HIGH PERFORMANCE

D-subminiature Connectors

POSITRONIC
GLOBAL Connector SOLUTIONS

Goddard Space Flight Center S-311-P-4
Goddard Space Flight Center S-311-P-10
MIL-DTL-24308 Class M

Catalog C-005 Rev. B1

www.connectpositronic.com
Experience

- Founded in 1966
- Involvement in the development of international connector specifications through EIA®, IEC and ISO as well as PICMG® and VITA.
- 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, C.UL, military and customer-specified 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: 369,000.

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  #6,329,697
#6,260,268  #6,835,079  #7,115,002
Patented in Canada, 1992  Other Patents Pending

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SND STANDARD DENSITY D-SUBMINIATURE CONNECTORS
Removable or fixed size 20 contacts. Crimp, solder cup, straight and right angle (90°) printed board mount contact terminations. Five connector variants, 9 through 50 contacts. Conforming to applicable material, dimensional and performance requirements of GSFC S-311-P4, GSFC S-311-P10 and MIL-DLT-24308 Class M.

SDD HIGH DENSITY D-SUBMINIATURE CONNECTORS
Removable or fixed size 22 contacts. Crimp, solder, straight and right angle (90°) printed board contact terminations. Six connector variants, 15 through 104 contacts. Conforming to applicable material, dimensional and performance requirements of GSFC S-311-P4 and MIL-DLT-24308 Class M.

SCBM STANDARD DENSITY COMBINATION D-SUBMINIATURE CONNECTORS
Fixed size 20 signal contacts. Size 8 power, shielded and high voltage contacts. Crimp, solder cup, straight and right angle (90°) printed board mount contact terminations. Twenty-two connector variants, 2WK2 through 46W4, using shell sizes 1 through 6. Conforming to applicable material, dimensional and performance requirements of GSFC S-311-P4, GSFC S-311-P10 and DSCC specification 85039.

SCBC STANDARD DENSITY COMBINATION D-SUBMINIATURE CONNECTORS WITH REMOVABLE CRIMP CONTACTS
Removable size 20 signal contacts. Size 8 power, shielded, and high voltage removable contacts. Crimp and solder terminations. Sixteen connector variants, shell sizes 1 through 6. Conforming to applicable material, dimensional and performance requirements of GSFC S-311-P4, GSFC S-311-P10 and DSCC specification 85039.

continued on next page...
SCBDD HIGH DENSITY COMBINATION D-SUBMINIATURE CONNECTORS

Fixed size 22 signal and size 16 power contacts. Size 8 power, shielded, and high voltage contacts. Crimp, solder cup, straight and right angle (90°) printed board terminations. Four connector variants, shell sizes 1 through 4. Conforming to applicable material, dimensional and performance requirements of GSFC S-311-P4, GSFC S-311-P10 and DSCC specification 85039.

SCBCD HIGH DENSITY COMBINATION D-SUBMINIATURE CONNECTORS WITH REMOVABLE CRIMP CONTACTS

Removable size 22 signal and size 16 power contacts. Size 8 power, shielded, and high voltage removable contacts. Crimp and solder terminations. Three connector variants, shell sizes 1, 2 and 4. Conforming to applicable material, dimensional and performance requirements of GSFC S-311-P4, GSFC S-311-P10 and DSCC specification 85039.

SAD, SADD, SACBMP CONNECTOR SAVER / GENDER CHANGER

Standard density, high density and combination connector savers and gender changers for use with SND, SDD, SCBM and SCBC connectors. Conforming to applicable material, dimensional and performance requirements of GSFC S-311-P4, GSFC S-311-P10 and DSCC specification 85039.
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*All dimensions are subject to change.*
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- QPL Listing .............................................................................. 98
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 to 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 qualified under GSFC S-311-P4 to the higher 40 gram contact engagement test requirement.

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

- **PosiBand** is more robust than the 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 specification. **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 engagement 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).

### TEMPERATURE RISE CURVES

Test conducted in accordance with UL1977.

#### Size 22 PosiBand Contacts

**Initial Contact Resistance:** 0.005 ohms, maximum.

Curve developed using High Density D-subminiature connectors loaded with size 22 crimp contacts terminated to size 22 AWG wire.

#### Size 20 PosiBand Contacts

**Initial Contact Resistance:** 0.004 ohms, maximum.

Curve developed using Standard Density D-subminiature connectors loaded with size 20 crimp contacts terminated to size 20 AWG wire.
GENERAL INFORMATION

TEMPERATURE RISE CURVES FOR SIZE 8, 10 AND 12 AWG WIRE

Test conducted in accordance with UL1977. All power contacts under load.

**7W2**

- **8 AWG**: Curve developed using a mated Combination-D 7W2F57 and Combination-D 7W2M loaded with size 8 crimp contacts terminated to 8 AWG wire.
- **10 AWG**: Curve developed using a mated Combination-D 7W2F3 and Combination-D 7W2M loaded with size 8 crimp contacts terminated to 10 AWG wire.
- **12 AWG**: Curve developed using a mated Combination-D 7W2F55 and Combination-D 7W2M loaded with size 8 crimp contacts terminated to 12 AWG wire.

**21WA4**

- **8 AWG**: Curve developed using a mated Combination-D 21WA4F57 and Combination-D 21WA4M loaded with size 8 crimp contacts terminated to 8 AWG wire.
- **10 AWG**: Curve developed using a mated Combination-D 21WA4F36 and Combination-D 21WA4M loaded with size 8 crimp contacts terminated to 10 AWG wire.
- **12 AWG**: Curve developed using a mated Combination-D 21WA4F55 and Combination-D 21WA4M loaded with size 8 crimp contacts terminated to 12 AWG wire.

**8W8**

- **8 AWG**: Curve developed using a mated Combination-D 8W8F57 and Combination-D 8W8M loaded with size 8 crimp contacts terminated to 8 AWG wire.
- **10 AWG**: Curve developed using a mated Combination-D 8W8F36 and Combination-D 8W8M loaded with size 8 crimp contacts terminated to 10 AWG wire.
- **12 AWG**: Curve developed using a mated Combination-D 8W8F55 and Combination-D 8W8M loaded with size 8 crimp contacts terminated to 12 AWG wire.

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
TEMPERATURE RISE CURVE FOR SIZE 8 AND 12 AWG WIRE

Test conducted in accordance with UL1977. All power contacts under load.

**3W3**

Curve developed using a mated Combination-D 3W3F loaded with size 8 crimp contacts and Combination-D 3W3M loaded with size 8 crimp contacts terminated to 8 AWG wire.

**8W8**

Curve developed using a mated Combination-D 8W8F loaded with size 8 crimp contacts and Combination-D 8W8M loaded with size 8 crimp contacts terminated to 8 AWG wire.

**HIGH DENSITY 8W2**

Curve developed using a mated Combination-D 8W2M loaded with size 8 crimp contacts and Combination-D 8W2S loaded with size 8 crimp contacts terminated to 12 AWG wire.
High performance for use in harsh environments, including space flight.

Size 20 fixed or removable contacts.

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

GSFC S-311-P-4/10 offers two contact engagement test options. Size 20 PosiBand contacts meet the higher 40 gram requirements per 4.2.2.b.

Five connector variants include 9, 15, 25, 37, and 50 contacts.

Terminations include cable or wire crimp and solder, straight and right angle PCB mount.

Current ratings: signal level to 18 amperes. See temperature rise curves on page 2 for details.

A wide variety of options and accessories.

Applicable variants are qualified to GSFC and military specifications; see page 98 for details.

Conforming To Applicable Material, Dimensional and Performance Requirements:
- GSFC S-311-P4 & GSFC S-311-P10
- MIL-DTL-24308 Class M

Conforming To Outgassing Requirements:
- ASTM E-595 & NASA-RP-1124

**TECHNICAL CHARACTERISTICS**

**MATERIALS AND FINISHES:**
- Contacts: Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.
- Connector Housing (Shells): Brass with 0.000050 inch [1.27 microns] gold over copper plate.
- Mounting Spacers and Brackets: Brass with 0.000050 inch [1.27 microns] gold over copper plate.
- Push-On Fasteners: Phosphor bronze or beryllium copper with 0.000050 inch [1.27 microns] gold over copper plate.
- Jackscrew Systems: Brass with 0.000050 inch [1.27 microns] gold over copper plate.
- Cable Adapter (Hood): Brass with 0.000050 inch [1.27 microns] gold over copper plate; aluminum with electrolyless nickel plate. Other finishes available, contact Technical Sales.

**MECHANICAL CHARACTERISTICS:**
- Contacts:
  - Size 20 Fixed: Male contact 0.040 inch [1.02 mm] mating diameter. Female contact - PosiBand closed entry design; see page 1 for details.
  - Size 20 Removable: Install contact to rear face of connector insert and remove from rear face of connector insert. Size 20 contact, male contact 0.040 inch [1.02 mm] mating diameter. Female contact - PosiBand closed entry design; see page 1 for details. For removable size 20 contacts, see pages 79 & 80.

continued on next page...
MECHANICAL CHARACTERISTICS, continued:

Contact Retention in Connector Insert: 9 lbs. [40 N].


Contact Terminations:
- Removable, closed barrel crimp - wire sizes 18 AWG [1.0 mm²] through 30 AWG [0.05 mm²].
- Removable, closed barrel solder - wire size 20 AWG [0.5 mm²] maximum; see page 80 for details.
- Fixed, solder cup - wire size 20 AWG [0.5 mm²] maximum; see page 8 for details.
- Straight solder printed board mount - 0.028 inch [0.71 mm] termination diameter and 0.024 inch [0.61 mm] termination diameter.
- Right angle (90°) printed board mount - 0.028 inch [0.71 mm] termination diameter for Inch System footprint, and 0.024 inch [0.64 mm] termination diameter for European Metric footprint.

Connector Housing (Shells):
- Male connector housings may be dimpled for EMI/ESD ground paths.

Polarization:
- Trapezoidally-shaped connector housings and polarized jackscrews.

Mounting to Angle Brackets:
- J ackscrews and riveted fasteners with 0.120 inch [3.05 mm] clearance hole, and threaded riveted fasteners with 4-40 thread and polyester lock inserts.

Mounting to Printed Board: Rapid installation push-on fasteners and mounting posts.

Locking Systems: J ackscrews.

Mechanical Operations: 1,000 operations minimum per IEC 60512-5.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating, Tested per UL 1977:
- 18 amperes, 2 contacts energized.
- 14 amperes, 6 contacts energized.
- 11 amperes, 15 contacts energized.
- 10 amperes, 25 contacts energized.
- 9 amperes, 50 contacts energized.

See temperature rise curves on page 2 for details.

Initial Contact Resistance: 0.004 ohms, maximum.

Proof Voltage: 1,000 V r.m.s.

Insulation Resistance: 5 G ohms.

Clearance and Creepage Distance: 0.039 inch [1.0 mm], minimum.

Working Voltage: 300 V r.m.s.

CLIMATIC CHARACTERISTICS:

Temperature Range: -55°C to +125°C.

Damp Heat, Steady State: 21 days.

CONTACT VARIANTS

FACE VIEW OF MALE OR REAR VIEW OF FEMALE

SND 9

SND 15

SND 25

SND 37

SND 50

For information regarding REMOVABLE CONTACTS, see contact illustration drawings and charts on pages 77-85.
**SND SERIES**
**MILITARY / SPACE FLIGHT QUALITY**
**STANDARD DENSITY FIXED OR REMOVABLE CONTACTS**

**STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY**

**CRIMP REMOVABLE**

![Diagram of a Crimp Removable Connector Housing Assembly](image)

**BOARD MOUNT**

![Diagram of a Board Mount](image)

**OPTIONAL CONNECTOR HOUSING ASSEMBLY (0, 02)**

![Diagram of an Optional Connector Housing Assembly](image)

**OPTIONAL CONNECTOR HOUSING ASSEMBLY WITH UNIVERSAL FLOAT MOUNTS (F)**

![Diagram of an Optional Connector Housing Assembly with Universal Float Mounts](image)

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<th>C ±0.005 [0.13]</th>
<th>D ±0.005 [0.13]</th>
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<th>E ±0.015 [0.38]</th>
<th>G ±0.010 [0.25]</th>
<th>H ±0.010 [0.25]</th>
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<td>MALE</td>
<td>1.213 [30.81]</td>
<td>0.666 [16.92]</td>
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<td>2.088 [53.04]</td>
<td>1.534 [38.96]</td>
<td>1.852 [47.04]</td>
<td>0.329 [8.36]</td>
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<td>MALE</td>
<td>2.729 [69.32]</td>
<td>2.182 [55.42]</td>
<td>2.500 [63.50]</td>
<td>0.329 [8.36]</td>
<td>0.494 [12.55]</td>
<td>2.272 [57.71]</td>
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<td>0.230 [5.84]</td>
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<td>FEMALE</td>
<td>2.729 [69.32]</td>
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<td>2.079 [52.81]</td>
<td>2.406 [61.11]</td>
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<td>0.230 [5.84]</td>
<td>0.426 [10.82]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DIMENSIONS ARE IN INCHES [MILLIMETERS].**
**ALL DIMENSIONS ARE SUBJECT TO CHANGE.**
SOLDER CUP TERMINATION
CODE 2

TYPICAL PART NUMBER:
SND15M200T6G

SOLDER CUP TERMINATION
CODE 3, 32 AND 36

**CODE NUMBER** | **L**  | **ØD**
---|---|---
3 | 0.170 [4.32] | 0.028 [0.71]
32 | 0.375 [9.53] | 0.028 [0.71]
36 | 0.236 [6.00] | 0.024 [0.61]

NOTE:
*1 Contact termination code as specified in Step 4 of ordering information.

STRAIGHT SOLDER PRINTED BOARD MOUNT TERMINATION
CODE 3, 32 AND 36

TYPICAL PART NUMBER:
SND25S3S60TG

NOTE:
*1 CODE NUMBER L ØD
3 0.170 [4.32] 0.028 [0.71]
32 0.375 [9.53] 0.028 [0.71]
36 0.236 [6.00] 0.024 [0.61]
RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION

CODE 42, 0.370 [9.40] CONTACT EXTENSION

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>SND9<em>42</em>***</td>
<td>1.204 [30.58]</td>
<td>0.984 [24.99]</td>
<td>0.420 [10.67]</td>
</tr>
<tr>
<td>SND15<em>42</em>***</td>
<td>1.532 [38.91]</td>
<td>1.312 [33.32]</td>
<td>0.420 [10.67]</td>
</tr>
<tr>
<td>SND25<em>42</em>***</td>
<td>2.072 [52.63]</td>
<td>1.852 [47.04]</td>
<td>0.420 [10.67]</td>
</tr>
<tr>
<td>SND37<em>42</em>***</td>
<td>2.720 [69.09]</td>
<td>2.500 [63.50]</td>
<td>0.420 [10.67]</td>
</tr>
<tr>
<td>SND50<em>42</em>***</td>
<td>2.626 [66.70]</td>
<td>2.406 [61.11]</td>
<td>0.470 [11.94]</td>
</tr>
</tbody>
</table>

TYPICAL PART NUMBER:
SND25M42B30T2G

TYPICAL PART NUMBER:
SND50M42B30T2G

RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION

CODE 5, 0.283 [7.19] CONTACT EXTENSION

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>SND9<em>5</em>***</td>
<td>1.204 [30.58]</td>
<td>0.984 [24.99]</td>
<td>0.339 [8.61]</td>
</tr>
<tr>
<td>SND15<em>5</em>***</td>
<td>1.532 [38.91]</td>
<td>1.312 [33.32]</td>
<td>0.339 [8.61]</td>
</tr>
<tr>
<td>SND25<em>5</em>***</td>
<td>2.072 [52.63]</td>
<td>1.852 [47.04]</td>
<td>0.339 [8.61]</td>
</tr>
<tr>
<td>SND37<em>5</em>***</td>
<td>2.720 [69.09]</td>
<td>2.500 [63.50]</td>
<td>0.339 [8.61]</td>
</tr>
<tr>
<td>SND50<em>5</em>***</td>
<td>2.626 [66.70]</td>
<td>2.406 [61.11]</td>
<td>0.395 [10.03]</td>
</tr>
</tbody>
</table>

TYPICAL PART NUMBER:
SND25M5R7NT2G

TYPICAL PART NUMBER:
SND50S5R7NT2G

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
SND SERIES
MILITARY / SPACE FLIGHT QUALITY
STANDARD DENSITY FIXED OR REMOVABLE CONTACTS

RIGHT ANGLE (90˚) AND STRAIGHT SOLDER PRINTED BOARD CONTACT HOLE PATTERN

HOLE IDENTIFICATION SHOWN FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.
MOUNT CONNECTOR WITH MATING FACE POSITIONED TO FOLLOW DIRECTION OF ARROWS.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest 0.039 [0.99] Ø hole for 0.024 [0.61] Ø contact termination positions.
Suggest 0.045 [1.14] Ø hole for 0.028 [0.71] Ø contact termination positions.
Suggest 0.123 ±0.003 [3.12 ±0.08] Ø hole for mounting connector with push-on fasteners.

NOTE:
*1 Contact termination code as specified in Step 4 of ordering information.
*2 Metric system, European contact hole pattern.
### SND SERIES
**MILITARY / SPACE FLIGHT QUALITY**
**STANDARD DENSITY FIXED OR REMOVABLE CONTACTS**

#### REMOVABLE CONTACT ORDERING ASSISTANCE CHART

**SND SERIES**  
**CRIMP AND SOLDER CONTACT TERMINATIONS**

<table>
<thead>
<tr>
<th>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</th>
<th>AWG [mm²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIMP</td>
<td>see page 79 for additional information</td>
<td>20</td>
<td>FC6020M2</td>
<td>MC6020M</td>
<td>20 / 22 / 24</td>
<td>0.5 / 0.3 / 0.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC6026M2</td>
<td>MC6026M</td>
<td>26 / 28 / 30</td>
<td>0.12 / 0.08 / 0.05</td>
</tr>
<tr>
<td></td>
<td>see page 80 for additional information</td>
<td></td>
<td>FC6018M2</td>
<td>MC6018M</td>
<td></td>
<td>18 [1.0] max.</td>
</tr>
<tr>
<td>SOLDER</td>
<td>see page 80 for additional information</td>
<td>20</td>
<td>FS6020M2</td>
<td>MS6020M</td>
<td>20 [0.5] max.</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** For ordering crimp contacts on reels, add “R” to part number, see page 77 for details. Examples: FC6020M2R or MC6020MR

---

The **PosiBand®** contact system has many advantages over the legacy split tine design:

- **PosiBand** is more robust than split tine, 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** main 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 specification. **PosiBand** is also qualified under GSFC S-311-P4 to the higher 40 gram contact engagement test requirement.

**NEW!**

FC8022M2. Deconstructed contact shown for reference only.

For more information on PosiBand closed entry contacts, see page 1 & 2.

---

For information regarding **REMOVABLE CONTACTS**, see contact illustration drawings and charts on pages 77-85.

---

For information regarding **CRIMP TOOLS & CRIMPING TOOL TECHNIQUES**, see page 96.
**ORDERING INFORMATION - CODE NUMBERING SYSTEM**
Specify Complete Connector By Selecting An Option From Step 1 Through 8

<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>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAMPLE</td>
<td>SND</td>
<td>37</td>
<td>S</td>
<td>5</td>
<td>B3</td>
<td>0</td>
<td>T2</td>
<td>G</td>
<td></td>
</tr>
</tbody>
</table>

**STEP 1 - BASIC SERIES**
SND series

**STEP 2 - CONNECTOR VARIANTS**
9, 15, 25, 37, 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 - Contacts ordered separately, see contact chart on page 11 for details.
1 - Crimp, 20 AWG - 24 AWG [0.5 mm² - 0.25 mm²].
12 - Crimp, 26 AWG - 30 AWG [0.12 mm² - 0.05 mm²].
2 - Fixed, solder cup.
3 - Solder, straight printed board mount with 0.170 [4.32] tail length.
32 - Solder, straight printed board mount with 0.375 [9.52] tail length.
36 - Solder, straight printed board mount with 0.236 [5.99] tail length.
42 - Solder, metric system right angle (90°) printed board mount with 0.370 [9.40] contact extension.
5 - Solder, right angle (90°) printed board mount with 0.283 [7.19] contact extension.

**STEP 5 - MOUNTING STYLE**
0 - Mounting hole, 0.120 [3.05] Ø.
02 - Mounting hole, 0.154 [3.91] Ø.
C5 - Swaged spacer, cul-de-sac style, 4-40 threads, 0.350 [8.89] length. For use with cable connectors only.
C7 - Bracket, mounting, right angle (90°) metal, swaged to connector with cul-de-sac spacer and 4-40 threads with cross bar.
F - Float mounts, universal.
P - Threaded post, brass, length varies according to contact termination code. See page 89.
R2 - Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 thread fixed female jackscrews with cross bar.
R6 - Bracket, mounting, right angle (90°) metal, swaged to connector with 0.120 [3.05] Ø mounting hole with cross bar.
R7 - Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 threads with cross bar.
R8 - Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 locknut with cross bar.
S - Swaged spacer, 4-40 threads, length varies according to contact termination code. See page 88.
S2 - Swaged spacer, 4-40 threads, 0.125 [3.18] length.
S5 - Swaged locknut, 4-40 threads.
S6 - Swaged spacer with push-on fastener, 4-40 threads, length varies according to contact termination code. See page 88.

**STEP 6 - CABLE ADAPTER (HOOD) AND PUSH-ON FASTENER**
0 - None.
H - Cable adapter, top opening, brass.
AN - Cable adapter, lightweight aluminum, electroless nickel plate, see page 91 for details.
N - Push-on fastener for right angle (90°) mounting brackets.

**STEP 7 - LOCKING AND POLARIZING SYSTEMS**
0 - None.
T - Fixed female jackscrews.
T2 - Fixed female jackscrews.
T6 - Fixed male and female polarized jackscrews.
E - Rotating male jackscrews.
E2 - Rotating male screw locks.
E3 - Rotating male with internal hex for 3/32 hex drives.
E6 - Rotating male and female polarized jackscrews.

**STEP 8 - CONNECTOR HOUSING (SHELLS) OPTIONS**
G - Gold over copper plate.
D - Gold over copper plate and dimpled (male connectors only).

**STEP 9 - SPECIAL OPTIONS**
SEE APPENDIX ON PAGE 95.

**NOTE:**
* For additional information on accessories listed in Step 5, 6, and 7, see the Accessories section, pages 86-94.

---

Do you need 2-D drawings or 3-D models?
See page 18 for more information!

**For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 96.**
MATERIALS AND FINISHES:

Contacts: Precision machined high tensile copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.

Connector Housing (Shells): Brass with 0.000050 inch [1.27 microns] gold over copper plate.

Mounting Spacers and Brackets: Brass with 0.000050 inch [1.27 microns] gold over copper plate.

Push-On Fasteners: Phosphor bronze or beryllium copper with 0.000050 inch [1.27 microns] gold over copper plate.

Conforming To Applicable Material, Dimensional and Performance Requirements:
- GSFC S-311-P4
- MIL-DTL-24308 Class M

Conforming To Outgassing Requirements:
- ASTM E-595 & NASA-RP-1124

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

- Size 22 Removable: Install contact to rear face of connector insert and remove from rear face of connector insert. Male contact - 0.030 inch [0.76 mm] mating diameter. Female contact - PosiBand closed entry design; see page 1 for details. For removable size 22 contacts, see page 78-79.

Current ratings: signal level to 12 amperes. See temperature rise curves on page 2 for details.

A wide variety of options and accessories.
Applicable variants are qualified to GSFC and military specifications. See page 98 for details.
TECHNICAL CHARACTERISTICS, continued

MECHANICAL CHARACTERISTICS, continued:

Contact Retention in Connector Insert: 9 lbs. [40 N].
Contact Terminations:
- Removable closed barrel crimp - wire sizes 20 AWG [0.5 mm²] through 30 AWG [0.05 mm²]. 0.020 inch [0.51 mm] diameter.
- Removable, closed barrel solder - wire size 22 AWG [0.3 mm²] maximum; see page 79 for details.
- Straight solder printed board mount - 0.020 inch [0.51 mm] termination diameter.
- Right angle (90°) printed board mount - 0.020 inch [0.51 mm] termination diameter.

Connector Housing (Shells):
- Male connector housings may be dimpled for EMI/ESD ground paths.
- Trapezoidally-shaped connector housings and polarized jackscrews.

Polarization:
- Jackscrews and riveted fasteners with 0.120 inch [3.05 mm] clearance hole, and threaded fasteners with 4-40 threads and polyester lock inserts.

Mounting to Angle Brackets:
- Rapid installation push-on fasteners and mounting posts.
- Jackscrews.

Locking Systems:
- 1,000 operations, minimum, per IEC 60512-5.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating, Tested per UL 1977:
- 12 amperes, 2 contacts energized.
- 10 amperes, 6 contacts energized.
- 7.5 amperes, 26 contacts energized.
- 6.5 amperes, 65 contacts energized.
- 5.0 amperes, 104 contacts energized.

See temperature rise curves on page 2 for details.
Initial Contact Resistance: 0.005 ohms, maximum.
Proof Voltage: 1,000 V r.m.s.
Insulation Resistance: 5 G ohms.
Clearance and Creepage Distance: 0.042 inch [1.06 mm], minimum.
Working Voltage: 300 V r.m.s.

CLIMATIC CHARACTERISTICS:

Temperature Range: -55°C to +125°C.
Damp Heat, Steady State: 21 days.

For information regarding REMOVABLE CONTACTS, see contact illustration drawings and charts on pages 77-85.
# SDD SERIES

**MILITARY / SPACE FLIGHT QUALITY**

**HIGH DENSITY REMOVABLE OR PCB CONTACTS**

## STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY

### OPTIONAL CONNECTOR HOUSING ASSEMBLY (0, 02)

- **STANDARD FOR SIZE 104 CONNECTORS**

### OPTIONAL CONNECTOR HOUSING ASSEMBLY WITH UNIVERSAL FLOAT MOUNTS (F)

- **Ø0.085±0.005 [Ø2.18±0.013]**
- **±0.005 [±0.13]**
- **Total diametral float**
- **Mounting hole, two places**

## CONNECTOR VARIANT SIZES

<table>
<thead>
<tr>
<th>CONNECTOR VARIANT SIZES</th>
<th>GENDER</th>
<th>A ±0.015 [0.38]</th>
<th>B ±0.005 [0.13]</th>
<th>B1 ±0.005 [0.13]</th>
<th>C ±0.005 [0.13]</th>
<th>D ±0.005 [0.13]</th>
<th>D1 ±0.005 [0.13]</th>
<th>E ±0.015 [0.38]</th>
<th>G ±0.010 [0.25]</th>
<th>H ±0.010 [0.25]</th>
<th>K ±0.005 [0.13]</th>
<th>M ±0.010 [0.25]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SDD 15</strong></td>
<td>MALE</td>
<td>1.213 [30.81]</td>
<td>0.666 [16.92]</td>
<td>0.984 [24.99]</td>
<td>0.329 [8.36]</td>
<td>0.494 [12.55]</td>
<td>0.759 [19.28]</td>
<td>0.422 [10.72]</td>
<td>0.233 [5.92]</td>
<td>0.422 [10.72]</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>FEMALE</td>
<td>1.213 [30.81]</td>
<td>0.643 [16.33]</td>
<td>0.984 [24.99]</td>
<td>0.311 [7.90]</td>
<td>0.494 [12.55]</td>
<td>0.759 [19.28]</td>
<td>0.422 [10.72]</td>
<td>0.233 [5.92]</td>
<td>0.429 [10.90]</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SDD 44</strong></td>
<td>MALE</td>
<td>2.088 [53.04]</td>
<td>1.534 [38.96]</td>
<td>1.852 [47.04]</td>
<td>0.329 [8.36]</td>
<td>0.494 [12.55]</td>
<td>1.625 [41.28]</td>
<td>0.422 [10.72]</td>
<td>0.230 [5.84]</td>
<td>0.429 [10.90]</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SDD 62</strong></td>
<td>MALE</td>
<td>2.729 [69.32]</td>
<td>2.162 [55.42]</td>
<td>2.500 [63.50]</td>
<td>0.329 [8.36]</td>
<td>0.494 [12.55]</td>
<td>2.272 [57.71]</td>
<td>0.422 [10.72]</td>
<td>0.230 [5.84]</td>
<td>0.426 [10.82]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FEMALE</td>
<td>2.729 [69.32]</td>
<td>2.159 [55.84]</td>
<td>2.500 [63.50]</td>
<td>0.311 [7.90]</td>
<td>0.494 [12.55]</td>
<td>2.272 [57.71]</td>
<td>0.422 [10.72]</td>
<td>0.243 [6.17]</td>
<td>0.429 [10.90]</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SDD 78</strong></td>
<td>MALE</td>
<td>2.635 [66.93]</td>
<td>2.079 [52.81]</td>
<td>2.406 [61.11]</td>
<td>0.441 [11.20]</td>
<td>0.605 [15.37]</td>
<td>2.178 [55.32]</td>
<td>0.534 [13.56]</td>
<td>0.230 [5.84]</td>
<td>0.428 [10.82]</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SDD 104</strong></td>
<td>MALE</td>
<td>2.729 [69.32]</td>
<td>2.212 [56.16]</td>
<td>2.500 [63.50]</td>
<td>0.503 [12.76]</td>
<td>0.668 [16.97]</td>
<td>2.302 [58.47]</td>
<td>0.596 [15.14]</td>
<td>0.230 [5.84]</td>
<td>0.428 [10.82]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SDD SERIES
MILITARY / SPACE FLIGHT QUALITY
HIGH DENSITY REMOVABLE OR PCB CONTACTS

STRaight solder printed board mount termination
Code 3 and 32

**CODE NUMBER | L
---|---
3 | 0.150 [3.81]
32 | 0.300 [7.62]

Note:
*1 Contact termination code as specified in Step 4 of ordering information.

Right angle (90°) printed board mount termination
Code 4. 0.450 [11.43] contact extension

Numbering shown is rear view of male and face view of female.

Typical part number: SDD62S3560T2G

Typical part number: SDD78M4R7NT2G
RIGHT ANGLE (90˚) AND STRAIGHT SOLDER PRINTED BOARD CONTACT HOLE PATTERN
MOUNT CONNECTOR WITH MATING FACE POSITIONED TO FOLLOW DIRECTION OF ARROWS.

**SDD SERIES**

MILITARY / SPACE FLIGHT QUALITY
HIGH DENSITY REMOVABLE OR PCB CONTACTS

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

**SUGGESTED PRINTED BOARD HOLE SIZES:**
Suggest 0.035 [0.89] Ø hole for contact termination positions.
Suggest 0.123 ±0.003 [3.12 ±0.08] Ø hole for mounting connector with push-on fasteners.
## REMOVABLE CONTACT ORDERING ASSISTANCE CHART

### SDD SERIES
CRIMP AND SOLDER CONTACT TERMINATIONS

<table>
<thead>
<tr>
<th>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 78 for additional information</td>
<td>22</td>
<td>FC8020M2</td>
<td>MC8020M</td>
<td>20 [0.5] max.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC8022M2</td>
<td>MC8022M</td>
<td>22 / 24 / 26 / 28 / 30 [0.3 / 0.25 / 0.12 / 0.08 / 0.05]</td>
</tr>
<tr>
<td>SOLDER</td>
<td>see page 79 for additional information</td>
<td>22</td>
<td>FS8022M2</td>
<td>MS8022M</td>
<td>22 [0.3] max.</td>
</tr>
</tbody>
</table>

**NOTE:** For ordering crimp contacts on reels, add “R” to part number, see page 77 for details. Examples: FC8022M2R or MC8022MR

---

For information regarding **REMOVABLE CONTACTS**, see contact illustration drawings and charts on pages 77-85.

For information regarding **CRIMP TOOLS & CRIMPING TOOL TECHNIQUES**, see page 96.

---

**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 use the search function on our web site, www.connectpositronic.com.

---

2-D Drawing

3-D Model
**ORDERING INFORMATION - CODE NUMBERING SYSTEM**

Specify Complete Connector By Selecting An Option From Step 1 Through 8

<table>
<thead>
<tr>
<th>STEP</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SDD 62</td>
</tr>
<tr>
<td>2</td>
<td>S</td>
</tr>
<tr>
<td>3</td>
<td>R7</td>
</tr>
<tr>
<td>4</td>
<td>T6</td>
</tr>
<tr>
<td>5</td>
<td>G</td>
</tr>
</tbody>
</table>

**STEP 1 - BASIC SERIES**

**SDD series**

**STEP 2 - CONNECTOR VARIANTS**

15, 26, 44, 62, 78, 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 ordered separately, see contact chart on page 18.
1 - Crimp, 22 AWG - 30 AWG [0.3 mm² - 0.05 mm²].
3 - Solder, straight printed board mount with 0.150 [3.81] tail length.
32 - Solder, straight printed board mount with 0.300 [7.62] tail length.
4 - Solder, right angle (90°) printed board mount with 0.450 [11.43] Contact Extension.

**STEP 5 - MOUNTING STYLE**

0 - Mounting hole, 0.120 [3.05] Ø.
02 - Mounting hole, 0.154 [3.91] Ø.
B3 - Bracket, mounting, right angle (90°) metal with cross bar.
C5 - Swaged spacer, cul-de-sac style, 4-40 threads, 0.350 [8.89] length. For use with cable connectors only.
C7 - Bracket, mounting, right angle (90°) metal, swaged to connector with cul-de-sac spacer and 4-40 threads with cross bar.
F - Float mounts, universal.
P - Threaded post, brass, 0.375 [9.53] length.
R2 - Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 thread fixed female jackscrews with cross bar.
R6 - Bracket, mounting, right angle (90°) metal, swaged to connector with 0.120 [3.05] Ø mounting hole with cross bar.
R7 - Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 threads with cross bar.
R8 - Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 locknut with cross bar.
S - Swaged spacer, 4-40 threads, 0.375 [9.53] length.
S2 - Swaged spacer, 4-40 threads, 0.125 [3.18] length.
S5 - Swaged locknut, 4-40 threads.
S6 - Swaged spacer with push-on fastener, 4-40 threads, 0.375 [9.53] length.

**STEP 6 - CABLE ADAPTER (HOOD) AND PUSH-ON FASTENER**

0 - None.
H - Cable adapter, top opening, brass.
AN - Cable adapter, lightweight aluminum, electroless nickel plate, see page 91 for details.
N - Push-on fastener for right angle (90°) mounting brackets.

**STEP 7 - LOCKING AND POLARIZING SYSTEMS**

0 - None.
T - Fixed female jackscrews.
T2 - Fixed female jackscrews.
T6 - Fixed male and female polarized jackscrews.
E - Rotating male jackscrews.
E2 - Rotating male screw locks.
E3 - Rotating male with internal hex for 3/32 hex drives.
E6 - Rotating male and female polarized jackscrews.

**STEP 8 - CONNECTOR HOUSING (SHELLS) OPTION**

G - Gold over copper plate.
D - Gold over copper plate and dimpled (male connectors only).

**NOTE:**

* For additional information on accessories listed in Step 5, 6, and 7, see the Accessories section, pages 86-94.

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

See page 18 for more information!

---

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 96.
High performance for use in harsh environments, including space flight.

Size 20 **fixed** and Size 8 **removable** contacts.

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

GSFC S-311-P-4/10 offers two contact engagement test options. Size 20 PosiBand contacts meet the higher 40 gram requirements per 4.2.2.b.

Twenty-two connector variants with a mixture of signal, power, shielded and high voltage contacts.

Terminations include cable or wire crimp and solder, straight and right angle PCB mount.

Current ratings to 70 amperes. See temperature rise curves on page 3 & 4 for details.

A wide variety of options and accessories.

Applicable variants are qualified to GSFC and military specifications. See page 98 for details.

---

**Conforming To Applicable Material, Dimensional and Performance Requirements:**
- GSFC S-311-P4 & GSFC S-311-P10
- DSCC Specification 85039

**Conforming To Outgassing Requirements:**
- ASTM E-595 & NASA-RP-1124

---

**TECHNICAL CHARACTERISTICS**

**MATERIALS AND FINISHES:**

**Connector Insert:** Glass-filled polyester per ASTM-D-5927, UL 94V-0, ASTM E-595, NASA-RP-1124, blue color.

**Contacts:**

**Size 20:** Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.

**Size 8:**

- **Power:** Precision machined high conductivity copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.
- **Shielded:** For material and finishes, see page 77.
- **High Voltage:** For material and finishes, see page 77.

**Connector Housing (Shells):** Brass with 0.000050 inch [1.27 microns] gold over copper plate.

**Mounting Spacers and Brackets:** Brass with 0.000050 inch [1.27 microns] gold over copper plate.

**Push-On Fasteners:** Phosphor bronze or beryllium copper with 0.000050 inch [1.27 microns] gold over copper plate.

**Jacksscrew Systems:** Brass with 0.000050 inch [1.27 microns] gold over copper plate.

**Cable Adapter (Hood):** Brass with 0.000050 inch [1.27 microns] gold over copper plate; aluminum with electroless nickel plate. Other finishes available, contact Technical Sales.

---

Continued on next page...
### MECHANICAL CHARACTERISTICS:

**Contacts:**

- **Size 20 Fixed:** Male contact - 0.040 inch [1.02 mm] mating diameter. Female contact - PosiBand closed entry design; see page 1 for details.
- **Size 8 Removable:**
  - **Power:** Install contact to rear face of connector insert and remove from front face of connector insert. Male contact - 0.142 inch [3.61 mm] mating diameter. Female contact - features Large Surface Area (L.S.A.) closed entry design utilizing BeCu mechanical retention member. For removable size 8 contacts, see pages 81-85.
- **Shielded:** For mechanical characteristics, see page 77.
- **High Voltage:** For mechanical characteristics, see page 77.

**Contact Retention in Connector Insert:**

- **Size 20:** 9 lbs. [40N].
- **Size 8 Power / Shielded:** 22 lbs. [98N].

**Resistance to Solder Iron Heat:** 500°F [260°C] for 10 seconds duration per IEC 60512-6.

**Contact Terminations:**

- **Size 20:**
  - Solder cup - wire size 20 AWG [0.5 mm²] maximum; see page 24 for details.
  - Straight solder printed board mount - 0.028 inch [0.71 mm] termination diameter.
  - Right angle (90°) printed board mount - 0.028 inch [0.71 mm] termination diameter.

- **Size 8 Power:**
  - Closed barrel crimp or solder cup - wire sizes 8 [10.0 mm²], 10 [4.3 mm²], 12 [4.0 mm²], and 16 [1.5 mm²] AWG.
  - Straight solder printed board mount - 0.078 inch [1.98 mm], 0.094 inch [2.39 mm] and 0.125 inch [3.18 mm] termination diameters.
  - Right angle (90°) printed board mount - 0.078 inch [1.98 mm] and 0.125 inch [3.18 mm] termination diameters.

- **Shielded:** Refer to RF Cable in chart on page 84 for contact terminations.
- **High Voltage:** Straight and right angle (90°) terminations - 0.041 inch [1.04 mm] minimum hole diameter.

**Connector Housing (Shells):** Male connector housings may be dimpled for EMI/ESD ground paths.

**Polarization:** Trapezoidally-shaped connector housing and polarized jackscrews.

**Mounting to Angle Brackets:** Jackscrews and riveted fasteners with 0.120 inch [3.05 mm] diameter hole, and threaded riveted fasteners with 4-40 threads and polyester inserts.

**Mounting to Printed Board:** Rapid installation push-on fasteners and threaded posts.

**Locking Systems:** Jackscrews.

**Mechanical Operations:** 1,000 operations per IEC 60512-5.

### ELECTRICAL CHARACTERISTICS:

#### SIZE 20 CONTACTS

- **Contact Current Rating:** 7.5 amperes, nominal
- **Initial Contact Resistance:** 0.005 ohms maximum.
- **Proof Voltage:** 1000 V r.m.s.

#### SIZE 8 CONTACTS

**POWER CONTACTS**

- **Contact Current Rating - Tested per U.L. 1977:**
  - 0.078 inches diameter / 12 AWG terminations: 39 amperes.
  - 0.094 inches diameter / 10 AWG terminations: 50 amperes.
  - 0.125 inches diameter / 8 AWG terminations: 70 amperes.
  - See Temperature Rise Curves on page 3 for details.
- **Initial Contact Resistance:** 0.0005 ohms max. per IEC 60512-2, Test 2b.

**SHEIELDED CONTACTS**

For electrical characteristics, see page 77.

#### HIGH VOLTAGE CONTACTS

For electrical characteristics, see page 77.

**CONNECTOR**

- **Insulation Resistance:** 5 G ohms.
- **Clearance and Creepage Distance:** 0.039 inch [1.0 mm], minimum.
- **Working Voltage:** 300 V r.m.s.

**CLIMATIC CHARACTERISTICS:**

- **Temperature Range:** -55°C to +125°C.
- **Damp Heat, Steady State:** 21 days.
CONTACT VARIANTS
FACE VIEW OF MALE OR REAR VIEW OF FEMALE

--- SHELL SIZE 1 ---

*1 2WK2
5W1

--- SHELL SIZE 2 ---

3W3
*2 3WK3
7W2
11W1

--- SHELL SIZE 3 ---

5W5
9W4
13W3
17W2
21W1

--- SHELL SIZE 4 ---

8W8
13W6
17W5
21WA4
25W3
27W2

--- SHELL SIZE 5 ---

24W7
36W4
43W2
47W1

--- SHELL SIZE 6 ---

46W4

Notes:
*1 2WK2 connectors have 1 male and 1 female contacts. Female connector should be loaded with female contact in A2 position.
*2 3WK3 male variant contains 2 male contacts and 1 female contact. Female variant contains 2 female contacts and 1 male contact.
### Standard Connector Housing (Shells) Assembly

#### New! Recommended Mating Dimensions

![Image of recommended mating dimensions](image)

#### Optional Connector Housing Assembly (02)

<table>
<thead>
<tr>
<th>Shell Size</th>
<th>Gender</th>
<th>A ±0.015</th>
<th>B ±0.005</th>
<th>B1 ±0.005</th>
<th>C ±0.005</th>
<th>D ±0.005</th>
<th>D1 ±0.005</th>
<th>E ±0.015</th>
<th>F ±0.010</th>
<th>G ±0.005</th>
<th>H ±0.010</th>
<th>K ±0.005</th>
<th>M ±0.010</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Male</td>
<td>1.213 [30.81]</td>
<td>0.666 [16.92]</td>
<td>0.984 [24.99]</td>
<td>0.329 [8.36]</td>
<td>0.949 [24.09]</td>
<td>0.759 [19.28]</td>
<td>0.422 [10.72]</td>
<td>0.233 [5.93]</td>
<td>0.422 [10.72]</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Male</td>
<td>2.088 [53.04]</td>
<td>1.534 [38.96]</td>
<td>1.852 [47.04]</td>
<td>0.329 [8.36]</td>
<td>0.949 [24.09]</td>
<td>1.625 [41.28]</td>
<td>0.422 [10.72]</td>
<td>0.230 [5.84]</td>
<td>0.426 [10.82]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>2.088 [53.04]</td>
<td>1.611 [38.38]</td>
<td>1.852 [47.04]</td>
<td>0.311 [7.90]</td>
<td>0.949 [24.09]</td>
<td>1.625 [41.28]</td>
<td>0.422 [10.72]</td>
<td>0.243 [6.17]</td>
<td>0.429 [10.90]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Male</td>
<td>2.729 [69.32]</td>
<td>2.182 [55.42]</td>
<td>2.500 [63.50]</td>
<td>0.329 [8.36]</td>
<td>0.949 [24.09]</td>
<td>2.272 [57.71]</td>
<td>0.422 [10.72]</td>
<td>0.230 [5.84]</td>
<td>0.426 [10.82]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>2.729 [69.32]</td>
<td>2.159 [54.84]</td>
<td>2.500 [63.50]</td>
<td>0.311 [7.90]</td>
<td>0.949 [24.09]</td>
<td>2.272 [57.71]</td>
<td>0.422 [10.72]</td>
<td>0.243 [6.17]</td>
<td>0.429 [10.90]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Male</td>
<td>2.635 [66.93]</td>
<td>2.079 [52.81]</td>
<td>2.406 [61.11]</td>
<td>0.441 [11.20]</td>
<td>0.605 [15.37]</td>
<td>2.178 [55.32]</td>
<td>0.534 [13.56]</td>
<td>0.230 [5.84]</td>
<td>0.426 [10.82]</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Male</td>
<td>2.729 [69.32]</td>
<td>2.212 [56.18]</td>
<td>2.500 [63.50]</td>
<td>0.503 [12.76]</td>
<td>0.668 [16.97]</td>
<td>2.302 [58.47]</td>
<td>0.596 [15.14]</td>
<td>0.230 [5.84]</td>
<td>0.426 [10.82]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SOLDER CUP TERMINATION
CODE 2

For solder cup contacts, specify code 2 in step 4 of ordering information.

Typical Part Number:
SCBM7W2M200T2G

TYPICAL PART NUMBER: SCBM7W2S200T6G

STRAIGHT SOLDER PRINTED BOARD MOUNT TERMINATION
CODE 3, 35, 36 AND 37

<table>
<thead>
<tr>
<th><strong>1</strong> CODE NUMBER</th>
<th>D Ø</th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>Size 8 contacts not supplied</td>
</tr>
<tr>
<td>35</td>
<td>0.078 [1.98]</td>
</tr>
<tr>
<td>36</td>
<td>0.094 [2.39]</td>
</tr>
<tr>
<td>37</td>
<td>0.125 [3.18]</td>
</tr>
</tbody>
</table>

**NOTE:**

**1** Contact termination code as specified in Step 4 of ordering information.
SCBM SERIES
MILITARY / SPACE FLIGHT QUALITY
STANDARD DENSITY PCB MOUNT

RIGHT ANGLE (90˚) PRINTED BOARD MOUNT TERMINATION
WITH 0.078 [1.98] Ø POWER CONTACTS
CODE 5 AND 55, 0.283 [7.19] CONTACT EXTENSION

See temperature rise curves on pages 3 and 4

<table>
<thead>
<tr>
<th>SHELL SIZE</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHELL SIZE 1</td>
<td>1.204 [30.58]</td>
<td>0.339 [8.61]</td>
<td>0.283 [7.19]</td>
<td></td>
</tr>
<tr>
<td>SHELL SIZE 2</td>
<td>1.353 [34.36]</td>
<td>1.312 [33.32]</td>
<td>0.339 [8.61]</td>
<td>0.283 [7.19]</td>
</tr>
<tr>
<td>SHELL SIZE 3</td>
<td>2.072 [52.63]</td>
<td>1.852 [47.04]</td>
<td>0.339 [8.61]</td>
<td>0.283 [7.19]</td>
</tr>
<tr>
<td>SHELL SIZE 4</td>
<td>2.720 [69.09]</td>
<td>2.500 [63.50]</td>
<td>0.339 [8.61]</td>
<td>0.283 [7.19]</td>
</tr>
<tr>
<td>SHELL SIZE 5</td>
<td>2.626 [66.70]</td>
<td>2.406 [61.11]</td>
<td>0.395 [10.03]</td>
<td>0.283 [7.19]</td>
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</table>

TYPICAL PART NUMBER: SCBM17W2M55R7NT2G

SHELL SIZE 6
RIGHT ANGLE (90˚) PRINTED BOARD MOUNT TERMINATION
WITH 0.078 [1.98] Ø POWER CONTACTS
CODE 5 AND 55, 0.283 [7.19] CONTACT EXTENSION

CONNECTOR VARIANT 46W4
See temperature rise curves on pages 3 and 4

TYPICAL PART NUMBER: SCBM46W4M55R7NT2G

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION
WITH 0.125 [3.18] Ø POWER CONTACTS
CODE 5 AND 57, 0.283 [7.19] CONTACT EXTENSION

See temperature rise curves on pages 3 and 4

SCBM SERIES
MILITARY / SPACE FLIGHT QUALITY
STANDARD DENSITY PCB MOUNT

SCBM**(5 or 57)**** 0.283 [7.19] CONTACT EXTENSION

<table>
<thead>
<tr>
<th>SHELL SIZE</th>
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<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHELL SIZE 1</td>
<td>1.204</td>
<td>0.984</td>
<td>0.339</td>
<td>0.283</td>
</tr>
<tr>
<td>SHELL SIZE 2</td>
<td>1.532</td>
<td>1.312</td>
<td>0.339</td>
<td>0.283</td>
</tr>
<tr>
<td>SHELL SIZE 3</td>
<td>2.072</td>
<td>1.852</td>
<td>0.339</td>
<td>0.283</td>
</tr>
<tr>
<td>SHELL SIZE 4</td>
<td>2.720</td>
<td>2.500</td>
<td>0.339</td>
<td>0.283</td>
</tr>
<tr>
<td>SHELL SIZE 5</td>
<td>2.626</td>
<td>2.408</td>
<td>0.395</td>
<td>0.283</td>
</tr>
</tbody>
</table>

Typical Part Number: SCBM36W4S57R7NT2G

SHELL SIZE 6
RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION
WITH 0.125 [3.18] Ø POWER CONTACTS
CODE 5 AND 57, 0.283 [7.19] CONTACT EXTENSION

CONNECTOR VARIANT 46W4

See temperature rise curves on pages 3 and 4

TYPICAL PART NUMBER: SCBM17W2M57R7NT2G

SHELL SIZE 6 CONNECTOR

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
METRIC SYSTEM RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION WITH 0.078 [1.98] Ø POWER CONTACTS

CODE 7 AND 75, 0.370 [9.40] CONTACT EXTENSION

See temperature rise curves on pages 3 and 4

<table>
<thead>
<tr>
<th>SHELL SIZE</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHELL SIZE 1</td>
<td>1.204 [30.58]</td>
<td>0.984 [24.99]</td>
<td>0.420 [10.67]</td>
<td>0.370 [9.40]</td>
</tr>
<tr>
<td>SHELL SIZE 2</td>
<td>1.532 [38.91]</td>
<td>1.312 [33.32]</td>
<td>0.420 [10.67]</td>
<td>0.370 [9.40]</td>
</tr>
<tr>
<td>SHELL SIZE 3</td>
<td>2.072 [52.63]</td>
<td>1.852 [47.04]</td>
<td>0.420 [10.67]</td>
<td>0.370 [9.40]</td>
</tr>
<tr>
<td>SHELL SIZE 4</td>
<td>2.720 [69.09]</td>
<td>2.500 [63.50]</td>
<td>0.420 [10.67]</td>
<td>0.370 [9.40]</td>
</tr>
<tr>
<td>SHELL SIZE 5</td>
<td>2.628 [66.70]</td>
<td>2.406 [61.11]</td>
<td>0.470 [11.94]</td>
<td>0.370 [9.40]</td>
</tr>
</tbody>
</table>

TYPICAL PART NUMBER: SCBM17W2M75R70T2G

TYPICAL PART NUMBER: SCBM17W2M77R70T2G

METRIC SYSTEM RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION WITH 0.125 [3.18] Ø POWER CONTACTS

CODE 7 AND 77, 0.370 [9.40] CONTACT EXTENSION

See temperature rise curves on pages 3 and 4

<table>
<thead>
<tr>
<th>SHELL SIZE</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHELL SIZE 1</td>
<td>1.204 [30.58]</td>
<td>0.984 [24.99]</td>
<td>0.420 [10.67]</td>
<td>0.370 [9.40]</td>
</tr>
<tr>
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<td>1.312 [33.32]</td>
<td>0.420 [10.67]</td>
<td>0.370 [9.40]</td>
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<tr>
<td>SHELL SIZE 3</td>
<td>2.072 [52.63]</td>
<td>1.852 [47.04]</td>
<td>0.420 [10.67]</td>
<td>0.370 [9.40]</td>
</tr>
<tr>
<td>SHELL SIZE 4</td>
<td>2.720 [69.09]</td>
<td>2.500 [63.50]</td>
<td>0.420 [10.67]</td>
<td>0.370 [9.40]</td>
</tr>
<tr>
<td>SHELL SIZE 5</td>
<td>2.628 [66.70]</td>
<td>2.406 [61.11]</td>
<td>0.470 [11.94]</td>
<td>0.370 [9.40]</td>
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TYPICAL PART NUMBER: SCBM17W2M77R70T2G

TYPICAL PART NUMBER: SCBM36W4S77R70T2G

TYPICAL PART NUMBER: SCBM36W4S75R70T2G

DIMENSIONS ARE IN INCHES [MILLIMETERS]. ALL DIMENSIONS ARE SUBJECT TO CHANGE.
PRINTED BOARD CONTACT HOLE PATTERNS

RIGHT ANGLE (90°) WITH 0.078 [1.98] Ø POWER CONTACTS AND STRAIGHT SOLDER PRINTED BOARD MOUNT WITH 0.078 [1.98] Ø, 0.094 [2.39] Ø AND 0.125 [3.18] Ø POWER CONTACTS

HOLE IDENTIFICATION SHOWN FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.

MOUNT CONNECTOR WITH MATING FACE POSITIONED TO FOLLOW DIRECTION OF ARROWS.

HOLE IDENTIFICATION SHOWN FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.

SUGGESTED PRINTED BOARD HOLE SIZES:

Suggest 0.045 [1.14] Ø hole for size 20 contact termination positions.
Suggest 0.098 [2.49] Ø hole for 0.078 [1.98] Ø power contact termination positions.
Suggest 0.114 [2.90] Ø hole for 0.094 [2.39] Ø power contact termination positions.
Suggest 0.145 [3.68] Ø hole for 0.125 [3.18] Ø power contact termination positions.
Suggest 0.123 ±0.003 [3.12] Ø hole for mounting connector with push-on fasteners.

For “X” and “Y” dimensions, see chart on page 29.
PRINTED BOARD CONTACT HOLE PATTERNS
RIGHT ANGLE (90°) WITH 0.078 [1.98] Ø POWER CONTACTS AND STRAIGHT SOLDER PRINTED BOARD MOUNT WITH 0.078 [1.98] Ø, 0.094 [2.39] Ø AND 0.125 [3.18] Ø POWER CONTACTS

HOLE IDENTIFICATION SHOWN FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.
MOUNT CONNECTOR WITH MATING FACE POSITIONED TO FOLLOW DIRECTION OF ARROWS.

continued from previous page . . .

<table>
<thead>
<tr>
<th>CODE NUMBER</th>
<th>X</th>
<th>Y</th>
<th>A</th>
<th>B</th>
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</thead>
<tbody>
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<td>0.112</td>
<td>0.056</td>
<td>0.050</td>
<td>0.100</td>
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<td>0.056</td>
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</tbody>
</table>

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest 0.045 [1.14] Ø hole for size 20 contact termination positions.
Suggest 0.098 [2.49] Ø hole for 0.078 [1.98] Ø power contact termination positions.
Suggest 0.114 [2.90] Ø hole for 0.094 [2.39] Ø power contact termination positions.
Suggest 0.145 [3.68] Ø hole for 0.125 [3.18] Ø power contact termination positions.
Suggest 0.123 ±0.003 [3.12] Ø hole for mounting connector with push-on fasteners.
PRINTED BOARD CONTACT HOLE PATTERN

RIGHT ANGLE (90°) WITH 0.125 [3.18] Ø POWER CONTACTS

HOLE IDENTIFICATION SHOWN FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.

MOUNT CONNECTOR WITH MATING FACE POSITIONED TO FOLLOW DIRECTION OF ARROWS.

For “A”, “B”, “X” and “Y” dimensions, see chart on page 31.

SUGGESTED PRINTED BOARD HOLE SIZES:

- Suggest 0.045 [1.14] Ø hole for size 20 contact termination positions.
- Suggest 0.145 [3.68] Ø hole for power contact termination positions.
- Suggest 0.123±0.003 [3.12] Ø hole for mounting connector with push-on fasteners.

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
SCBM SERIES
MILITARY / SPACE FLIGHT QUALITY
STANDARD DENSITY PCB MOUNT

PRINTED BOARD CONTACT HOLE PATTERN
RIGHT ANGLE (90°) WITH 0.125 [3.18] Ø POWER CONTACTS

HOLE IDENTIFICATION SHOWN FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.
MOUNT CONNECTOR WITH MATING FACE POSITIONED TO FOLLOW DIRECTION OF ARROWS.

continued from previous page…

<table>
<thead>
<tr>
<th>CODE NUMBER</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>X</th>
<th>Y</th>
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<tr>
<td>5</td>
<td>0.471</td>
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<td>57</td>
<td>[11.96]</td>
<td>[10.54]</td>
<td>[9.12]</td>
<td>[2.84]</td>
<td>[1.42]</td>
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<td>7</td>
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<td>[9.91]</td>
<td>[8.64]</td>
<td>[7.37]</td>
<td>[2.54]</td>
<td>[1.42]</td>
</tr>
</tbody>
</table>

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest 0.045 [1.14] Ø hole for size 20 contact termination positions.
Suggest 0.145 [3.68] Ø hole for power contact termination positions.
Suggest 0.123±0.003 [3.12] Ø hole for mounting connector with push-on fasteners.

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
SCBM SERIES
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STANDARD DENSITY PCB MOUNT

STRAIGHT SOLDER PRINTED BOARD MOUNT TERMINATION WITH SHIELDED CONTACTS
CODE 65, CONNECTOR WITH FDS4201M OR MDS4201M CONTACTS

TYPICAL PART NUMBER:
SCBM17W2M65S60T2G

RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION WITH SHIELDED CONTACTS
CODE 85, CONNECTOR WITH FRT4201M OR MRT4201M CONTACTS

TYPICAL PART NUMBER:
SCBM17W2M85R7NT2G

<table>
<thead>
<tr>
<th>SHELL SIZE</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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<tr>
<td>SHELL SIZE 1</td>
<td>1.204</td>
<td>0.984</td>
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<td>0.283</td>
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<tr>
<td>SHELL SIZE 2</td>
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<td>1.312</td>
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<td>2.072</td>
<td>1.852</td>
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<td>0.283</td>
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<td>SHELL SIZE 4</td>
<td>2.720</td>
<td>2.500</td>
<td>0.339</td>
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<td>SHELL SIZE 5</td>
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<td>2.406</td>
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<td>0.545</td>
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</table>

NOTE:
** Shell size 5 connectors are supplied inverted when ordered with right angle (90°) printed board mount shielded contacts.

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
STRAIGHT SOLDER PRINTED BOARD MOUNT CONTACT HOLE PATTERN
WITH FDS4201M AND MDS4201M SHIELDED CONTACTS

HOLE IDENTIFICATION SHOWN FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest 0.045 [1.14] Ø hole for size 20 contact termination position.
Suggest 0.123±0.003 [3.12] Ø hole for mounting connector with push-on fasteners.
High Performance D-sub

SCBM SERIES
MILITARY / SPACE FLIGHT QUALITY
STANDARD DENSITY PCB MOUNT

STRAIGHT SOLDER PRINTED BOARD MOUNT CONTACT HOLE PATTERN
WITH FDS4201M AND MDS4201M SHIELDED CONTACTS

HOLE IDENTIFICATION SHOWN FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.

continued from previous page . . .
SCBM SERIES
MILITARY / SPACE FLIGHT QUALITY
STANDARD DENSITY PCB MOUNT

RIGHT ANGLE (90°) PRINTED BOARD MOUNT CONTACT HOLE PATTERN
WITH FRT4201M AND MRT4201M SHIELDED CONTACTS

HOLE IDENTIFICATION SHOWN IS FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.
MOUNT CONNECTOR WITH MATING FACE POSITIONED TO FOLLOW DIRECTION OF ARROW.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest 0.045 [1.14] Ø hole for size 20 contact termination position.
Suggest 0.123±0.003 [3.12] Ø hole for mounting connector with push-on fasteners.
### Right Angle (90°) Printed Board Mount Contact Hole Pattern

**NOTE:**
* Shell size 5 connectors are supplied inverted when ordered with right angle (90°) printed board mount shielded contacts.

**HOLE IDENTIFICATION SHOWN IS FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.**

Mount connector with mating face positioned to follow direction of arrow.

### Suggested Printed Board Hole Sizes:

Suggest 0.045 [1.14] Ø hole for size 20 contact termination position.

Suggest 0.123±0.003 [3.12] Ø hole for mounting connector with push-on fasteners.

---

Image content:

- Diagrams of contact hole patterns for different connector types (21WA4, 25W3, 27W2, 24W7, 36W4, 43W2, 47W1).
- Dimensions are in inches [millimeters].
- All dimensions are subject to change.

---

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

---

**High Performance D-sub**

**Positronic Industries**
connectPOSITRONIC.com

**SCBM SERIES**
MILITARY / SPACE FLIGHT QUALITY
STANDARD DENSITY PCB MOUNT
## SCBM SERIES
### CRIMP AND SOLDER CUP TERMINATION CONTACTS

<table>
<thead>
<tr>
<th>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 AVG [mm²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRIMP</td>
<td>see page 81 for additional information</td>
<td>8</td>
<td>FC4008M</td>
<td>MC4008M</td>
<td>8 [10.0]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC4010M</td>
<td>MC4010M</td>
<td>10 [5.3]</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>FC4012M</td>
<td>MC4012M</td>
<td>12 [4.0]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC4016M</td>
<td>MC4016M</td>
<td>16 [1.5]</td>
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<td>SOLDER CUP</td>
<td>see page 82 for additional information</td>
<td>8</td>
<td>FS4008M</td>
<td>MS4008M</td>
<td>8 [10.0]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FS4012M</td>
<td>MS4012M</td>
<td>12 [4.0]</td>
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<tr>
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<td></td>
<td></td>
<td>FS4016M</td>
<td>MS4016M</td>
<td>16 [1.5]</td>
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<tr>
<td>HIGH VOLTAGE</td>
<td>see page 83 for additional information</td>
<td>8</td>
<td>FS4820M</td>
<td>MS4820M</td>
<td>20 [0.5]</td>
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<tr>
<td>Straight Solder Wire</td>
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<td>FS4920M</td>
<td>MS4920M</td>
<td>20 [0.5]</td>
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<td>HIGH VOLTAGE</td>
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<td>FC4101M</td>
<td>MC4101M</td>
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<tr>
<td>Right Angle (90°) Solder Wire</td>
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<td>FC4102M</td>
<td>MC4102M</td>
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<td>SOLDER / CRIMP</td>
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<td>FC4103M</td>
<td>MC4103M</td>
<td>RG 180 B/U</td>
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<td>SOLDER / SOLDER</td>
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<td>FC4104M</td>
<td>MC4104M</td>
<td>RG 58 B/U</td>
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<tr>
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<td>see page 85 for additional information</td>
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<td>MS4101M</td>
<td>RG 178 B/U, 196 B/U</td>
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<tr>
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<td>FS4102M</td>
<td>MS4102M</td>
<td>RG 179 BU, 316 B/U</td>
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<tr>
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<td>FS4103M</td>
<td>MS4103M</td>
<td>RG 180 B/U</td>
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<tr>
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<td>FS4104M</td>
<td>MS4104M</td>
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<tr>
<td>CRIMP / CRIMP</td>
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<td>FCC4101M</td>
<td>MCC4101M</td>
<td>RG 178 B/U, 196 B/U</td>
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<td>MCC4102M</td>
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<td>MCC4104M</td>
<td>RG 58 B/U</td>
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### PRINTED BOARD MOUNT TERMINATION CONTACTS

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<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>TERMINATION LENGTH</th>
<th>TERMINATION DIMENSION</th>
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<td>see page 82 for additional information</td>
<td>8</td>
<td>FDS4314M</td>
<td>MDS4314M</td>
<td>0.170 [4.32]</td>
<td>0.078 [1.98] Ø</td>
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<td>FDS4312M</td>
<td>MDS4312M</td>
<td>0.094 [2.39] Ø</td>
<td>0125 [3.18] Ø</td>
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<tr>
<td></td>
<td></td>
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<td>FDS4310M</td>
<td>MDS4310M</td>
<td>0125 [3.18] Ø</td>
<td>SHIELDED</td>
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<tr>
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<td>see page 85 for additional information</td>
<td>SHIELDED</td>
<td>FDS4201M</td>
<td>MDS4201M</td>
<td>0.156 [3.96]</td>
<td>SHIELDED</td>
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<tr>
<td>RIGHT ANGLE (90°) PRINTED BOARD MOUNT</td>
<td>see page 83 for additional information</td>
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<td>FRT4314M</td>
<td>MRT4314M</td>
<td>0.339 [8.61]</td>
<td>0.078 [1.98] Ø</td>
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<td>MRT4414M</td>
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<td>0.078 [1.98] Ø</td>
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<td>FRT4814M</td>
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<td>0.078 [1.98] Ø</td>
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<td>MRT4410M</td>
<td>0.810 [20.57]</td>
<td>0125 [3.18] Ø</td>
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<tr>
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<td>see page 85 for additional information</td>
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<td>MRT4201M</td>
<td>0.162 [6.10]</td>
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**NOTE:** For ordering crimp contacts on reels, add “R” to part number, see page 77 for details. Examples: FC4008MR or MC4008MR

**NOTE:** Positronic recommends printed circuit board contacts be supplied factory installed in the connector. Contact technical sales.
### ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 8

#### STEP 1 - BASIC SERIES

<table>
<thead>
<tr>
<th>SCBM</th>
<th>17W2</th>
<th>S</th>
<th>55</th>
<th>R7</th>
<th>N</th>
<th>T2</th>
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#### STEP 2 - CONNECTOR VARIANTS

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<th>Shell Size</th>
<th>Description</th>
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<tbody>
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<td>1</td>
<td>2WK2, 5W1</td>
</tr>
<tr>
<td>2</td>
<td>3W3, 3WK3, 7W2, 11W1</td>
</tr>
<tr>
<td>3</td>
<td>5W5, 9W4, 13W3, 17W2, 21W1</td>
</tr>
<tr>
<td>4</td>
<td>8W8, 13W6, 17W5, 21WA4, 25W3, 27W2</td>
</tr>
<tr>
<td>5</td>
<td>24W7, 36W4, 43W2, 47W1</td>
</tr>
</tbody>
</table>

#### STEP 3 - CONNECTOR GENDER

| M  | Male    |
| S  | Female  |

| 2WK2, 3W3, 3WK3, 5W5, AND 8W8 variants will be supplied without an alignment bar. |

#### STEP 4 - CONTACT TERMINATION TYPE

*10 - Connector ordered without size 8 power shielded or high voltage removable contacts, see contact chart on page 37 for details.
*2 - Fixed, solder cup, signal contacts only.
*3 - Solder, straight printed board mount with signal contacts only, 0.170 [4.32] tail length.
*35 - Solder, straight printed board mount with signal and 0.078 [1.98] Ø power contacts, 0.170 [4.32] tail length.
*36 - Solder, straight printed board mount with signal and 0.094 [2.39] Ø power contacts, 0.170 [4.32] tail length.
*37 - Solder, straight printed board mount with signal and 0.125 [3.18] Ø power contacts, 0.170 [4.32] tail length.
*5 - Solder, right angle (90˚) printed board mount with signal contacts only, 0.283 [7.19] signal contact extension.
*55 - Solder, right angle (90˚) printed board mount with signal and 0.078 [1.98] Ø power contacts, 0.283 [7.19] signal contact extension.
*56 - Solder, right angle (90˚) printed board mount with signal and 0.125 [3.18] Ø power contacts, 0.283 [7.19] signal contact extension.
*65 - Solder, straight printed board mount with signal and shielded contacts, MDS/FDS 4201M footprint, 0.170 [4.32] signal contact tail length.
*7 - Solder, metric system right angle (90˚) printed board mount with signal contacts only, 0.370 [9.40] signal contact extension.
*75 - Solder, metric system right angle (90˚) printed board mount with signal and 0.078 [1.98] Ø power contacts, 0.370 [9.40] signal contact extension.
*77 - Solder, metric system right angle (90˚) printed board mount with signal and 0.125 [3.18] Ø power contacts, 0.370 [9.40] signal contact extension.
**285 - Solder, right angle (90˚) printed board mount with signal and shielded contacts, MRT/FRT 4201M footprint, 0.283 [7.19] signal contact extension.

#### STEP 5 - MOUNTING STYLE

| B3 | Bracket, mounting, right angle (90˚) metal with cross bar. |
| C5 | Swaged spacer, cul-de-sac style, 4-40 threads, 0.350 [8.89] length. For use with cable connectors only. |
| D  | Gold over copper plate. |
| G  | Gold over copper plate and dimpled (male connectors only). |

#### STEP 6 - CABLE ADAPTER (HOOD) AND PUSH-ON FASTENER

| 02 | Mounting hole, 0.154 [3.91] Ø. |
| 07 | None. |
| AN | Cable adapter, lightweight aluminum, electroless nickel plate, see page 91 for details. |
| E6 | Rotating male and female polarized jackscrews. |
| S6 | Swaged spacer with push-on fastener, 4-40 threads, 0.250 [6.35] Length. |

#### STEP 7 - LOCKING AND POLARIZING SYSTEMS

| E  | Rotating male jackscrews. |
| E6 | Rotating male and female polarized jackscrews. |
| E7 | Rotating male and female polarized jackscrews, MRT/FRT 4201M footprint, 0.283 [7.19] signal contact extension. |
| R  | Fixed female jackscrews. |
| R6 | Fixed female jackscrews, MRT/FRT 4201M footprint, 0.283 [7.19] signal contact extension. |
| R7 | Fixed female jackscrews, MRT/FRT 4201M footprint, 0.120 [3.05] Ø mounting hole with cross bar. |
| R8 | Bracket, mounting, right angle (90˚) metal, swaged to connector with 4-40 thread fixed female jackscrews. |

#### STEP 8 - CONNECTOR HOUSING (SHELLS) OPTION

| G  | Gold over copper plate. |
| D  | Gold over copper plate and dimpled (male connectors only). |

#### STEP 9 - SPECIAL OPTIONS

| S  | Shell Size 6 - 46W4 |

---

**NOTES:**

*1 Available on 2WK2, 3W3, 3WK3, 5W5 and 8W8 variants only.
*2 Not available on shell size 6, SCBM 46W4.
*3 For additional information on accessories listed in Step 5, 6, and 7, see the Accessories section, pages 86-94.
*4 Not available on 2WK2, 3W3, 3WK3, 5W5 and 8W8 variants when choosing code 57, 77 or 85 in Step 4.
*5 For use with 2WK2, 3W3, 3WK3, 5W5, 8W8 variants when choosing code 57, 77 or 85 in step 4.
*6 2WK2, 3W3, 3WK3, 5W5, AND 8W8 variants will be supplied without an alignment bar.

---

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 96.

---

Do you need 2-D drawings or 3-D models? See page 18 for more information!
High performance for use in harsh environments, including space flight.

Size 20 and Size 8 removable contacts.

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

GSFC S-311-P-4/10 offers two contact engagement test options. Size 20 PosiBand contacts meet the higher 40 gram requirements per 4.2.2.b.

Sixteen connector variants with a mixture of signal, power, shielded and high voltage contacts.

Terminations include cable or wire crimp and solder.

Current ratings to 70 amperes. See temperature rise curves on page 3 & 4 for details.

A wide variety of options and accessories.

Applicable variants are qualified to GSFC and military specifications. See page 99 for details.

Conforming To Applicable Material, Dimensional and Performance Requirements:
• GSFC S-311-P4
• DSCC Specification 85039

Conforming To Outgassing Requirements:
• ASTM E-595 & NASA-RP-1124

TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Contacts:
Size 20:
Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate.

Size 8:
Power:
Precision machined high conductivity copper alloy. 0.000050 inch [1.27 microns] gold over copper plate.

Shielded:
For material and finishes, see page 77.

High Voltage:
For material and finishes, see page 77.

Connector Housing (Shells):
Brass with 0.000050 inch [1.27 microns] gold over copper plate.

Mounting Spacers and Brackets:
Brass with 0.000050 inch [1.27 microns] gold over copper plate.

Jackscrew Systems:
Brass with 0.000050 inch [1.27 microns] gold over copper plate.

Cable Adapter (Hood):
Brass with 0.000050 inch [1.27 microns] gold over copper plate; aluminum with electroless nickel plate. Other finishes available, contact Technical Sales.

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

MECHANICAL CHARACTERISTICS:

Size 20 Removable: Male contact - 0.040 inch [1.02 mm] mating diameter. Female contact - PosiBand closed entry design; see page 1 for details. For removable size 20 contacts, see page 79-80.

Size 8 Removable:
- Power: Male contact - 0.142 inch [3.61 mm] mating diameter. Female contact - features Large Surface Area (L.S.A.) closed entry design utilizing BeCu mechanical retention member. For removable size 8 contacts, see pages 81-85.
- Shielded: For mechanical characteristics, see page 77.
- High Voltage: For mechanical characteristics, see page 77.

Contact Retention in Connector Insert:
- Size 20: 9 lbs. [40 N].
- Size 8 Power / Shielded: 22 lbs. [98 N].

Contact Terminations:
- Size 20: Closed barrel crimp - wire sizes 18 AWG [1.0 mm²] through 30 AWG [0.05 mm²]. Closed barrel solder - wire size 20 AWG [0.5 mm²] maximum; see page 80 for details.
- Size 8:
  - Power: Closed barrel crimp or solder cup - wire sizes 8 [10.0 mm²], 10 [5.3 mm²], 12 [4.0 mm²], and 16 [1.5 mm²] AWG.
  - Shielded: Refer to RF Cable in chart on page 84 for contact terminations.
  - High Voltage: Straight and right angle (90°) terminations 0.041 inch [1.04 mm] minimum hole diameter.

Connector Housing
- (Shells): Male connector housings may be dimpled for EMI/ESD ground paths.
- Polarization: Trapezoidally-shaped connector housings and polarized jackscrews.
- Locking Systems: Jackscrews.
- Mechanical Operations: 1,000 operations per IEC 60512-5.

ELECTRICAL CHARACTERISTICS:

SIZE 20 CONTACTS
- Contact Current Rating: 7.5 amperes, nominal
- Initial Contact Resistance: 0.004 ohms maximum.
- Proof Voltage: 1000 V r.m.s.

SIZE 8 CONTACTS
- Power CONTACTS
  - For electrical characteristics, see page 21.
- SHIELDED CONTACTS
  - For electrical characteristics, see page 77.
- HIGH VOLTAGE CONTACTS
  - For electrical characteristics, see page 77.

CONNECTOR
- Insulation Resistance: 5 G ohms.
- Clearance and Creepage Distance: 0.039 inch [1.0 mm], minimum.
- Working Voltage: 300 V r.m.s.

CLIMATIC CHARACTERISTICS:
- Temperature Range: -55°C to +125°C.
- Damp Heat, Steady State: 21 days.
**NOTES:**

*1* Additional contact variants may be tooled at customer request.

*2* 13W6 and 27W2 variant currently available in female only. Contact Technical Sales for availability of male connector.

---

**SHELL SIZE 1**

![Shell Size 1 Diagram]

5W1

**SHELL SIZE 2**

![Shell Size 2 Diagram]

7W2

11W1

**SHELL SIZE 3**

![Shell Size 3 Diagram]

9W4

13W3

17W2

21W1

**SHELL SIZE 4**

![Shell Size 4 Diagram]

21WA4

*1* CONTACT VARIANTS

FACE VIEW OF MALE OR REAR VIEW OF FEMALE

**SHELL SIZE 5**

![Shell Size 5 Diagram]

24W7

36W4

43W2

47W1

**SHELL SIZE 6**

![Shell Size 6 Diagram]

46W4

---

*DIMENSIONS ARE IN INCHES [MILLIMETERS]. ALL DIMENSIONS ARE SUBJECT TO CHANGE.*
# SCBC SERIES

### MILITARY / SPACE FLIGHT QUALITY

### STANDARD DENSITY REMOVABLE CONTACTS

## STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY

![TYPICAL CONNECTOR TOP VIEW](image)

### OPTIONAL CONNECTOR HOUSING ASSEMBLY (0, 02)

- ø0.120±0.005 [3.05±0.031]
- Mounting hole, two places for stainless steel connector housing (0 option).
- ø0.154 [3.91] Mounting hole, two places (02 option)

### RECOMMENDED MATING DIMENSIONS

| Shell Sizes 1 & 2 | ø0.256±0.015 [6.50±0.38] |
| Shell Sizes 3, 4, 5 & 6 | ø0.256±0.015 [6.50±0.38] |

### OPTIONAL CONNECTOR HOUSING ASSEMBLY WITH UNIVERSAL FLOAT MOUNTS (F)

- ø0.120 [3.05] ±0.010
- Mounting hole, two places

### Table: Shell Sizes and Dimensions

<table>
<thead>
<tr>
<th>SHELL SIZE</th>
<th>GENDER</th>
<th>A [0.015]</th>
<th>B [0.005]</th>
<th>B1 [0.013]</th>
<th>C [0.005]</th>
<th>D [0.005]</th>
<th>D1 [0.013]</th>
<th>E [0.015]</th>
<th>F1 [0.013]</th>
<th>G [0.010]</th>
<th>H [0.010]</th>
<th>K [0.005]</th>
<th>M [0.010]</th>
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<tbody>
<tr>
<td>1 MALE</td>
<td>1.213</td>
<td>0.966</td>
<td>0.984</td>
<td>0.329</td>
<td>0.494</td>
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<tr>
<td>1 FEMALE</td>
<td>1.213</td>
<td>0.643</td>
<td>0.984</td>
<td>0.311</td>
<td>0.494</td>
<td>0.759</td>
<td>0.422</td>
<td>0.233</td>
<td>0.422</td>
<td>0.422</td>
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<tr>
<td>2 MALE</td>
<td>1.541</td>
<td>0.994</td>
<td>1.312</td>
<td>0.329</td>
<td>0.494</td>
<td>1.083</td>
<td>0.422</td>
<td>0.233</td>
<td>0.422</td>
<td>0.422</td>
<td>0.233</td>
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<td>0.422</td>
</tr>
<tr>
<td>2 FEMALE</td>
<td>1.541</td>
<td>0.971</td>
<td>1.312</td>
<td>0.311</td>
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<td>1.083</td>
<td>0.422</td>
<td>0.233</td>
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<td>0.233</td>
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<tr>
<td>3 MALE</td>
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<td>1.534</td>
<td>1.852</td>
<td>0.329</td>
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<td>1.625</td>
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<td>0.422</td>
<td>0.233</td>
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<tr>
<td>3 FEMALE</td>
<td>2.088</td>
<td>1.511</td>
<td>1.852</td>
<td>0.311</td>
<td>0.494</td>
<td>1.625</td>
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<td>4 MALE</td>
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<td>2.182</td>
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<td>0.329</td>
<td>0.494</td>
<td>2.272</td>
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<tr>
<td>4 FEMALE</td>
<td>2.729</td>
<td>2.159</td>
<td>2.500</td>
<td>0.311</td>
<td>0.494</td>
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<td>0.422</td>
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<td>0.422</td>
<td>0.233</td>
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<td>5 MALE</td>
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<td>2.079</td>
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<tr>
<td>5 FEMALE</td>
<td>2.635</td>
<td>2.044</td>
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<td>0.605</td>
<td>2.178</td>
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<td>0.233</td>
<td>0.422</td>
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<td>0.422</td>
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<td>6 MALE</td>
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<td>0.233</td>
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<td>0.422</td>
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<tr>
<td>6 FEMALE</td>
<td>2.729</td>
<td>2.189</td>
<td>2.500</td>
<td>0.485</td>
<td>0.668</td>
<td>2.302</td>
<td>0.596</td>
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<td>0.422</td>
<td>0.422</td>
<td>0.233</td>
<td>0.422</td>
<td>0.422</td>
</tr>
</tbody>
</table>

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

42
# SCBC SERIES CRIMP AND SOLDER TERMINATION CONTACTS

<table>
<thead>
<tr>
<th>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>
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<tbody>
<tr>
<td>CRIMP</td>
<td>see page 79 for additional information</td>
<td>20</td>
<td>FC6020M2</td>
<td>MC6020M</td>
<td>20 [0.5] / 22 [0.3] / 24 [0.25]</td>
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<td>26</td>
<td>FC6026M2</td>
<td>MC6026M</td>
<td>26 [0.12] / 28 [0.08] / 30 [0.05]</td>
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<tr>
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<td>18</td>
<td>FC6018M2</td>
<td>MC6018M</td>
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<td>see page 81 for additional information</td>
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<td>FC4008M</td>
<td>MC4008M</td>
<td>8 [1.0]</td>
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<td>FC4010M</td>
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<tr>
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<td></td>
<td>12</td>
<td>FC4012M</td>
<td>MC4012M</td>
<td>12 [4.0]</td>
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<tr>
<td></td>
<td></td>
<td>16</td>
<td>FC4016M</td>
<td>MC4016M</td>
<td>16 [1.5]</td>
</tr>
<tr>
<td>SOLDER</td>
<td>see page 80 for additional information</td>
<td>20</td>
<td>FS6020M2</td>
<td>MS6020M</td>
<td>20 [0.5] max.</td>
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<tr>
<td>SOLDER CUP</td>
<td>see page 82 for additional information</td>
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<td>MS4008M</td>
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<tr>
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<td></td>
<td>12</td>
<td>FS4012M</td>
<td>MS4012M</td>
<td>12 [4.0]</td>
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<tr>
<td></td>
<td></td>
<td>16</td>
<td>FS4016M</td>
<td>MS4016M</td>
<td>16 [1.5]</td>
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<tr>
<td>HIGH VOLTAGE</td>
<td>see page 83 for additional information</td>
<td>8</td>
<td>FS4820M</td>
<td>MS4820M</td>
<td>20 [0.5]</td>
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<tr>
<td>Straight Solder Wire</td>
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<td>MS4920M</td>
<td>20 [0.5]</td>
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<td>HIGH VOLTAGE</td>
<td>see page 83 for additional information</td>
<td>8</td>
<td>FC4101M</td>
<td>MC4101M</td>
<td>RG 178 B/U, 196 B/U</td>
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<tr>
<td>Right Angle (90º) Solder Wire</td>
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<td>MC4102M</td>
<td>RG 179 B/U, 316 B/U</td>
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<td></td>
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<td>FC4103M</td>
<td>MC4103M</td>
<td>RG 180 B/U</td>
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<tr>
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<td></td>
<td></td>
<td>FC4104M</td>
<td>MC4104M</td>
<td>RG 58 B/U</td>
</tr>
<tr>
<td>SHIELDED</td>
<td>see page 84 for additional information</td>
<td>8</td>
<td>FS4101M</td>
<td>MS4101M</td>
<td>RG 178 B/U, 196 B/U</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FS4102M</td>
<td>MS4102M</td>
<td>RG 179 B/U, 316 B/U</td>
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<td>FS4103M</td>
<td>MS4103M</td>
<td>RG 180 B/U</td>
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<td>FS4104M</td>
<td>MS4104M</td>
<td>RG 58 B/U</td>
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<tr>
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<td>FCC4101M</td>
<td>MCC4101M</td>
<td>RG 178 B/U, 196 B/U</td>
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<td>MCC4102M</td>
<td>RG 179 B/U, 316 B/U</td>
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<tr>
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<td></td>
<td></td>
<td>FCC4103M</td>
<td>MCC4103M</td>
<td>RG 180 B/U</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>FCC4104M</td>
<td>MCC4104M</td>
<td>RG 58 B/U</td>
</tr>
</tbody>
</table>

**NOTE:** For ordering crimp contacts on reels, add “R” to part number, see page 77 for details. Examples: FC4008MR or MC4008MR

**For information regarding** **REMOVABLE CONTACTS**, see contact illustration drawings and charts on pages 77-85.

**For information regarding** **CRIMP TOOLS & CRIMPING TOOL TECHNIQUES**, see page 96.
### ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 8

<table>
<thead>
<tr>
<th>STEP</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SCBC</td>
</tr>
<tr>
<td>2</td>
<td>7W2</td>
</tr>
<tr>
<td>3</td>
<td>M</td>
</tr>
<tr>
<td>4</td>
<td>14</td>
</tr>
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<td>5</td>
<td>0</td>
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<td>6</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>E</td>
</tr>
<tr>
<td>8</td>
<td>D</td>
</tr>
</tbody>
</table>

#### STEP 1 - BASIC SERIES

SCBC Series

#### STEP 2 - CONNECTOR VARIANTS

| Shell Size 1 | 5W1 |
| Shell Size 2 | 7W2, 11W1 |
| Shell Size 3 | 9W4, 13W3, 17W2, 21W1 |
| Shell Size 4 | *13W6, 21WA4, 25W3, *127W2 |
| Shell Size 5 | 24W7, 36W4, 43W2, 47W1 |
| Shell Size 6 | 46W4 |

#### 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 ordered separately, see contact chart on page 43 for details.
- *3 1 - Signal contacts, 20 AWG - 24 AWG [0.5mm²-0.25mm²].
- *3 11 - Signal contacts, 20 AWG - 24 AWG [0.5mm²-0.25mm²] with MC/FC 4012M power contact.
- *3 12 - Signal contacts, 20 AWG - 24 AWG [0.5mm²-0.25mm²] with MC/FC 4016M power contact.
- *3 13 - Signal contacts, 20 AWG - 24 AWG [0.5mm²-0.25mm²] with MCC/FCC 4101M shielded contacts.
- *3 14 - Signal contacts, 20 AWG - 24 AWG [0.5mm²-0.25mm²] with MCC/FCC 4102M shielded contacts.

#### STEP 5 - MOUNTING STYLE

- 0 - Mounting hole, 0.120 [3.05] Ø.
- 02 - Mounting hole, 0.154 [3.91] Ø.
- C5 - Swaged spacer, cul-de-sac style, 4-40 threads, 0.350 [8.89] length.
- F - Float mounts, universal.
- S2 - Swaged spacer, 4-40 threads, 0.125 [3.18] Length.
- S5 - Swaged locknut, 4-40 threads.

#### STEP 6 - CABLE ADAPTER (HOOD)

- 0 - None.
- H - Cable adapter, top opening, brass.
- AN - Cable adapter, lightweight aluminum, electroless nickel plate, see page 91 for details.

#### STEP 7 - LOCKING AND POLARIZING SYSTEMS

- 0 - None.
- T - Fixed female jackscrews.
- T2 - Fixed female jackscrews.
- T6 - Fixed male and female polarized jackscrews.
- E - Rotating male jackscrews.
- E2 - Rotating male screw locks.
- E3 - Rotating male with internal hex for 3/32 hex drives
- E6 - Rotating male and female polarized jackscrews.

#### NOTE:

- *1 13W6 and 27W2 variant currently available in female only. Contact Technical Sales for availability of male connector.
- *2 For additional information on accessories listed in Step 5, 6, and 7, see the Accessories section, pages 86-94.
- *3 Kitted contacts are supplied in sealed bags.
- *4 See SCBM series for removable contact versions of 2WK2, 3W3, 3WK3, 5W5 and 8W8 variants.

---

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

See page 18 for more information!

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 96.
High performance for use in harsh environments, including space flight.

Size 22 fixed contacts, Size 16 fixed contacts and Size 8 removable contacts.

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

GSFC S-311-P-4/08 offers two contact engagement test options. Size 22 PosiBand contacts meet the higher 40 gram requirements per 4.2.2.b.

Four connector variants with a mixture of signal, power, shielded and high voltage contacts.

Terminations include cable or wire crimp and solder, straight and right angle PCB mount.

Current ratings to 70 amperes. See temperature rise curves on page 3 & 4 for details.

A wide variety of options and accessories.

Conforming To Applicable Material, Dimensional and Performance Requirements:
- GSFC S-311-P4 & GSFC S-311-P10
- DSCC Specification 85039

Conforming To Outgassing Requirements:
- ASTM E-595 & NASA-RP-1124

**MATERIALS AND FINISHES:**

| Contacts: | |
| Size 22: | Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95. |
| Size 16: | Precision machined high conductivity copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95. |
| Size 8: | |
| Power: | Precision machined high conductivity copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95. |
| Shielded: | For material and finishes, see page 77. |
| High Voltage: | For material and finishes, see page 77. |
| Connector Housing (Shells): | Brass with 0.000050 inch [1.27 microns] gold over copper plate. |
| Mounting Spacers and Brackets: | Brass with 0.000050 inch [1.27 microns] gold over copper plate. |
| Push-On Fasteners: | Phosphor bronze or beryllium copper with 0.000050 inch [1.27 microns] gold over copper plate. |
| Jackscrew Systems: | Brass with 0.000050 inch [1.27 microns] gold over copper plate. |
| Cable Adapter (Hood): | Brass with 0.000050 inch [1.27 microns] gold over copper plate; aluminum with electroless nickel plate. Other finishes available, contact Technical Sales. |

continued on next page...
MECHANICAL CHARACTERISTICS:

| Size 22 Fixed:  | Male – 0.030 inch [0.76 mm] mating diameter. Female contact - PosiBand closed entry design; see page 1 for details. |
| Size 16 Fixed:  | Male – 0.062 inch [1.57 mm] mating diameter. Female contact - PosiBand closed entry design; see page 1 for details. |
| Size 8 Removable: | Male – 0.142 inch [3.61 mm] mating diameter. Female contact features Large Surface Area (L.S.A.) closed entry contact design utilizing BeCu mechanical retention member. |
| Shielded:       | For mechanical characteristics, see page 77. |
| High Voltage:   | For mechanical characteristics, see page 77. |

Contact Retention in Connector Insert:

| Size 22: | 5 lbs. [21N] minimum. |
| Size 8 Power / Shielded: | 22 lbs. [98N]. |

Resistance to Solder Iron Heat:

- 500°F [260°C] for 10 seconds duration per IEC 60512-6.

Contact Terminations:

| Size 22: | Solder cup - wire size 22 AWG [0.25 mm²] maximum. Straight solder printed board mount - 0.020 inch [0.51 mm] termination diameter. Right angle (90°) printed board mount - 0.030 inch [0.76 mm] termination diameter. |
| Size 16: | Solder cup - wire size 22 AWG [0.25 mm²] maximum. Straight solder printed board mount - 0.063 inch [1.60 mm] termination diameter. Right angle (90°) printed board mount - 0.062 inch [0.76 mm] termination diameter. |
| Size 8:  | Power: Closed barrel crimp or solder cup - wire sizes 8 [10.0 mm²], 10 [5.3 mm²], 12 [4.0 mm²], and 16 [1.5 mm²] AWG. Straight solder printed board mount - 0.078 inch [1.98 mm], 0.094 inch [2.39 mm] and 0.125 inch [3.18 mm] termination diameters. Right angle (90°) printed board mount - 0.078 inch [1.98 mm] and 0.125 inch [3.18 mm] termination diameters. |
| Shielded: | Refer to RF Cable in chart on page 84 for contact terminations. |

High Voltage:

- Straight and right angle (90°) terminations 0.041 inch [1.04 mm] minimum hole diameter.

Connector Housing (Shells):

- Male connector housings may be dimpled for EMI/ESD ground paths.

Polarization:

- Trapezoidally-shaped connector housing and polarized jackscrews.

Mounting to Angle Brackets:

- Jackscrews and riveted fasteners with 0.120 inch [3.05 mm] diameter hole, and threaded riveted fasteners with 4-40 threads and polyester inserts.

Mounting to Printed Board:

- Rapid installation push-on fasteners and threaded posts.

Locking Systems:

- Jackscrews.

Mechanical Operations:

- 1,000 operations per IEC 60512-5.

ELECTRICAL CHARACTERISTICS:

SIZE 22 CONTACTS

- Contact Current Rating: 5 amperes, nominal
- Initial Contact Resistance: 0.005 ohms maximum
- Proof Voltage: 1000 V r.m.s

SIZE 16 CONTACTS

- Contact Current Rating, Tested per UL 1977: 28 amperes See temperature rise curves on page 4 for details.
- Initial Contact Resistance: 0.0016 ohms maximum, per IEC 60512-2, Test 2b.
- Proof Voltage: 1000 V r.m.s

SIZE 8 CONTACTS

POWER CONTACTS

- For electrical characteristics, see page 21.

SHIELDED CONTACTS

- For electrical characteristics, see page 77.

HIGH VOLTAGE CONTACTS

- For electrical characteristics, see page 77.

CONNECTOR

- Insulation Resistance: 5 G ohms.
- Clearance and Creepage Distance: 0.042 inch [1.06 mm], minimum.
- Working Voltage: 300 V r.m.s

CLIMATIC CHARACTERISTICS:

- Temperature Range: -55°C to +125°C.
- Damp Heat, Steady State: 10 days.
## STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY

### SCBDD SERIES

**High Performance**
**D-sub**

**MILITARY / SPACE FLIGHT QUALITY**

**HIGH DENSITY PCB MOUNT**

### RECOMMENDED MATING DIMENSIONS

Shell Sizes 1 & 2 = 0.265±0.015 [6.73±0.38]
Shell Sizes 3, 4, 5 & 6 = 0.256±0.015 [6.50±0.38]

### OPTIONAL CONNECTOR HOUSING ASSEMBLY (0, 02)

**NEW!**

- **SCBDD8W2M3S00G**
- **SCBDD45W2M3000G**

### OPTIONAL CONNECTOR HOUSING ASSEMBLY WITH UNIVERSAL FLOAT MOUNTS (F)

- **NEW!**

### SHELL SIZES

<table>
<thead>
<tr>
<th>SHELL SIZES</th>
<th>VARIANT</th>
<th>A ±0.015 [0.38]</th>
<th>B ±0.005 [0.13]</th>
<th>B1 ±0.005 [0.13]</th>
<th>C ±0.005 [0.13]</th>
<th>D ±0.005 [0.13]</th>
<th>D1 ±0.005 [0.13]</th>
<th>E ±0.015 [0.38]</th>
<th>G ±0.010 [0.25]</th>
<th>H ±0.010 [0.25]</th>
<th>K ±0.005 [0.13]</th>
<th>M ±0.010 [0.25]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8W2M</td>
<td>1.213 [30.81]</td>
<td>0.666 [16.92]</td>
<td>0.984 [24.99]</td>
<td>0.329 [8.36]</td>
<td>0.494 [12.55]</td>
<td>0.759 [19.28]</td>
<td>0.422 [10.72]</td>
<td>0.233 [5.92]</td>
<td>0.422 [10.72]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>15W4M</td>
<td>2.088 [53.04]</td>
<td>1.534 [38.96]</td>
<td>1.852 [47.04]</td>
<td>0.329 [8.36]</td>
<td>0.494 [12.55]</td>
<td>1.625 [41.28]</td>
<td>0.422 [10.72]</td>
<td>0.230 [5.84]</td>
<td>0.426 [10.82]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>45W2M</td>
<td>2.729 [69.32]</td>
<td>2.182 [55.42]</td>
<td>2.500 [63.50]</td>
<td>0.329 [8.36]</td>
<td>0.494 [12.55]</td>
<td>2.272 [57.71]</td>
<td>0.422 [10.72]</td>
<td>0.230 [5.84]</td>
<td>0.426 [10.82]</td>
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<td></td>
</tr>
</tbody>
</table>

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

**MILITARY / SPACE FLIGHT QUALITY**

**HIGH DENSITY PCB MOUNT**

---

**NEW!**

High Performance D-sub

---

**DIMENSIONS ARE IN INCHES [MILLIMETERS].**

ALL DIMENSIONS ARE SUBJECT TO CHANGE.

---

**SCBDD SERIES**

**FACE VIEW OF MALE OR REAR VIEW OF FEMALE**

---

**SHELL SIZE 1**

- **8W2**
  - Six (6) Size 22 Signal Contacts and Two (2) Size 16 Power Contacts

**SHELL SIZE 2**

- **19W1**
  - Eighteen (18) Size 22 Signal Contacts and One (1) Size 8 Power Contact

**SHELL SIZE 3**

- **15W4**
  - Eleven (11) Size 22 Signal Contacts and Four (4) Size 8 Power Contacts

**SHELL SIZE 4**

- **45W2**
  - Forty-three (43) Size 22 Signal Contacts and Two (2) Size 8 Power Contacts

---

**NOTES:**

- Additional contact variants may be tooled at customer request.
- 45W2 variant currently available in male only. Contact Technical Sales for availability of female connector.

---

**OTHER VARIANTS WILL BE ADDED, CONSULT OUR WEBSITE OR CONTACT TECHNICAL SALES FOR UPDATED INFORMATION.**

---

**SOLDER CUP TERMINATION**

**CODE 21**

- 22 AWG max. [0.25mm²]
- 0.082 [2.08]
- 0.145 [3.68]

- Fixed female jackscrews

- For solder cup contacts, specify code 21 in step 4 of ordering information.

---

**TYPICAL PART NUMBER:**

SCBDD19W1M2100T2G

---

**TYPICAL PART NUMBER:**

SCBDD19W1M2100T6G

---

Fixed female jackscrew

Fixed male jackscrew

Fixed male and female polarized jackscrews available. Specify code T6 in step 7 of ordering information.
STRAIGHT SOLDER PRINTED BOARD MOUNT TERMINATION
CODE 3, 35, 36, AND 37

FOR VARIANTS INCLUDING SIZE 16 CONTACTS

<table>
<thead>
<tr>
<th>CONTACT NUMBER</th>
<th>D Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0.063 [1.60]</td>
</tr>
</tbody>
</table>

NOTE:
*1 Contact termination code as specified in Step 4 of ordering information.

FOR VARIANTS WITH SIZE 8 CAVITY

<table>
<thead>
<tr>
<th>CONTACT NUMBER</th>
<th>D Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Size 8 contacts not supplied</td>
</tr>
<tr>
<td>35</td>
<td>0.078 [1.98]</td>
</tr>
<tr>
<td>36</td>
<td>0.094 [2.39]</td>
</tr>
<tr>
<td>37</td>
<td>0.125 [3.18]</td>
</tr>
</tbody>
</table>

NOTE:
*2 Contact termination code as specified in Step 4 of ordering information.

TYPICAL PART NUMBER:
SCBDD8W2S3S60T2G

RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION
SIZE 16 POWER CONTACTS WITH 0.062 [1.57] Ø TERMINATIONS
CODE 4, 0.314 [7.98] CONTACT EXTENSION

See temperature rise curves on pages 3 and 4

TYPICAL PART NUMBER:
SCBDD8W2M4R70T2G
### Right Angle (90°) Printed Board Mount Termination

**Size 8 Power Contacts with 0.078 [1.98] Ø Terminations**

**Code 4 and 45, 0.314 [7.98] Contact Extension**

See temperature rise curves on pages 3 and 4

![Diagram of Right Angle (90°) Printed Board Mount Termination]

**Typical Part Number:** SCBDD15W4M45R7N0G

<table>
<thead>
<tr>
<th>SCBDD**(4 or 45)**** 0.314 [7.98] Contact Extension</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHELL SIZE 2</td>
<td>1.532 [38.91]</td>
<td>1.312 [33.32]</td>
</tr>
<tr>
<td>SHELL SIZE 3</td>
<td>2.072 [52.63]</td>
<td>1.852 [47.04]</td>
</tr>
<tr>
<td>SHELL SIZE 4</td>
<td>2.720 [69.09]</td>
<td>2.500 [63.50]</td>
</tr>
</tbody>
</table>

### Right Angle (90°) Printed Board Mount Termination

**Size 8 Power Contacts with 0.125 [3.18] Ø Terminations**

**Code 4 and 47, 0.314 [7.98] Contact Extension**

See temperature rise curves on pages 3 and 4

![Diagram of Right Angle (90°) Printed Board Mount Termination]

**Typical Part Number:** SCBDD15W4M45R7N0G

<table>
<thead>
<tr>
<th>SCBDD**(4 or 47)**** 0.314 [7.98] Contact Extension</th>
<th>A</th>
<th>B</th>
</tr>
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<tbody>
<tr>
<td>SHELL SIZE 2</td>
<td>1.532 [38.91]</td>
<td>1.312 [33.32]</td>
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<tr>
<td>SHELL SIZE 3</td>
<td>2.072 [52.63]</td>
<td>1.852 [47.04]</td>
</tr>
<tr>
<td>SHELL SIZE 4</td>
<td>2.720 [69.09]</td>
<td>2.500 [63.50]</td>
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</tbody>
</table>
SCBDD SERIES
MILITARY / SPACE FLIGHT QUALITY
HIGH DENSITY PCB MOUNT

STRAIGHT SOLDER PRINTED BOARD MOUNT TERMINATION
WITH FDS4201M OR MDS4201M SHIELDED CONTACTS
CODE 65

TYPICAL PART NUMBER:
SCBDD19W1M65S60T2G

ELEVATION

Pressure contact extension

Shielded contacts only visible this view for clarity

SHELL SIZE 2

SHELL SIZE 3

SHELL SIZE 4

0.314 [7.98] CONTACT EXTENSION

<table>
<thead>
<tr>
<th>SHELL SIZE</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHELL SIZE 2</td>
<td>1.532</td>
<td>1.312</td>
</tr>
<tr>
<td>SHELL SIZE 3</td>
<td>2.072</td>
<td>1.852</td>
</tr>
<tr>
<td>SHELL SIZE 4</td>
<td>2.720</td>
<td>2.500</td>
</tr>
</tbody>
</table>

RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION
WITH FRT4201M OR MRT4201M SHIELDED CONTACTS
CODE 84

TYPICAL PART NUMBER:
SCBDD19W1M84R70T2G

ELEVATION

Pressure contact extension

Shielded contacts only visible this view for clarity

SHELL SIZE 2

SHELL SIZE 3

SHELL SIZE 4

0.314 [7.98] CONTACT EXTENSION

<table>
<thead>
<tr>
<th>SHELL SIZE</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHELL SIZE 2</td>
<td>1.532</td>
<td>1.312</td>
</tr>
<tr>
<td>SHELL SIZE 3</td>
<td>2.072</td>
<td>1.852</td>
</tr>
<tr>
<td>SHELL SIZE 4</td>
<td>2.720</td>
<td>2.500</td>
</tr>
</tbody>
</table>
PRINTED BOARD MOUNT CONTACT HOLE PATTERN

HOLE IDENTIFICATION SHOWN FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.
MOUNT RIGHT ANGLE (90°) CONNECTOR WITH MATING FACE POSITIONED TO FOLLOW DIRECTION OF ARROWS.

SUGGESTED PRINTED BOARD HOLE SIZES:

See Suggested Printed Board Hole Size chart on page 53.
## PRINTED BOARD MOUNT CONTACT HOLE PATTERN

Hole identification shown for male connector; use mirror image for female connector. Mount right angle (90°) connector with mating face positioned to follow direction of arrows.

### SUGGESTED PRINTED BOARD HOLE SIZES

<table>
<thead>
<tr>
<th>VARIANT</th>
<th>CODE</th>
<th>ØA</th>
<th>B</th>
<th>ØC</th>
</tr>
</thead>
<tbody>
<tr>
<td>8W2</td>
<td>3</td>
<td>0.080 [2.03]</td>
<td>0.078 [1.98]</td>
<td>0.035 [0.89]</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>0.080 [2.03]</td>
<td>0.100 [2.54]</td>
<td>0.045 [1.14]</td>
</tr>
<tr>
<td>19W1</td>
<td>3, 35</td>
<td>0.098 [2.49]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>36</td>
<td>0.114 [2.90]</td>
<td>0.078 [1.98]</td>
<td>0.035 [0.89]</td>
</tr>
<tr>
<td></td>
<td>37</td>
<td>0.145 [3.68]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15W4</td>
<td>4</td>
<td>N/A</td>
<td>0.100 [2.54]</td>
<td>0.045 [1.14]</td>
</tr>
<tr>
<td>45W2</td>
<td>45</td>
<td>0.098 [2.49]</td>
<td>0.100 [2.54]</td>
<td>0.045 [1.14]</td>
</tr>
<tr>
<td></td>
<td>47</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>65</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td></td>
<td>84</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*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 8
FOR CONNECTORS NOT INCLUDING SIZE 8 CONTACTS

<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>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAMPLE</td>
<td>SCBDD</td>
<td>8W2</td>
<td>S</td>
<td>3</td>
<td>S6</td>
<td>0</td>
<td>T2</td>
<td>G</td>
<td></td>
</tr>
</tbody>
</table>

STEP 1 - BASIC SERIES
SCBDD Series

STEP 2 - CONNECTOR VARIANTS
Shell Size 1 - 8W2
See page 56 for ordering information for other shell size options.

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

STEP 4 - CONTACT TERMINATION TYPE
*1 21 – Fixed, solder cup.
*1 3 – Solder, straight printed board mount, 0.170 [4.32] tail length.
*1 4 – Solder, right angle (90°) printed board mount, 0.314 [7.98] signal contact extension.

*2 STEP 5 - MOUNTING STYLE
0 – Mounting hole, 0.120 [3.05] Ø
02 – Mounting hole, 0.154 [3.91] Ø
C5 – Swaged spacer, cul-de-sac style, 4-40 threads, 0.350 [8.89] length. For use with cable connectors only.
C7 – Bracket, mounting right angle (90°) metal, swaged to connector with cul-de-sac spacer and 4-40 threads with cross bar.
F – Float mounts, universal
P – Threaded post, brass, 0.250 [6.35] length
R2 – Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 thread fixed female jackscrews with cross bar
R6 – Bracket, mounting, right angle (90°) metal, swaged to connector with 0.120 [3.05] Ø mounting hole with cross bar
R7 – Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 threads with cross bar
R8 – Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 locknut with cross bar
S – Swaged spacer, 4-40 threads, 0.250 [6.35] length
S2 – Swaged spacer, 4-40 threads, 0.125 [3.18] length
S5 – Swaged locknut, 4-40 threads
S6 – Swaged spacer with push-on fastener, 4-40 threads, 0.250 [6.35] length

*2 STEP 6 - CABLE ADAPTER (HOOD) AND PUSH-ON FASTENER
0 – None
AN – Cable adapter, lightweight aluminum, electroless nickel plate, see page 91 for details.
H – Cable adapter, top opening, brass
N – Push-on fastener, for right angle (90°) mounting brackets

*2 STEP 7 - LOCKING AND POLARIZING SYSTEMS
0 – None
T – Fixed female jackscrews.
T4 – Fixed female jackscrews.
T6 – Fixed male and female polarized jackscrews.
E – Rotating male jackscrews.
E2 – Rotating male screw locks.
E3 – Rotating male with internal hex for 3/32 hex drives.
E6 – Rotating male and female polarized jackscrews.

*2 STEP 8 - CONNECTOR HOUSING (SHELLS) OPTION
G – Gold over copper plate.
D – Gold over copper plate and dimpled (male connectors only).

NOTES
*1 Size 16 power contacts are included when used on 8W2 variant in Step 2.
*2 For additional information of options listed in steps 5, 6, and 7, see Accessories Section on pages 86-94.
### SCBDD SERIES
CRIMP AND SOLDER CUP TERMINATION CONTACTS

<table>
<thead>
<tr>
<th>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 81 for additional information</td>
<td>8</td>
<td>FC4008M</td>
<td>MC4008M</td>
<td>8 [10.0]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC4010M</td>
<td>MC4010M</td>
<td>10 [5.3]</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>FC4012M</td>
<td>MC4012M</td>
<td>12 [4.0]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC4016M</td>
<td>MC4016M</td>
<td>16 [1.5]</td>
</tr>
<tr>
<td>SOLDER CUP</td>
<td>see page 82 for additional information</td>
<td>8</td>
<td>FS4008M</td>
<td>MS4008M</td>
<td>8 [10.0]</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>FS4012M</td>
<td>MS4012M</td>
<td>12 [4.0]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FS4016M</td>
<td>MS4016M</td>
<td>16 [1.5]</td>
</tr>
<tr>
<td>HIGH VOLTAGE</td>
<td>see page 83 for additional information</td>
<td>8</td>
<td>FS4820M</td>
<td>MS4820M</td>
<td>20 [0.5]</td>
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<tr>
<td>Straight Solder Wire</td>
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<tr>
<td>HIGH VOLTAGE</td>
<td>see page 84 for additional information</td>
<td>8</td>
<td>FS4920M</td>
<td>MS4920M</td>
<td>20 [0.5]</td>
</tr>
<tr>
<td>Right Angle (90º)</td>
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<td></td>
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</tr>
<tr>
<td>SOLDER / CRIMP</td>
<td></td>
<td></td>
<td>FC4101M</td>
<td>MC4101M</td>
<td>RG 178 B/U, 196 B/U</td>
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<tr>
<td></td>
<td></td>
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<td>FC4102M</td>
<td>MC4102M</td>
<td>RG 179 BU, 316 B/U</td>
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<td></td>
<td></td>
<td>FC4103M</td>
<td>MC4103M</td>
<td>RG 180 B/U</td>
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<tr>
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<td></td>
<td></td>
<td>FC4104M</td>
<td>MC4104M</td>
<td>RG 58 B/U</td>
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<tr>
<td>SOLDER / SOLDER</td>
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<td></td>
<td>FS4101M</td>
<td>MS4101M</td>
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<tr>
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<td>FS4102M</td>
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<td>MS4104M</td>
<td>RG 58 B/U</td>
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<tr>
<td>CRIMP / CRIMP</td>
<td></td>
<td></td>
<td>FCC4101M</td>
<td>MCC4101M</td>
<td>RG 178 B/U, 196 B/U</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>FCC4102M</td>
<td>MCC4102M</td>
<td>RG 179 BU, 316 B/U</td>
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<tr>
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<td></td>
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<td>FCC4103M</td>
<td>MCC4103M</td>
<td>RG 180 B/U</td>
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<td></td>
<td></td>
<td>FCC4104M</td>
<td>MCC4104M</td>
<td>RG 58 B/U</td>
</tr>
</tbody>
</table>

**NOTE:** For ordering crimp contacts on reels, add “R” to part number, see page 77 for details. Examples: FC4008MR or MC4008MR

For information regarding **REMOVABLE CONTACTS**, see contact illustration drawings and charts on pages 77-85.

For information regarding **CRIMP TOOLS & CRIMPING TOOL TECHNIQUES**, see page 96.
**ORDERING INFORMATION - CODE NUMBERING SYSTEM**
Specify Complete Connector By Selecting An Option From Step 1 Through 8

### FOR CONNECTORS INCLUDING SIZE 8 CONTACTS

<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>
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</thead>
<tbody>
<tr>
<td><strong>EXAMPLE</strong></td>
<td><strong>SCBDD</strong></td>
<td><strong>19W1</strong></td>
<td><strong>M</strong></td>
<td><strong>47</strong></td>
<td><strong>R7</strong></td>
<td><strong>0</strong></td>
<td><strong>T2</strong></td>
<td><strong>G</strong></td>
<td></td>
</tr>
</tbody>
</table>

**STEP 1 - BASIC SERIES**
SCBDD Series

**STEP 2 - CONNECTOR VARIANTS**
- Shell Size 2 - 19W1
- Shell Size 3 - 15W4
- **Shell Size 4 - 45W2**

See page 54 for ordering information for shell size 1 - 8W2 options.

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

**STEP 4 - CONTACT TERMINATION TYPE**
- 21 – Fixed, solder cup, signal contact only.
- 3 – Solder, straight printed board mount with signal contacts only 0.170 [4.32] tail length.
- 35 – Solder, straight printed board mount with signal and 0.078 [1.98] Ø power contacts, 0.170 [4.32] tail length.
- 36 – Solder, straight printed board mount with signal and 0.094 [2.39] Ø power contacts, 0.170 [4.32] tail length.
- 37 – Solder, straight printed board mount with signal and 0.125 [3.18] Ø power contacts, 0.170 [4.32] tail length.
- 4 – Solder, right angle (90°) printed board mount with signal contacts only, 0.314 [7.98] signal contact extension.
- 45 – Solder, right angle (90°) printed board mount with signal and 0.078 [1.98] Ø power contacts, 0.314 [7.98] signal contact extension.
- 47 – Solder, right angle (90°) printed board mount with signal and 0.125 [3.18] Ø power contacts, 0.314 [7.98] signal contact extension.
- 65 – Solder, straight printed board mount with signal and shielded contacts MDS/FDS4201D footprint, 0.170 [4.32] signal contact tail length.
- 84 – Solder, right angle (90°) printed board mount with signal and shielded contacts MRT/FDS4201D footprint, 0.314 [7.98] signal contact extension.

**NOTES**
- **1** 45W2 variant currently available in male only.
- **2** For additional information of options listed in steps 5, 6, and 7, see Accessories Section on pages 86-94.

Do you need 2-D drawings or 3-D models? See page 18 for more information!
High performance for use in harsh environments, including space flight.

Size 22, Size 16 and Size 8 removable contacts.

All female closed entry signal contacts utilize the “PosiBand” system. See page 1 for details.

GSFC S-311-P-4/08 offers two contact engagement test options. Size 22 PosiBand contacts meet the higher 40 gram requirements per 4.2.2.b.

Three connector variants with a mixture of signal, power, shielded and high voltage contacts.

Terminations include cable or wire crimp and solder.

Current ratings to 70 amperes. See temperature rise curves on page 3 & 4 for details.

A wide variety of options and accessories.

Conforming To Applicable Material, Dimensional and Performance Requirements:
- GSFC S-311-P4 & GSFC S-311-P10
- DSCC Specification 85039

Conforming To Outgassing Requirements:
- ASTM E-595 & NASA-RP-1124

**MATERIALS AND FINISHES:**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Contacts:</td>
<td></td>
</tr>
<tr>
<td>Size 22:</td>
<td>Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.</td>
</tr>
<tr>
<td>Size 16:</td>
<td>Precision machined high conductivity copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.</td>
</tr>
<tr>
<td>Size 8:</td>
<td>Precision machined high conductivity copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.</td>
</tr>
<tr>
<td>Power:</td>
<td>For material and finishes, see page 77.</td>
</tr>
<tr>
<td>Shielded: Power:</td>
<td>For material and finishes, see page 77.</td>
</tr>
<tr>
<td>High Voltage:</td>
<td>For material and finishes, see page 77.</td>
</tr>
</tbody>
</table>

**MECHANICAL CHARACTERISTICS:**

<table>
<thead>
<tr>
<th>Jackscrew Systems:</th>
<th>Brass with 0.000050 inch [1.27 microns] gold over copper plate.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable Adapter (Hood):</td>
<td>Brass with 0.000050 inch [1.27 microns] gold over copper plate; aluminum with electroless nickel plate. Other finishes available, contact Technical Sales.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size 22 Removable:</th>
<th>Male contact - 0.030 inch [0.76 mm] mating diameter. Female contact - PosiBand closed entry design; see page 1 for details. For removable size 22 contacts, see page 79.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size 16 Removable:</td>
<td>Male – 0.062 inch [1.57mm] mating diameter. Female contact - PosiBand closed entry design; see page 1 for details. For removable size 16 contacts, see page 81.</td>
</tr>
<tr>
<td>Size 8 Removable:</td>
<td>Male contact - 0.142 inch [3.61 mm] mating diameter. Female contact - features Large Surface Area (L.S.A.) closed entry design utilizing BeCu mechanical retention member. Closed crimp barrel. For removable size 8 contacts, see pages 81-85.</td>
</tr>
</tbody>
</table>

continued on next page...
MECHANICAL CHARACTERISTICS, continued:

Shielded: For mechanical characteristics, see page 77.

High Voltage: For mechanical characteristics, see page 77.

Contact Retention in Connector Insert:

<table>
<thead>
<tr>
<th>Size</th>
<th>Minimum Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>9 lbs. [40N] minimum.</td>
</tr>
<tr>
<td>16</td>
<td>15 lbs. [67N] minimum.</td>
</tr>
<tr>
<td>8</td>
<td>22 lbs. [98N].</td>
</tr>
</tbody>
</table>

Contact Terminations:

<table>
<thead>
<tr>
<th>Size</th>
<th>Terminations</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>Closed barrel crimp - wire sizes 20 AWG [0.5 mm²] through 30 AWG [0.05 mm²]. Closed barrel solder - wire size 22 AWG [0.3 mm²] maximum; see page 79 for details.</td>
</tr>
<tr>
<td>16</td>
<td>Closed barrel crimp - wire sizes 12 AWG [4.0 mm²] through 24 AWG [0.25 mm²].</td>
</tr>
<tr>
<td>8</td>
<td>Closed barrel crimp or solder cup - wire sizes 8 [10.0 mm²], 10 [5.3 mm²], 12 [4.0 mm²], and 16 [1.5 mm²] AWG.</td>
</tr>
</tbody>
</table>

Shielded: Refer to RF Cable in chart on page 84 for contact terminations.

High Voltage: Straight and right angle (90º) terminations - 0.041 inch [1.04 mm] minimum hole diameter.

Connector Housing (Shells):

Male connector housings may be dimpled for EMI/ESD ground paths.

Polarization:

Trapezoidally-shaped connector housings and polarized jackscrews.

LOCKING SYSTEMS:

Jackscrews.

MECHANICAL OPERATIONS:

1,000 operations per IEC 60512-5.

ELECTRICAL CHARACTERISTICS:

SIZE 22 CONTACTS

Contact Current Rating: 5 amperes, nominal
Initial Contact Resistance: 0.005 ohms maximum.
Proof Voltage: 1000 V r.m.s.

SIZE 16 CONTACTS

Contact Current Rating, Tested per UL 1977: 28 amperes
See temperature rise curves on page 4 for details.
Initial Contact Resistance: 0.0016 ohms maximum, per IEC 60512-2, Test 2b.
Proof Voltage: 1000 V r.m.s.

SIZE 8 CONTACTS

POWER CONTACTS
For electrical characteristics, see page 21.

SHIELDED CONTACTS
For electrical characteristics, see page 77.

HIGH VOLTAGE CONTACTS
For electrical characteristics, see page 77.

CONNECTOR

Insulation Resistance: 5 G ohms.
Clearance and Creepage Distance: 0.042 inch [1.06 mm], minimum.
Working Voltage: 300 V r.m.s.

CLIMATIC CHARACTERISTICS:

Temperature Range: -55°C to +125°C.
Damp Heat, Steady State: 10 days.

OTHER VARIANTS WILL BE ADDED, CONSULT OUR WEBSITE OR CONTACT TECHNICAL SALES FOR UPDATED INFORMATION.

NOTES:

* Additional contact variants may be tooled at customer request.
** 45W2 variant currently available in female only. Contact Technical Sales for availability of male connector.

HIGH DENSITY REMOVABLE CONTACTS

STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY

TYPICAL CONNECTOR TOP VIEW

OPTIONAL CONNECTOR HOUSING ASSEMBLY (0, 02)

OPTIONAL CONNECTOR HOUSING ASSEMBLY WITH UNIVERSAL FLOAT MOUNTS (F)

RECOMMENDED MATING DIMENSIONS

DIMENSIONS ARE IN INCHES [MILLIMETERS]. ALL DIMENSIONS ARE SUBJECT TO CHANGE.
# SCBCD SERIES
CRIMP AND SOLDER TERMINATION CONTACTS

## NEW!
**High Performance**
D-sub

**MILITARY / SPACE FLIGHT QUALITY**
HIGH DENSITY REMOVABLE CONTACTS

---

### REMOVABLE CONTACT ORDERING ASSISTANCE CHART

#### SCBCD SERIES
CRIMP AND SOLDER TERMINATION CONTACTS

<table>
<thead>
<tr>
<th>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><strong>Crimp</strong></td>
<td>see page 78 for additional information</td>
<td>22</td>
<td>FC8022M2</td>
<td>MC8022M</td>
<td>22 [0.3] / 24 [0.25] / 26 [0.12] / 28 [0.08] / 30 [0.5]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC8020M2</td>
<td>MC8020M</td>
<td>20 [0.5] max.</td>
</tr>
<tr>
<td></td>
<td>see page 81 for additional information</td>
<td>16</td>
<td>FC112N4-50</td>
<td>MC112N-50-133.0</td>
<td>12 [4.0]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC114N4-50</td>
<td>MC114N-50-133.0</td>
<td>14 [2.5] / 16 [1.5]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC116N4-50</td>
<td>MC116N-50-133.0</td>
<td>16 [1.5] / 18 [1.0]</td>
</tr>
<tr>
<td></td>
<td>see page 81 for additional information</td>
<td>8</td>
<td>FC4008M</td>
<td>MC4008M</td>
<td>8 [10.0]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC4010M</td>
<td>MC4010M</td>
<td>10 [5.3]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC4012M</td>
<td>MC4012M</td>
<td>12 [4.0]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC4016M</td>
<td>MC4016M</td>
<td>16 [1.5]</td>
</tr>
<tr>
<td><strong>Solder</strong></td>
<td>see page 79 for additional information</td>
<td>22</td>
<td>FS8022M2</td>
<td>MS8022M</td>
<td>22 [0.3] max.</td>
</tr>
<tr>
<td><strong>Solder Cup</strong></td>
<td>see page 82 for additional information</td>
<td>8</td>
<td>FS4008M</td>
<td>MS4008M</td>
<td>8 [10.0]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FS4012M</td>
<td>MS4012M</td>
<td>12 [4.0]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FS4016M</td>
<td>MS4016M</td>
<td>16 [1.5]</td>
</tr>
<tr>
<td><strong>High Voltage</strong></td>
<td>see page 83 for additional information</td>
<td>8</td>
<td>FS4920M</td>
<td>MS4920M</td>
<td>20 [0.5]</td>
</tr>
<tr>
<td>Straight Solder Wire</td>
<td></td>
<td></td>
<td>FS4920M</td>
<td>MS4920M</td>
<td>20 [0.5]</td>
</tr>
<tr>
<td>Right Angle (90°)</td>
<td></td>
<td></td>
<td>FS4920M</td>
<td>MS4920M</td>
<td></td>
</tr>
<tr>
<td><strong>Shielded</strong></td>
<td>see page 84 for additional information</td>
<td>8</td>
<td>FC4101M</td>
<td>MC4101M</td>
<td>RG 178 B/U, 196 B/U</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC4102M</td>
<td>MC4102M</td>
<td>RG 179 BU, 316 B/U</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC4103M</td>
<td>MC4103M</td>
<td>RG 180 B/U</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FC4104M</td>
<td>MC4104M</td>
<td>RG 58 B/U</td>
</tr>
<tr>
<td><strong>Solder / Crimp</strong></td>
<td></td>
<td></td>
<td>FS4101M</td>
<td>MS4101M</td>
<td>RG 178 B/U, 196 B/U</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FS4102M</td>
<td>MS4102M</td>
<td>RG 179 BU, 316 B/U</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FS4103M</td>
<td>MS4103M</td>
<td>RG 180 B/U</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FS4104M</td>
<td>MS4104M</td>
<td>RG 58 B/U</td>
</tr>
<tr>
<td><strong>Crimp / Solder</strong></td>
<td></td>
<td></td>
<td>FCC4101M</td>
<td>MCC4101M</td>
<td>RG 178 B/U, 196 B/U</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FCC4102M</td>
<td>MCC4102M</td>
<td>RG 179 BU, 316 B/U</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FCC4103M</td>
<td>MCC4103M</td>
<td>RG 180 B/U</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FCC4104M</td>
<td>MCC4104M</td>
<td>RG 58 B/U</td>
</tr>
</tbody>
</table>

**NOTE:** For ordering crimp contacts on reels, add "R" to part number, see page 77 for details. Examples: FC4008MR or MC4008MR

---

For information regarding **REMOVABLE CONTACTS**, see contact illustration drawings and charts on pages 77-85.

For information regarding **CRIMP TOOLS & CRIMPING TOOL TECHNIQUES**, see page 96.

---

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
SCBCD SERIES
MILITARY / SPACE FLIGHT QUALITY
HIGH DENSITY REMOVABLE CONTACTS

New!
High Performance
D-sub

ORDERING INFORMATION - CODE NUMBERING SYSTEM
Specify Complete Connector By Selecting An Option From Step 1 Through 8

<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>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAMPLE</td>
<td>SCBCD</td>
<td>8W2</td>
<td>S</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>G</td>
<td></td>
</tr>
</tbody>
</table>

STEP 1 - BASIC SERIES
SCBCD Series

STEP 2 - CONNECTOR VARIANTS
Shell Size 1 - 8W2
Shell Size 2 - 19W1
Shell Size 4 - 45W2

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 ordered separately, see contact chart on page 60 for details.
1 – Signal contacts, 22 AWG-30 AWG [0.03mm²-0.05mm²].
*2 11 – Signal contacts, 22 AWG-30 AWG [0.03mm²-0.05mm²] with MC/FC 4012M power contact.
*2 12 – Signal contacts, 22 AWG-30 AWG [0.03mm²-0.05mm²] with MC/FC 4016M power contact.
*2 13 – Signal contacts, 22 AWG-30 AWG [0.03mm²-0.05mm²] with MCC/FC 4101M shielded contacts.
*2 14 – Signal contacts, 22 AWG-30 AWG [0.03mm²-0.05mm²] with MCC/FC 4102M shielded contacts.

STEP 5 - MOUNTING STYLE
0 – Mounting hole, 0.120 [3.05] Ø
02 – Mounting hole, 0.154 [3.91] Ø
CS – Swaged spacer, Cul-de-Sac style, 4-40 threads, 0.350 [8.89] length,
F – Float mounts, universal
S2 – Swaged spacer, 4-40 threads, 0.125 [3.18] length
S5 – Swaged locknut, 4-40 threads

STEP 6 - CABLE ADAPTER (HOOD) AND PUSH-ON FASTENER
0 – None. AN – Cable adapter, lightweight aluminum, electropolished nickel plate, see page 91 for details.
H – Cable adapter, top opening, brass
N – Push-on fastener, for right angle (90°) mounting brackets

STEP 7 - LOCKING AND POLARIZING SYSTEMS
0 – None.
T – Fixed female jackscrews. T2 – Fixed female jackscrews.
T6 – Fixed male and female polarized jackscrews.
E – Rotating male jackscrews.
E2 – Rotating male screw locks.
E3 – Rotating male with internal hex for 3/32 hex drives
E6 – Rotating male and female polarized jackscrews.

*3 STEP 6 - CABLE ADAPTER (HOOD)
And Push-On Fastener

<table>
<thead>
<tr>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>AN</td>
<td>Cable adapter, lightweight aluminum, electropolished nickel plate</td>
</tr>
<tr>
<td>H</td>
<td>Cable adapter, top opening, brass</td>
</tr>
<tr>
<td>N</td>
<td>Push-on fastener, for right angle (90°) mounting brackets</td>
</tr>
</tbody>
</table>

NOTES
*1 45W2 variant currently available in female only.
*2 Available on 19W1 and 45W2 connectors only.
*3 For additional information of options listed in steps 5, 6, and 7, see Accessories Section on pages 86-94.

Do you need 2-D drawings or 3-D models?
See page 18 for more information!

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 96.
High performance for use in harsh environments, including space flight.

Size 20 fixed contacts.

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

Five connector variants include 9, 15, 25, 37, and 50 contacts.

Suitable for use as connector saver or gender changer.

A wide variety of jackscrew options allows for mechanical keying.

Conforming To Applicable Material, Dimensional and Performance Requirements:
- GSFC S-311-P4 & GSFC S-311-P10
- MIL-DTL-24308 Class M

Conforming To Outgassing Requirements:
- ASTM E-595 & NASA-RP-1124

TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:


Contacts: Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.

Connector Housing (Shells), Spacers and Jackscrew Systems: Brass with 0.000050 inch [1.27 microns] gold over copper plate.

MECHANICAL CHARACTERISTICS:

Size 20 Fixed: Male contact - 0.040 inch [1.02 mm] mating diameter. Female contact - PosiBand closed entry design; see page 1 for details.

Connector Saver: Male to female, or male to male.

Contact Retention: 9 lbs. [40 N].

Connector Housing (Shells): Male connector housings may be dimpled for EMI/ESD ground paths.

Polarization: Trapezoidally-shaped connector housings.

Mechanical Operations: 1,000 operations, minimum, per IEC 60512-5.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating: 7.5 amperes, nominal.

Initial Contact Resistance: 0.008 ohms, maximum.

Proof Voltage: 1,000 V r.m.s.

Insulator Resistance: 5 G ohms.

Clearance and Creepage Distance: 0.039 inch [1.0 mm], minimum.

Working Voltage: 300 V r.m.s.

CLIMATIC CHARACTERISTICS:

Temperature Range: -55°C to +125°C.
## SAD SERIES SIZE 20 CONTACT CONNECTOR SAVER

### CONTACT VARIANTS

FACE VIEW OF MALE OR REAR VIEW OF FEMALE

![Male Contacts](image1)

![Molding Spacer](image2)

![Female Contacts](image3)

### STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY DIMENSIONS

#### SIZE 20 CONTACTS

<table>
<thead>
<tr>
<th>CONNECTOR VARIANT SIZES</th>
<th>A ±0.015 [0.38]</th>
<th>B ±0.005 [0.13]</th>
<th>B1 ±0.005 [0.13]</th>
<th>C ±0.005 [0.13]</th>
<th>D ±0.005 [0.13]</th>
<th>D1 ±0.005 [0.13]</th>
<th>E ±0.015 [0.38]</th>
<th>K ±0.005 [0.13]</th>
<th>K1 ±0.005 [0.13]</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 M</td>
<td>1.213 [30.81]</td>
<td>0.666 [16.92]</td>
<td>0.984 [24.99]</td>
<td>0.329 [8.36]</td>
<td>0.494 [12.55]</td>
<td>0.233</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 S</td>
<td>1.213 [30.81]</td>
<td>0.643 [16.33]</td>
<td>0.984 [24.99]</td>
<td>0.311 [7.90]</td>
<td>0.494 [12.55]</td>
<td>0.243</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 S</td>
<td>1.541 [39.14]</td>
<td>0.971 [24.66]</td>
<td>1.312 [33.32]</td>
<td>0.311 [7.90]</td>
<td>0.494 [12.55]</td>
<td>0.243</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 M</td>
<td>2.088 [53.04]</td>
<td>1.534 [38.96]</td>
<td>1.852 [47.04]</td>
<td>0.329 [8.36]</td>
<td>0.494 [12.55]</td>
<td>0.230</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 S</td>
<td>2.088 [53.04]</td>
<td>1.511 [38.38]</td>
<td>1.852 [47.04]</td>
<td>0.311 [7.90]</td>
<td>0.494 [12.55]</td>
<td>0.243</td>
<td></td>
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<tr>
<td>37 M</td>
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<td>2.500 [63.50]</td>
<td>0.329 [8.36]</td>
<td>0.494 [12.55]</td>
<td>0.230</td>
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<td>37 S</td>
<td>2.729 [69.32]</td>
<td>2.159 [54.84]</td>
<td>2.500 [63.50]</td>
<td>0.311 [7.90]</td>
<td>0.494 [12.55]</td>
<td>0.243</td>
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<tr>
<td>50 M</td>
<td>2.635 [66.93]</td>
<td>2.079 [52.81]</td>
<td>2.406 [61.11]</td>
<td>0.441 [11.20]</td>
<td>0.605 [15.37]</td>
<td>0.243</td>
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<td>2.406 [61.11]</td>
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<td>0.605 [15.37]</td>
<td>0.243</td>
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</table>

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

**CODE E, E6, T AND T6**

**ROTATING MALE AND FEMALE JACKSCREWS**

- **E**
- **E6**

**FIXED MALE AND FEMALE JACKSCREWS**

- **T**
- **T6**

**EXAMPLE PART NUMBER:**
- SAD9SEGGM0G
- SAD9SE6GM0G
- SAD9STGM0G
- SAD9ST6GM0G

SAD15S0GM0G connector saver mated to SND15S5R70T2G connector.
ORDERING INFORMATION - CODE NUMBERING SYSTEM
Specify Complete Connector By Selecting An Option From Step 1 Through 8

STEP 1 - BASIC SERIES
SAD series

STEP 2 - CONNECTOR VARIANT
9, 15, 25, 37, 50

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

*1 STEP 4 - 1ST CONNECTOR MATING STYLE
  0 - Swaged spacer 0.120 [3.05µ] mounting hole
  S - Swaged spacer 4-40 UNC-2B threads
  **E - Rotating male and female jackscrews (Select 0 in Step 7)
  **E6 - Rotating male and female polarized jackscrew (Select 0 in Step 7)
  **T - Fixed male and female jackscrews (Select 0 in Step 7)
  **T6 - Fixed male and female polarized jackscrew (Select 0 in Step 7)

STEP 5 - 1ST CONNECTOR HOUSING (SHELLS) OPTION
G - Gold over copper plate.
D - Gold over copper plate and dimpled (male connectors only).

*1 STEP 7 - 2ND CONNECTOR MATING STYLE
  0 - Swaged spacer 0.120 [3.05µ] mounting hole
  S - Swaged spacer 4-40 UNC-2B threads
  **E - Rotating male and female jackscrews (Select 0 in Step 7)
  **E6 - Rotating male and female polarized jackscrew (Select 0 in Step 7)
  **T - Fixed male and female jackscrews (Select 0 in Step 7)
  **T6 - Fixed male and female polarized jackscrew (Select 0 in Step 7)

STEP 6 - 2ND CONNECTOR GENDER
M - Male

NOTES
*1 Connector mating style for both connectors must be the same if 0 or S is used. If E or E6 is used in either Step 4 or 8 the other step must be 0.
*2 For hardware information, see page 64.

Do you need 2-D drawings or 3-D models?
See page 18 for more information!
SADD SERIES
MILITARY / SPACE FLIGHT QUALITY
HIGH DENSITY CONNECTOR SAVER

High performance for use in harsh environments, including space flight.

- **Size 22 fixed contacts.**
- Female closed entry contacts utilize the “PosiBand®” system. See page 1 for details.
- Five connector variants include 15, 26, 44, 62, 78, and 104 contacts.
- Suitable for use as connector saver or gender changer.
- A wide variety of jackscrew options allows for mechanical keying.

**TECHNICAL CHARACTERISTICS**

**MATERIALS AND FINISHES:**
- **Connector Insulator:** Polyester glass-filled per ASTM-D-5927, UL 94V-0, ASTM E-595, NASA-RP-1124.
- **Contacts:** Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.
- **Connector Housing (Shells), Spacers and Jackscrew Systems:** Brass with 0.000050 inch [1.27 microns] gold over copper plate.

**MECHANICAL CHARACTERISTICS:**
- **Size 20 Fixed:** Male contact - 0.030 inch [0.76 mm] mating diameter. Female contact - PosiBand closed entry design; see page 1 for details.
- **Connector Saver:** Male to female (or male to male, Size 78 only).
- **Contact Retention:** 9 lbs. [40 N].

**Electrical Characteristics:**
- **Contact Current Rating:** 5 amperes, nominal.
- **Initial Contact Resistance:** 0.008 ohms, maximum.
- **Proof Voltage:** 1,000 V r.m.s.
- **Insulator Resistance:** 5 G ohms.
- **Clearance and Creepage Distance:** 0.039 inch [1.0 mm], minimum.
- **Working Voltage:** 300 V r.m.s.

**Climatic Characteristics:**
- **Temperature Range:** -55°C to +125°C.

**Conforming To Applicable Material, Dimensional and Performance Requirements:**
- GSFC S-311-P4
- MIL-DTL-24308 Class M

**Conforming To Outgassing Requirements:**
- ASTM E-595 & NASA-RP-1124

SADD SERIES
MILITARY / SPACE FLIGHT QUALITY
HIGH DENSITY CONNECTOR SAVER

SADD SERIES SIZE 22 CONTACT CONNECTOR SAVER

CONTACT VARIANTS
FACE VIEW OF MALE OR USE MIRROR IMAGE FOR FEMALE

SADD 15
SADD 26
SADD 44
SADD 62
SADD 78
SADD 104

STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY DIMENSIONS
SIZE 22 CONTACTS

TYPICAL PART NUMBER:
SADD15S0G15M0G

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<tr>
<th>CONNECTOR VARIANT SIZES</th>
<th>A ±0.015 [0.05]</th>
<th>B ±0.005 [0.13]</th>
<th>B1 ±0.005 [0.13]</th>
<th>C ±0.005 [0.13]</th>
<th>D ±0.005 [0.13]</th>
<th>D1 ±0.005 [0.13]</th>
<th>E ±0.015 [0.05]</th>
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<th>K1 ±0.005 [0.13]</th>
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<td>1.213 [30.81]</td>
<td>0.643 [16.33]</td>
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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 8

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### STEP 1 - BASIC SERIES
SADD series

### STEP 2 - CONNECTOR VARIANT
15, 26, 44, 62, 78, 104

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

### STEP 4 - 1ST CONNECTOR MATING STYLE
* 0 - Swaged spacer 0.120 [3.05µ] mounting hole
* S - Swaged spacer 4-40 UNC-2B threads
* E - Rotating male and female jackscrews (Select 0 in Step 7)
* E6 - Rotating male and female polarized jackscrew (Select 0 in Step 7)
* T - Fixed male and female jackscrews (Select 0 in Step 7)
* T6 - Fixed male and female polarized jackscrew (Select 0 in Step 7)

### STEP 5 - 1ST CONNECTOR HOUSING (SHELLS) OPTION
G - Gold over copper plate.
D - Gold over copper plate and dimpled (male connectors only).

### STEP 6 - 2ND CONNECTOR GENDER
M - Male

### STEP 7 - 2ND CONNECTOR MATING STYLE
* 0 - Swaged spacer 0.120 [3.05µ] mounting hole
* S - Swaged spacer 4-40 UNC-2B threads
* E - Rotating male and female jackscrews (Select 0 in Step 4)
* E6 - Rotating male and female polarized jackscrew (Select 0 in Step 4)
* T - Fixed male and female jackscrews (Select 0 in Step 4)
* T6 - Fixed male and female polarized jackscrew (Select 0 in Step 4)

### NOTES
*1 Connector mating style for both connectors must be the same if 0 or S is used. If E or E6 is used in either Step 4 or 8 the other step must be 0.
* For hardware information, see page 64.
* Male option available only on connector variant 78.

---

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

See page 18 for more information!
High performance for use in harsh environments, including space flight.

Size 20 and Size 8 **fixed** contacts.

All female closed entry signal contacts utilize the “PosiBand®” system. *See page 1 for details.*

Twenty-two connector variants with a mixture of signal, power, shielded and high voltage contacts.

Suitable for use as connector saver or gender changer.

Current ratings: signal level to 7.5 amperes. *See temperature rise curves on page 2 for details.*

A wide variety of jackscrew options allows for mechanical keying.

**Conforming To Applicable Material, Dimensional and Performance Requirements:**
- GSFC S-311-P4 & GSFC S-311-P10
- DSCC Specification 85039

**Conforming To Outgassing Requirements:**
- ASTM E-595 & NASA-RP-1124

**T E C H N I C A L C H A R A C T E R I S T I C S**

**MATERIALS AND FINISHES:**
- **Connector Insulator:** Glass-filled polyester per ASTM-D-5927, UL 94-V0, ASTM E-595, NASA-RP-1124, blue color.
- **Contacts:**
  - **Size 20:** Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.
  - **Size 8:** Precision machined high conductivity copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.
- **Connector Housing (Shells), Spacers and Jackscrew Systems:** Brass with 0.000050 inch [1.27 microns] gold over copper plate.

**MECHANICAL CHARACTERISTICS:**
- **Size 20 Fixed:** Male contact - 0.040 inch [1.02 mm] mating diameter. Female contact - PosiBand closed entry design; *see page 1 for details.*
- **Size 8 Fixed:** Male - 0.142 inch [3.61mm] mating diameter. Female contact features Large Surface Area (L.S.A.) closed entry contact design utilizing BeCu mechanical retention member. Closed crimp barrel.
- **Connector Saver:** Male to female, male to male see page 72 for available variants.
- **Contact Retention:** 9 lbs. [40 N].
- **Polarization:** Trapezoidally-shaped connector housings.
- **Mechanical Operations:** 1,000 operations, minimum, per IEC 60512-5.

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

**ELECTRICAL CHARACTERISTICS:**

**SIZE 20 CONTACTS**
- Contact Current Rating: 7.5 amperes, nominal
- Initial Contact Resistance: 0.008 ohms maximum.
- Proof Voltage: 1000 V r.m.s.

**SIZE 8 CONTACTS**
- Contact Current Rating: 40 amperes, nominal
- Initial Contact Resistance: 0.008 ohms maximum.
- Proof Voltage: 1000 V r.m.s.

**CONNECTOR**
- Insulation Resistance: 5 G ohms.
- Clearance and Creepage Distance: 0.039 inch [1.0 mm], minimum.
- Working Voltage: 300 V r.m.s.

**CLIMATIC CHARACTERISTICS:**
- Temperature Range: -55˚C to +125˚C.


**SACBMP SERIES SIZE 20 AND SIZE 8 CONTACT CONNECTOR SAVER**

**CONTACT VARIANTS**
FACE VIEW OF MALE OR REAR VIEW OF FEMALE

--- SHELL SIZE 1 ---
- 5W1

--- SHELL SIZE 2 ---
- 3W3
- 7W2
- 11W1

--- SHELL SIZE 3 ---
- 5W5
- 9W4
- 13W3
- 17W2
- 21W1

--- SHELL SIZE 4 ---
- 8W8
- 13W6
- 17W5
- 25W3
- 27W2

--- SHELL SIZE 5 ---
- 24W7
- 36W4
- 43W2
- 47W1

--- SHELL SIZE 6 ---
- 46W4

Note: For high density 8W2, 19W1, 15W4 and 45W2 variants contact Technical Sales for availability.
STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY DIMENSIONS
SIZE 20 AND SIZE 8 CONTACTS

TYPICAL PART NUMBER:
SACBMP11W1S0GM0G

NOTE:
Code S = Swaged spacer with 4-40 UNC-2B threads.

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<thead>
<tr>
<th>SHELL SIZES</th>
<th>CONNECTOR VARIANT</th>
<th>A ±0.015 [0.38]</th>
<th>B ±0.005 [0.13]</th>
<th>B1 ±0.005 [0.13]</th>
<th>C ±0.005 [0.13]</th>
<th>D ±0.005 [0.13]</th>
<th>D1 ±0.005 [0.13]</th>
<th>E ±0.015 [0.38]</th>
<th>K1 ±0.005 [0.13]</th>
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</thead>
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<td>0.643 [16.33]</td>
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<td>0.311 [7.90]</td>
<td>0.329 [8.36]</td>
<td>0.494 [12.55]</td>
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</tr>
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<td>2.088 [53.04]</td>
<td>1.511 [38.38]</td>
<td>1.534 [38.96]</td>
<td>1.852 [47.04]</td>
<td>0.311 [7.90]</td>
<td>0.329 [8.36]</td>
<td>0.494 [12.55]</td>
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**ORDERING INFORMATION - CODE NUMBERING SYSTEM**

Specify Complete Connector By Selecting An Option From Step 1 Through 8

<table>
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<tr>
<th>STEP</th>
<th>1</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
</table>
| EXAMPLE | SACBMP | 11W1 | S | S | G | M | S | D | **NEW!**

**STEP 1 - BASIC SERIES**

SACBMP series

**STEP 2 - CONNECTOR VARIANT**

Shell Size 1
5W1
Shell Size 2
3W3, 7W2, 11W1
Shell Size 3
5W5, 9W4, 13W3, 17W2, 21W1
Shell Size 4
8W8, 13W6, 17W5, 21WA4, 25W3, 27W2
Shell Size 5
24W7, 36W4, 43W2, 47W1
Shell Size 6
46W4

Note: For high density 8W2, 19W1, 15W4 and 45W2 variants contact Technical Sales for availability.

**STEP 3 - 1ST CONNECTOR GENDER**

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

**STEP 4 - 1ST CONNECTOR MATING STYLE**

*0* - Swaged spacer 0.120 [3.05µ] mounting hole
* S - Swaged spacer 4-40 UNC-2B threads
* E - Rotating male and female jackscrews (Select 0 in Step 7)
* E6 - Rotating male and female polarized jackscrew (Select 0 in Step 7)
* T - Fixed male and female jackscrews (Select 0 in Step 7)
* T6 - Fixed male and female polarized jackscrew (Select 0 in Step 7)

**STEP 5 - 1ST CONNECTOR HOUSING (SHELLS) OPTION**

G - Gold over copper plate.
D - Gold over copper plate and dimpled (male connectors only).

**STEP 6 - 2ND CONNECTOR GENDER**

M - Male

**STEP 7 - 2ND CONNECTOR MATING STYLE**

0 - Swaged spacer 0.120 [3.05µ] mounting hole
S - Swaged spacer 4-40 UNC-2B threads
* E - Rotating male and female jackscrews (Select 0 in Step 7)
* E6 - Rotating male and female polarized jackscrew (Select 0 in Step 7)
* T - Fixed male and female jackscrews (Select 0 in Step 7)
* T6 - Fixed male and female polarized jackscrew (Select 0 in Step 7)

**STEP 8 - 2ND CONNECTOR HOUSING (SHELLS) OPTION**

G - Gold over copper plate.
D - Gold over copper plate and dimpled (male connectors only).

**STEP 9 - SPECIAL OPTIONS**

SEE APPENDIX ON PAGE 95.

**NOTES**

*1 Male option in Step 3 available only on connector variants 5W1, 3W3, 7W2, 11W1, 17W2, 21W1, 21WA4, 27W2, 24W7, 46W4.

*2 Connector mating style for both connectors must be the same if 0 or S is used. If E, E6, T or T6 is used in either Step 4 or 8 the other step must be 0.

*3 For hardware information, see page 64.

---

Do you need 2-D drawings or 3-D models?
See page 18 for more information!
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 for specific customer applications. If you do not find what you need in this catalog, please contact us for assistance.

### UNIQUE FEATURE SECTION

**SEQUENTIAL MATING CONTACTS**

Three levels of sequential mating are possible:

- First mate accomplished by a size 12 power contact. Male contact diameter is 0.094 inch. Contact Technical Sales for first mate size 8 (0.125 inch) diameter contacts.
- Second mate accomplished by a size 8 power contact. Male contact diameter is 0.142 inch.
- Third mate can be accomplished by size 20 signal contacts.

**Note:** A third level can be accomplished with signal contacts if needed.

**CONTACT TECHNICAL SALES FOR MORE INFORMATION!**
SIZE 8 CONTACT STABILIZATION FEATURE
MINIMIZES FLOAT IN SIZE 8 CONTACT POSITIONS

SCBM size 8 male contacts are removed toward the rear after utilizing front release tooling. Space must be provided between the contact and the connector molding so the tooling can slide over the mating portion of the contact. This fact allows the contact to float. In some applications this float creates problems in alignment during mating. Many male contact SCBM variants offer an integral stabilizing feature to minimize problems created by float in size 8 contacts. An alternate tool is used to remove the contact if necessary. Tool number is 4311-0-1-0.

The stabilization feature is currently available for the following male contact variants:

- SCBM3W3M
- SCBM8W8M
- SCBC36W4M
- SCBC43W2M

Add MOS -1570.4 to end of part number. Example: SCBM3W3M00000-1570.4

CONTACT TECHNICAL SALES FOR MORE INFORMATION!

SELECTIVELY LOADED CONNECTOR

Select loading may be advantageous in applications requiring additional creepage and clearance distances.

- SCBM3W3
  - loaded in 2 positions
  - SCBM3W3 and SND25 variants shown for reference. Selectively loading available on all series and variants.

- SND25
  - loaded in 12 positions

CONTACT TECHNICAL SALES FOR MORE INFORMATION!
CUSTOMER SPECIFIED CONTACT TERMINATION LENGTH

Positronic can supply high performance D-subminiature series connectors with customer specified termination lengths. A wide variety of options are available.

**STRAIGHT SOLDER PRINTED BOARD MOUNT**

X and Y contact termination lengths can be custom designed to fit specific application requirements.

**Note:** PCB spacer height can be adjusted according to contact termination length

**RIGHT ANGLE (90°) PRINTED BOARD MOUNT**

Combination-D variants shown for reference only. This option is available with SND, SDD, SCBM, SCBC and SCBCD.

LOW PROFILE INSULATOR

Positronic can supply high performance high density D-subminiature series connectors with a low profile insulator.

**LOW PROFILE**

Note: Nominal

**STANDARD PROFILE**

Note: Nominal

**CONTACT TECHNICAL SALES FOR MORE INFORMATION!**
UNIQUE FEATURES

COMPLIANT PRESS-IN CONNECTOR

Customers may determine press-in terminations are a viable option based on their application parameters.

DUAL PORT CONNECTOR

Connectors can be stacked to conserve printed circuit board space.

THREE HEIGHT OPTIONS!

<table>
<thead>
<tr>
<th>OPTION</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPTION 1</td>
<td>0.625</td>
<td>1.119</td>
<td>0.131</td>
</tr>
<tr>
<td></td>
<td>[15.88]</td>
<td>[28.42]</td>
<td>[3.33]</td>
</tr>
<tr>
<td>OPTION 2</td>
<td>0.750</td>
<td>1.244</td>
<td>0.256</td>
</tr>
<tr>
<td></td>
<td>[19.05]</td>
<td>[31.60]</td>
<td>[6.50]</td>
</tr>
<tr>
<td>OPTION 3</td>
<td>0.900</td>
<td>1.394</td>
<td>0.406</td>
</tr>
<tr>
<td></td>
<td>[22.86]</td>
<td>[35.41]</td>
<td>[10.31]</td>
</tr>
</tbody>
</table>

Connectors can be stacked in a variety of configurations:
- Standard / Standard Density
- High Density / High Density
- Standard / High Density
- Combination / Combination
- Combination / Standard or High Density

CONTACT TECHNICAL SALES FOR MORE INFORMATION!
REMOVABLE CONTACT TECHNICAL CHARACTERISTICS

SIZE 22 CONTACT
MATERIALS AND FINISHES:
Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.

MECHANICAL CHARACTERISTICS:
Install contact to rear face of connector insert and remove from rear face of connector insert. Size 22 contacts, male – 0.030 inch [0.76 mm] mating diameter. Female contact - PosiBand closed entry design; see page 1 for details. Terminations for 20, 22, 24, 26, 28, and 30 AWG. Closed barrel crimp or solder.

ELECTRICAL CHARACTERISTICS:
For SDD series: For electrical characteristics, see page 14. For SCBC series: For electrical characteristics, see page 58.

SIZE 20 CONTACT
MATERIALS AND FINISHES:
Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.

MECHANICAL CHARACTERISTICS:
Install contact to rear face of connector insert and remove from rear face of connector insert. Size 20 contact, male – 0.040 inch [1.02 mm] mating diameter. Female contact - PosiBand closed entry design; see page 1 for details. Terminations for 18, 20, 22, 24, 26, 28, and 30 AWG. Closed barrel crimp or solder.

ELECTRICAL CHARACTERISTICS:
For SND series: For electrical characteristics, see page 6. For SCBC series: For electrical characteristics, see page 40.

SIZE 16 CONTACT
MATERIALS AND FINISHES:
Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.

MECHANICAL CHARACTERISTICS:
Install contact to rear face of insulator, release from front face of insulator. Size 16 contacts, male – 0.062 inch [1.57mm] mating diameter. Female contact - PosiBand closed entry design; see page 1 for details. Terminations for 12, 14, 16, 18, 20, 22 and 24 AWG. Closed barrel crimp.

ELECTRICAL CHARACTERISTICS:
For electrical characteristics, see SCBC series on page 58.

SIZE 8 CONTACT
MATERIALS AND FINISHES:
POWER: Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.

HIGH VOLTAGE:
Insulator Material: PTFE teflon
Contacts: Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.

SHIELDED:
Dielectric Material: PTFE teflon
Inner Contacts: Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.
Outer Contacts: Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 95.

MECHANICAL CHARACTERISTICS:
POWER: Install contact to rear face of connector insert and remove from front face of connector insert. Size 8 contacts, male –0.142 inch [3.61 mm] mating diameter. Female contact - features Large Surface Area (L.S.A.) closed entry design utilizing BeCu mechanical retention member. Closed barrel crimp.

SHIELDED:
Durability:
Vibration:
Shock:
HIGH VOLTAGE:
Install contact to rear face of insulator and remove from front face of insulator. Size 8 contacts. Straight and right angle (90°) terminations. 0.041 inch [1.04 mm] minimum hole diameter.

Durability:
Vibration:
Shock:
500 cycles minimum.
20g from 10 Hz to 500 Hz.
30g-11ms.
500 cycles minimum.
20g from 10 Hz to 500 Hz.
30g-11ms.

ELECTRICAL CHARACTERISTICS:
POWER: For electrical characteristics, see page 21.

SHIELDED:
Initial Contact Resistance: 0.008 ohms maximum.
Nominal Impedance: 50 ohms.
Insertion Loss: -0.46 dB at 1 GHz
-1.5 dB at 2 GHz
VSWR: 1.15 average at 1 GHz
1.56 average at 2 GHz
Above values measured using frequency domain techniques.
Proof Voltage: 1000 V r.m.s.
HIGH VOLTAGE:
Flash over Voltage: 3600 V r.m.s.
Proof Voltage: 2700 V r.m.s.
Initial Contact Resistance: 0.008 ohms maximum.

OPTIONAL PLATING FINISHES
-54 0.000100 [2.54 µ] gold over copper by adding “-54” suffix onto part number. Example: FC8026M2-54.

REELED CONTACTS:
Contacts may be supplied in plastic carriers, packaged in reels holding 2,000 contacts for use with the automatic pneumatic crimp tools, catalog part number 9550-1. The same type carrier is used for both male and female contacts.
All male and female crimp contacts can be ordered in reels by adding letter “R” after the contact part number, such as MC4008MR for a male contact and FC120N4R-50 for female contact.

Enlarged section of plastic contact carriers

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 96.

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
REMOVABLE CRIMP CONTACTS
FOR USE WITH SDD AND SCBCD SERIES CONNECTORS

SIZE 22

Note: Connectors can be kitted with all applicable crimp/solder contacts, contact Technical Sales for connector part number.

FEMALE CONTACT
"PosiBand" Closed Entry Design

MALE CONTACT

<table>
<thead>
<tr>
<th>FEMALE PART NUMBER</th>
<th>WIRE SIZE</th>
<th>AWG/[mm²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC8022M2</td>
<td>22 / 24 / 26 / 28 / 30</td>
<td>[0.3/0.25/0.12/0.08/0.05]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MALE PART NUMBER</th>
<th>WIRE SIZE</th>
<th>AWG/[mm²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC8022M</td>
<td>22 / 24 / 26 / 28 / 30</td>
<td>[0.3/0.25/0.12/0.08/0.05]</td>
</tr>
</tbody>
</table>

The crimp area of these contacts is not protected when fully seated in the connector molding. These contacts require shrink tubing after installation. Not suitable for fully loaded connector.

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 96.
REMOVABLE CLOSED BARREL SOLDER CONTACTS
FOR USE WITH SDD AND SCBC SERIES CONNECTORS
SIZE 22

**FEMALE CONTACT**
“PosiBand” Closed Entry Design

<table>
<thead>
<tr>
<th>ØA</th>
<th>Ø0.047 [1.19]</th>
<th>Ø0.035 [0.89]</th>
<th>Ø0.520 [13.21]</th>
<th>Ø0.150 [3.81]</th>
</tr>
</thead>
</table>

**MALE CONTACT**

<table>
<thead>
<tr>
<th>ØA</th>
<th>Ø0.047 [1.19]</th>
<th>Ø0.035 [0.89]</th>
<th>Ø0.531 [13.49]</th>
<th>Ø0.150 [3.81]</th>
</tr>
</thead>
</table>

**FEMALE CONTACT**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>WIRE SIZE AWG/[mm²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS8022M2</td>
<td>22 [0.3] max</td>
</tr>
</tbody>
</table>

**MALE CONTACT**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>WIRE SIZE AWG/[mm²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS8022M</td>
<td>22 [0.3] max</td>
</tr>
</tbody>
</table>

**REMOVABLE CRIMP CONTACT**
FOR USE WITH SND AND SCBC SERIES CONNECTORS
SIZE 20

**FEMALE CONTACT**
“PosiBand” Closed Entry Design

<table>
<thead>
<tr>
<th>ØA</th>
<th>Ø0.045 [1.14]</th>
<th>Ø0.027 [0.69]</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>WIRE SIZE</th>
<th>ØA</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 / 22 / 24 [0.5/0.3/0.25]</td>
<td>0.045 [1.14]</td>
</tr>
<tr>
<td>26 / 28 / 30 [0.12/0.08/0.05]</td>
<td>0.027 [0.69]</td>
</tr>
</tbody>
</table>

**MALE CONTACT**

<table>
<thead>
<tr>
<th>ØA</th>
<th>Ø0.045 [1.14]</th>
<th>Ø0.027 [0.69]</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>WIRE SIZE</th>
<th>ØA</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 / 22 / 24 [0.5/0.3/0.25]</td>
<td>0.045 [1.14]</td>
</tr>
<tr>
<td>26 / 28 / 30 [0.12/0.08/0.05]</td>
<td>0.027 [0.69]</td>
</tr>
</tbody>
</table>

Note: Connectors can be kitted with all applicable crimp/solder contacts, contact Technical Sales for connector part number.

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 96.
REMOVABLE CRIMP CONTACT
FOR USE WITH SND AND SCBC SERIES CONNECTORS
CONTACTS USED WITH 18 AWG WIRE
SIZE 20

Note: Connectors can be kitted with all applicable crimp/solder contacts, contact Technical Sales for connector part number.

The crimp area of these contacts is not protected when fully seated in the connector molding. These contacts require shrink tubing after installation. Not suitable for fully loaded connector.

REMOVABLE CLOSED BARREL SOLDER CONTACTS
FOR USE WITH SND AND SCBC SERIES CONNECTORS
SIZE 20

Note: Connectors can be kitted with all applicable crimp/solder contacts, contact Technical Sales for connector part number.
REMovable Crimp Power Contact

For USE WITH SCBCD SERIES CONNECTORS

Size 16

FEMALE CONTACT

“PosiBand” Closed Entry Design

MALE CONTACT

For contact current rating, see page 21.

**FEMALE CONTACT**

“CLOSED ENTRY” Design, L.S.A.

**MALE CONTACT**

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 96.
REMOVABLE SOLDER CUP POWER CONTACT
FOR USE WITH SCBM, SCBC, SCBDD AND SCBCD SERIES CONNECTORS
SIZE 8

For contact current rating, see page 21

**1** FEMALE CONTACT
“CLOSED ENTRY” DESIGN, L.S.A.

<table>
<thead>
<tr>
<th>Ø A</th>
<th>Ø B</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.188</td>
<td>0.219 [5.56]</td>
</tr>
<tr>
<td>0.112</td>
<td>0.143 [3.63]</td>
</tr>
<tr>
<td>0.069</td>
<td>0.100 [2.54]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ø A</th>
<th>Ø B</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.198</td>
<td>0.219 [5.56]</td>
</tr>
<tr>
<td>0.112</td>
<td>0.143 [3.63]</td>
</tr>
<tr>
<td>0.069</td>
<td>0.100 [2.54]</td>
</tr>
</tbody>
</table>

MALE CONTACT

**1** FEMALE CONTACT
“CLOSED ENTRY” DESIGN, L.S.A.

<table>
<thead>
<tr>
<th>Ø A</th>
<th>Ø B</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.188</td>
<td>0.219 [5.56]</td>
</tr>
<tr>
<td>0.112</td>
<td>0.143 [3.63]</td>
</tr>
<tr>
<td>0.069</td>
<td>0.100 [2.54]</td>
</tr>
</tbody>
</table>

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<thead>
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</thead>
<tbody>
<tr>
<td>0.198</td>
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<td>0.112</td>
<td>0.143 [3.63]</td>
</tr>
<tr>
<td>0.069</td>
<td>0.100 [2.54]</td>
</tr>
</tbody>
</table>

STRAIGHT SOLDER PRINTED BOARD MOUNT POWER CONTACT
FOR USE WITH SCBM AND SCBDD SERIES CONNECTORS
SIZE 8

For contact current rating, see page 21

**1** FEMALE CONTACT
“CLOSED ENTRY” DESIGN, L.S.A.

<table>
<thead>
<tr>
<th>Ø A</th>
<th>CONTACT CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.078 [1.98]</td>
<td>35</td>
</tr>
<tr>
<td>0.094 [2.39]</td>
<td>36</td>
</tr>
<tr>
<td>0.125 [3.18]</td>
<td>37</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Ø A</th>
<th>CONTACT CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.078 [1.98]</td>
<td>35</td>
</tr>
<tr>
<td>0.094 [2.39]</td>
<td>36</td>
</tr>
<tr>
<td>0.125 [3.18]</td>
<td>37</td>
</tr>
</tbody>
</table>

Note: Connectors can be kitted with all applicable crimp/solder contacts, contact Technical Sales for connector part number.

NOTE: \*1 Female contacts feature Large Surface Area (L.S.A.) closed entry contact design which provides maximum mating surfaces between male and female contact and reduced contact resistance during operation.

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 96.
RIGHT ANGLE (90°) PRINTED BOARD MOUNT POWER CONTACT
FOR USE WITH SCBM AND SCBDD SERIES CONNECTORS

**FEMALE CONTACT**
“CLOSED ENTRY” DESIGN, L.S.A.

**MALE CONTACT**

For contact current rating, see page 21

---

### REMOVABLE HIGH VOLTAGE POWER CONTACT
FOR USE WITH SCBM, SCBC, SCBDD AND SCBCD SERIES CONNECTORS

**STRAIGHT SOLDER WIRE TERMINATION**

**RIGHT ANGLE (90°) SOLDER WIRE TERMINATION**

---

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 96.
REMOVABLE SHIELDED CONTACT
FOR USE WITH SCBM, SCBC, SCBDD AND SCBCD SERIES CONNECTORS

SIZE 8

STRAIGHT SOLDER/Crimp CONTACTS

STRAIGHT SOLDER/Solder CONTACTS

STRAIGHT CrIMP/Crimp CONTACTS

<table>
<thead>
<tr>
<th>TYPE OF CONTACT</th>
<th>FEMALE PART NUMBER</th>
<th>MALE PART NUMBER</th>
<th>A</th>
<th>ØB</th>
<th>C MAX.</th>
<th>RG CABLE NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLDER/Crimp</td>
<td>FC4101M</td>
<td>MC4101M</td>
<td>0.929 [23.60]</td>
<td>0.040 [1.02]</td>
<td>0.739 [18.77]</td>
<td>178 B/U</td>
</tr>
<tr>
<td></td>
<td>FC4102M</td>
<td>MC4102M</td>
<td>0.929 [23.60]</td>
<td>0.067 [1.70]</td>
<td>0.739 [18.77]</td>
<td>179 B/U</td>
</tr>
<tr>
<td></td>
<td>FC4103M</td>
<td>MC4103M</td>
<td>1.037 [26.34]</td>
<td>0.108 [2.74]</td>
<td>0.847 [21.51]</td>
<td>180 B/U</td>
</tr>
<tr>
<td></td>
<td>FC4104M</td>
<td>MC4104M</td>
<td>1.037 [26.34]</td>
<td>0.120 [3.05]</td>
<td>0.847 [21.51]</td>
<td>58 B/U</td>
</tr>
<tr>
<td>SOLDER/Solder</td>
<td>FS4101M</td>
<td>MS4101M</td>
<td>0.929 [23.60]</td>
<td>0.040 [1.02]</td>
<td>0.739 [18.77]</td>
<td>178 B/U</td>
</tr>
<tr>
<td></td>
<td>FS4102M</td>
<td>MS4102M</td>
<td>0.929 [23.60]</td>
<td>0.067 [1.70]</td>
<td>0.739 [18.77]</td>
<td>179 B/U</td>
</tr>
<tr>
<td></td>
<td>FS4103M</td>
<td>MS4103M</td>
<td>1.037 [26.34]</td>
<td>0.108 [2.74]</td>
<td>0.847 [21.51]</td>
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</tr>
<tr>
<td></td>
<td>FS4104M</td>
<td>MS4104M</td>
<td>1.037 [26.34]</td>
<td>0.120 [3.05]</td>
<td>0.847 [21.51]</td>
<td>58 B/U</td>
</tr>
<tr>
<td>CrIMP/Crimp</td>
<td>FCC4101M</td>
<td>MCC4101M</td>
<td>0.929 [23.60]</td>
<td>0.040 [1.02]</td>
<td>0.739 [18.77]</td>
<td>178 B/U</td>
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<tr>
<td></td>
<td>FCC4102M</td>
<td>MCC4102M</td>
<td>0.929 [23.60]</td>
<td>0.067 [1.70]</td>
<td>0.739 [18.77]</td>
<td>179 B/U</td>
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<tr>
<td></td>
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<td>MCC4104M</td>
<td>1.037 [26.34]</td>
<td>0.120 [3.05]</td>
<td>0.847 [21.51]</td>
<td>58 B/U</td>
</tr>
</tbody>
</table>

Note: Connectors can be kitted with all applicable crimp/solder contacts, contact Technical Sales for connector part number.

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 96.
STRAIGHT SOLDER PRINTED BOARD MOUNTED SHIELDED CONTACT
FOR USE WITH SCBM AND SCBDD SERIES CONNECTORS
SIZE 8

FEMALE CONTACT
MALE CONTACT

FDS4201M
MDS4201M

Suggest Ø0.045
[1.14] hole

0.100 [2.54]

0.200 [5.08]

0.156 [3.96]

0.481 [12.22]

-0.025 [0.64]

0.037 [9.40]
Across points

Ø0.040 [1.02]

0.200 [5.08]

0.156 [3.96]

0.489 [12.42]

-0.025 [0.64]

0.037 [9.40]
Across points

CONTACT HOLE PATTERN

Don't forget: Positronic recommends printed board mount contacts be supplied in connector. Contact Technical Sales.

Note:

RIGHT ANGLE (90°) PRINTED BOARD MOUNT SHIELDED CONTACTS
FOR USE WITH SCBM AND SCBDD SERIES CONNECTORS
SIZE 8

FEMALE CONTACT
MALE CONTACT

FRT4201M
MRT4201M

Suggest Ø0.045
[1.14] hole

0.100 [2.54]

0.200 [5.08]

0.470 [11.94]

0.240 [6.10]

0.162 [4.11]

0.821 [20.85]

0.253 [6.43]

-0.037 [9.40]
Across points

Ø0.040 [1.02]

0.253 [6.43]

-0.037 [9.40]
Across points

Note:
Positronic recommends printed board mount contacts be supplied in connector. Contact Technical Sales.

Note:

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 96.

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
ACCESSORIES
MILITARY / SPACE FLIGHT QUALITY

RIVETED ON RIGHT ANGLE (90°) MOUNTING BRACKETS WITH CROSS BAR
CODE R2, R6, R7 AND R8
CONTACT ALIGNMENT BAR IS SUPPLIED WITH R2, R6, R7, AND R8. EXCEPTION: SCBM2WK2, SCBM3W3, SCBM3WK3, SCBM5W5 AND SCBM8W8 VARIANTS. SEE PAGE 38 FOR MORE INFORMATION.

R2
R6
R7
R8

Material: Brass, 0.000050 inch [1.27 µ] gold over copper plate.

DETAIL A

DETAIL B

PUSH-ON FASTENER FOR RIVETED ON RIGHT ANGLE (90°) MOUNTING BRACKETS
CODE N

SCBM17W2S5R7N0G (shown left)
SDD26S4R7N0G (shown right)

TYPICAL PERFORMANCE EVALUATION DATA

<table>
<thead>
<tr>
<th>SAMPLE #</th>
<th>PRINTED BOARD HOLE Ø</th>
<th>INSERTION FORCE [LBS.]</th>
<th>RETENTION FORCE [LBS.]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.120 [3.05]</td>
<td>7-1/4</td>
<td>5-3/4</td>
</tr>
<tr>
<td>2</td>
<td>0.123 [3.12]</td>
<td>5-3/4</td>
<td>5-1/2</td>
</tr>
<tr>
<td>3</td>
<td>0.125 [3.18]</td>
<td>2-3/4</td>
<td>2-1/2</td>
</tr>
<tr>
<td>4</td>
<td>0.128 [3.25]</td>
<td>1-3/4</td>
<td>2-1/4</td>
</tr>
<tr>
<td>5</td>
<td>0.126 [3.20] PLATED</td>
<td>1-3/4</td>
<td>2-1/4</td>
</tr>
</tbody>
</table>

Material: Beryllium copper, 0.000050 inch [1.27 µ] gold over copper plate.

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
### RIGHT ANGLE (90°) METAL MOUNTING BRACKET

**CODE B3**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>STYLE</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>SIZE</th>
<th>SND</th>
<th>SDD</th>
<th>SCBM</th>
<th>SCBDD</th>
</tr>
</thead>
<tbody>
<tr>
<td>4535-2-0</td>
<td>1</td>
<td>0.324</td>
<td>0.484</td>
<td>0.244</td>
<td>0.358</td>
<td>9-37</td>
<td>5</td>
<td>5, 55, 57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4535-3-0</td>
<td>1</td>
<td>0.380</td>
<td>0.594</td>
<td>0.303</td>
<td>0.417</td>
<td>50</td>
<td>5</td>
<td>5, 55, 57</td>
<td></td>
<td></td>
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<tr>
<td>4535-5-0</td>
<td>3</td>
<td>0.554</td>
<td>0.739</td>
<td>0.244</td>
<td>0.358</td>
<td>15-62</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4535-6-0</td>
<td>3</td>
<td>0.604</td>
<td>0.800</td>
<td>0.303</td>
<td>0.417</td>
<td>78</td>
<td>4</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4535-8-0</td>
<td>2</td>
<td>0.405</td>
<td>0.522</td>
<td>0.246</td>
<td>0.358</td>
<td>9-37</td>
<td>42</td>
<td>7, 75, 77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4535-9-0</td>
<td>2</td>
<td>0.455</td>
<td>0.572</td>
<td>0.303</td>
<td>0.414</td>
<td>50</td>
<td>42</td>
<td>7, 75, 77</td>
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<tr>
<td>4535-32-0</td>
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<td>0.399</td>
<td>0.516</td>
<td>0.246</td>
<td>0.358</td>
<td>15-62</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4535-33-0</td>
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<td>0.399</td>
<td>0.516</td>
<td>0.303</td>
<td>0.414</td>
<td>78</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4535-62-0</td>
<td>2</td>
<td>0.614</td>
<td>0.731</td>
<td>0.334</td>
<td>0.445</td>
<td>104</td>
<td>4</td>
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</tbody>
</table>

**NOTE:** Sold only as part of a connector assembly.

**Note:** Contact alignment bar is supplied with B3 option.

### RIGHT ANGLE (90°) METAL MOUNTING BRACKET SUPPLIED WITH R, R2, R3, R4, R5, R6, R7 AND R8 RIVETED-ON BRACKET ASSEMBLIES

**CODE R, R2, R3, R4, R5, R6, R7 AND R8**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>SIZE</th>
<th>SND</th>
<th>SDD</th>
<th>SCBM</th>
<th>SCBDD</th>
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</thead>
<tbody>
<tr>
<td>4535-2-1</td>
<td>0.339</td>
<td>0.456</td>
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<td>0.358</td>
<td>9 - 37</td>
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<td>5, 55, 57</td>
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<td>4535-3-1</td>
<td>0.385</td>
<td>0.512</td>
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<td>0.414</td>
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<td>5</td>
<td>5, 55, 57</td>
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<td></td>
</tr>
<tr>
<td>4535-8-1</td>
<td>0.420</td>
<td>0.537</td>
<td>0.246</td>
<td>0.358</td>
<td>9-37</td>
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<td>7, 75, 77</td>
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<td>4535-9-1</td>
<td>0.470</td>
<td>0.587</td>
<td>0.303</td>
<td>0.414</td>
<td>50</td>
<td>42</td>
<td>7, 75, 77</td>
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<td></td>
</tr>
<tr>
<td>4535-32-1</td>
<td>0.414</td>
<td>0.531</td>
<td>0.246</td>
<td>0.358</td>
<td>15-62</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4535-33-1</td>
<td>0.414</td>
<td>0.531</td>
<td>0.303</td>
<td>0.414</td>
<td>78</td>
<td>4</td>
<td></td>
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<tr>
<td>4535-34-1</td>
<td>0.528</td>
<td>0.645</td>
<td>0.246</td>
<td>0.358</td>
<td>15-62</td>
<td>4</td>
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<td>4535-35-1</td>
<td>0.572</td>
<td>0.690</td>
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<tr>
<td>4535-62-1</td>
<td>0.614</td>
<td>0.731</td>
<td>0.334</td>
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<td>104</td>
<td>4</td>
<td></td>
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</tr>
</tbody>
</table>

**NOTE:** Sold only as part of a connector assembly.

**Note:** Contact alignment bar is supplied with R2, R6, R7 and R8 options only.
### ACCESSORIES
MILITARY / SPACE FLIGHT QUALITY

**High Performance D-sub**

![Diagram of SWAGED SPACER CODE S](image)

**Material:** Brass, 0.000050 inch [1.27 µ] gold over copper plate.

![Diagram of SWAGED SPACER CODE S2](image)

**Material:** Brass, 0.000050 inch [1.27 µ] gold over copper plate.

![Diagram of SWAGED LOCKNUT CODE S5](image)

**Material:** Brass, 0.000050 inch [1.27 µ] gold over copper plate. Polyester insert.

### SWAGED SPACER WITH PUSH-ON FASTENER CODE S6

![Diagram of SWAGED SPACER WITH PUSH-ON FASTENER CODE S6](image)

**Material:** Phosphor bronze, 0.000050 inch [1.27 µ] gold over copper plate.

---

#### CONNECTOR SERIES

<table>
<thead>
<tr>
<th></th>
<th><strong>A</strong></th>
</tr>
</thead>
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<tr>
<td>SND</td>
<td>0.375 [9.53]</td>
</tr>
<tr>
<td>2, 3, 32, 36, 42, 5</td>
<td>0.225 [5.72]</td>
</tr>
<tr>
<td>SDD</td>
<td>0.375 [9.53]</td>
</tr>
<tr>
<td>0, 1, 3, 32, 4</td>
<td>0.225 [5.72]</td>
</tr>
<tr>
<td>SCBM</td>
<td>0.250 [6.35]</td>
</tr>
<tr>
<td>0, 2, 3, 35, 36, 37, 5, 55, 57, 65, 7, 75, 77, 85</td>
<td>0.250 [6.35]</td>
</tr>
<tr>
<td>SCBC</td>
<td>0.375 [9.53]</td>
</tr>
<tr>
<td>0, 1, 12, 13, 14</td>
<td>0.250 [6.35]</td>
</tr>
<tr>
<td>SCBDD</td>
<td>0.375 [9.53]</td>
</tr>
<tr>
<td>21, 3, 35, 36, 37, 4, 45, 47, 65, 84</td>
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</tr>
<tr>
<td>SCBCD</td>
<td>0.375 [9.53]</td>
</tr>
<tr>
<td>0, 1, 12, 13, 14</td>
<td>0.250 [6.35]</td>
</tr>
</tbody>
</table>

---

**NOTE:**

*Contact termination code as specified in Step 4 of ordering information.*
Material: Brass, 0.000050 inch [1.27 µ] gold over copper plate.

NOTE: *1 Contact termination code as specified in Step 4 of ordering information.

Material: Brass, 0.000050 inch [1.27 µ] gold over copper plate.

NOTE: *1 To order crimp splice with insulating sleeve, add "-W" suffix to part number. To order without sleeve, add "-N" suffix.

Materials: Splice: Copper alloy, 0.000050 [1.27 µ] gold over copper.
Sleeve: Shrink-fit polyvinylidene fluoride.
BLIND MATING GUIDES

TO OBTAIN BLIND MATING GUIDES, ADD THE SUFFIX "-759.42" TO THE END OF THE PART NUMBER.

Material: Brass, 0.000050 inch [1.27 µ] gold over copper plate.

<table>
<thead>
<tr>
<th>CONNECTOR VARIANT (SHELL SIZE)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/15 (SHELL SIZE 1)</td>
<td>0.984</td>
<td>1.596</td>
<td>1.333</td>
<td>1.930</td>
<td>0.677</td>
</tr>
<tr>
<td></td>
<td>[24.99]</td>
<td>[40.28]</td>
<td>[33.86]</td>
<td>[49.02]</td>
<td>[17.20]</td>
</tr>
<tr>
<td>15/26 (SHELL SIZE 2)</td>
<td>1.312</td>
<td>1.914</td>
<td>1.661</td>
<td>2.258</td>
<td>0.677</td>
</tr>
<tr>
<td></td>
<td>[33.32]</td>
<td>[48.62]</td>
<td>[42.19]</td>
<td>[57.35]</td>
<td>[17.20]</td>
</tr>
<tr>
<td>25/44 (SHELL SIZE 3)</td>
<td>1.852</td>
<td>2.461</td>
<td>2.208</td>
<td>2.805</td>
<td>0.677</td>
</tr>
<tr>
<td></td>
<td>[47.04]</td>
<td>[62.51]</td>
<td>[56.08]</td>
<td>[71.25]</td>
<td>[17.20]</td>
</tr>
<tr>
<td>37/62 (SHELL SIZE 4)</td>
<td>2.500</td>
<td>3.102</td>
<td>2.849</td>
<td>3.446</td>
<td>0.677</td>
</tr>
<tr>
<td></td>
<td>[63.50]</td>
<td>[78.79]</td>
<td>[72.36]</td>
<td>[87.53]</td>
<td>[17.20]</td>
</tr>
<tr>
<td>50/78 (SHELL SIZE 5)</td>
<td>2.406</td>
<td>3.008</td>
<td>2.755</td>
<td>3.352</td>
<td>0.769</td>
</tr>
<tr>
<td></td>
<td>[61.11]</td>
<td>[76.40]</td>
<td>[90.43]</td>
<td>[85.14]</td>
<td>[20.04]</td>
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</tbody>
</table>

TYPICAL PART NUMBER:
SND15M5R700G-759.42

PANEL MOUNTING

TO OBTAIN PANEL MOUNTING, ADD THE SUFFIX "-759.43" TO THE END OF THE PART NUMBER.

TYPICAL PART NUMBER:
SND15S2000G-759.43

Material: Aluminum, yellow anodize standard.

<table>
<thead>
<tr>
<th>CONNECTOR VARIANT (SHELL SIZE)</th>
<th>PART NO.</th>
<th>A</th>
<th>B</th>
<th>C MAX.</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H MAX.</th>
</tr>
</thead>
<tbody>
<tr>
<td>15/26 (SHELL SIZE 2)</td>
<td>SND15000H0G</td>
<td>1.531</td>
<td>0.492</td>
<td>1.312</td>
<td>0.578</td>
<td>0.713</td>
<td>0.312</td>
<td>0.750</td>
<td>1.219</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[38.88]</td>
<td>[12.50]</td>
<td>[33.32]</td>
<td>[14.68]</td>
<td>[18.11]</td>
<td>[7.92]</td>
<td>[19.05]</td>
<td>[30.96]</td>
</tr>
<tr>
<td>25/44 (SHELL SIZE 3)</td>
<td>SND25000H0G</td>
<td>2.078</td>
<td>0.492</td>
<td>1.852</td>
<td>0.578</td>
<td>1.000</td>
<td>0.312</td>
<td>1.000</td>
<td>1.532</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[52.78]</td>
<td>[12.50]</td>
<td>[47.04]</td>
<td>[14.68]</td>
<td>[25.40]</td>
<td>[7.92]</td>
<td>[25.40]</td>
<td>[38.91]</td>
</tr>
<tr>
<td>37/62 (SHELL SIZE 4)</td>
<td>SND37000H0G</td>
<td>2.718</td>
<td>0.492</td>
<td>2.500</td>
<td>0.578</td>
<td>1.375</td>
<td>0.312</td>
<td>1.000</td>
<td>1.532</td>
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<td></td>
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<td>[69.03]</td>
<td>[12.50]</td>
<td>[63.50]</td>
<td>[14.68]</td>
<td>[34.93]</td>
<td>[7.92]</td>
<td>[25.40]</td>
<td>[38.91]</td>
</tr>
<tr>
<td>50/78 (SHELL SIZE 5)</td>
<td>SND50000H0G</td>
<td>2.625</td>
<td>0.601</td>
<td>2.406</td>
<td>0.667</td>
<td>1.406</td>
<td>0.406</td>
<td>1.125</td>
<td>1.657</td>
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<td>[66.68]</td>
<td>[15.27]</td>
<td>[61.11]</td>
<td>[17.45]</td>
<td>[35.71]</td>
<td>[10.31]</td>
<td>[28.58]</td>
<td>[42.09]</td>
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</tbody>
</table>

Material: Brass, 0.000050 inch [1.27 µ] gold over copper plate.

METAL CABLE ADAPTER (HOOD)

CODE H

TYPICAL PART NUMBER:
SND15M500H0G

Dimensions are in inches [millimeters].
All dimensions are subject to change.
**LIGHTWEIGHT ALUMINUM CABLE ADAPTER (HOOD)**

**CODE AN**

### MATERIAL AND FINISHES:
- **Hood & Cable Clamps:** Aluminum with electroless nickel plate. Zinc content is 1% maximum.
- **Jackscrews & Screws:** Brass, 0.000050 inch [1.27 µ] over copper plate.

*Other plating and finishes are available, contact Technical Sales.*

### MECHANICAL CHARACTERISTICS:
- **Ground Screws:** Can accept up to 0.250 inch [6.35mm] diameter ring terminal.
- **Locking System:** Jackscrews, see below and page 92 for more information.

### CLIMATIC CHARACTERISTICS:
- **Temperature Range:** -55˚C to +125˚C

### TECHNICAL CHARACTERISTICS

#### ELECTRICAL CHARACTERISTICS:
- **Range of Operation,** **Calculated Method:** 2 GHz minimum.

#### WEIGHT CHART:

<table>
<thead>
<tr>
<th>HOOD SIZE</th>
<th>D*000ANE ounces [grams]</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>1.08 [30.54]</td>
</tr>
<tr>
<td>15</td>
<td>1.32 [37.44]</td>
</tr>
<tr>
<td>25</td>
<td>1.62 [45.92]</td>
</tr>
<tr>
<td>37</td>
<td>2.19 [62.06]</td>
</tr>
<tr>
<td>50</td>
<td>2.26 [63.94]</td>
</tr>
<tr>
<td>104</td>
<td>2.41 [68.44]</td>
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</tbody>
</table>

*Note: *1 designates hood size in part number. Contact Technical Sales for weights on T2, E6, and E7 hardware options.

### ACCESSORIES

#### MILITARY / SPACE FLIGHT QUALITY

**D-sub Positronic Industries**
connectpositronic.com

**NOTE:**
- *1 Smaller cable openings may be achieved by inverting one or both cable clamps.

### SHELL SIZE

<table>
<thead>
<tr>
<th>SHELL SIZE</th>
<th>CONNECTOR / CONTACT VARIANT COMPATIBILITY</th>
<th>PART NUMBER</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Std-D: 9 High-D: 15 Combo-D: 5W1, 2WK2 Combo-D High-D: 8W2</td>
<td>D9000ANT2G</td>
<td>1.219 [30.36]</td>
<td>0.586 [16.88]</td>
<td>2.000 [50.80]</td>
<td>1.700 [43.18]</td>
<td>0.984 [24.99]</td>
<td>0.362 [9.22]</td>
<td>0.240 [6.10]</td>
<td>0.453 [11.51]</td>
<td>0.100 [2.54]</td>
</tr>
</tbody>
</table>
ACCESSORIES
MILITARY / SPACE FLIGHT QUALITY

**NEW!**

**LIGHTWEIGHT ALUMINUM CABLE ADAPTER (HOOD)**
WITH ROTATING JACKSCREWS
CODE ANE, AN6, AND AN7

**CODE E**
ROTATING MALE JACKSCREWS

**CODE E7**
ROTATING FEMALE JACKSCREWS

For Technical Characteristics, see page 91 for details.

**CODE E6**
POLARIZED ROTATING JACKSCREWS

<table>
<thead>
<tr>
<th>SHELL SIZE</th>
<th>CONNECTOR / CONTACT VARIANT COMPATIBILITY</th>
<th>PART NUMBER</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>
<th>K</th>
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<tbody>
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<td>D9000AN-1G</td>
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<td>1</td>
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<tr>
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<td>2.30</td>
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<td>D50000AN-1G</td>
<td></td>
<td>5</td>
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<td></td>
<td>2.21</td>
<td>2.21</td>
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<td>2.21</td>
<td>2.27</td>
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<tr>
<td></td>
<td>D10000AN-1G</td>
<td></td>
<td>6</td>
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<td>2.30</td>
<td>2.30</td>
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<td>2.30</td>
<td>2.30</td>
<td>2.30</td>
</tr>
</tbody>
</table>

**NOTES:**
* For completed part number, insert the desired code (E, E6 or E7) for required jackscrew option.
* Smaller cable openings may be achieved by inverting one or both cable clamps.

DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
**EMI/RFI PROTECTIVE COVER**

**Material:** Brass, 0.000050 [1.27 µ] gold over copper.

**NOTE:**
* To order protective cover with E2 rotating male screw locks (see page 94), insert “N” into the last digit of part number. Omit this digit if thread locks are not required.

---

**COVER PART NUMBER**  |  **COVER MATES TO**  |  **A ±0.015 [0.38]**  |  **B ±0.005 [0.12]**  |  **B1 ±0.005 [0.13]**  |  **C ±0.005 [0.13]**  |  **D ±0.005 [0.13]**  |  **D1 ±0.005 [0.13]**  |  **E ±0.015 [0.38]**  |  **K ±0.005 [0.13]**  |  **M ±0.010 [0.25]**
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
PSK633-25MG*1  | Female 25 / 44  | 2.088 [53.04]  | 1.534 [38.96]  | 1.852 [47.04]  | 0.329 [8.36]  | 0.494 [12.55]  | 0.230 [5.84]  | 0.426 [10.82]
PSK633-37MG*1  | Female 37 / 62  | 2.729 [69.32]  | 2.182 [55.42]  | 2.500 [63.50]  | 0.329 [8.36]  | 0.494 [12.55]  | 0.230 [5.84]  | 0.426 [10.82]
PSK633-37FG*1  | Male 37 / 62  | 2.729 [69.32]  | 2.159 [54.84]  | 2.500 [63.50]  | 0.311 [7.90]  | 0.494 [12.55]  | 0.243 [6.17]  | 0.429 [10.90]
PSK633-50MG*1  | Female 50 / 78  | 2.935 [76.93]  | 2.079 [52.81]  | 2.406 [61.11]  | 0.441 [11.20]  | 0.606 [15.37]  | 0.230 [5.84]  | 0.426 [10.82]
PSK633-104MG*1  | Female - / 104  | 2.729 [69.32]  | 2.212 [56.18]  | 2.500 [63.50]  | 0.503 [12.78]  | 0.668 [16.97]  | 0.230 [5.84]  | 0.426 [10.82]

---

SND25M1000G with PSK633-25FGN installed.
Jackscrew Material: Brass, 0.000050 inch [1.27 µ] gold over copper plate.

**Note:** Stainless steel jackscrews are available. Consult Technical Sales for ordering information.

**NEW!**
Stainless steel jackscrews are available. Consult Technical Sales for ordering information.

**NEW!**
Stainless steel jackscrews are available. Consult Technical Sales for ordering information.
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: SND9M5R7SNT2G-1768.33 (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>SND, SDD, SCBM, SCBC, SCBD, SCBCD, SAD, SADD, SACBMP</td>
<td>ALL</td>
<td>MALE</td>
<td>ALL</td>
<td>-54</td>
<td>Allows connector with contacts installed, for size 22, size 20 and size 16 contacts only to be plated 0.0000100 [2.54 µ] gold over copper.</td>
</tr>
<tr>
<td>SND, SDD, SCBM, SCBD</td>
<td>ALL</td>
<td>MALE</td>
<td>ALL</td>
<td>-367.9</td>
<td>Allows connector to be supplied with contacts inverted.</td>
</tr>
<tr>
<td>SND, SDD, SCBC, SCBM, SCBD, SCBDD</td>
<td>ALL</td>
<td>MALE</td>
<td>ALL</td>
<td>-759.42</td>
<td>Allows connector to be supplied with blind mate guides, lockwashers and hexnuts installed. For connectors with a 4-40 threaded mounting style install blind mate guides only. For connectors with a R3/R6 mounting style install special blind mate guides with lockwashers and hexnuts. See page 90 in accessories section for more information.</td>
</tr>
<tr>
<td>SND, SDD, SCBM, SCBC, SCBD, SCBDD, SCBCD, SAD, SADD</td>
<td>ALL</td>
<td>MALE</td>
<td>ALL</td>
<td>-759.43</td>
<td>Allows connector, with any contacts to include blind mate mounting plate. See page 90 in accessories section for more information.</td>
</tr>
<tr>
<td>SND, SDD, SCBM, SCBC, SCBD</td>
<td>ALL</td>
<td>MALE</td>
<td>ALL</td>
<td>-1144.8</td>
<td>Allows connector to have Group A inspection per Goddard Spec GSFC-S-311-P-4 performed. Certifications included with shipment.</td>
</tr>
<tr>
<td>SCBM</td>
<td>3W3, 8W8</td>
<td>MALE</td>
<td>0</td>
<td>-1570.4</td>
<td>Integral stabilizing feature used to minimize size 8 contacts from floating in the molding. Use tool number 4311-0-1-0 to removed contact if necessary. See page 74 in unique feature section for more information.</td>
</tr>
<tr>
<td>SCBC</td>
<td>36W4, 43W3</td>
<td>MALE</td>
<td>0</td>
<td>-1768.33</td>
<td>Allows connector to have Group A inspection per Goddard Spec GSFC-S-311-P-4 performed. Certifications included with shipment.</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 High Performance D-subminiature connectors can be modified to customers specifications.

Examples: select loading of contacts for cost savings or to gain creepage and clearance distances; longer PCB terminations; customer specified hardware; sealing for water resistance.

Contact Technical Sales with your particular requirements.
APPLICATION TOOLS
MILITARY / SPACE FLIGHT QUALITY

APPLICATION TOOLS SECTION

High Performance D-subminiature 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 contacts. These charts will supply part numbers for insertion, removal and crimping tools, along with information regarding use of tools and techniques.

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.
### Contact Application Tools Cross Reference List

<table>
<thead>
<tr>
<th>P/N</th>
<th>Description</th>
<th>Application</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>

*For complete listing of contact part numbers, see removable contact section pages 77-85.

**Note:** See Note 7-78.
Positronic® offers a variety of QPL connector products

**D-SUBMINIATURE CONNECTORS**

<table>
<thead>
<tr>
<th>MIL PREFIX</th>
<th>POSITRONIC SERIES</th>
</tr>
</thead>
<tbody>
<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>

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!

http://www.connectpositronic.com/pdf_view/222/
Positronic Hermetic Connector Assemblies

- **Leakage Rate:** $5 \times 10^{-9} \text{ mbar.l/s}$
  @ vacuum $1.5 \times 10^{-5} \text{ atm}$
- **Shock and vibration resistant**
- **Application Specific Design**

Positronic Industries can supply hermetic connector assemblies for use in vacuum applications. All Positronic hermetic connectors are designed to act as feedthroughs through the bulkhead/chamber wall. Typically both sides of the connector have mating faces, but certain contact terminations are also available per customer requirement. Typical configurations include:

- **Standard Density D-subminiature** (Contact size 20)
- **High Density D-subminiature** (Contact size 22)
- **Mixed Density D-subminiature** (Contact sizes 8 and 20 in a single package)
- **Circular** (Variety of contact sizes and configurations)

In addition to simply providing the hermetic connector itself, Positronic can provide a fully-assembled flange/plate according to customer specification (see above).

**For more information on Positronic hermetic capabilities**, please call (800) 641-4054 and request to speak to someone about the Positronic hermetic product line.
**Power**

<table>
<thead>
<tr>
<th>Contact Sizes:</th>
<th>Current Ratings:</th>
<th>Terminations:</th>
<th>Configurations:</th>
<th>Compliance:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0, 8, 12, 16, 20, 22 and 24</td>
<td>To 200 amperes per contact</td>
<td>Crimp and panel mount, straight solder, right angle (90°) solder, straight compliant press-in and right angle (90°) compliant press-in</td>
<td>Multiple variants in a variety of package sizes</td>
<td>PICMG 2.11, PICMG 3.0, VITA 41, DSCC, GSFC S-311-P-4, GSFC S-311-P-10</td>
</tr>
</tbody>
</table>

**Features:**
- High current density
- Energy saving - low contact resistance
- AC/DC operation in a single connector
- Signal contacts for hardware management
- Blind mating
- Sequential mating
- Large surface area contact mating system
- Wide variety of accessories
- Customer-specific contact arrangements
- Modular design which produces a single piece connector insert

**D-SUBMINIATURE**

<table>
<thead>
<tr>
<th>Contact Sizes:</th>
<th>Current Ratings:</th>
<th>Terminations:</th>
<th>Configurations:</th>
<th>Qualifications:</th>
</tr>
</thead>
<tbody>
<tr>
<td>8, 16, 20 and 22</td>
<td>To 100 amperes</td>
<td>Crimp, wire solder, straight solder, right angle (90°) solder, straight compliant press-in and right angle (90°) compliant press-in</td>
<td>Multiple variants in both standard and high densities, seven shell sizes</td>
<td>MIL-DETL-24308, GSFC S-311-P-4, GSFC S-311-P-10, MIL-DETL-24308, GSFC S-311-P-4, GSFC S-311-P-10, SAE AS39029, DSCC</td>
</tr>
</tbody>
</table>

**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

**Rectangular**

<table>
<thead>
<tr>
<th>Contact Sizes:</th>
<th>Current Ratings:</th>
<th>Terminations:</th>
<th>Configurations:</th>
<th>Qualifications:</th>
</tr>
</thead>
<tbody>
<tr>
<td>16, 20 and 22</td>
<td>To 13 amperes nominal</td>
<td>Crimp, wire solder, straight solder, right angle (90°) solder, and straight compliant press-in</td>
<td>Multiple variants in both standard and high densities, thirty package sizes</td>
<td>MIL-DETL-28748, SAE AS39029, CCITT V.35</td>
</tr>
</tbody>
</table>

**Features:**
- Two performance levels available: industrial quality and military quality
- A wide variety of accessories
- Broad selection of contact variants and package sizes
- Connector keying options

**Circular**

<table>
<thead>
<tr>
<th>Contact Sizes:</th>
<th>Current Ratings:</th>
<th>Terminations:</th>
<th>Configurations:</th>
<th>Qualifications:</th>
</tr>
</thead>
<tbody>
<tr>
<td>12, 16, 20 and 22</td>
<td>To 25 amperes nominal</td>
<td>Crimp, wire solder, straight solder, and right angle (90°) solder</td>
<td>Multiple variants in four package sizes</td>
<td>MIL-DETL-24308, GSFC S-311-P-4, GSFC S-311-P-10, SAE AS39029, DSCC</td>
</tr>
</tbody>
</table>

**Features:**
- Non-corrodible / lightweight composite construction
- EM/RF shielded versions
- Thermocouple contacts
- Environmentally sealed versions
- Rear insertion/ front release of removable contacts
- Two level sequential mating
- Overmolding available on full assemblies

**Cable**

<table>
<thead>
<tr>
<th>Contact Sizes:</th>
<th>Current Ratings:</th>
<th>Terminations:</th>
<th>Configurations:</th>
<th>Qualifications:</th>
</tr>
</thead>
<tbody>
<tr>
<td>8, 12, 16, 20 and 22</td>
<td>To 40 amperes nominal</td>
<td>Feedthrough is standard; flying leads and board mount available upon request</td>
<td>See D-subminiature and circular configurations above</td>
<td>MIL-DETL-24308, GSFC S-311-P-4, GSFC S-311-P-10, SAE AS39029, DSCC</td>
</tr>
</tbody>
</table>

**Features:**
- Shorten the supply chain and reduce additional costs and delays by “cablizing” your Positronic connector selection
- Overmolding available
- Shielded and environmentally sealed versions available
- Power cables and access boxes which meet the SAE J2496 specification

**Hermetic**

<table>
<thead>
<tr>
<th>Contact Sizes:</th>
<th>Current Ratings:</th>
<th>Terminations:</th>
<th>Configurations:</th>
<th>Compliance:</th>
</tr>
</thead>
<tbody>
<tr>
<td>8, 12, 16, 20 and 22</td>
<td>To 40 amperes nominal</td>
<td>Feedthrough is standard; flying leads and board mount available upon request</td>
<td>See D-subminiature and circular configurations above</td>
<td>MIL-DETL-24308, GSFC S-311-P-4, GSFC S-311-P-10, SAE AS39029, DSCC</td>
</tr>
</tbody>
</table>

**Features:**
- Intended for use as an electrical feedthrough in high vacuum applications
- Leakage rate: 5 x 10⁻⁹ mbar.l/s @ vacuum 1.5 x 10⁻⁵ atm
- 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.
NORTH AMERICAN LOCATIONS

UNITED STATES, Springfield, Missouri, Corporate Headquarters
Factory Sales and Engineering Offices 800 641 4054 info@connectpositronic.com

PUERTO RICO, Ponce Factory
Factory Sales and Engineering Offices 800 641 4054 info@connectpositronic.com

MEXICO
Factory Sales and Engineering Offices 800 872 7674 info@connectpositronic.com

CANADA
Factory Sales and Engineering Offices 800 327 8272 info@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 3626 466 zhuhai@connectpositronic.com
China -Shenzhen Sales Office 86 755 2643 7578 shenzhen@connectpositronic.com
China -Shanghai Sales Office 86 158 2907 9779 shanghai@connectpositronic.com
China -Xian/Beijing Sales Office 86 29 8839 5306 xian@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 5619 8072 japan@connectpositronic.com

INDIA, Direct Sales Offices
Factory Sales and Engineering Offices 91 20 2439 4810 india@connectpositronic.com
Bangalore Sales Office 91 94 4807 3251 bangalore@connectpositronic.com
New Delhi Sales Office 91 80 1071 1175 delhi@connectpositronic.com

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

EUROPEAN LOCATIONS

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

EUROPE, Direct Sales Offices
Northern France Sales Office 33 1 4588 1388 jchalaux@connectpositronic.com
Southern 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 7975 682 488 lbridwell@connectpositronic.com

EUROPE, Technical Agents
Technical Agents in Austria, Benelux, Eastern Europe Countries, Greece, Ireland, Russia, Scandinavia, Spain, Switzerland and the United Kingdom

MIDEAST, Technical Agents
Technical Agents in Israel and Turkey