Qualifed to:

MIL-C-28748/13 & MIL-C-28748/14
MIL-DTL-28748/7 & MIL-DTL-28748/8
SAE AS39029/34-440 & SAE AS39029/35-441
Experience

- Founded in 1966
- Involvement in the development of international connector specifications through EIA®, IEC and ISO as well as PICMG®.
- Introduction of new and unique connector products to the electronics industry.
- Patent holder for many unique connector features and manufacturing techniques.
- Vertically integrated manufacturing – raw materials to finished connectors.

Technology

- Expertise with solid machined contacts provides a variety of high reliability connectors including high current density power connectors.
- Quality Assurance lab is capable of testing to IEC, EIA, UL, CUL, military and customer-specific requirements.
- In-house design and development of connectors based on market need or individual customer requirements.
- Internal manufacturing capabilities include automatic precision contact machining, injection molding, stamping, plating operations and connector assembly.
- Manufacturing locations in southwest Missouri, U.S.A. (headquarters); Puerto Rico, France, China, Singapore, and India. Total square footage: 407,441.

Support

- Compliance to a variety of international and customer specific environmental requirements.
- Large in-house inventory of finished connectors. Customer specific stocking programs.
- Factory direct technical sales support in major cities worldwide.
- One-on-one customer support from worldwide factory locations.
- World class web site.
- Value-added solutions and willingness to develop custom products with reasonable price and delivery.

Regional Headquarters

Springfield, MO   Auch, France   Singapore

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

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

Unless otherwise specified, dimensional tolerances are:
1) ±0.001 inches [0.03 mm] for male contact mating diameters.
2) ±0.003 inches [0.08 mm] for contact termination diameters.
3) ±0.005 inches [0.13 mm] for all other diameters.
4) ±0.015 inches [0.38 mm] for all other dimensions.

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Information in this catalog is proprietary to Positronic and its subsidiaries. Positronic believes the data contained herein to be reliable. Since the technical information is given free of charge, the user employs such information at his own discretion and risk. Positronic Industries assumes no responsibility for results obtained or damages incurred from use of such information in whole or in part.

Positronic®, Positronic Industries, Inc.®, P+ logo, Positronic Global Connector Solutions®, Connector Excellence® and their logo designs are registered trademarks of Positronic Industries, Inc.
SGMC SERIES
High density rectangular connectors with size 22 removable contacts. Industrial performance or MIL-C-28748/13, MIL-C-28748/14, SAE AS39029/34 and SAE AS39029/35. Eleven connector variants, 4 through 104 contacts. Crimp, solder cup, straight solder and compliant press-in printed board mount terminations. Thermocouple contact options available.

SGM SERIES
High density rectangular connectors with size 22 straight printed circuit board mount / solder cup contacts. Industrial performance or MIL-DTL-28748/7 and MIL-DTL-28748/8. Thirteen connector variants, 4 through 75 contacts. Solder cup, wrap post, straight solder and compliant press-in printed board mount terminations. Thermocouple contact options available.

SMPL SERIES
High density rectangular connectors with size 22 right angle printed circuit board mount contacts. Industrial performance or conformance to MIL-DTL-28748. Twelve connector variants, 4 through 50 contacts. Right angle (90°) solder printed board mount terminations. Thermocouple contact options available.

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### Connectors Designed To Customer Specifications

**Positronic SGMC, SGM and SMPL series connectors can be modified to customer specifications.**

**Examples:** select loading of contacts for cost savings or to gain creepage and clearance distances; longer printed circuit board terminations; customer specified hardware.

**Contact Technical Sales with your particular requirements.**
Support Capabilities:

- Design, development, engineering support, and documentation
- Build to customer print
- Assist in expansion of qualified suppliers on BOM
- Select facilities certified to ISO 9001 and AS9100
- Adherence to IPC-620 standards
- Product prototyping and first articles
- Electrical and mechanical testing

Products & Services:

- Cable and harness assemblies
- Flex circuit assemblies
- Coaxial cable assemblies
- Kitting services
- EMI/RFI shielded assemblies
- Box builds
- Hermetic assemblies
What Makes Positronic’s New “PosiBand®” Contact Interface a Significant Improvement?

High reliability connectors utilize female closed entry contacts that provide an unbroken ring of solid material at the face of the contact. The closed entry feature is crucial in preventing damage to female contacts used in harsh environments, repeated mating cycles, blind mate applications and applications requiring highest reliability.

The most common closed entry design utilized by connector manufacturers is a split tine and sleeve concept. See figure 1. With this design, both the mechanical forces and electrical interface are provided only at the tip of the female contact.

Positronic’s new PosiBand technology takes a unique approach for closed entry female contacts. PosiBand contacts utilize a two-piece contact design. See figure 2. Each piece serves a separate function, providing a more mechanically robust contact and more consistent electrical performance.

The main body of the PosiBand contact provides a true closed entry opening to enhance robustness. The PosiBand spring clip provides normal force on the male contact. Consistent electrical performance is supported through a larger area of contact interface between the male and female contact along the entire “floor” of the contact body. PosiBand contacts are QPL listed under SAE AS39029 and MIL-DLT-24308 specifications. PosiBand is also qualified under GSFC S-311-P4/08 Rev C and GSFC S-311-P4/10 Rev C to the higher 40 gram contact separation test.

continued on next page . . .
**The PosiBand® contact system has many advantages over the legacy split tine design.**

- **PosiBand** is more robust than split tine contact, which can be pried open in harsh environments, resulting in reduced normal force and degradation of electrical performance.

- **PosiBand** has greater surface area at the male and female contact interface, resulting in more consistent electrical performance.

- **PosiBand** has lower average insertion forces, resulting in greater ease in mating, especially in larger high density connectors. The average lower insertion force is accomplished while meeting or exceeding performance requirements.

- The **PosiBand’s** contact body does not require annealing of the crimp barrels, as does the split tine design. This eliminates concern of unintentionally heat-treating the mating end of the contact, which can cause electrical failure.

- **PosiBand** is qualified under SAE AS39029 and MIL-DTL-24308 specifications. **PosiBand** is also qualified under GSFC S-311-P4/08 Rev C and GSFC S-311-P4/10 Rev C to the higher 40 gram contact separation test requirement.

For more details about the *advantages of the PosiBand®* system, please view the detailed white paper at [www.connectpositronic.com/content/37](http://www.connectpositronic.com/content/37) or visit our web site at [www.connectpositronic.com](http://www.connectpositronic.com).

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**TEMPERATURE RISE CURVES**

*Test conducted in accordance with UL1977.*

![Graph showing temperature rise curves for different contact configurations.](image)
MATING DIMENSIONS
FULLY MATED

SGMC TO SGMC

SGM TO SGM

SGM TO SMPL

SMPL TO SMPL

EXPLODED VIEWS OF TYPICAL MATED CONNECTOR ASSEMBLIES

FOR DESCRIPTION AND TERMINOLOGY, SEE PAGE 4.
A1 – Connector contact: The primary electrically conductive element of connectors. The contact system is comprised of a male contact and a female contact. In general, contacts are available in a wide variety of sizes. The contacts in this catalog are size 22 (0.030 inches [0.76mm] in diameter). Contacts can be provided with multiple termination types, including wire crimp and solder; printed circuit board (pcb) solder, straight and right angle mount; and straight mount compliant press-in. A male crimp termination contact is shown in the example.

A2 – See definitions outlined in A1. A female crimp termination contact is shown in the example.

A3 – See definitions outlined in A1. A female right angle pcb solder termination is shown in the example.

A4 – See definitions outlined in A1. A female straight pcb solder termination is shown in the example.

B1 – Connector insert: The connector insulating element which also supports and positions the contacts in the connector system. Connectors can be supplied as a free connector or a fixed connector. Connector systems are available with a wide variety of contact variants and termination types. A 26 contact variant free connector for use with size 22 male crimp contacts is shown in the example.

B2 – See definitions outlined for B1. A 26 contact variant fixed connector with size 22 female contacts and right angle solder terminations is shown in the example.

B3 – A 26 contact variant free connector for use with size 22 male crimp contacts is shown in the example.

B4 – See definitions outlined for B1. A 26 contact variant fixed connector with size 22 female contacts and straight solder terminations is shown in the example.

B5 – See definitions outlined for B1. A 104 contact variant fixed bulkhead or panel mount connector for use with size 22 female crimp contacts is shown in the example.

B6 – A 104 contact variant free connector for use with size 22 male crimp contacts is shown in the example.

C1 – Male and female guides – Used to guide the mating of connector pairs and ensure proper alignment of contacts. A polarized guide system is shown in the example. Guide systems can also be used as a coding device for 75 and 104 variant connectors when used in corner position mounting holes.

C2 – Jackscrew system – A locking device which uses the mechanical advantage of male and female screw threads to couple and uncouple connector pairs. The system consists of a fixed jackscrew and a rotating jackscrew. A polarized jackscrew system is shown in the example. Jackscrew systems can also be used as a coding device for connectors.

C3 – Quick disconnect locking device – Device which allows for rapid connect and disconnect of connector pairs. The system shown in the example consists of fixed lock tabs and actuation levers.

C4 – Cable adapter – Connector accessory (commonly referred to as a “hood” or “back shell”) which is used on free connectors to support cable or wires and to protect contact terminations. Cable adapters may be used with other accessories such as jackscrew and quick disconnect locking systems, guides, and connector housings as shown in the examples.

C5 – Connector Housing – Connector accessory (commonly referred to as a “shell” or “shroud”) which protects the mating portion of the connector contacts. Connector housings are capable of serving as a coding device with the use of pin and slot system shown in this catalog, see page 34 for details.

C6 – Mounting bracket – Connector accessory used to mechanically fix a connector to a mounting surface. The example shows a mounting bracket used to secure a right angle solder connector to a pcb.

**Supplemental Definitions**

**Male contact** – Contact gender in which mechanical and electrical engagement is made on the outer surface of the contact.

**Female contact** – Contact gender in which mechanical and electrical engagement is made on the inner surface of the contact.

**Size (contact)** – A designation to differentiate one contact from another. Numbers are commonly used for this purpose. The designator numbers are associated with a specific male contact diameter; the smaller the designator, the larger the contact size.

**Termination type** – Means of making connection between the contact and external conductors.

**Compliant press-in termination** – A termination with a specially shaped section designed to provide an electrically secure solderless connection when pressed into a printed circuit board (pcb).

**Crimp contact termination** – A contact having a barrel which accepts a conductor and the barrel is designed to be crimped.

**Free connector** – The portion of connector system designed for attachment to the free end of wire or cable.

**Fixed connector** – The portion of connector system designed for attachment to a rigid surface.

**Contact variant** – The number, size, and arrangement of contacts.

**Polarization (connector mating)** – Integral feature within a connector system to ensure corresponding male and female contacts are engaged when the connectors are mated.

**Coding device** – Means of preventing the mating of a connector to any connector other than its intended mate. Also referred to as “keying”.

**Locking device (connector)** – An accessory that provides mechanical retention of mated connectors.

SGMC SERIES
INDUSTRIAL / MILITARY QUALITY
REMOVABLE CONTACTS

- High reliability connectors with **removable** contacts.
- Contacts are high density size 22.
- Female closed entry contacts utilize the “**PosiBand®**” system. *See page 1 for details.*
- Current ratings: signal level to 13 amperes. *See temperature rise curves on page 2 for details.*
- Eleven connector variants, 4 - 104 contacts.
- A multitude of polarization and connector coding (keying) options. *See pages 30-34 for details.*
- Intermateable with SGM and SMPL series. *See page 15 for SGM series and page 23 for SMPL series.*
- Thermocouple contact options available.
- A wide variety of options and accessories.

**TECHNICAL CHARACTERISTICS**

**MATERIALS AND FINISHES:**
- **Connector Insert:** Glass filled DAP per ASTM-D-5948 type SDG-F. Green color is standard, black or grey available.
- **Removable Contacts:** Precision machined copper alloy. 0.000015 inch [0.38 µ] gold over nickel. Other finishes available upon request, *see pages 11-14 for details.*
- **Polarizing Guides:** Copper alloy with nickel plate or passivated stainless steel.
- **Jackscrew System:** Passivated stainless steel.
- **Connector Housing (Shells):** Aluminum with yellow anodize or black anodize1.

**Cable Adapter (Hood):** Aluminum with yellow or black anodize. Actuation lock lever and lock tab, copper alloy with nickel plate.

**Quick Disconnect Locking Device:**

**MECHANICAL CHARACTERISTICS:**
- **Removable Contacts:** Insert contact to rear face of connector insert, release from front face of connector insert. Size 22 contact, male contact - 0.030 inch [0.76mm] mating diameter. Female contact - **PosiBand** closed entry design, *see page 1 for details.*

**Contact Retention in Connector Insert:** 6 lbs. [26.5N] minimum.

**Connectors Qualified to:**
- DSCC Drawing No. 86040 & 86078
- MIL-C-28748/13 & 28748/14

**Contacts Qualified to:**
- SAE AS39029/34 & 39029/35

**Telecommunication:**
- UL File # E49351

*continued on next page.*
continued from previous page . . .

MECHANICAL CHARACTERISTICS, continued:

Contact Termination: Crimp all wire sizes from 20 AWG [0.5 mm²] through 28 AWG [0.08 mm²].
Solder cup - 0.035 inch [0.89mm] hole diameter for 22 AWG [0.3mm²] wire maximum. 0.045 inch [1.14mm] hole diameter for 20 AWG [0.5mm²] wire maximum.
Straight printed board mount - 0.025 inch [0.64mm] termination diameter.
Compliant press-in termination.

Locking Systems: Friction, quick disconnect locking device and jackscrews.

Polarization: Polarized guides and jackscrew system.

Coding (Keying) Device: Pin and slot system; male and female guide system.

Mechanical Operations: 1000 operations

Jackscrews: Standard threads, 2-56 UNC on all sizes, except 75 and 104 connector variants, which use 6-32 UNC. Metric threads, M2X0.4 and M3X0.5 available.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating, Tested per UL 1977:
- 13 amperes, 2 contacts energized.
- 10 amperes, 6 contacts energized.
- 6 amperes, 26 contacts energized.
- 5 amperes, 104 contacts energized

See temperature rise curves on page 2 for details.

Initial Contact Resistance: 0.004 ohms, maximum.
Flash over Voltage: 2200 V.AC (rms)
Test Voltage: 1000 V.AC (rms)
Insulation Resistance: 5 G ohms, minimum.
Clearance and Creepage Distance: 0.060 inch [1.52 mm], minimum.
Working Temperature: -55°C to 135°C
Working Voltage: 250 V.AC (rms)

THERMOCOUPLE CONTACTS:
Size 22 removable crimp contacts are available, see page 12 for details.
Straight printed circuit board mount contacts are available in SGM series, see page 16 for details.
Right angle (90°) printed circuit board mount contacts are available in SMPL series, see page 24 for details.

Visit our web site for the latest catalog updates and supplements at http://www.connectpositronic.com/products/54/HighDensityRectangular/catalogs

Do you need 2-D drawings or 3-D models?

Once you have made a connector selection, contact Technical Sales if you would like a 2-D drawing or 3-D model. If we do not have your specific part number on file, we can create one for you. Or, please visit www.connectpositronic.com and use the search function.
SGMC SERIES
INDUSTRIAL / MILITARY QUALITY
REMOVABLE CONTACTS

CONNECTOR INSERT DIMENSIONS
MATING FACE VIEW OF FEMALE OR REAR FACE VIEW OF MALE

MALE AND FEMALE PROFILE VIEW

SGMC 4
SGMC 7
SGMC 9

SGMC 14
SGMC 20
SGMC 26

SGMC 34
SGMC 44
SGMC 50

CONTACT HOLE PATTERNS:
For SGMC series contact hole patterns, refer to page 21 in SGM series.

For information regarding REMOVABLE CONTACTS, see contact illustration drawings and charts on pages 11-14.
SGMC SERIES
INDUSTRIAL / MILITARY QUALITY
REMOVABLE CONTACTS

CONNECTOR INSERT DIMENSIONS
MATING FACE VIEW OF FEMALE OR REAR FACE VIEW OF MALE

CONTACT HOLE POSITION DIMENSIONS AND PRINTED BOARD HOLE PATTERN FOR CONTACT VARIANTS 75 AND 104
MATING FACE VIEW OF FEMALE OR REAR FACE VIEW OF MALE
For contact hole patterns for SGMC series sizes 4 - 50, refer to page 21 in SGM series.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest 0.040 [1.01] Ø holes in printed board for contact terminations.

For information regarding REMOVABLE CONTACTS, see contact illustration drawings and charts on pages 11-14.
## SGMC SERIES
### CRIMP AND SOLDER CUP CONTACT TERMINATIONS

<table>
<thead>
<tr>
<th>TERMINATION TYPE</th>
<th>PAGE NUMBER REFERENCE IN CATALOG</th>
<th>CONTACT SIZE</th>
<th>FEMALE PART NUMBER</th>
<th>MALE PART NUMBER</th>
<th>WIRE SIZE AWG [mm²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIMP</td>
<td>see page 11 for additional information</td>
<td>22</td>
<td>FC422P2</td>
<td>MC422N</td>
<td>22 / 24 / 26 / 28 [0.3/0.25/0.12/0.08]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC420P2</td>
<td>MC420N</td>
<td>20 [0.5]</td>
</tr>
<tr>
<td>MILITARY CRIMP</td>
<td>see page 12 for additional information</td>
<td>22</td>
<td>M39029/35-441</td>
<td>M39029/34-440</td>
<td>22 / 24 / 26 / 28 [0.3/0.25/0.12/0.08]</td>
</tr>
<tr>
<td>THERMOCOUPLE CRIMP</td>
<td>see page 12 for additional information</td>
<td>22</td>
<td>FC422P2CH</td>
<td>MC422NCH</td>
<td>22 / 24 / 26 [0.3/0.25/0.12]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC422P2AL</td>
<td>MC422NAL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC422P2CU</td>
<td>MC422NCU</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC422P2CO</td>
<td>MC422NCO</td>
<td></td>
</tr>
<tr>
<td>SOLDER CUP</td>
<td>see page 13 for additional information</td>
<td>22</td>
<td>FS422P2</td>
<td>MS422N</td>
<td>22 [0.3] max.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FS420P2</td>
<td>MS420N</td>
<td>20 [0.5] max.</td>
</tr>
</tbody>
</table>

**NOTE:** For ordering crimp contacts on reels, add “R” to part number, see page 11 for details. Examples: MC422NR or FC422P2R

## SGMC SERIES
### PRINTED BOARD MOUNT CONTACT TERMINATIONS

<table>
<thead>
<tr>
<th>TERMINATION TYPE</th>
<th>PAGE NUMBER REFERENCE IN CATALOG</th>
<th>CONTACT SIZE</th>
<th>FEMALE PART NUMBER</th>
<th>MALE PART NUMBER</th>
<th>USABLE TERMINATION LENGTH</th>
<th>TERMINATION DIMENSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>STRAIGHT SOLDER</td>
<td>see page 13 for additional information</td>
<td>22</td>
<td>FDS425P2</td>
<td>MDS425N</td>
<td>0.125 [3.18]</td>
<td>0.025 Ø [0.64]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FDS456P2</td>
<td>MDS456N</td>
<td>0.156 [3.96]</td>
<td>0.025 Ø [0.64]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FDS487P2</td>
<td>MDS487N</td>
<td>0.187 [4.75]</td>
<td>0.025 Ø [0.64]</td>
</tr>
<tr>
<td>COMPLIANT PRESS-IN</td>
<td>see page 14 for additional information</td>
<td>22</td>
<td>FPF467P2</td>
<td>MPF467N</td>
<td>N/A</td>
<td>0.048 Ø [1.22]</td>
</tr>
</tbody>
</table>

**NOTE:** Positronic recommends printed circuit board contacts be supplied installed in the connector. Contact technical sales.

---

For information regarding **REMOVABLE CONTACTS**, see contact illustration drawings and charts on pages 11-14.

For information regarding **CRIMP TOOLS & CRIMPING TOOL TECHNIQUES**, see page 37.
### ORDERING INFORMATION - CODE NUMBERING SYSTEM

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

<table>
<thead>
<tr>
<th>STEP</th>
<th>EXAMPLE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SGMC</td>
<td>14</td>
<td>S</td>
<td>0</td>
<td>ESS</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**STEP 1 - BASIC SERIES**
- SGMC series

**STEP 2 - CONNECTOR VARIANTS**
- 4, 7, 9, 14, 20, 26, 34, 44, 50, 75, 104

**STEP 3 - CONNECTOR GENDER**
- M - Male
- S - Female - PosiBand closed entry contacts, see page 1 for more information.

**STEP 4 - CONTACT TERMINATION TYPE**
- 0 - Contacts are to be ordered separately, see contact ordering chart on page 9.

**STEP 5 - POLARIZING GUIDES AND JACKSCREW SYSTEMS**
- N - Polarizing guides.
- NSS - Stainless steel polarizing guides.
- T - Fixed jackscrews.
- E - Rotating jackscrews with knobs.
- E1 - Rotating jackscrews used with cable adapter only. Not offered on 75 and 104 variants.
- ESS - Short rotating jackscrews.
- 0 - If no polarizing guides or jackscrews are required. Also use "0" if ordering cable adapter equipped with jackscrews, for variants 75 and 104, see STEP 8.

**STEP 6 - CONNECTOR HOUSING (SHELLS)**
- P - Male shell.
- R - Female shell.
- 0 - If no connector housings are required.

**STEP 7 - CODING (KEYING) POSITIONS OF CONNECTOR HOUSING (SHELLS)**
- Select letter to designate position of male pin or female slot for coding system.
- A, B, C, D, E, F, G
- 0 - If no coding is required or if no connector housings are required.

**STEP 8 - CABLE ADAPTER (HOODS)**
- V - Side opening cable adapter equipped with stainless steel jackscrew system offered on 104 variant only.
- Z - Top opening cable adapter equipped with stainless steel jackscrew system offered on 104 variants only.
- J - Top opening cable adapter offered on all variants except 75 and 104.
- 0 - If no cable adapters are required.

**STEP 9 - ADDITIONAL FEATURES**
- B - For black anodized aluminum parts.
- R - For yellow chromate coating on aluminum parts.
- *V - Lock tab, not offered on 75 and 104 variants.
- *VL - Actuation lock lever, not offered on 75 and 104 variants.
- 0 - If no additional options are required.
- M - Jackscrews with metric threads.

**STEP 10 - SPECIAL OPTIONS**
- For special options, see special options appendix on page 41.

---

**NOTE:**

* For details of items listed in steps 5 through 9, see Accessories section on pages 30-36.

** Select "0" in Step 6 when selecting "V" and "VL" options.

---

Do you need 2-D drawings or 3-D models?

See page 6 for more information!
For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 37.
For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 37.
SGMC SERIES
INDUSTRIAL / MILITARY QUALITY
REMOVABLE CONTACTS

REMOVABLE SOLDER CUP CONTACT
FOR USE WITH SGMC SERIES CONNECTORS
SIZE 22

FEMALE CONTACT
“CLOSED ENTRY” DESIGN

MALE CONTACT

<table>
<thead>
<tr>
<th>FEMALE PART NUMBER</th>
<th>WIRE SIZE</th>
<th>ØA</th>
<th>ØB</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS422P2</td>
<td>22</td>
<td>0.056 [1.42]</td>
<td>0.035 [0.89]</td>
</tr>
<tr>
<td>FS420P2</td>
<td>20</td>
<td>N/A</td>
<td>0.045 [1.14]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MALE PART NUMBER</th>
<th>WIRE SIZE</th>
<th>ØA</th>
<th>ØB</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS422N</td>
<td>22</td>
<td>0.056 [1.42]</td>
<td>0.035 [0.89]</td>
</tr>
<tr>
<td>MS420N</td>
<td>20</td>
<td>N/A</td>
<td>0.045 [1.14]</td>
</tr>
</tbody>
</table>

REMOVABLE STRAIGHT SOLDER PRINTED BOARD MOUNT CONTACT**
FOR USE WITH SGMC SERIES CONNECTORS**
SIZE 22

FEMALE CONTACT
“CLOSED ENTRY” DESIGN

MALE CONTACT

<table>
<thead>
<tr>
<th>FEMALE PART NUMBER</th>
<th>A</th>
<th>B See below illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDS425P2</td>
<td>0.607 [15.42]</td>
<td>0.125 [3.16]</td>
</tr>
<tr>
<td>FDS456P2</td>
<td>0.638 [16.21]</td>
<td>0.156 [3.96]</td>
</tr>
<tr>
<td>FDS487P2</td>
<td>0.669 [16.99]</td>
<td>0.187 [4.75]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MALE PART NUMBER</th>
<th>A</th>
<th>B See below illustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDS425N</td>
<td>0.772 [19.61]</td>
<td>0.125 [3.18]</td>
</tr>
<tr>
<td>MDS456N</td>
<td>0.803 [20.40]</td>
<td>0.156 [3.96]</td>
</tr>
<tr>
<td>MDS487N</td>
<td>0.834 [21.18]</td>
<td>0.187 [4.75]</td>
</tr>
</tbody>
</table>

NOTES:
* Positronic recommends printed circuit board contacts be supplied installed in the connector. Contact technical sales.
** Positronic recommends the practice of using mounting hardware to secure connector to printed circuit board, see mounting hardware presentation on page 14.

CONTACT HOLE PATTERNS:
For SGMC series contact hole patterns, refer to page 21 in SGM series.

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 37.
REMOVABLE COMPLIANT PRESS-IN PRINTED BOARD MOUNT CONTACT*1
FOR USE WITH SGMC SERIES CONNECTORS**
SIZE 22

FEMALE CONTACT
"CLOSED ENTRY" DESIGN

MALE CONTACT

PART NUMBER: FPF467P2
PART NUMBER: MPF467N

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest 0.105 [2.66] Ø hole in printed board for connector mounting holes.

NOTE: For suggested printed board recommended drill hole sizes, plating and finished hole sizes for compliant contact termination positions, see page 40. For compliant press-in connector installation tools, see page 39.

CONTACT HOLE PATTERNS:
For SGMC series contact hole patterns, refer to page 21 in SGM series.

MOUNTING HARDWARE FOR PRINTED BOARD MOUNT CONNECTORS
FOR USE WITH SGMC OR SGM SERIES CONNECTORS
SGMC CONNECTOR INSERT SHOWN IN ILLUSTRATION FOR REFERENCE

Positronic recommends the practice of using mounting hardware. Stresses that occur during coupling and uncoupling of connectors or through shock and vibration of systems can be transferred to printed circuit boards through compliant press-in connector terminations. Avoid concern over electrical integrity of the connector to board interface by using mounting screws.

CONTACT TECHNICAL SALES FOR PART NUMBERS WITH LONG JACKSCREW OR NYLON SPACER*1

NOTES: *1 Positronic recommends printed circuit board contacts be supplied installed in the connector. Contact technical sales.

** Positronic recommends the practice of using mounting hardware to secure connector to printed circuit board, see mounting hardware presentation below.

NOTE: *1 Stainless steel spacer available.

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 37.
High reliability connectors with fixed contacts.

Contacts are high density size 22.


Female closed entry contacts utilize the “PosiBand®” system. See page 1 for details.

Current ratings: signal level to 13 amperes. See temperature rise curves on page 2 for details.

Thirteen connector variants, 4 - 75 contacts.

A multitude of polarization and connector coding (keying) options. See pages 30-34 for details.

Intermateable with SGMC and SMPL series. See page 5 for SGMC series and page 23 for SMPL series.

Thermocouple contact options available.

A wide variety of options and accessories.

Qualified to:
• MIL-DTL-28748/7 & 28748/8

Telecommunication:
• UL File # E49351

TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

- Connector Insert: Glass filled DAP per ASTM-D-5948 type SDG-F. Grey color is standard, black or green available.
- Fixed Contacts: Precision machined copper alloy. 0.000015 inch [0.38 µ] gold over nickel. Other finishes available upon request, see page 41 for details.
- Polarizing Guides: Copper alloy with nickel plate or passivated stainless steel.
- Jackscrew System: Passivated stainless steel.
- Connector Housing (Shells): Aluminum with yellow anodize or black anodize.
- Cable Adapter (Hoods): Aluminum with yellow or black anodize.

Quick Disconnect Locking Device:
Actuation lock lever and lock tab, copper alloy with nickel plate.

MECHANICAL CHARACTERISTICS:

Fixed Contacts:
Size 22, male contact 0.030 inch [0.76 mm] mating diameter. Female contact - PosiBand closed entry design, see page 1 for details.

Contact Retention in Connector Insert:
6 lbs. [26.5N] minimum.

Contact Termination:
Solder cup contacts - 0.037 inch [0.94 mm] internal hole diameter for 22 AWG [0.3 mm²] wire maximum.
Straight printed board mount - 0.025 inch [0.64 mm] termination diameter.

continued on next page...
TECHNICAL CHARACTERISTICS, continued

continued from previous page... . . .

MECHANICAL CHARACTERISTICS, continued:

Wire post - 0.025 inch [0.64 mm] square.
Compliant press-in termination.

Locking Systems: Friction, quick disconnect locking device and jackscrews.

Polarization: Polarized guides and jackscrew system.

Coding (Keying) Device: Pin and slot system; male and female guide system.

Mechanical Operations: 1000 operations per IEC 60512-5.

Jackscrews: Standard threads, 2-56 UNC on all sizes, except 6-32 UNC. Metric threads, M2X0.4 and M3X0.5 available.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating, Tested per UL 1977:
13 amperes, 2 contacts energized.
10 amperes, 6 contacts energized.
6 amperes, 26 contacts energized.
5 amperes, 104 contacts energized

See temperature rise curves on page 2 for details.

Initial Contact Resistance: 0.004 ohms, maximum.
Flash over Voltage: 2200 V.AC (rms)
Test Voltage: 1000 V.AC (rms)
Insulation Resistance: 5 G ohms, minimum.
Clearance and Creepage Distance: 0.028 inch [0.71 mm], minimum.
Working Temperature: -55°C to 135°C
Working Voltage: 250 V.AC (rms)

THERMOCOUPLE CONTACTS:
Straight printed circuit board mount contacts are available, please contact Technical Sales for details.
Right angle (90°) printed circuit board mount contacts are available in SMPL series, see page 24 for details.
Size 22 removable crimp contacts are available in SGMC series, see page 12 for details.

Visit our web site for the latest catalog updates and supplements at http://www.connectpositronic.com/products/54/HighDensityRectangular/catalogs

Do you need 2-D drawings or 3-D models?

Once you have made a connector selection, contact Technical Sales if you would like a 2-D drawing or 3-D model. If we do not have your specific part number on file, we can create one for you. Or, please visit www.connectpositronic.com and use the search function.

2-D Drawing

3-D Model
## CONNECTOR INSERT DIMENSIONS
FOR SGM AND SMPL SERIES
MATING FACE VIEW OF FEMALE OR REAR FACE VIEW OF MALE

### MALE AND FEMALE PROFILE VIEW

**SGM 4 SMPL 4**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>0.240</td>
<td>[6.10]</td>
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<tr>
<td>0.780</td>
<td>[19.81]</td>
</tr>
<tr>
<td>0.562</td>
<td>[14.27]</td>
</tr>
<tr>
<td>0.482</td>
<td>[12.24]</td>
</tr>
<tr>
<td>0.700</td>
<td>[17.78]</td>
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<tr>
<td>0.780</td>
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**SGM 5 SMPL 5**

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<tbody>
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<td>[17.78]</td>
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**SGM 7 SMPL 7**

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<tr>
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**SGM 9 SMPL 9**

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<tr>
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### SGM 11 SMPL 11

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### SGM 14 SMPL 14

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### SGM 20 SMPL 20

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### SGM 26 SMPL 26

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### SGM 29 SMPL 29

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<tr>
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### SGM 34 SMPL 34

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<td>0.700</td>
<td>[17.78]</td>
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### SGM 44 SMPL 44

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<tr>
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<td>[12.24]</td>
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<tr>
<td>0.700</td>
<td>[17.78]</td>
</tr>
<tr>
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<td>[19.81]</td>
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### SGM 50 SMPL 50

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<tbody>
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<tr>
<td>0.482</td>
<td>[12.24]</td>
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<td>0.700</td>
<td>[17.78]</td>
</tr>
<tr>
<td>0.780</td>
<td>[19.81]</td>
</tr>
</tbody>
</table>

### CONTACT HOLE PATTERNS:

For SGM series contact hole patterns, refer to page 21 in SGM series.
For SMPL series contact hole patterns, refer to page 26 in SMPL series.
CONNECTOR INSERT DIMENSIONS
SGM 75 CONNECTOR
MATING FACE VIEW OF FEMALE OR REAR FACE VIEW OF MALE

CONTACT HOLE PATTERNS:
For SGM 75 series contact hole patterns, refer to page 8 in SGMC series.

STRAIGHT SOLDER PRINTED BOARD MOUNT TERMINATION
CODE DS3, DS4, DS5 AND DS6

Typical Part Number:
SGM26SDS3T0000

For straight solder contacts, specify contact code in Step 4 of ordering information.
SGM SERIES
INDUSTRIAL / MILITARY QUALITY
FIXED STRAIGHT PCB MOUNT / SOLDER CUP

SGM SERIES
INDUSTRIAL / MILITARY QUALITY
FIXED STRAIGHT PCB MOUNT / SOLDER CUP

SOLDER CUP TERMINATION
CODE SC
For solder cup contacts, specify contact code “SC” in Step 4 of ordering information.

FEMALE

MALE

Typical Part Number:
SGM26SSCN0000

Typical Part Number:
SGM26MSCN0000

SOLDER CUP TERMINATION
CODE SC
For solder cup contacts, specify contact code “SC” in Step 4 of ordering information.

FEMALE

MALE

Typical Part Number:
SGM75SSCT0000

Typical Part Number:
SGM75MSCCT0000

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
**SGM SERIES**
**INDUSTRIAL / MILITARY QUALITY**
**FIXED STRAIGHT PCB MOUNT / SOLDER CUP**

**WRAP POST TERMINATION**
**CODE WW1 OR CODE WW2**

**FEMALE**

**CONTACT HOLE PATTERNS:**
For compliant press-in connector contact hole patterns, see page 21.

<table>
<thead>
<tr>
<th>CONTACT CODE</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>WW1</td>
<td>0.225 [5.72]</td>
</tr>
<tr>
<td>WW2</td>
<td>0.355 [9.00]</td>
</tr>
</tbody>
</table>

For wrap post contacts, specify contact code in Step 4 of ordering information.

**SUGGESTED PRINTED BOARD HOLE SIZES:**
Suggest 0.105 [2.66] Ø hole in printed board for connector mounting holes.  
**NOTE:** For suggested printed board recommended drill hole sizes, plating and finished hole sizes for compliant contact termination positions, see page 40.  For compliant press-in connector installation tools, see page 39.

**NOTES:**
*1 Positronic recommends the practice of using mounting hardware to secure connector to printed circuit board.  
*2 M2X0.4 metric thread available.  
*3 Stainless steel spacer available.
SGM SERIES
INDUSTRIAL / MILITARY QUALITY
FIXED STRAIGHT PCB MOUNT / SOLDER CUP

CONTACT HOLE POSITION DIMENSIONS AND PRINTED BOARD HOLE PATTERN
FOR SGM AND SGMC SERIES
MATING FACE VIEW OF FEMALE OR REAR FACE VIEW OF MALE

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest 0.105 [2.66] Ø holes in printed board for connector mounting holes
Suggest 0.040 [1.01] Ø holes in printed board for contact terminations
ORDERING INFORMATION - CODE NUMBERING SYSTEM

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

<table>
<thead>
<tr>
<th>STEP 1 - BASIC SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGM series</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STEP 2 - CONNECTOR VARIANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4, 5, 7, 9, 11, 14, 20, 26, 29, 34, 44, 50, 75</td>
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</table>

<table>
<thead>
<tr>
<th>STEP 3 - CONNECTOR GENDER</th>
</tr>
</thead>
<tbody>
<tr>
<td>M - Male</td>
</tr>
<tr>
<td>S - Female - PosiBand closed entry contacts, see page 1 for more information.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STEP 4 - CONTACT TERMINATION TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>All female contacts “closed entry” design</td>
</tr>
</tbody>
</table>

- **DS3** – Straight solder 0.093 [2.36] not offered on 75 variant.
- **DS4** – Straight solder 0.125 [3.18] not offered on 75 variant.
- **DS5** – Straight solder 0.156 [3.96] not offered on 75 variant.
- **DS6** – Straight solder 0.187 [4.75] not offered on 75 variant.
- **SC** – Solder cup
- **WW1** – Wrap post 0.225 [5.72] not offered on 75 variant.
- **WW2** – Wrap post 0.355 [9.02] not offered on 75 variant.
- **98** – Straight printed circuit board mount, compliant press-in.

<table>
<thead>
<tr>
<th>STEP 5 - POLARIZING GUIDES AND JACKSCREW SYSTEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>N – Polarizing guides.</td>
</tr>
<tr>
<td>NSS – Stainless steel polarizing guides.</td>
</tr>
<tr>
<td>T – Fixed jackscrews.</td>
</tr>
<tr>
<td>E – Rotating jackscrews with knobs.</td>
</tr>
<tr>
<td>E1 – Rotating jackscrews used with cable adapter only. Not offered on 75 variant.</td>
</tr>
<tr>
<td>ESS – Short rotating jackscrews.</td>
</tr>
<tr>
<td>0 – If no polarizing guides or jackscrews are required.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STEP 6 - CONNECTOR HOUSING (SHELLS)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P</strong> – Male shell.</td>
</tr>
<tr>
<td><strong>R</strong> – Female shell.</td>
</tr>
<tr>
<td>0 – If no connector housings are required.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STEP 7 - CODING (KEYING) POSITIONS OF CONNECTOR HOUSING (SHELLS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select letter to designate position of male pin or female slot for coding system.</td>
</tr>
<tr>
<td>A, B, C, D, E, F, G</td>
</tr>
<tr>
<td>0 – If no coding is required or if no connector housings are required.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STEP 8 - CABLE ADAPTER (HOOD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>J</strong> – Top opening cable adapter offered on all variants except 5, 11 and 75.</td>
</tr>
<tr>
<td>0 – If no cable adapters are required.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STEP 9 - ADDITIONAL FEATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B</strong> – For black anodized aluminum parts.</td>
</tr>
<tr>
<td><strong>R</strong> – For yellow chromate coating on aluminum parts.</td>
</tr>
<tr>
<td><strong>V</strong> – Lock tab, not offered on 75 variant.</td>
</tr>
<tr>
<td><strong>VL</strong> – Actuation lock lever, not offered on 75 variant.</td>
</tr>
<tr>
<td><strong>M</strong> – Jackscrews with metric threads.</td>
</tr>
<tr>
<td>0 – If no additional options are required.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STEP 10 - SPECIAL OPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOR SPECIAL OPTIONS, SEE SPECIAL OPTIONS APPENDIX ON PAGE 41.</td>
</tr>
</tbody>
</table>

NOTE:
- **1** For details of items listed in steps 5 through 9, see Accessories section on pages 30-36.
- Contact Technical Sales for availability of size 75 connector variant.
- Contact Technical Sales for availability of 5, 11 and 29 connector variants.
- Select ‘0’ in Step 6 when selecting ‘V’ and ‘VL’ options.

---

Do you need 2-D drawings or 3-D models? See page 16 for more information!
High reliability connectors with fixed contacts.

Contacts are high density size 22.

Terminations: right angle (90°) solder printed board mount.
See pages 25 for details.

Female closed entry contacts utilize the “PosiBand®” system.
See page 1 for details.

Current ratings: signal level to 13 amperes.
See temperature rise curves on page 2 for details.

Twelve connector variants, 4 - 50 contacts.

A multitude of polarization and connector coding (keying) options. See pages 30-34 for details.

Intermateable with SGMC and SGM series.
See page 5 for SGMC series and page 15 for SGM series.

Thermocouple contact options available.

A wide variety of options and accessories.

Conforms to:
• MIL-DTL-28748

Telecommunication:
• UL File # E49351

TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:
Connector insert: Glass filled DAP per ASTM-D-5948 type SDG-F. Grey color is standard, black or green available.

Fixed Contacts: Precision machined copper alloy, 0.000015 inch [0.38 µ] gold over nickel. Other finishes available upon request, see page 41 for details.

Polarizing Guides: Copper alloy with nickel plate or passivated stainless steel.


Mounting Bracket: Phosphor bronze with zinc plate and chromate seal.

Alignment Bar: Nylon, black.
Quick Disconnect Locking Device: Actuation lock lever and lock tab, copper alloy with nickel plate.

MECHANICAL CHARACTERISTICS:
Fixed Contacts: Size 22, male 0.030 inch [0.76 mm] mating diameter. Female - PosiBand closed entry design, see page 1 for details.

Contact Retention in Connector Insert: 6 lbs. [26.5N] minimum.
Contact Termination: 0.020 inch [0.51 mm] termination diameter.

Locking Systems: Friction, quick disconnect locking device and jackscrews.
continued from previous page.

MECHANICAL CHARACTERISTICS, continued:

Polarization: Polarized guides and jackscrew system.
Coding (Keying) Device: Pin and slot system; male and female guide system.
Mechanical Operations: 1000 operations per IEC 60512-5.
Jackscrews: Standard threads, 2-56 UNC. M2X0.4 metric threads available.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating, Tested per UL 1977:
- 13 amperes, 2 contacts energized.
- 10 amperes, 6 contacts energized.
- 6 amperes, 26 contacts energized.
- 5 amperes, 104 contacts energized

See temperature rise curves on page 2 for details.
Initial Contact Resistance: 0.004 ohms, maximum.

Flash over Voltage: 2200 V.AC (rms)
Test Voltage: 1000 V.AC (rms)
Insulation Resistance: 5 G ohms, minimum.
Clearance and Creepage Distance: 0.028 inch [0.71 mm], minimum.
Working Temperature: -55°C to 135°C
Working Voltage: 250 V.AC (rms)

THERMOCOUPLE CONTACTS:

Right angle (90°) printed board mount contacts are available, please contact Technical Sales for details.
Straight printed board mount contacts are available in SGM series, see page 16 for details.
Size 22 removable crimp contacts are available in SGMC series, see page 12 for details.

Visit our web site for the latest catalog updates and supplements at http://www.connectpositronic.com/products/54/HighDensityRectangular/catalogs

Do you need 2-D drawings or 3-D models?

Once you have made a connector selection, contact Technical Sales if you would like a 2-D drawing or 3-D model. If we do not have your specific part number on file, we can create one for you. Or, please visit www.connectpositronic.com and use the search function.
RIGHT ANGLE (90°) SOLDER PRINTED BOARD MOUNT TERMINATION

CODE 0

Typical Part Number:
SMPL29M0N0LB

NOTE:
Add 0.030 [0.76] to the hole location dimension 0.175 [4.48] when mounting bracket (Code LB) and locking tab (Code V) are used in combination on connector.

CONNECTOR INSERT DIMENSIONS:
For SMPL series connector insert dimensions, refer to page 17 in SGM series.
SMPL SERIES
INDUSTRIAL / MILITARY QUALITY
FIXED RIGHT ANGLE PCB MOUNT TERMINATION

RIGHT ANGLE (90°) PRINTED BOARD HOLE PATTERN
HOLE IDENTIFICATION SHOWN FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.

SMPL 4
0.070 [1.78]
0.220 [5.59]
0.045 [1.14] TYP.
0.281 [7.14]

SMPL 5
0.175 TYP. [4.45]
0.094 TYP. [2.39]
0.047 TYP. [1.19]
0.241 [6.12]

SMPL 7
0.281 [7.14]

SMPL 9
0.070 [1.78]
0.220 [5.59]
0.328 [8.33]

SMPL 11
0.175 TYP. [4.45]
0.266 [6.76]

SMPL 14
0.312 [7.92]

SMPL 20
0.070 [1.78]
0.220 [5.59]
0.370 [9.40]

SMPL 26
0.407 [10.34]
0.500 [12.70]

SMPL 29
0.547 [13.89]

SMPL 34
0.070 [1.78]
0.220 [5.59]
0.370 [9.40]

SMPL 44
0.024 [0.61]
0.094 TYP. [2.39]
0.640 [16.26]

SMPL 50
0.520 [13.21]
0.516 [13.11]
0.704 [17.88]

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest 0.105 [2.66] Ø holes in printed board for connector mounting holes
Suggest 0.040 [1.01] Ø holes in printed board for contact terminations
Add 0.030 [0.76] to the hole location dimension 0.175 [4.48] when mounting bracket (Code LB) and locking tab (Code V) are used in combination on connector.

DIMENSIONS ARE IN INCHES [MILLIMETERS], ALL DIMENSIONS ARE SUBJECT TO CHANGE.
## ORDERING INFORMATION - CODE NUMBERING SYSTEM

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

### STEP 1 - BASIC SERIES
SMPL series.

### STEP 2 - CONNECTOR VARIANTS
4, 5, 7, 9, 11, 14, 20, 26, 29, 34, 44, 50

### STEP 3 - CONNECTOR GENDER
M - Male  
S - Female - PosiBand closed entry contacts, see page 1 for more information.

### STEP 4 - CONTACT TERMINATION TYPE
0 - Standard termination, right angle (90°).

### STEP 5 - POLARIZING GUIDES AND JACKSCREW SYSTEMS
N - Polarizing guides.  
NSS - Stainless steel polarizing guides.  
T - Fixed jackscrews.  
0 - If no polarizing guides or jackscrews are required.

### STEP 6 - QUICK DISCONNECT LOCKING DEVICES
V - Lock tab.  
VL - Actuation lock lever.  
0 - If no locking devices are required.

### STEP 7 - MOUNTING BRACKETS
LB - Mounting bracket.  
0 - If no mounting bracket is required.

### STEP 8 - SPECIAL OPTIONS
FOR SPECIAL OPTIONS, SEE SPECIAL OPTIONS APPENDIX ON PAGE 41.

### EXAMPLE
SMPL 14 S 0 T 0 LB

### CODE NUMBERING SYSTEM

<table>
<thead>
<tr>
<th>STEP</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMPL</td>
<td>14</td>
<td>S</td>
<td>0</td>
<td>T</td>
<td>0</td>
<td>LB</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:**

For details of items listed in steps 5 through 6, see Accessories section on pages 30-36.

---

Do you need 2-D drawings or 3-D models?  
See page 24 for more information!

---

Visit our web site for the latest catalog updates and supplements at [http://www.connectpositronic.com/products/54/HighDensityRectangular/catalogs](http://www.connectpositronic.com/products/54/HighDensityRectangular/catalogs)
Positronic Industries is known around the world for offering our customers flexibility when choosing connectors.

In addition to allowing customers to create part numbers for particular applications, Positronic offers a wide variety of features and accessories within our products.

Positronic is able to modify existing products to meet unique customer requirements. We are also eager to develop custom connectors to customer requirements. If you do not find what you need in this catalog, please contact us for assistance.

SGM connectors can be used to stack multiple printed circuit boards in applications requiring rugged, high density connectors.
CUSTOMER SPECIFIED CONTACT TERMINATION LENGTH

Positronic can supply High Density Rectangular connectors with customer specified termination lengths. We have a wide variety of options available.

STRAIGHT PRINTED BOARD MOUNT

“X” contact termination lengths can be custom designed to fit your application requirements.

RIGHT ANGLE (90°) PRINTED BOARD MOUNT

CONTACT TECHNICAL SALES FOR MORE INFORMATION!

FLUSH PANEL CONNECTOR MOUNTING BRACKETS

PART NUMBER 80217-0
**UNIQUE FEATURES AND ACCESSORIES**

**POLARIZATION & CODING (KEYING) OPTIONS**

Male and female polarizing guide locations may be reversed to provide connector coding (keying) from one connector to another.

**ACCESSORIES SECTION**

**PANEL CUT-OUT DIMENSIONS**

For use with SGMC or SGM series connectors.

<table>
<thead>
<tr>
<th>SIZE</th>
<th>A</th>
<th>B MIN.</th>
<th>C MIN.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>0.562 [14.27]</td>
<td>0.390 [9.91]</td>
<td>0.215 [5.46]</td>
</tr>
<tr>
<td>5</td>
<td>0.482 [12.24]</td>
<td>0.315 [8.00]</td>
<td>0.215 [5.46]</td>
</tr>
<tr>
<td>7</td>
<td>0.562 [14.27]</td>
<td>0.397 [10.08]</td>
<td>0.215 [5.46]</td>
</tr>
<tr>
<td>9</td>
<td>0.656 [16.66]</td>
<td>0.495 [12.57]</td>
<td>0.215 [5.46]</td>
</tr>
<tr>
<td>11</td>
<td>0.531 [13.49]</td>
<td>0.401 [10.19]</td>
<td>0.285 [7.24]</td>
</tr>
<tr>
<td>14</td>
<td>0.625 [15.88]</td>
<td>0.510 [12.95]</td>
<td>0.285 [7.24]</td>
</tr>
<tr>
<td>20</td>
<td>0.814 [20.68]</td>
<td>0.700 [17.78]</td>
<td>0.285 [7.24]</td>
</tr>
<tr>
<td>26</td>
<td>1.000 [25.40]</td>
<td>0.885 [22.48]</td>
<td>0.285 [7.24]</td>
</tr>
<tr>
<td>29</td>
<td>1.094 [27.79]</td>
<td>0.959 [24.36]</td>
<td>0.285 [7.24]</td>
</tr>
<tr>
<td>34</td>
<td>1.032 [26.21]</td>
<td>0.867 [22.02]</td>
<td>0.395 [10.03]</td>
</tr>
<tr>
<td>44</td>
<td>1.281 [32.54]</td>
<td>1.105 [28.07]</td>
<td>0.395 [10.03]</td>
</tr>
<tr>
<td>50</td>
<td>1.408 [35.76]</td>
<td>1.235 [31.37]</td>
<td>0.395 [10.03]</td>
</tr>
<tr>
<td>75</td>
<td>1.375 [34.93]</td>
<td>1.145 [29.08]</td>
<td>0.755 [19.18]</td>
</tr>
<tr>
<td>104</td>
<td>1.750 [44.45]</td>
<td>1.520 [37.47]</td>
<td>0.755 [19.18]</td>
</tr>
</tbody>
</table>

Dimensions are in inches [millimeters]. All dimensions are subject to change.
### Polarizing Guides

**Code N or Code NSS**

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Male Polarizing Guides" /></td>
<td><img src="image2.png" alt="Female Polarizing Guides" /></td>
</tr>
</tbody>
</table>

**Stainless Steel Polarizing Guides**

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="Male Stainless Steel Polarizing Guides" /></td>
<td><img src="image4.png" alt="Female Stainless Steel Polarizing Guides" /></td>
</tr>
</tbody>
</table>

### Fixed and Rotating Jackscrew Systems

**Code T, Code E or Code ESS**

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5.png" alt="Fixed Jackscrews" /></td>
<td><img src="image6.png" alt="Rotating Jackscrews" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image7.png" alt="Fixed Jackscrews" /></td>
<td><img src="image8.png" alt="Short Rotating Jackscrews" /></td>
</tr>
</tbody>
</table>

### Polarizing Guide and Jackscrew Thread Availability Chart

**Code N, Code NSS, Code T, Code E or Code ESS**

<table>
<thead>
<tr>
<th>Thread Options</th>
<th>Polarizing Guides</th>
<th>Fixed and Rotating Jackscrews</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4 - 50 Variants</strong></td>
<td><strong>75 &amp;104 Variants</strong></td>
<td><strong>4 - 50 Variants</strong></td>
</tr>
<tr>
<td><strong>2-56 Thread</strong></td>
<td>Supplied as Standard</td>
<td>...</td>
</tr>
<tr>
<td><strong>M2x0.4 Metric Thread</strong></td>
<td>Available</td>
<td>...</td>
</tr>
<tr>
<td><strong>6-32 Thread</strong></td>
<td>...</td>
<td>Supplied as Standard</td>
</tr>
<tr>
<td><strong>M3x0.5 Metric Thread</strong></td>
<td>...</td>
<td>Available</td>
</tr>
</tbody>
</table>

**Material and Finish**

<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper Alloy with Nickel Plate</td>
</tr>
</tbody>
</table>

**Note:** *ESS jackscrew is not offered in kits and must be factory installed on connectors.
**POLARIZING GUIDE**

FOR USE WITH 4 TO 50 CONTACTS VARIANTS

**CODE N OR CODE NSS**

QUALIFIED TO MIL-DTL-28748

---

**Polarizing Guides**

**Brass**

- 2-56 UNC-2A TYP.
- Slot 0.031 [0.79] WIDE

**Stainless Steel**

- Slot 0.020 [0.51] WIDE

---

**NOTES:**

Alternative lengths of polarizing guides are available as special options, contact Technical Sales.

M2x0.4 metric threads available, see chart on page 31.

---

**POLARIZING GUIDE**

FOR USE WITH SGMC 75 OR SGMC 104 CONTACT VARIANTS

**CODE NSS**

---

**NSS**

- Slot 0.038 [0.97] WIDE

---

**NOTE:**

* M3x0.5 metric threads available, see chart on page 31.
JACKSCREW SYSTEM
FOR USE WITH 4 TO 50 CONTACTS VARIANTS
CODE T, CODE E, CODE ESS, CODE ESS-756.2 OR CODE ESS-793.4
QUALIFIED TO MIL-DTL-28748

NOTES:
Alternative lengths of jackscrews are available as special options, contact Technical Sales. M3x0.5 metric threads available, see chart on page 31.

JACKSCREW SYSTEM
FOR USE WITH SGM 75, SGMC 75 OR SGMC 104 CONTACT VARIANTS
CODE T OR CODE E

NOTE:
*1 M3x0.5 metric threads available, see chart on page 31.
CODING (KEYING) DEVICE OPTIONS

Coding (keying) is accomplished with connector housings by a pin and slot system. Female connector housings are slotted to accept stainless steel polarizing pins mounted on the male connector housings.

There are seven coding positions available which are designated by the letters A, B, C, D, E, F or G. Non-coded connector housings are designated by “0” and are supplied without slot and pin. See ordering chart.

### FEMALE
#### CODE R

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>A MIN.</th>
<th>B MIN.</th>
<th>C MIN.</th>
<th>D MIN.</th>
<th>E</th>
<th>F</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG4000R000</td>
<td>0.875</td>
<td>0.306</td>
<td>0.230</td>
<td>0.430</td>
<td>0.562</td>
<td>0.437</td>
<td>0.031</td>
</tr>
<tr>
<td></td>
<td>[22.23]</td>
<td>[7.75]</td>
<td>[5.84]</td>
<td>[10.92]</td>
<td>[14.27]</td>
<td>[11.10]</td>
<td>[0.79]</td>
</tr>
<tr>
<td>SG7000R000</td>
<td>0.875</td>
<td>0.306</td>
<td>0.230</td>
<td>0.430</td>
<td>0.562</td>
<td>0.437</td>
<td>0.031</td>
</tr>
<tr>
<td></td>
<td>[22.23]</td>
<td>[7.75]</td>
<td>[5.84]</td>
<td>[10.92]</td>
<td>[14.27]</td>
<td>[11.10]</td>
<td>[0.79]</td>
</tr>
<tr>
<td>SG14000R000</td>
<td>0.975</td>
<td>0.375</td>
<td>0.300</td>
<td>0.530</td>
<td>0.625</td>
<td>0.437</td>
<td>0.062</td>
</tr>
<tr>
<td></td>
<td>[24.77]</td>
<td>[9.53]</td>
<td>[7.62]</td>
<td>[13.48]</td>
<td>[15.88]</td>
<td>[11.10]</td>
<td>[1.57]</td>
</tr>
<tr>
<td>SG20000R000</td>
<td>1.185</td>
<td>0.375</td>
<td>0.300</td>
<td>0.730</td>
<td>0.814</td>
<td>0.437</td>
<td>0.062</td>
</tr>
<tr>
<td></td>
<td>[29.59]</td>
<td>[9.53]</td>
<td>[7.62]</td>
<td>[18.54]</td>
<td>[20.69]</td>
<td>[11.10]</td>
<td>[1.57]</td>
</tr>
<tr>
<td>SG26000R000</td>
<td>1.500</td>
<td>0.375</td>
<td>0.300</td>
<td>0.910</td>
<td>1.000</td>
<td>0.437</td>
<td>0.062</td>
</tr>
<tr>
<td></td>
<td>[34.29]</td>
<td>[9.53]</td>
<td>[7.62]</td>
<td>[23.11]</td>
<td>[25.40]</td>
<td>[11.10]</td>
<td>[1.57]</td>
</tr>
<tr>
<td>SG34000R000</td>
<td>1.345</td>
<td>0.480</td>
<td>0.410</td>
<td>0.900</td>
<td>1.140</td>
<td>1.281</td>
<td>0.437</td>
</tr>
<tr>
<td></td>
<td>[40.91]</td>
<td>[12.19]</td>
<td>[10.41]</td>
<td>[28.96]</td>
<td>[32.54]</td>
<td>[32.44]</td>
<td>[11.10]</td>
</tr>
<tr>
<td>SG44000R000</td>
<td>1.595</td>
<td>0.480</td>
<td>0.410</td>
<td>1.270</td>
<td>1.408</td>
<td>0.437</td>
<td>0.062</td>
</tr>
<tr>
<td></td>
<td>[43.56]</td>
<td>[12.19]</td>
<td>[10.41]</td>
<td>[32.26]</td>
<td>[35.76]</td>
<td>[11.10]</td>
<td>[1.57]</td>
</tr>
<tr>
<td>SG50000R000</td>
<td>1.775</td>
<td>0.840</td>
<td>0.770</td>
<td>1.545</td>
<td>1.750</td>
<td>0.512</td>
<td>0.062</td>
</tr>
<tr>
<td></td>
<td>[45.09]</td>
<td>[21.34]</td>
<td>[19.56]</td>
<td>[39.24]</td>
<td>[44.45]</td>
<td>[39.00]</td>
<td>[11.10]</td>
</tr>
<tr>
<td>SG75000R000</td>
<td>2.160</td>
<td>0.840</td>
<td>0.770</td>
<td>1.545</td>
<td>1.750</td>
<td>0.512</td>
<td>0.062</td>
</tr>
<tr>
<td></td>
<td>[54.86]</td>
<td>[21.34]</td>
<td>[19.56]</td>
<td>[39.24]</td>
<td>[44.45]</td>
<td>[39.00]</td>
<td>[11.10]</td>
</tr>
</tbody>
</table>

### MALE
#### CODE P

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>A MAX.</th>
<th>B MAX.</th>
<th>C MIN.</th>
<th>D MIN.</th>
<th>E</th>
<th>F</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG4000P000</td>
<td>0.870</td>
<td>0.300</td>
<td>0.230</td>
<td>0.430</td>
<td>0.562</td>
<td>0.437</td>
<td>0.031</td>
</tr>
<tr>
<td></td>
<td>[22.20]</td>
<td>[7.62]</td>
<td>[5.84]</td>
<td>[10.92]</td>
<td>[14.27]</td>
<td>[11.10]</td>
<td>[0.79]</td>
</tr>
<tr>
<td>SG7000P000</td>
<td>0.870</td>
<td>0.300</td>
<td>0.230</td>
<td>0.430</td>
<td>0.562</td>
<td>0.437</td>
<td>0.031</td>
</tr>
<tr>
<td></td>
<td>[22.20]</td>
<td>[7.62]</td>
<td>[5.84]</td>
<td>[10.92]</td>
<td>[14.27]</td>
<td>[11.10]</td>
<td>[0.79]</td>
</tr>
<tr>
<td>SG14000P000</td>
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<td>[24.64]</td>
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<td>[7.62]</td>
<td>[13.46]</td>
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All dimensions are in inches [millimeters]. All dimensions are subject to change.
### ALUMINUM CABLE ADAPTER (HOOD)

FOR USE WITH 4 TO 50 CONTACTS VARIANTS

**CODE J**

QUALIFIED TO MIL-DTL-28748

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DIMENSIONS</th>
<th>CABLE OPENING</th>
</tr>
</thead>
<tbody>
<tr>
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<td>A</td>
<td>B</td>
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<tr>
<td>SG400000J0</td>
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<td>SG700000J0</td>
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<td>SG900000J0</td>
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<td>0.750</td>
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<tr>
<td>SG140000J0</td>
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<tr>
<td>SG200000J0</td>
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<td>SG260000J0</td>
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<td>SG290000J0</td>
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<td>SG340000J0</td>
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<td>SG440000J0</td>
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<tr>
<td>SG500000J0</td>
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<td>1.190</td>
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</table>

### ALUMINUM CABLE ADAPTER (HOOD) WITH JACKSCREW SYSTEM

FOR USE WITH 4 TO 50 CONTACTS VARIANTS

**CODE E1 IN STEP 9** AND **J IN STEP 8**

QUALIFIED TO MIL-DTL-28748

<table>
<thead>
<tr>
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<th>CABLE OPENING</th>
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<tr>
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<tr>
<td>SG2000E100J0</td>
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</tr>
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<td>SG2900E100J0</td>
<td>1.561</td>
<td>0.750</td>
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<tr>
<td>SG3400E100J0</td>
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<td>SG4400E100J0</td>
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<tr>
<td>SG5000E100J0</td>
<td>2.001</td>
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</tbody>
</table>

**NOTE:**

**1** M2x0.4 metric threads available, see chart on page 31.

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
FULL ACCESS ALUMINUM CABLE ADAPTER (HOOD) WITH JACKSCREW SYSTEM

Hinged cover allows access to the inside of the hood while still installed on the connector

FOR USE WITH 104 CONTACTS VARIANTS

CODE Z OR CODE V

**Z**
TOP OPENING CABLE ADAPTER

**V**
SIDE OPENING CABLE ADAPTER

FIGURE 1

FIGURE 2

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>FIGURE</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
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<tbody>
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<td>0.860</td>
<td>1.110</td>
<td>2.645</td>
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<td>0.812</td>
<td>1.750</td>
<td>2.100</td>
<td>0.500</td>
<td>0.860</td>
<td>1.110</td>
<td>2.645</td>
<td>1.050</td>
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</tbody>
</table>

NOTE:

*1 M3x0.5 metric threads available, see chart on page 31.

QUICK DISCONNECT LOCKING DEVICE

CODE V OR VL

**V**LOCKING TABS

**VL**ACTUATION LOCK LEVER ASSEMBLY

TYPICAL PART NUMBER:

SGMC14S0N000V

TYPICAL PART NUMBER:

SGMC14M0N000VL
APPLICATION TOOLS SECTION

SGMC connectors are offered with removable crimp contacts. Positronic Industries recognizes the importance of supplying application tooling to support our customers’ use of our products. Information on application tooling is available on our web site at http://www.connectpositronic.com/products/157/ApplicationTooling

There you will find downloadable PDF cross reference charts for removable and compliant press-in contacts. These charts will supply part numbers for insertion, removal and crimping tools, along with information regarding use of tools and techniques.

Connectors Designed To Customer Specifications

Positronic SGMC, SGM and SMPL series connectors can be modified to customer specifications.

Examples: select loading of contacts for cost savings or to gain creepage and clearance distances; longer printed circuit board terminations; customer specified hardware.

Contact Technical Sales with your particular requirements.
<table>
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</tbody>
</table>

**Note:** All male and female crimp contacts can be ordered on reels in quantities of 2,000 by adding letter "R" after the contact part number. See page 11 for more information.

POSITRONIC TOOLS CROSS REFERENCE LIST

USE INDICATED POSTTRONIC TOOLS FOR BEST RESULTS
COMPLIANT PRESS-IN CONNECTOR INSTALLATION TOOLS
USE INDICATED POSITRONIC TOOLS FOR BEST RESULTS

Positronic offers expert assistance in adapting application tooling to your manufacturing environment. Contact our application tooling specialist for assistance.

POSITRONIC RECOMMENDED TOOLS FOR COMPLIANT PRESS-IN CONNECTORS AND CONTACTS

<table>
<thead>
<tr>
<th>CONNECTOR VARIANT (NUMBER OF CONTACTS)</th>
<th>SUPPORT TOOL</th>
<th>CONNECTOR SEATING TOOL WITH ARBOR PRESS SHAFT</th>
<th>CONNECTOR SEATING TOOL WITHOUT ARBOR PRESS SHAFT</th>
<th>ARBOR PRESS FOR SEATING TOOLS</th>
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<td></td>
<td>FEMALE P / N</td>
<td>MALE P / N</td>
<td>FEMALE P / N</td>
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<tr>
<td>4</td>
<td>9513-40-4-41</td>
<td>9513-42-4-41</td>
<td>9513-41-4-41</td>
<td>9513-44-4-41</td>
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<td>9513-41-5-41</td>
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</table>

Use p / n 9530-1-0
1 ton capacity
4 inch throat
SUGGESTED PRINTED BOARD HOLE SIZES FOR COMPLIANT PRESS-IN CONNECTORS

Traditionally, tin-lead has been a popular plating for printed circuit boards (PCB) 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.

### PCB PRINTED HOLE SIZE

#### OMEGA COMPLIANT PRESS-IN CONTACT HOLE

<table>
<thead>
<tr>
<th>BOARD TYPE</th>
<th>CONTACT SIZE / TYPE</th>
<th>RECOMMENDED DRILL HOLE SIZE</th>
<th>RECOMMENDED PLATING</th>
<th>FINISHED HOLE SIZES</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIN-LEAD SOLDER PCB</td>
<td>22 OMEGA</td>
<td>ø0.0453±0.0010 [ø1.150±0.025]</td>
<td>0.0006 [15µ] minimum solder over 0.0010 [25µ] min. copper</td>
<td>ø0.0394±0.0035-0.0024 [ø1.000±0.090-0.060]</td>
</tr>
</tbody>
</table>

#### RoHS PCB PLATING OPTIONS

| COPPER PCB | 22 OMEGA | ø0.047±0.001 [ø1.19±0.025] | 0.0010 [25µ] min. copper | ø0.043±0.002 [ø1.09±0.05] |
| IMMERSION TIN PCB | 22 OMEGA | ø0.047±0.001 [ø1.19±0.025] | 0.00033±0.00006 [0.85±0.15µ] immersion tin over 0.0010 [25µ] min. copper | ø0.043±0.002 [ø1.09±0.05] |
| IMMERSION SILVER PCB | 22 OMEGA | ø0.047±0.001 [ø1.19±0.025] | 0.00013±0.00007 [0.34±0.17µ] immersion silver over 0.0010 [25µ] min. copper | ø0.043±0.002 [ø1.09±0.05] |
| ELECTROLESS NICKEL / IMMERSION GOLD PCB | 22 OMEGA | ø0.047±0.001 [ø1.19±0.025] | 0.00002 [0.05µ] min. immersion gold over 0.00017±0.000059 [4.5±1.5µ] electroless nickel per IPC-4552 over 0.0010 [25µ] min. copper | ø0.043±0.002 [ø1.09±0.05] |

### NOTE:

For PCB plating compositions not shown, consult Technical Sales.

### COMPLIANT PRESS-IN TERMINATION CONTACT HOLE

When properly used, Positronic Industries omega compliant press-in terminations provide reliable service even under severe conditions.

Connectors utilizing this leading technology compliant press-in contact are easy to install:

1. Inexpensive installation tooling is available from Positronic, to choose the proper installation tool refer to page 39 for part number ordering information.
2. Insert the connector into the P.C. board or backplane and seat connector fully.
3. Secure the connector to the P.C. board or backplane with supplied hardware.
## MODIFICATION (MOS) SUFFIXES

Specify complete connector by selecting a base part number from the desired series Ordering Information Page.

Once base part number is selected, add desired modifications (MOS) number below to the end of the part number.

Example part number: SMPL34M0T0LB/AA-14-293.2

(Ordering information pages can be found at the end of each series)

<table>
<thead>
<tr>
<th>SERIES</th>
<th>CONNECTOR VARIANT</th>
<th>GENDER</th>
<th>TERMINATION TYPE AVAILABLE</th>
<th>MODIFICATION OF STANDARD (MOS) SUFFIXES</th>
<th>DESCRIPTION OF MODIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGMC</td>
<td>ALL</td>
<td>F / M</td>
<td>ALL</td>
<td>-14</td>
<td>Allows connector with contacts installed, for contacts only to be plated 0.000030 [0.76 µ] gold over nickel.</td>
</tr>
<tr>
<td>SGMC</td>
<td>ALL</td>
<td>F / M</td>
<td>ALL</td>
<td>-15</td>
<td>Allows connector with contacts installed, for contacts only to be plated 0.000050 inch [1.27µ] gold over nickel.</td>
</tr>
<tr>
<td>SGMC</td>
<td>ALL</td>
<td>F / M</td>
<td>ALL</td>
<td>-293.2</td>
<td>Allows connector with any polarizing jackscrews to be supplied with jackscrew positions reversed.</td>
</tr>
<tr>
<td>SGMC</td>
<td>ALL</td>
<td>F / M</td>
<td>ALL</td>
<td>-650.0</td>
<td>Allows connector with any hardware to be supplied with MC422N or FC422P2 contacts kitted.</td>
</tr>
<tr>
<td>SGM</td>
<td>ALL</td>
<td>F / M</td>
<td>DS3, DS4, DS5, DS6</td>
<td>-672.0</td>
<td>Allows connector with straight solder contacts to have standard nylon hex nut and washer replaced with stainless steel hex nut and washer.</td>
</tr>
<tr>
<td>SGM</td>
<td>4, 5, 7, 9, 11, 14, 20, 26, 29, 34, 44, and 50</td>
<td>F / M</td>
<td>ALL</td>
<td>-756.2</td>
<td>Allows connector to be supplied with special length “ESS” jackscrews.</td>
</tr>
<tr>
<td>SGM</td>
<td>ALL</td>
<td>F / M</td>
<td>ALL</td>
<td>-793.4</td>
<td>Allows connector to be supplied with special rotating jackscrews with 0.078 [1.98] hex socket head.</td>
</tr>
<tr>
<td>SGM</td>
<td>ALL</td>
<td>F / M</td>
<td>ALL</td>
<td>/AA</td>
<td>Allows connector for environmental compliance per EU Directive 2002/95/EC (RoHS).</td>
</tr>
</tbody>
</table>

MANY OTHER SPECIAL OPTIONS ARE AVAILABLE CONSULT TECHNICAL SALES OR VISIT OUR WEB SITE AT WWW.CONNECTPOSITRONIC.COM

Connectors Designed To Customer Specifications

Positronic **SGMC, SGM and SMPL series connectors** can be modified to customer specifications.

**Examples:** select loading of contacts for cost savings or to gain creepage and clearance distances; longer printed circuit board terminations; customer specified hardware.

**Contact Technical Sales with your particular requirements.**
Positronic® offers a variety of QPL connector products

### Rectangular Connectors

<table>
<thead>
<tr>
<th>MIL PREFIX</th>
<th>POSITRONIC SERIES</th>
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</tr>
</thead>
<tbody>
<tr>
<td>MIL-DTL-28748/3</td>
<td>GMCT</td>
<td></td>
</tr>
<tr>
<td>MIL-DTL-28748/4</td>
<td>GMCT</td>
<td></td>
</tr>
<tr>
<td>MIL-DTL-28748/5</td>
<td>GM</td>
<td></td>
</tr>
<tr>
<td>MIL-DTL-28748/6</td>
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<td></td>
</tr>
<tr>
<td>MIL-DTL-28748/7</td>
<td>SGM</td>
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<tr>
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<tr>
<td>MIL-DTL-28748/8</td>
<td>SGM</td>
</tr>
<tr>
<td>MIL-C-28748/13</td>
<td>SGM</td>
</tr>
<tr>
<td>MIL-C-28748/14</td>
<td>SGM</td>
</tr>
<tr>
<td>SAE AS39029/34</td>
<td>SGM, GMCT</td>
</tr>
<tr>
<td>SAE AS39029/35</td>
<td>SGM, GMCT</td>
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### D-Subminiature Connectors

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<tr>
<td>MIL-DTL-24308/1</td>
<td>HDC</td>
</tr>
<tr>
<td>MIL-DTL-24308/2</td>
<td>RD, DD</td>
</tr>
<tr>
<td>MIL-DTL-24308/3</td>
<td>HDC</td>
</tr>
<tr>
<td>MIL-DTL-24308/4</td>
<td>RD, DD</td>
</tr>
<tr>
<td>MIL-DTL-24308/5</td>
<td>HDC</td>
</tr>
<tr>
<td>MIL-DTL-24308/6</td>
<td>RD, DD</td>
</tr>
<tr>
<td>MIL-DTL-24308/7</td>
<td>HDC</td>
</tr>
<tr>
<td>MIL-DTL-24308/8</td>
<td>RD, DD</td>
</tr>
<tr>
<td>MIL-DTL-24308/23</td>
<td>HDC, DD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MIL PREFIX</th>
<th>POSITRONIC SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIL-DTL-24308/24</td>
<td>HDC, DD</td>
</tr>
<tr>
<td>MIL-DTL-24308/25</td>
<td>HDC, RD, DD</td>
</tr>
<tr>
<td>MIL-DTL-24308/26</td>
<td>HDC, RD, DD</td>
</tr>
<tr>
<td>GSFC S-311-P4</td>
<td>SND, SDD, SCBC, SCBM</td>
</tr>
<tr>
<td>GSFC S-311-P10</td>
<td>SND, SCBM</td>
</tr>
<tr>
<td>SAE AS39029/57</td>
<td>DD</td>
</tr>
<tr>
<td>SAE AS39029/58</td>
<td>DD</td>
</tr>
<tr>
<td>SAE AS39029/63</td>
<td>RD</td>
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<tr>
<td>SAE AS39029/64</td>
<td>RD</td>
</tr>
</tbody>
</table>

For a complete QPL listing available to download in PDF format, visit the desired connector family home page and click on link “Qualified Product Listing (PDF)” on our website at:

www.connectpositronic.com

or enter the URL link below to download the QPL PDF file immediately!

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Positronic has factory direct technical sales people in major metropolitan areas around the world. These sales professionals are ready to support you locally with face-to-face consultation.

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Positronic HIGH RELIABILITY Products

**POWER**

- **Contact Sizes:** 0, 8, 12, 16, 20, 22, and 24
- **Current Ratings:** To 200 amperes per contact
- **Terminations:** Crimp and fixed cable connector, straight solder, right angle (90°) compliant press-in, and right angle (90°) compliant press-in
- **Configurations:** Multiple variants in a variety of package sizes
- **Compliance:** PICMG 2.11, PICMG 3.0, VITA 41, DSCC, GSFC S-311-P-4, GSFC S-311-P-10

**FEATURES:**
- High current density
- Energy saving – low contact resistance
- Hot swap capability
- AC/DC operation in a single connector
- Signal contacts for hardware management
- Blind mating
- Large contact area
- Large variety of accessories
- Customer-specified contact arrangements

**CABLE**

- **Contact Sizes:** 16, 20, and 22
- **Current Ratings:** To 13 amperes nominal
- **Terminations:** Crimp, wire solder, straight solder, right angle (90°) solder, straight compliant press-in, and right angle (90°) compliant press-in
- **Configurations:** Multiple variants in standard and high densities, thirty package sizes
- **Qualifications:** MIL-DTL-28748, SAE AS39029, CCITT V.35

**FEATURES:**
- Two performance levels available: industrial quality and military quality
- A wide variety of contact arrangements and package sizes
- Connector coding device (keying) options

**RECTANGULAR**

- **Contact Sizes:** 16, 20 and 22
- **Current Ratings:** To 100 amperes
- **Terminations:** Crimp and fixed cable connector, straight solder, right angle (90°) compliant press-in, and right angle (90°) compliant press-in
- **Configurations:** Multiple variants in both standard and high densities, thirty package sizes
- **Qualifications:** MIL-DTL-24308, GSFC S-311-P-4, GSFC S-311-P-10, SAE AS39029, DSCC

**FEATURES:**
- Four performance levels available for best cost/performance ratio: professional, industrial, military, and space-flight quality
- Options include high voltage, coax, thermocouple and air coupling contacts; environmentally sealed and dual port connector packages including mixed density
- Broad selection of accessories
- Size 20 and 22 contacts suitable for use in carrying power
- IP65, IP67

**HERMETIC**

- **Contact Sizes:** 8, 12, 16, 20, and 22
- **Current Ratings:** To 40 amperes nominal
- **Terminations:** Crimp and fixed cable connector, straight solder, right angle (90°) solder, straight compliant press-in, and right angle (90°) compliant press-in
- **Configurations:** Multiple variants in four package sizes
- **Qualifications:** MIL-DTL-24308, GSFC S-311-P-4, GSFC S-311-P-10, SAE AS39029, DSCC

**FEATURES:**
- Intended for use as an electrical feedthrough in high vacuum applications
- Leakage rate: < 5x10^-9 mbar.l/s under a vacuum of 1.5x10^-2 mbar
- Signal, power, coax, and high voltage versions available
- Connectors can be mounted on flange assembly per customer specification

For more information, visit [www.connectpositronic.com](http://www.connectpositronic.com) or call your nearest Positronic sales office listed on the back of this catalog.
POSITRONIC INDUSTRIES, INC.
423 N Campbell Avenue • PO Box 8247 • Springfield, MO 65801
Tel 417 866 2322 • Fax 417 866 4115 • Toll Free 800 641 4054 • info@connectpositronic.com

AMERICAS LOCATIONS

NORTH AMERICA
United States, Springfield, Missouri, Corporate Headquarters
Factory, Sales and Engineering Offices 800 641 4054 info@connectpositronic.com
Canada Sales Office 800 327 8272 info@connectpositronic.com
Mexico Sales Office 800 872 7674 info@connectpositronic.com
Puerto Rico Factory and Sales Office 800 641 4054 info@connectpositronic.com

SOUTH AMERICA
Argentina Sales Office 417 866 2322 info@connectpositronic.com
Brazil Sales Office 417 866 2322 info@connectpositronic.com
Chile Sales Office 417 866 2322 info@connectpositronic.com

POSITRONIC ASIA PTE LTD.
3014A Ubi Road 1 #07-01 • Singapore 408703
Telephone 65 6842 1419 • Fax  65 6842 1421 • singapore@connectpositronic.com

ASIA/PACIFIC LOCATIONS

SINGAPORE, Asia/Pacific Headquarters
Factory Sales and Engineering Offices 65 6842 1419 singapore@connectpositronic.com

ASIA, Direct Sales Offices
China - Zhuhai Factory and Sales Office 86 756 362 6762 zhuhai@connectpositronic.com
Shenzhen Sales Office 86 755 2601 0941 shenzhen@connectpositronic.com
Shanghai Sales Office 86 158 2907 9779 shanghai@connectpositronic.com
Xian Sales Office 86 29 8839 5306 xian@connectpositronic.com
Beijing Sales Office 86 10 8203 7718 beijing@connectpositronic.com
Korea Sales Office 82 31 909 8047 korea@connectpositronic.com
Taiwan Sales Office 886 2 2937 8775 taiwan@connectpositronic.com

JAPAN, Direct Sales Offices
Sales and Engineering Offices 81 3 6310 5830 japan@connectpositronic.com

INDIA, Direct Sales Offices
Factory Sales and Engineering Offices 91 20 2469 9910 india@connectpositronic.com
Bangalore Sales Office 91 94 4907 3251 bangalore@connectpositronic.com
New Delhi Sales Office 91 80 1071 1175 delhi@connectpositronic.com

ASIA/PACIFIC, Technical Agents
Technical Agents in Australia, Hong Kong, Malaysia, New Zealand, Philippines, Thailand and Vietnam.

POSITRONIC INDUSTRIES, S.A.S.
Zone Industrielle d’Engachies • 46 Route d’Engachies • F-32020 Auch Cedex 9 France
Telephone 33 5 6263 4491 • Fax 33 5 6263 5117 • contact@connectpositronic.com

EUROPEAN LOCATIONS

FRANCE, Auch Factory, European Headquarters
Factory Sales and Engineering Offices 33 5 6263 4491 contact@connectpositronic.com

EUROPE, Direct Sales Offices
North France Sales Office 33 1 4588 1388 jchalaux@connectpositronic.com
South France Sales Office 33 5 6263 4491 plafon@connectpositronic.com
Eire + Northern Ireland 33 5 6263 4557 tauvin@connectpositronic.com
Italy Sales Office 39 02 5411 6106 rmagni@connectpositronic.com
Germany Sales Office 49 23 5163 4739 cbouche@connectpositronic.com
UK Sales Office 44 1242 897 493 lbirdwell@connectpositronic.com

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