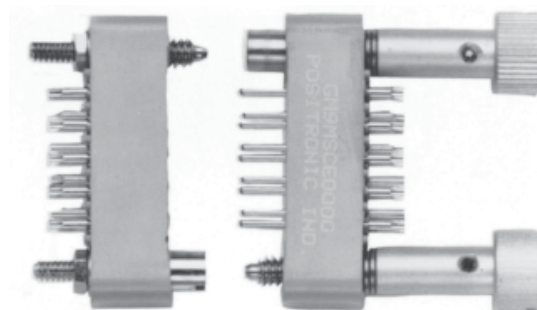
Typical Part Number: GM34FDS5T0000

SEE GM SERIES PRINTED BOARD HOLE PATTERN PAGE  
FOR CONNECTOR VARIANT CONTACT HOLE POSITIONS

| CONTACT CODE | L               |
|--------------|-----------------|
| DS3          | 0.093<br>[2.36] |
| DS4          | 0.125<br>[3.18] |
| DS5          | 0.156<br>[3.96] |
| DS6          | 0.187<br>[4.75] |

SPECIFY CONTACT CODE IN STEP 4 OF  
ORDERING INFORMATION FOR DESIRED  
LENGTH OF CONTACT TERMINATION

## TYPICAL MATING ASSEMBLY

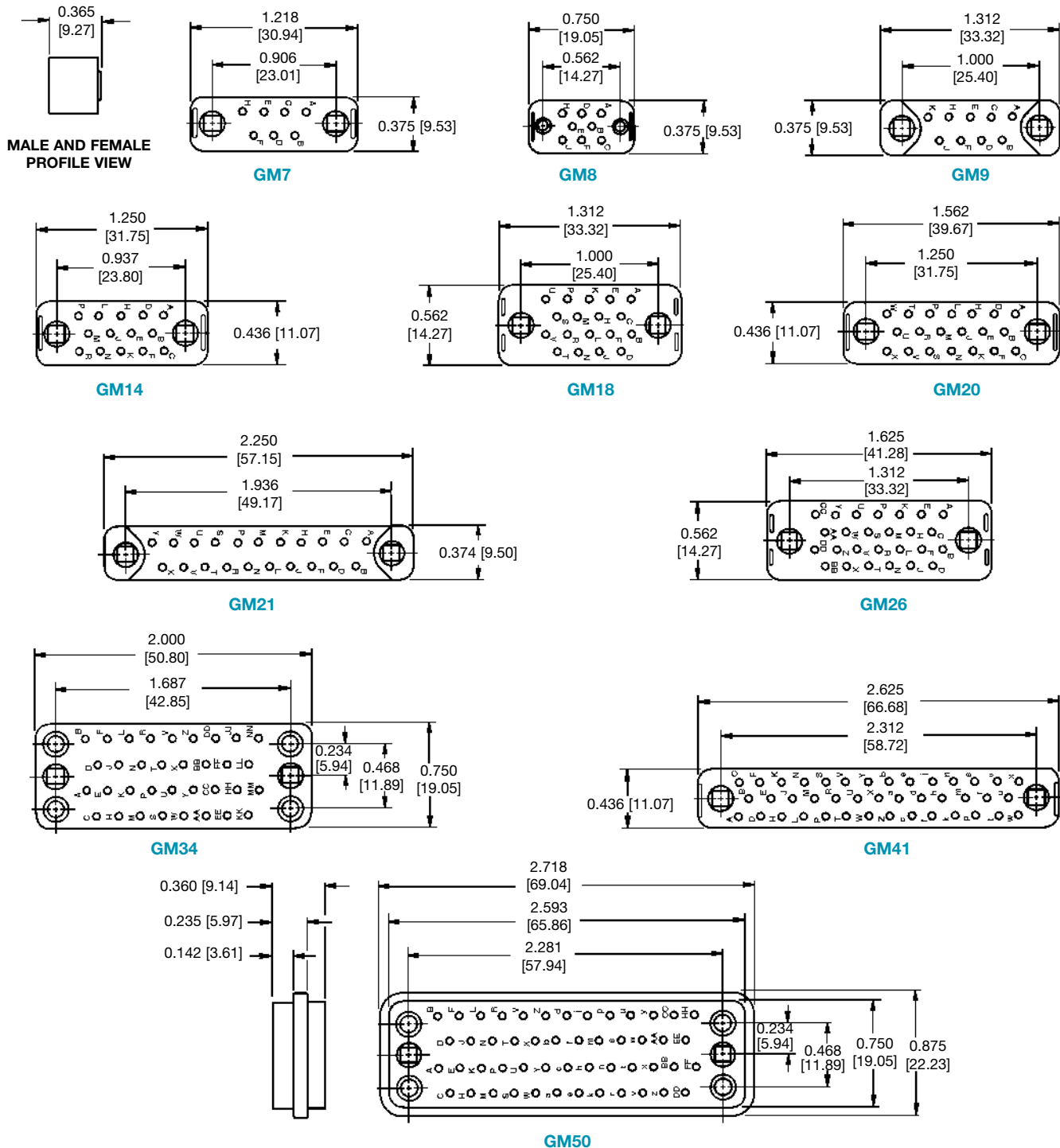


GM9FSC0000

GM9MSCE0000

## INSULATOR DIMENSIONS

### MATING FACE OF FEMALE CONNECTOR OR REAR FACE OF MALE CONNECTOR



SEE GM SERIES PRINTED BOARD HOLE PATTERN PAGE FOR CONNECTOR  
VARIANT CONTACT HOLE POSITIONS

MATERIAL: GLASS FILLED DIALLYL PHTHALATE PER ASTM-D-5948 TYPE SDG-F



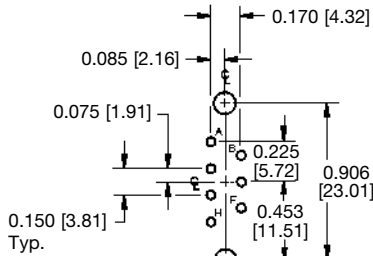
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# RECTANGULAR CONNECTORS WITH FIXED SOLDER CONTACTS

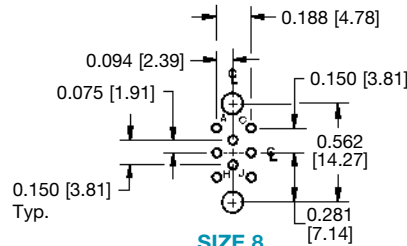
Standard  
Density  
Rectangular

## CONTACT HOLE POSITION DIMENSIONS AND PRINTED BOARD HOLE PATTERN

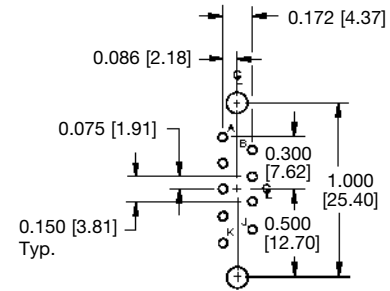
MATING FACE OF FEMALE CONNECTOR OR REAR FACE OF MALE CONNECTOR



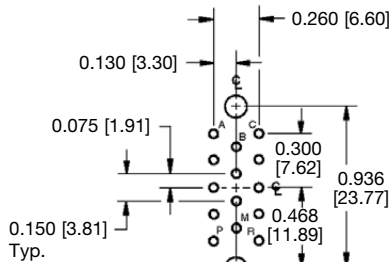
SIZE 7



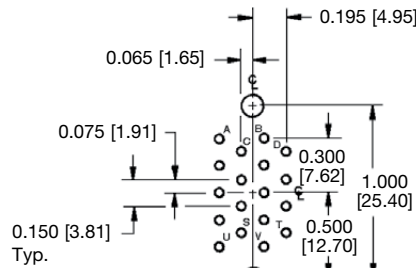
SIZE 8



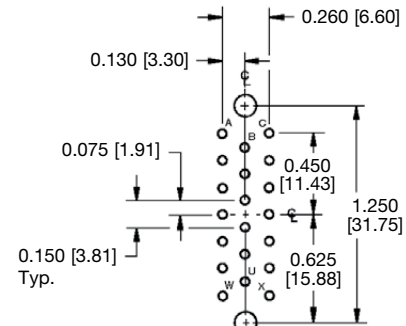
SIZE 9



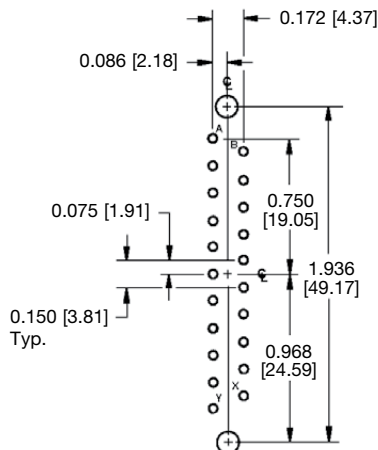
SIZE 14



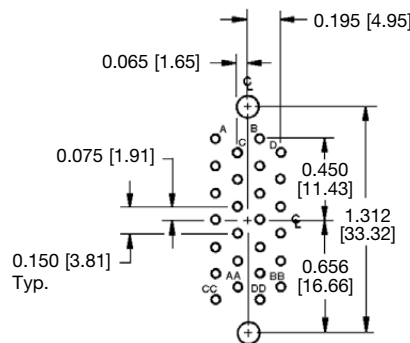
SIZE 18



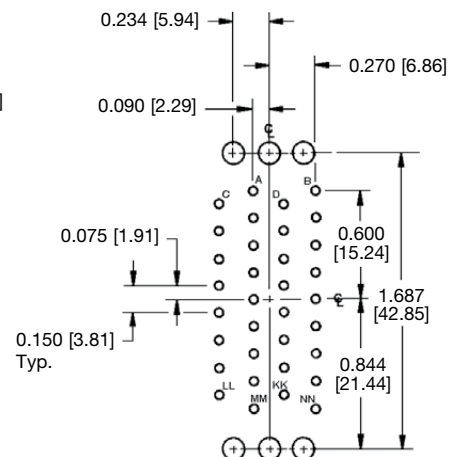
SIZE 20



SIZE 21



SIZE 26



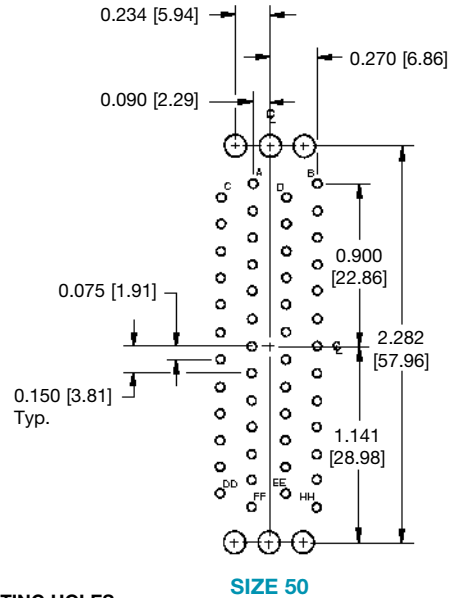
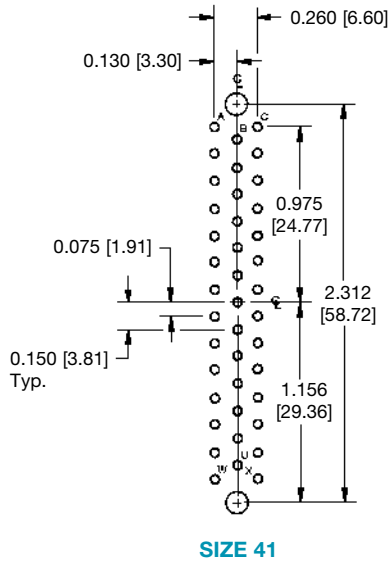
SIZE 34

SUGGEST 0.120 [3.05] Ø HOLES IN PRINTED BOARD FOR CONNECTOR MOUNTING HOLES  
SUGGEST 0.040 [1.02] Ø HOLE IN PRINTED BOARD FOR CONTACT TERMINATIONS

HOLE IDENTIFICATION FOR REFERENCE ONLY

## CONTACT HOLE POSITION DIMENSIONS AND PRINTED BOARD HOLE PATTERN

MATING FACE OF FEMALE CONNECTOR OR REAR FACE OF MALE CONNECTOR

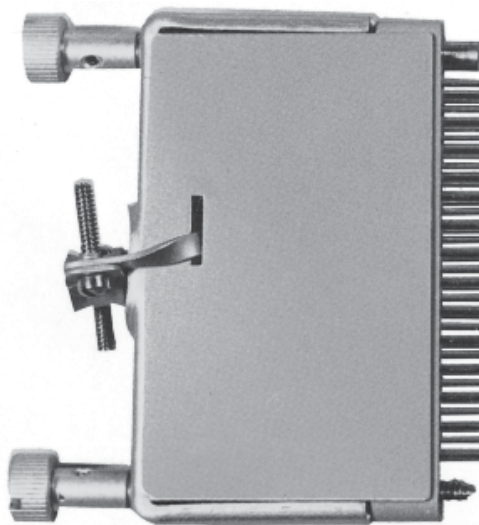


SUGGEST 0.120 [3.05] Ø HOLES IN PRINTED BOARD FOR CONNECTOR MOUNTING HOLES

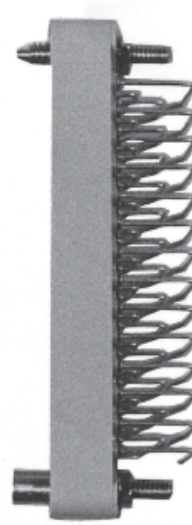
SUGGEST 0.040 [1.02] Ø HOLE IN PRINTED BOARD FOR CONTACT TERMINATIONS

HOLE IDENTIFICATION FOR REFERENCE ONLY

## TYPICAL MATING ASSEMBLY



GM41MSCE100J0



GMPL41F0T00



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# RECTANGULAR CONNECTORS WITH FIXED SOLDER CONTACTS

Standard  
Density  
Rectangular

## ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 9

| STEP    | 1  | 2  | 3 | 4  | 5  | 6 | 7 | 8 | 9 | 10  | 11  |
|---------|----|----|---|----|----|---|---|---|---|-----|-----|
| EXAMPLE | GM | 41 | M | SC | E1 | 0 | 0 | J | 0 | /AA | -14 |

### STEP 1 - BASIC SERIES

GM Series.

### STEP 2 - CONNECTOR VARIANTS

7, 8, 9, 14, 18, 20, 21, 26, 34, 41, 50

### STEP 3 - CONNECTOR GENDER

M - Male insulator.  
F - Female insulator.

### STEP 4 - CONTACT TERMINATION TYPE

SC - Solder cup, for closed entry female contact specify 'CE' in Step 10.  
DS3 - Straight solder 0.093 [2.36].  
DS4 - Straight solder 0.125 [3.18].  
DS5 - Straight solder 0.156 [3.96].  
DS6 - Straight solder 0.187 [4.75].

### \*STEP 5 - POLARIZING GUIDES AND JACKSCREW SYSTEM

G - Polarizing grounding guides.  
N - Polarizing guides, only option offered for size 8 connectors  
NSS - Stainless steel polarizing guides.  
T - Fixed jackscrews.  
E - Short turnable jackscrews, offered with set screw option.  
EL - Long turnable jackscrews, offered with set screw option.  
E1 - Turnable jackscrews used on 9, 14, 18, 20, 21, 26 and 41 variant hoods, offered with set screw option.  
0 - If no polarizing guides or jackscrews are required. Also, use "0" if ordering hoods equipped with jackscrews for sizes 34 and 50, see Step 8.

### \*STEP 6 - SHELLS AND MOUNTING PLATES

P - Male shell, not available on 41 variant.  
R - Female shell, not available on 41 variant.  
H - Mounting plate, not available on 41 variant.  
W - Male shell with mounting plate.  
U - Female shell with mounting plate.  
0 - If no shells or mounting plates are required.

**\*NOTE:** FOR DETAILS OF ITEMS LISTED IN STEPS 5 THROUGH 9, SEE HIGH DENSITY RECTANGULAR CONNECTOR ACCESSORIES SECTION ON PAGES 44-59.

### STEP 11 - SPECIAL OPTIONS

-14 - Contacts plated 0.000030 [0.76μ] gold over nickel.  
-50 - Contacts plated 0.000050 [1.27μ] gold over copper.

**CONTACT TECHNICAL SALES FOR SPECIAL OPTIONS**



### STEP 10 - ENVIRONMENTAL COMPLIANCE OPTIONS

/AA - Compliant per EU Directive 2002/95/EC (RoHS)

**NOTE:** If compliance to environmental legislation is not required, this step will not be used. Example: GM41MSCE100J0

### \*STEP 9 - ADDITIONAL FEATURES

B - For black anodized aluminum parts.  
C - Set screw option, offered on the E, EL and E1 jackscrew systems.  
R - For chemical conversion coating on aluminum parts.  
V - Lock tab, offered on 7, 9, 14, 18, 20, 21, 26, 34 and 41 variants.  
VL - Lock lever, offered on 7, 9, 14, 18, 20, 21, 26, 34 and 41 variants.  
0 - If no additional options are required.

### \*STEP 8 - CABLE ADAPTERS (HOODS)

J - Top opening hood (formed).  
L - Side opening hood (formed).  
Y - Top opening hood (formed), equipped with stainless steel jackscrew system, offered on 34 and 50 variants.  
I - Side opening hood (formed), equipped with stainless steel jackscrew system, offered on 34 and 50 variants.  
Z - Top opening hood (drawn, side access), equipped with stainless steel jackscrew system, offered on 34 and 50 variants.  
V - Side opening hood (drawn, side access), equipped with stainless steel jackscrew system, offered on 34 and 50 variants.  
0 - If no hoods are required.

### \*STEP 7 - POLARIZATION POSITIONS OF SHELLS

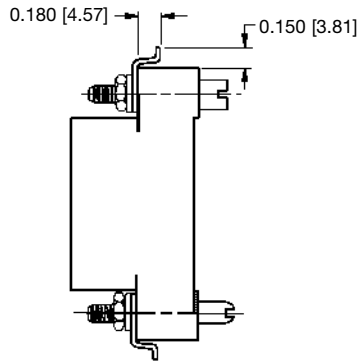
Select letter to designate position of male pin and female slot for polarization system.

A, B, C, D, E, F, G

0 - If no polarization is required or if no shells are required.

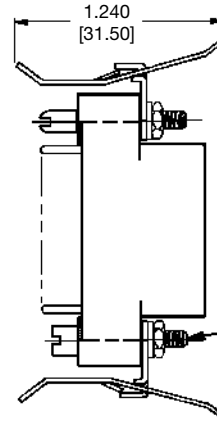
## VIBRATION LOCKS (V,VL)

### (V) - VIBRATION TABS



Typical Part Number:  
GMCT34F0N000V

### (VL) - VIBRATION LEVER ASSEMBLY



Typical Part Number:  
GMCT34M0N000VL

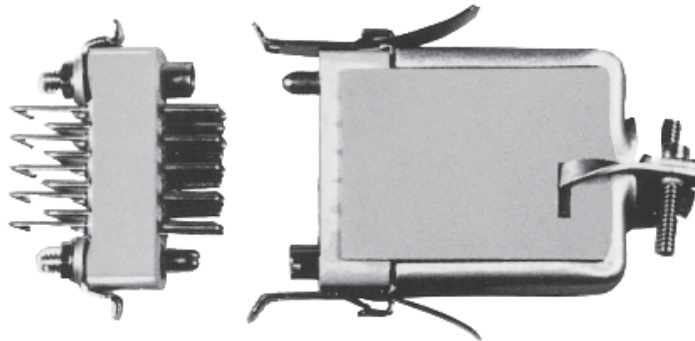
SPECIFY CODE "V" OR "VL" IN STEP  
9 OF ORDERING INFORMATION

MATERIAL: COPPER ALLOY

FINISH: ZINC PLATE WITH  
CHROMATE SEAL

ON MALE CONNECTOR THE FEMALE  
GUIDE OR JACKSCREW IS LOCATED  
AT CONTACT POSITION A OR NO. 1

## TYPICAL MATING ASSEMBLY



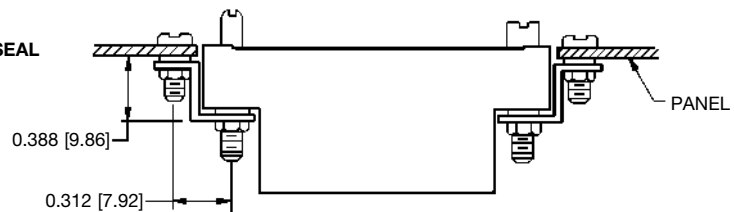
GAPL14M0NVLB

GMCT14F0N00JVL

## FLUSH PANEL CONNECTOR MOUNTING BRACKETS

MATERIAL: COPPER ALLOY

FINISH: ZINC WITH CHROMATE SEAL



| CONNECTOR<br>VARIANTS | PART<br>NUMBER |
|-----------------------|----------------|
| 7 THRU 75             | 80023-2        |
| 60 AND 104            | 80023-4        |

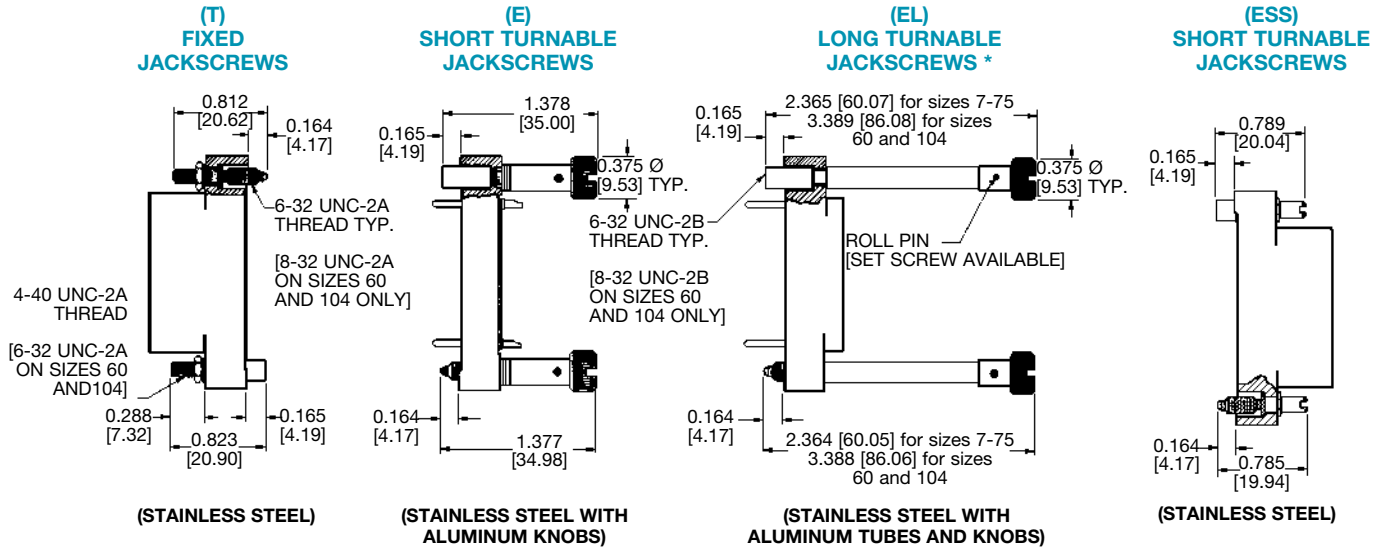


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# ACCESSORIES FOR RECTANGULAR CONNECTORS

Standard  
Density  
Rectangular

## JACKSCREW SYSTEM DIMENSIONS (T, E, EL, ESS) QUALIFIED TO MIL-DTL-28748



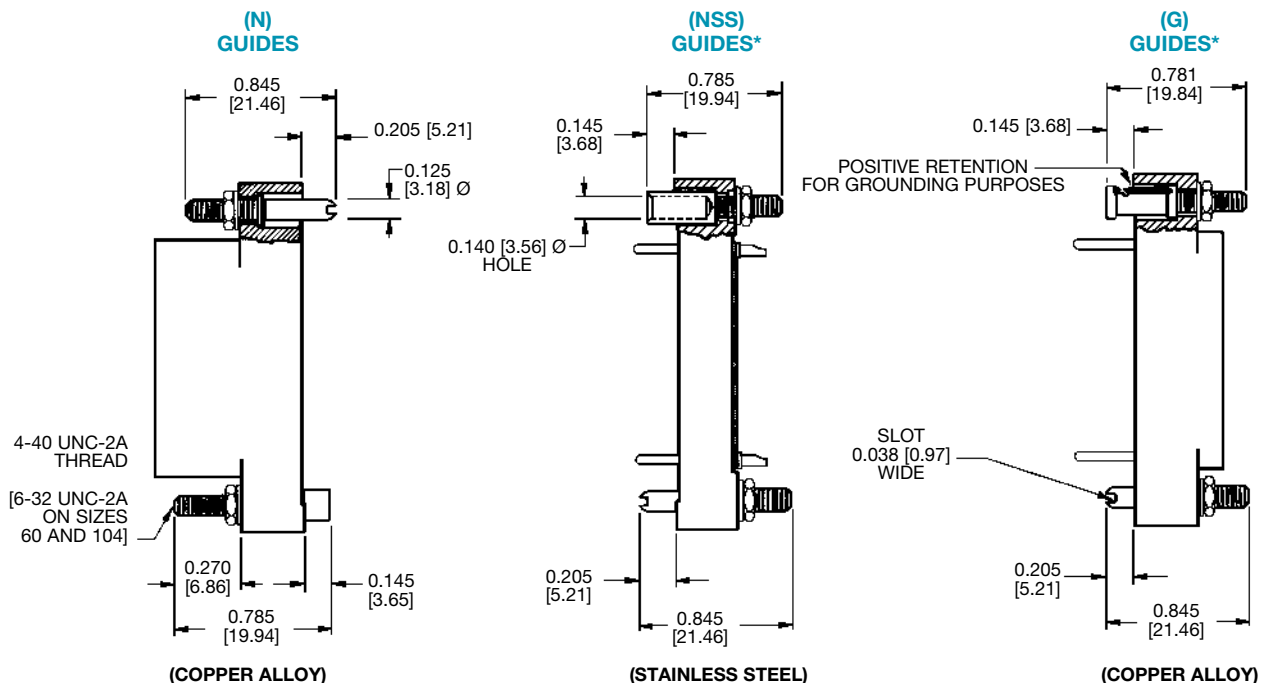
"E" AND "EL" OPTIONS USING ROLL PINS MAY HAVE SOLID WIRE THREADED THROUGH THE ROLL PINS AS AN ANTI-ROTATION MEASURE.

\* WHEN SUPPLIED WITH A FEMALE OR MALE SHELL, THE JACKSCREW MATING LENGTHS 0.164 [4.17] SHALL BE 0.124 [3.15] AND THE 0.165 [4.19] SHALL BE 0.125 [3.18]

ON A MALE CONNECTOR, THE FEMALE GUIDE OR FEMALE JACKSCREW IS LOCATED AT THE END WITH CONTACT POSITION A OR NO. 1

METRIC THREADS AVAILABLE, SEE PAGE 55

## POLARIZING GUIDE DIMENSIONS (N, NSS, G) QUALIFIED TO MIL-DTL-2874



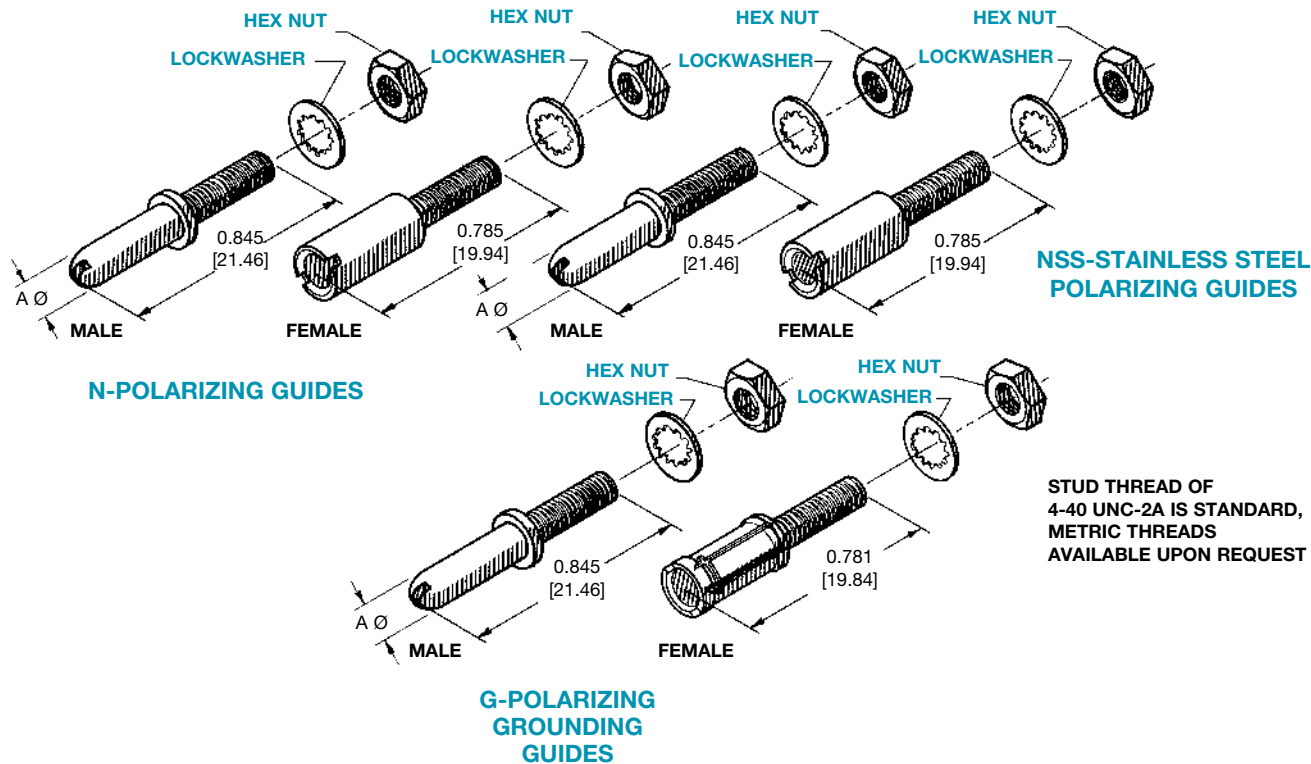
ON A MALE CONNECTOR, THE FEMALE GUIDE OR FEMALE JACKSCREW IS LOCATED AT THE END WITH CONTACT POSITION A OR NO. 1

METRIC THREADS AVAILABLE, SEE PAGE 55

\*NOT OFFERED ON GM8 CONNECTOR VARIANT



POLARIZING GUIDES (N, NSS, G)



NUT DRIVER



Part Number: 9535-1 FOR 4-40 THREADS  
Part Number: 9535-2 FOR 6-32 THREADS

| TYPE             | MATERIAL AND FINISH            | USED ON CONNECTOR VARIANTS | A Ø          |
|------------------|--------------------------------|----------------------------|--------------|
| N-GUIDE MALE     | COPPER ALLOY WITH NICKEL PLATE | 7 AND 9 THROUGH 75         | 0.124 [3.15] |
|                  |                                | 60 AND 104                 | 0.124 [3.15] |
| N-GUIDE FEMALE   | COPPER ALLOY WITH NICKEL PLATE | 7 AND 9 THROUGH 75         | —            |
|                  |                                | 60 AND 104                 | —            |
| NSS-GUIDE MALE   | STAINLESS STEEL PASSIVATED     | 7 AND 9 THROUGH 75         | 0.124 [3.15] |
|                  |                                | 60 AND 104                 | 0.124 [3.15] |
| NSS-GUIDE FEMALE | STAINLESS STEEL PASSIVATED     | 7 AND 9 THROUGH 75         | —            |
|                  |                                | 60 AND 104                 | —            |
| G-GUIDE MALE     | COPPER ALLOY WITH NICKEL PLATE | 7 AND 9 THROUGH 75         | 0.124 [3.15] |
|                  |                                | 60 AND 104                 | 0.124 [3.15] |
| G-GUIDE FEMALE   | COPPER ALLOY WITH NICKEL PLATE | 7 AND 9 THROUGH 75         | —            |
|                  |                                | 60 AND 104                 | —            |



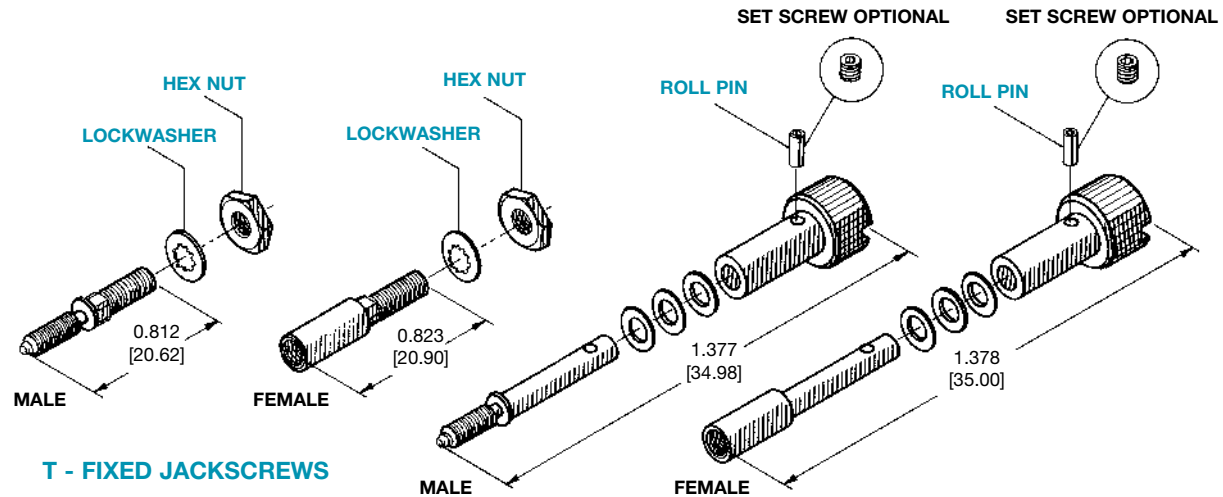
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connectpositronic.com

# ACCESSORIES FOR RECTANGULAR CONNECTORS

Standard  
Density  
Rectangular

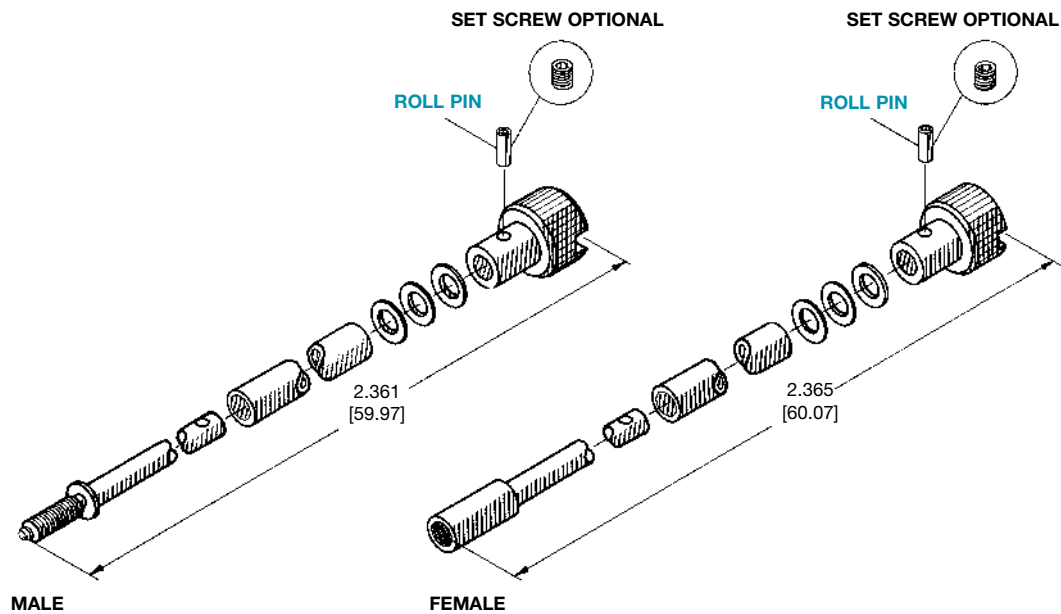
## FIXED AND TURNABLE JACKSCREW SYSTEM (T, E, EL)

SEE PAGE 55 FOR THREAD INFORMATION



### E - SHORT TURNABLE JACKSCREWS

"E" AND "EL" OPTIONS USING ROLL PINS MAY HAVE SOLID WIRE THREADED THROUGH THE ROLL PINS AS AN ANTI-ROTATION MEASURE.





## FIXED AND TURNABLE JACKSCREW SYSTEMS (T, E, EL)

### COUPLING THREAD SIZES ONLY

| TYPE                      | MATERIAL<br>AND<br>FINISH        | AVAILABILITY M3x0.5 |                |                       | USED ON<br>CONNECTOR<br>VARIANTS |
|---------------------------|----------------------------------|---------------------|----------------|-----------------------|----------------------------------|
|                           |                                  | 6-32<br>THREAD      | 8-32<br>THREAD | M3x0.5<br>METRIC THD. |                                  |
| T<br>JACKSCREW<br>MALE    | STAINLESS<br>STEEL<br>PASSIVATED | X                   | -----          | X                     | 7 AND 9<br>THROUGH 75            |
|                           |                                  | -----               | X              | X                     | 60 AND 104                       |
| T<br>JACKSCREW<br>FEMALE  | STAINLESS<br>STEEL<br>PASSIVATED | X                   | -----          | X                     | 7 AND 9<br>THROUGH 75            |
|                           |                                  | -----               | X              | X                     | 60 AND 104                       |
| E<br>JACKSCREW<br>MALE    | STAINLESS<br>STEEL<br>PASSIVATED | X *                 | -----          | X                     | 7 AND 9<br>THROUGH 75            |
|                           |                                  | -----               | X              | X                     | 60 AND 104                       |
| E<br>JACKSCREW<br>FEMALE  | STAINLESS<br>STEEL<br>PASSIVATED | X *                 | -----          | X                     | 7 AND 9<br>THROUGH 75            |
|                           |                                  | -----               | X              | X                     | 60 AND 104                       |
| EL<br>JACKSCREW<br>MALE   | STAINLESS<br>STEEL<br>PASSIVATED | X *                 | -----          | X                     | 7 AND 9<br>THROUGH 75            |
|                           |                                  | -----               | X              | X                     | 60 AND 104                       |
| EL<br>JACKSCREW<br>FEMALE | STAINLESS<br>STEEL<br>PASSIVATED | X *                 | -----          | X                     | 7 AND 9<br>THROUGH 75            |
|                           |                                  | -----               | X              | X                     | 60 AND 104                       |

\* SET SCREW OPTION AVAILABLE ON STAINLESS STEEL  
TURNABLE JACKSCREWS WITH 6-32 THREADS ONLY



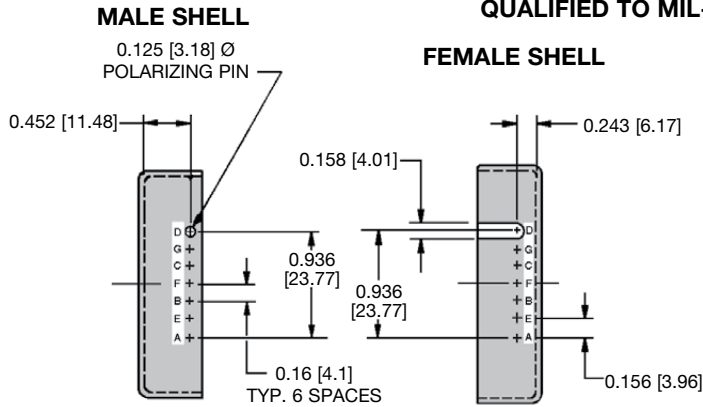
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# ACCESSORIES FOR RECTANGULAR CONNECTORS

Standard  
Density  
Rectangular

## POLARIZATION OF MALE AND FEMALE SHELLS

QUALIFIED TO MIL-DTL-28748



Typical Part Number:  
G34000PD000

Typical Part Number:  
G34000RD000

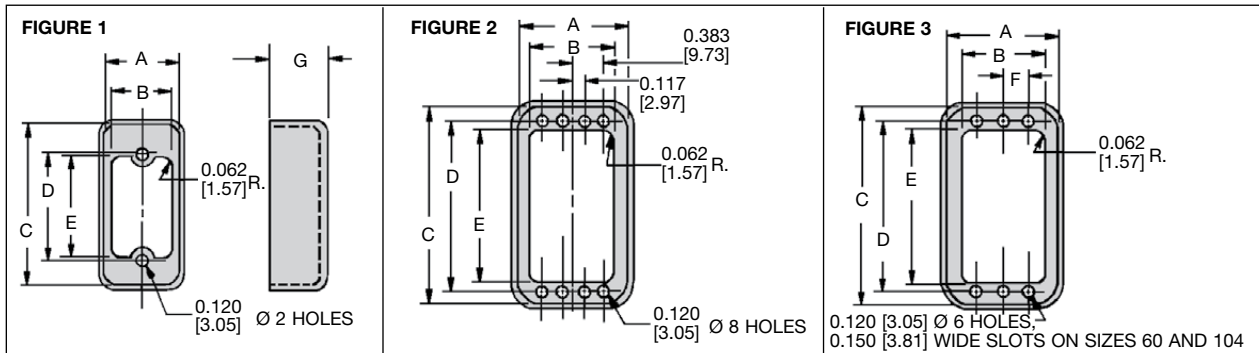
## POLARIZATION

Polarization is accomplished with shells by a pin and slot arrangement. Female shells are slotted to accept non-magnetic stainless steel polarizing pins mounted on the male shells.

There are 7 polarizing positions available which are designated by the letters A, B, C, D, E, F or G. Nonpolarized shells are designated by "O" and are supplied without slot and pin. See ordering chart.

## DIMENSIONS FOR FEMALE SHELLS (R)

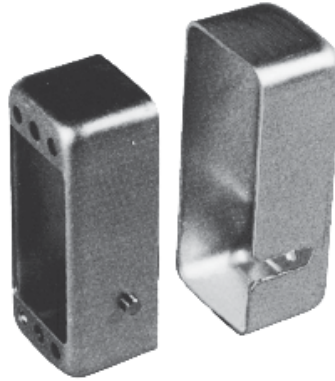
QUALIFIED TO MIL-DTL-28748



| FIGURE | PART NUMBER | A                | B                | C                | D                | E                | F                | G                |
|--------|-------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| 1      | G9000R000   | 0.517<br>[13.13] | 0.380<br>[9.65]  | 1.453<br>[36.91] | 1.000<br>[25.40] | 0.875<br>[22.23] | -----            | 0.719<br>[18.26] |
| 1      | G14000R000  | 0.580<br>[14.73] | 0.445<br>[11.30] | 1.393<br>[35.38] | 0.938<br>[23.83] | 0.812<br>[20.62] | -----            | 0.719<br>[18.26] |
| 1      | G18000R000  | 0.705<br>[17.91] | 0.575<br>[14.61] | 1.453<br>[36.91] | 1.000<br>[25.40] | 0.875<br>[22.23] | -----            | 0.719<br>[18.26] |
| 1      | G20000R000  | 0.580<br>[14.73] | 0.453<br>[11.51] | 1.707<br>[43.36] | 1.250<br>[31.75] | 1.125<br>[28.58] | -----            | 0.719<br>[18.26] |
| 1      | G26000R000  | 0.705<br>[17.91] | 0.580<br>[14.73] | 1.775<br>[45.09] | 1.312<br>[33.32] | 1.187<br>[30.14] | -----            | 0.719<br>[18.26] |
| 3      | G34000R000  | 0.898<br>[22.81] | 0.763<br>[19.38] | 2.143<br>[54.43] | 1.688<br>[42.88] | 1.423<br>[36.14] | 0.234<br>[5.94]  | 0.719<br>[18.26] |
| 3      | G42000R000  | 0.895<br>[22.73] | 0.768<br>[19.51] | 2.458<br>[62.43] | 2.000<br>[50.80] | 1.750<br>[44.45] | 0.234<br>[5.94]  | 0.719<br>[18.26] |
| 3      | G50000R000  | 1.020<br>[25.91] | 0.763<br>[19.38] | 2.861<br>[72.67] | 2.281<br>[57.94] | 2.031<br>[51.59] | 0.234<br>[5.94]  | 0.719<br>[18.26] |
| 3      | G60000R000  | 1.688<br>[42.88] | 1.481<br>[37.62] | 2.905<br>[73.78] | 2.375<br>[60.33] | 2.075<br>[52.71] | 0.438<br>[11.11] | 0.719<br>[18.26] |
| 3      | G66000R000  | 1.269<br>[32.23] | 1.130<br>[28.70] | 2.429<br>[61.70] | 1.969<br>[50.01] | 1.704<br>[43.28] | 0.250<br>[6.35]  | 0.719<br>[18.26] |
| 2      | G75000R000  | 1.375<br>[34.93] | 1.125<br>[28.58] | 2.865<br>[72.77] | 2.281<br>[57.94] | 2.031<br>[51.59] | -----            | 0.719<br>[18.26] |
| 3      | G104000R000 | 1.688<br>[42.88] | 1.481<br>[37.62] | 2.905<br>[73.78] | 2.375<br>[60.33] | 2.075<br>[52.71] | 0.438<br>[11.11] | 0.719<br>[18.26] |

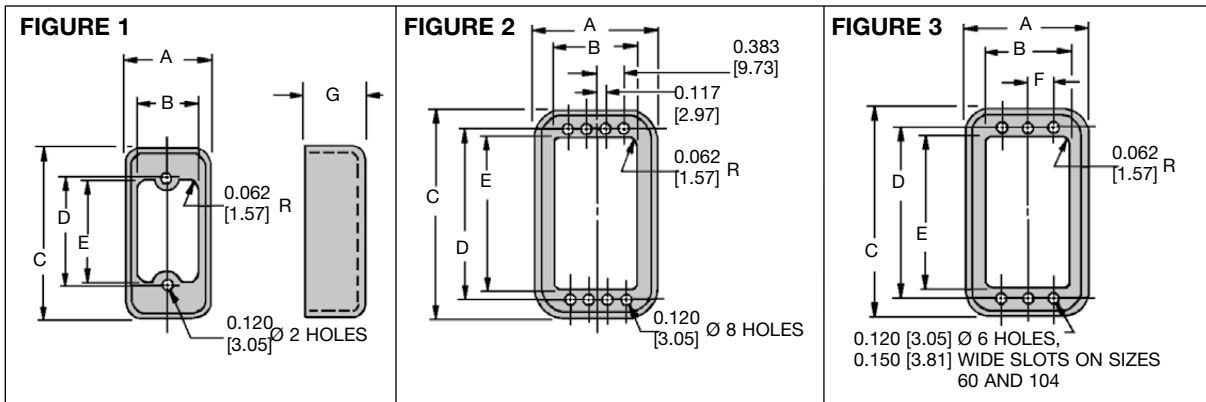
**MATERIAL:**  
0.040 [1.02]  
THICK  
ALUMINUM

**FINISH:**  
YELLOW  
OR  
BLACK  
ANODIZE



## DIMENSIONS FOR MALE SHELLS (P)

QUALIFIED TO MIL-DTL-28748



| FIGURE | PART NUMBER | A                | B                | C                | D                | E                | F                | G                |
|--------|-------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| 1      | G9000P000   | 0.495<br>[12.57] | 0.380<br>[9.65]  | 1.435<br>[36.45] | 1.000<br>[25.40] | 0.875<br>[22.23] | -----            | 0.719<br>[18.26] |
| 1      | G14000P000  | 0.562<br>[14.27] | 0.445<br>[11.30] | 1.375<br>[34.93] | 0.938<br>[23.83] | 0.812<br>[20.62] | -----            | 0.719<br>[18.26] |
| 1      | G18000P000  | 0.683<br>[17.35] | 0.575<br>[14.61] | 1.435<br>[36.45] | 1.000<br>[25.40] | 0.875<br>[22.23] | -----            | 0.719<br>[18.26] |
| 1      | G20000P000  | 0.562<br>[14.27] | 0.453<br>[11.51] | 1.687<br>[42.85] | 1.250<br>[31.75] | 1.125<br>[28.58] | -----            | 0.719<br>[18.26] |
| 1      | G26000P000  | 0.682<br>[17.32] | 0.580<br>[14.73] | 1.750<br>[44.50] | 1.312<br>[33.32] | 1.187<br>[30.14] | -----            | 0.719<br>[18.26] |
| 3      | G34000P000  | 0.870<br>[22.10] | 0.763<br>[19.38] | 2.120<br>[53.85] | 1.688<br>[42.88] | 1.423<br>[36.14] | 0.234<br>[5.94]  | 0.719<br>[18.26] |
| 3      | G42000P000  | 0.875<br>[22.23] | 0.768<br>[19.51] | 2.432<br>[61.77] | 2.000<br>[50.80] | 1.750<br>[44.45] | 0.234<br>[5.94]  | 0.719<br>[18.26] |
| 3      | G50000P000  | 1.000<br>[25.40] | 0.763<br>[19.38] | 2.841<br>[72.16] | 2.281<br>[57.94] | 2.031<br>[51.59] | 0.234<br>[5.94]  | 0.719<br>[18.26] |
| 3      | G60000P000  | 1.665<br>[42.29] | 1.481<br>[37.62] | 2.885<br>[73.28] | 2.375<br>[60.33] | 2.075<br>[52.71] | 0.438<br>[11.11] | 0.719<br>[18.26] |
| 3      | G66000P000  | 1.249<br>[31.72] | 1.130<br>[28.70] | 2.405<br>[61.09] | 1.969<br>[50.01] | 1.704<br>[43.28] | 0.250<br>[6.35]  | 0.719<br>[18.26] |
| 2      | G75000P000  | 1.355<br>[34.42] | 1.125<br>[28.58] | 2.845<br>[72.26] | 2.281<br>[57.94] | 2.031<br>[51.59] | -----            | 0.719<br>[18.26] |
| 3      | G104000P000 | 1.665<br>[42.29] | 1.481<br>[37.62] | 2.885<br>[73.28] | 2.375<br>[60.33] | 2.075<br>[52.71] | 0.438<br>[11.11] | 0.719<br>[18.26] |

MATERIAL: 0.040 [1.02] THICK ALUMINUM

FINISH: YELLOW OR BLACK ANODIZE



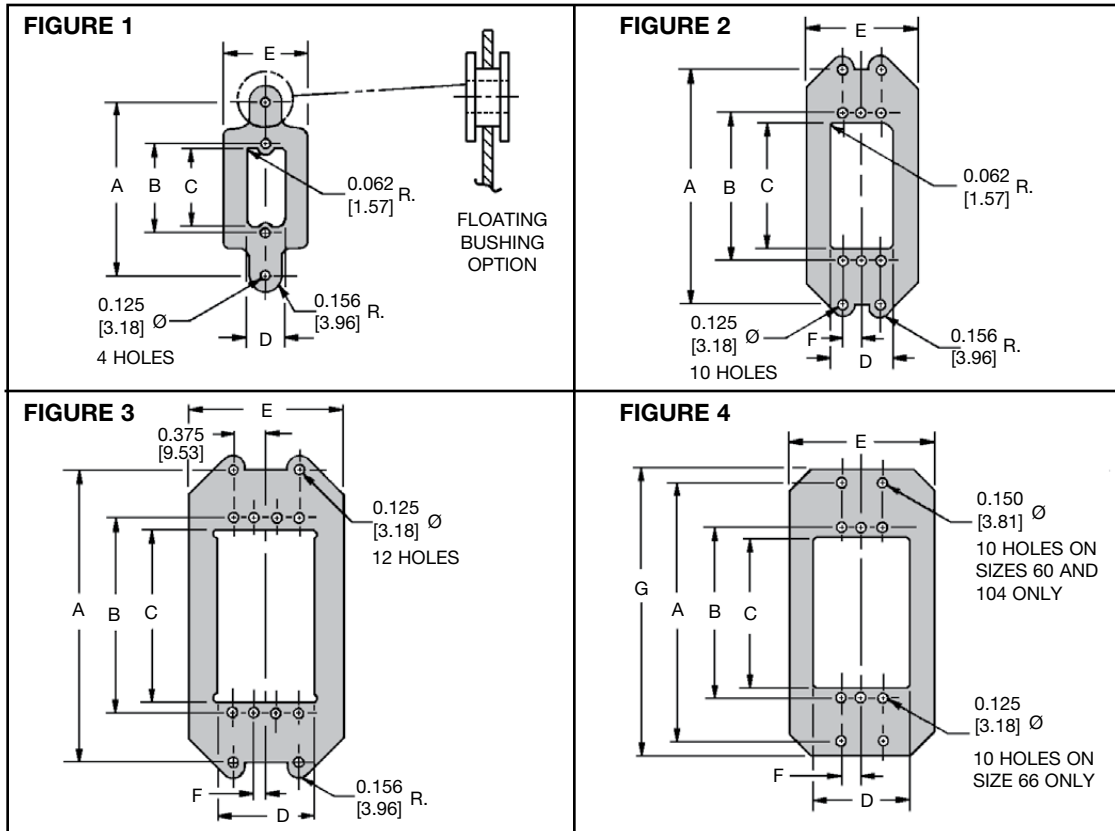
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# ACCESSORIES FOR RECTANGULAR CONNECTORS

Standard  
Density  
Rectangular

## DIMENSIONS FOR MOUNTING PLATES (H) QUALIFIED TO MIL-DTL-28748

Mounting plates provide a simple, economical means of mounting the connector to any supporting surface. They can be used with or without shells and are available with floating bushings for “blind mountings” to facilitate alignment and coupling of the connector.



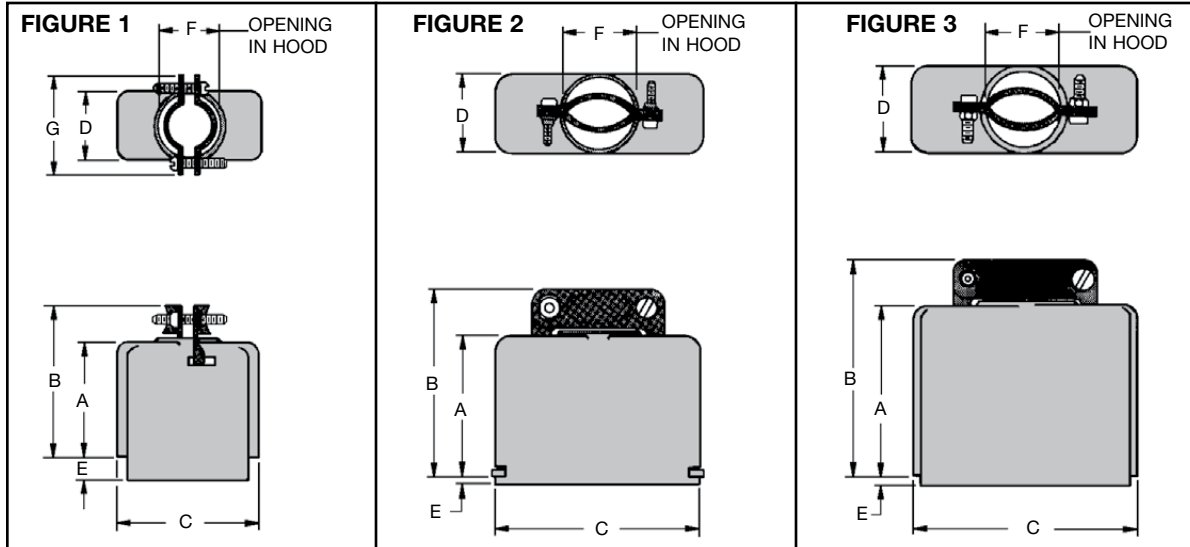
| FIGURE | PART NUMBER | A                | B                | C                | D                | E                | F                | G                |
|--------|-------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| 1      | G9000H000   | 2.016<br>[51.21] | 1.000<br>[25.40] | 0.876<br>[22.25] | 0.406<br>[10.31] | 0.958<br>[24.33] | ----             | ----             |
| 1      | G14000H000  | 1.953<br>[49.61] | 0.937<br>[23.80] | 0.812<br>[20.62] | 0.469<br>[11.91] | 1.015<br>[25.78] | ----             | ----             |
| 1      | G18000H000  | 2.016<br>[51.21] | 1.000<br>[25.40] | 0.875<br>[22.23] | 0.594<br>[15.09] | 1.141<br>[28.98] | ----             | ----             |
| 1      | G20000H000  | 2.266<br>[57.56] | 1.250<br>[31.75] | 1.125<br>[28.58] | 0.468<br>[11.89] | 1.016<br>[25.81] | ----             | ----             |
| 1      | G26000H000  | 2.328<br>[59.13] | 1.312<br>[33.32] | 1.188<br>[30.18] | 0.594<br>[15.09] | 1.140<br>[28.96] | ----             | ----             |
| 2      | G34000H000  | 2.703<br>[68.66] | 1.687<br>[42.85] | 1.438<br>[36.53] | 0.750<br>[19.05] | 1.328<br>[33.73] | 0.234<br>[5.94]  | ----             |
| 2      | G42000H000  | 3.016<br>[76.61] | 2.000<br>[50.80] | 1.750<br>[44.45] | 0.750<br>[19.05] | 1.328<br>[33.73] | 0.234<br>[5.94]  | ----             |
| 2      | G50000H000  | 3.422<br>[86.92] | 2.281<br>[57.94] | 2.031<br>[51.59] | 0.750<br>[19.05] | 1.453<br>[36.91] | 0.234<br>[5.94]  | ----             |
| 4      | G60000H000  | 3.500<br>[88.90] | 2.375<br>[60.33] | 2.125<br>[53.98] | 1.488<br>[37.74] | 2.000<br>[50.80] | 0.438<br>[11.13] | 3.875<br>[98.43] |
| 4      | G66000H000  | 2.984<br>[75.79] | 1.969<br>[50.01] | 1.718<br>[43.64] | 1.125<br>[28.58] | 1.688<br>[42.88] | 0.250<br>[6.35]  | 3.296<br>[83.72] |
| 3      | G75000H000  | 3.422<br>[86.92] | 2.281<br>[57.94] | 2.031<br>[51.59] | 1.109<br>[28.17] | 1.797<br>[45.65] | 0.117<br>[2.98]  | ----             |
| 4      | G104000H000 | 3.500<br>[88.90] | 2.375<br>[60.33] | 2.125<br>[53.98] | 1.488<br>[37.74] | 2.000<br>[50.80] | 0.438<br>[11.13] | 3.875<br>[98.43] |

MATERIAL: ALUMINUM

FINISH: YELLOW OR  
BLACK ANODIZE

FOR FLOATING BUSHING  
OPTION USE CODE “FB”  
IN STEP 9 OF ORDERING  
INFORMATION

## CABLE ADAPTERS DIMENSIONS FOR TOP OPENING HOODS (J,Q)



| FIGURE | PART NUMBER | A                | B                | C                | D                | E               | F                                  | G                |
|--------|-------------|------------------|------------------|------------------|------------------|-----------------|------------------------------------|------------------|
| 3      | G700000J0   | 1.140<br>[28.96] | 1.549<br>[39.34] | 1.225<br>[31.12] | 0.437<br>[11.10] | 0.200<br>[5.08] | 0.312 Ø<br>[7.92]                  | -----            |
| 3      | G800000J0   | 1.000<br>[25.40] | 1.304<br>[33.12] | 0.812<br>[20.62] | 0.437<br>[11.10] | 0.281<br>[7.14] | 0.250 Ø<br>[6.35]                  | -----            |
| 1      | G900000J0   | 1.245<br>[31.62] | 1.636<br>[41.55] | 1.357<br>[34.47] | 0.437<br>[11.10] | 0.293<br>[7.44] | 0.375 x 0.516<br>[9.53] x [13.11]  | 0.812<br>[20.62] |
| 3      | G900000J20  | 0.855<br>[21.72] | 1.235<br>[31.38] | 1.340<br>[34.04] | 0.437<br>[11.10] | 0.255<br>[6.48] | 0.312 Ø<br>[7.92]                  | -----            |
| 1      | G1400000J0  | 1.200<br>[30.48] | 1.591<br>[40.41] | 1.250<br>[31.75] | 0.500<br>[12.70] | 0.281<br>[7.14] | 0.438 x 0.495<br>[11.13] x [12.57] | 0.812<br>[20.62] |
| 3      | G1400000J30 | 1.188<br>[30.18] | 1.569<br>[39.86] | 1.250<br>[31.75] | 0.500<br>[12.70] | 0.281<br>[7.14] | 0.375 Ø<br>[9.53]                  | -----            |
| 1      | G1800000J0  | 1.188<br>[30.18] | 1.621<br>[41.17] | 1.312<br>[33.32] | 0.624<br>[15.85] | 0.327<br>[8.31] | 0.531 Ø<br>[13.49]                 | 0.938<br>[23.83] |
| 1      | G2000000J0  | 1.312<br>[33.32] | 1.703<br>[43.26] | 1.580<br>[40.13] | 0.502<br>[12.80] | 0.281<br>[7.14] | 0.442 x 0.659<br>[11.23] x [16.74] | 0.812<br>[20.62] |
| 3      | G2100000J0  | 1.335<br>[33.91] | 1.780<br>[45.21] | 2.290<br>[58.17] | 0.437<br>[11.10] | 0.245<br>[6.22] | 0.375 Ø<br>[9.53]                  | -----            |
| 3      | G2600000J0  | 1.281<br>[32.54] | 1.727<br>[43.87] | 1.625<br>[41.28] | 0.624<br>[15.85] | 0.281<br>[7.14] | 0.375 x 0.594<br>[9.53] x [15.09]  | -----            |
| 3      | G3400000J0  | 1.250<br>[31.75] | 1.652<br>[41.96] | 2.000<br>[50.80] | 0.834<br>[21.18] | 0.271<br>[6.88] | 0.700 Ø<br>[17.79]                 | -----            |
| 1      | G4100000J0  | 1.250<br>[31.75] | 1.641<br>[41.68] | 2.690<br>[68.31] | 0.507<br>[12.88] | 0.315<br>[8.00] | 0.445 x 0.630<br>[11.30] x [16.00] | 0.812<br>[20.62] |
| 3      | G4200000J0  | 1.300<br>[33.02] | 1.700<br>[43.18] | 2.312<br>[58.72] | 0.830<br>[21.08] | 0.093<br>[2.36] | 0.695 Ø<br>[17.65]                 | -----            |
| 3      | G5000000J0  | 1.834<br>[46.58] | 2.292<br>[58.22] | 2.600<br>[66.04] | 0.812<br>[20.62] | 0.099<br>[2.51] | 0.750 x 0.990<br>[19.05] x [25.15] | -----            |
| 3      | G5000000J20 | 1.297<br>[32.94] | 1.708<br>[43.38] | 2.594<br>[65.89] | 0.812<br>[20.62] | 0.093<br>[2.36] | 0.625 Ø<br>[15.88]                 | -----            |
| 3      | G5000000J30 | 1.832<br>[46.53] | 2.292<br>[58.22] | 2.600<br>[66.04] | 0.812<br>[20.62] | 0.139<br>[3.53] | 0.750 Ø<br>[19.05]                 | -----            |
| 3      | G5000000J50 | 1.297<br>[32.94] | 1.745<br>[44.32] | 2.594<br>[65.89] | 0.812<br>[20.62] | 0.093<br>[2.36] | 0.750 x 0.990<br>[19.05] x [25.15] | -----            |
| 2      | G6000000Q0  | 2.220<br>[56.39] | 2.740<br>[69.60] | 2.846<br>[72.29] | 1.627<br>[41.33] | 0.092<br>[2.34] | 1.188 Ø<br>[30.18]                 | -----            |
| 2      | G6600000Q0  | 1.140<br>[28.96] | 1.644<br>[41.76] | 2.377<br>[60.38] | 1.221<br>[31.01] | 0.110<br>[2.79] | 0.874 x 1.141<br>[22.20] x [28.98] | -----            |
| 3      | G7500000J0  | 2.015<br>[51.18] | 2.530<br>[64.26] | 2.594<br>[65.89] | 1.189<br>[30.20] | 0.085<br>[2.16] | 1.060 Ø<br>[26.92]                 | -----            |
| 2      | G10400000Q0 | 2.220<br>[56.39] | 2.740<br>[69.60] | 2.846<br>[72.29] | 1.627<br>[41.33] | 0.092<br>[2.34] | 1.188 Ø<br>[30.18]                 | -----            |

PLASTIC CABLE CLAMPS FOR RIGID CABLE SUPPORT ARE AVAILABLE ON HOODS FOR CONTACT VARIANTS 34, 42 AND 50. SEE PAGE 57.

MATERIAL: HOODS, CABLE CLAMPS AND KNOBS - ALUMINUM, YELLOW OR BLACK ANODIZE

DESKIRTED HOODS AVAILABLE

HOODS HAVE THREADED MOUNTING HOLES FOR USE WITH POLARIZING GUIDES TO ATTACH TO CONNECTOR

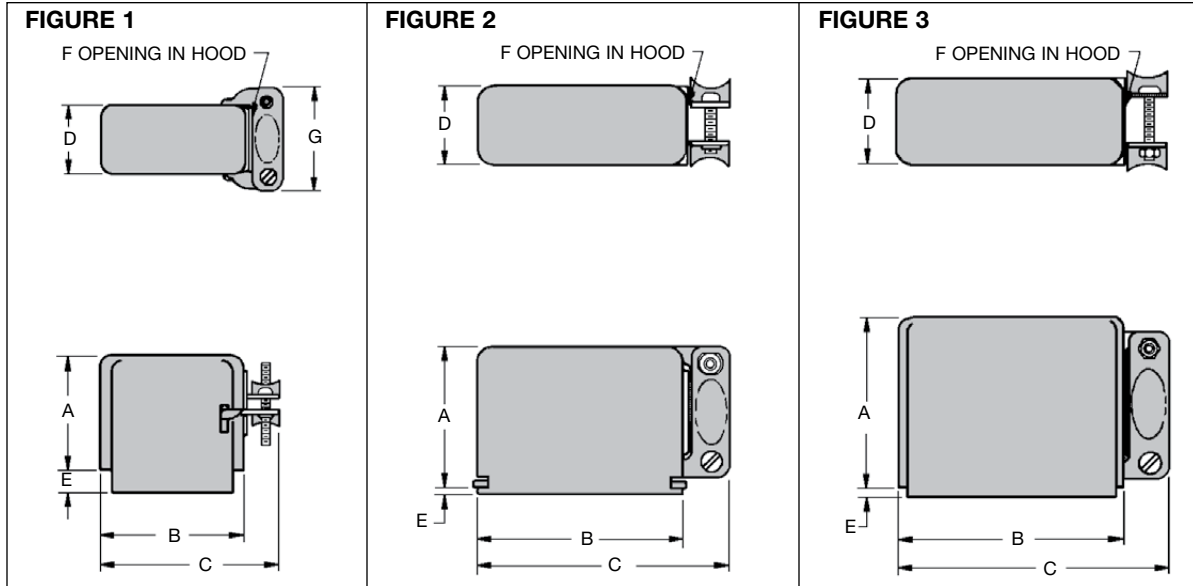


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# ACCESSORIES FOR RECTANGULAR CONNECTORS

Standard  
Density  
Rectangular

## CABLE ADAPTERS DIMENSIONS FOR SIDE OPENING HOODS (L,S)

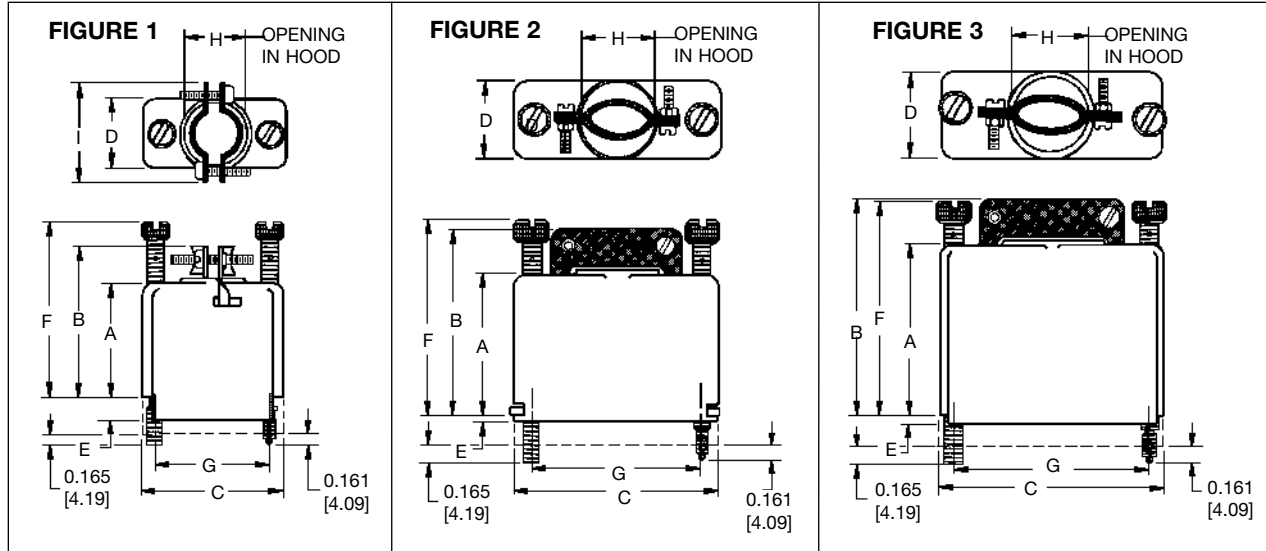


| FIGURE | PART NUMBER | A                | B                | C                | D                | E               | F                                   | G                |
|--------|-------------|------------------|------------------|------------------|------------------|-----------------|-------------------------------------|------------------|
| 1      | G900000L0   | 1.240<br>[31.50] | 1.362<br>[34.59] | 1.726<br>[43.84] | 0.437<br>[11.10] | 0.246<br>[6.25] | 0.375<br>[9.53] x 0.500<br>[12.70]  | 0.812<br>[20.62] |
| 1      | G1400000L0  | 1.187<br>[30.15] | 1.250<br>[31.75] | 1.641<br>[41.68] | 0.500<br>[12.70] | 0.281<br>[7.14] | 0.438<br>[11.13] x 0.500<br>[12.70] | 0.812<br>[20.62] |
| 3      | G1400000L30 | 1.188<br>[30.18] | 1.250<br>[31.75] | 1.631<br>[41.43] | 0.500<br>[12.70] | 0.281<br>[7.14] | 0.375 Ø<br>[9.53]                   | -----            |
| 1      | G1800000L0  | 1.188<br>[30.18] | 1.312<br>[33.32] | 1.745<br>[44.33] | 0.624<br>[15.85] | 0.281<br>[7.14] | 0.546 Ø<br>[13.87]                  | 0.938<br>[23.83] |
| 1      | G2000000L0  | 1.312<br>[33.32] | 1.562<br>[39.67] | 1.953<br>[49.61] | 0.504<br>[12.80] | 0.231<br>[5.87] | 0.442<br>[11.23] x 0.668<br>[16.97] | 0.812<br>[20.62] |
| 3      | G2100000L0  | 1.335<br>[33.91] | 2.290<br>[58.17] | 2.736<br>[69.49] | 0.437<br>[11.10] | 0.245<br>[6.22] | 0.375 Ø<br>[9.53]                   | -----            |
| 3      | G2600000L0  | 1.281<br>[32.54] | 1.625<br>[41.28] | 2.071<br>[52.60] | 0.624<br>[15.85] | 0.281<br>[7.14] | 0.375<br>[9.53] x 0.594<br>[15.09]  | -----            |
| 3      | G3400000L0  | 1.250<br>[31.75] | 2.000<br>[50.80] | 2.403<br>[61.04] | 0.834<br>[21.19] | 0.271<br>[6.88] | 0.700 Ø<br>[17.78]                  | -----            |
| 1      | G4100000L0  | 1.250<br>[31.75] | 2.690<br>[68.33] | 3.136<br>[79.65] | 0.507<br>[12.88] | 0.315<br>[8.00] | 0.426<br>[10.82] x 0.615<br>[15.62] | -----            |
| 3      | G4200000L0  | 1.300<br>[33.02] | 2.312<br>[58.72] | 2.712<br>[68.88] | 0.830<br>[21.08] | 0.093<br>[2.36] | 0.695 Ø<br>[17.65]                  | -----            |
| 3      | G5000000L0  | 1.834<br>[46.58] | 2.678<br>[68.02] | 3.124<br>[79.35] | 0.812<br>[20.62] | 0.093<br>[2.36] | 0.750<br>[19.05] x 0.990<br>[25.15] | -----            |
| 2      | G6600000S0  | 1.140<br>[28.96] | 2.377<br>[60.38] | 2.947<br>[74.85] | 1.221<br>[31.01] | 0.110<br>[2.79] | 0.845 Ø<br>[21.46]                  | -----            |
| 3      | G7500000L0  | 2.015<br>[51.18] | 2.594<br>[65.89] | 3.109<br>[78.97] | 1.189<br>[30.20] | 0.085<br>[2.16] | 1.060 Ø<br>[26.92]                  | -----            |

**MATERIAL: HOODS, CABLE CLAMPS AND KNOBS - ALUMINUM, YELLOW OR BLACK ANODIZE**  
**HOODS HAVE THREADED MOUNTING HOLES FOR USE WITH POLARIZING GUIDES TO ATTACH TO CONNECTOR**  
**DESKIRTED HOODS AVAILABLE**

## CABLE ADAPTERS

### DIMENSIONS FOR TOP OPENING HOODS WITH JACKSCREW SYSTEM (J, Y, Z)



| FIGURE | PART NUMBER | A                | B                | C                | D                | E               | F                | G                | H                                   | I                |
|--------|-------------|------------------|------------------|------------------|------------------|-----------------|------------------|------------------|-------------------------------------|------------------|
| 1      | G900E100J0  | 1.245<br>[31.62] | 1.636<br>[41.55] | 1.357<br>[34.47] | 0.437<br>[11.10] | 0.293<br>[7.44] | 1.943<br>[49.35] | 1.000<br>[25.40] | 0.375<br>[9.53] x 0.516<br>[13.11]  | 0.812<br>[20.62] |
| 1      | G1400E100J0 | 1.200<br>[30.48] | 1.591<br>[40.41] | 1.250<br>[31.75] | 0.500<br>[12.70] | 0.281<br>[7.14] | 1.864<br>[46.89] | 0.936<br>[23.77] | 0.438<br>[11.13] x 0.495<br>[12.57] | 0.812<br>[20.62] |
| 1      | G1800E100J0 | 1.188<br>[30.18] | 1.621<br>[41.17] | 1.312<br>[33.32] | 0.624<br>[15.85] | 0.327<br>[8.31] | 1.864<br>[46.89] | 1.000<br>[25.40] | 0.531 Ø<br>[13.49]                  | 0.938<br>[23.83] |
| 1      | G2000E100J0 | 1.312<br>[33.32] | 1.703<br>[43.26] | 1.580<br>[40.13] | 0.502<br>[12.80] | 0.281<br>[7.14] | 1.882<br>[47.80] | 1.250<br>[31.75] | 0.442<br>[11.23] x 0.659<br>[16.74] | 0.812<br>[20.62] |
| 3      | G2100E100J0 | 1.335<br>[33.91] | 1.780<br>[45.21] | 2.290<br>[58.17] | 0.437<br>[11.10] | 0.245<br>[6.22] | 1.989<br>[50.52] | 1.936<br>[49.17] | 0.375 Ø<br>[9.53]                   | -----            |
| 3      | G2600E100J0 | 1.281<br>[32.54] | 1.727<br>[43.87] | 1.625<br>[41.28] | 0.624<br>[15.85] | 0.281<br>[7.14] | 1.906<br>[48.41] | 1.312<br>[33.32] | 0.375<br>[9.53] x 0.594<br>[15.09]  | -----            |
| 3      | G3400000Y0  | 1.250<br>[31.75] | 1.652<br>[41.96] | 2.000<br>[50.80] | 0.834<br>[21.18] | 0.271<br>[6.88] | 1.780<br>[45.21] | 1.687<br>[42.85] | 0.700 Ø<br>[17.79]                  | -----            |
| 1      | G4100E100J0 | 1.250<br>[31.75] | 1.641<br>[41.68] | 2.690<br>[68.31] | 0.507<br>[12.88] | 0.315<br>[8.00] | 1.873<br>[47.57] | 2.312<br>[58.72] | 0.445<br>[11.30] x 0.630<br>[16.00] | 0.812<br>[20.62] |
| 3      | G4200000Y0  | 1.300<br>[33.02] | 1.700<br>[43.18] | 2.312<br>[58.72] | 0.830<br>[21.08] | 0.093<br>[2.36] | 1.826<br>[46.38] | 2.000<br>[50.80] | 0.695 Ø<br>[17.63]                  | -----            |
| 3      | G5000000Y0  | 1.834<br>[46.58] | 2.292<br>[58.22] | 2.600<br>[66.04] | 0.812<br>[20.62] | 0.099<br>[2.51] | 2.354<br>[59.79] | 2.281<br>[57.94] | 0.750<br>[19.05] x 0.990<br>[25.15] | -----            |
| 3      | G5000000Y20 | 1.297<br>[32.94] | 1.708<br>[43.38] | 2.594<br>[65.89] | 0.812<br>[20.62] | 0.093<br>[2.36] | 1.827<br>[46.41] | 2.281<br>[57.94] | 0.625 Ø<br>[15.88]                  | -----            |
| 3      | G5000000Y30 | 1.832<br>[46.53] | 2.292<br>[58.22] | 2.600<br>[66.04] | 0.812<br>[20.62] | 0.139<br>[3.53] | 2.354<br>[59.79] | 2.281<br>[57.94] | 0.750 Ø<br>[19.05]                  | -----            |
| 3      | G5000000Y50 | 1.297<br>[32.94] | 1.745<br>[44.32] | 2.594<br>[65.89] | 0.812<br>[20.62] | 0.093<br>[2.36] | 1.826<br>[46.38] | 2.281<br>[57.94] | 0.750<br>[19.05] x 0.990<br>[25.15] | -----            |
| 2      | G6000000Z0  | 2.220<br>[56.39] | 2.740<br>[69.60] | 2.846<br>[72.29] | 1.627<br>[41.33] | 0.092<br>[2.34] | 2.867<br>[72.82] | 2.375<br>[60.33] | 1.188 Ø<br>[30.18]                  | -----            |
| 2      | G6600000Z0  | 1.140<br>[28.96] | 1.644<br>[41.76] | 2.377<br>[60.38] | 1.221<br>[31.01] | 0.110<br>[2.79] | 1.827<br>[46.41] | 1.969<br>[50.01] | 0.874<br>[22.20] x 1.141<br>[28.97] | -----            |
| 3      | G7500000Y0  | 2.015<br>[51.18] | 2.530<br>[64.26] | 2.594<br>[65.89] | 1.189<br>[30.20] | 0.085<br>[2.16] | 2.520<br>[64.01] | 2.281<br>[57.94] | 1.060 Ø<br>[26.92]                  | -----            |
| 2      | G10400000Z0 | 2.220<br>[56.39] | 2.740<br>[69.60] | 2.846<br>[72.29] | 1.627<br>[41.33] | 0.092<br>[2.34] | 2.867<br>[72.82] | 2.375<br>[60.33] | 1.188 Ø<br>[30.18]                  | -----            |

**MATERIAL: HOODS, CABLE CLAMPS AND KNOBS - ALUMINUM, YELLOW OR BLACK ANODIZE**  
**JACKSCREWS - STAINLESS STEEL, PASSIVATED, SEE PAGE 55 FOR THREAD INFORMATION**  
**M 3 x 0.5 METRIC THREADS AVAILABLE ON ZINC PLATED STEEL JACKSCREWS**  
**DESKIRTED HOODS AVAILABLE**

\* WHEN SUPPLIED WITH A FEMALE OR MALE SHELL, THE JACKSCREW MATING LENGTHS  
0.161 [4.09] SHALL BE 0.121 [3.07] AND THE 0.165 [4.19] SHALL BE 0.125 [3.18]

DIMENSIONS ARE IN INCHES [MILLIMETERS].  
ALL DIMENSIONS ARE SUBJECT TO CHANGE. **54**



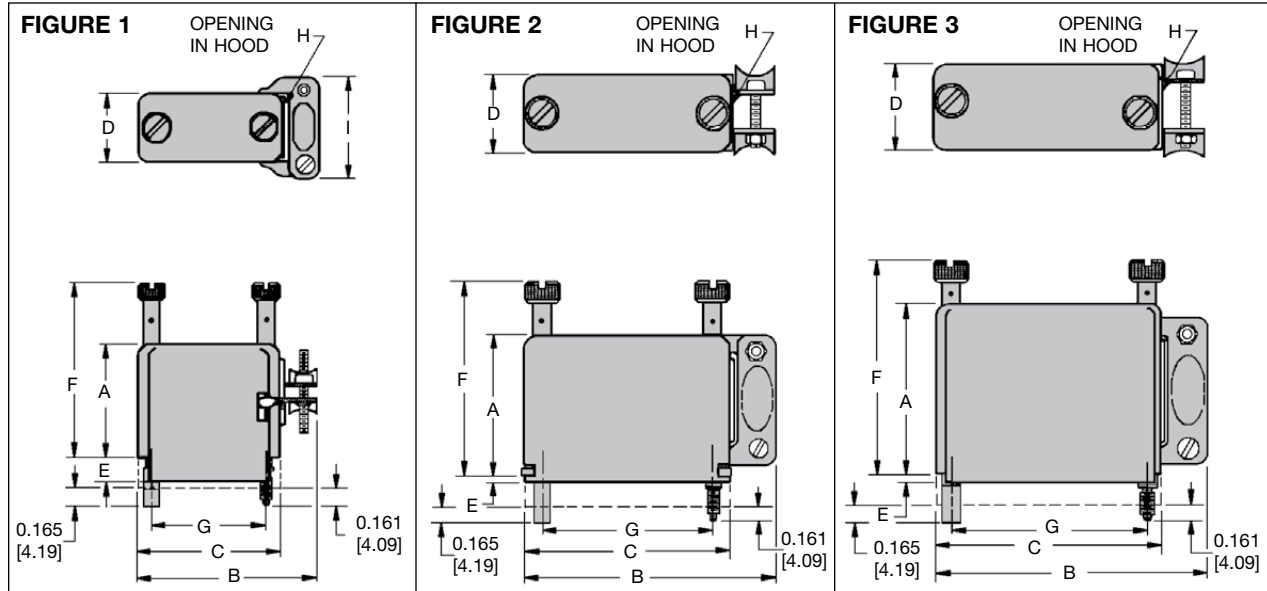
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# ACCESSORIES FOR RECTANGULAR CONNECTORS

Standard  
Density  
Rectangular

## CABLE ADAPTERS

### DIMENSIONS FOR SIDE OPENING HOODS WITH JACKSCREW SYSTEM (L,I,V)



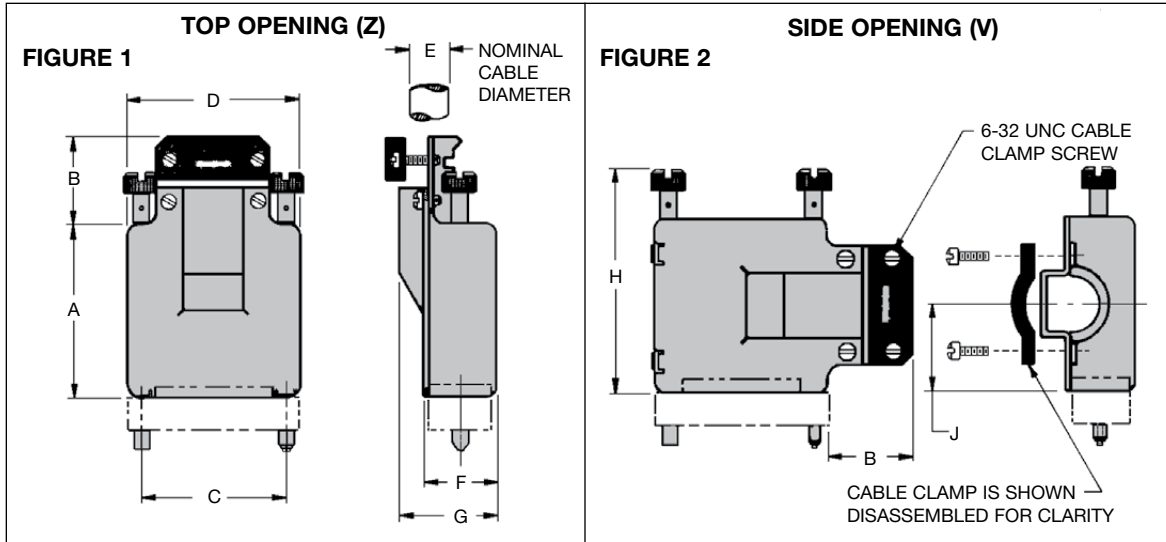
| FIGURE | PART NUMBER  | A                | B                | C                | D                | E               | F                | G                | H                                   | I                |
|--------|--------------|------------------|------------------|------------------|------------------|-----------------|------------------|------------------|-------------------------------------|------------------|
| 1      | G900E100L0   | 1.240<br>[31.50] | 1.726<br>[43.84] | 1.362<br>[34.59] | 0.437<br>[11.10] | 0.246<br>[6.25] | 1.943<br>[49.35] | 1.000<br>[25.40] | 0.375<br>[9.53] x 0.500<br>[12.70]  | 0.812<br>[20.62] |
| 1      | G1400E100L0  | 1.187<br>[30.15] | 1.641<br>[41.68] | 1.250<br>[31.75] | 0.500<br>[12.70] | 0.281<br>[7.14] | 1.864<br>[47.35] | 0.936<br>[23.77] | 0.438<br>[11.13] x 0.500<br>[12.70] | 0.812<br>[20.62] |
| 3      | G1400E100L30 | 1.188<br>[30.18] | 1.631<br>[41.43] | 1.250<br>[31.75] | 0.500<br>[12.70] | 0.281<br>[7.14] | 1.864<br>[47.35] | 0.936<br>[23.77] | 0.375 Ø<br>[9.53]                   | -----            |
| 1      | G1800E100L0  | 1.188<br>[30.18] | 1.745<br>[44.32] | 1.312<br>[33.32] | 0.624<br>[15.85] | 0.281<br>[7.14] | 1.818<br>[46.18] | 1.000<br>[25.40] | 0.546 Ø<br>[13.87]                  | 0.938<br>[23.83] |
| 1      | G2000E100L0  | 1.312<br>[33.32] | 1.953<br>[49.61] | 1.562<br>[39.67] | 0.504<br>[12.80] | 0.231<br>[5.87] | 1.882<br>[47.80] | 1.250<br>[31.75] | 0.442<br>[11.23] x 0.668<br>[16.97] | 0.812<br>[20.62] |
| 3      | G2100E100L0  | 1.335<br>[33.91] | 2.736<br>[69.49] | 2.290<br>[58.17] | 0.437<br>[11.10] | 0.245<br>[6.22] | 1.989<br>[50.52] | 1.936<br>[49.17] | 0.375 Ø<br>[9.53]                   | -----            |
| 3      | G2600E100L0  | 1.281<br>[32.54] | 2.071<br>[52.60] | 1.625<br>[41.28] | 0.624<br>[15.85] | 0.281<br>[7.14] | 1.906<br>[48.41] | 1.312<br>[33.32] | 0.375 x 0.594<br>[9.53] x [15.09]   | -----            |
| 3      | G3400000I0   | 1.250<br>[31.75] | 2.403<br>[61.04] | 2.000<br>[50.80] | 0.834<br>[21.19] | 0.271<br>[6.88] | 1.780<br>[45.21] | 1.687<br>[42.85] | 0.700 Ø<br>[17.78]                  | -----            |
| 3      | G4100E100L0  | 1.250<br>[31.75] | 3.136<br>[79.65] | 2.690<br>[68.33] | 0.507<br>[12.88] | 0.315<br>[8.00] | 1.873<br>[47.57] | 2.312<br>[58.72] | 0.426 x 0.615<br>[10.82] x [15.62]  | -----            |
| 3      | G4200000I0   | 1.300<br>[33.02] | 2.712<br>[68.88] | 2.312<br>[58.72] | 0.830<br>[21.08] | 0.093<br>[2.36] | 1.826<br>[46.38] | 2.000<br>[50.80] | 0.695 Ø<br>[17.65]                  | -----            |
| 3      | G5000000I0   | 1.834<br>[46.58] | 3.124<br>[79.35] | 2.678<br>[68.02] | 0.812<br>[20.62] | 0.093<br>[2.36] | 2.354<br>[59.79] | 2.281<br>[57.94] | 0.750 x 0.990<br>[19.05] x [25.15]  | -----            |
| 2      | G6600000V0   | 1.140<br>[28.96] | 2.947<br>[74.85] | 2.377<br>[60.38] | 1.221<br>[31.01] | 0.110<br>[2.79] | 1.827<br>[46.41] | 1.969<br>[50.01] | 0.845 Ø<br>[21.46]                  | -----            |
| 3      | G7500000I0   | 2.015<br>[51.18] | 3.109<br>[78.97] | 2.594<br>[65.89] | 1.189<br>[30.20] | 0.085<br>[2.16] | 2.520<br>[64.01] | 2.281<br>[57.94] | 1.060 Ø<br>[26.92]                  | -----            |

**MATERIAL: HOODS, CABLE CLAMPS AND KNOBS - ALUMINUM, YELLOW OR BLACK ANODIZE**  
**JACKSCREWS - STAINLESS STEEL, PASSIVATED, SEE PAGE 55 FOR THREAD INFORMATION**  
**M 3 x 0.5 METRIC THREADS AVAILABLE ON ZINC PLATED STEEL JACKSCREWS**  
**DESKIRTED HOODS AVAILABLE UPON REQUEST**

\* WHEN SUPPLIED WITH A FEMALE OR MALE SHELL, THE JACKSCREW MATING LENGTHS 0.161 [4.09] SHALL BE 0.121 [3.07]  
AND THE 0.165 [4.19] SHALL BE 0.125 [3.18].

## CABLE ADAPTERS

### DIMENSIONS FOR SIDE ACCESS HOODS WITH JACKSCREW SYSTEM (Z,V)



| FIGURE | PART NUMBER | A                | B                | C                | D                | E                | F                | G                | H                | J                |
|--------|-------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| 1      | G3400000Z0  | 2.100<br>[53.34] | 0.812<br>[20.62] | 1.688<br>[42.88] | 2.100<br>[53.34] | 0.438<br>[11.13] | 0.860<br>[21.84] | 1.110<br>[28.19] | 2.605<br>[66.17] | ----             |
| 2      | G3400000V0  | 2.100<br>[53.34] | 0.812<br>[20.62] | 1.688<br>[42.88] | 2.100<br>[53.34] | 0.438<br>[11.13] | 0.860<br>[21.84] | 1.110<br>[28.19] | 2.605<br>[66.17] | 1.050<br>[26.67] |
| 1      | G5000000Z0  | 2.693<br>[68.40] | 0.812<br>[20.62] | 2.282<br>[57.96] | 2.693<br>[68.40] | 0.625<br>[15.88] | 0.860<br>[21.84] | 1.235<br>[31.37] | 3.198<br>[81.23] | ----             |
| 2      | G5000000V0  | 2.693<br>[68.40] | 0.812<br>[20.62] | 2.282<br>[57.96] | 2.693<br>[68.40] | 0.625<br>[15.88] | 0.860<br>[21.84] | 1.235<br>[31.37] | 3.198<br>[81.23] | 1.347<br>[34.21] |
| 1      | G7500000Z0  | 2.693<br>[68.40] | 0.937<br>[23.80] | 2.282<br>[57.96] | 2.693<br>[68.40] | 1.000<br>[25.40] | 1.219<br>[30.96] | 1.720<br>[43.69] | 3.198<br>[81.23] | ----             |
| 2      | G7500000V0  | 2.693<br>[68.40] | 0.937<br>[23.80] | 2.282<br>[57.96] | 2.693<br>[68.40] | 1.000<br>[25.40] | 1.219<br>[30.96] | 1.720<br>[43.69] | 3.245<br>[82.42] | 1.347<br>[34.21] |

**MATERIAL: HOODS AND KNOBS - ALUMINUM, YELLOW OR BLACK ANODIZE**  
**CABLE CLAMPS - ALUMINUM, YELLOW OR BLACK ANODIZE**  
**JACKSCREW - STAINLESS STEEL, PASSIVATED, 6-32 THREADS STANDARD**  
**M3 x 0.5 METRIC THREADS AVAILABLE**



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# ACCESSORIES FOR RECTANGULAR CONNECTORS

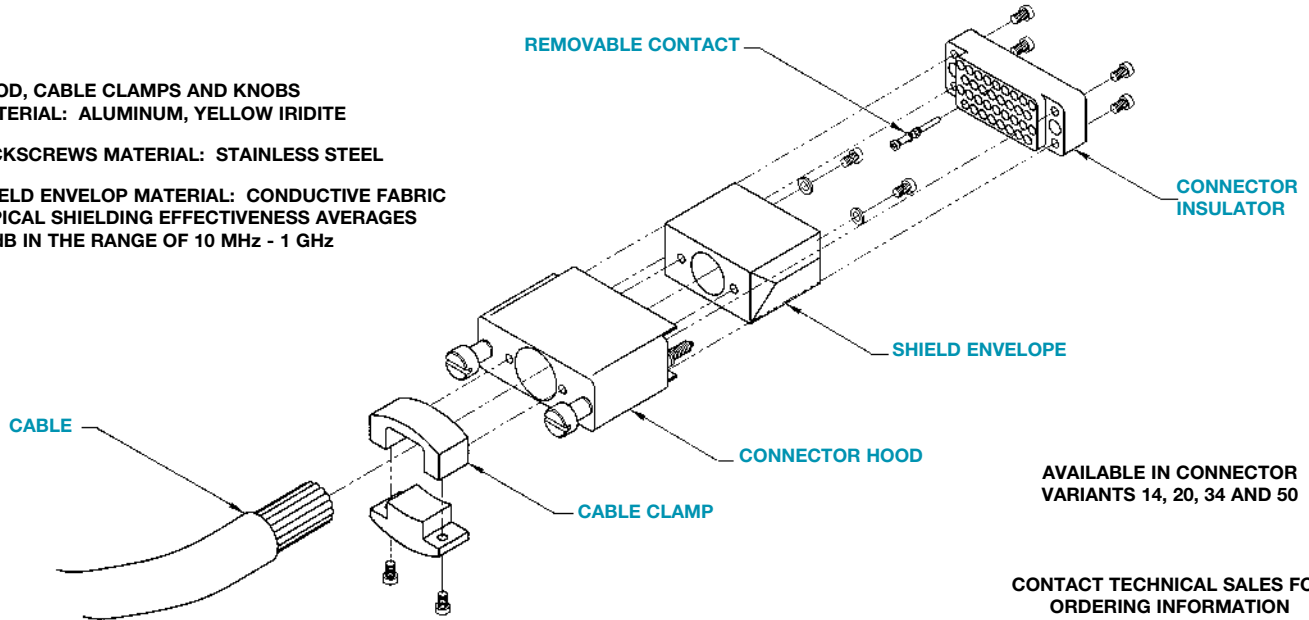
Standard  
Density  
Rectangular

## EMI/RFI SHIELDED HOOD

HOOD, CABLE CLAMPS AND KNOBS  
MATERIAL: ALUMINUM, YELLOW IRIDITE

JACKSCREWS MATERIAL: STAINLESS STEEL

SHIELD ENVELOP MATERIAL: CONDUCTIVE FABRIC  
TYPICAL SHIELDING EFFECTIVENESS AVERAGES  
60 dB IN THE RANGE OF 10 MHz - 1 GHz

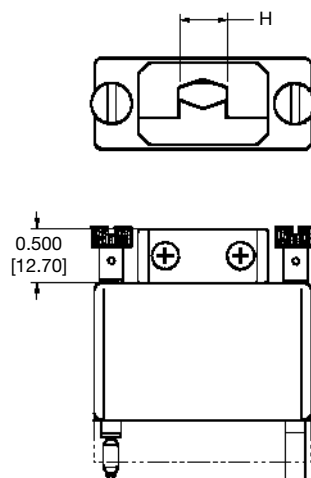


AVAILABLE IN CONNECTOR  
VARIANTS 14, 20, 34 AND 50

CONTACT TECHNICAL SALES FOR  
ORDERING INFORMATION

## TOP OPENING HOODS WITH JACKSCREW SYSTEM AND PLASTIC CABLE CLAMPS

FOR RIGID CABLE SUPPORT



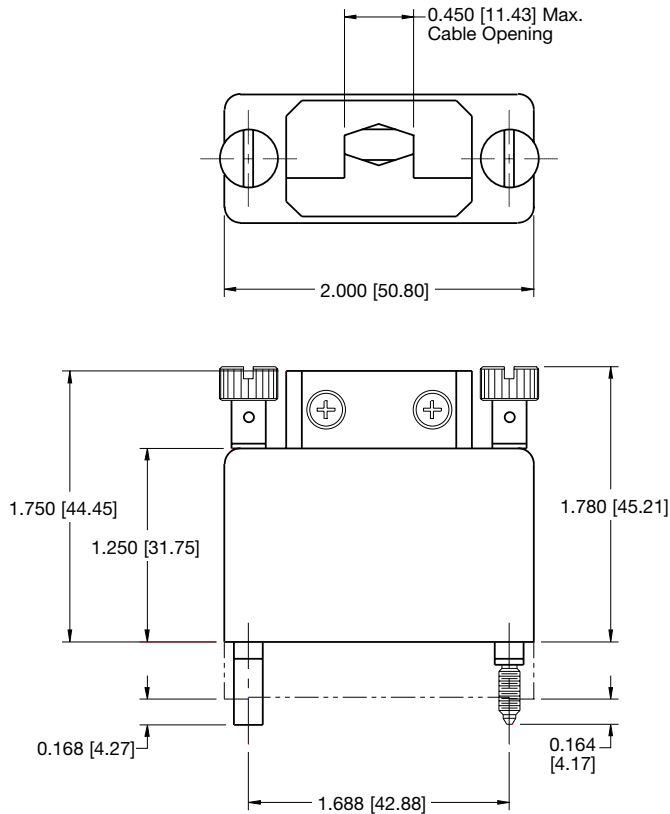
| HOOD PART NUMBER | H                       |
|------------------|-------------------------|
| G3400000Y60      | 0.300 MAX.<br>[7.62] Ø  |
| G3400000Y70      | 0.375 MAX.<br>[9.53] Ø  |
| G3400000Y80      | 0.450 MAX.<br>[11.43] Ø |
| G4200000Y60      | 0.300 MAX.<br>[7.62] Ø  |
| G4200000Y70      | 0.375 MAX.<br>[9.53] Ø  |
| G4200000Y80      | 0.450 MAX.<br>[11.43] Ø |
| G5000000Y60      | 0.300 MAX.<br>[7.62] Ø  |
| G5000000Y70      | 0.375 MAX.<br>[9.53] Ø  |
| G5000000Y80      | 0.450 MAX.<br>[11.43] Ø |

CABLE CLAMPS MATERIAL - COMPOSITE STANDARD,  
GLASS FILLED POLYESTER OPTION

ALUMINUM MATERIAL WITH YELLOW OR BLACK  
ANODIZE FINISH ALSO AVAILABLE FOR CABLE CLAMPS

## EMI/RFI SHIELDED CABLE ADAPTER (HOOD) AND SHELLS (Z2, R2, P2) FOR USE WITH SIZE 34 CONNECTOR VARIANTS DEEP DRAWN STEEL CONSTRUCTION

### SHIELDED TOP OPENING HOOD (Z2)



#### Materials and Finishes:

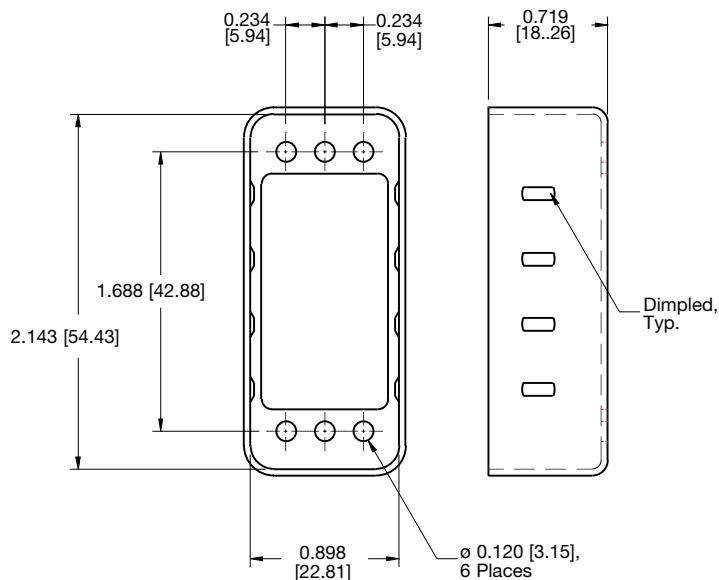
Hood: Steel, nickel plate, or tin plate.

Cable Clamp: Plastic, nickel plate.

Jackscrews: Stainless steel, passivated.

Knobs: Aluminum, anodized.

### SHIELDED FEMALE SHELL (R2)

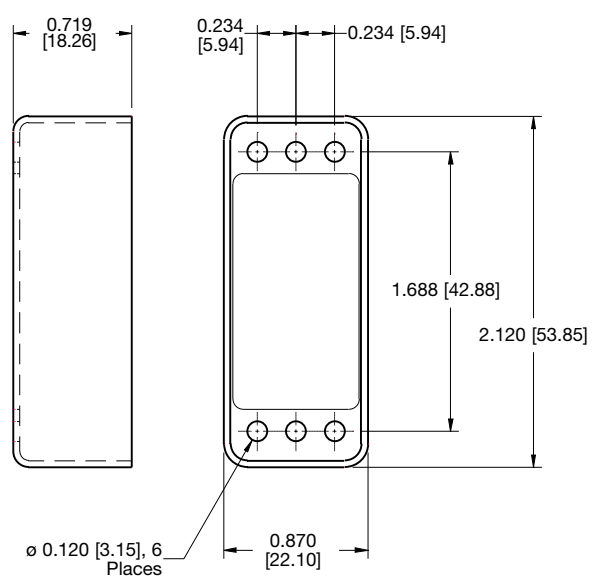


#### Materials and Finishes:

Steel, nickel plate, or tin plate.

Aluminum, chemical conversion coating.

### SHIELDED MALE SHELL (P2)



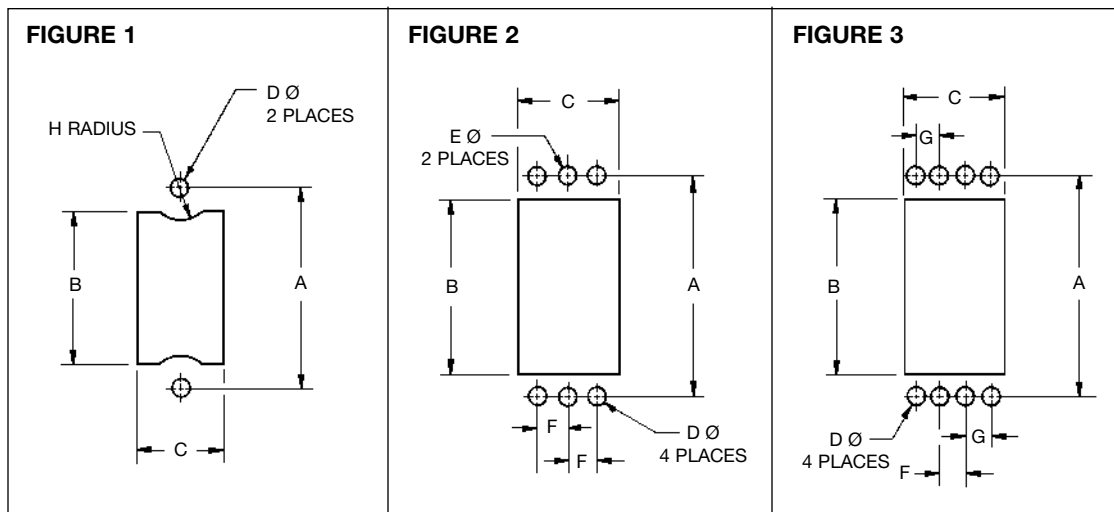


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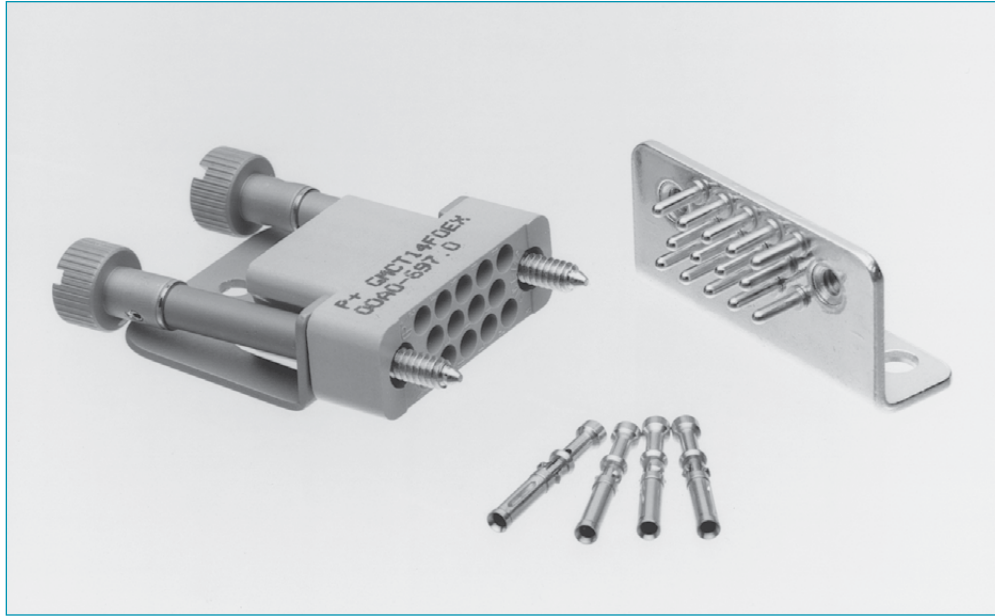
# ACCESSORIES FOR RECTANGULAR CONNECTORS

Standard  
Density  
Rectangular

## PANEL CUT-OUT DIMENSIONS FOR GM SERIES AND GMCT SERIES CONNECTORS



| SIZE | FIGURE | A                | B<br>MIN.        | C<br>MIN.        | D<br>MIN.       | E<br>MIN.       | F                | G               | H<br>MAX.       |
|------|--------|------------------|------------------|------------------|-----------------|-----------------|------------------|-----------------|-----------------|
| 7    | 1      | 0.906<br>[23.01] | 0.660<br>[16.76] | 0.386<br>[9.80]  | 0.120<br>[3.05] | -----           | -----            | -----           | -----           |
| 8    | 1      | 0.562<br>[14.27] | 0.440<br>[11.18] | 0.385<br>[9.78]  | 0.095<br>[2.41] | -----           | -----            | -----           | -----           |
| 9    | 1      | 1.000<br>[25.40] | 0.820<br>[20.83] | 0.386<br>[9.80]  | 0.120<br>[3.05] | -----           | -----            | -----           | -----           |
| 14   | 1      | 0.936<br>[23.77] | 0.817<br>[20.75] | 0.446<br>[11.33] | 0.120<br>[3.05] | -----           | -----            | -----           | 0.118<br>[3.00] |
| 18   | 1      | 1.000<br>[25.40] | 0.880<br>[22.35] | 0.572<br>[14.53] | 0.120<br>[3.05] | -----           | -----            | -----           | 0.115<br>[2.92] |
| 20   | 1      | 1.250<br>[31.75] | 1.129<br>[28.68] | 0.446<br>[11.33] | 0.120<br>[3.05] | -----           | -----            | -----           | 0.115<br>[2.92] |
| 21   | 1      | 1.936<br>[49.17] | 1.830<br>[46.48] | 0.384<br>[9.75]  | 0.120<br>[3.05] | -----           | -----            | -----           | 0.115<br>[2.92] |
| 26   | 1      | 1.312<br>[33.32] | 1.192<br>[30.28] | 0.572<br>[14.53] | 0.120<br>[3.05] | -----           | -----            | -----           | -----           |
| 34   | 2      | 1.687<br>[42.85] | 1.389<br>[35.28] | 0.776<br>[19.71] | 0.120<br>[3.05] | 0.125<br>[3.18] | 0.234<br>[5.94]  | -----           | -----           |
| 41   | 1      | 2.312<br>[58.72] | 2.135<br>[54.23] | 0.446<br>[11.33] | 0.120<br>[3.05] | -----           | -----            | -----           | -----           |
| 42   | 2      | 2.000<br>[50.80] | 1.682<br>[42.72] | 0.776<br>[19.71] | 0.120<br>[3.05] | 0.125<br>[3.18] | 0.234<br>[5.94]  | -----           | -----           |
| 50   | 2      | 2.282<br>[57.96] | 1.983<br>[50.37] | 0.776<br>[19.71] | 0.120<br>[3.05] | 0.125<br>[3.18] | 0.234<br>[5.94]  | -----           | -----           |
| 60   | 2      | 2.375<br>[60.33] | 2.058<br>[52.27] | 1.479<br>[37.57] | 0.120<br>[3.05] | 0.145<br>[3.68] | 0.438<br>[11.13] | -----           | -----           |
| 66   | 2      | 1.968<br>[49.99] | 1.683<br>[42.75] | 1.135<br>[28.83] | 0.120<br>[3.05] | 0.125<br>[3.18] | 0.251<br>[6.38]  | -----           | -----           |
| 75   | 3      | 2.282<br>[57.96] | 1.987<br>[50.47] | 1.120<br>[28.45] | 0.120<br>[3.05] | -----           | 0.234<br>[5.94]  | 0.266<br>[6.76] | -----           |
| 104  | 2      | 2.375<br>[60.33] | 2.058<br>[52.27] | 1.479<br>[37.57] | 0.120<br>[3.05] | 0.145<br>[3.68] | 0.438<br>[11.13] | -----           | -----           |



Positronic Industries' grounding plates were designed especially for aircraft applications where shielded cable must be grounded to the aircraft frame. The ground wires of the shielded cable are piggy-backed out of the cable with ferrules and are crimped to Size 16 female contacts. The female contacts are loaded into standard 14 or 34 contact connector housings. These connectors can then be mated to the grounding plate which is fastened to the aircraft frame. Grounding plates have Size 16 precision-machined male contacts which are swaged and soldered onto the metal

plate. The metal plates (angled and plane) have fixed female jackscrews that accept the rotating jackscrews, which are an integral part of the mating female connector. Long rotating jackscrews extend beyond the edge of the cable adapter of the 14-contact female connector which permits easy coupling to the grounding plate.

Other contact variants are available for grounding plate applications. Contact Technical Sales for information on the availability of other grounding plates offered by Positronic Industries.

## GROUNDING PLATES TECHNICAL CHARACTERISTICS

### MATERIALS AND FINISHES:

|                   |                                                                          |
|-------------------|--------------------------------------------------------------------------|
| Insulator:        | Glass-filled DAP per MIL-M-14, Type SDG-F. Grey or black in color.       |
| Grounding Plates: | Copper alloy with tin plate.                                             |
| Contacts:         | Copper alloy with 0.000010 inch [0.25 microns] gold over nickel plate.   |
| Jackscrew System: | Stainless steel, passivated.                                             |
| Strain Reliefs:   | Steel with zinc plate and chromate seal or aluminum with yellow anodize. |

### MECHANICAL CHARACTERISTICS:

|                  |                                                                                                                                |
|------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Removable        |                                                                                                                                |
| Female Contacts: | Insert contact to rear face of insulator, release from front face of insulator. "Closed Entry" design for highest reliability. |

|                                 |                                                                                          |
|---------------------------------|------------------------------------------------------------------------------------------|
| Contact Retention in Insulator: | 20 lbs. (89N) after 10 cycles of contact insertion/extraction.                           |
| Female Contact Termination:     | Crimp wires, Sizes 20 AWG [0.5 mm <sup>2</sup> ] through 24 AWG [0.25 mm <sup>2</sup> ]. |
| Jackscrews:                     | 6-32 UNC threads.                                                                        |

### ELECTRICAL CHARACTERISTICS:

|                         |                     |
|-------------------------|---------------------|
| Contact Current Rating: | 13 amperes nominal. |
| Insulation Resistance:  | 5 G ohms.           |
| Working Voltage:        | 500 VAC (rms).      |
| Working Temperature:    | -65°C to 150°C.     |

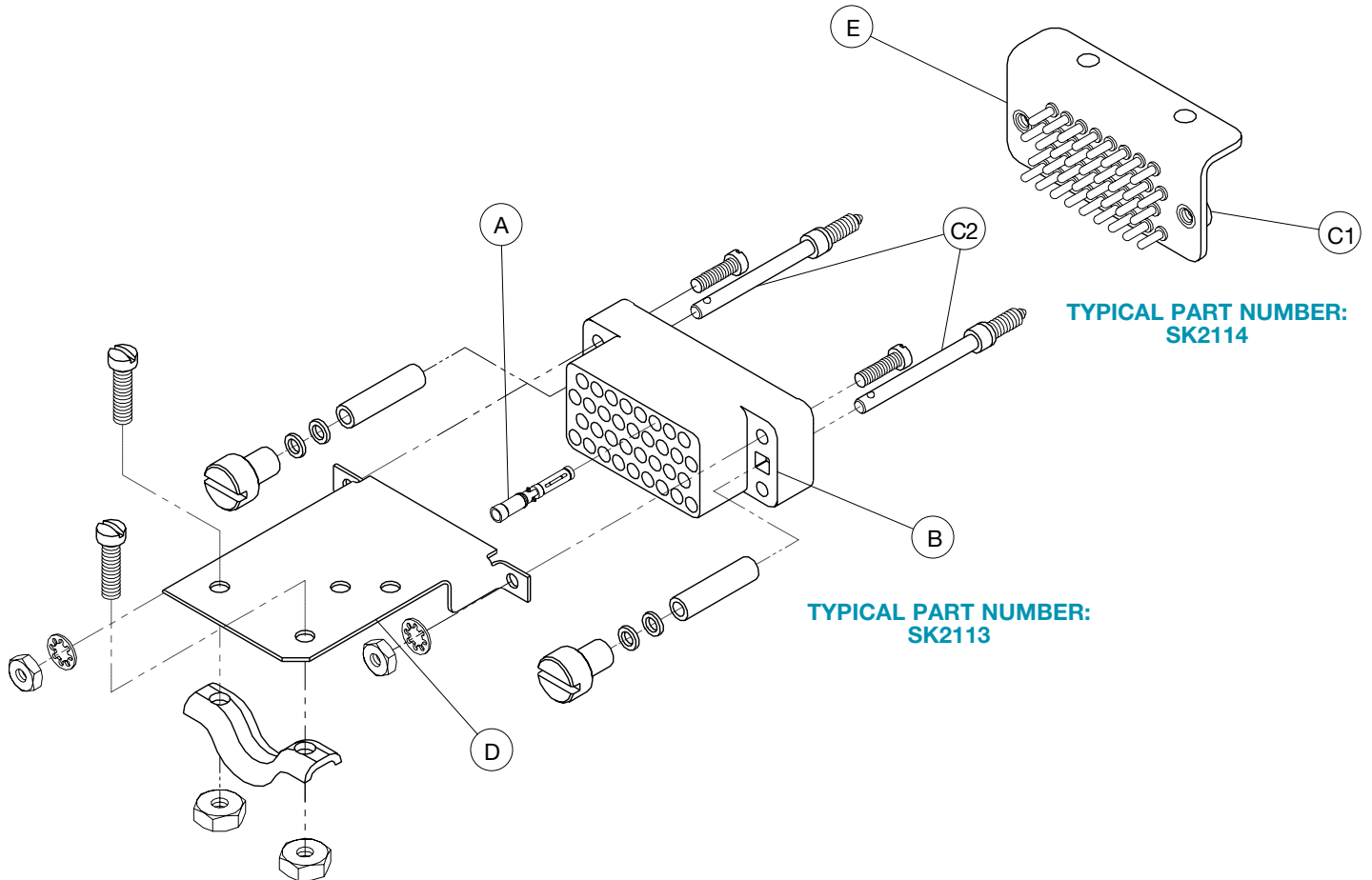


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# GROUNDING PLATES DESIGNED FOR AIRCRAFT APPLICATIONS

Standard  
Density  
Rectangular

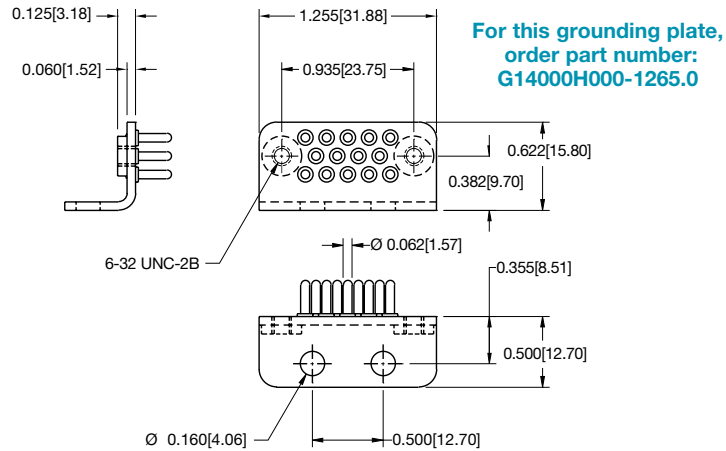
## GROUNDING PLATE COMPONENT DESCRIPTION



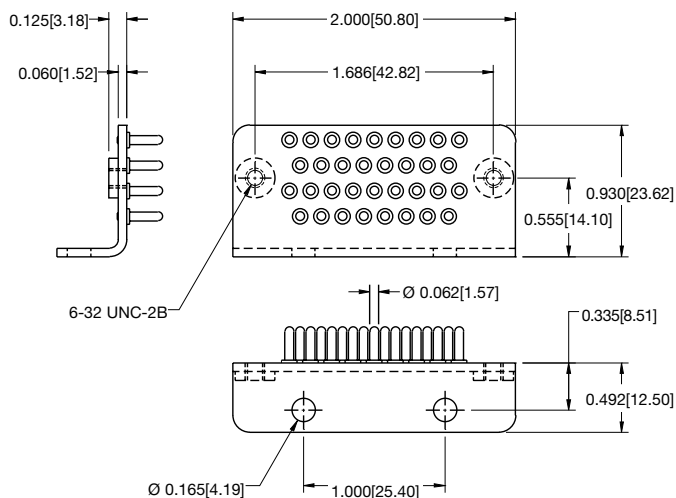
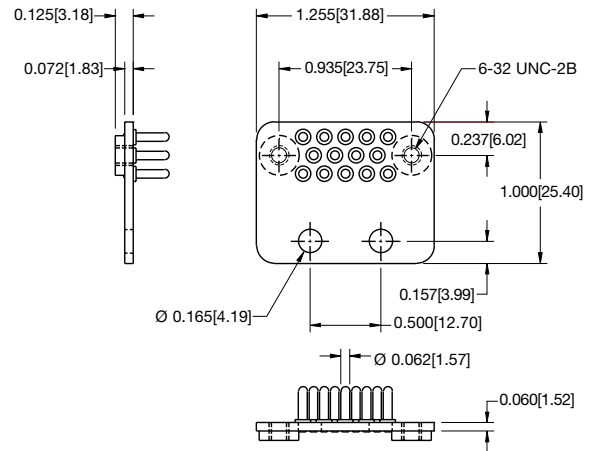
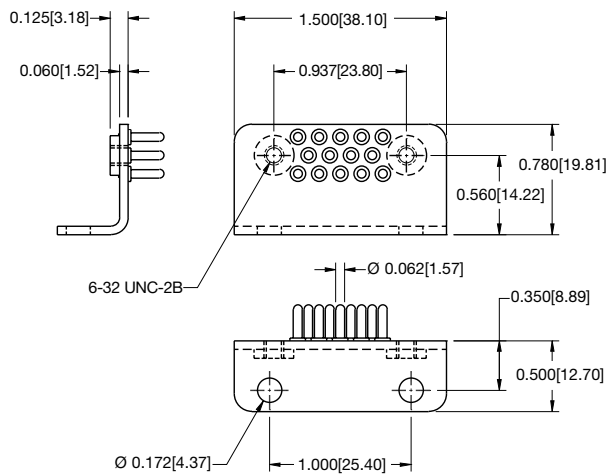
| CONNECTOR COMPONENT DESCRIPTIONS |                                               |
|----------------------------------|-----------------------------------------------|
| ITEM                             | COMPONENT DESCRIPTIONS                        |
| A                                | Female Contacts, Size 16, Crimp Terminations. |
| B                                | Female Connector Insulator.                   |
| C1                               | Fixed Jackscrew.                              |
| C2                               | Rotating Jackscrew.                           |
| D                                | Strain Relief provides cable support.         |
| E                                | Grounding Plate.                              |

## Grounding Plate Ordering Information

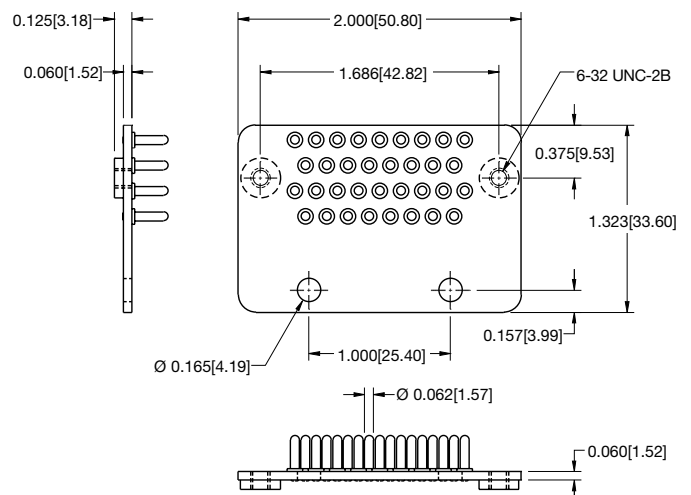
Grounding plates are offered in five (5) different configurations, as shown below. These grounding plates can be used with the connector strain relief assemblies shown to the right below. The connector strain relief assemblies are provided with an appropriate number of FC120N2 female contacts. The FC120N2 contacts feature a "Closed Entry" design and accommodate wire sizes 20 - 24 AWG (0.5 - 0.25 mm<sup>2</sup>). Reference the schematics below for dimensional information. Use the indicated part numbers below to order your grounding plate assemblies from Positronic Industries.



For this grounding plate, order part number: **SK2484**



For this grounding plate, order part number: **SK2114**



For this grounding plate, order part number: **SK2664**



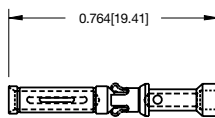
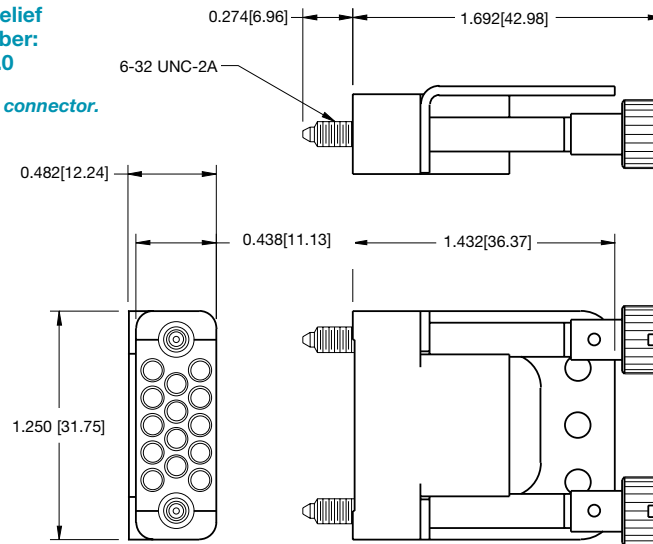
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# GROUNDING PLATES DESIGNED FOR AIRCRAFT APPLICATIONS

Standard  
Density  
Rectangular

For this connector strain relief  
assembly, order part number:  
**GMCT14F0EX00A0-697.0**

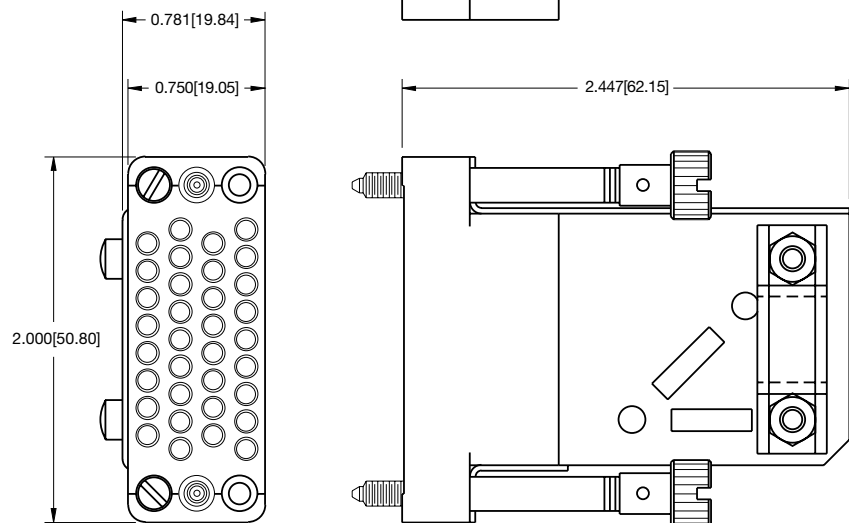
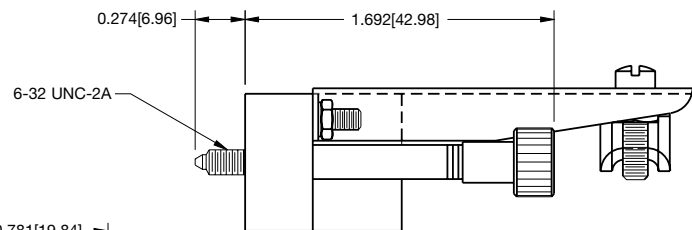
A plastic cable tie is supplied with this connector.



## FC120N2 FEMALE CONTACT "CLOSED ENTRY" DESIGN

(ENLARGED)

The appropriate number of contacts are supplied with the connectors. These crimp termination contacts accommodate wire sizes 20 - 24 AWG (0.5 - 0.25 mm<sup>2</sup>). Contact Technical Sales for crimp tool ordering information.



For this connector strain relief  
assembly, order part number:  
**SK2113**



## CHART #1 MALE CONNECTORS

## PART NUMBER EXPLANATIONS

| M28748/3-                                                                                                                                                                                                                                                                                                                                                                                 | B | 1 | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | S                                                                                                                                                                                             | 1A                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| <b>Step 1 – Basic Part Number</b><br>M28748/3-                                                                                                                                                                                                                                                                                                                                            |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                               | <b>Step 6 – Contacts</b><br>(SEE CHART 5) |
| <b>Step 2 – Insert Size</b><br>B - 9 Contact Variant<br>C - 14 Contact Variant<br>D - 20 Contact Variant<br>E - 26 Contact Variant<br>F - 34 Contact Variant<br>G - 42 Contact Variant<br>H - 50 Contact Variant<br>J - 66 Contact Variant<br>K - 75 Contact Variant<br>L - 104 Contact Variant                                                                                           |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Step 5 – Jackscrews/Guide Pins</b><br>L - Long Jackscrews/Shields Only<br>S - Short Jackscrews/No Shield<br>F - Fixed Jackscrews/No Shield<br>G - Guide Pin/No Shield<br>0 - None Included |                                           |
| <b>Step 3 – Shield/Retaining Plate</b><br><b>Shield</b><br>1 - Top Opening Hood (Size 9-50 & 75)<br>2 - Side Opening Hood (Size 9-50 & 75)<br>3 - Top Opening Hood (Size 66/104)<br>4 - Side Opening Hood (Size 66/104)<br>0 - None<br><b>Retaining Plate</b><br>5 - Retaining Plate (Size 9-26)<br>6 - Retaining Plate (Size 34-75, except Size 66)<br>7 - Retaining Plate (Size 66/104) |   |   | <b>Step 4 – Shell</b><br>A - A (Polarized Plug)<br>B - B (Polarized Plug)<br>C - C (Polarized Plug)<br>D - D (Polarized Plug)<br>E - E (Polarized Plug)<br>F - F (Polarized Plug)<br>G - G (Polarized Plug)<br>H - Unpolarized Plug<br>J - A (Polarized Receptacle)<br>K - B (Polarized Receptacle)<br>L - C (Polarized Receptacle)<br>M - D (Polarized Receptacle)<br>N - E (Polarized Receptacle)<br>P - F (Polarized Receptacle)<br>Q - G (Polarized Receptacle)<br>R - Unpolarized Receptacle<br>0 - None |                                                                                                                                                                                               |                                           |

## CHART #2 FEMALE CONNECTORS

## PART NUMBER EXPLANATIONS

| M28748/4-                                                                                                                                                                                                                                                                                                                                      | C | 1 | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | L                                                                                                                                                                                  | 1A                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| <b>Step 1 – Basic Part Number</b><br>M28748/4                                                                                                                                                                                                                                                                                                  |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                    | <b>Step 6 – Contacts</b><br>(SEE CHART 6) |
| <b>Step 2 – Insert Size</b><br>B - 9 Contact Variant<br>C - 14 Contact Variant<br>D - 20 Contact Variant<br>E - 26 Contact Variant<br>F - 34 Contact Variant<br>G - 42 Contact Variant<br>H - 50 Contact Variant<br>J - 66 Contact Variant<br>K - 75 Contact Variant<br>L - 104 Contact Variant                                                |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Step 5 – Jackscrews/Guide Pins</b><br>L - Long Jackscrews/Shields Only<br>S - Short Jackscrew/No Shield<br>F - Fixed Jackscrew/No Shield<br>G - Guide Pin/No Shield<br>0 - None |                                           |
| <b>Step 3 – Shield/Retaining Plate</b><br>1 - Retaining Plate (Size 9-26)<br>2 - Retaining Plate (Size 34-75, except Size 66)<br>3 - Retaining Plate (Size 66/104)<br>4 - Top Opening Hood (Size 9-50 & 75)<br>5 - Side Opening Hood (Size 9-50 & 75)<br>6 - Top Opening Hood (Size 66/104)<br>7 - Side Opening Hood (Size 66/104)<br>0 - None |   |   | <b>Step 4 – Shell</b><br>A - A (Polarized Receptacle)<br>B - B (Polarized Receptacle)<br>C - C (Polarized Receptacle)<br>D - D (Polarized Receptacle)<br>E - E (Polarized Receptacle)<br>F - F (Polarized Receptacle)<br>G - G (Polarized Receptacle)<br>H - Unpolarized Receptacle<br>J - A (Polarized Plug)<br>K - B (Polarized Plug)<br>L - C (Polarized Plug)<br>M - D (Polarized Plug)<br>N - E (Polarized Plug)<br>P - F (Polarized Plug)<br>Q - G (Polarized Plug)<br>R - Unpolarized Plug<br>0 - None |                                                                                                                                                                                    |                                           |

See GMCT Series Connectors pages 1-21 and Accessories pages 44-58

## CHART #3 MALE CONNECTORS

## PART NUMBER EXPLANATIONS

| M28748/5-                                                                                                                                                                                                                                                                                                                                                                                                                                                             | B | 1 | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | L                                                                                                                                                                                             | 1A                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| <b>Step 1 – Basic Part Number</b><br>M28748/5-                                                                                                                                                                                                                                                                                                                                                                                                                        |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                               | <b>Step 6 – Contacts</b><br>1A - Size 20 Contacts |
| <b>Step 2 – Insert Size</b><br>A - 7 Contact Variant<br>B - 9 Contact Variant<br>C - 14 Contact Variant<br>D - 20 Contact Variant<br>E - 26 Contact Variant<br>F - 34 Contact Variant<br>H - 50 Contact Variant                                                                                                                                                                                                                                                       |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Step 5 – Jackscrews/Guide Pins</b><br>L - Long Jackscrews (Shields Only)<br>S - Short Jackscrews (No Shield)<br>F - Fixed Jackscrews (No Shield)<br>G - Guide Pins (No Shield)<br>0 - None |                                                   |
| <b>Step 3 – Shield/Retaining Plate</b><br><b>Shield</b><br>1 - Top Opening, use w/o shell (Size 9-26)<br>2 - Side Opening, use w/o shell (Size 9-26)<br>3 - Top Opening, use w/o shell (Size 34-50)<br>4 - Side Opening, use w/o shell (Size 34-50)<br>5 - Top Opening, use with Shell (Size 34-50)<br>6 - Side Opening, use with Shell (Size 34-75, except Size 66)<br><b>Retaining Plate</b><br>7 - Retaining Plate (Size 9-26)<br>8 - Retaining Plate (Size 34-50) |   |   | <b>Step 4 – Shell</b><br>A - A (Polarized Plug)<br>B - B (Polarized Plug)<br>C - C (Polarized Plug)<br>D - D (Polarized Plug)<br>E - E (Polarized Plug)<br>F - F (Polarized Plug)<br>G - G (Polarized Plug)<br>H - Unpolarized Plug<br>J - A (Polarized Receptacle)<br>K - B (Polarized Receptacle)<br>L - C (Polarized Receptacle)<br>M - D (Polarized Receptacle)<br>N - E (Polarized Receptacle)<br>P - F (Polarized Receptacle)<br>Q - G (Polarized Receptacle)<br>R - Unpolarized Receptacle<br>0 - None |                                                                                                                                                                                               |                                                   |

## CHART #4 FEMALE CONNECTORS

## PART NUMBER EXPLANATIONS

| M28748/6-                                                                                                                                                                                                                                                                                                                                                                                                                                             | B | 1 | A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | L                                                                                                                                                                                             | 1A                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| <b>Step 1 – Basic Part Number</b><br>M28748/6-                                                                                                                                                                                                                                                                                                                                                                                                        |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                               | <b>Step 6 – Contacts</b><br>1A - Size 20 Contacts |
| <b>Step 2 – Insert Size</b><br>A - 7 Contact Variant<br>B - 9 Contact Variant<br>C - 14 Contact Variant<br>D - 20 Contact Variant<br>E - 26 Contact Variant<br>F - 34 Contact Variant<br>H - 50 Contact Variant                                                                                                                                                                                                                                       |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Step 5 – Jackscrews/Guide Pins</b><br>L - Long Jackscrews (Shields Only)<br>S - Short Jackscrews (No Shield)<br>F - Fixed Jackscrews (No Shield)<br>G - Guide Pins (No Shield)<br>0 - None |                                                   |
| <b>Step 3 – Shield/Retaining Plate</b><br><b>Shield</b><br>1 - Top Opening, use w/o shell (Size 9-26)<br>2 - Side Opening, use w/o shell (Size 9-26)<br>3 - Top Opening, use w/o shell (Size 34-50)<br>4 - Side Opening, use w/o shell (Size 34-50)<br>5 - Top Opening, use with Shell (Size 34-50)<br>6 - Side Opening, use with Shell (Size 34-50)<br><b>Retaining Plate</b><br>7 - Retaining Plate (Size 9-26)<br>8 - Retaining Plate (Size 34-50) |   |   | <b>Step 4 – Shell</b><br>A - A (Polarized Plug)<br>B - B (Polarized Plug)<br>C - C (Polarized Plug)<br>D - D (Polarized Plug)<br>E - E (Polarized Plug)<br>F - F (Polarized Plug)<br>G - G (Polarized Plug)<br>H - Unpolarized Plug<br>J - A (Polarized Receptacle)<br>K - B (Polarized Receptacle)<br>L - C (Polarized Receptacle)<br>M - D (Polarized Receptacle)<br>N - E (Polarized Receptacle)<br>P - F (Polarized Receptacle)<br>Q - G (Polarized Receptacle)<br>R - Unpolarized Receptacle<br>0 - None |                                                                                                                                                                                               |                                                   |



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# ORDERING INFORMATION FOR MIL-DTL-28748/3 AND MIL-DTL-28748/4

Standard  
Density  
Rectangular

**CHART #5**

| CONTACT SIZE PERCENT<br>(FOR M28748/3 CONNECTORS) |                                |                                |                                |
|---------------------------------------------------|--------------------------------|--------------------------------|--------------------------------|
| CONTACT                                           | SIZE<br>16-16<br>M39029/34-273 | SIZE<br>16-20<br>M39029/34-272 | SIZE<br>20-20<br>M39029/34-271 |
| 1A                                                | 100                            | 0                              | 0                              |
| 1B                                                | 90                             | 0                              | 0                              |
| 1C                                                | 80                             | 0                              | 0                              |
| 1D                                                | 70                             | 0                              | 0                              |
| 1E                                                | 60                             | 0                              | 0                              |
| 1F                                                | 50                             | 0                              | 0                              |
| 1G                                                | 40                             | 0                              | 0                              |
| 1H                                                | 30                             | 0                              | 0                              |
| 1J                                                | 20                             | 0                              | 0                              |
| 1K                                                | 10                             | 0                              | 0                              |
| 1L                                                | 0                              | 0                              | 0                              |
| 2A                                                | 0                              | 100                            | 0                              |
| 2B                                                | 0                              | 90                             | 0                              |
| 2C                                                | 0                              | 80                             | 0                              |
| 2D                                                | 0                              | 70                             | 0                              |
| 2E                                                | 0                              | 60                             | 0                              |
| 2F                                                | 0                              | 50                             | 0                              |
| 2G                                                | 0                              | 40                             | 0                              |
| 2H                                                | 0                              | 30                             | 0                              |
| 2J                                                | 0                              | 20                             | 0                              |
| 2K                                                | 0                              | 10                             | 0                              |
| 3A                                                | 0                              | 0                              | 100                            |
| 3B                                                | 0                              | 0                              | 90                             |
| 3C                                                | 0                              | 0                              | 80                             |
| 3D                                                | 0                              | 0                              | 70                             |
| 3E                                                | 0                              | 0                              | 60                             |
| 3F                                                | 0                              | 0                              | 50                             |
| 3G                                                | 0                              | 0                              | 40                             |
| 3H                                                | 0                              | 0                              | 30                             |
| 3J                                                | 0                              | 0                              | 20                             |
| 3K                                                | 0                              | 0                              | 10                             |

**CHART #6**

| CONTACT SIZE PERCENT<br>(FOR M28748/4 CONNECTORS) |                                |                                |                                |
|---------------------------------------------------|--------------------------------|--------------------------------|--------------------------------|
| CONTACT                                           | SIZE<br>16-16<br>M39029/35-276 | SIZE<br>16-20<br>M39029/35-275 | SIZE<br>20-20<br>M39029/35-274 |
| 1A                                                | 100                            | 0                              | 0                              |
| 1B                                                | 90                             | 0                              | 0                              |
| 1C                                                | 80                             | 0                              | 0                              |
| 1D                                                | 70                             | 0                              | 0                              |
| 1E                                                | 60                             | 0                              | 0                              |
| 1F                                                | 50                             | 0                              | 0                              |
| 1G                                                | 40                             | 0                              | 0                              |
| 1H                                                | 30                             | 0                              | 0                              |
| 1J                                                | 20                             | 0                              | 0                              |
| 1K                                                | 10                             | 0                              | 0                              |
| 1L                                                | 0                              | 0                              | 0                              |
| 2A                                                | 0                              | 100                            | 0                              |
| 2B                                                | 0                              | 90                             | 0                              |
| 2C                                                | 0                              | 80                             | 0                              |
| 2D                                                | 0                              | 70                             | 0                              |
| 2E                                                | 0                              | 60                             | 0                              |
| 2F                                                | 0                              | 50                             | 0                              |
| 2G                                                | 0                              | 40                             | 0                              |
| 2H                                                | 0                              | 30                             | 0                              |
| 2J                                                | 0                              | 20                             | 0                              |
| 2K                                                | 0                              | 10                             | 0                              |
| 3A                                                | 0                              | 0                              | 100                            |
| 3B                                                | 0                              | 0                              | 90                             |
| 3C                                                | 0                              | 0                              | 80                             |
| 3D                                                | 0                              | 0                              | 70                             |
| 3E                                                | 0                              | 0                              | 60                             |
| 3F                                                | 0                              | 0                              | 50                             |
| 3G                                                | 0                              | 0                              | 40                             |
| 3H                                                | 0                              | 0                              | 30                             |
| 3J                                                | 0                              | 0                              | 20                             |
| 3K                                                | 0                              | 0                              | 10                             |

See GMCT Series contacts page 12.



Positronic Industries offers the listing below of connectors and connector accessories, which are products qualified under Military Specifications MIL-DTL-28748 and SAE AS 39029. For additional Q.P.L. connectors, please contact Technical Sales. Positronic GMCT series connectors are Q.P.L. approved to MIL-DTL-28748.

Positronic GMCT series crimp removable contacts are Q.P.L. approved to SAE AS 39029.

Positronic GM series connectors are Q.P.L. approved to MIL-DTL-28748.

| MILITARY<br>PART NUMBER | MILITARY<br>PART NUMBER | MILITARY<br>PART NUMBER | MILITARY<br>PART NUMBER | MILITARY<br>PART NUMBER |
|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| M28748/3-BXXL*          | M28748/3-HXXG*          | M28748/4-EXXS*          | M28748/4-LXX0*          | M28748/6-B00S1A         |
| M28748/3-BXXS*          | M28748/3-HXX0*          | M28748/4-EXXF*          | M28748/5-A00S1A         | M28748/6-B00F1A         |
| M28748/3-BXXF*          | M28748/3-JXXL*          | M28748/4-EXXG*          | M28748/5-A00F1A         | M28748/6-B00G1A         |
| M28748/3-BXXG*          | M28748/3-JXXS*          | M28748/4-EXX0*          | M28748/5-A00G1A         | M28748/6-B0001A         |
| M28748/3-BXX0*          | M28748/3-JXXF*          | M28748/4-FXXL*          | M28748/5-A0001A         | M28748/6-C00S1A         |
| M28748/3-CXXL*          | M28748/3-JXXG*          | M28748/4-FXXS*          | M28748/5-B00S1A         | M28748/6-C00F1A         |
| M28748/3-CXXS*          | M28748/3-JXX0*          | M28748/4-FXXF*          | M28748/5-B00F1A         | M28748/6-C00G1A         |
| M28748/3-CXXF*          | M28748/3-KXXL*          | M28748/4-FXXG*          | M28748/5-B00G1A         | M28748/6-C0001A         |
| M28748/3-CXXG*          | M28748/3-KXXS*          | M28748/4-FXX0*          | M28748/5-B0001A         | M28748/6-D00S1A         |
| M28748/3-CXX0*          | M28748/3-KXXF*          | M28748/4-GXXL*          | M28748/5-C00S1A         | M28748/6-D00F1A         |
| M28748/3-DXXL*          | M28748/3-KXXG*          | M28748/4-GXXS*          | M28748/5-C00F1A         | M28748/6-D00G1A         |
| M28748/3-DXXS*          | M28748/3-KXX0*          | M28748/4-GXXF*          | M28748/5-C00G1A         | M28748/6-D0001A         |
| M28748/3-DXXF*          | M28748/3-LXXL*          | M28748/4-GXXG*          | M28748/5-C0001A         | M28748/6-E00S1A         |
| M28748/3-DXXG*          | M28748/3-LXXS*          | M28748/4-GXX0*          | M28748/5-D00S1A         | M28748/6-E00F1A         |
| M28748/3-DXX0*          | M28748/3-LXXF*          | M28748/4-HXXL*          | M28748/5-D00F1A         | M28748/6-E00G1A         |
| M28748/3-EXXL*          | M28748/3-LXXG*          | M28748/4-HXXS*          | M28748/5-D00G1A         | M28748/6-E0001A         |
| M28748/3-EXXS*          | M28748/3-LXX0*          | M28748/4-HXXF*          | M28748/5-D0001A         | M28748/6-F00S1A         |
| M28748/3-EXXF*          | M28748/4-BXXL*          | M28748/4-HXXG*          | M28748/5-E00S1A         | M28748/6-F00F1A         |
| M28748/3-EXXG*          | M28748/4-BXXS*          | M28748/4-HXX0*          | M28748/5-E00F1A         | M28748/6-F00G1A         |
| M28748/3-EXX0*          | M28748/4-BXXF*          | M28748/4-JXXL*          | M28748/5-E00G1A         | M28748/6-F0001A         |
| M28748/3-FXXL*          | M28748/4-BXXG*          | M28748/4-JXXS*          | M28748/5-E0001A         | M28748/6-H00S1A         |
| M28748/3-FXXS*          | M28748/4-BXX0*          | M28748/4-JXXF*          | M28748/5-F00S1A         | M28748/6-H00F1A         |
| M28748/3-FXXF*          | M28748/4-CXXL*          | M28748/4-JXXG*          | M28748/5-F00F1A         | M28748/6-H00G1A         |
| M28748/3-FXXG*          | M28748/4-CXXS*          | M28748/4-JXX0*          | M28748/5-F00G1A         | M28748/6H0001A          |
| M28748/3-FXX0*          | M28748/4-CXXF*          | M28748/4-KXXL*          | M28748/5-F0001A         | M39029/34-271           |
| M28748/3-GXXL*          | M28748/4-CXXG*          | M28748/4-KXXS*          | M28748/5-H00S1A         | M39029/34-272           |
| M28748/3-GXXS*          | M28748/4-CXX0*          | M28748/4-KXXF*          | M28748/5-H00F1A         | M39029/34-273           |
| M28748/3-GXXF*          | M28748/4-DXXL*          | M28748/4-KXXG*          | M28748/5-H00G1A         | M39029/35-274           |
| M28748/3-GXXG*          | M28748/4-DXXS*          | M28748/4-KXX0*          | M28748/5-H0001A         | M39029/35-275           |
| M28748/3-GXX0*          | M28748/4-DXXF*          | M28748/4-LXXL*          | M28748/6-A00S1A         | M39029/35-276           |
| M28748/3-HXXL*          | M28748/4-DXXG*          | M28748/4-LXXS*          | M28748/6-A00F1A         |                         |
| M28748/3-HXXS*          | M28748/4-DXX0*          | M28748/4-LXXF*          | M28748/6-A00G1A         |                         |
| M28748/3-HXXF*          | M28748/4-EXXL*          | M28748/4-LXXG*          | M28748/6-A0001A         |                         |

XX Refer to charts #1 or #2 as applicable

\* Refer to charts #5 or #6 as applicable



# Positronic®

an Amphenol company

## Regional Headquarters

### Positronic | Americas

1325 N Eldon Ave  
Springfield MO 65803 USA

+1 800 641 4054  
[info@connectpositronic.com](mailto:info@connectpositronic.com)

### Positronic | Europe

Z.I. d'Engachies  
46, route d'Engachies  
F-32020 Auch Cedex 9 France

+33 5 6263 4491  
[contact@connectpositronic.com](mailto:contact@connectpositronic.com)

### Positronic | Asia

3014A Ubi RD 1 #07-01  
Singapore 408703

+65 6842 1419  
[singapore@connectpositronic.com](mailto:singapore@connectpositronic.com)

## Sales Offices

Positronic has local sales representation all over the world. To find the nearest sales office, please visit [www.connectpositronic.com/locations](http://www.connectpositronic.com/locations)