# HIGH PERFORMANCE

## D-subminiature Connectors

Positronic®

an **Amphenol** company

## 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. C2

# Connector Excellence®

## Positronic Provides Complete Capability

### Mission Statement

"To utilize product flexibility and application assistance to present interconnect solutions which represent value to customers worldwide."

## 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

- **Quality Systems:** Select locations qualified to ISO9001:2000, ISO14001, AS9100, MIL-STD-790 and customer "dock to stock" programs. Applicable products qualified to MIL-DTL-24308, SAE AS39029, DSCC 85039, MIL-DTL-28748, Space D32, GSFC S-311-P-4 and GSFC S-311-P-10.
- Compliance to a variety of international and customer specific **environmental requirements.**
- Large **in-house inventory** of finished connectors. Customer specific **stocking programs.**
- Factory direct **technical sales support** in major cities worldwide.
- **One-on-one customer support** from worldwide factory locations.
- World class **web site**.
- **Value-added solutions** and willingness to **develop custom products** with reasonable price and delivery.

## Regional Headquarters

Springfield, MO

Auch, France

Singapore

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

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

Patented in Canada, 1992 Other Patents Pending

**POSITRONIC® IS AN ITAR REGISTERED COMPANY**

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

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

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

# CONNECTOR DESCRIPTIONS



## 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.

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## 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.



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

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## S D D  S E R I E S



## S C B M  S E R I E S



## S C B C  S E R I E S



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## S C B D D  S E R I E S



## S C B C D  S E R I E S



## S A D  C O N N E C T O R  S A V E R



## S A D D  C O N N E C T O R  S A V E R



## S A C B M P  C O N N E C T O R  S A V E R



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DIMENSIONS ARE IN INCHES [MILLIMETERS].
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## UNIQUE FEATURES



## REMOVABLE CONTACTS



## ACCESSORIES



## SPECIAL OPTIONS



## APPLICATION TOOLS

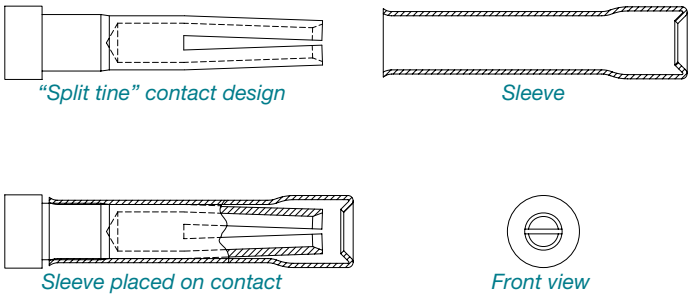


## QPL LISTING

# What Makes Positronic's New "PosiBand®" Contact Interface a Significant Improvement?

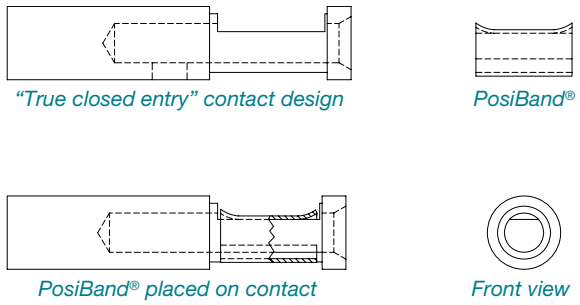
High reliability connectors utilize female **closed entry contacts** that provide an unbroken ring of solid material at the face of the contact. The closed entry feature is **crucial in preventing damage** to female contacts used in harsh environments, repeated mating cycles, blind mate applications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

**FIGURE 1**




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.

**FIGURE 2**




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.

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DIMENSIONS ARE IN INCHES [MILLIMETERS].
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# 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 visit our web site at ***www.connectpositronic.com.***

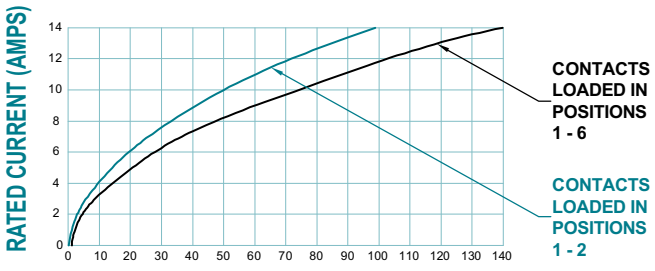
## TEMPERATURE RISE CURVES

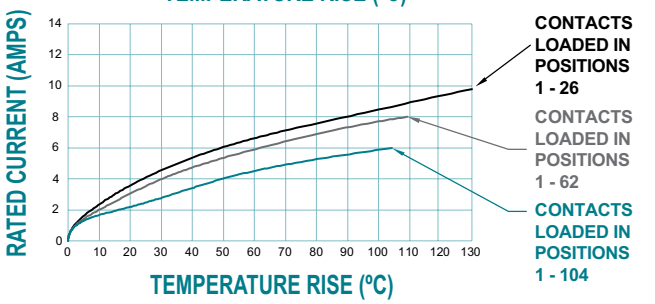
*Test conducted in accordance with UL1977.*

### 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.

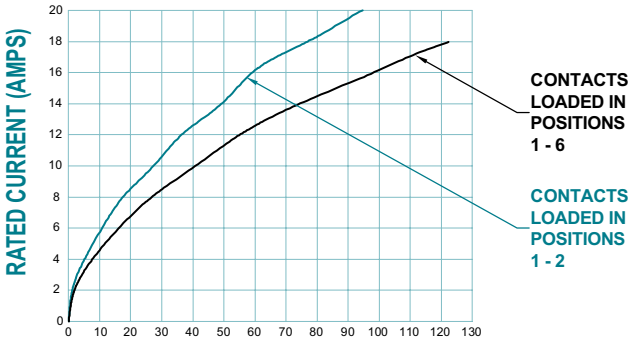


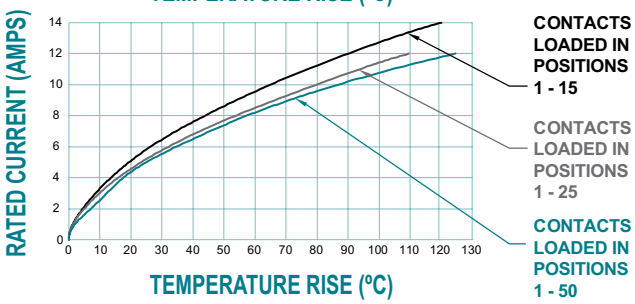




### Size 20 PosiBand Contacts

**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.

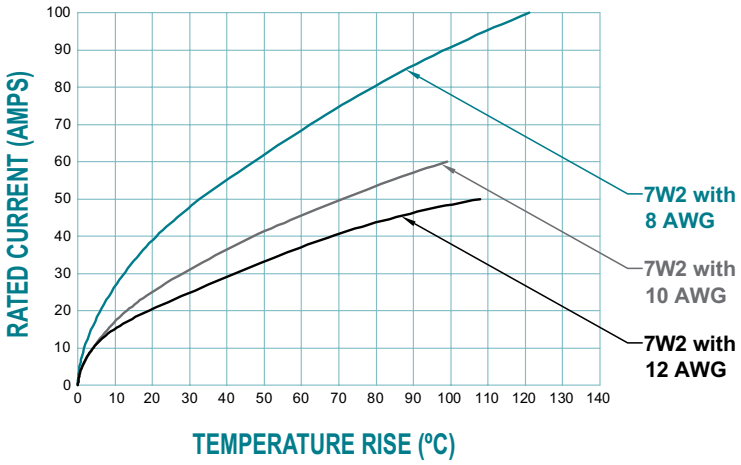


# TEMPERATURE RISE CURVES FOR SIZE 8, 10 AND 12 AWG WIRE

*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.

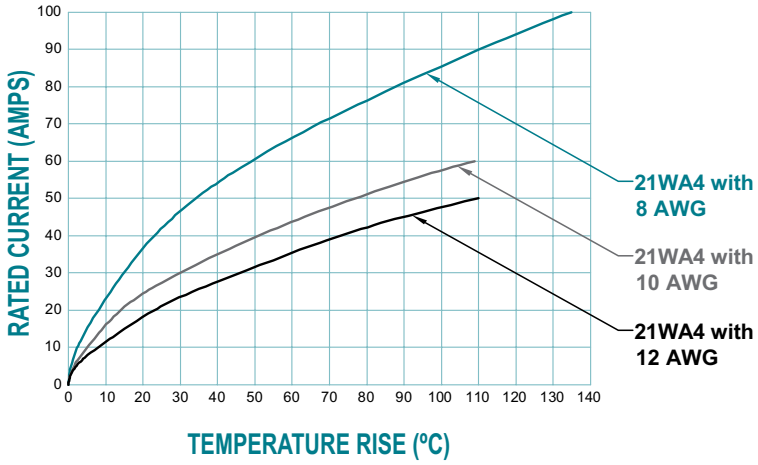
**12AWG**: Curve developed using a mated Combination-D 7W2F55 and Combination-D 7W2M loaded with size 8 crimp contacts terminated to 12 AWG wire.

## 21WA4

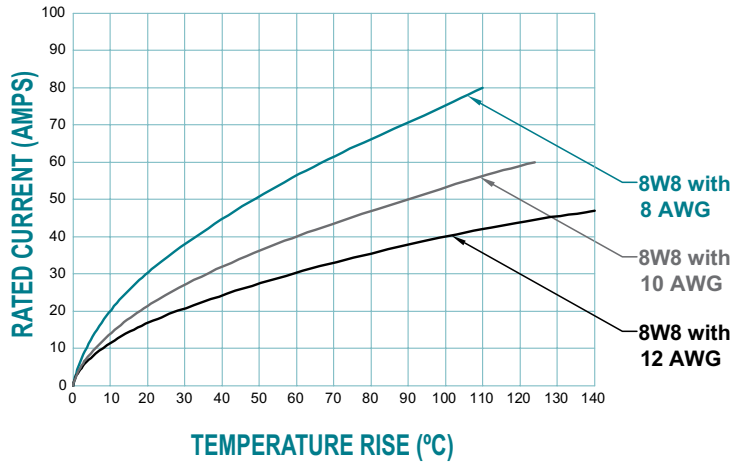
**8 AWG**: Curve developed using a mated Combination-D 21WA4F57 and Combination-D 21WA4M loaded with size 8 crimp contacts terminated to 8 AWG wire.

**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.

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



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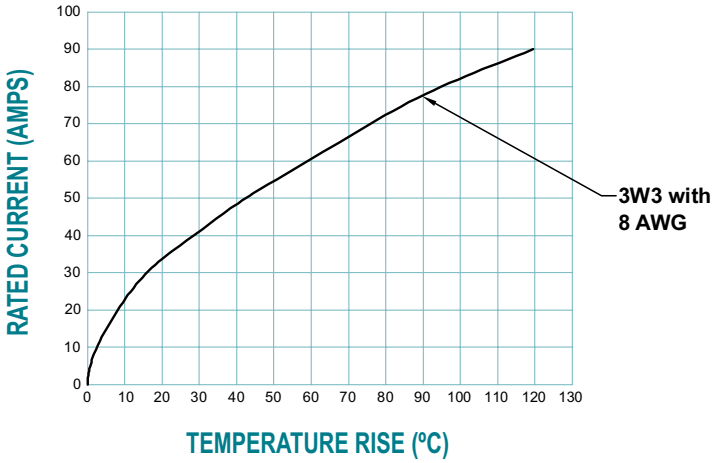
# TEMPERATURE RISE CURVE FOR SIZE 8 AND 12 AWG WIRE

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

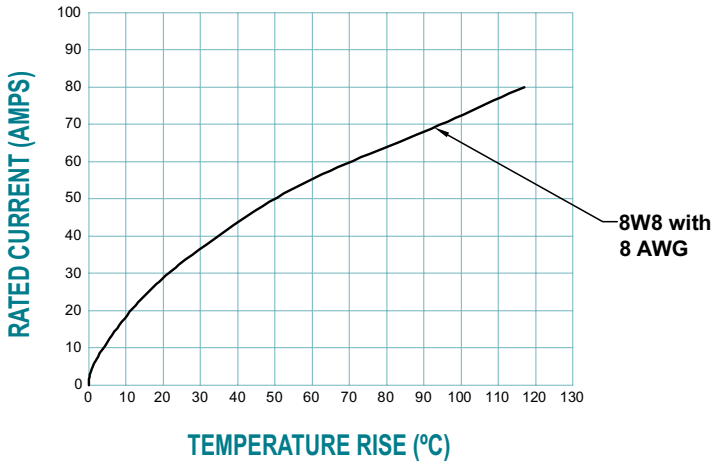
## 3W3



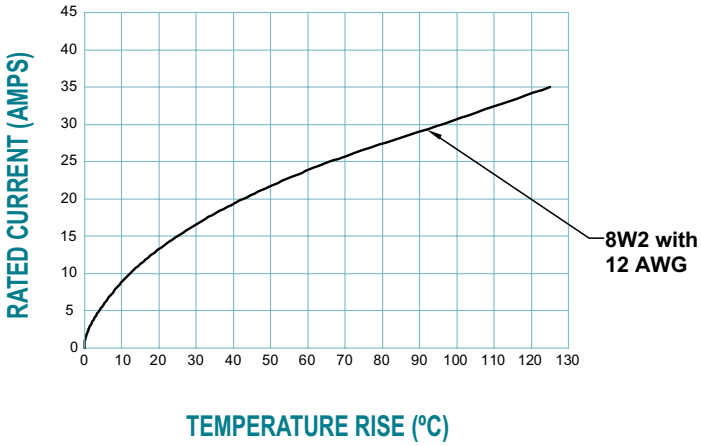

Curve developed using a mated Combination-D 3W3F loaded with size 8 crimp contacts and Combination-D 3W3M loaded with size 8 crimp contacts terminated to 8 AWG wire.

## 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

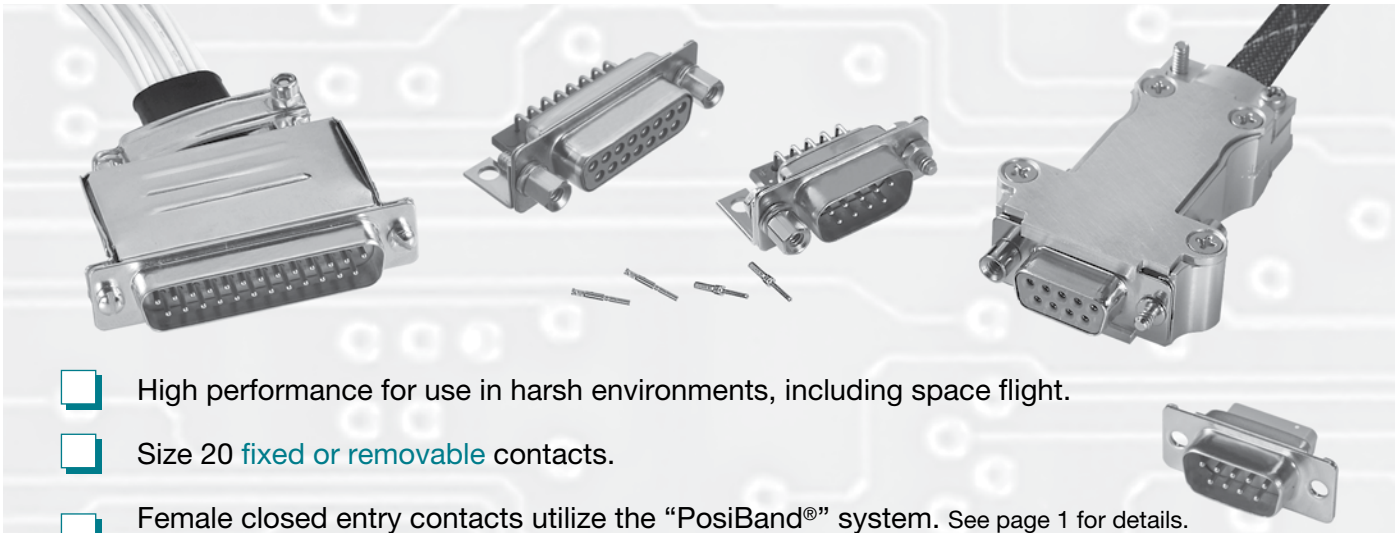



Curve developed using a mated Combination-D 8W2M loaded with size 8 crimp contacts and Combination-D 8W2S loaded with size 8 crimp contacts terminated to 12 AWG wire.

# SND SERIES
## MILITARY / SPACE FLIGHT QUALITY
## STANDARD DENSITY FIXED OR REMOVABLE CONTACTS

High Performance D-sub





- 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 100 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:

**Connector Insert:** Glass-filled DAP per ASTM-D-5948, Type SDG-F, UL 94V-0, ASTM E-595, NASA-RP-1124, green color.

**Contacts:** Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 97.

**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.

## 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 81 & 82.*

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

# TECHNICAL CHARACTERISTICS, *continued*

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## MECHANICAL CHARACTERISTICS, continued:

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

**Resistance to Solder Iron Heat:** 650˚F [350˚C] for 10 seconds duration per IEC 60512-6, solder cup contacts.

**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 82 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 (90º) 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.

Straight printed circuit board mount, compliant press-fit, see page 10.

**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:** Jackscrews 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:** Jackscrews.

**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.

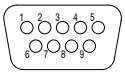
## CLIMATIC CHARACTERISTICS:

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

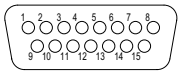
**Damp Heat, Steady State:** 21 days.

## CONTACT VARIANTS

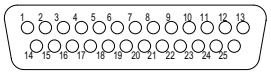
FACE VIEW OF MALE OR REAR VIEW OF FEMALE



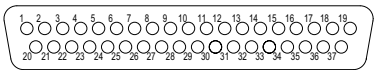
SND 9



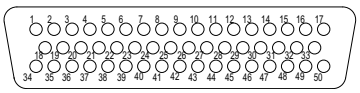
SND 15



SND 25



SND 37

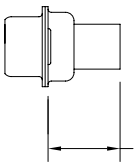


SND 50

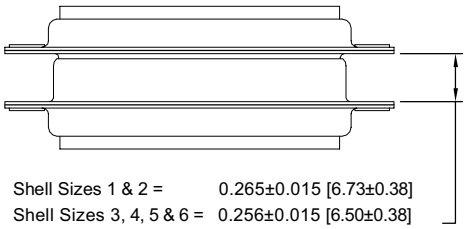
For information regarding **REMOVABLE CONTACTS,** see contact illustration drawings and charts on pages 79-87.

# STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY

## CRIMP REMOVABLE

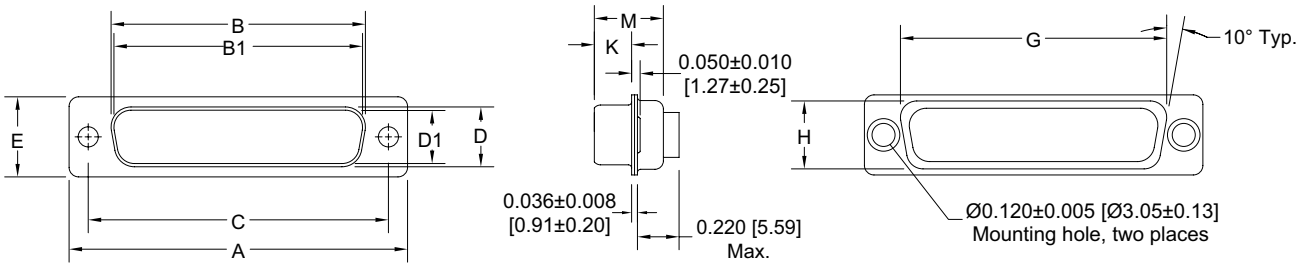



### RECOMMENDED MATING DIMENSIONS

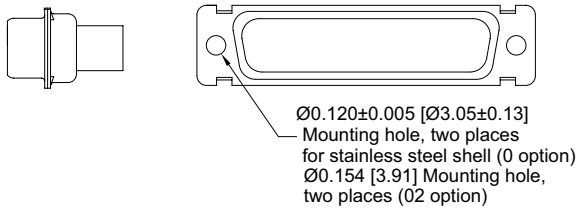


Shell Sizes 1 & 2 = 0.265±0.015 [6.73±0.38]
Shell Sizes 3, 4, 5 & 6 = 0.256±0.015 [6.50±0.38]

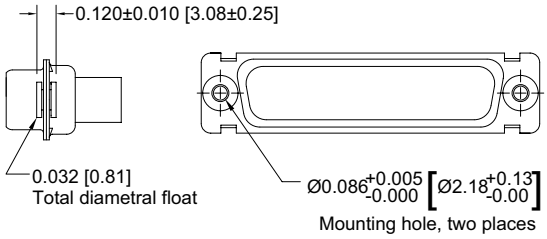
## BOARD MOUNT




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



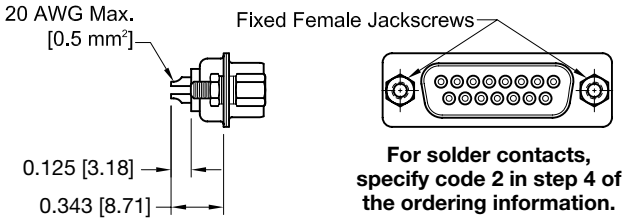

### OPTIONAL CONNECTOR HOUSING ASSEMBLY WITH UNIVERSAL FLOAT MOUNTS (F)




| CONNECTOR VARIANT SIZES | GENDER | A ±0.015 [0.38] | B ±0.005 [0.13] | 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] | G ±0.010 [0.25] | H ±0.010 [0.25] | K ±0.005 [0.13] | M ±0.010 [0.25] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SND 9 *(SHELL SIZE 1)* | MALE | 1.213 [30.81] | | 0.666 [16.92] | 0.984 [24.99] | | 0.329 [8.36] | 0.494 [12.55] | 0.759 [19.28] | 0.422 [10.72] | 0.233 [5.92] | 0.422 [10.72] |
| | FEMALE | 1.213 [30.81] | 0.643 [16.33] | | 0.984 [24.99] | 0.311 [7.90] | | 0.494 [12.55] | 0.759 [19.28] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| SND 15 *(SHELL SIZE 2)* | MALE | 1.541 [39.14] | | 0.994 [25.25] | 1.312 [33.32] | | 0.329 [8.36] | 0.494 [12.55] | 1.083 [27.51] | 0.422 [10.72] | 0.233 [5.92] | 0.422 [10.72] |
| | FEMALE | 1.541 [39.14] | 0.971 [24.66] | | 1.312 [33.32] | 0.311 [7.90] | | 0.494 [12.55] | 1.083 [27.51] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| SND 25 *(SHELL SIZE 3)* | MALE | 2.088 [53.04] | | 1.534 [38.96] | 1.852 [47.04] | | 0.329 [8.36] | 0.494 [12.55] | 1.625 [41.28] | 0.422 [10.72] | 0.230 [5.84] | 0.426 [10.82] |
| | FEMALE | 2.088 [53.04] | 1.511 [38.38] | | 1.852 [47.04] | 0.311 [7.90] | | 0.494 [12.55] | 1.625 [41.28] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| SND 37 *(SHELL SIZE 4)* | MALE | 2.729 [69.32] | | 2.182 [55.42] | 2.500 [63.50] | | 0.329 [8.36] | 0.494 [12.55] | 2.272 [57.71] | 0.422 [10.72] | 0.230 [5.84] | 0.426 [10.82] |
| | FEMALE | 2.729 [69.32] | 2.159 [54.84] | | 2.500 [63.50] | 0.311 [7.90] | | 0.494 [12.55] | 2.272 [57.71] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| SND 50 *(SHELL SIZE 5)* | MALE | 2.635 [66.93] | | 2.079 [52.81] | 2.406 [61.11] | | 0.441 [11.20] | 0.605 [15.37] | 2.178 [55.32] | 0.534 [13.56] | 0.230 [5.84] | 0.426 [10.82] |
| | FEMALE | 2.635 [66.93] | 2.064 [52.43] | | 2.406 [61.11] | 0.423 [10.74] | | 0.605 [15.37] | 2.178 [55.32] | 0.534 [13.56] | 0.243 [6.17] | 0.429 [10.90] |

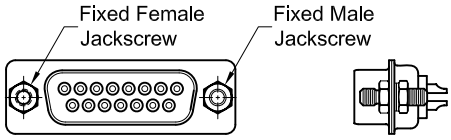
DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

## SOLDER CUP TERMINATION
### CODE 2




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

**TYPICAL PART NUMBER:**
**SND15M200T2G**




**Fixed male and female polarized jackscrews available. Specify Code T6 in step 7 of ordering information.**

**TYPICAL PART NUMBER:**
**SND15M200T6G**

**SND15S5R70T2G**
(shown left)

**SND25M10H0G**
(shown middle)

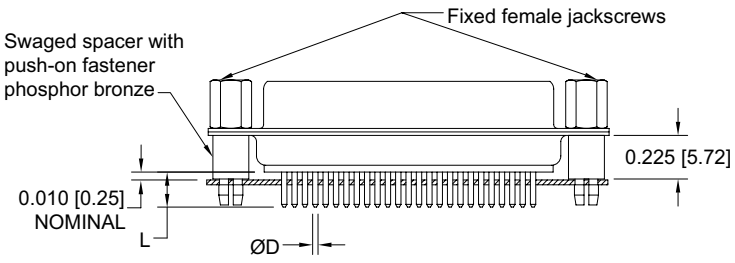
**SND9M000G with MC6020M contacts**
(shown right)

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

| *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] |

**NOTE:**

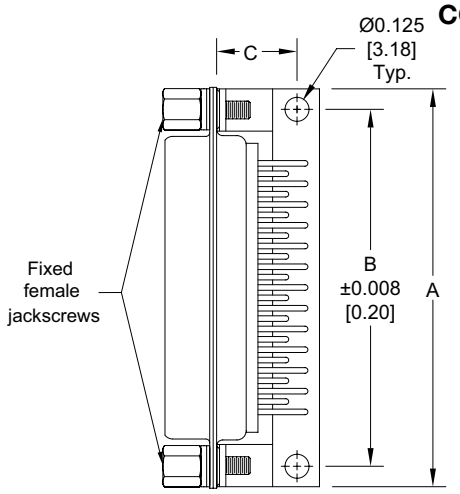
*1 Contact termination code as specified in Step 4 of ordering information.



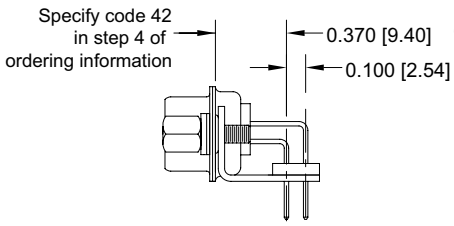

**TYPICAL PART NUMBER:**
**SND25S3S60TG**

## RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION

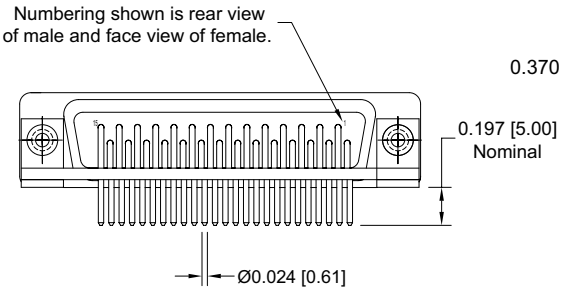
### CODE 42, 0.370 [9.40] CONTACT EXTENSION

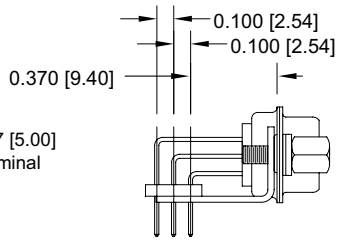



| SND**42**** 0.370 [9.40] CONTACT EXTENSION | | | |
|---|---|---|---|
| PART NUMBER | A | B | C |
| SND9*42**** | 1.204 [30.58] | 0.984 [24.99] | 0.420 [10.67] |
| SND15*42**** | 1.532 [38.91] | 1.312 [33.32] | 0.420 [10.67] |
| SND25*42**** | 2.072 [52.63] | 1.852 [47.04] | 0.420 [10.67] |
| SND37*42**** | 2.720 [69.09] | 2.500 [63.50] | 0.420 [10.67] |
| SND50*42**** | 2.626 [66.70] | 2.406 [61.11] | 0.470 [11.94] |




TYPICAL PART NUMBER:
SND25M42B30T2G

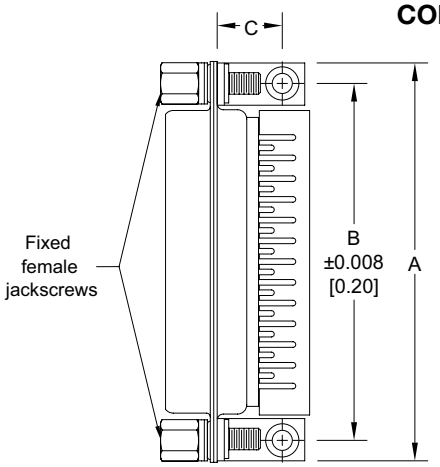


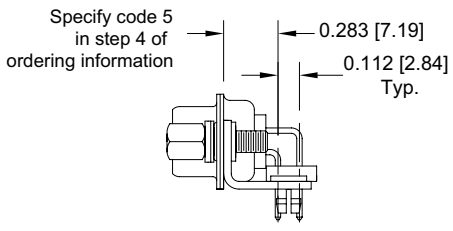

TYPICAL PART NUMBER:
SND50M42B30TG

## RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION

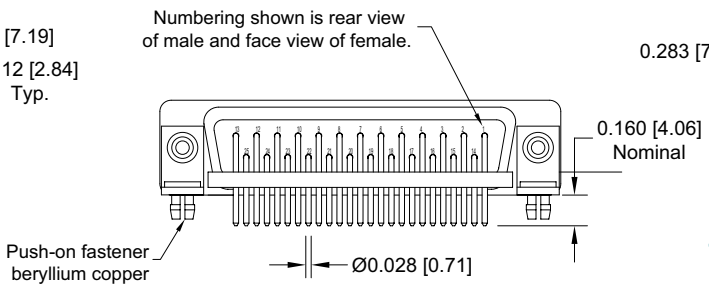
### CODE 5, 0.283 [7.19] CONTACT EXTENSION

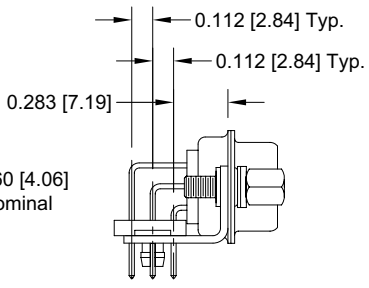



| SND**5**** 0.283 [7.19] CONTACT EXTENSION | | | |
|---|---|---|---|
| PART NUMBER | A | B | C |
| SND9*5**** | 1.204 [30.58] | 0.984 [24.99] | 0.339 [8.61] |
| SND15*5**** | 1.532 [38.91] | 1.312 [33.32] | 0.339 [8.61] |
| SND25*5**** | 2.072 [52.63] | 1.852 [47.04] | 0.339 [8.61] |
| SND37*5**** | 2.720 [69.09] | 2.500 [63.50] | 0.339 [8.61] |
| SND50*5**** | 2.626 [66.70] | 2.406 [61.11] | 0.395 [10.03] |




TYPICAL PART NUMBER:
SND25M5R7NT2G



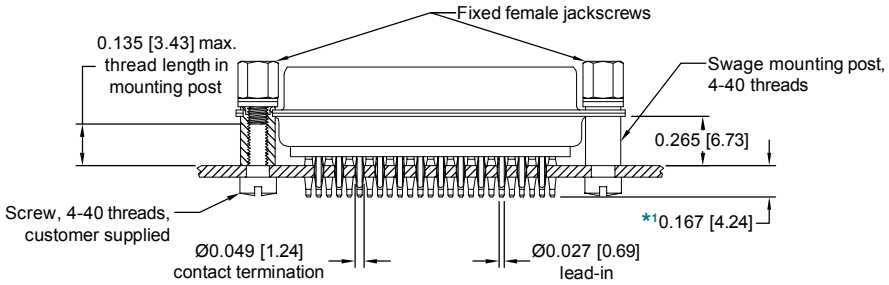

TYPICAL PART NUMBER:
SND50S5R7NTG



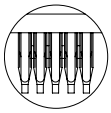
DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

## STRAIGHT COMPLIANT PRESS-FIT TERMINATION
### CODE 98

Positronic recommends the practice of using mounting hardware to secure connector to printed circuit board.




**TYPICAL PART NUMBER: SND25S98000G**



Detail of
Omega contacts

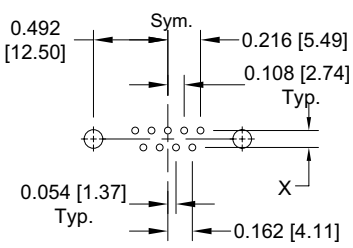
**For straight compliant press-fit contacts, specify code 98 in step 4 of ordering information.**

**NOTE:**

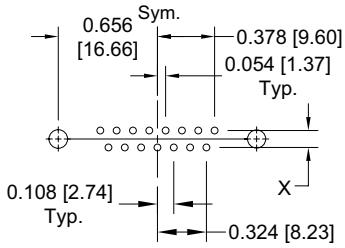
*1 The effective length of the compliant section may also be varied (longer or shorter) and can be selectively positioned and centered at several points along the contact termination length, permitting high or low profile mounting of the connector on printed boards.

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

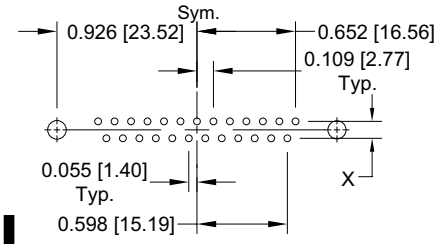
HOLE IDENTIFICATION SHOWN FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.
MOUNT CONNECTOR WITH MATING FACE POSITIONED TO FOLLOW DIRECTION OF ARROWS.



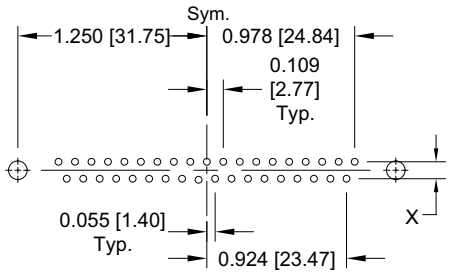

SND9



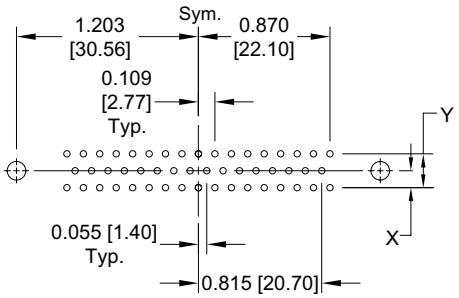

SND15




SND25




SND37




SND50

| *1 CODE NUMBER | X | Y |
|---|---|---|
| 3 | 0.112 [2.84] | 0.224 [5.69] |
| 5 | | |
| 32 | | |
| 36 | | |
| *2 42 | 0.100 [2.54] | 0.200 [5.08] |

**NOTE:**

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

*2 Metric system, European contact hole pattern.

### 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.



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

# REMOVABLE CONTACT ORDERING ASSISTANCE CHART

## SND SERIES
### CRIMP AND SOLDER CONTACT TERMINATIONS

| TYPE | PAGE NUMBER REFERENCE IN CATALOG | CONTACT SIZE | FEMALE PART NUMBER | MALE PART NUMBER | WIRE SIZE AWG [mm²] |
|---|---|---|---|---|---|
| CRIMP | see page 81 for additional information | 20 | **FC6020M2** | **MC6020M** | 20 / 22 / 24 [0.5 / 0.3 / 0.25] |
| | | | **FC6026M2** | **MC6026M** | 26 / 28 / 30 [0.12 / 0.0 8 / 0.05] |
| | see page 82 for additional information | | **FC6018M2** | **MC6018M** | 18 [1.0] max. |
| SOLDER | see page 82 for additional information | 20 | **FS6020M2** | **MS6020M** | 20 [0.5] max. |

**NOTE:** For ordering crimp contacts on reels, add "R" to part number, see page 79 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.

**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 79-87.

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.

# ORDERING INFORMATION - CODE NUMBERING SYSTEM

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

| STEP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | — | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| EXAMPLE | SND | 37 | S | 5 | B3 | 0 | T2 | G | | |

## 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 12 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.
98 - Straight printed circuit board mount, compliant press-fit

## *1 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 91.
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 90.
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 90.

## *1 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 93 for details.*
N - Push-on fastener for right angle (90°) mounting brackets.

## *1 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 97.***

**NOTE:**

*1 For additional information on accessories listed in Step 5, 6, and 7, see the Accessories section, pages 88-96.

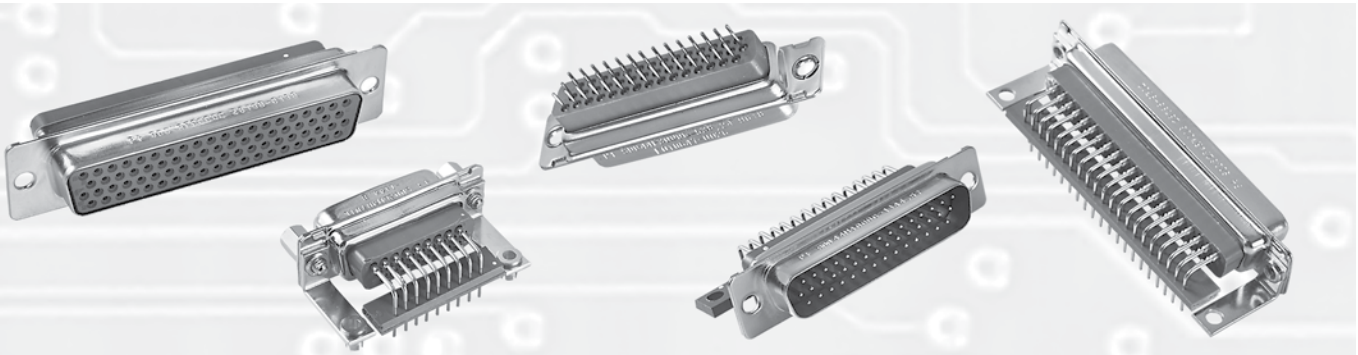
For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.



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

# SDD SERIES
## MILITARY / SPACE FLIGHT QUALITY
## HIGH DENSITY REMOVABLE OR PCB CONTACTS





- High performance for use in harsh environments, including space flight.
- Size 22 fixed or removable contacts.

- Female closed entry 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.

- Six connector variants include 15, 26, 44, 62, 78, and 104 contacts.
- Terminations include cable or wire crimp and solder, straight and right angle PCB mount.
- 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 100 for details.

### 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



# 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:** Precision machined high tensile copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 97.

**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.

## 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 80-81.*

*continued on next page. . . .*

# TECHNICAL CHARACTERISTICS, *continued*

*continued from previous page. . . .*

## 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 81 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.

Straight printed circuit board mount, compliant press-fit, see page 18.

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

**Locking Systems:** Jackscrews.

**Mechanical Operations:** 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.

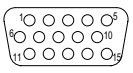
## CLIMATIC CHARACTERISTICS:

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

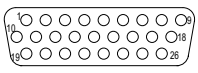
**Damp Heat, Steady State:** 21 days.

## CONTACT VARIANTS

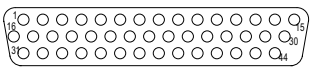
FACE VIEW OF MALE OR REAR VIEW OF FEMALE



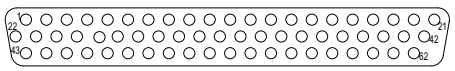
SDD 15



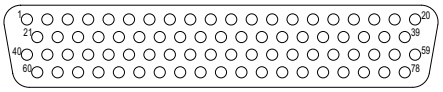
SDD 26



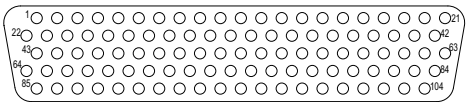
SDD 44



SDD 62



SDD 78



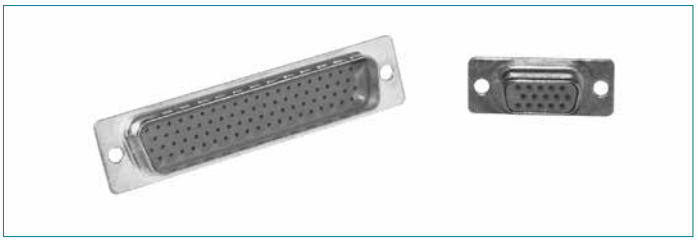
SDD 104

For information regarding **REMOVABLE CONTACTS,** see contact illustration drawings and charts on pages 79-87.



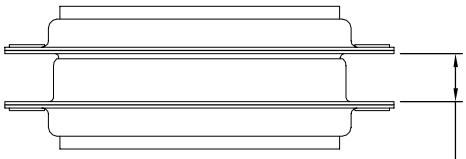
DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

## STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY

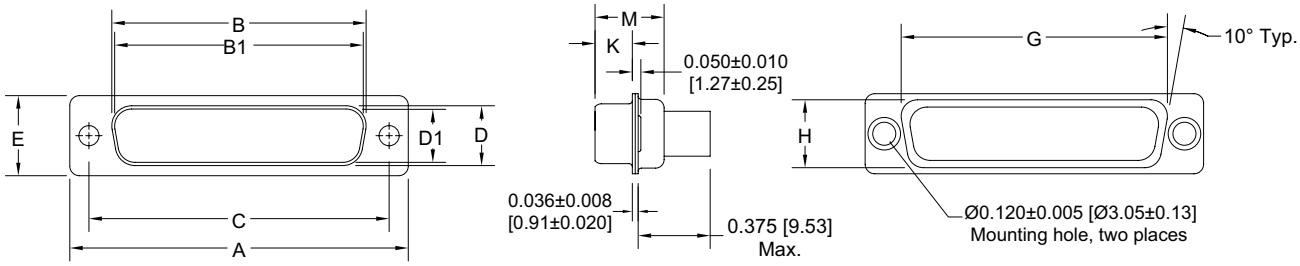


SDD78M0000D SDD15S0000G

### RECOMMENDED MATING DIMENSIONS

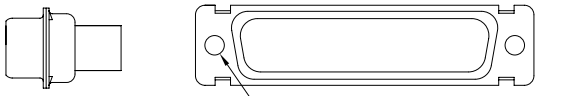


Shell Sizes 1 & 2 = 0.265±0.015 [6.73±0.38]
Shell Sizes 3, 4, 5 & 6 = 0.256±0.015 [6.50±0.38]

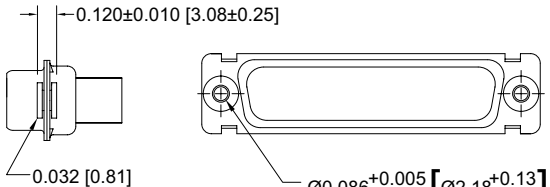



### OPTIONAL CONNECTOR HOUSING ASSEMBLY (0, 02)

STANDARD FOR SIZE 104 CONNECTORS




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



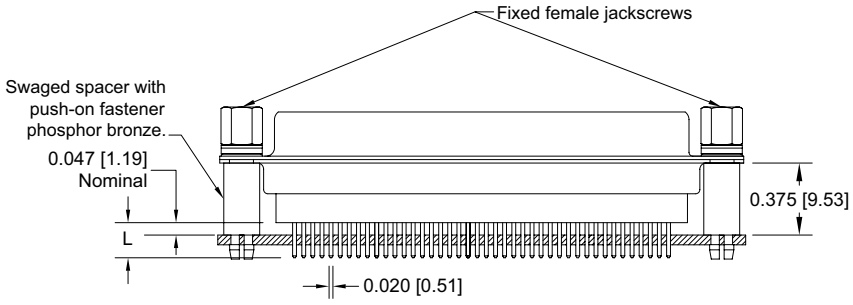

| CONNECTOR VARIANT SIZES | GENDER | A ±0.015 [0.38] | B ±0.005 [0.13] | B1 ±0.005 [0.13] | C ±0.005 [0.13] | D ±0.005 [0.13] | D1 ±0.005 [0.13] | E ±0.015 [0.38] | G ±0.010 [0.25] | H ±0.010 [0.25] | K ±0.005 [0.13] | M ±0.010 [0.25] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SDD 15** *(SHELL SIZE 1)* | **MALE** | 1.213 [30.81] | | 0.666 [16.92] | 0.984 [24.99] | | 0.329 [8.36] | 0.494 [12.55] | 0.759 [19.28] | 0.422 [10.72] | 0.233 [5.92] | 0.422 [10.72] |
| | **FEMALE** | 1.213 [30.81] | 0.643 [16.33] | | 0.984 [24.99] | 0.311 [7.90] | | 0.494 [12.55] | 0.759 [19.28] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| **SDD 26** *(SHELL SIZE 2)* | **MALE** | 1.541 [39.14] | | 0.994 [25.25] | 1.312 [33.32] | | 0.329 [8.36] | 0.494 [12.55] | 1.083 [27.51] | 0.422 [10.72] | 0.233 [5.92] | 0.422 [10.72] |
| | **FEMALE** | 1.541 [39.14] | 0.971 [24.66] | | 1.312 [33.32] | 0.311 [7.90] | | 0.494 [12.55] | 1.083 [27.51] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| **SDD 44** *(SHELL SIZE 3)* | **MALE** | 2.088 [53.04] | | 1.534 [38.96] | 1.852 [47.04] | | 0.329 [8.36] | 0.494 [12.55] | 1.625 [41.28] | 0.422 [10.72] | 0.230 [5.84] | 0.426 [10.82] |
| | **FEMALE** | 2.088 [53.04] | 1.511 [38.38] | | 1.852 [47.04] | 0.311 [7.90] | | 0.494 [12.55] | 1.625 [41.28] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| **SDD 62** *(SHELL SIZE 4)* | **MALE** | 2.729 [69.32] | | 2.182 [55.42] | 2.500 [63.50] | | 0.329 [8.36] | 0.494 [12.55] | 2.272 [57.71] | 0.422 [10.72] | 0.230 [5.84] | 0.426 [10.82] |
| | **FEMALE** | 2.729 [69.32] | 2.159 [54.84] | | 2.500 [63.50] | 0.311 [7.90] | | 0.494 [12.55] | 2.272 [57.71] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| **SDD 78** *(SHELL SIZE 5)* | **MALE** | 2.635 [66.93] | | 2.079 [52.81] | 2.406 [61.11] | | 0.441 [11.20] | 0.605 [15.37] | 2.178 [55.32] | 0.534 [13.56] | 0.230 [5.84] | 0.426 [10.82] |
| | **FEMALE** | 2.635 [66.93] | 2.064 [52.43] | | 2.406 [61.11] | 0.423 [10.74] | | 0.605 [15.37] | 2.178 [55.32] | 0.534 [13.56] | 0.243 [6.17] | 0.429 [10.90] |
| **SDD 104** *(SHELL SIZE 6)* | **MALE** | 2.729 [69.32] | | 2.212 [56.18] | 2.500 [63.50] | | 0.503 [12.78] | 0.668 [16.97] | 2.302 [58.47] | 0.596 [15.14] | 0.230 [5.84] | 0.426 [10.82] |
| | **FEMALE** | 2.729 [69.32] | 2.189 [55.60] | | 2.500 [63.50] | 0.485 [12.32] | | 0.668 [16.97] | 2.302 [58.47] | 0.596 [15.14] | 0.243 [6.17] | 0.429 [10.90] |

## STRAIGHT SOLDER PRINTED BOARD MOUNT TERMINATION
### CODE 3 AND 32

| *1 CODE NUMBER | L |
|---|---|
| 3 | 0.150 [3.81] |
| 32 | 0.300 [7.62] |

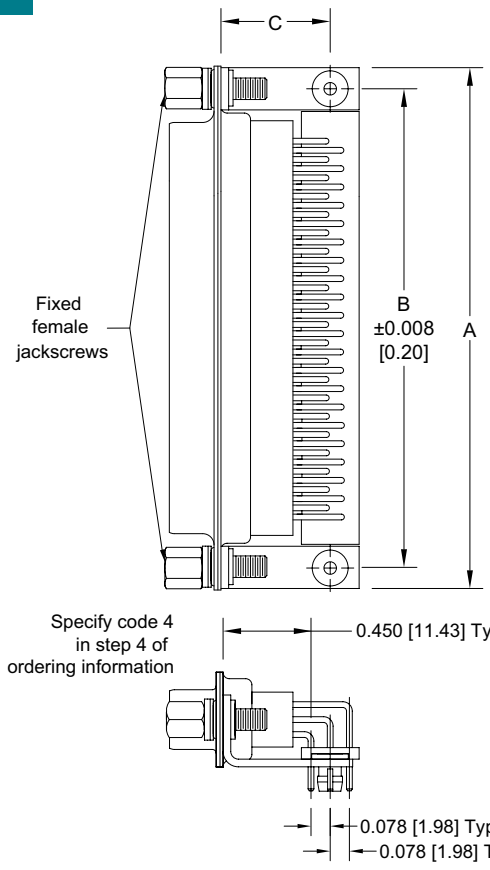
**NOTE:**

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

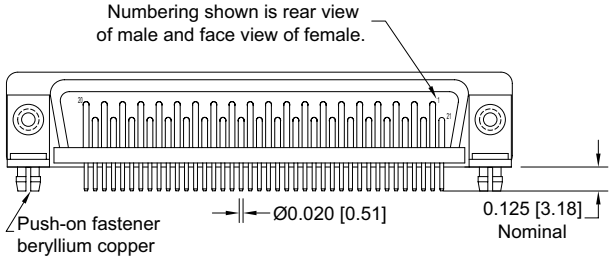



**TYPICAL PART NUMBER:**
**SDD62S3S60T2G**

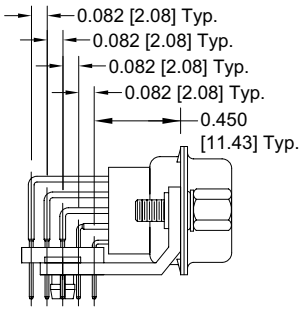
## RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION
### CODE 4, 0.450 [11.43] CONTACT EXTENSION



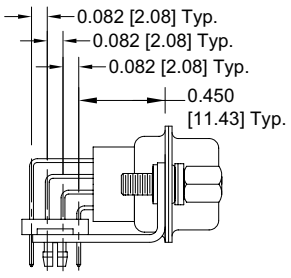

| SDD**4**** 0.450 [11.43] CONTACT EXTENSION | | | |
|---|---|---|---|
| PART NUMBER | A | B | C |
| SDD15*4**** | 1.204 [30.58] | 0.984 [24.99] | 0.528 [13.41] |
| SDD26*4**** | 1.532 [38.91] | 1.312 [33.32] | 0.528 [13.41] |
| SDD44*4**** | 2.072 [52.63] | 1.852 [47.04] | 0.528 [13.41] |
| SDD62*4**** | 2.720 [69.09] | 2.500 [63.50] | 0.528 [13.41] |
| SDD78*5**** | 2.626 [66.70] | 2.406 [61.11] | 0.573 [14.55] |
| SDD104*4**** | 2.720 [69.09] | 2.500 [63.50] | 0.614 [15.60] |




**TYPICAL PART NUMBER:**
**SDD44S4R7NT2G**




**TYPICAL PART NUMBER:**
**SDD104M4R7NT2G**



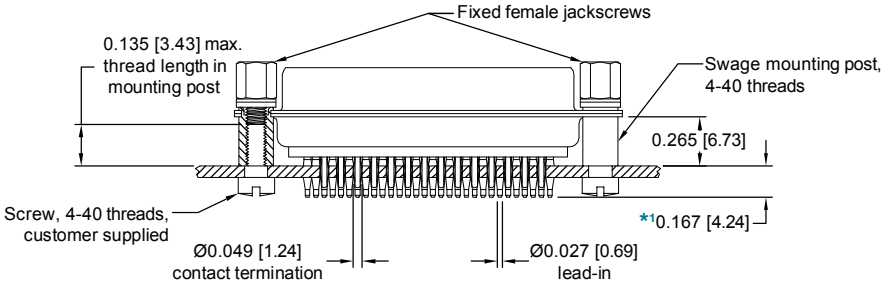

**TYPICAL PART NUMBER:**
**SDD78M4R7NT2G**



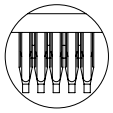
DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

# STRAIGHT COMPLIANT PRESS-FIT TERMINATION
## CODE 98

Positronic recommends the practice of using mounting hardware to secure connector to printed circuit board.




**TYPICAL PART NUMBER: SDD44M980T2G**



Detail of
Omega contacts

**For straight compliant press-fit contacts, specify code 98 in step 4 of ordering information.**

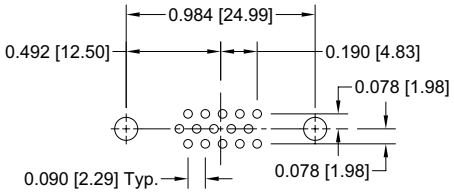
**NOTE:**

*1 The effective length of the compliant section may also be varied (longer or shorter) and can be selectively positioned and centered at several points along the contact termination length, permitting high or low profile mounting of the connector on printed boards.

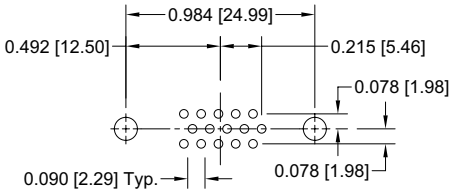
## RIGHT ANGLE (90°) AND STRAIGHT SOLDER PRINTED BOARD CONTACT HOLE PATTERN

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

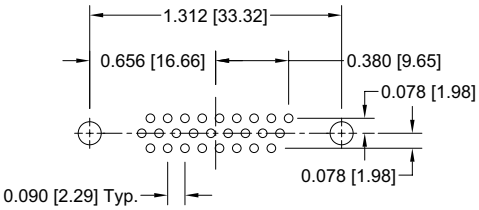
### SDD15 MALE



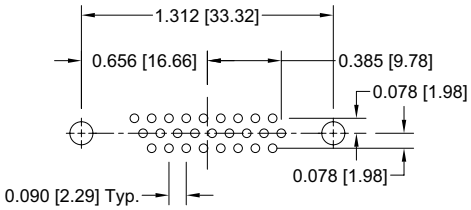

### SDD15 FEMALE



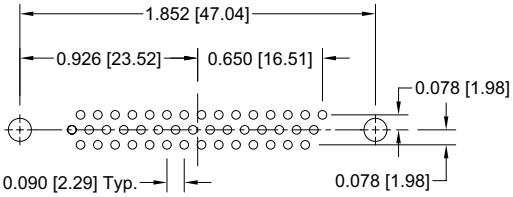

### SDD26 MALE



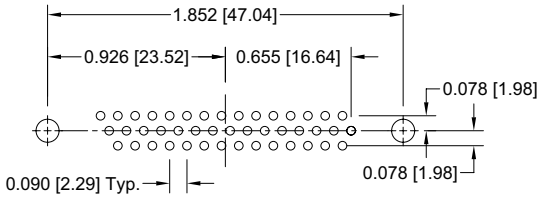

### SDD26 FEMALE



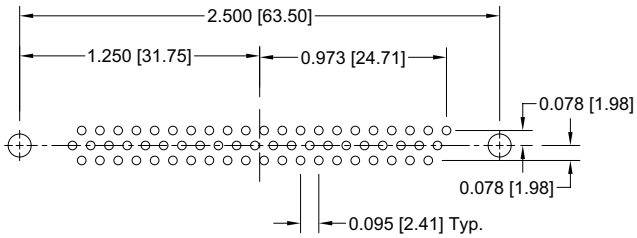

### SDD44 MALE



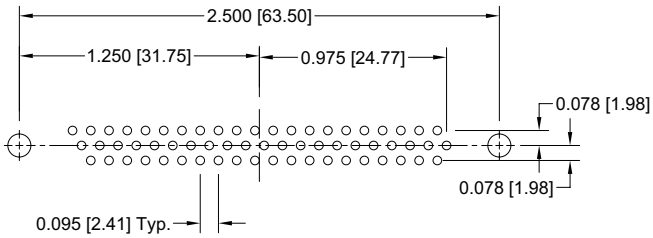

### SDD44 FEMALE



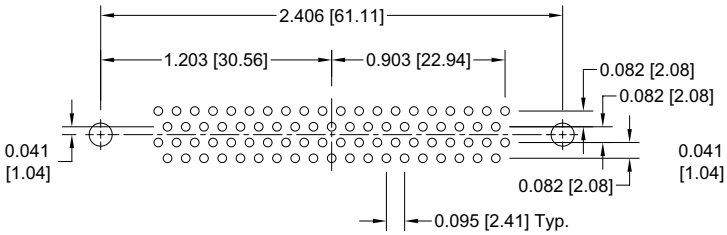

### SDD62 MALE



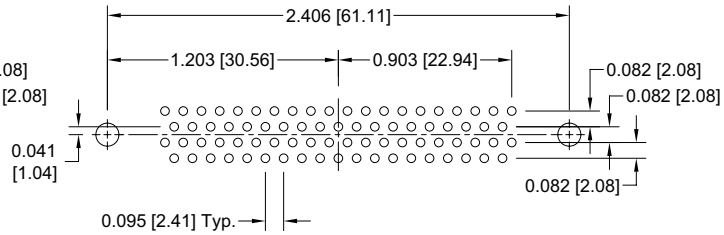

### SDD62 FEMALE



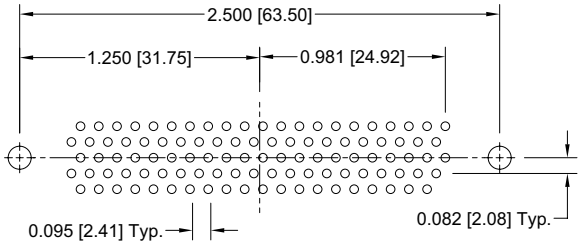

### SDD78 MALE



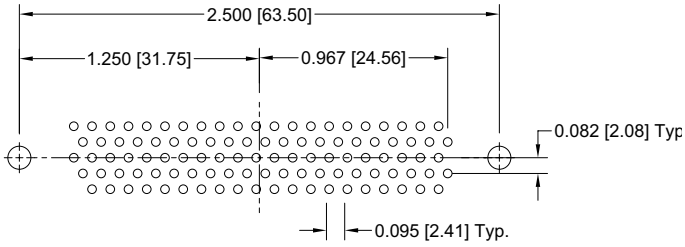

### SDD78 FEMALE




### SDD104 MALE




### SDD104 FEMALE




### 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.



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

# REMOVABLE CONTACT ORDERING ASSISTANCE CHART

## SDD SERIES
### CRIMP AND SOLDER CONTACT TERMINATIONS

| TYPE | PAGE NUMBER REFERENCE IN CATALOG | CONTACT SIZE | FEMALE PART NUMBER | MALE PART NUMBER | WIRE SIZE AWG [mm²] |
|---|---|---|---|---|---|
| CRIMP | see page 80 for additional information | 22 | **FC8020M2** | **MC8020M** | 20 [0.5] max. |
| | | | **FC8022M2** | **MC8022M** | 22 / 24 / 26 / 28 / 30 [0.3 / 0.25 / 0.12 / 0.0 8 / 0.05] |
| SOLDER | see page 81 for additional information | 22 | **FS8022M2** | **MS8022M** | 22 [0.3] max. |

**NOTE:** For ordering crimp contacts on reels, add "R" to part number, see page 79 for details.
Examples: FC8022M2R or MC8022MR

For information regarding **REMOVABLE CONTACTS,** see contact illustration drawings and charts on pages 79-87.

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.

# ORDERING INFORMATION - CODE NUMBERING SYSTEM

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

| STEP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| EXAMPLE | SDD | 62 | S | 4 | R7 | N | T6 | G | — | |

## 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 20.*
1 - Crimp, 22 AWG - 30 AWG [0.3 $mm^2$ - 0.05 $mm^2$].
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.
98 - Straight printed circuit board mount, compliant press-fit

## *1 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.

## *1 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 93 for details.
N - Push-on fastener for right angle (90˚) mounting brackets.

## *1 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).*

## STEP 9 - SPECIAL OPTIONS

***SEE APPENDIX ON PAGE 97.***

**NOTE:**

*1 For additional information on accessories listed in Step 5, 6, and 7, see the Accessories section, pages 88-96.

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.





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

# SCBM SERIES
## MILITARY / SPACE FLIGHT QUALITY
## STANDARD DENSITY PCB MOUNT



- 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 100 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 97.

**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 97.

**Shielded:** *For material and finishes, see page 79.*

**High Voltage:** *For material and finishes, see page 79.*

**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. . . .*

# TECHNICAL CHARACTERISTICS, *continued*

*continued from previous 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 83-87.*

**Shielded:** *For mechanical characteristics, see page 79.*

**High Voltage:** *For mechanical characteristics, see page 79.*

**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 26 for details.*

Straight solder printed board mount - 0.028 inch [0.71 mm] termination diameter.

Right angle (90º) 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 (90º) 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 86 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 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.

**SHIELDED CONTACTS**

*For electrical characteristics, see page 79.*

**HIGH VOLTAGE CONTACTS**

*For electrical characteristics, see page 79.*

**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.





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

# CONTACT VARIANTS

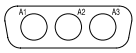
FACE VIEW OF MALE OR REAR VIEW OF FEMALE

## SHELL SIZE 1

*1 2WK2

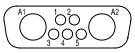
5W1

## SHELL SIZE 2

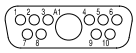


3W3

*2 3WK3

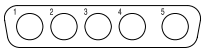


7W2

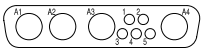


11W1

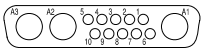
## SHELL SIZE 3



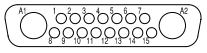
5W5



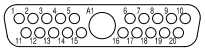
9W4



13W3

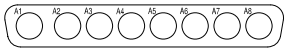


17W2

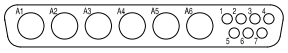


21W1

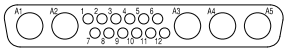
## SHELL SIZE 4



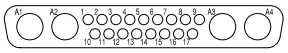
8W8



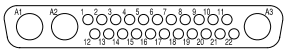
13W6



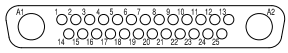
17W5



21WA4

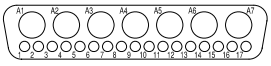


25W3

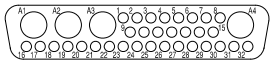


27W2

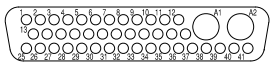
## SHELL SIZE 5



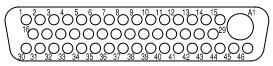
24W7



36W4

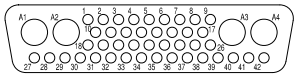


43W2



47W1

## SHELL SIZE 6



46W4

**Notes:**

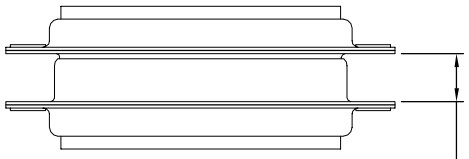
*1 2WK2 connectors have 1 male and 1 female contacts. Female connector should be loaded with female contact in A2 position.

*2 3WK3 male variant contains 2 male contacts and 1 female contact. Female variant contains 2 female contacts and 1 male contact

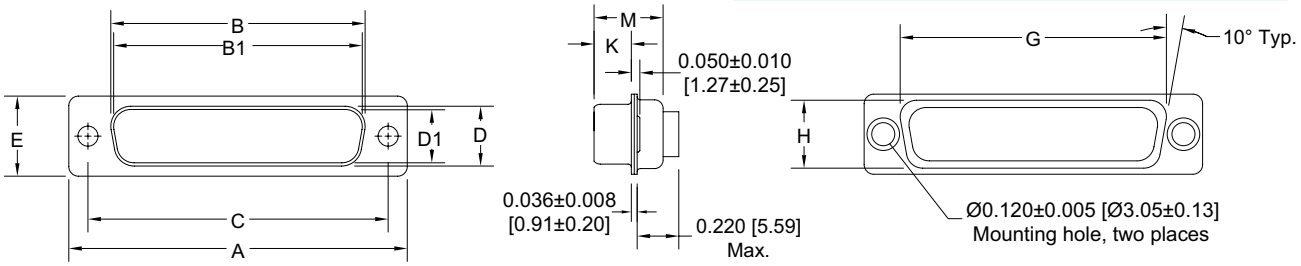
# STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY

SCBM3W3M0000G SCBM5W5M0000G

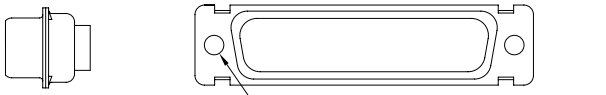
## RECOMMENDED MATING DIMENSIONS



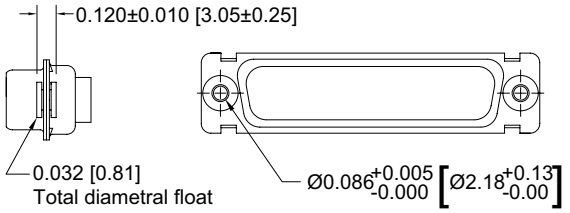
Shell Sizes 1 & 2 = 0.265±0.015 [6.73±0.38]
Shell Sizes 3, 4, 5 & 6 = 0.256±0.015 [6.50±0.38]




## OPTIONAL CONNECTOR HOUSING ASSEMBLY (0, 02)




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



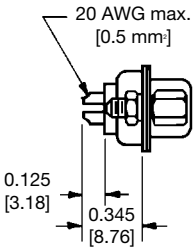

| SHELL SIZE | GENDER | A ±0.015 [0.38] | B ±0.005 [0.13] | B1 ±0.005 [0.13] | C ±0.005 [0.13] | D ±0.005 [0.13] | D1 ±0.005 [0.13] | E ±0.015 [0.38] | G ±0.010 [0.25] | H ±0.010 [0.25] | K ±0.005 [0.13] | M ±0.010 [0.25] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MALE | 1.213 [30.81] | | 0.666 [16.92] | 0.984 [24.99] | | 0.329 [8.36] | 0.494 [12.55] | 0.759 [19.28] | 0.422 [10.72] | 0.233 [5.92] | 0.422 [10.72] |
| | FEMALE | 1.213 [30.81] | 0.643 [16.33] | | 0.984 [24.99] | 0.311 [7.90] | | 0.494 [12.55] | 0.759 [19.28] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| 2 | MALE | 1.541 [39.14] | | 0.994 [25.25] | 1.312 [33.32] | | 0.329 [8.36] | 0.494 [12.55] | 1.083 [27.51] | 0.422 [10.72] | 0.233 [5.92] | 0.422 [10.72] |
| | FEMALE | 1.541 [39.14] | 0.971 [24.66] | | 1.312 [33.32] | 0.311 [7.90] | | 0.494 [12.55] | 1.083 [27.51] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| 3 | MALE | 2.088 [53.04] | | 1.534 [38.96] | 1.852 [47.04] | | 0.329 [8.36] | 0.494 [12.55] | 1.625 [41.28] | 0.422 [10.72] | 0.230 [5.84] | 0.426 [10.82] |
| | FEMALE | 2.088 [53.04] | 1.511 [38.38] | | 1.852 [47.04] | 0.311 [7.90] | | 0.494 [12.55] | 1.625 [41.28] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| 4 | MALE | 2.729 [69.32] | | 2.182 [55.42] | 2.500 [63.50] | | 0.329 [8.36] | 0.494 [12.55] | 2.272 [57.71] | 0.422 [10.72] | 0.230 [5.84] | 0.426 [10.82] |
| | FEMALE | 2.729 [69.32] | 2.159 [54.84] | | 2.500 [63.50] | 0.311 [7.90] | | 0.494 [12.55] | 2.272 [57.71] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| 5 | MALE | 2.635 [66.93] | | 2.079 [52.81] | 2.406 [61.11] | | 0.441 [11.20] | 0.605 [15.37] | 2.178 [55.32] | 0.534 [13.56] | 0.230 [5.84] | 0.426 [10.82] |
| | FEMALE | 2.635 [66.93] | 2.064 [52.43] | | 2.406 [61.11] | 0.423 [10.74] | | 0.605 [15.37] | 2.178 [55.32] | 0.534 [13.56] | 0.243 [6.17] | 0.429 [10.90] |
| 6 | MALE | 2.729 [69.32] | | 2.212 [56.18] | 2.500 [63.50] | | 0.503 [12.78] | 0.668 [16.97] | 2.302 [58.47] | 0.596 [15.14] | 0.230 [5.84] | 0.426 [10.82] |
| | FEMALE | 2.729 [69.32] | 2.189 [55.60] | | 2.500 [63.50] | 0.485 [12.32] | | 0.668 [16.97] | 2.302 [58.47] | 0.596 [15.14] | 0.243 [6.17] | 0.429 [10.90] |

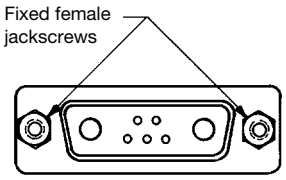




DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

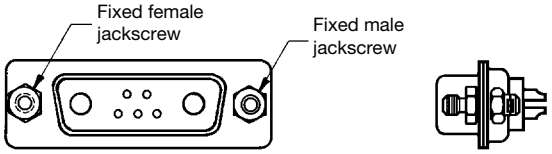
## SOLDER CUP TERMINATION
### CODE 2



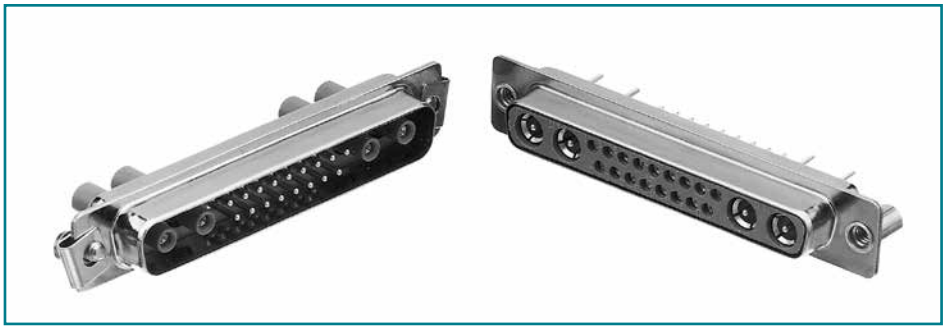

**For solder cup contacts, specify code 2 in step 4 of ordering information.**

**Typical Part Number:**
**SCBM7W2M200T2G**




**Fixed male and female polarized jackscrews available. Specify code T6 in step 7 of ordering information.**

**TYPICAL PART NUMBER: SCBM7W2S200T6G**



**SCBM21WA4M2000G WITH MS4820M**

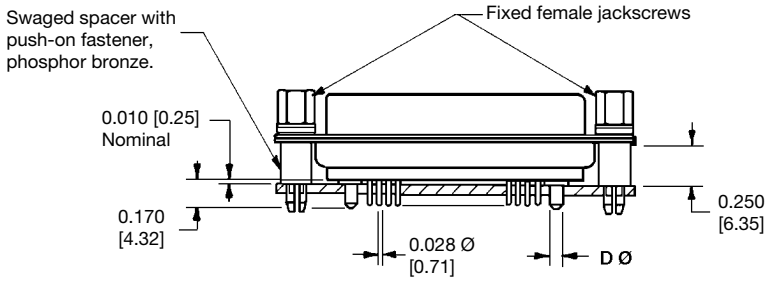
**SCBM21WA4S65S00G**

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

| *1 CODE NUMBER | D Ø |
|---|---|
| 3 | Size 8 contacts not supplied |
| 35 | 0.078 [1.98] |
| 36 | 0.094 [2.39] |
| 37 | 0.125 [3.18] |

**NOTE:**

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




**TYPICAL PART NUMBER:**
**SCBM17W2S35S60T2G**

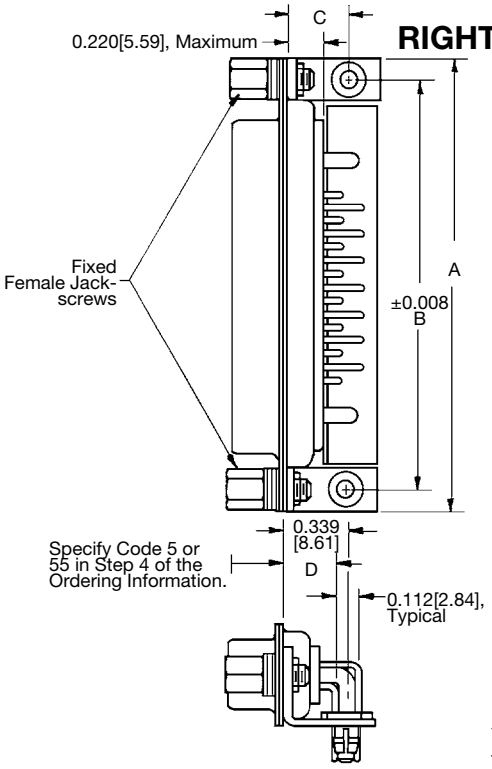
SCBM SERIES

## RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION WITH 0.078 [1.98] Ø POWER CONTACTS

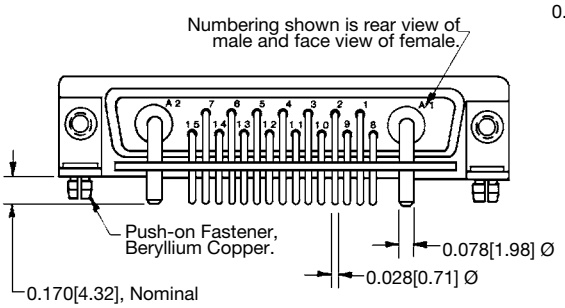
### CODE 5 AND 55, 0.283 [7.19] CONTACT EXTENSION

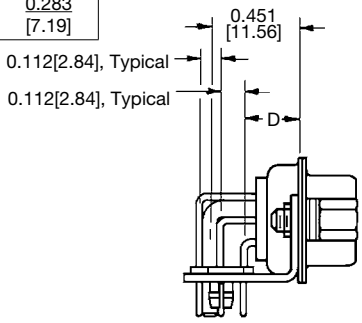
*See temperature rise curves on pages 3 and 4*

| SCBM**(5 or 55)**** 0.283 [7.19] CONTACT EXTENSION | | | | |
|---|---|---|---|---|
| SHELL SIZE | A | B | C | D |
| SHELL SIZE 1 | 1.204 [30.58] | 0.984 [24.99] | 0.339 [8.61] | 0.283 [7.19] |
| SHELL SIZE 2 | 1.532 [38.91] | 1.312 [33.32] | 0.339 [8.61] | 0.283 [7.19] |
| SHELL SIZE 3 | 2.072 [52.63] | 1.852 [47.04] | 0.339 [8.61] | 0.283 [7.19] |
| SHELL SIZE 4 | 2.720 [69.09] | 2.500 [63.50] | 0.339 [8.61] | 0.283 [7.19] |
| SHELL SIZE 5 | 2.626 [66.70] | 2.406 [61.11] | 0.395 [10.03] | 0.283 [7.19] |




TYPICAL PART NUMBER:
SCBM17W2M55R7NT2G




TYPICAL PART NUMBER:
SCBM36W4S55R7NT2G

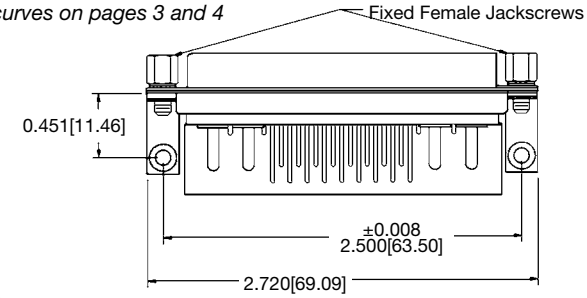
## SHELL SIZE 6

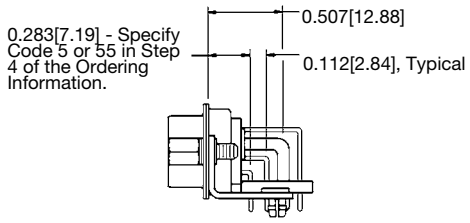
## RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION WITH 0.078 [1.98] Ø POWER CONTACTS

### CODE 5 AND 55, 0.283 [7.19] CONTACT EXTENSION

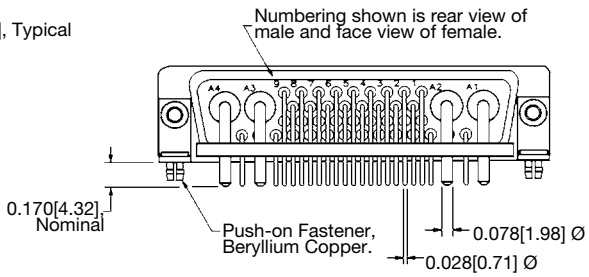
**CONNECTOR VARIANT 46W4**

*See temperature rise curves on pages 3 and 4*




TYPICAL PART NUMBER:
SCBM46W4M55R7NT2G



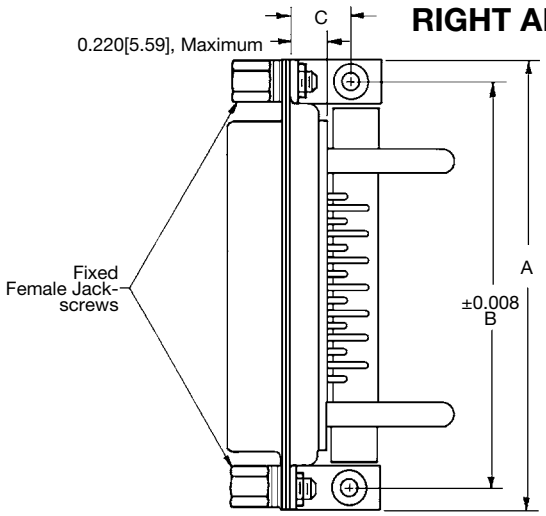



DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

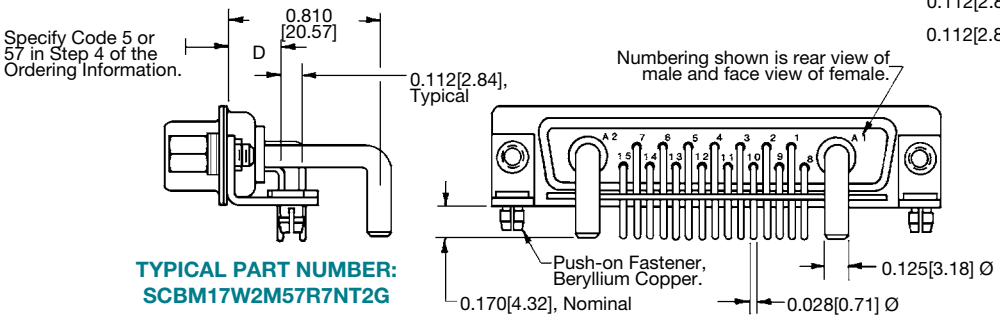
## RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION WITH 0.125 [3.18] Ø POWER CONTACTS

### CODE 5 AND 57, 0.283 [7.19] CONTACT EXTENSION

*See temperature rise curves on pages 3 and 4*




| SCBM**(5 or 57)**** 0.283 [7.19] CONTACT EXTENSION | | | | |
|---|---|---|---|---|
| SHELL SIZE | A | B | C | D |
| SHELL SIZE 1 | 1.204 [30.58] | 0.984 [24.99] | 0.339 [8.61] | 0.283 [7.19] |
| SHELL SIZE 2 | 1.532 [38.91] | 1.312 [33.32] | 0.339 [8.61] | 0.283 [7.19] |
| SHELL SIZE 3 | 2.072 [52.63] | 1.852 [47.04] | 0.339 [8.61] | 0.283 [7.19] |
| SHELL SIZE 4 | 2.720 [69.09] | 2.500 [63.50] | 0.339 [8.61] | 0.283 [7.19] |
| SHELL SIZE 5 | 2.626 [66.70] | 2.406 [61.11] | 0.395 [10.03] | 0.283 [7.19] |




**TYPICAL PART NUMBER:**
**SCBM17W2M57R7NT2G**

**Typical Part Number:**
**SCBM36W4S57R7NT2G**

## SHELL SIZE 6

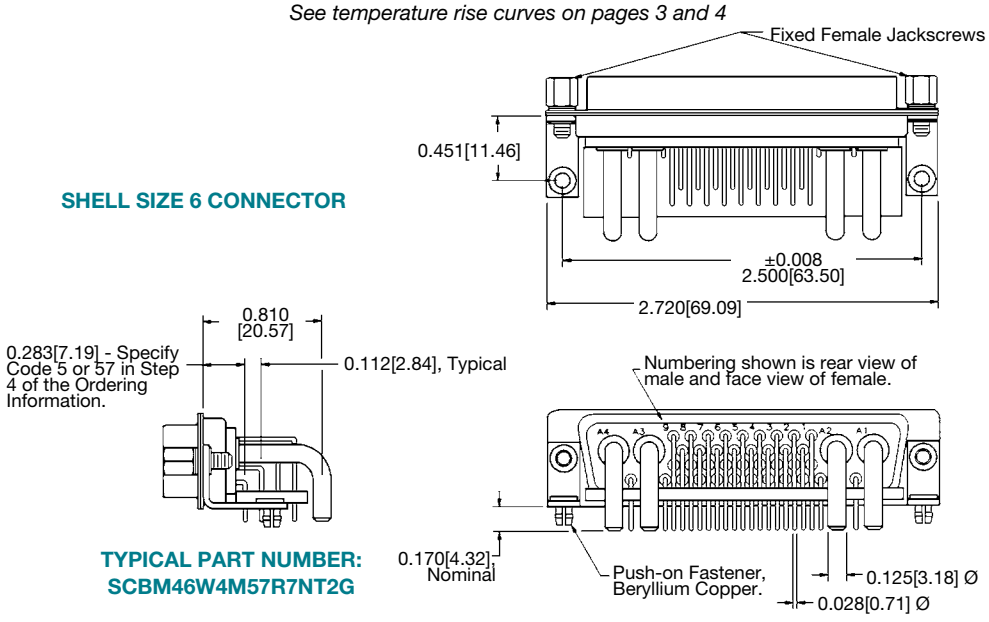
## RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION WITH 0.125 [3.18] Ø POWER CONTACTS

### CODE 5 AND 57, 0.283 [7.19] CONTACT EXTENSION

**CONNECTOR VARIANT 46W4**

*See temperature rise curves on pages 3 and 4*

**SHELL SIZE 6 CONNECTOR**

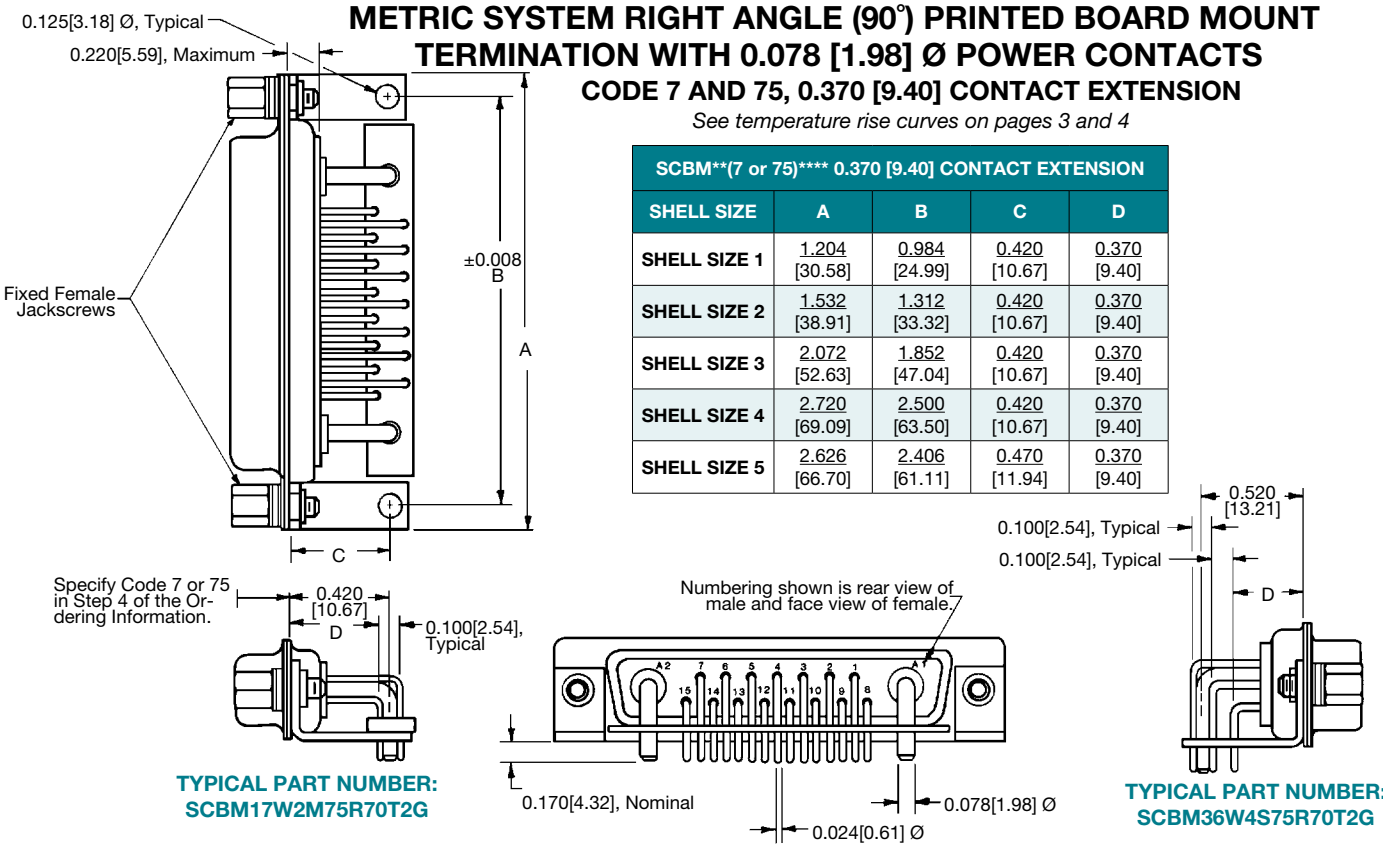



**TYPICAL PART NUMBER:**
**SCBM46W4M57R7NT2G**

## 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*



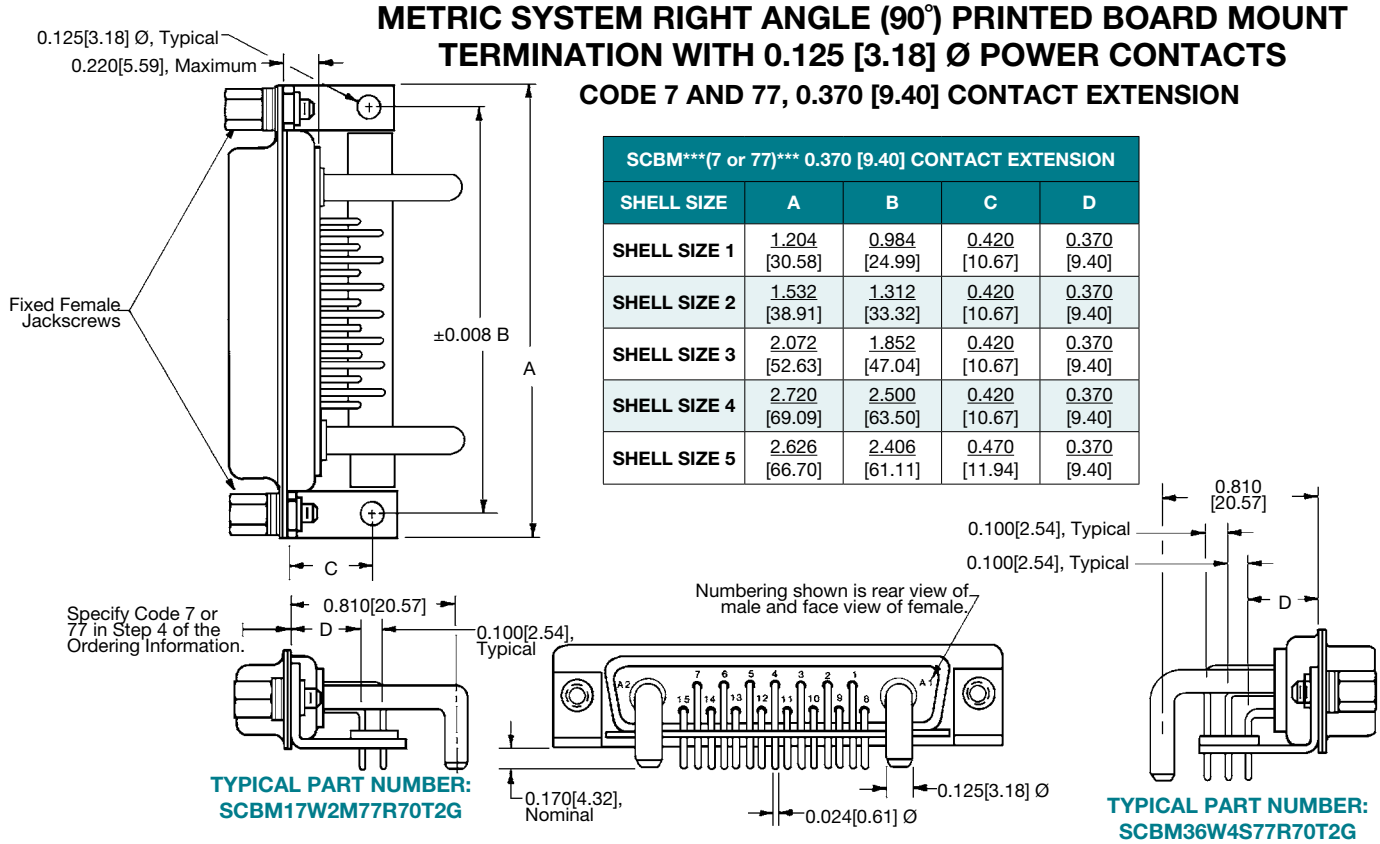

| SCBM**(7 or 75)**** 0.370 [9.40] CONTACT EXTENSION | | | | |
|---|---|---|---|---|
| SHELL SIZE | A | B | C | D |
| SHELL SIZE 1 | 1.204 [30.58] | 0.984 [24.99] | 0.420 [10.67] | 0.370 [9.40] |
| SHELL SIZE 2 | 1.532 [38.91] | 1.312 [33.32] | 0.420 [10.67] | 0.370 [9.40] |
| SHELL SIZE 3 | 2.072 [52.63] | 1.852 [47.04] | 0.420 [10.67] | 0.370 [9.40] |
| SHELL SIZE 4 | 2.720 [69.09] | 2.500 [63.50] | 0.420 [10.67] | 0.370 [9.40] |
| SHELL SIZE 5 | 2.626 [66.70] | 2.406 [61.11] | 0.470 [11.94] | 0.370 [9.40] |

**TYPICAL PART NUMBER:**
**SCBM17W2M75R70T2G**

**TYPICAL PART NUMBER:**
**SCBM36W4S75R70T2G**

## 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




| SCBM***(7 or 77)*** 0.370 [9.40] CONTACT EXTENSION | | | | |
|---|---|---|---|---|
| SHELL SIZE | A | B | C | D |
| SHELL SIZE 1 | 1.204 [30.58] | 0.984 [24.99] | 0.420 [10.67] | 0.370 [9.40] |
| SHELL SIZE 2 | 1.532 [38.91] | 1.312 [33.32] | 0.420 [10.67] | 0.370 [9.40] |
| SHELL SIZE 3 | 2.072 [52.63] | 1.852 [47.04] | 0.420 [10.67] | 0.370 [9.40] |
| SHELL SIZE 4 | 2.720 [69.09] | 2.500 [63.50] | 0.420 [10.67] | 0.370 [9.40] |
| SHELL SIZE 5 | 2.626 [66.70] | 2.406 [61.11] | 0.470 [11.94] | 0.370 [9.40] |

**TYPICAL PART NUMBER:**
**SCBM17W2M77R70T2G**

**TYPICAL PART NUMBER:**
**SCBM36W4S77R70T2G**



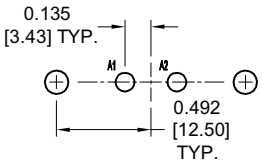


DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

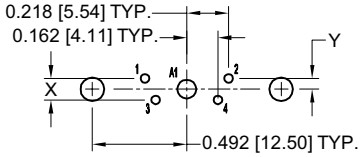
# PRINTED BOARD CONTACT HOLE PATTERNS

## 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

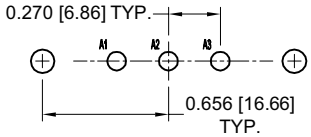
HOLE IDENTIFICATION SHOWN FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.
MOUNT CONNECTOR WITH MATING FACE POSITIONED TO FOLLOW DIRECTION OF ARROWS.



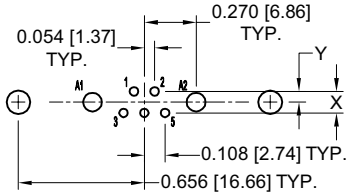

2WK2



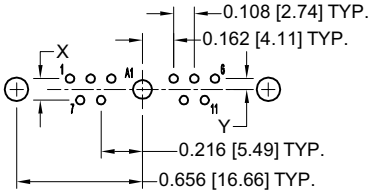

5W1



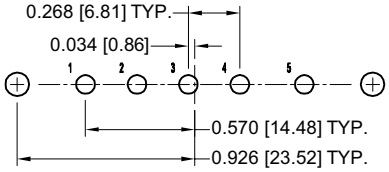

3W3/WK3



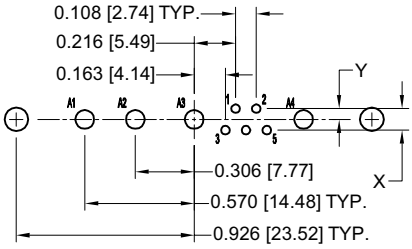

7W2



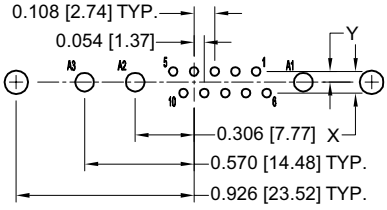

11W1



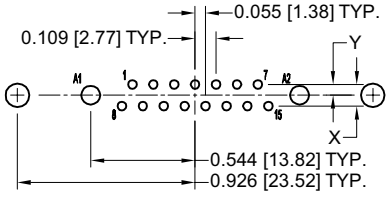

5W5



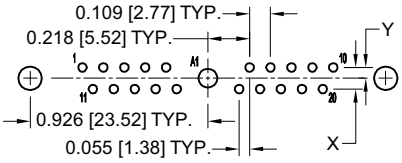

9W4



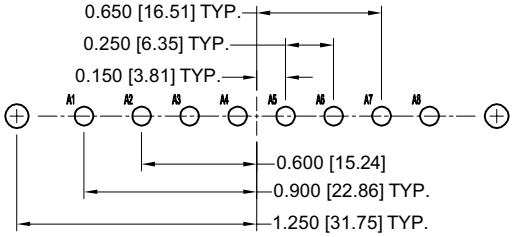

13W3



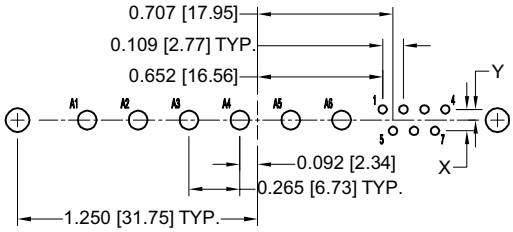

17W2



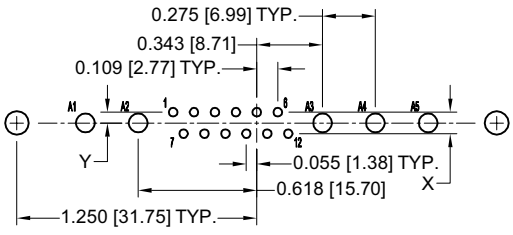

21W1



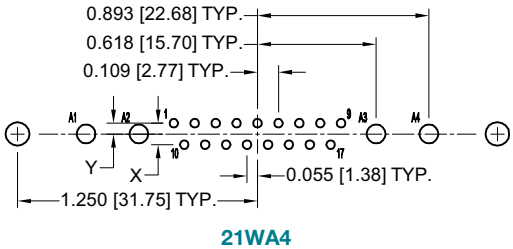

8W8




13W6




17W5




21WA4

## 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 31.

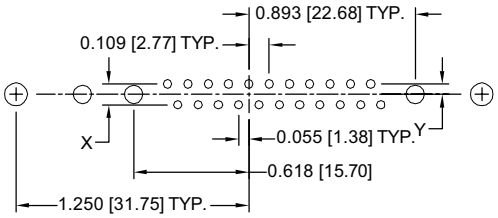
*continued on next page. . . .*

# PRINTED BOARD CONTACT HOLE PATTERNS

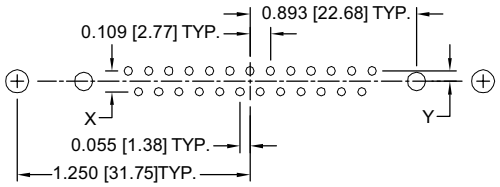
## RIGHT ANGLE (90°) WITH 0.078 [1.98] Ø POWER CONTACTS AND STRAIGHT SOLDER PRINTED BOARD MOUNT WITH 0.078 [1.98] Ø, 0.094 [2.39] Ø AND 0.125 [3.18] Ø POWER CONTACTS

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

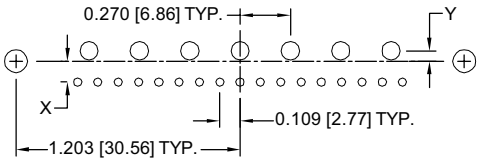
*continued from previous page. . . .*



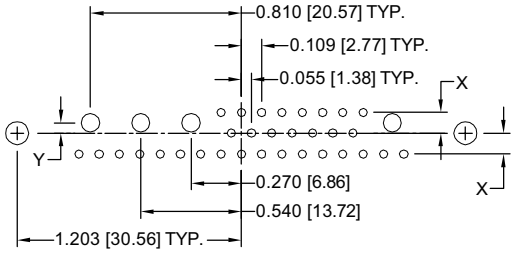

25W3



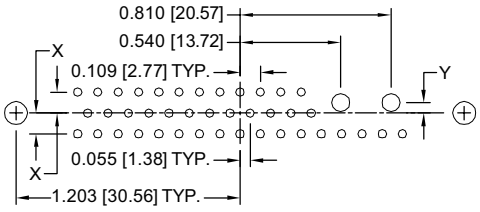

27W2



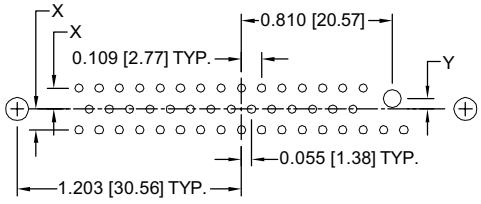

24W7



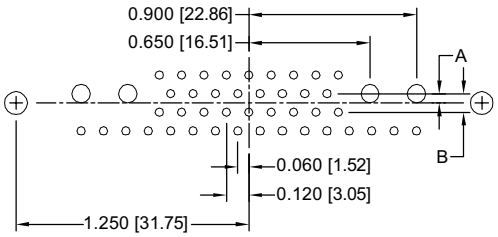

36W4




43W2




47W1




46W4

| CODE NUMBER | X | Y | A | B |
|---|---|---|---|---|
| 3 | 0.112 [2.84] | 0.056 [1.42] | 0.050 [1.27] | 0.100 [2.54] |
| 35 | | | | |
| NEW! 36 | | | | |
| 37 | | | | |
| 5 | 0.112 [2.84] | 0.056 [1.42] | 0.056 [1.42] | 0.112 [2.84] |
| 55 | | | | |
| 7 | 0.100 [2.54] | 0.050 [1.27] | 0.050 [1.27] | 0.100 [2.54] |
| 75 | | | | |

## 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.

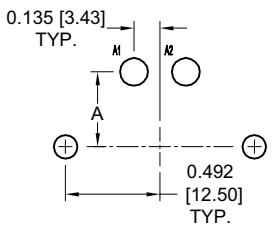




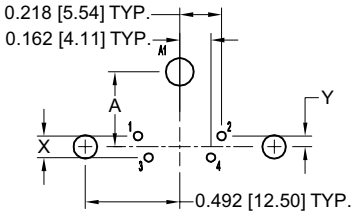
DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

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

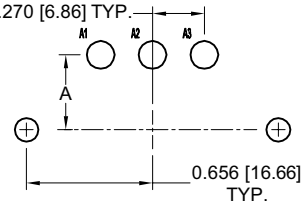
HOLE IDENTIFICATION SHOWN FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.
MOUNT CONNECTOR WITH MATING FACE POSITIONED TO FOLLOW DIRECTION OF ARROWS.



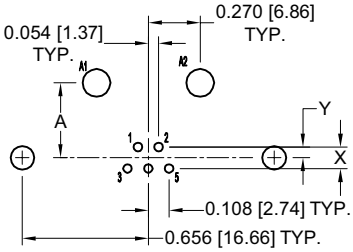

2WK2



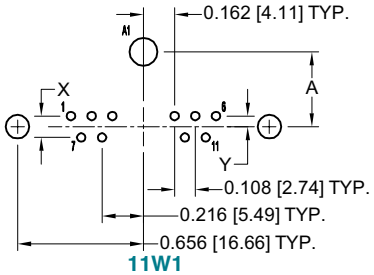

5W1



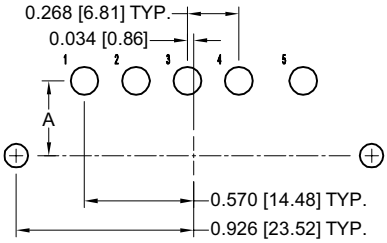

3W3/3WK3



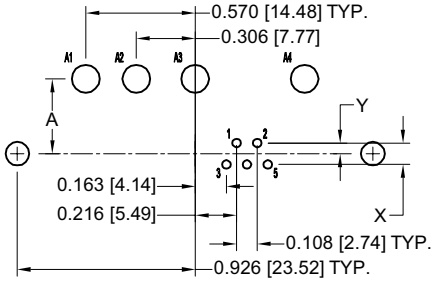

7W2



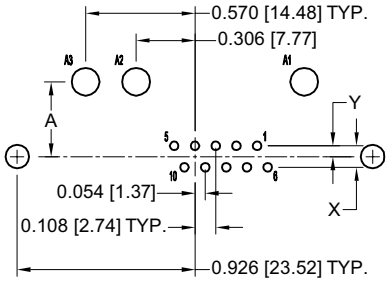

11W1



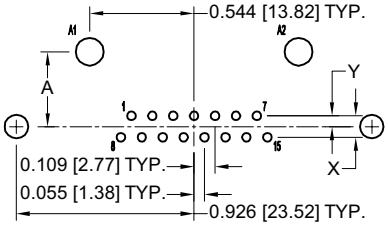

5W5



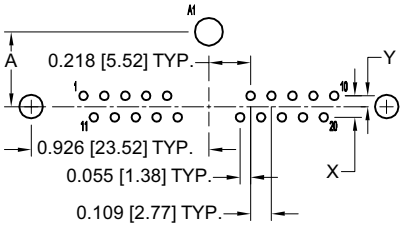

9W4



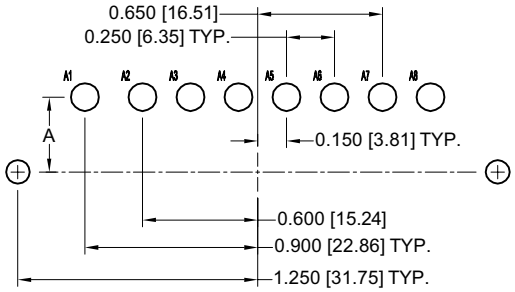

13W3



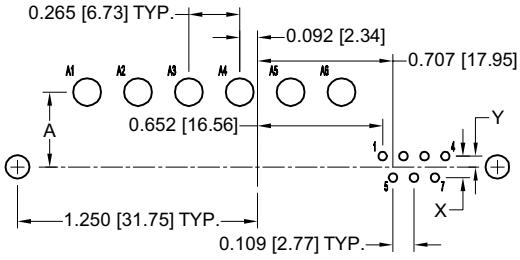

17W2




21W1

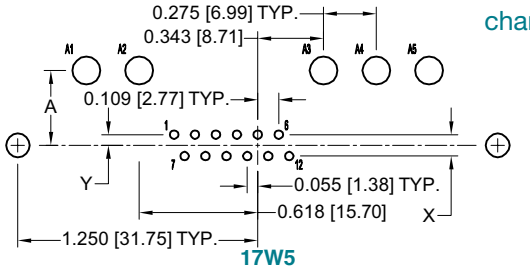



8W8

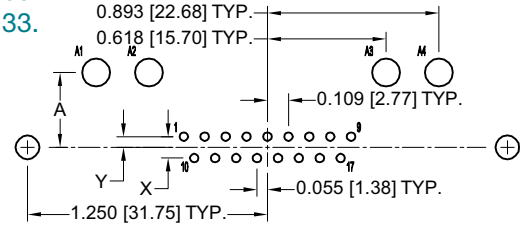



13W6

For “A”, “B”, “X” and “Y” dimensions, see chart on page 33.




17W5




21WA4

## SUGGESTED PRINTED BOARD HOLE SIZES:

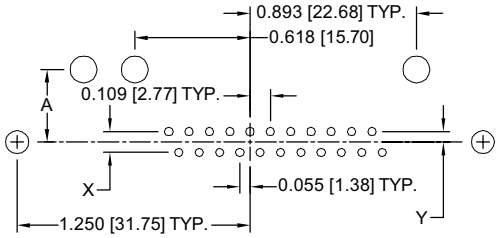
Suggest 0.045 [1.14] Ø hole for size 20 contact termination positions.
Suggest 0.145 [3.68] Ø hole for power contact termination positions.
Suggest 0.123±0.003 [3.12] Ø hole for mounting connector with push-on fasteners.

*continued on next page. . . .*

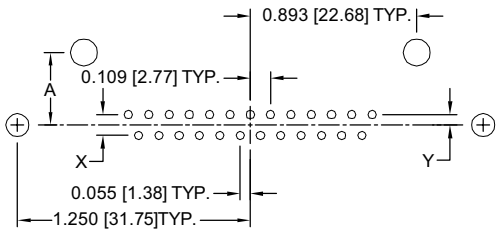
# PRINTED BOARD CONTACT HOLE PATTERN
# RIGHT ANGLE (90°) WITH 0.125 [3.18] Ø POWER CONTACTS

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

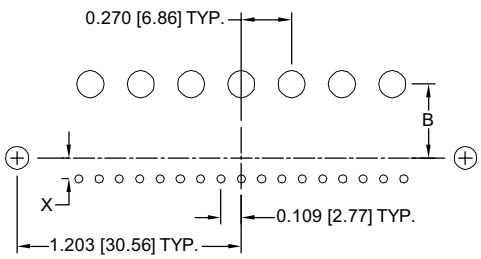
*continued from previous page. . . .*



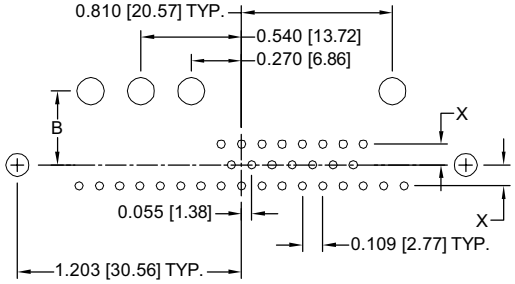

25W3



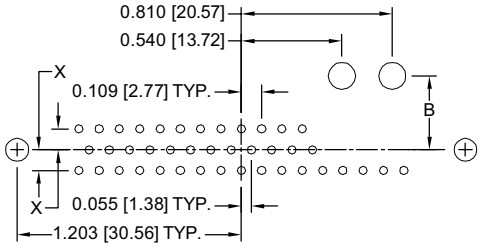

27W2



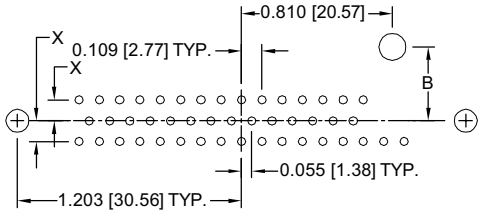

24W7



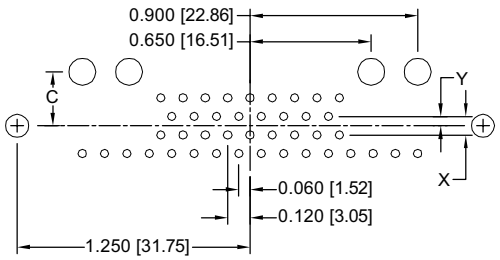

36W4




43W2




47W1




46W4

| CODE NUMBER | A | B | C | X | Y |
|---|---|---|---|---|---|
| 5 | 0.471 [11.96] | 0.415 [10.54] | 0.359 [9.12] | 0.112 [2.84] | 0.056 [1.42] |
| 57 | | | | | |
| 7 | 0.390 [9.91] | 0.340 [8.64] | 0.290 [7.37] | 0.100 [2.54] | 0.056 [1.42] |
| 77 | | | | | |

## SUGGESTED PRINTED BOARD HOLE SIZES:

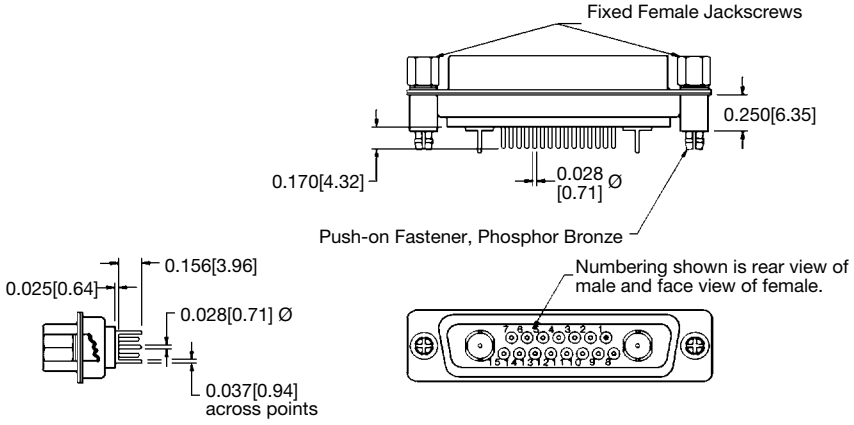
Suggest 0.045 [1.14] Ø hole for size 20 contact termination positions.
Suggest 0.145 [3.68] Ø hole for power contact termination positions.
Suggest 0.123±0.003 [3.12] Ø hole for mounting connector with push-on fasteners.



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

## STRAIGHT SOLDER PRINTED BOARD MOUNT TERMINATION WITH SHIELDED CONTACTS

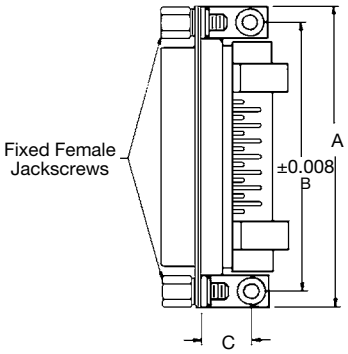
### CODE 65, CONNECTOR WITH FDS4201M OR MDS4201M CONTACTS




**TYPICAL PART NUMBER:**
**SCBM17W2M65S60T2G**

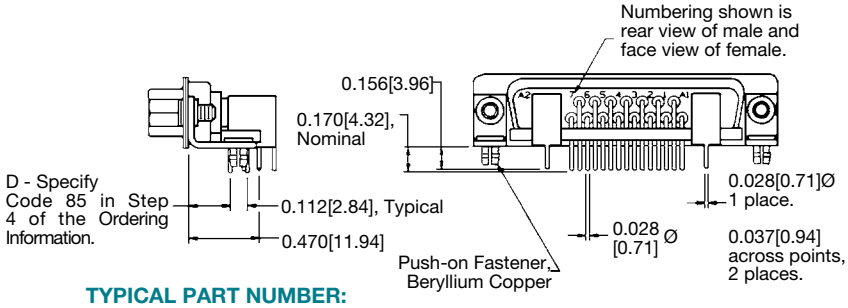
## RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION WITH SHIELDED CONTACTS

### CODE 85, CONNECTOR WITH FRT4201M OR MRT4201M CONTACTS

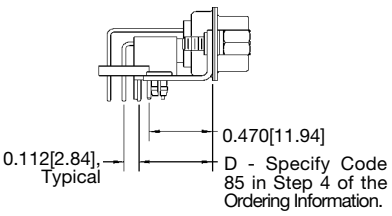



| SCBM**85**** 0.283 [7.19] CONTACT EXTENSION | | | | |
|---|---|---|---|---|
| SHELL SIZE | A | B | C | D |
| SHELL SIZE 1 | 1.204 [30.58] | 0.984 [24.99] | 0.339 [8.61] | 0.283 [7.19] |
| SHELL SIZE 2 | 1.532 [38.91] | 1.312 [33.32] | 0.339 [8.61] | 0.283 [7.19] |
| SHELL SIZE 3 | 2.072 [52.63] | 1.852 [47.04] | 0.339 [8.61] | 0.283 [7.19] |
| SHELL SIZE 4 | 2.720 [69.09] | 2.500 [63.50] | 0.339 [8.61] | 0.283 [7.19] |
| *1 SHELL SIZE 5 | 2.626 [66.70] | 2.406 [61.11] | 0.395 [10.03] | 0.545 [13.84] |

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




**TYPICAL PART NUMBER:**
**SCBM17W2M85R7NT2G**

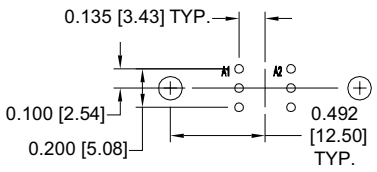



**TYPICAL PART NUMBER:**
**SCBM36W4M85R7NT2G**

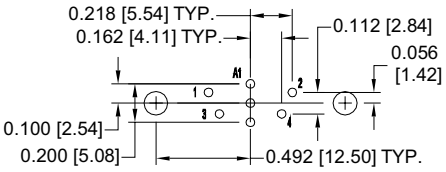
SCBM SERIES

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

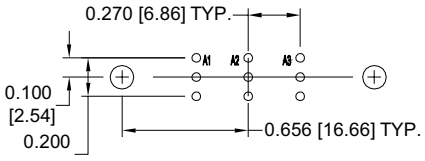
HOLE IDENTIFICATION SHOWN FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.



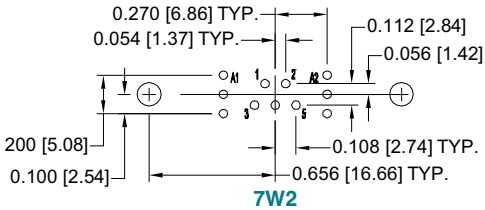

2WK2



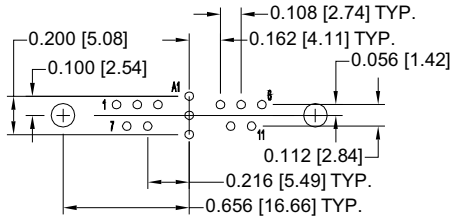

5W1



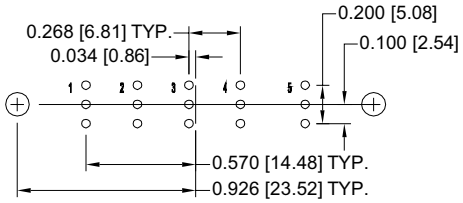

3W3/3WK3



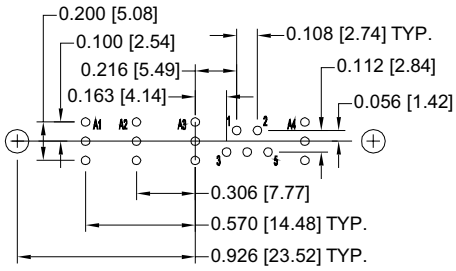

7W2



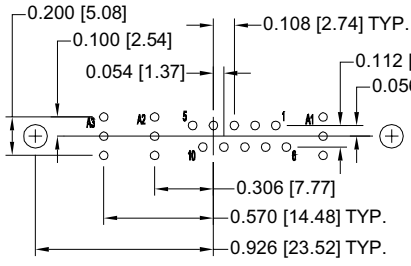

11W1



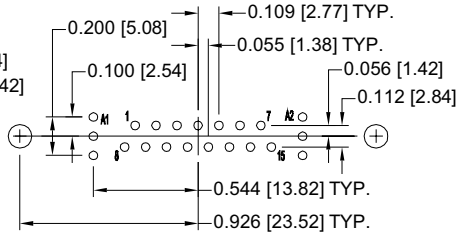

5W5



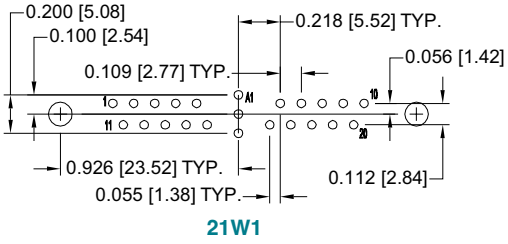

9W4



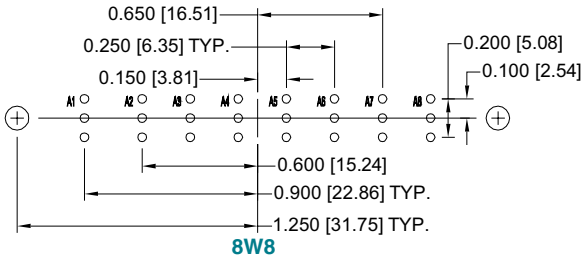

13W3



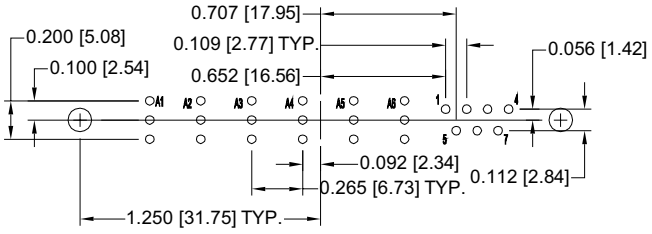

17W2



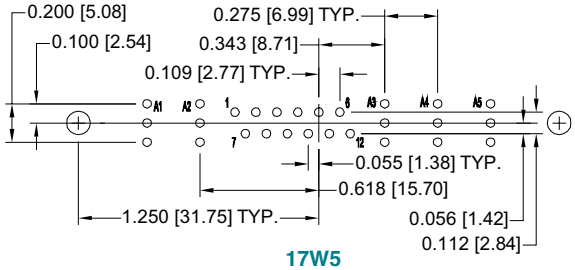

21W1




8W8




13W6




17W5

*continued on next page. . . .*

## 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.



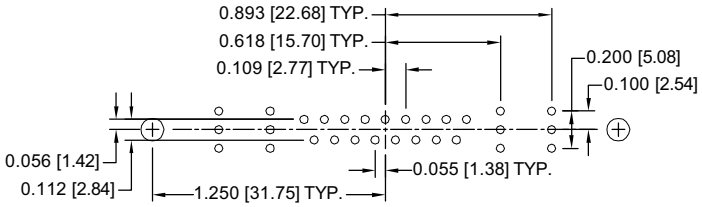
DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

# STRAIGHT SOLDER PRINTED BOARD MOUNT CONTACT HOLE PATTERN

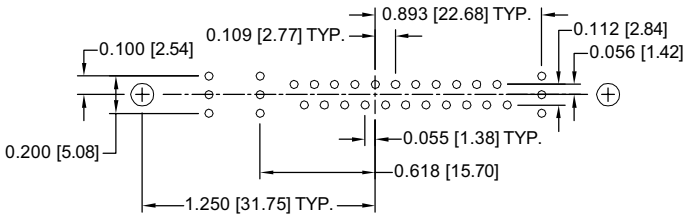
## WITH FDS4201M AND MDS4201M SHIELDED CONTACTS

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

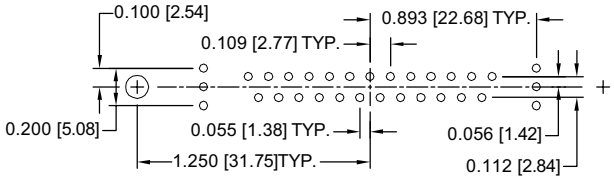
*continued from previous page. . . .*



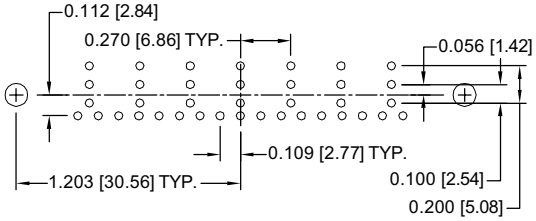

**21WA4**



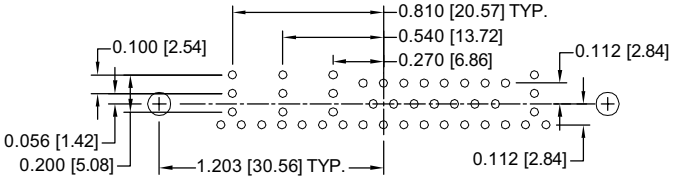

**25W3**



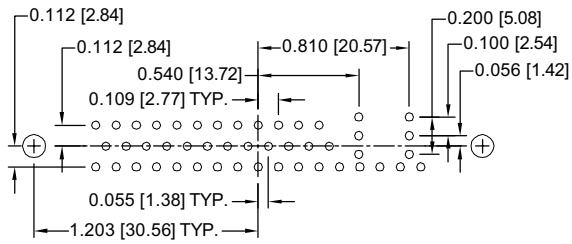

**27W2**



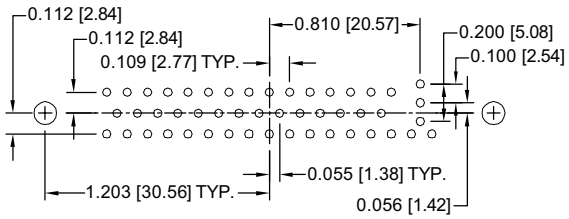

**24W7**



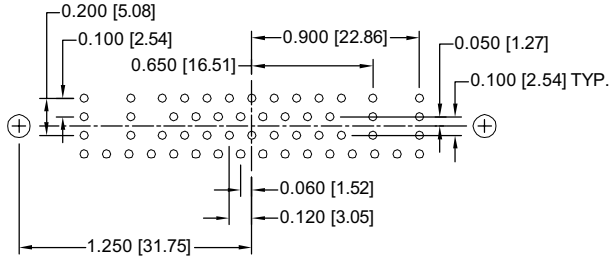

**36W4**




**43W2**




**47W1**



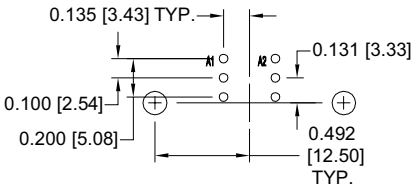

**46W4**

## SUGGESTED PRINTED BOARD HOLE SIZES:

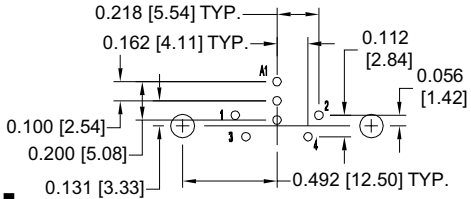
Suggest 0.045 [1.14] Ø hole for size 20 contact termination position.
Suggest 0.123±0.003 [3.12] Ø hole for mounting connector with push-on fasteners.

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

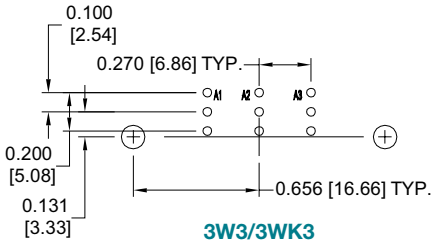
HOLE IDENTIFICATION SHOWN IS FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.
MOUNT CONNECTOR WITH MATING FACE POSITIONED TO FOLLOW DIRECTION OF ARROW.



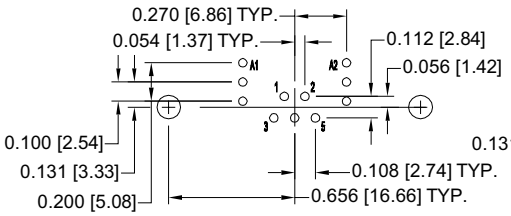

2WK2



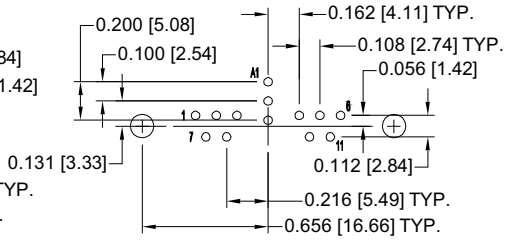

5W1



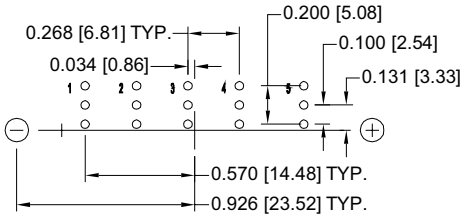

3W3/3WK3



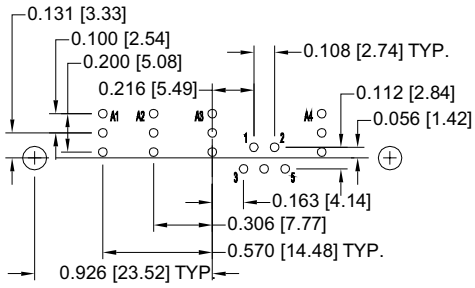

7W2



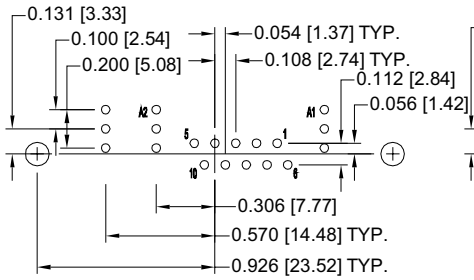

11W1



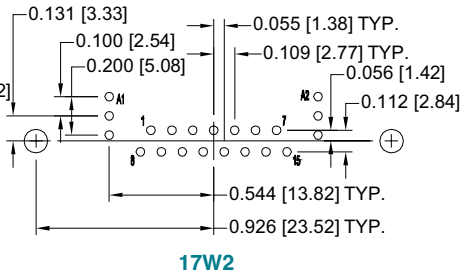

5W5



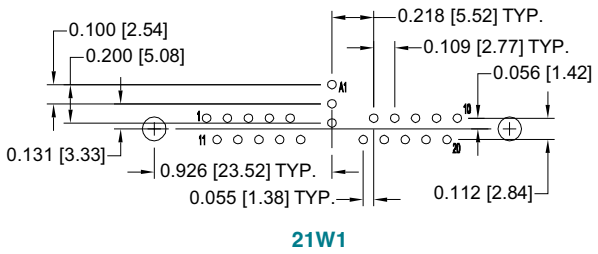

9W4



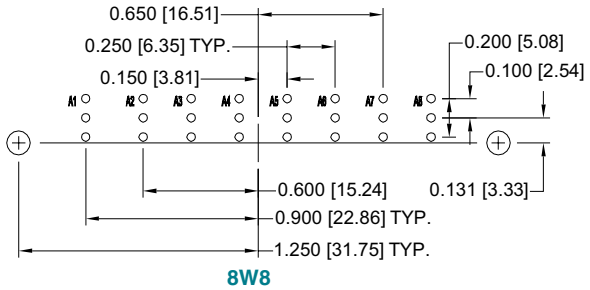

13W3



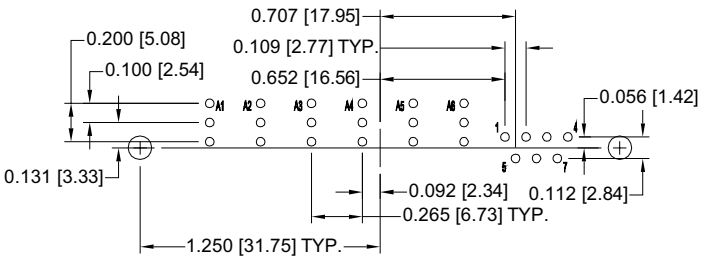

17W2



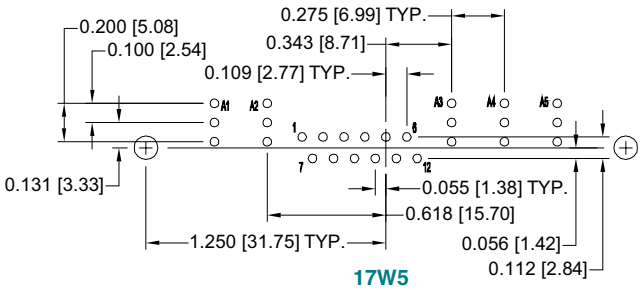

21W1




8W8




13W6




17W5

*continued on next page. . . .*

## 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.

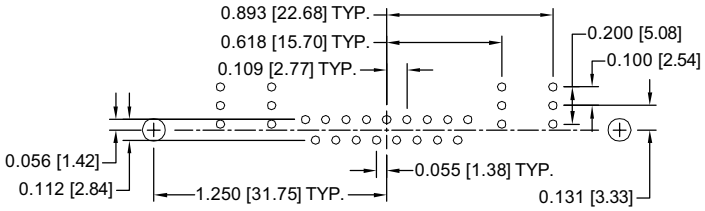


DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

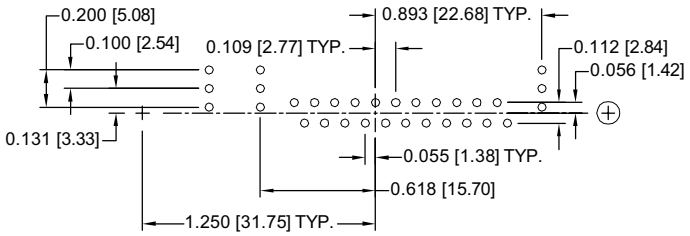
# RIGHT ANGLE (90°) PRINTED BOARD MOUNT CONTACT HOLE PATTERN
## WITH FRT4201M AND MRT4201M SHIELDED CONTACTS

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

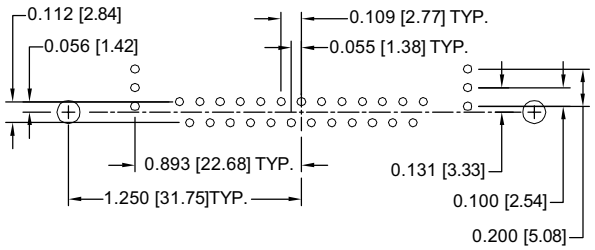
*continued from previous page. . . .*



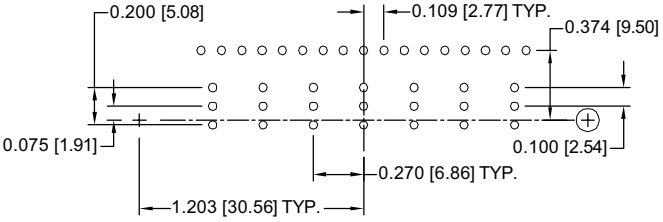

**21WA4**



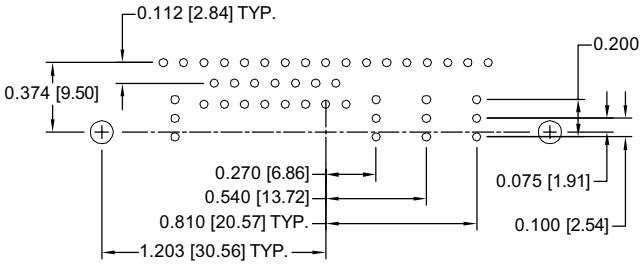

**25W3**



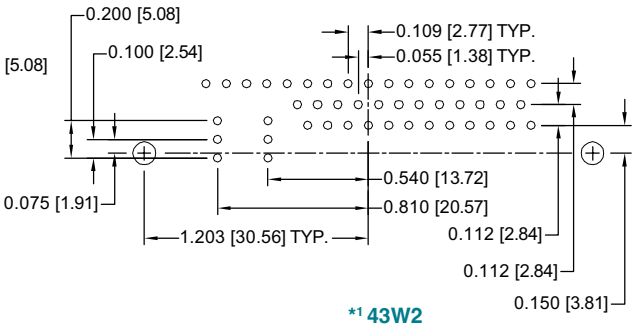

**27W2**



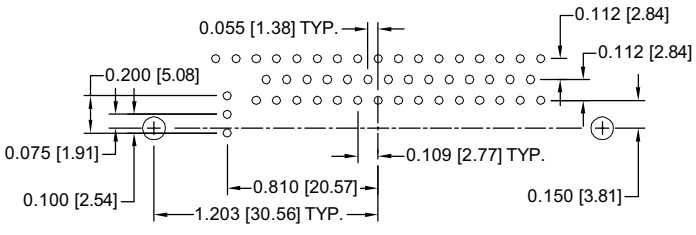

***1 24W7**




***1 36W4**




***1 43W2**




***1 47W1**

**NOTE:**

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

## 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.

# REMOVABLE CONTACT ORDERING ASSISTANCE CHART

## SCBM SERIES
### CRIMP AND SOLDER CUP TERMINATION CONTACTS

| TYPE | PAGE NUMBER REFERENCE IN CATALOG | CONTACT SIZE | FEMALE PART NUMBER | MALE PART NUMBER | WIRE SIZE AWG [mm²] |
|---|---|---|---|---|---|
| CRIMP | see page 83 for additional information | 8 | **FC4008M** | **MC4008M** | 8 [10.0] |
| | | | **FC4010M** | **MC4010M** | 10 [5.3] |
| | | | **FC4012M** | **MC4012M** | 12 [4.0] |
| | | | **FC4016M** | **MC4016M** | 16 [1.5] |
| SOLDER CUP | see page 84 for additional information | 8 | **FS4008M** | **MS4008M** | 8 [10.0] |
| | | | **FS4012M** | **MS4012M** | 12 [4.0] |
| | | | **FS4016M** | **MS4016M** | 16 [1.5] |
| HIGH VOLTAGE *Straight Solder Wire* | see page 85 for additional information | 8 | **FS4820M** | **MS4820M** | 20 [0.5] |
| HIGH VOLTAGE *Right Angle (90°) Solder Wire* | | | **FS4920M** | **MS4920M** | 20 [0.5] |
| SHIELDED | see page 86 for additional information | SOLDER / CRIMP | **FC4101M** | **MC4101M** | RG 178 B/U, 196 B/U |
| | | | **FC4102M** | **MC4102M** | RG 179 BU/, 316 B/U |
| | | | **FC4103M** | **MC4103M** | RG 180 B/U |
| | | | **FC4104M** | **MC4104M** | RG 58 B/U |
| | | SOLDER / SOLDER | **FS4101M** | **MS4101M** | RG 178 B/U, 196 B/U |
| | | | **FS4102M** | **MS4102M** | RG 179 B/U, 316 B/U |
| | | | **FS4103M** | **MS4103M** | RG 180 B/U |
| | | | **FS4104M** | **MS4104M** | RG 58 B/U |
| | | CRIMP / CRIMP | **FCC4101M** | **MCC4101M** | RG 178 B/U, 196 B/U |
| | | | **FCC4102M** | **MCC4102M** | RG 179 BU/, 316 B/U |
| | | | **FCC4103M** | **MCC4103M** | RG 180 B/U |
| | | | **FCC4104M** | **MCC4104M** | RG 58 B/U |

**NOTE:** For ordering crimp contacts on reels, add "R" to part number, see page 79 for details. Examples: FC4008MR or MC4008MR

## SCBM SERIES
### PRINTED BOARD MOUNT TERMINATION CONTACTS

| TERMINATION TYPE | PAGE NUMBER REFERENCE IN CATALOG | CONTACT SIZE | FEMALE PART NUMBER | MALE PART NUMBER | TERMINATION LENGTH | TERMINATION DIMENSION |
|---|---|---|---|---|---|---|
| STRAIGHT SOLDER PRINTED BOARD MOUNT | see page 84 for additional information | 8 | **FDS4314M** | **MDS4314M** | 0.170 [4.32] | 0.078 [1.98] Ø |
| | | | **FDS4312M** | **MDS4312M** | | 0.094 [2.39] Ø |
| | | | **FDS4310M** | **MDS4310M** | | 0125 [3.18] Ø |
| | see page 87 for additional information | SHIELDED | **FDS4201M** | **MDS4201M** | 0.156 [3.96] | SHIELDED |
| RIGHT ANGLE (90°) PRINTED BOARD MOUNT | see page 85 for additional information | 8 | **FRT4314M** | **MRT4314M** | 0.339 [8.61] | 0.078 [1.98] Ø |
| | | | **FRT4414M** | **MRT4414M** | 0.451 [11.56] | 0.078 [1.98] Ø |
| | | | **FRT4714M** | **MRT4714M** | 0.420 [10.67] | 0.078 [1.98] Ø |
| | | | **FRT4814M** | **MRT4814M** | 0.520 [13.21] | 0.078 [1.98] Ø |
| | | | **FRT4310M** | **MRT4310M** | 0.810 [20.57] | 0125 [3.18] Ø |
| | | | **FRT4410M** | **MRT4410M** | 0.810 [20.57] | 0125 [3.18] Ø |
| | see page 87 for additional information | SHIELDED | **FRT4201M** | **MRT4201M** | 0.162 [6.10] | SHIELDED |

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

For information regarding **REMOVABLE CONTACTS,** see contact illustration drawings and charts on pages 79-87.

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.





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

| STEP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| EXAMPLE | SCBM | 17W2 | S | 55 | R7 | N | T2 | G | — | |

## STEP 1 - BASIC SERIES

**SCBM series**

## STEP 2 - CONNECTOR VARIANTS

**Shell Size 1** - 2WK2, 5W1
**Shell Size 2** - 3W3, 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

## STEP 3 - CONNECTOR GENDER

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

## STEP 4 - CONTACT TERMINATION TYPE

*1 0 - Connector ordered without size 8 power shielded or high voltage removable contacts, *see contact chart on page 39 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.
57 - 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.
*2 85 - Solder, right angle (90˚) printed board mount with signal and shielded contacts, MRT/FRT 4201M footprint, 0.283 [7.19] signal contact extension.

## *3 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.
*6 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.
*5 R - Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 thread fixed female jackscrews.
*4 R2 - Bracket, mounting, right angle (90˚) metal, swaged to connector with 4-40 thread fixed female jackscrews with cross bar.
*5 R3 - Bracket, mounting, right angle (90°) metal, swaged to connector with 0.120 [3.05] Ø mounting hole.
*5 R4 - Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 threads.
*5 R5 - Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 locknut.
*4 R6 - Bracket, mounting, right angle (90˚) metal, swaged to connector with 0.120 [3.05] Ø mounting hole with cross bar.
*4 R7 - Bracket, mounting, right angle (90˚) metal, swaged to connector with 4-40 threads with cross bar.
*4 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.

## *3 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 93 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).*

## STEP 9 - SPECIAL OPTIONS

***SEE APPENDIX ON PAGE 97.***

**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 88-96.
*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 98.

# SCBC SERIES
## MILITARY / SPACE FLIGHT QUALITY
## STANDARD DENSITY REMOVABLE CONTACTS

High Performance D-sub

- 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 100 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:

**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.

**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 79.*

**High Voltage:** *For material and finishes, see page 79.*

**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. . . .*


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

# TECHNICAL CHARACTERISTICS, *continued*

*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 81-83.*

**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 83-87.*

**Shielded:** *For mechanical characteristics, see page 79.*

**High Voltage:** *For mechanical characteristics, see page 79.*

**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 82 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 86 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 23.*

**SHIELDED CONTACTS**
*For electrical characteristics, see page 79.*

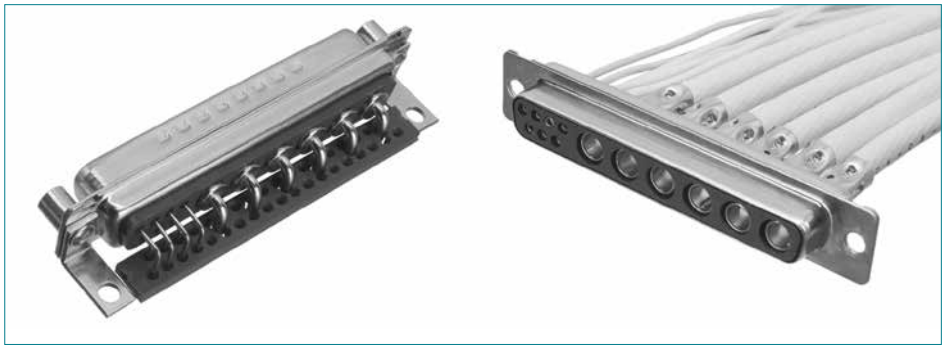
**HIGH VOLTAGE CONTACTS**
*For electrical characteristics, see page 79.*

**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.



**SCBM13W6M55R200D**
(shown left)

**SCBC13W6S1000G WITH FC4008M CONTACTS**
(shown right)

## *1 CONTACT VARIANTS

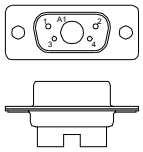
FACE VIEW OF MALE OR REAR VIEW OF FEMALE

**NOTES:**

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

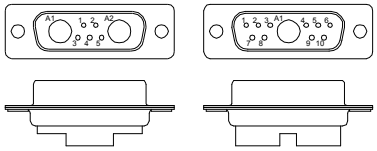
*2 13W6 and 27W2 variant currently available in female only. Contact Technical Sales for availability of male connector.

### SHELL SIZE 1



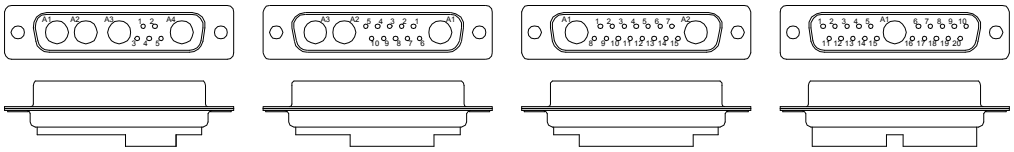
5W1

### SHELL SIZE 2



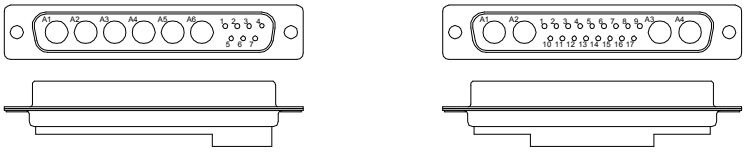
7W2 11W1

### SHELL SIZE 3

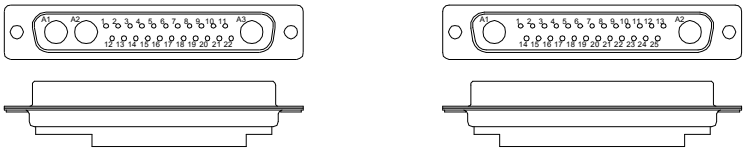


9W4 13W3 17W2 21W1

### SHELL SIZE 4

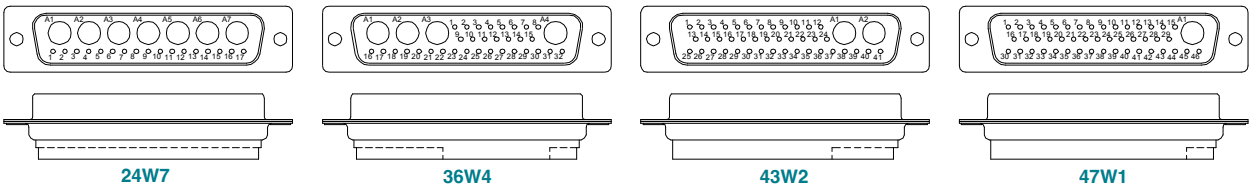


*2 13W6 21WA4



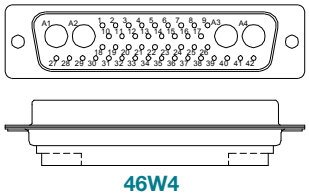
25W3 *2 27W2

### SHELL SIZE 5



24W7 36W4 43W2 47W1

### SHELL SIZE 6



46W4

SCBC SERIES

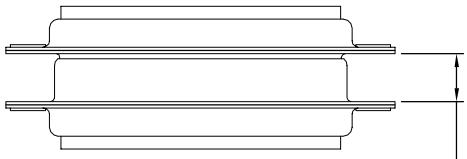


DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

## STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY

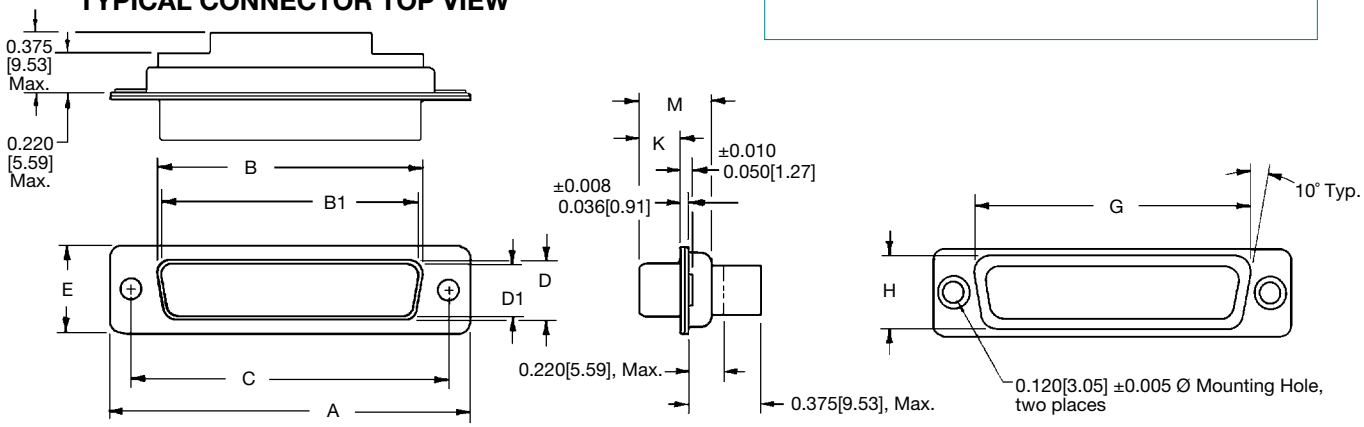
SCBC7W2S0000G SCBC17W2M0000G

### RECOMMENDED MATING DIMENSIONS

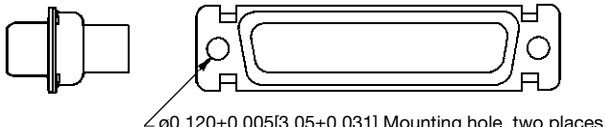


Shell Sizes 1 & 2 = 0.265±0.015 [6.73±0.38]
Shell Sizes 3, 4, 5 & 6 = 0.256±0.015 [6.50±0.38]

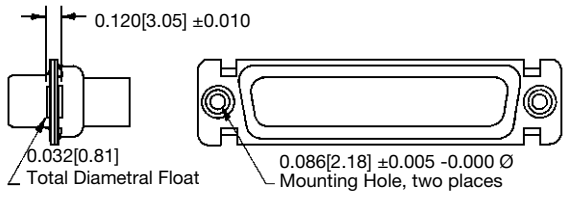
### TYPICAL CONNECTOR TOP VIEW




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




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




| SHELL SIZE | GENDER | A ±0.015 [0.38] | B ±0.005 [0.13] | 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] | G ±0.010 [0.25] | H ±0.010 [0.25] | K ±0.005 [0.13] | M ±0.010 [0.25] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MALE | 1.213 [30.81] | | 0.666 [16.92] | 0.984 [24.99] | | 0.329 [8.36] | 0.494 [12.55] | 0.759 [19.28] | 0.422 [10.72] | 0.233 [5.92] | 0.422 [10.72] |
| | FEMALE | 1.213 [30.81] | 0.643 [16.33] | | 0.984 [24.99] | 0.311 [7.90] | | 0.494 [12.55] | 0.759 [19.28] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| 2 | MALE | 1.541 [39.14] | | 0.994 [25.25] | 1.312 [33.32] | | 0.329 [8.36] | 0.494 [12.55] | 1.083 [27.51] | 0.422 [10.72] | 0.233 [5.92] | 0.422 [10.72] |
| | FEMALE | 1.541 [39.14] | 0.971 [24.66] | | 1.312 [33.32] | 0.311 [7.90] | | 0.494 [12.55] | 1.083 [27.51] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| 3 | MALE | 2.088 [53.04] | | 1.534 [38.96] | 1.852 [47.04] | | 0.329 [8.36] | 0.494 [12.55] | 1.625 [41.28] | 0.422 [10.72] | 0.230 [5.84] | 0.426 [10.82] |
| | FEMALE | 2.088 [53.04] | 1.511 [38.38] | | 1.852 [47.04] | 0.311 [7.90] | | 0.494 [12.55] | 1.625 [41.28] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| 4 | MALE | 2.729 [69.32] | | 2.182 [55.42] | 2.500 [63.50] | | 0.329 [8.36] | 0.494 [12.55] | 2.272 [57.71] | 0.422 [10.72] | 0.230 [5.84] | 0.426 [10.82] |
| | FEMALE | 2.729 [69.32] | 2.159 [54.84] | | 2.500 [63.50] | 0.311 [7.90] | | 0.494 [12.55] | 2.272 [57.71] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| 5 | MALE | 2.635 [66.93] | | 2.079 [52.81] | 2.406 [61.11] | | 0.441 [11.20] | 0.605 [15.37] | 2.178 [55.32] | 0.534 [13.56] | 0.230 [5.84] | 0.426 [10.82] |
| | FEMALE | 2.635 [66.93] | 2.064 [52.43] | | 2.406 [61.11] | 0.423 [10.74] | | 0.605 [15.37] | 2.178 [55.32] | 0.534 [13.56] | 0.243 [6.17] | 0.429 [10.90] |
| 6 | MALE | 2.729 [69.32] | | 2.212 [56.18] | 2.500 [63.50] | | 0.503 [12.78] | 0.668 [16.97] | 2.302 [58.47] | 0.596 [15.14] | 0.230 [5.84] | 0.426 [10.82] |
| | FEMALE | 2.729 [69.32] | 2.189 [55.60] | | 2.500 [63.50] | 0.485 [12.32] | | 0.668 [16.97] | 2.302 [58.47] | 0.596 [15.14] | 0.243 [6.17] | 0.429 [10.90] |

# REMOVABLE CONTACT ORDERING ASSISTANCE CHART

## SCBC SERIES
### CRIMP AND SOLDER TERMINATION CONTACTS

| TYPE | PAGE NUMBER REFERENCE IN CATALOG | CONTACT SIZE | FEMALE PART NUMBER | MALE PART NUMBER | WIRE SIZE AWG [mm²] |
|---|---|---|---|---|---|
| CRIMP | see page 81 for additional information | 20 | **FC6020M2** | **MC6020M** | 20 [0.5 ] / 22 [0.3] / 24 [0.25] |
| | | | **FC6026M2** | **MC6026M** | 26 [0.12] / 28 [0.0 8] / 30 [0.5] |
| | | | **FC6018M2** | **MC6018M** | 18 [1.0] max. |
| | see page 83 for additional information | 8 | **FC4008M** | **MC4008M** | 8 [10.0] |
| | | | **FC4010M** | **MC4010M** | 10 [5.3] |
| | | | **FC4012M** | **MC4012M** | 12 [4.0] |
| | | | **FC4016M** | **MC4016M** | 16 [1.5] |
| SOLDER | see page 82 for additional information | 20 | **FS6020M2** | **MS6020M** | 20 [0.5] max. |
| SOLDER CUP | see page 84 for additional information | 8 | **FS4008M** | **MS4008M** | 8 [10.0] |
| | | | **FS4012M** | **MS4012M** | 12 [4.0] |
| | | | **FS4016M** | **MS4016M** | 16 [1.5] |
| HIGH VOLTAGE *Straight Solder Wire* | see page 85 for additional information | 8 | **FS4820M** | **MS4820M** | 20 [0.5] |
| HIGH VOLTAGE *Right Angle (90°) Solder Wire* | | | **FS4920M** | **MS4920M** | 20 [0.5] |
| SHIELDED | see page 86 for additional information | SOLDER / CRIMP | **FC4101M** | **MC4101M** | RG 178 B/U, 196 B/U |
| | | | **FC4102M** | **MC4102M** | RG 179 BU/, 316 B/U |
| | | | **FC4103M** | **MC4103M** | RG 180 B/U |
| | | | **FC4104M** | **MC4104M** | RG 58 B/U |
| | | SOLDER / SOLDER | **FS4101M** | **MS4101M** | RG 178 B/U, 196 B/U |
| | | | **FS4102M** | **MS4102M** | RG 179 B/U, 316 B/U |
| | | | **FS4103M** | **MS4103M** | RG 180 B/U |
| | | | **FS4104M** | **MS4104M** | RG 58 B/U |
| | | CRIMP / CRIMP | **FCC4101M** | **MCC4101M** | RG 178 B/U, 196 B/U |
| | | | **FCC4102M** | **MCC4102M** | RG 179 BU/, 316 B/U |
| | | | **FCC4103M** | **MCC4103M** | RG 180 B/U |
| | | | **FCC4104M** | **MCC4104M** | RG 58 B/U |

**NOTE:** For ordering crimp contacts on reels, add "R" to part number, see page 79 for details. Examples: FC4008MR or MC4008MR

For information regarding **REMOVABLE CONTACTS,** see contact illustration drawings and charts on pages 79-87.

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.





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

| STEP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | — | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| EXAMPLE | SCBC | 7W2 | M | 14 | 0 | 0 | E | D | | |

## STEP 1 - BASIC SERIES

**SCBC Series**

## *4 STEP 2 - CONNECTOR VARIANTS

**Shell Size 1**
5W1

**Shell Size 2**
7W2, 11W1

**Shell Size 3**
9W4, 13W3, 17W2, 21W1

**Shell Size 4**
*1 13W6 , 21WA4, 25W3, *1 27W2

**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 45 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.

## *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.
F - Float mounts, universal.
S2 - Swaged spacer, 4-40 threads, 0.125 [3.18] Length.
S5 - Swaged locknut, 4-40 threads.

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

0 - None.
H - Cable adapter, top opening, brass.
AN - Cable adapter, lightweight aluminum, electroless nickel plate, see page 93 for details.

## *2 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).*

## STEP 9 - SPECIAL OPTIONS

***SEE APPENDIX ON PAGE 97.***

**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 88-96.

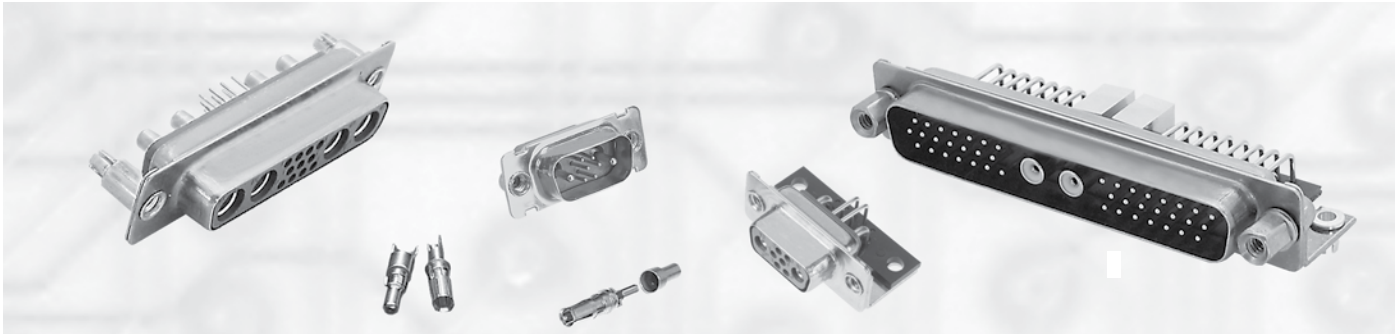
*3 Kitted contacts are supplied in sealed bags.

*4 See SCBM series for removable contact versions of 2WK2, 3W3, 3WK3, 5W5 and 8W8 variants.

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.

# SCBDD SERIES
## MILITARY / SPACE FLIGHT QUALITY
## HIGH DENSITY PCB MOUNT

High Performance D-sub



- 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

# 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 22:** Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 97.

**Size 16:** Precision machined high conductivity copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 97.

**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 97.

**Shielded:** *For material and finishes, see page 79.*

**High Voltage:** *For material and finishes, see page 79.*

**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. . . .*

# TECHNICAL CHARACTERISTICS, *continued*

*continued from previous 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 [3.61mm] 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 79.*

**High Voltage:** *For mechanical characteristics, see page 79.*

**Contact Retention in Connector Insert:**

**Size 22:** 5 lbs. [21N] minimum.
**Size 16 Power:** 6 lbs. [26N] 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 (90º) 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 (90º) 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 (90º) 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 86 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 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 23.*

**SHIELDED CONTACTS**
*For electrical characteristics, see page 79.*

**HIGH VOLTAGE CONTACTS**
*For electrical characteristics, see page 79.*

**CONNECTOR**

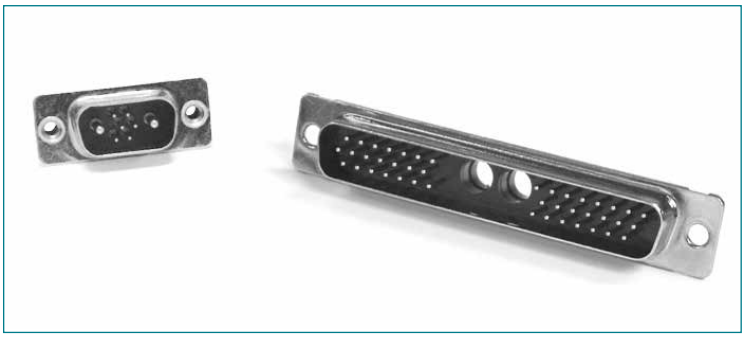
**Insulation Resistance:** 5 G ohms.
**Clearance and Creepage Distance:** 0.042 inch [1.06 mm], minimum.
**Working Voltage:** 300 V r.m.s.

## CLIMATIC CHARACTERISTICS:

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

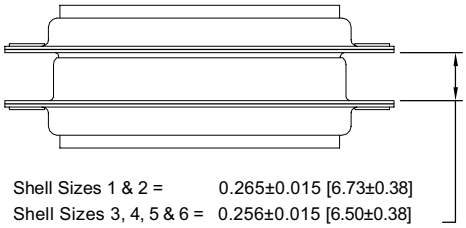
**Damp Heat, Steady State:** 10 days.

# STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY

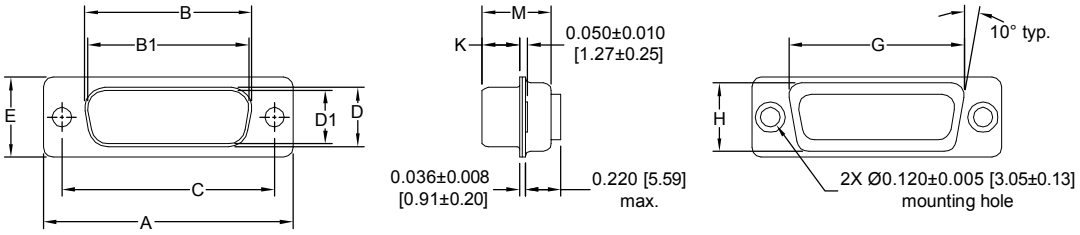


SCBDD8W2M3S00G SCBDD45W2M3000G

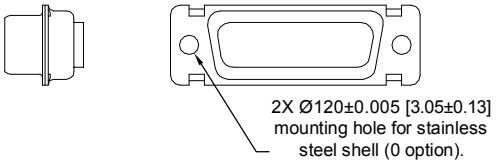
## RECOMMENDED MATING DIMENSIONS



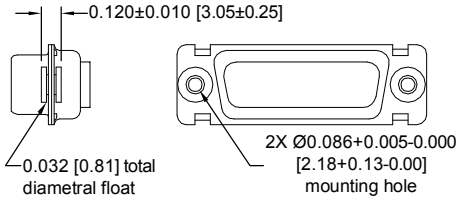
Shell Sizes 1 & 2 = 0.265±0.015 [6.73±0.38]
Shell Sizes 3, 4, 5 & 6 = 0.256±0.015 [6.50±0.38]




## OPTIONAL CONNECTOR HOUSING ASSEMBLY (0, 02)




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



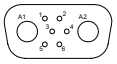

| SHELL SIZES | VARIANT | A ±0.015 [0.38] | B ±0.005 [0.13] | B1 ±0.005 [0.13] | C ±0.005 [0.13] | D ±0.005 [0.13] | D1 ±0.005 [0.13] | E ±0.015 [0.38] | G ±0.010 [0.25] | H ±0.010 [0.25] | K ±0.005 [0.13] | M ±0.010 [0.25] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8W2M | 1.213 [30.81] | | 0.666 [16.92] | 0.984 [24.99] | | 0.329 [8.36] | 0.494 [12.55] | 0.759 [19.28] | 0.422 [10.72] | 0.233 [5.92] | 0.422 [10.72] |
| | 8W2S | 1.213 [30.81] | 0.643 [16.33] | | 0.984 [24.99] | 0.311 [7.90] | | 0.494 [12.55] | 0.759 [19.28] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| 2 | 19W1M | 1.541 [39.14] | | 0.994 [25.25] | 1.312 [33.32] | | 0.329 [8.36] | 0.494 [12.55] | 1.083 [27.51] | 0.422 [10.72] | 0.233 [5.92] | 0.422 [10.72] |
| | 19W1S | 1.541 [39.14] | 0.971 [24.66] | | 1.312 [33.32] | 0.311 [7.90] | | 0.494 [12.55] | 1.083 [27.51] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| 3 | 15W4M | 2.088 [53.04] | | 1.534 [38.96] | 1.852 [47.04] | | 0.329 [8.36] | 0.494 [12.55] | 1.625 [41.28] | 0.422 [10.72] | 0.230 [5.84] | 0.426 [10.82] |
| | 15W4S | 2.088 [53.04] | 1.511 [38.38] | | 1.852 [47.04] | 0.311 [7.90] | | 0.494 [12.55] | 1.625 [41.28] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| 4 | 45W2M | 2.729 [69.32] | | 2.182 [55.42] | 2.500 [63.50] | | 0.329 [8.36] | 0.494 [12.55] | 2.272 [57.71] | 0.422 [10.72] | 0.230 [5.84] | 0.426 [10.82] |

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

## *1 CONTACT VARIANTS

FACE VIEW OF MALE OR REAR VIEW OF FEMALE

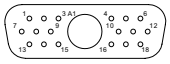
### SHELL SIZE 1



**8W2**

Six (6) Size 22 Signal Contacts and Two (2) Size 16 Power Contacts

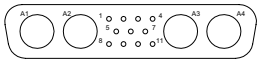
### SHELL SIZE 2



**19W1**

Eighteen (18) Size 22 Signal Contacts and One (1) Size 8 Power Contact

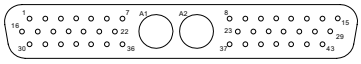
### SHELL SIZE 3



**15W4**

Eleven (11) Size 22 Signal Contacts and Four (4) Size 8 Power Contacts

### SHELL SIZE 4



***2 45W2**

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

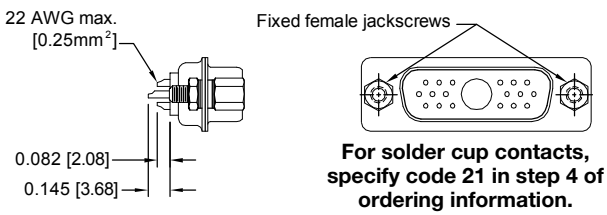
**NOTES:**

*1 Additional contact variants may be tooled at customer request.
*2 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.**

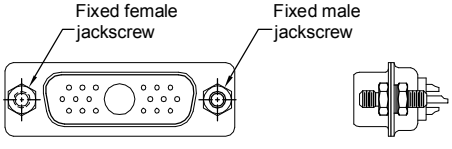
## SOLDER CUP TERMINATION

### CODE 21




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

**TYPICAL PART NUMBER:**
**SCBDD19W1M2100T2G**




**Fixed male and female polarized jackscrews available. Specify code T6 in step 7 of ordering information.**

**TYPICAL PART NUMBER:**
**SCBDD19W1M2100T6G**

## STRAIGHT SOLDER PRINTED BOARD MOUNT TERMINATION

### CODE 3, 35, 36, AND 37

| FOR VARIANTS INCLUDING SIZE 16 CONTACTS | |
|---|---|
| *1 CONTACT NUMBER | D Ø |
| 3 | 0.063 [1.60] |

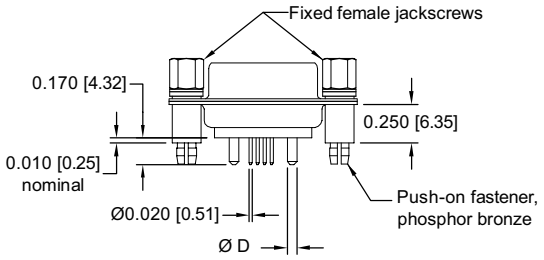
NOTE:

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

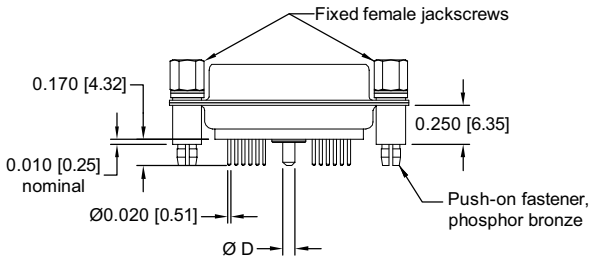
| FOR VARIANTS WITH SIZE 8 CAVITY | |
|---|---|
| *1 CONTACT NUMBER | D Ø |
| 3 | Size 8 contacts not supplied |
| 35 | 0.078 [1.98] |
| 36 | 0.094 [2.39] |
| 37 | 0.125 [3.18] |

NOTE:

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




**Typical Part Number: SCBDD8W2S3S60T2G**



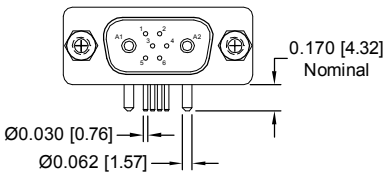

**TYPICAL PART NUMBER:**
**SCBDD19W1S35S60T2G**

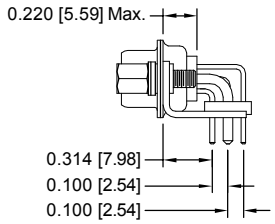
## RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION

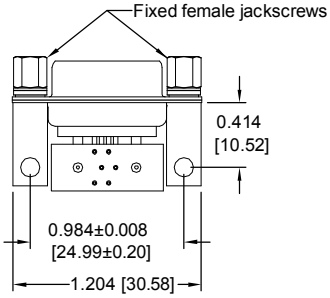
### SIZE 16 POWER CONTACTS WITH 0.062 [1.57] Ø TERMINATIONS

### CODE 4, 0.314 [7.98] CONTACT EXTENSION

*See temperature rise curves on pages 3 and 4*



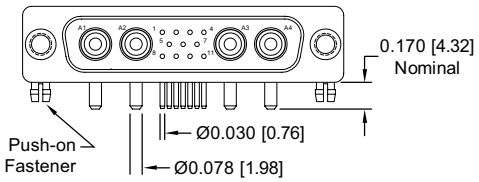

**TYPICAL PART NUMBER:**
**SCBDD8W2M4R70T2G**

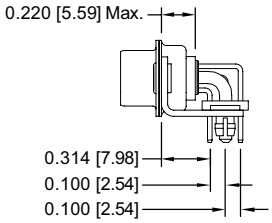


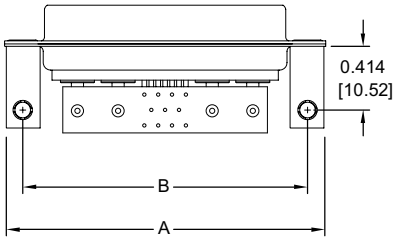
DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

## 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*



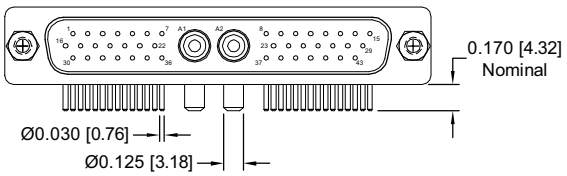



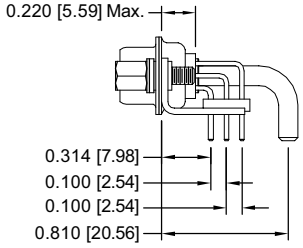

**TYPICAL PART NUMBER:**
**SCBDD15W4M45R7N0G**

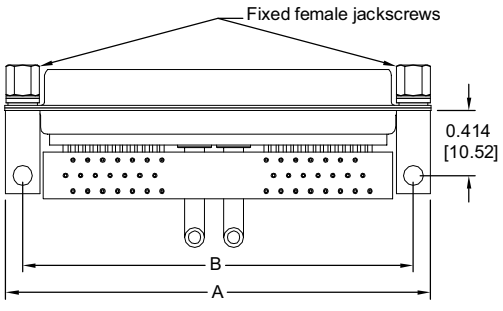
| SCBDD***(4 or 45)****<br>0.314 [7.98] CONTACT EXTENSION | | |
|---|---|---|
| **SHELL SIZE** | **A** | **B** |
| **SHELL SIZE 2** | 1.532<br>[38.91] | 1.312<br>[33.32] |
| **SHELL SIZE 3** | 2.072<br>[52.63] | 1.852<br>[47.04] |
| **SHELL SIZE 4** | 2.720<br>[69.09] | 2.500<br>[63.50] |

## 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*



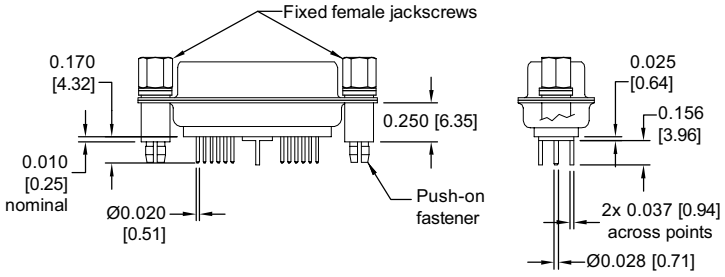




**TYPICAL PART NUMBER:**
**SCBDD45W2M47R70T2G**

| SCBDD***(4 or 47)****<br>0.314 [7.98] CONTACT EXTENSION | | |
|---|---|---|
| **SHELL SIZE** | **A** | **B** |
| **SHELL SIZE 2** | 1.532<br>[38.91] | 1.312<br>[33.32] |
| **SHELL SIZE 3** | 2.072<br>[52.63] | 1.852<br>[47.04] |
| **SHELL SIZE 4** | 2.720<br>[69.09] | 2.500<br>[63.50] |

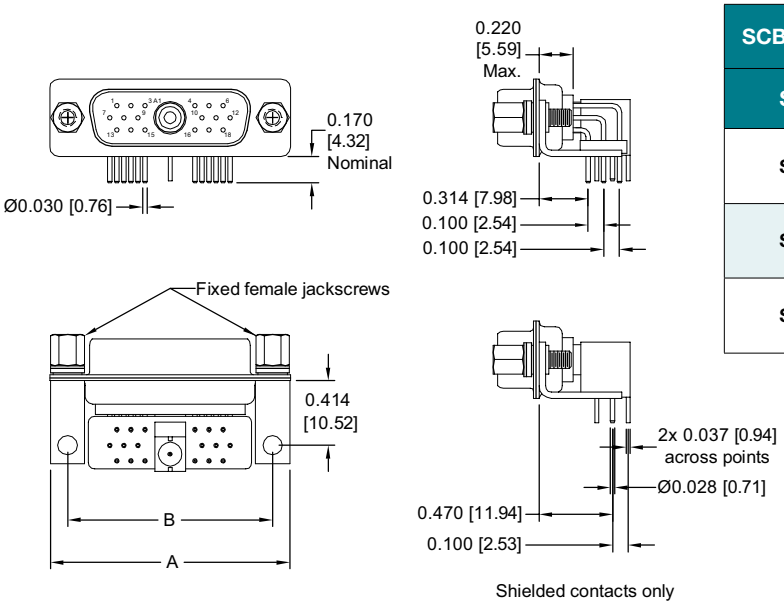
## STRAIGHT SOLDER PRINTED BOARD MOUNT TERMINATION
### WITH FDS4201M OR MDS4201M SHIELDED CONTACTS
### CODE 65




**TYPICAL PART NUMBER:**
**SCBDD19W1M65S60T2G**

Shielded contacts only
visible this view for clarity

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




Shielded contacts only
visible this view for clarity

| SCBDD***84**** 0.314 [7.98] CONTACT EXTENSION | | |
|---|---|---|
| **SHELL SIZE** | **A** | **B** |
| **SHELL SIZE 2** | 1.532 [38.91] | 1.312 [33.32] |
| **SHELL SIZE 3** | 2.072 [52.63] | 1.852 [47.04] |
| **SHELL SIZE 4** | 2.720 [69.09] | 2.500 [63.50] |

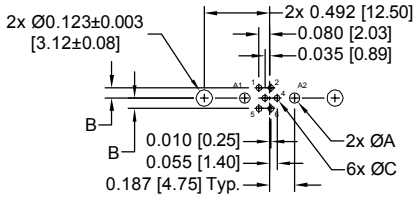
**TYPICAL PART NUMBER:**
**SCBDD19W1M84R70T2G**



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

# PRINTED BOARD MOUNT CONTACT HOLE PATTERN

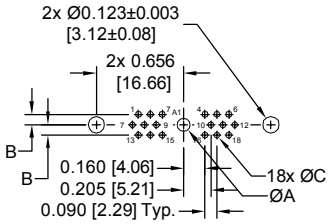
HOLE IDENTIFICATION SHOWN FOR MALE CONNECTOR; USE MIRROR IMAGE FOR FEMALE CONNECTOR.
MOUNT RIGHT ANGLE (90°) CONNECTOR WITH MATING FACE POSITIONED TO FOLLOW DIRECTION OF ARROWS.



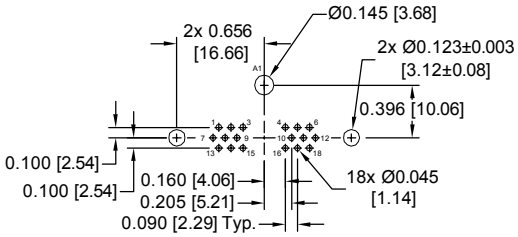

**SCBDD8W2M3**
**SCBDD8W2M4**

## SUGGESTED PRINTED BOARD HOLE SIZES:

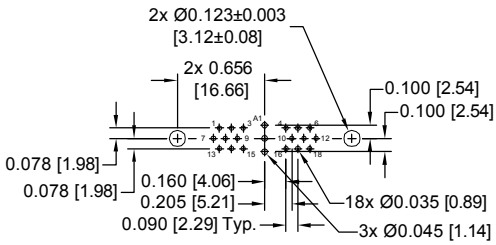
See Suggested Printed Board Hole Size chart on page 55.



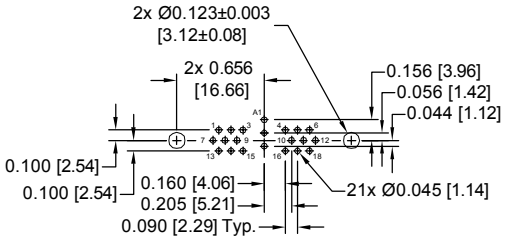

**SCBDD19W1M3, 35, 36, 37**
**SCBDD19W1M4, 45**



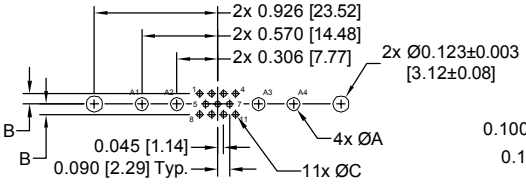

**SCBDD19W1M47**



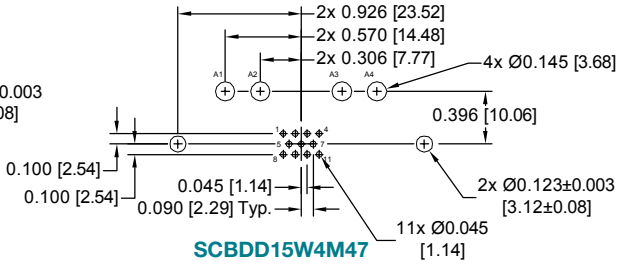

**SCBDD19W1M65**



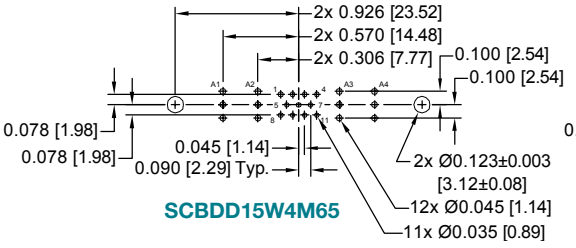

**SCBDD19W1M84**



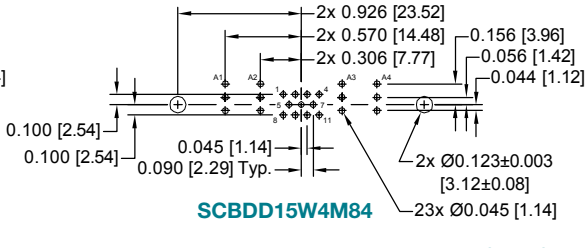

**SCBDD15W4M3, 35, 36, 37**
**SCBDD15W4M4, 45**




**SCBDD15W4M47**




**SCBDD15W4M65**



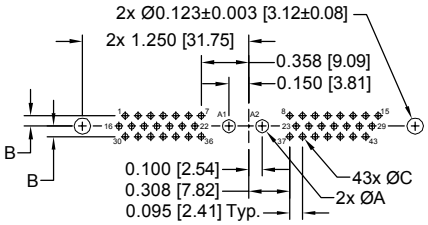

**SCBDD15W4M84**

*continued on next page. . . .*

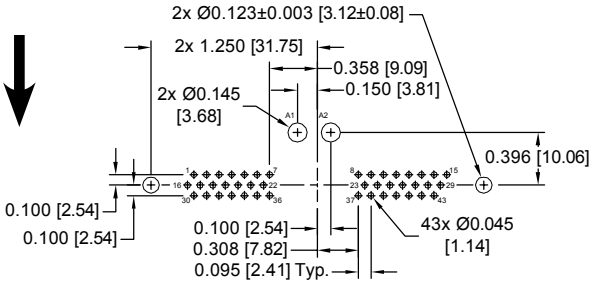
## PRINTED BOARD MOUNT CONTACT HOLE PATTERN

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.

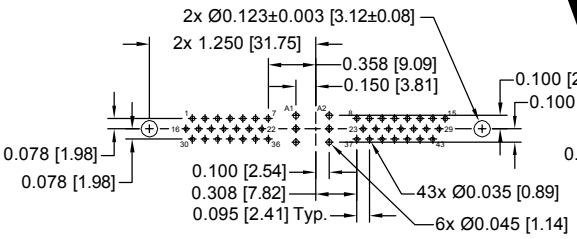
*continued from previous page. . . .*



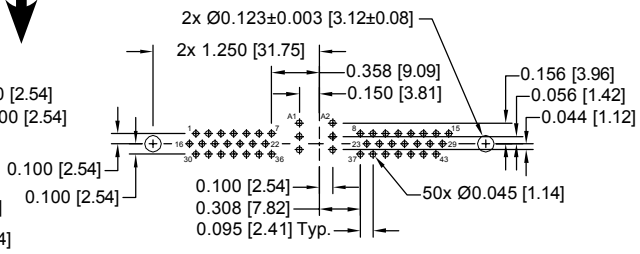

**SCBDD45W2M3, 35, 36, 37**
**SCBDD45W2M4, 45**




**SCBDD45W2M47**




**SCBDD45W2M65**




**SCBDD45W2M84**

## SUGGESTED PRINTED BOARD HOLE SIZES

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



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

| STEP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| EXAMPLE | SCBDD | 8W2 | S | 3 | S6 | 0 | T2 | G | — | |

### STEP 1 - BASIC SERIES

**SCBDD Series**

### STEP 2 - CONNECTOR VARIANTS

**Shell Size 1 -** 8W2

*See page 58 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 93 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.
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).*

### STEP 9 - SPECIAL OPTIONS

***SEE APPENDIX ON PAGE 97.***

**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 88-96.

# REMOVABLE CONTACT ORDERING ASSISTANCE CHART

## SCBDD SERIES
### CRIMP AND SOLDER CUP TERMINATION CONTACTS

| TYPE | PAGE NUMBER REFERENCE IN CATALOG | CONTACT SIZE | FEMALE PART NUMBER | MALE PART NUMBER | WIRE SIZE AWG [mm²] |
|---|---|---|---|---|---|
| CRIMP | see page 83 for additional information | 8 | **FC4008M** | **MC4008M** | 8 [10.0] |
| | | | **FC4010M** | **MC4010M** | 10 [5.3] |
| | | | **FC4012M** | **MC4012M** | 12 [4.0] |
| | | | **FC4016M** | **MC4016M** | 16 [1.5] |
| SOLDER CUP | see page 84 for additional information | 8 | **FS4008M** | **MS4008M** | 8 [10.0] |
| | | | **FS4012M** | **MS4012M** | 12 [4.0] |
| | | | **FS4016M** | **MS4016M** | 16 [1.5] |
| HIGH VOLTAGE *Straight Solder Wire* | see page 85 for additional information | 8 | **FS4820M** | **MS4820M** | 20 [0.5] |
| HIGH VOLTAGE *Right Angle (90°) Solder Wire* | | 8 | **FS4920M** | **MS4920M** | 20 [0.5] |
| SHIELDED | see page 86 for additional information | SOLDER / CRIMP | **FC4101M** | **MC4101M** | RG 178 B/U, 196 B/U |
| | | | **FC4102M** | **MC4102M** | RG 179 BU/, 316 B/U |
| | | | **FC4103M** | **MC4103M** | RG 180 B/U |
| | | | **FC4104M** | **MC4104M** | RG 58 B/U |
| | | SOLDER / SOLDER | **FS4101M** | **MS4101M** | RG 178 B/U, 196 B/U |
| | | | **FS4102M** | **MS4102M** | RG 179 B/U, 316 B/U |
| | | | **FS4103M** | **MS4103M** | RG 180 B/U |
| | | | **FS4104M** | **MS4104M** | RG 58 B/U |
| | | CRIMP / CRIMP | **FCC4101M** | **MCC4101M** | RG 178 B/U, 196 B/U |
| | | | **FCC4102M** | **MCC4102M** | RG 179 BU/, 316 B/U |
| | | | **FCC4103M** | **MCC4103M** | RG 180 B/U |
| | | | **FCC4104M** | **MCC4104M** | RG 58 B/U |

**NOTE:** For ordering crimp contacts on reels, add "R" to part number, see page 79 for details. Examples: FC4008MR or MC4008MR

For information regarding **REMOVABLE CONTACTS,** see contact illustration drawings and charts on pages 79-87.

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.



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 INCLUDING SIZE 8 CONTACTS

| STEP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| EXAMPLE | SCBDD | 19W1 | M | 47 | R7 | 0 | T2 | G | — | |

### STEP 1 - BASIC SERIES

**SCBDD Series**

### STEP 2 - CONNECTOR VARIANTS

**Shell Size 2 -** 19W1
**Shell Size 3 -** 15W4
*[1] **Shell Size 4 -** 45W2

*See page 56 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 88-96.

### [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 93 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.
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).*

### STEP 9 - SPECIAL OPTIONS

***SEE APPENDIX ON PAGE 97.***

Positronic
connectpositronic.com

# SCBCD SERIES
## MILITARY / SPACE FLIGHT QUALITY
## HIGH DENSITY REMOVABLE CONTACTS

High Performance D-sub

- 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

# 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 22:** Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 97.

**Size 16:** Precision machined high conductivity copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 97.

**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 97.

**Shielded:** *For material and finishes, see page 79.*

**High Voltage:** *For material and finishes, see page 79.*

**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.

## MECHANICAL CHARACTERISTICS:

**Size 22 Removable:** 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 81.*

**Size 16 Removable:** 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 83.*

**Size 8 Removable:** 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 83-87.*

*continued on next page. . .*



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

# TECHNICAL CHARACTERISTICS, *continued*

*continued from previous page. . . .*

## MECHANICAL CHARACTERISTICS, continued:

**Shielded:** *For mechanical characteristics, see page 79.*

**High Voltage:** *For mechanical characteristics, see page 79.*

**Contact Retention in Connector Insert:**

**Size 22:** 9 lbs. [40N] minimum.
**Size 16:** 15 lbs. [67N] minimum.
**Size 8 Power / Shielded:** 22 lbs. [98N].

**Contact Terminations:**

**Size 22:** 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 81 for details.*

**Size 16:** Closed barrel crimp - wire sizes 12 AWG [4.0 mm²] through 24 AWG [0.25 mm²].

**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 86 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 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 23.*

**SHIELDED CONTACTS**
*For electrical characteristics, see page 79.*

**HIGH VOLTAGE CONTACTS**
*For electrical characteristics, see page 79.*

**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:

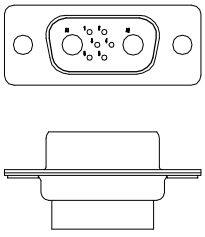
**Temperature Range:** -55°C to +125°C.

**Damp Heat, Steady State:** 10 days.

## *1 CONTACT VARIANT

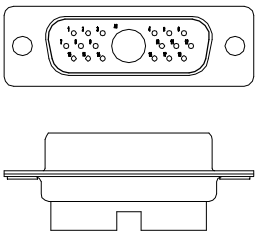
FACE VIEW OF MALE OR REAR VIEW OF FEMALE

**SHELL SIZE 1**



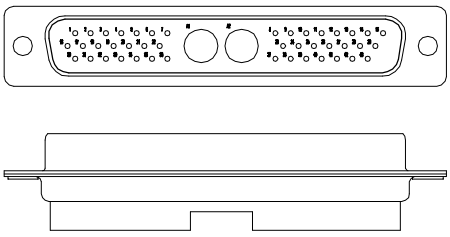
**8W2**
Six (6) Size 22 Signal Contacts and Two (2) Size 16 Power Contacts

**SHELL SIZE 2**



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

**SHELL SIZE 4**



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

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

**NOTES:**

*1 Additional contact variants may be tooled at customer request.
*2 45W2 variant currently available in female only. Contact Technical Sales for availability of male connector.

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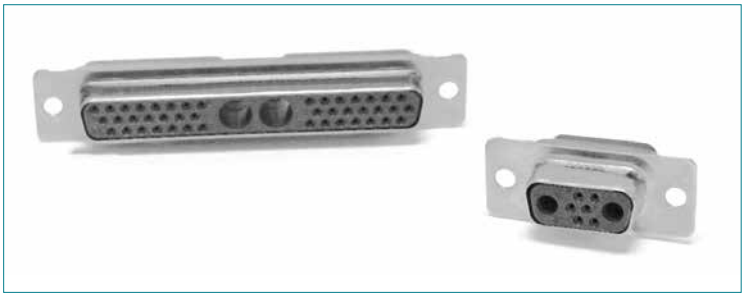
# SCBCD SERIES
## MILITARY / SPACE FLIGHT QUALITY
## HIGH DENSITY REMOVABLE CONTACTS

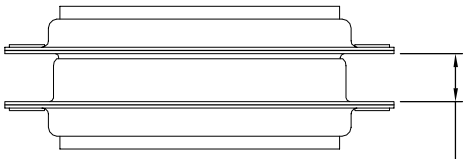
High Performance D-sub

## STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY



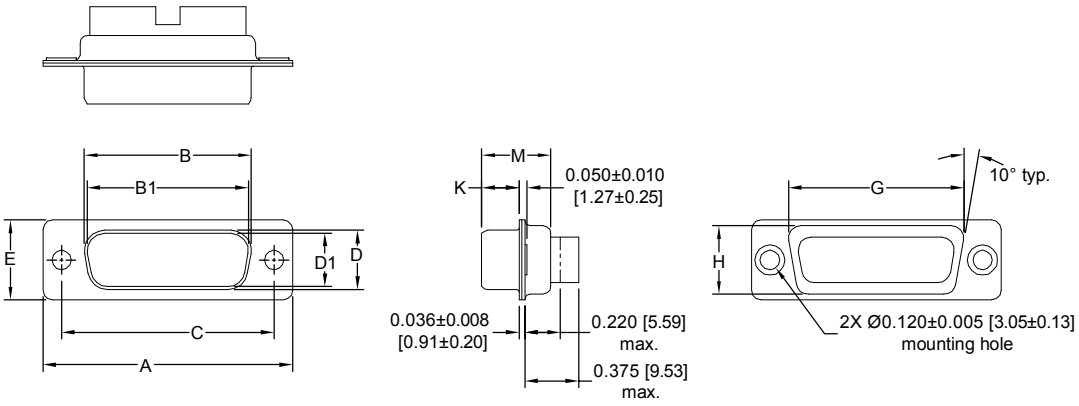
SCBCD45W2S0000G SCBCD8W2S0000G

### RECOMMENDED MATING DIMENSIONS

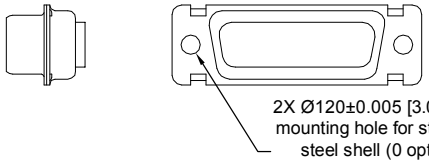


Shell Sizes 1 & 2 = 0.265±0.015 [6.73±0.38]
Shell Sizes 3, 4, 5 & 6 = 0.256±0.015 [6.50±0.38]

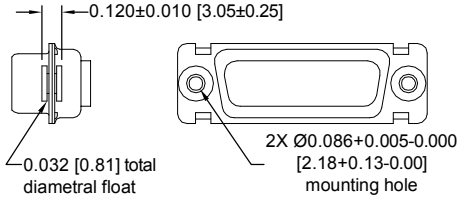
### TYPICAL CONNECTOR TOP VIEW




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




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




| SHELL SIZES | VARIANT | A ±0.015 [0.38] | B ±0.005 [0.13] | 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] | G ±0.010 [0.25] | H ±0.010 [0.25] | K ±0.005 [0.13] | M ±0.010 [0.25] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8W2 M | 1.213 [30.81] | | 0.666 [16.92] | 0.984 [24.99] | | 0.329 [8.36] | 0.494 [12.55] | 0.759 [19.28] | 0.422 [10.72] | 0.233 [5.92] | 0.422 [10.72] |
| | 8W2 S | 1.213 [30.81] | 0.643 [16.33] | | 0.984 [24.99] | 0.311 [7.90] | | 0.494 [12.55] | 0.759 [19.28] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| 2 | 19W1 M | 1.541 [39.14] | | 0.994 [25.25] | 1.312 [33.32] | | 0.329 [8.36] | 0.494 [12.55] | 1.083 [27.51] | 0.422 [10.72] | 0.233 [5.92] | 0.422 [10.72] |
| | 19W1 S | 1.541 [39.14] | 0.971 [24.66] | | 1.312 [33.32] | 0.311 [7.90] | | 0.494 [12.55] | 1.083 [27.51] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |
| 4 | 45W2 S | 2.729 [69.32] | 2.159 [54.84] | | 2.500 [63.50] | 0.311 [7.90] | | 0.494 [12.55] | 2.272 [57.71] | 0.422 [10.72] | 0.243 [6.17] | 0.429 [10.90] |

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

# REMOVABLE CONTACT ORDERING ASSISTANCE CHART

## SCBCD SERIES
### CRIMP AND SOLDER TERMINATION CONTACTS

| TYPE | PAGE NUMBER REFERENCE IN CATALOG | CONTACT SIZE | FEMALE PART NUMBER | MALE PART NUMBER | WIRE SIZE AWG [mm²] |
|---|---|---|---|---|---|
| CRIMP | see page 80 for additional information | 22 | **FC8022M2** | **MC8022M** | 22 [0.3] / 24 [0.25] / 26 [0.12] / 28 [0.0 8] / 30 [0.5] |
| | | | **FC8020M2** | **MC8020M** | 20 [0.5] max. |
| | see page 83 for additional information | 16 | **FC112N4-50** | **MC112N-50-133.0** | 12 [4.0] |
| | | | **FC114N4-50** | **MC114N-50-133.0** | 14 [2.5] / 16 [1.5] |
| | | | **FC116N4-50** | **MC116N-50-133.0** | 16 [1.5] / 18 [1.0] |
| | | | **FC120N4-50** | **MC120N-50-133.0** | 20 [0.5] / 22 [0.3] / 24 [0.25] |
| | see page 83 for additional information | 8 | **FC4008M** | **MC4008M** | 8 [10.0] |
| | | | **FC4010M** | **MC4010M** | 10 [5.3] |
| | | | **FC4012M** | **MC4012M** | 12 [4.0] |
| | | | **FC4016M** | **MC4016M** | 16 [1.5] |
| SOLDER | see page 81 for additional information | 22 | **FS8022M2** | **MS8022M** | 22 [0.3] max. |
| SOLDER CUP | see page 84 for additional information | 8 | **FS4008M** | **MS4008M** | 8 [10.0] |
| | | | **FS4012M** | **MS4012M** | 12 [4.0] |
| | | | **FS4016M** | **MS4016M** | 16 [1.5] |
| HIGH VOLTAGE *Straight Solder Wire* | see page 85 for additional information | 8 | **FS4820M** | **MS4820M** | 20 [0.5] |
| HIGH VOLTAGE *Right Angle (90°) Solder Wire* | | 8 | **FS4920M** | **MS4920M** | 20 [0.5] |
| SHIELDED | see page 86 for additional information | SOLDER / CRIMP | **FC4101M** | **MC4101M** | RG 178 B/U, 196 B/U |
| | | | **FC4102M** | **MC4102M** | RG 179 BU/, 316 B/U |
| | | | **FC4103M** | **MC4103M** | RG 180 B/U |
| | | | **FC4104M** | **MC4104M** | RG 58 B/U |
| | | SOLDER / SOLDER | **FS4101M** | **MS4101M** | RG 178 B/U, 196 B/U |
| | | | **FS4102M** | **MS4102M** | RG 179 B/U, 316 B/U |
| | | | **FS4103M** | **MS4103M** | RG 180 B/U |
| | | | **FS4104M** | **MS4104M** | RG 58 B/U |
| | | CRIMP / CRIMP | **FCC4101M** | **MCC4101M** | RG 178 B/U, 196 B/U |
| | | | **FCC4102M** | **MCC4102M** | RG 179 BU/, 316 B/U |
| | | | **FCC4103M** | **MCC4103M** | RG 180 B/U |
| | | | **FCC4104M** | **MCC4104M** | RG 58 B/U |

**NOTE:** For ordering crimp contacts on reels, add "R" to part number, see page 79 for details. Examples: FC4008MR or MC4008MR

For information regarding REMOVABLE CONTACTS, see contact illustration drawings and charts on pages 79-87.

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.

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# SCBCD SERIES
## MILITARY / SPACE FLIGHT QUALITY
## HIGH DENSITY REMOVABLE CONTACTS

High Performance D-sub

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

| STEP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | — | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| EXAMPLE | SCBCD | 8W2 | S | 0 | 0 | 0 | 0 | G | | |

### STEP 1 - BASIC SERIES
**SCBCD Series**

### STEP 2 - CONNECTOR VARIANTS
**Shell Size 1 -** 8W2
**Shell Size 2 -** 19W1
*1 **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 62 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/FCC 4101M shielded contacts.
*2 14 – Signal contacts, 22 AWG-30 AWG [0.03mm²-0.05mm²] with MCC/FCC 4102M shielded contacts.

### *3 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

### *3 STEP 6 - CABLE ADAPTER (HOOD) AND PUSH-ON FASTENER
0 – None
AN – Cable adapter, lightweight aluminum, electroless nickel plate, see page 93 for details.
H – Cable adapter, top opening, brass
N – Push-on fastener, for right angle (90°) mounting brackets

### *3 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).*

### STEP 9 - SPECIAL OPTIONS
***SEE APPENDIX ON PAGE 97.***

**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 88-96.

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.


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

# SAD SERIES
## MILITARY / SPACE FLIGHT QUALITY
## STANDARD DENSITY CONNECTOR SAVER





- 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:

| | |
|---|---|
| **Connector Insulator:** | Glass-filled DAP per ASTM-D-5948, 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 97. |
| **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. |

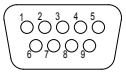
## CLIMATIC CHARACTERISTICS:

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

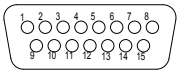
# SAD SERIES SIZE 20 CONTACT CONNECTOR SAVER

## CONTACT VARIANTS

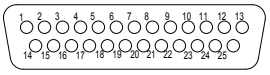
FACE VIEW OF MALE OR REAR VIEW OF FEMALE



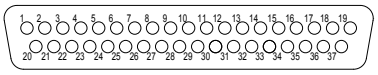
SAD 9



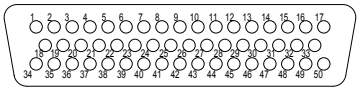
SAD 15



SAD 25



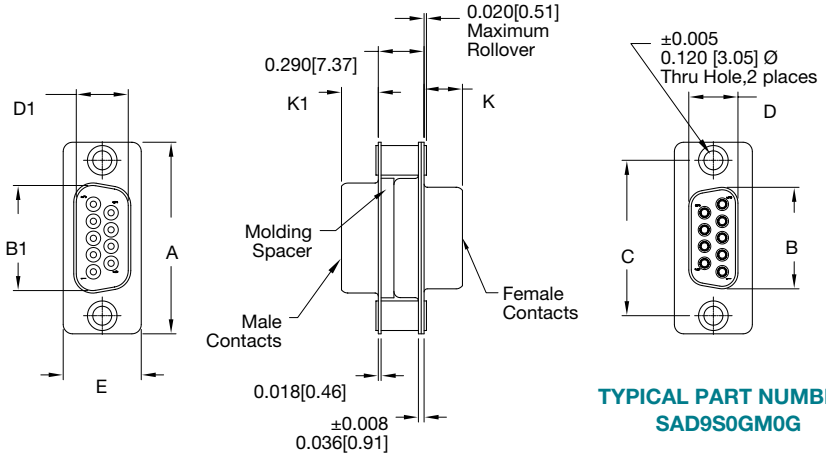
SAD 37



SAD 50

## STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY DIMENSIONS

### SIZE 20 CONTACTS




**TYPICAL PART NUMBER:**
**SAD9S0GM0G**

| CONNECTOR VARIANT SIZES | A ±0.015 [0.38] | B ±0.005 [0.13] | 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] | K1 ±0.005 [0.13] |
|---|---|---|---|---|---|---|---|---|---|
| 9 M | 1.213 [30.81] | | 0.666 [16.92] | 0.984 [24.99] | | 0.329 [8.36] | 0.494 [12.55] | | 0.233 [5.92] |
| 9 S | 1.213 [30.81] | 0.643 [16.33] | | 0.984 [24.99] | 0.311 [7.90] | | 0.494 [12.55] | 0.243 [6.17] | |
| 15 M | 1.541 [39.14] | | 0.994 [25.25] | 1.312 [33.32] | | 0.329 [8.36] | 0.494 [12.55] | | 0.233 [5.92] |
| 15 S | 1.541 [39.14] | 0.971 [24.66] | | 1.312 [33.32] | 0.311 [7.90] | | 0.494 [12.55] | 0.243 [6.17] | |
| 25 M | 2.088 [53.04] | | 1.534 [38.96] | 1.852 [47.04] | | 0.329 [8.36] | 0.494 [12.55] | | 0.230 [5.84] |
| 25 S | 2.088 [53.04] | 1.511 [38.38] | | 1.852 [47.04] | 0.311 [7.90] | | 0.494 [12.55] | 0.243 [6.17] | |
| 37 M | 2.729 [69.32] | | 2.182 [55.42] | 2.500 [63.50] | | 0.329 [8.36] | 0.494 [12.55] | | 0.230 [5.84] |
| 37 S | 2.729 [69.32] | 2.159 [54.84] | | 2.500 [63.50] | 0.311 [7.90] | | 0.494 [12.55] | 0.243 [6.17] | |
| 50 M | 2.635 [66.93] | | 2.079 [52.81] | 2.406 [61.11] | | 0.441 [11.20] | 0.605 [15.37] | | |
| 50 S | 2.635 [66.93] | 2.064 [52.43] | | 2.406 [61.11] | 0.423 [10.74] | | 0.605 [15.37] | 0.243 [6.17] | |

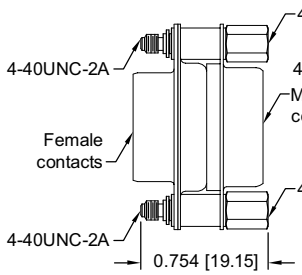


DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

## JACKSCREW SYSTEMS
### CODE E, E6, T AND T6

**ROTATING MALE AND FEMALE JACKSCREWS**

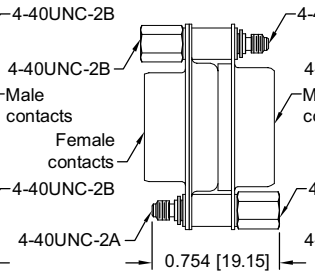
**E**




**EXAMPLE PART NUMBER:**
**SAD9SEGM0G**

**ROTATING MALE AND FEMALE POLARIZED JACKSCREWS**

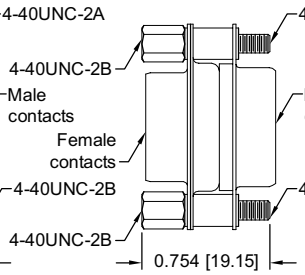
**E6**




**EXAMPLE PART NUMBER:**
**SAD9SE6GM0G**

**FIXED MALE AND FEMALE JACKSCREWS**

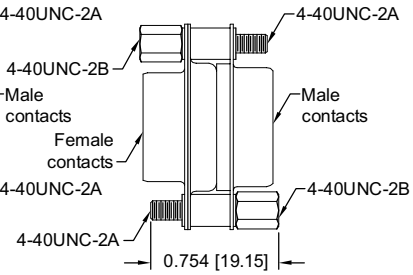
**T**



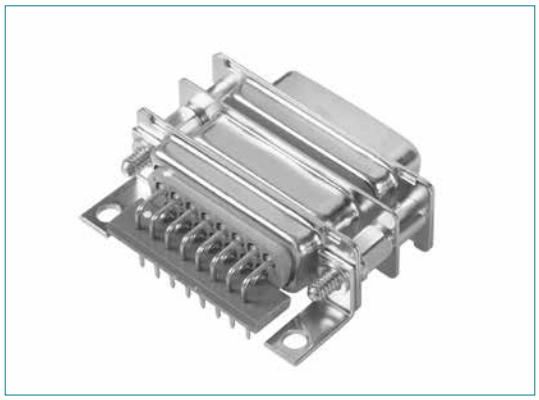

**EXAMPLE PART NUMBER:**
**SAD9STGM0G**

**FIXED MALE AND FEMALE POLARIZED JACKSCREWS**

**T6**




**EXAMPLE PART NUMBER:**
**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 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | — | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| EXAMPLE | SAD | 9 | S | S | G | M | S | D | | |

## 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
*2 E - Rotating male and female jackscrews *(Select 0 in Step 7)*
*2 E6 - Rotating male and female polarized jackscrew *(Select 0 in Step 7)*
*2 T - Fixed male and female jackscrews *(Select 0 in Step 7)*
*2 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

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

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

## 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 97.***

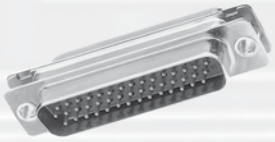
**NOTES**

*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 66.

# 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.

### 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



# 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 97.

**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].

**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:** 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.

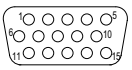
## CLIMATIC CHARACTERISTICS:

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

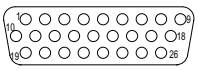
# SADD SERIES SIZE 22 CONTACT CONNECTOR SAVER

## CONTACT VARIANTS

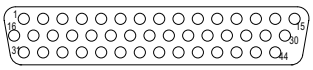
FACE VIEW OF MALE OR USE MIRROR IMAGE FOR FEMALE



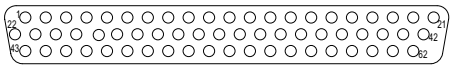
SADD 15



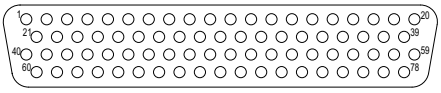
SADD 26



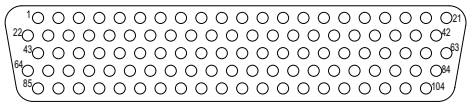
SADD 44



SADD 62



SADD 78



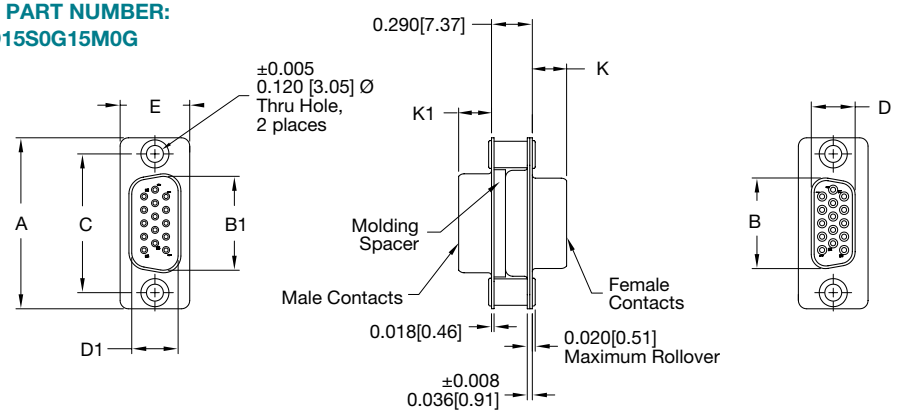
SADD 104



## STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY DIMENSIONS

### SIZE 22 CONTACTS

**TYPICAL PART NUMBER:**
**SADD15S0G15M0G**




| CONNECTOR VARIANT SIZES | A ±0.015 [0.38] | B ±0.005 [0.13] | 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] | K1 ±0.005 [0.13] |
|---|---|---|---|---|---|---|---|---|---|
| 15 M | 1.213 [30.81] | | 0.666 [16.92] | 0.984 [24.99] | | 0.329 [8.36] | 0.494 [12.55] | | 0.233 [5.92] |
| 15 S | 1.213 [30.81] | 0.643 [16.33] | | 0.984 [24.99] | 0.311 [7.90] | | 0.494 [12.55] | 0.243 [6.17] | |
| 26 M | 1.541 [39.14] | | 0.994 [25.25] | 1.312 [33.32] | | 0.329 [8.36] | 0.494 [12.55] | | 0.233 [5.92] |
| 26 S | 1.541 [39.14] | 0.971 [24.66] | | 1.312 [33.32] | 0.311 [7.90] | | 0.494 [12.55] | 0.243 [6.17] | |
| 44 M | 2.088 [53.04] | | 1.534 [38.96] | 1.852 [47.04] | | 0.329 [8.36] | 0.494 [12.55] | | 0.230 [5.84] |
| 44 S | 2.088 [53.04] | 1.511 [38.38] | | 1.852 [47.04] | 0.311 [7.90] | | 0.494 [12.55] | 0.243 [6.17] | |
| 62 M | 2.729 [69.32] | | 2.182 [55.42] | 2.500 [63.50] | | 0.329 [8.36] | 0.494 [12.55] | | 0.230 [5.84] |
| 62 S | 2.729 [69.32] | 2.159 [54.84] | | 2.500 [63.50] | 0.311 [7.90] | | 0.494 [12.55] | 0.243 [6.17] | |
| 78 M | 2.635 [66.93] | | 2.079 [52.81] | 2.406 [61.11] | | 0.441 [11.20] | 0.605 [15.37] | | |
| 78 S | 2.635 [66.93] | 2.064 [52.43] | | 2.406 [61.11] | 0.423 [10.74] | | 0.605 [15.37] | 0.243 [6.17] | |
| 104 M | 2.729 [69.32] | | 2.212 [56.18] | 2.500 [63.50] | | 0.503 [12.78] | 0.668 [16.97] | | 0.230 [5.84] |
| 104 S | 2.729 [69.32] | 2.189 [55.60] | | 2.500 [63.50] | 0.485 [12.32] | | 0.668 [16.97] | 0.243 [6.17] | |



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

| STEP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| EXAMPLE | SADD | 15 | S | S | G | M | S | D | | |

## STEP 1 - BASIC SERIES

**SADD series**

## STEP 2 - CONNECTOR VARIANT

15, 26, 44, 62, 78, 104

## STEP 3 - 1ST CONNECTOR GENDER

*3 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
*2 E - Rotating male and female jackscrews
*(Select 0 in Step 7)*
*2 E6 - Rotating male and female polarized jackscrew
*(Select 0 in Step 7)*
*2 T - Fixed male and female jackscrews
*(Select 0 in Step 7)*
*2 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

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

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

## 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 97.***

**NOTES**

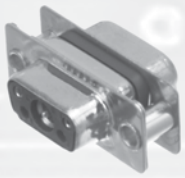
*1 Connector mating style for both connectors must be the same if 0 or S is used. If E or E6 is used in either Step 4 or 8 the other step must be 0.

*2 For hardware information, see page 66.

*3 Male option available only on connector variant 78.

# SACBMP SERIES
## MILITARY / SPACE FLIGHT QUALITY
## STANDARD DENSITY COMBO-D CONNECTOR SAVER

High Performance D-sub


- 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



# TECHNICAL CHARACTERISTICS

## 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 97.

**Size 8:** Precision machined high conductivity copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 97.

**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 74 for available variants.

**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.

*. . . continued on next page*


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

# TECHNICAL CHARACTERISTICS, *continued*

*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

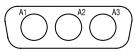
### CONTACT VARIANTS

FACE VIEW OF MALE OR REAR VIEW OF FEMALE

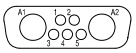
**SHELL SIZE 1**

5W1

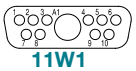
**SHELL SIZE 2**



3W3



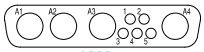
7W2



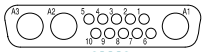
11W1

**SHELL SIZE 3**

5W5

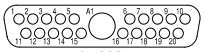


9W4



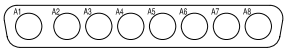
13W3

17W2

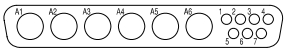


21W1

**SHELL SIZE 4**

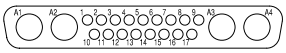


8W8

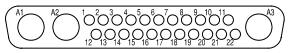


13W6

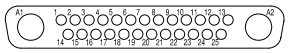
17W5



21WA4

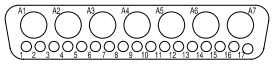


25W3

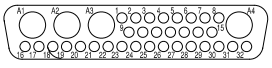


27W2

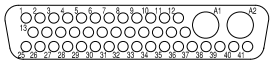
**SHELL SIZE 5**



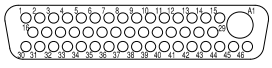
24W7



36W4

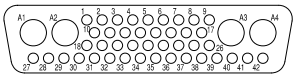


43W2



47W1

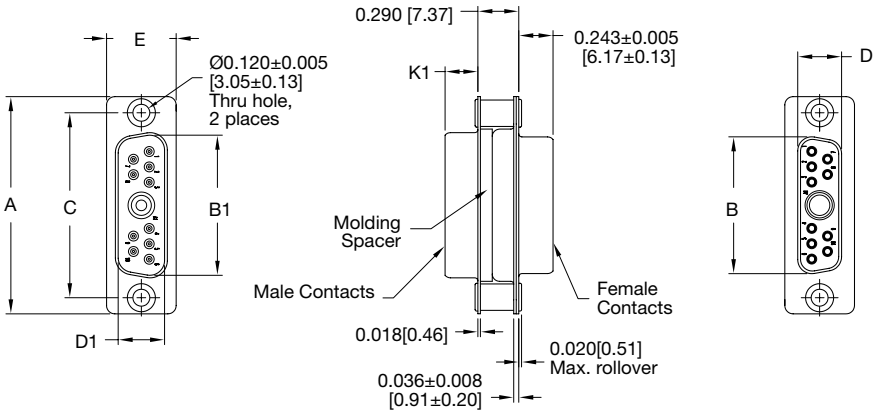
**SHELL SIZE 6**



46W4

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

## STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY DIMENSIONS
### SIZE 20 AND SIZE 8 CONTACTS




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

**TYPICAL PART NUMBER:**
**SACBMP11W1S0GM0G**

| SHELL SIZES | CONNECTOR VARIANT | A ±0.015 [0.38] | B ±0.005 [0.13] | 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] | K1 ±0.005 [0.13] |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5W1 | 1.213 [30.81] | 0.643 [16.33] | 0.666 [16.92] | 0.984 [24.99] | 0.311 [7.90] | 0.329 [8.36] | 0.494 [12.55] | 0.233 [5.92] |
| 2 | 3W3, 7W2, 11W1 | 1.541 [39.14] | 0.971 [24.66] | 0.994 [25.25] | 1.312 [33.32] | 0.311 [7.90] | 0.329 [8.36] | 0.494 [12.55] | 0.233 [5.92] |
| 3 | 5W5, 9W4, 13W3, 17W2, 21W1 | 2.088 [53.04] | 1.511 [38.38] | 1.534 [38.96] | 1.852 [47.04] | 0.311 [7.90] | 0.329 [8.36] | 0.494 [12.55] | 0.230 [5.84] |
| 4 | 8W8, 13W6, 17W5, 21WA4, 25W3, 27W2 | 2.729 [69.32] | 2.159 [54.84] | 2.182 [55.42] | 2.500 [63.50] | 0.311 [7.90] | 0.329 [8.36] | 0.494 [12.55] | 0.230 [5.84] |
| 5 | 24W7, 36W4, 43W2, 47W1 | 2.635 [66.93] | 2.064 [52.43] | 2.079 [52.81] | 2.406 [61.11] | 0.423 [10.74] | 0.441 [11.20] | 0.605 [15.37] | 0.230 [5.84] |
| 6 | 46W4 | 2.729 [69.32] | 2.189 [55.60] | 2.212 [56.18] | 2.500 [63.50] | 0.485 [12.32] | 0.503 [12.78] | 0.668 [16.97] | 0.230 [5.84] |




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

| STEP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| EXAMPLE | SACBMP | 11W1 | S | S | G | M | S | D | — | |

## 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.*

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

0 - Swaged spacer 0.120 [3.05µ] mounting hole
S - Swaged spacer 4-40 UNC-2B threads
*3 E - Rotating male and female jackscrews *(Select 0 in Step 7)*
*3 E6 - Rotating male and female polarized jackscrew *(Select 0 in Step 7)*
*3 T - Fixed male and female jackscrews *(Select 0 in Step 7)*
*3 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

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

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

## 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 97.***

**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 66.

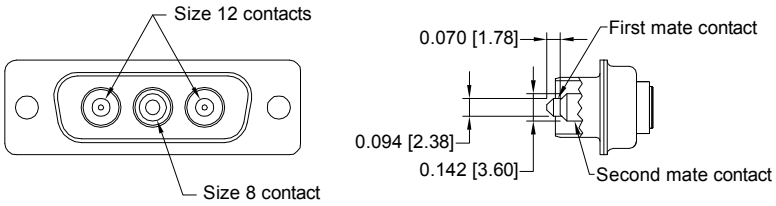
# UNIQUE FEATURE SECTION

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**.

## SEQUENTIAL MATING CONTACTS




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

**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.

**CONTACT TECHNICAL SALES FOR MORE INFORMATION!**

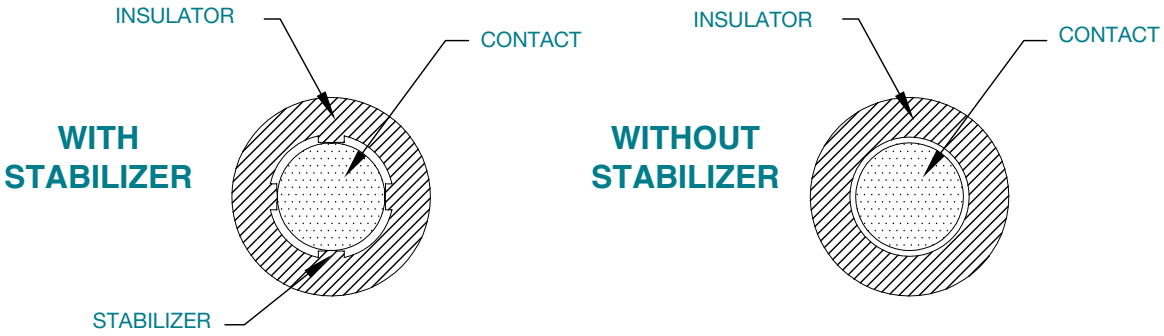




DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

## SIZE 8 CONTACT STABILIZATION FEATURE

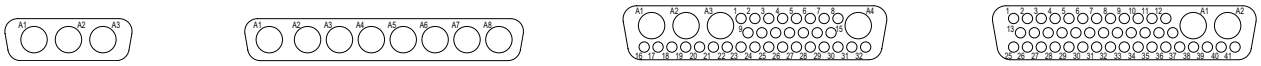
MINIMIZES FLOAT IN SIZE 8 CONTACT POSITIONS




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:**



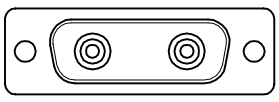
**SCBM3W3M** | **SCBM8W8M** | **SCBC36W4M** | **SCBC43W2M**

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

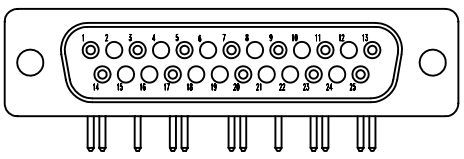
**CONTACT TECHNICAL SALES FOR MORE INFORMATION!**

## SELECTIVELY LOADED CONNECTOR

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



**SCBM3W3**
loaded in 2 positions



**SND25**
loaded in 12 positions

**Note:**

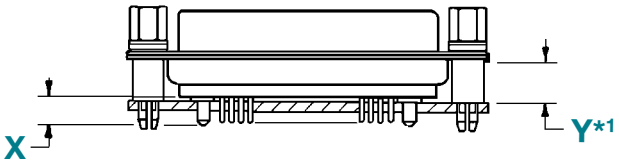
SCBM3W3 and SND25 variants shown for reference.
Selectively loading available on all series and variants.

**CONTACT TECHNICAL SALES FOR MORE INFORMATION!**

## CUSTOMER SPECIFIED CONTACT TERMINATION LENGTH

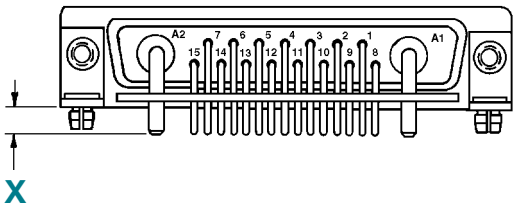
Positronic can supply high performance D-subminiature series connectors with customer specified termination lengths. A wide variety of options are available.

### STRAIGHT SOLDER PRINTED BOARD MOUNT




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

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




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

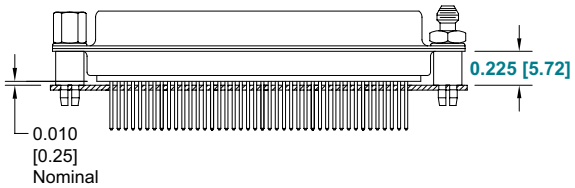
**X and Y contact termination lengths can be custom designed to fit specific application requirements.**

**CONTACT TECHNICAL SALES FOR MORE INFORMATION!**

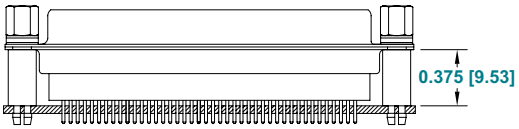
## LOW PROFILE INSULATOR

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

### LOW PROFILE




### STANDARD PROFILE




**CONTACT TECHNICAL SALES FOR MORE INFORMATION!**

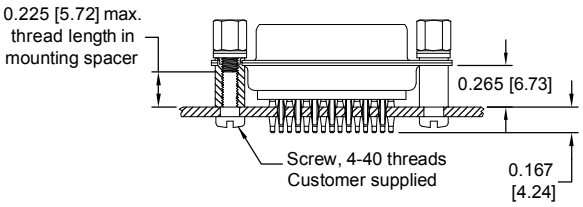




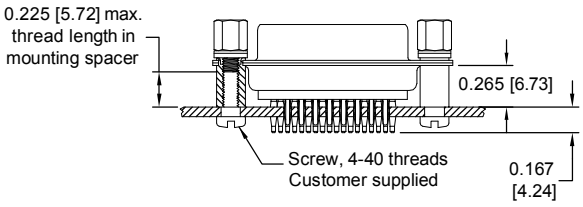
DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

## COMPLIANT PRESS-IN CONNECTOR

### Standard Density

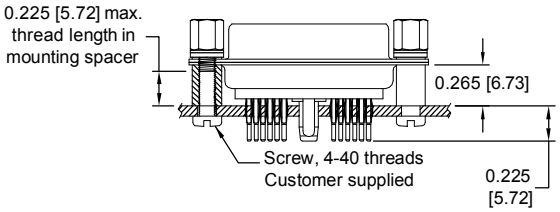



### High Density

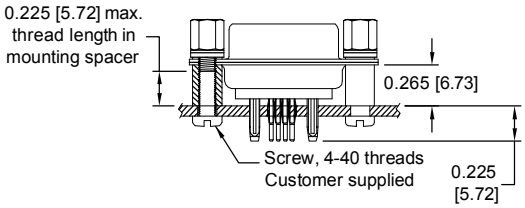



Customers may determine press-in terminations are a viable option based on their application parameters.

### Standard Density Combo-D



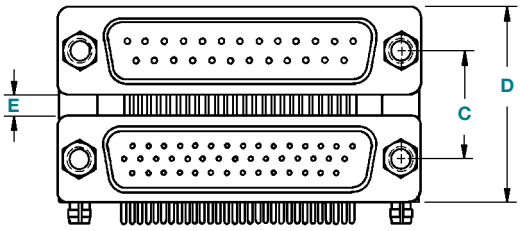

### High Density Combo-D



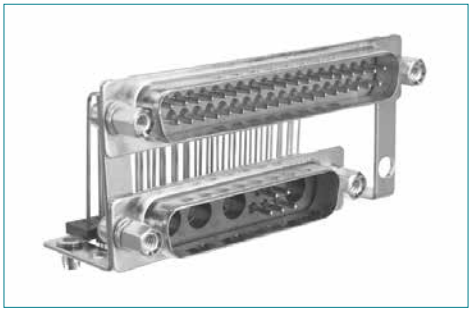

**CONTACT TECHNICAL SALES FOR MORE INFORMATION!**

## DUAL PORT CONNECTOR

Connectors can be stacked to conserve printed circuit board space.




**Standard density over high density shown for reference.**



***THREE HEIGHT OPTIONS!***

| SPACING BETWEEN CONNECTORS | C | D | E |
|---|---|---|---|
| OPTION 1 | 0.625 [15.88] | 1.119 [28.42] | 0.131 [3.33] |
| OPTION 2 | 0.750 [19.05] | 1.244 [31.60] | 0.256 [6.50] |
| OPTION 3 | 0.900 [22.86] | 1.394 [35.41] | 0.406 [10.31] |

**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 97.

### 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 15.*
For SCBCD series: *For electrical characteristics, see page 60.*

## 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 97.

### 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 42.*

## 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 97.

### 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 SCBCD series on page 60.*

## 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 97.

**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 97.

**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 97.
**Outer Contacts:** Precision machined copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 97.

### 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:** Install contact to rear face of insulator and remove from front face of insulator. Size 8 contacts. See page 86 table of cable sizes for contact termination dimensions.
**Durability:** 500 cycles minimum.
**Vibration:** 20g from 10 Hz to 500 Hz.
**Shock:** 30g-11ms.

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

### ELECTRICAL CHARACTERISTICS:

**POWER:**
*For electrical characteristics, see page 23.*

**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.

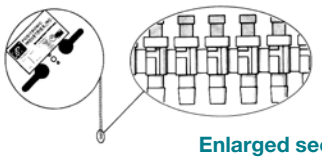
**HIGH VOLTAGE:**
**Flash over Voltage:** 3600 V r.m.s.
**Proof Voltage:** 2700 V r.m.s.
**Initial Contact Resistance:** 0.008 ohms maximum.

## OPTIONAL PLATING FINISHES

**-54** 0.000100 [2.54 µ] gold over copper by adding "-54" suffix onto part number. *Example: FC6026M2-54.*

## 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 98.


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

## REMOVABLE CRIMP CONTACTS

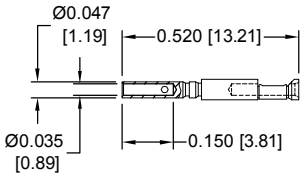
FOR USE WITH SDD AND SCBCD SERIES CONNECTORS

**SIZE 22**

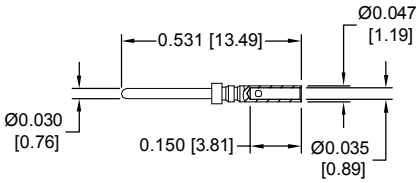
*Note: Connectors can be kitted with all applicable crimp/solder contacts, contact Technical Sales for connector part number.*

### FEMALE CONTACT

"PosiBand" Closed Entry Design




### MALE CONTACT




| FEMALE PART NUMBER | WIRE SIZE AWG/[mm²] |
|---|---|
| FC8022M2 | 22 / 24 / 26 / 28 / 30 [0.3/0.25/0.12/0.08/0.05] |

| MALE PART NUMBER | WIRE SIZE AWG/[mm²] |
|---|---|
| MC8022M | 22 / 24 / 26 / 28 / 30 [0.3/0.25/0.12/0.08/0.05] |

## REMOVABLE CRIMP CONTACT

FOR USE WITH SDD AND SCBCD SERIES CONNECTORS

CONTACTS USED WITH 20 AWG WIRE

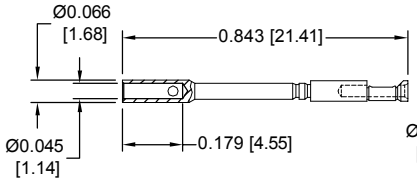
**SIZE 22**

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.

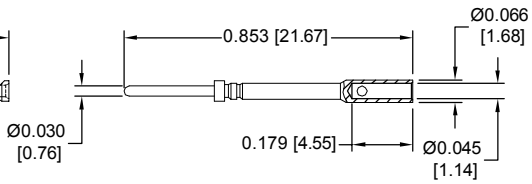
*Note: Connectors can be kitted with all applicable crimp/solder contacts, contact Technical Sales for connector part number.*

### FEMALE CONTACT

"PosiBand" Closed Entry Design




### MALE CONTACT




**Crimp area extends above connector molding.**

| FEMALE PART NUMBER | WIRE SIZE AWG/[mm²] |
|---|---|
| FC8020M2 | 20 [0.5] max |

| MALE PART NUMBER | WIRE SIZE AWG/[mm²] |
|---|---|
| MC8020M | 20 [0.5] max |

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.

## REMOVABLE CLOSED BARREL SOLDER CONTACTS

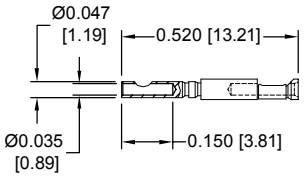
FOR USE WITH SDD AND SCBCD SERIES CONNECTORS

**SIZE 22**

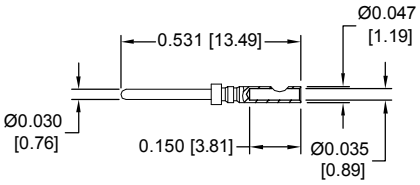
*Note: Connectors can be kitted with all applicable crimp/solder contacts, contact Technical Sales for connector part number.*

### FEMALE CONTACT

"PosiBand" Closed Entry Design




### MALE CONTACT




| FEMALE PART NUMBER | WIRE SIZE AWG/[mm²] |
|---|---|
| **FS8022M2** | 22 [0.3] max |

| MALE PART NUMBER | WIRE SIZE AWG/[mm²] |
|---|---|
| **MS8022M** | 22 [0.3] max |

## REMOVABLE CRIMP CONTACT

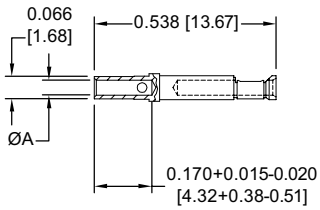
FOR USE WITH SND AND SCBC SERIES CONNECTORS

**SIZE 20**

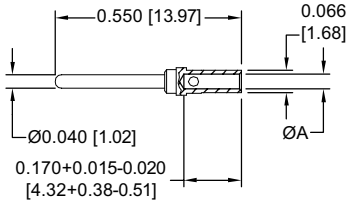
*Note: Connectors can be kitted with all applicable crimp/solder contacts, contact Technical Sales for connector part number.*

### FEMALE CONTACT

"PosiBand" Closed Entry Design




### MALE CONTACT




| FEMALE PART NUMBER | WIRE SIZE AWG/[mm²] | ØA |
|---|---|---|
| **FC6020M2** | 20 / 22 / 24 [0.5/0.3/0.25] | 0.045 [1.14] |
| **FC6026M2** | 26 / 28 / 30 [0.12/0.08/0.05] | 0.027 [0.69] |

| MALE PART NUMBER | WIRE SIZE AWG/[mm²] | ØA |
|---|---|---|
| **MC6020M** | 20 / 22 / 24 [0.5/0.3/0.25] | 0.045 [1.14] |
| **MC6026M** | 26 / 28 / 30 [0.12/0.08/0.05] | 0.027 [0.69] |

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.



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

## REMOVABLE CRIMP CONTACT

FOR USE WITH SND AND SCBC SERIES CONNECTORS

CONTACTS USED WITH 18 AWG WIRE

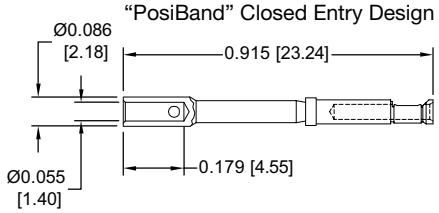
**SIZE 20**

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.

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

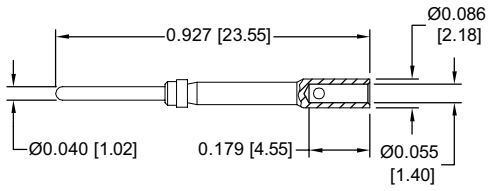
### FEMALE CONTACT

"PosiBand" Closed Entry Design




| FEMALE PART NUMBER | WIRE SIZE AWG/[mm²] |
|---|---|
| **FC6018M2** | 18 [1.0] max |

### MALE CONTACT




| MALE PART NUMBER | WIRE SIZE AWG/[mm²] |
|---|---|
| **MC6018M** | 18 [1.0] max |

## REMOVABLE CLOSED BARREL SOLDER CONTACTS

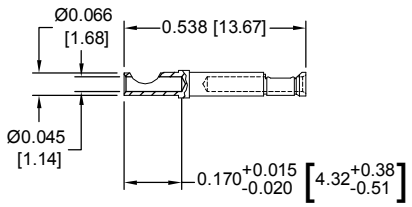
FOR USE WITH SND AND SCBC SERIES CONNECTORS

**SIZE 20**

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

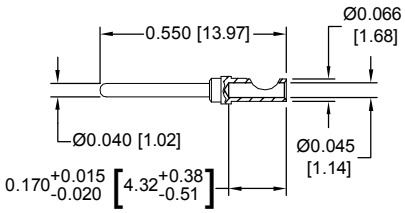
### FEMALE CONTACT

"PosiBand" Closed Entry Design




| FEMALE PART NUMBER | WIRE SIZE AWG/[mm²] |
|---|---|
| **FS6020M2** | 20 [0.5] max |

### MALE CONTACT




| MALE PART NUMBER | WIRE SIZE AWG/[mm²] |
|---|---|
| **MS6020M** | 20 [0.5] max |

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.

## REMOVABLE CRIMP POWER CONTACT

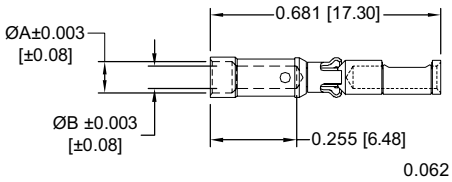
FOR USE WITH SCBCD SERIES CONNECTORS

**SIZE 16**

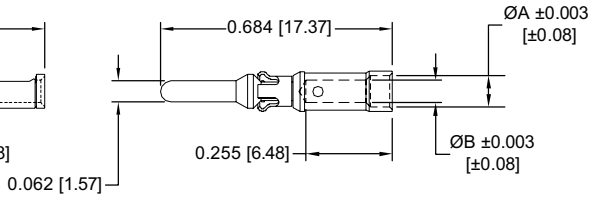
*Note: Connectors can be kitted with all applicable crimp/solder contacts, contact Technical Sales for connector part number.*

**FEMALE CONTACT**

"PosiBand" Closed Entry Design




**MALE CONTACT**




| FEMALE PART NUMBER | WIRE SIZE [AWG] mm² | ØA | ØB |
|---|---|---|---|
| FC112N4-50 | 12 / [4.0] | N/A | 0.098 [2.49] |
| FC114N4-50 | 14-16 [2.5-1.5] | 0.105 [2.67] | 0.081 [2.06] |
| FC116N4-50 | 16-18 [1.5-1.0] | 0.093 [2.36] | 0.067 [1.70] |
| FC120N4-50 | 20-22-24 [0.5-0.3-0.25] | 0.065 [1.65] | 0.045 [1.14] |

| MALE PART NUMBER | WIRE SIZE mm² [AWG] | ØA | ØB |
|---|---|---|---|
| MC112N-50-133.0 | 12 / [4.0] | N/A | 0.098 [2.49] |
| MC114N-50-133.0 | 14-16 [2.5-1.5] | 0.105 [2.67] | 0.081 [2.06] |
| MC116N-50-133.0 | 16-18 [1.5-1.0] | 0.093 [2.36] | 0.067 [1.70] |
| MC120N-50-133.0 | 20-22-24 [0.5-0.3-0.25] | 0.065 [1.65] | 0.045 [1.14] |

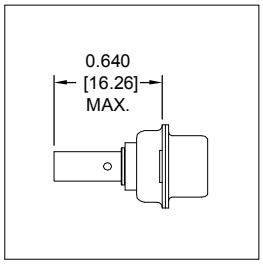
## REMOVABLE CRIMP POWER CONTACT

FOR USE WITH SCBM, SCBC, SCBDD AND SCBCD SERIES CONNECTORS

**SIZE 8**

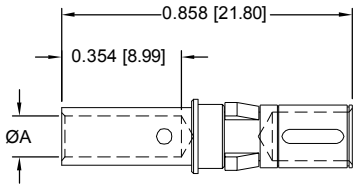
**For contact current rating, see page 23.**

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

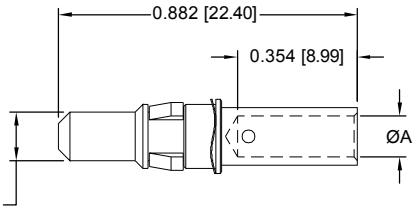



***1 FEMALE CONTACT**

"CLOSED ENTRY" DESIGN, L.S.A.




**MALE CONTACT**




| FEMALE PART NUMBER | WIRE SIZE [AWG] mm² | Ø A |
|---|---|---|
| FC4008M | 8 [10.0] | 0.181 [4.60] |
| FC4010M | 10 [5.3] | 0.122 [3.10] |
| FC4012M | 12 [4.0] | 0.101 [2.57] |
| FC4016M | 16 [1.5] | 0.067 [1.70] |

| MALE PART NUMBER | WIRE SIZE [AWG] mm² | Ø A |
|---|---|---|
| MC4008M | 8 [10.0] | 0.181 [4.60] |
| MC4010M | 10 [5.3] | 0.122 [3.10] |
| MC4012M | 12 [4.0] | 0.101 [2.57] |
| MC4016M | 16 [1.5] | 0.067 [1.70] |

**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 98.



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

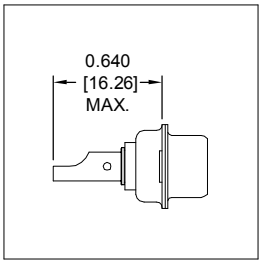
## REMOVABLE SOLDER CUP POWER CONTACT

FOR USE WITH SCBM, SCBC, SCBDD AND SCBCD SERIES CONNECTORS

**SIZE 8**

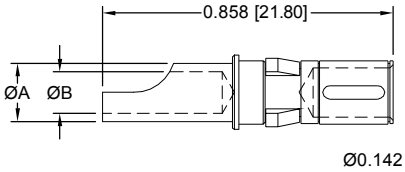
**For contact current rating, see page 23**

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

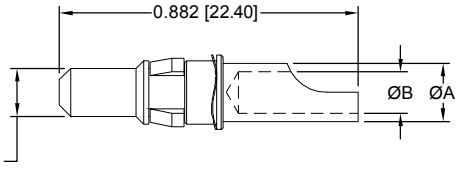



***1 FEMALE CONTACT**

"CLOSED ENTRY" DESIGN, L.S.A.




**MALE CONTACT**




| FEMALE PART NUMBER | WIRE SIZE [AWG] mm² | Ø A | Ø B |
|---|---|---|---|
| **FS4008M** | 8 [10.0] | 0.219 [5.56] | 0.188 [4.78] |
| **FS4012M** | 12 [4.0] | 0.143 [3.63] | 0.112 [2.84] |
| **FS4016M** | 16 [1.5] | 0.100 [2.54] | 0.069 [1.75] |

| MALE PART NUMBER | WIRE SIZE [AWG] mm² | Ø A | Ø B |
|---|---|---|---|
| **MS4008M** | 8 [10.0] | 0.219 [5.56] | 0.188 [4.78] |
| **MS4012M** | 12 [4.0] | 0.143 [3.63] | 0.112 [2.84] |
| **MS4016M** | 16 [1.5] | 0.100 [2.54] | 0.069 [1.75] |

**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.

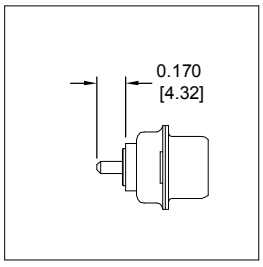
## STRAIGHT SOLDER PRINTED BOARD MOUNT POWER CONTACT

FOR USE WITH SCBM AND SCBDD SERIES CONNECTORS

**SIZE 8**

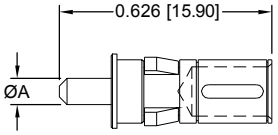
**For contact current rating, see page 23.**

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

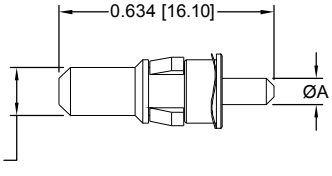



***1 FEMALE CONTACT**

"CLOSED ENTRY" DESIGN, L.S.A.




**MALE CONTACT**




| FEMALE PART NUMBER | Ø A | CONTACT CODE |
|---|---|---|
| **FDS4314M** | 0.078 [1.98] | 35 |
| **FDS4312M** | 0.094 [2.39] | 36 |
| **FDS4310M** | 0.125 [3.18] | 37 |

| MALE PART NUMBER | Ø A | CONTACT CODE |
|---|---|---|
| **MDS4314M** | 0.078 [1.98] | 35 |
| **MDS4312M** | 0.094 [2.39] | 36 |
| **MDS4310M** | 0.125 [3.18] | 37 |

**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.

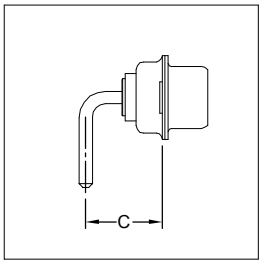
For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.

# RIGHT ANGLE (90°) PRINTED BOARD MOUNT POWER CONTACT

FOR USE WITH SCBM AND SCBDD SERIES CONNECTORS

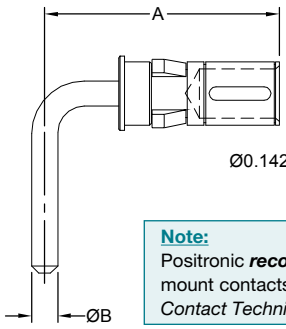
For contact current rating, see page 23

## SIZE 8

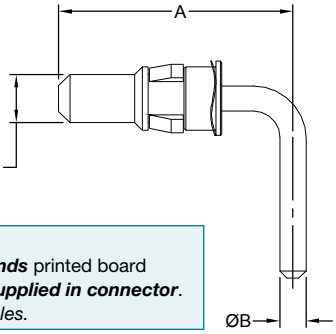



***1 FEMALE CONTACT**

"CLOSED ENTRY" DESIGN, L.S.A.




**MALE CONTACT**




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

**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.

| FEMALE PART NUMBER | A REF. | Ø B | C | SHELL SIZE | CONTACT CODE |
|---|---|---|---|---|---|
| **FRT4314M** | 0.580 [14.73] | 0.078 [1.98] | 0.339 [8.61] | 1, 2, 3 & 4 | 55 |
| **FRT4414M** | 0.692 [17.58] | 0.078 [1.98] | 0.451 [11.46] | 5 | 55 |
| **FRT4714M** | 0.661 [16.79] | 0.078 [1.98] | 0.420 [10.67] | 1, 2, 3 & 4 | 75 |
| **FRT4814M** | 0.773 [19.63] | 0.078 [1.98] | 0.520 [13.21] | 5 | 75 |
| **FRT4310M** | 1.051 [26.70] | 0.125 [3.18] | 0.810 [20.57] | 1, 2, 3 & 4 | 57, 77 |
| **FRT4410M** | 1.051 [26.70] | 0.125 [3.18] | 0.810 [20.57] | 5 | 57, 77 |

| MALE PART NUMBER | A REF. | Ø B | C | SHELL SIZE | CONTACT CODE |
|---|---|---|---|---|---|
| **MRT4314M** | 0.580 [14.73] | 0.078 [1.98] | 0.339 [8.61] | 1, 2, 3 & 4 | 55 |
| **MRT4414M** | 0.692 [17.58] | 0.078 [1.98] | 0.451 [11.46] | 5 | 55 |
| **MRT4714M** | 0.661 [16.79] | 0.078 [1.98] | 0.420 [10.67] | 1, 2, 3 & 4 | 75 |
| **MRT4814M** | 0.773 [19.63] | 0.078 [1.98] | 0.520 [13.21] | 5 | 75 |
| **MRT4310M** | 1.051 [26.70] | 0.125 [3.18] | 0.810 [20.57] | 1, 2, 3 & 4 | 57, 77 |
| **MRT4410M** | 1.051 [26.70] | 0.125 [3.18] | 0.810 [20.57] | 5 | 57, 77 |

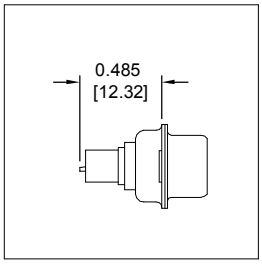
*Note: Connectors can be kitted with all applicable crimp/solder contacts, contact Technical Sales for connector part number.*

# REMOVABLE HIGH VOLTAGE POWER CONTACT

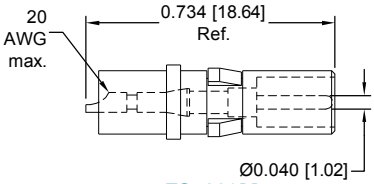
FOR USE WITH SCBM, SCBC, SCBDD AND SCBCD SERIES CONNECTORS

## SIZE 8

### STRAIGHT SOLDER WIRE TERMINATION

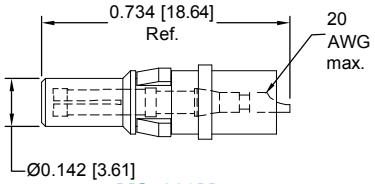



**FEMALE CONTACT**



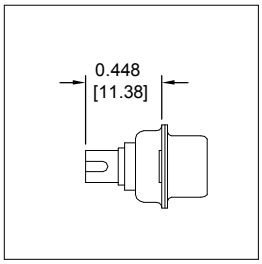

**FS4820M**

**MALE CONTACT**

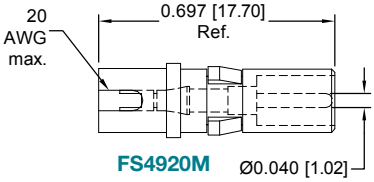



**MS4820M**

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

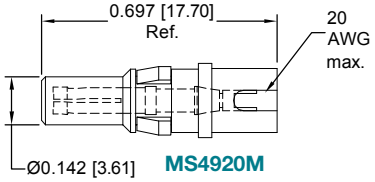



**FEMALE CONTACT**




**FS4920M**

**MALE CONTACT**




**MS4920M**

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.



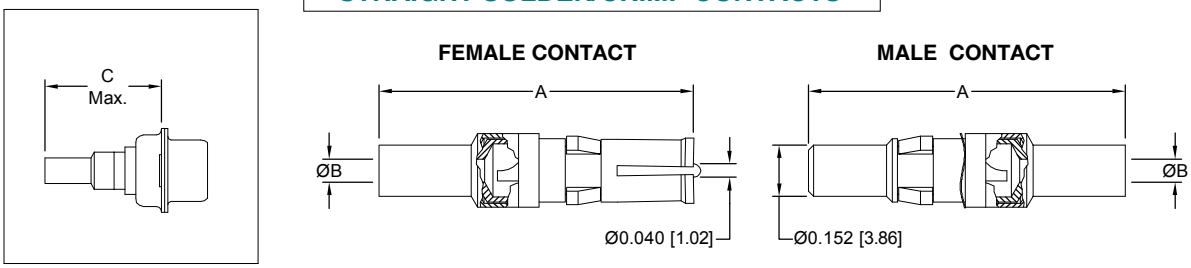
DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

# REMOVABLE SHIELDED CONTACT

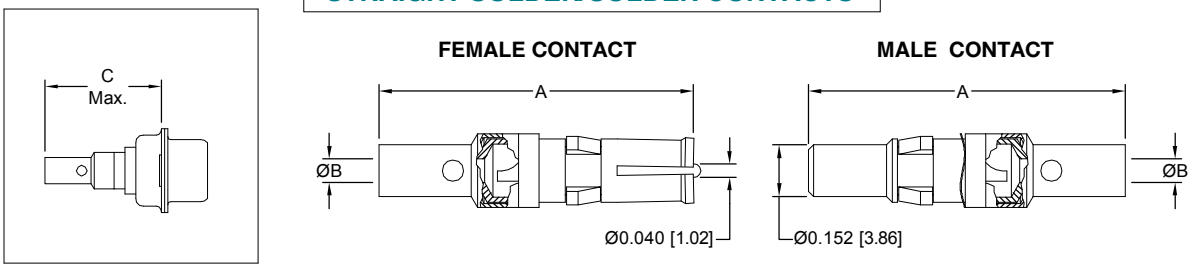
FOR USE WITH SCBM, SCBC, SCBDD AND SCBCD SERIES CONNECTORS

**SIZE 8**

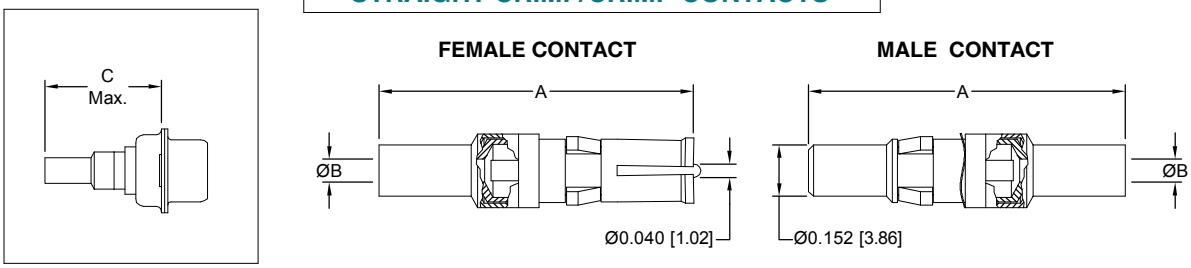
## STRAIGHT SOLDER/CRIMP CONTACTS




## STRAIGHT SOLDER/SOLDER CONTACTS




## STRAIGHT CRIMP/CRIMP CONTACTS




| TYPE OF CONTACT | FEMALE PART NUMBER | MALE PART NUMBER | A | Ø B | C MAX. | RG CABLE NUMBER |
|---|---|---|---|---|---|---|
| SOLDER/CRIMP | **FC4101M** | **MC4101M** | 0.929 [23.60] | 0.040 [1.02] | 0.739 [18.77] | 178 B/U<br>196 B/U |
| | **FC4102M** | **MC4102M** | 0.929 [23.60] | 0.067 [1.70] | 0.739 [18.77] | 179 B/U<br>316 /U |
| | **FC4103M** | **MC4103M** | 1.037 [26.34] | 0.108 [2.74] | 0.847 [21.51] | 180 B/U |
| | **FC4104M** | **MC4104M** | 1.037 [26.34] | 0.120 [3.05] | 0.847 [21.51] | 58 B/U |
| SOLDER/SOLDER | **FS4101M** | **MS4101M** | 0.929 [23.60] | 0.040 [1.02] | 0.739 [18.77] | 178 B/U<br>196 B/U |
| | **FS4102M** | **MS4102M** | 0.929 [23.60] | 0.067 [1.70] | 0.739 [18.77] | 179 B/U<br>316 /U |
| | **FS4103M** | **MS4103M** | 1.037 [26.34] | 0.108 [2.74] | 0.847 [21.51] | 180 B/U |
| | **FS4104M** | **MS4104M** | 1.037 [26.34] | 0.120 [3.05] | 0.847 [21.51] | 58 B/U |
| CRIMP/CRIMP | **FCC4101M** | **MCC4101M** | 0.929 [23.60] | 0.040 [1.02] | 0.739 [18.77] | 178 B/U<br>196 B/U |
| | **FCC4102M** | **MCC4102M** | 0.929 [23.60] | 0.067 [1.70] | 0.739 [18.77] | 179 B/U<br>316 /U |
| | **FCC4103M** | **MCC4103M** | 1.037 [26.34] | 0.108 [2.74] | 0.847 [21.51] | 180 B/U |
| | **FCC4104M** | **MCC4104M** | 1.037 [26.34] | 0.120 [3.05] | 0.847 [21.51] | 58 B/U |

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

## SHIELDED CONTACTS

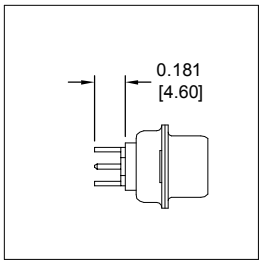
**Two-step crimping action for signal and shielding conductors.**

For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.

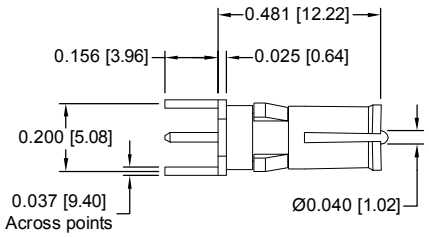
## STRAIGHT SOLDER PRINTED BOARD MOUNTED SHIELDED CONTACT

FOR USE WITH SCBM AND SCBDD SERIES CONNECTORS

**SIZE 8**

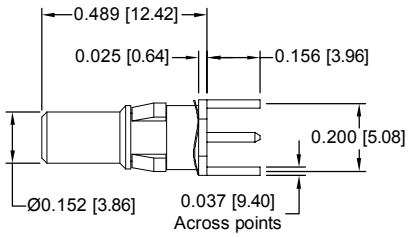



**FEMALE CONTACT**

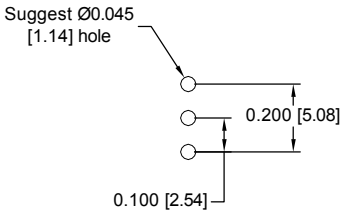



**FDS4201M**

**MALE CONTACT**




**MDS4201M**



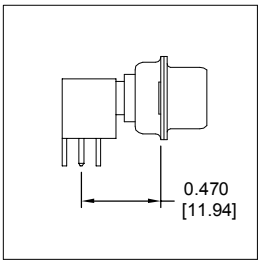

**CONTACT HOLE PATTERN**

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

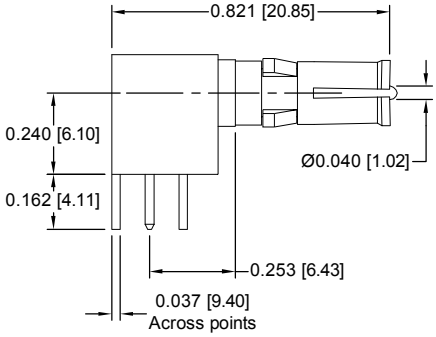
## RIGHT ANGLE (90°) PRINTED BOARD MOUNT SHIELDED CONTACTS

FOR USE WITH SCBM AND SCBDD SERIES CONNECTORS

**SIZE 8**

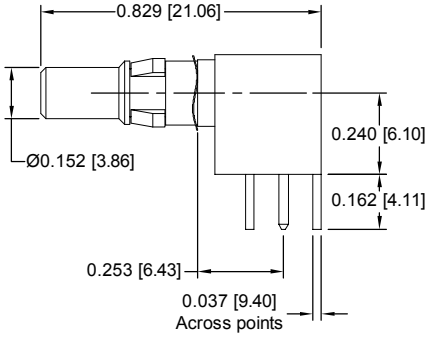



**FEMALE CONTACT**

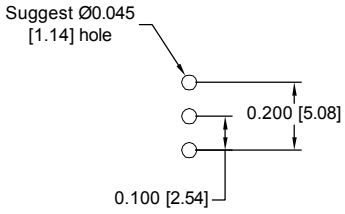



**FRT4201M**

**MALE CONTACT**




**MRT4201M**




**CONTACT HOLE PATTERN**

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

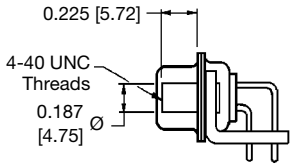
For information regarding CRIMP TOOLS & CRIMPING TOOL TECHNIQUES, see page 98.



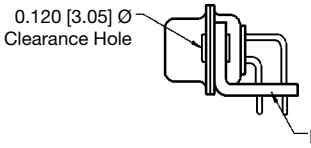
DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

## RIVETED ON RIGHT ANGLE (90°) MOUNTING BRACKETS WITH CROSS BAR
### CODE R2, R6, R7 AND R8

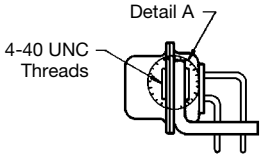
CONTACT ALIGNMENT BAR IS SUPPLIED WITH R2, R6, R7, AND R8. EXCEPTION: SCBM2WK2, SCBM3W3, SCBM3WK3, SCBM5W5 AND SCBM8W8 VARIANTS. SEE PAGE 40 FOR MORE INFORMATION.



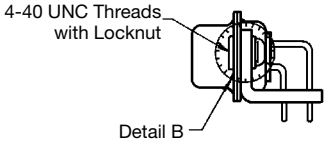

R2




R6

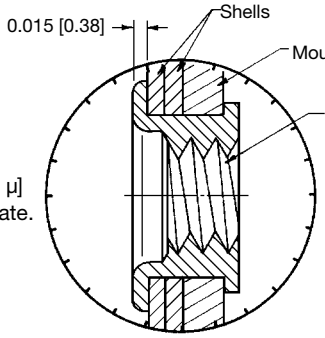



R7

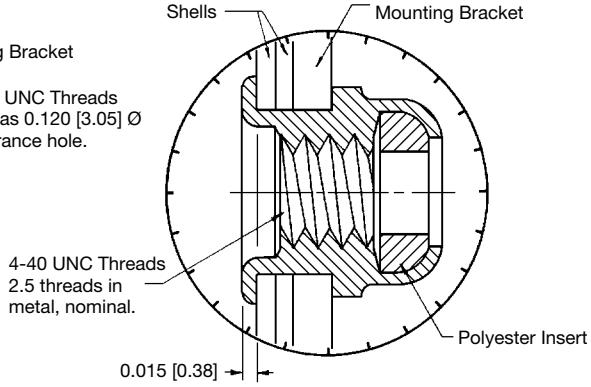



R8

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




DETAIL A

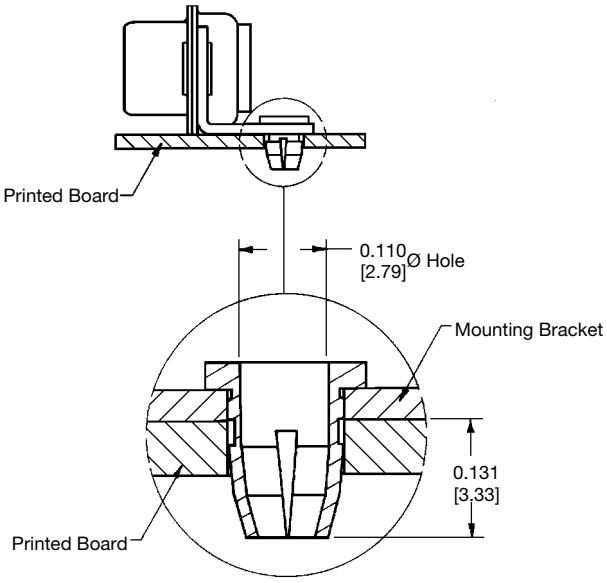



DETAIL B

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

**SCBM17W2S5R7N0G** (shown left)

**SDD26S4R7N0G** (shown right)




Printed board mounting hole to be 0.123 [3.12] Ø ±0.003 for use with push-on fastener.

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

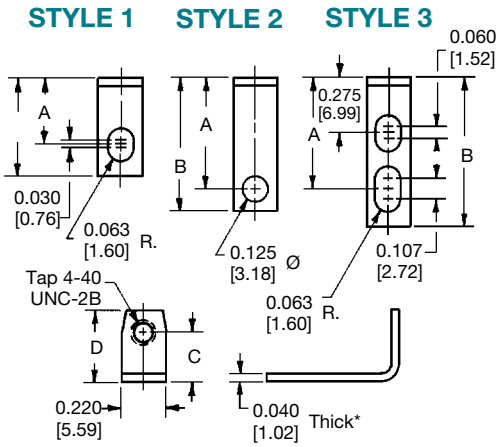
| TYPICAL PERFORMANCE EVALUATION DATA | | | |
|---|---|---|---|
| SAMPLE # | PRINTED BOARD HOLE Ø | INSERTION FORCE [LBS.] | RETENTION FORCE [LBS.] |
| 1 | 0.120 [3.05] | 7-1/4 | 5-3/4 |
| 2 | 0.123 [3.12] | 5-3/4 | 5-1/2 |
| 3 | 0.125 [3.18] | 2-3/4 | 2-1/2 |
| 4 | 0.128 [3.25] | 1-3/4 | 2-1/4 |
| 5 | 0.126 [3.20] PLATED | 1-3/4 | 2-1/4 |

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

## RIGHT ANGLE (90°) METAL MOUNTING BRACKET
### CODE B3

| PART NO. | STYLE | A | B | C | D | SIZE | SND | SDD | SCBM | SCBDD |
|---|---|---|---|---|---|---|---|---|---|---|
| 4535-2-0 | 1 | 0.324 [8.23] | 0.484 [12.29] | 0.244 [6.20] | 0.358 [9.09] | 9-37 | 5 | | 5, 55, 57 | |
| 4535-3-0 | 1 | 0.380 [9.65] | 0.594 [15.09] | 0.303 [7.70] | 0.417 [10.59] | 50 | 5 | | 5, 55, 57 | |
| 4535-5-0 | 3 | 0.554 [14.07] | 0.739 [18.77] | 0.244 [6.20] | 0.358 [9.09] | 15-62 | | 4 | | |
| 4535-6-0 | 3 | 0.604 [15.34] | 0.800 [20.32] | 0.303 [7.70] | 0.417 [10.59] | 78 | | 4 | | |
| 4535-8-0 | 2 | 0.405 [10.29] | 0.522 [13.26] | 0.246 [6.25] | 0.358 [9.09] | 9-37 | 42 | | 7, 75, 77 | |
| 4535-9-0 | 2 | 0.455 [11.56] | 0.572 [14.53] | 0.303 [7.70] | 0.414 [10.52] | 50 | 42 | | 7, 75, 77 | |
| 4535-32-0 | 2 | 0.399 [10.13] | 0.516 [13.11] | 0.246 [6.25] | 0.358 [9.09] | 15-62 | | | | 4 |
| 4535-33-0 | 2 | 0.399 [10.13] | 0.516 [13.11] | 0.303 [7.70] | 0.414 [10.52] | 78 | | | | 4 |
| 4535-62-0 | 2 | 0.614 [15.60] | 0.731 [18.57] | 0.334 [8.48] | 0.445 [11.30] | 104 | | 4 | | |
| NOTE: Sold only as part of a connector assembly. | | | | | | | | | | |

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



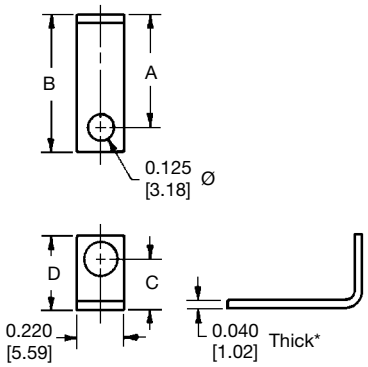

***0.062 [1.57] thick for Size 104 SDD series and SCBM46W4 variant.**

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

## 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

| PART NO. | A | B | C | D | SIZE | SND | SDD | SCBM | SCBDD |
|---|---|---|---|---|---|---|---|---|---|
| 4535-2-1 | 0.339 [8.61] | 0.456 [11.58] | 0.246 [6.25] | 0.358 [9.09] | 9 - 37 | 5 | | 5, 55, 57 | |
| 4535-3-1 | 0.395 [10.03] | 0.512 [13.00] | 0.303 [7.70] | 0.414 [10.52] | 50 | 5 | | 5, 55, 57 | |
| 4535-8-1 | 0.420 [10.67] | 0.537 [13.64] | 0.246 [6.25] | 0.358 [9.09] | 9 - 37 | 42 | | 7, 75, 77 | |
| 4535-9-1 | 0.470 [11.94] | 0.587 [14.91] | 0.303 [7.70] | 0.414 [10.52] | 50 | 42 | | 7, 75, 77 | |
| 4535-32-1 | 0.414 [10.52] | 0.531 [13.49] | 0.246 [6.25] | 0.358 [9.09] | 15-62 | | | | 4 |
| 4535-33-1 | 0.414 [10.52] | 0.531 [13.49] | 0.303 [7.70] | 0.414 [10.52] | 78 | | | | 4 |
| 4535-34-1 | 0.528 [13.41] | 0.645 [16.38] | 0.246 [6.25] | 0.358 [9.09] | 15 - 62 | | 4 | | |
| 4535-35-1 | 0.573 [14.55] | 0.690 [17.53] | 0.303 [7.70] | 0.414 [10.52] | 78 | | 4 | | |
| 4535-62-1 | 0.614 [15.60] | 0.731 [18.57] | 0.334 [8.48] | 0.445 [11.30] | 104 | | 4 | | |
| NOTE: Sold only as part of a connector assembly. | | | | | | | | | |

**Note:** Contact alignment bar is supplied with R2, R6, R7 and R8 options only.



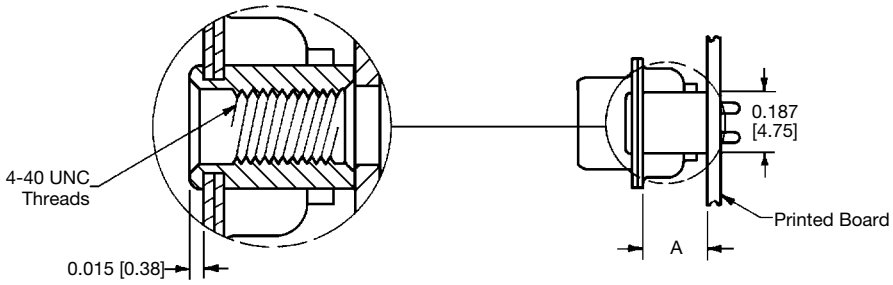

***0.062 [1.57] thick for Size 104 SDD series and SCBM46W4 variant.**

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



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

## SWAGED SPACER
### CODE S



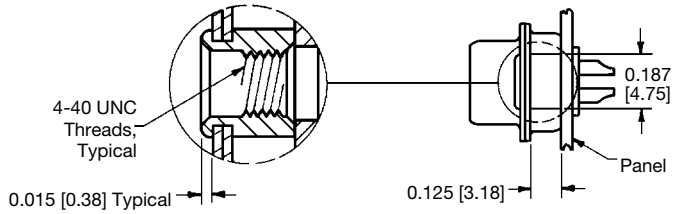

| CONNECTOR SERIES | *1 CODE NUMBER | A |
|---|---|---|
| SND | 0, 1, 12 | 0.375 [9.53] |
| | 2, 3, 32, 36, 42, 5 | 0.225 [5.72] |
| SDD | 0, 1, 3, 32, 4 | 0.375 [9.53] |
| SCBM | 0, 2, 3, 35, 36, 37, 5, 55, 57, 65, 7, 75, 77, 85 | 0.250 [6.35] |
| SCBC | 0, 1, 12, 13, 14 | 0.375 [9.53] |
| SCBDD | 21, 3, 35, 36, 37, 4, 45, 47, 65, 84 | 0.250 [6.35] |
| SCBCD | 0, 1, 12, 13, 14 | 0.375 [9.53] |

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

**NOTE:**

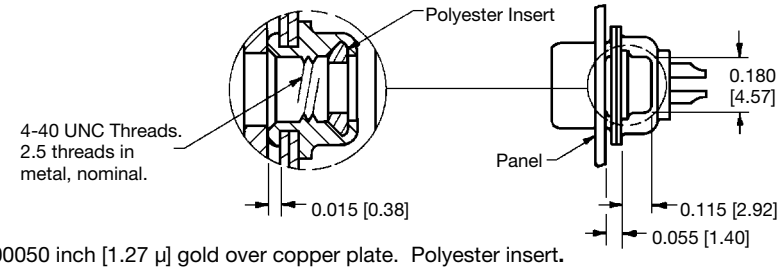
*1 Contact termination code as specified in Step 4 of ordering information.

## SWAGED SPACER
### CODE S2



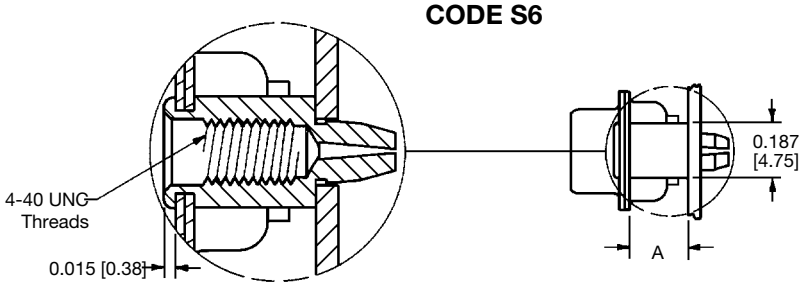

**Material:** Brass, 0.000050 inch [1.27 µ] gold over copper plate.

## SWAGED LOCKNUT
### CODE S5




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

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




**Printed board mounting hole to be 0.123 [3.12] Ø ±0.003 for use with push-on fastener.**

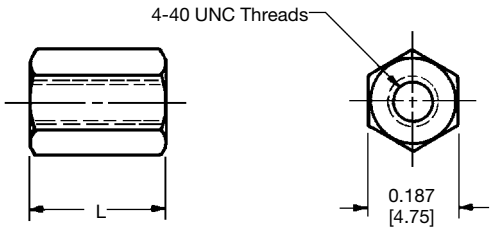
**Material:** Phosphor bronze, 0.000050 inch [1.27 µ] gold over copper plate.

| CONNECTOR SERIES | *1 CODE NUMBER | A |
|---|---|---|
| SND | 0, 1, 12 | 0.375 [9.53] |
| | 2, 3, 32, 36, 42, 5 | 0.225 [5.72] |
| SDD | 0, 1, 3, 32, 4 | 0.375 [9.53] |
| SCBM | 0, 2, 3, 35, 36, 37, 5, 55, 57, 65, 7, 75, 77, 85 | 0.250 [6.35] |
| SCBC | 0, 1, 12, 13, 14 | 0.375 [9.53] |
| SCBDD | 21, 3, 35, 36, 37, 4, 45, 47, 65, 84 | 0.250 [6.35] |
| SCBCD | 0, 1, 12, 13, 14 | 0.375 [9.53] |

**NOTE:**

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

## THREADED POST
### CODE P



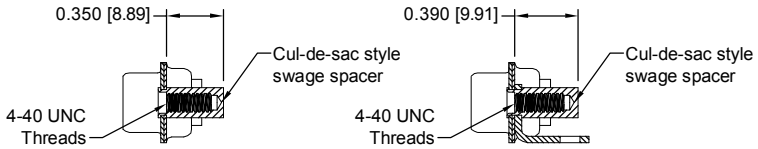

| CONNECTOR SERIES | *1 CODE NUMBER | A |
|---|---|---|
| SND | 0, 1, 12 | 0.375 [9.53] |
| | 2, 3, 32, 36, 42, 5 | 0.225 [5.72] |
| SDD | 0, 1, 3, 32, 4 | 0.375 [9.53] |
| SCBM | 0, 2, 3, 35, 36, 37, 5, 55, 57, 65, 7, 75, 77, 85 | 0.250 [6.35] |
| SCBC | 0, 1, 12, 13, 14 | 0.375 [9.53] |
| SCBDD | 21, 3, 35, 36, 37, 4, 45, 47, 65, 84 | 0.250 [6.35] |
| SCBCD | 0, 1, 12, 13, 14 | 0.375 [9.53] |

**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.

## CUL-DE-SAC STYLE MOUNTING ACCESSORIES
### CODE C5 AND C7



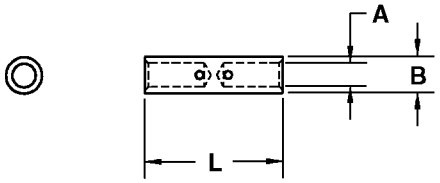

**C5**
PANEL MOUNT

**C7**
RIGHT ANGLE (90°)
PRINTED BOARD MOUNT

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

## IN-LINE CRIMP SPLICE

**Consult Technical Sales for crimp tool part number.**




**NOTE:**

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

| PART NUMBER | WIRE SIZE AWG / [mm²] | L | A | B |
|---|---|---|---|---|
| PSK43636-*1 | 20-26 [0.5/0.12] | 0.500 [12.70] | 0.045 [1.14] | 0.076 [1.93] |
| PSK43637-*1 | 16-20 [1.5/0.5] | 0.575 [14.61] | 0.066 [1.68] | 0.101 [2.57] |
| PSK43638-*1 | 12-18 [4.0-1.0] | 0.577 [14.66] | 0.097 [2.46] | 0.150 [3.81] |

**Materials:**

**Splice:** Copper alloy, 0.000050 [1.27 µ] gold over copper.

**Sleeve:** Shrink-fit polyvinylidene fluoride.

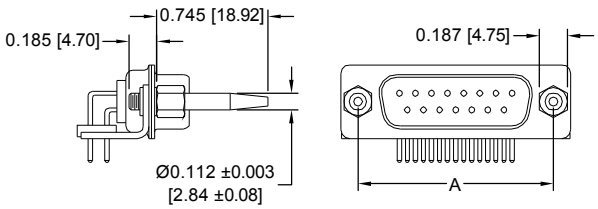


DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

# BLIND MATING SYSTEM

## BLIND MATING GUIDES

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



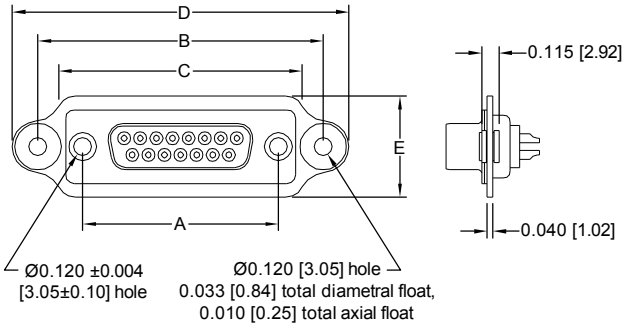

**TYPICAL PART NUMBER:**
**SND15M5R700G-759.42**

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

| CONNECTOR VARIANT (SHELL SIZE) | A | B | C | D | E |
|---|---|---|---|---|---|
| **9/15** *(SHELL SIZE 1)* | 0.984 [24.99] | 1.586 [40.28] | 1.333 [33.86] | 1.930 [49.02] | 0.677 [17.20] |
| **15/26** *(SHELL SIZE 2)* | 1.312 [33.32] | 1.914 [48.62] | 1.661 [42.19] | 2.258 [57.35] | 0.677 [17.20] |
| **25/44** *(SHELL SIZE 3)* | 1.852 [47.04] | 2.461 [62.51] | 2.208 [56.08] | 2.805 [71.25] | 0.677 [17.20] |
| **37/62** *(SHELL SIZE 4)* | 2.500 [63.50] | 3.102 [78.79] | 2.849 [72.36] | 3.446 [87.53] | 0.677 [17.20] |
| **50/78** *(SHELL SIZE 5)* | 2.406 [61.11] | 3.008 [76.40] | 2.755 [69.98] | 3.352 [85.14] | 0.789 [20.04] |

## PANEL MOUNTING

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

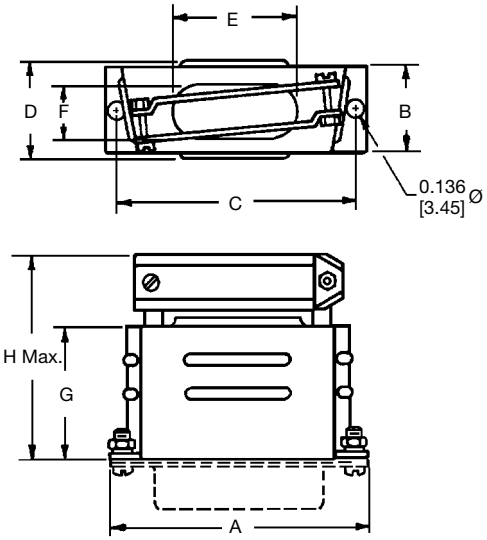



**TYPICAL PART NUMBER:**
**SND15S2000G-759.43**

**Material:** Aluminum, yellow anodize standard.

# METAL CABLE ADAPTER (HOOD)

## CODE H

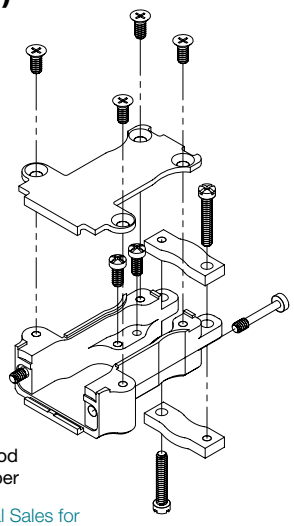



**TYPICAL PART NUMBER:**
**SND15M00H0G**

| CONNECTOR VARIANT (SHELL SIZE) | PART NO. | A | B | C | D MAX. | E | F | G | H MAX. |
|---|---|---|---|---|---|---|---|---|---|
| **15/26** *(SHELL SIZE 2)* | **SND15000H0G** | 1.531 [38.88] | 0.492 [12.50] | 1.312 [33.32] | 0.578 [14.68] | 0.713 [18.11] | 0.312 [7.92] | 0.750 [19.05] | 1.219 [30.96] |
| **25/44** *(SHELL SIZE 3)* | **SND25000H0G** | 2.078 [52.78] | 0.492 [12.50] | 1.852 [47.04] | 0.578 [14.68] | 1.000 [25.40] | 0.312 [7.92] | 1.000 [25.40] | 1.532 [38.91] |
| **37/62** *(SHELL SIZE 4)* | **SND37000H0G** | 2.718 [69.03] | 0.492 [12.50] | 2.500 [63.50] | 0.578 [14.68] | 1.375 [34.93] | 0.312 [7.92] | 1.000 [25.40] | 1.532 [38.91] |
| **50/78** *(SHELL SIZE 5)* | **SND50000H0G** | 2.625 [66.68] | 0.601 [15.27] | 2.406 [61.11] | 0.687 [17.45] | 1.406 [35.71] | 0.406 [10.31] | 1.125 [28.58] | 1.657 [42.09] |

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

# LIGHTWEIGHT ALUMINUM CABLE ADAPTER (HOOD)
## CODE AN



## TECHNICAL CHARACTERISTICS

### 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] gold 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 94 for more information.*

### CLIMATIC CHARACTERISTICS:

**Temperature Range:** -55°C to +125°C

### ELECTRICAL CHARACTERISTICS:

**Range of Operation, Calculated Method:** 2 GHz minimum.

### WEIGHT CHART:

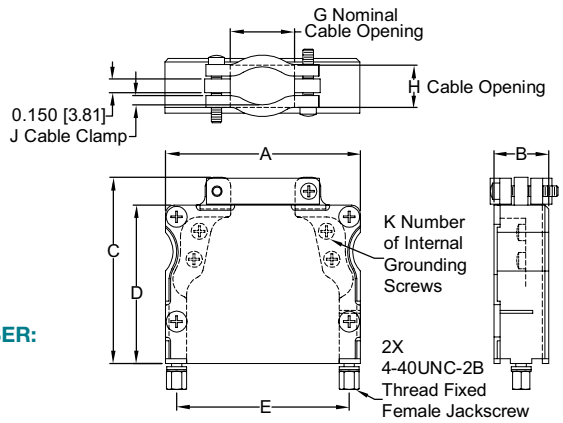
| HOOD SIZE | D*1000ANE ounces [grams] |
|---|---|
| 9 | 1.08 [30.54] |
| 15 | 1.32 [37.44] |
| 25 | 1.62 [45.92] |
| 37 | 2.19 [62.06] |
| 50 | 2.26 [63.94] |
| 104 | 2.41 [68.44] |
| All hardware in a hood assembly including cable clamps, screws, etc. | |

**NOTE:**
*1 designates hood size in part number

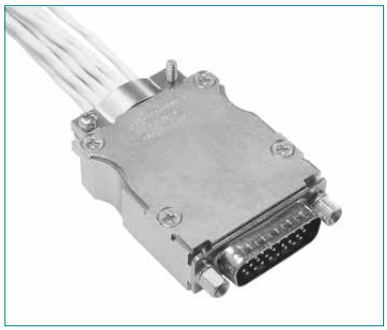
Contact Technical Sales for weights on T2, E6, and E7 hardware options.

# LIGHTWEIGHT ALUMINUM CABLE ADAPTER (HOOD) WITH FIXED FEMALE JACKSCREWS
## CODE ANT2

Also available with ***Polarized Fixed Jackscrews***. Contact Technical Sales for details.




**TYPICAL PART NUMBER: D25000ANT2G**



***D15000ANT2G- Lightweight aluminum hood with fixed female jackscrews, pictured above with connector installed.***

| SHELL SIZE | CONNECTOR / CONTACT VARIANT COMPATIBILITY | PART NUMBER | A | B | C | D | E | G | H Min.*2 | H Max. | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Std-D:** 9 **Combo-D:** 5W1, 2WK2<br>**High-D:** 15 **Combo-D High-D:** 8W2 | D9000ANT2G | 1.219 [30.96] | 0.586 [14.88] | 2.000 [50.08] | 1.700 [43.18] | 0.984 [24.99] | 0.362 [9.19] | 0.240 [6.10] | 0.453 [11.51] | 0.050 [1.27] | 4 |
| 2 | **Std-D:** 15 **Combo-D:** 3W3, 3WK3, 7W2, 11W1<br>**High-D:** 26 **Combo-D High-D:** 19W1 | D15000ANT2G | 1.547 [39.29] | 0.586 [14.88] | 2.000 [50.08] | 1.700 [43.18] | 1.312 [33.32] | 0.690 [17.53] | 0.350 [8.89] | 0.453 [11.51] | 0.100 [2.54] | 4 |
| 3 | **Std-D:** 25 **Combo-D:** 5W5, 9W4, 13W3, 17W2, 21W1<br>**High-D:** 44 **Combo-D High-D:** 15W4 | D25000ANT2G | 2.094 [53.19] | 0.586 [14.88] | 2.000 [50.08] | 1.700 [43.18] | 1.852 [47.04] | 0.690 [17.53] | 0.350 [8.89] | 0.453 [11.51] | 0.100 [2.54] | 4 |
| 4 | **Std-D:** 37 **Combo-D:** 8W8, 13W6, 17W5, 21WA4, 25W3, 27W2<br>**High-D:** 62 **Combo-D High-D:** 45W2 | D37000ANT2G | 2.736 [69.49] | 0.586 [14.88] | 2.250 [57.15] | 1.950 [49.53] | 2.500 [63.50] | 1.242 [31.55] | 0.410 [10.41] | 0.453 [11.51] | 0.130 [3.30] | 6 |
| 5 | **Std-D:** 50 **Combo-D:** 24W7, 36W4, 43W2, 47W1<br>**High-D:** 78 **Combo-D High-D:** n/a | D50000ANT2G | 2.642 [67.11] | 0.689 [17.73] | 2.250 [57.15] | 1.950 [49.53] | 2.406 [61.11] | 1.242 [31.55] | 0.410 [10.41] | 0.564 [14.33] | 0.130 [3.30] | 6 |
| 6 | **Std-D:** n/a **Combo-D:** 46W4<br>**High-D:** 104 **Combo-D High-D:** n/a | D104000ANT2G | 2.736 [69.49] | 0.760 [19.30] | 2.250 [57.15] | 1.950 [49.53] | 2.500 [63.50] | 1.242 [31.55] | 0.410 [10.41] | 0.627 [15.93] | 0.130 [3.30] | 6 |

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

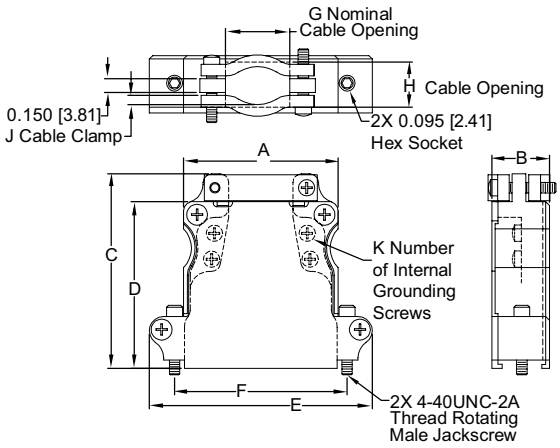


**DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.**

# LIGHTWEIGHT ALUMINUM CABLE ADAPTER (HOOD) WITH ROTATING JACKSCREWS

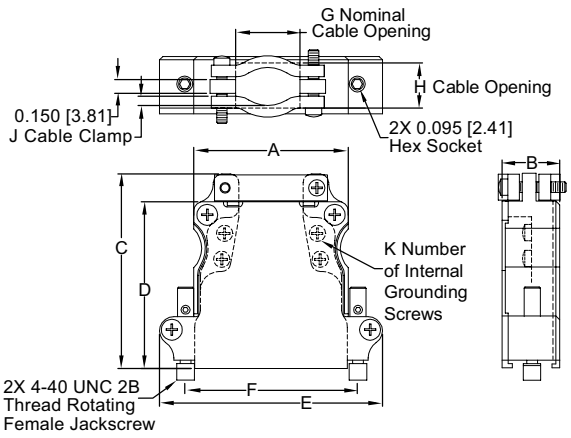
## CODE ANE, ANE6, AND ANE7

### CODE E
ROTATING MALE JACKSCREWS



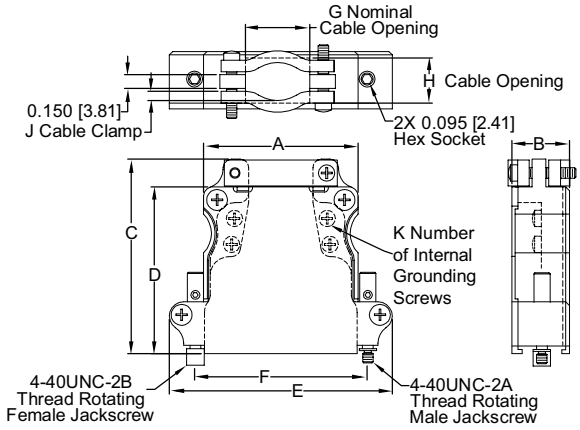

**TYPICAL PART NUMBER: D25000ANEG**

### CODE E7
ROTATING FEMALE JACKSCREWS



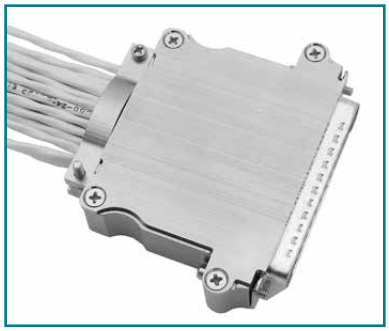

**TYPICAL PART NUMBER: D25000ANE7G**

### CODE E6
POLARIZED ROTATING JACKSCREWS




**TYPICAL PART NUMBER: D25000ANE6G**

For ***Technical Characteristics***, see page 93 for details.



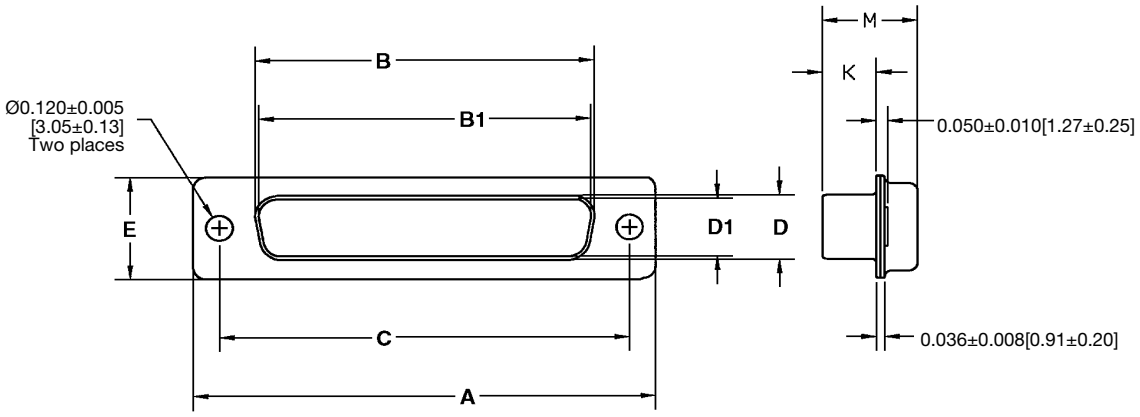
***D37000ANEG- Lightweight aluminum hood with rotating male jackscrews, pictured above with connector installed.***

| SHELL SIZE | CONNECTOR / CONTACT VARIANT COMPATIBILITY | PART NUMBER | A | B | C | D | E | F | G | H Min.*2 | H Max. | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **Std-D:** 9 **Combo-D:** 5W1, 2WK2<br>**High-D:** 15 **Combo-D High-D:** 8W2 | **D9000AN*1G** | 0.908 [23.06] | 0.616 [15.65] | 2.090 [53.09] | 1.790 [45.47] | 1.524 [38.71] | 0.984 [24.99] | 0.362 [9.19] | 0.240 [6.10] | 0.483 [12.27] | 0.050 [1.27] | 4 |
| 2 | **Std-D:** 15 **Combo-D:** 3W3, 3WK3, 7W2, 11W1<br>**High-D:** 26 **Combo-D High-D:** 19W1 | **D15000AN*1G** | 1.236 [31.39] | 0.616 [15.65] | 2.090 [53.09] | 1.790 [45.47] | 1.852 [47.04] | 1.312 [33.32] | 0.690 [17.53] | 0.350 [8.89] | 0.483 [12.27] | 0.100 [2.54] | 4 |
| 3 | **Std-D:** 25 **Combo-D:** 5W5, 9W4, 13W3, 17W2, 21W1<br>**High-D:** 44 **Combo-D High-D:** 15W4 | **D25000AN*1G** | 1.656 [42.06] | 0.616 [15.65] | 2.090 [53.09] | 1.790 [45.47] | 2.392 [60.76] | 1.852 [47.04] | 0.690 [17.53] | 0.350 [8.89] | 0.483 [12.27] | 0.100 [2.54] | 4 |
| 4 | **Std-D:** 37 **Combo-D:** 8W8, 13W6, 17W5, 21WA4, 25W3, 27W2<br>**High-D:** 62 **Combo-D High-D:** 45W2 | **D37000AN*1G** | 2.304 [58.52] | 0.616 [15.65] | 2.340 [59.44] | 2.040 [51.82] | 3.040 [77.22] | 2.500 [63.50] | 1.242 [31.55] | 0.410 [10.41] | 0.483 [12.27] | 0.130 [3.30] | 6 |
| 5 | **Std-D:** 50 **Combo-D:** 24W7, 36W4, 43W2, 47W1<br>**High-D:** 78 **Combo-D High-D:** n/a | **D50000AN*1G** | 2.210 [56.13] | 0.727 [18.47] | 2.340 [59.44] | 2.040 [51.82] | 2.946 [74.83] | 2.406 [61.11] | 1.242 [31.55] | 0.410 [10.41] | 0.594 [15.09] | 0.130 [3.30] | 6 |
| 6 | **Std-D:** n/a **Combo-D:** 46W4<br>**High-D:** 104 **Combo-D High-D:** n/a | **D104000AN*1G** | 2.304 [58.52] | 0.790 [20.07] | 2.340 [59.44] | 2.040 [51.82] | 3.040 [77.22] | 2.500 [63.50] | 1.242 [31.55] | 0.410 [10.41] | 0.657 [16.69] | 0.130 [3.30] | 6 |

**NOTES:** *1 For completed part number, insert the desired code *(E, E6 or E7)* for required jackscrew option.
*2 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

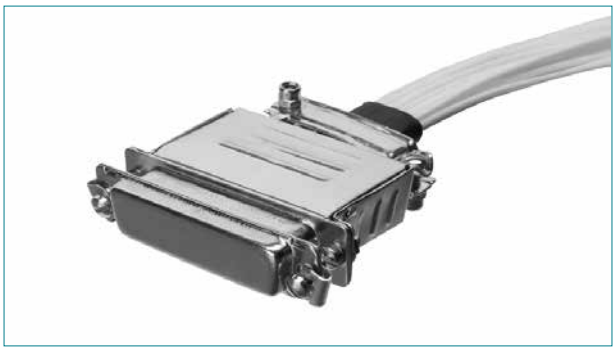



| COVER PART NUMBER | COVER MATES TO | A ±0.015 [0.38] | B ±0.005 [0.13] | B1 ±0.005 [0.13] | C ±0.005 [0.13] | D ±0.005 [0.13] | D1 ±0.005 [0.13] | E ±0.015 [0.38] | K ±0.005 [0.13] | M ±0.010 [0.25] |
|---|---|---|---|---|---|---|---|---|---|---|
| **PSK633-9MG*1** | **Female 9 / 15** | 1.213 [30.81] | | 0.666 [16.92] | 0.984 [24.99] | | 0.329 [8.36] | 0.494 [12.55] | 0.233 [5.92] | 0.422 [10.72] |
| **PSK633-9FG*1** | **Male 9 / 15** | 1.213 [30.81] | 0.643 [16.33] | | 0.984 [24.99] | 0.311 [7.90] | | 0.494 [12.55] | 0.243 [6.17] | 0.429 [10.90] |
| **PSK633-15MG*1** | **Female 15 / 26** | 1.541 [39.14] | | 0.994 [25.25] | 1.312 [33.32] | | 0.329 [8.36] | 0.494 [12.55] | 0.233 [5.92] | 0.422 [10.72] |
| **PSK633-15FG*1** | **Male 15 / 26** | 1.541 [39.14] | 0.971 [24.66] | | 1.312 [33.32] | 0.311 [7.90] | | 0.494 [12.55] | 0.243 [6.17] | 0.429 [10.90] |
| **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] |
| **PSK633-25FG*1** | **Male 25 / 44** | 2.088 [53.04] | 1.511 [38.38] | | 1.852 [47.04] | 0.311 [7.90] | | 0.494 [12.55] | 0.243 [6.17] | 0.429 [10.90] |
| **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** | 2.635 [66.93] | | 2.079 [52.81] | 2.406 [61.11] | | 0.441 [11.20] | 0.605 [15.37] | 0.230 [5.84] | 0.426 [10.82] |
| **PSK633-50FG*1** | **Male 50 / 78** | 2.635 [66.93] | 2.064 [52.43] | | 2.406 [61.11] | 0.423 [10.74] | | 0.605 [15.37] | 0.243 [6.17] | 0.429 [10.90] |
| **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] |
| **PSK633-104FG*1** | **Male - / 104** | 2.729 [69.32] | 2.189 [55.60] | | 2.500 [63.50] | 0.485 [12.32] | | 0.668 [16.97] | 0.243 [6.17] | 0.429 [10.90] |

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

**NOTE:**

*1 To order protective cover with E2 rotating male screw locks (see page 96), insert "N" into the last digit of part number. Omit this digit if thread locks are not required.



SND25M1000G with PSK633-25FGN installed.



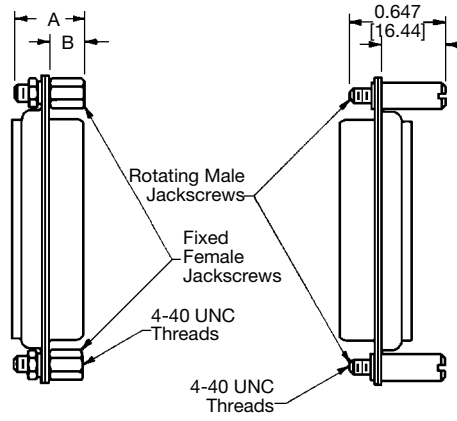
DIMENSIONS ARE IN INCHES [MILLIMETERS].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

## JACKSCREW SYSTEMS
### CODE T*1, T2*1, E, E2 AND E3

**Note:**
*1 T or T2 ***jackscrew supplied*** on connectors ***in combination with other accessories may differ dimensionally***, contact Technical Sales for more information.

| CODE | A | B |
|---|---|---|
| T*1 | 0.437 [11.10] | 0.250 [6.35] |
| T2*1 | 0.500 [12.70] | 0.198 [5.03] |

**T*1/T2*1**



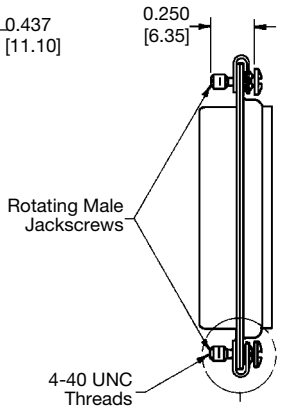

FIXED FEMALE JACKSCREWS

**E/E3**




ROTATING MALE JACKSCREWS

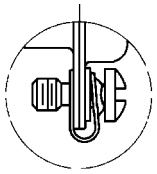
**E2**




ROTATING MALE SCREW LOCKS

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

**E** = slotted for screw driver
**E3** = internal hex for 3/32 hex drives



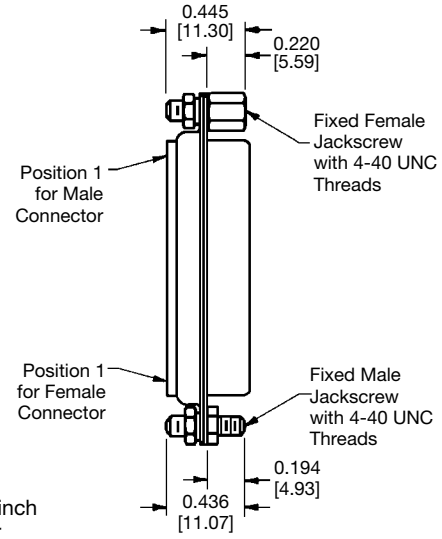
**Material: Screw -** Brass, 0.000050 inch [1.27 µ] gold over copper plate.

**U-Clip -** Copper alloy, 0.000050 inch [1.27 µ] gold over copper plate.

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

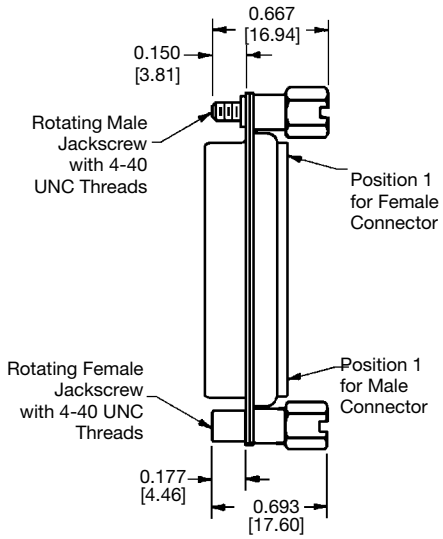
## POLARIZED JACKSCREW SYSTEMS
### CODE T6 AND E6

**T6**




FIXED MALE AND FEMALE JACKSCREWS

**E6*2**




ROTATING MALE AND FEMALE JACKSCREWS

**Note:**
*1 For customer installation of knobs onto jackscrews, ***set screw torque value of 16 in/oz is recommended.*** Recommend application of thread lock to set screw.

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

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

## 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)**

| SERIES | CONNECTOR VARIANT | GENDER | TERMINATION TYPE AVAILABLE | MODIFICATION OF STANDARD (MOS) SUFFIXES | DESCRIPTION OF MODIFICATION |
|---|---|---|---|---|---|
| SND, SDD, SCBM, SCBC, SCBDD, SCBCD, SAD, SADD, SACBMP | ALL | MALE FEMALE | ALL | **-54** | 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. |
| SND, SDD, SCBM, SCBDD | ALL | MALE FEMALE | 4, 5 | **-367.9** | Allows connector to be supplied with contacts inverted. |
| SND, SDD, SCBC, SCBM, SCBDD, SCBCD | ALL | MALE FEMALE | ALL | **-759.42** | 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 92 in accessories section for more information. |
| SND, SDD, SCBM, SCBC, SCBDD, SCBCD, SAD, SADD | ALL | MALE FEMALE | ALL | **-759.43** | Allows connector, with any contacts to include blind mate mounting plate. See page 92 in accessories section for more information. |
| SND, SDD, SCBC, SCBM, SCBDD, SCBCD | ALL | MALE FEMALE | ALL | **-1144.8** | Allows connector to have Group A inspection per Goddard Spec GSFC-S-311-P-4 performed. Certifications included with shipment. |
| SCBM | 3W3, 8W8 | MALE FEMALE | 0 | **-1570.4** | 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 76 in unique feature section for more information. |
| SCBC | 36W4,43W3 | | | | |
| SND, SDD | ALL | MALE FEMALE | ALL | **-1768.33** | Allows connector to be permanently marked with single lot/date code. Individual package and label per MIL-C-5530. Inspect per GSFC-S-311-P-4. Failure analysis reports. Certifications included with shipment. |

**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.***



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

# 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/tooling***

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.

## CONTACT APPLICATION TOOLS CROSS REFERENCE LIST

USE INDICATED POSITRONIC TOOLS FOR BEST RESULTS

| Positronic Contact P/N | Contact Size | Handle & Positioner P/N | Hand Crimp Tool P/N | Mfg. Cross | Mil Equiv | Positioner | Mfg. Cross | Mil Equiv | Insertion Tool | Mfg. Cross | Mil Equiv | Removal Tool | Mfg. Cross | Mil Equiv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **FC11*N4-50** | 16 | 9501-0-0-0 | AF8 | M22520/1-01 | 9502-39-0-0 | TH713 | | 9099-0-0-0 | ITH 1094 | M81969/18-01 | 9081-0-0-0 | RTG 2103 | M81969/20-01 |
| **FC120N4-50** | | 9501-0-0-0 | AF8 | M22520/1-01 | 9502-39-0-0 | TH713 | | 9099-0-0-0 | ITH 1094 | M81969/18-01 | 9081-0-0-0 | RTG 2103 | M81969/20-01 |
| **FC4008M** | | 9504-19-0-0 | HX4 | M22520/5-05 | 9504-19-1-0 | Y524 | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **FC401*M** | 8 | 9509-0-0-0 | M310 | | 9509-2-0-0 | TP-974 | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **FC410*M** | | 9504-0-0-0 | HX4 | M22520/5-01 | 9504-2-0-0 | Y322 | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **FC6018M2** | | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-11-0-0 | K774 | | 4711-2-0-0 | 91067-2 | M81969/1-02 | 4711-2-0-0 | 91067-2 | M81969/1-02 |
| **FC6020M2** | 20 | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-5-0-0 | K13-1 | M22520/2-08 | 4711-2-0-0 | 91067-2 | M81969/1-02 | 4711-2-0-0 | 91067-2 | M81969/1-02 |
| **FC6026M2** | | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-5-0-0 | K13-1 | M22520/2-08 | 4711-2-0-0 | 91067-2 | M81969/1-02 | 4711-2-0-0 | 91067-2 | M81969/1-02 |
| **FC8020M2** | 22 | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-29-0-0 | K1665 | | N/A | | N/A | N/A | | |
| **FC8022M2** | | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-3-0-0 | K-41 | M22520/2-06 | 4811-2-0-0 | 91067-1 | M81969/1-04 | 4811-2-0-0 | 91067-1 | M81969/1-04 |
| **FCC4101M** | | 9504-14-0-0 | HX4 | M22520/5-01 | 9504-14-1-0 | Y878 | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **FCC4102M** | | 9504-13-0-0 | HX4 | M22520/5-01 | 9504-13-1-0 | Y937 | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **FCC4103M** | | 9504-13-0-0 | HX4 | M22520/5-01 | 9504-13-1-0 | Y937 | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **FCC4104M** | | 9504-15-0-0 | HX4 | M22520/5-01 | 9504-15-1-0 | Y877 | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **FDS4**M** | | | | | | | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **FRT4**M** | 8 | | | | | | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **FS4008M** | | | | | | | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **FS401*M** | | | | | | | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **FS410*M** | | | | | | | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **FS4*20M** | | | | | | | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **FS6020M2** | 20 | | | | | | | 4711-2-0-0 | 91067-2 | M81969/1-02 | 4711-2-0-0 | 91067-2 | M81969/1-02 |
| **FS8022M2** | | | | | | | | 4811-2-0-0 | 91067-1 | M81969/1-04 | 4811-2-0-0 | 91067-1 | M81969/1-04 |
| **G08P1** | 22 | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-4-0-0 | K-42 | M22520/2-09 | 4811-2-0-0 | 91067-1 | M81969/1-04 | 4811-2-0-0 | 91067-1 | M81969/1-04 |
| **G08S1, G08S2** | | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-3-0-0 | K-41 | M22520/2-06 | 4811-2-0-0 | 91067-1 | M81969/1-04 | 4811-2-0-0 | 91067-1 | M81969/1-04 |
| **G10P1** | 20 | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-5-0-0 | K13-1 | M22520/2-08 | 4711-2-0-0 | 91067-2 | M81969/1-02 | 4711-2-0-0 | 91067-2 | M81969/1-02 |
| **G10S1, G10S2** | | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-5-0-0 | K13-1 | M22520/2-08 | 4711-2-0-0 | 91067-2 | M81969/1-02 | 4711-2-0-0 | 91067-2 | M81969/1-02 |
| **M39029/57-354** | 22 | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-3-0-0 | K-41 | M22520/2-06 | 4811-2-0-0 | 91067-1 | M81969/1-04 | 4811-2-0-0 | 91067-1 | M81969/1-04 |
| **M39029/58-360** | | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-4-0-0 | K-42 | M22520/2-09 | 4811-2-0-0 | 91067-1 | M81969/1-04 | 4811-2-0-0 | 91067-1 | M81969/1-04 |
| **M39029/63-368** | 20 | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-5-0-0 | K13-1 | M22520/2-08 | 4711-2-0-0 | 91067-2 | M81969/1-02 | 4711-2-0-0 | 91067-2 | M81969/1-02 |
| **M39029/64-369** | | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-5-0-0 | K13-1 | M22520/2-08 | 4711-2-0-0 | 91067-2 | M81969/1-02 | 4711-2-0-0 | 91067-2 | M81969/1-02 |
| **MC11*N--50-133.0** | 16 | 9501-0-0-0 | AF8 | M22520/1-01 | 9502-17-0-0 | TP1110 | | 9099-0-0-0 | ITH 1094 | M81969/18-01 | 9081-0-0-0 | RTG 2103 | M81969/20-01 |
| **MC120N-133.0** | | 9501-0-0-0 | AF8 | M22520/1-01 | 9502-17-0-0 | TP1110 | | 9099-0-0-0 | ITH 1094 | M81969/18-01 | 9081-0-0-0 | RTG 2103 | M81969/20-01 |
| **MC4008M** | | 9504-19-0-0 | HX4 | | 9504-19-1-0 | Y524 | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **MC401*M** | 8 | 9509-0-0-0 | M310 | | 9509-2-0-0 | TP-974 | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **MC410*M** | | 9504-0-0-0 | HX4 | M22520/5-01 | 9504-2-0-0 | Y322 | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **MC6018M** | | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-11-0-0 | K774 | | 4711-2-0-0 | 91067-2 | M81969/1-02 | 4711-2-0-0 | 91067-2 | M81969/1-02 |
| **MC6020M** | 20 | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-5-0-0 | K13-1 | M22520/2-08 | 4711-2-0-0 | 91067-2 | M81969/1-02 | 4711-2-0-0 | 91067-2 | M81969/1-02 |
| **MC6026M** | | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-5-0-0 | K13-1 | M22520/2-08 | 4711-2-0-0 | 91067-2 | M81969/1-02 | 4711-2-0-0 | 91067-2 | M81969/1-02 |
| **MC8020M** | 22 | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-29-0-0 | K1665 | | 4811-2-0-0 | 91067-1 | M81969/1-04 | 4811-2-0-0 | 91067-1 | M81969/1-04 |
| **MC8022M** | | 9507-0-0-0 | AFM8 | M22520/2-01 | 9502-4-0-0 | K-42 | M22520/2-09 | 4811-2-0-0 | 91067-1 | M81969/1-04 | 4811-2-0-0 | 91067-1 | M81969/1-04 |
| **MCC4101M** | | 9504-14-0-0 | HX4 | M22520/5-01 | 9504-14-1-0 | Y878 | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **MCC4102M** | | 9504-13-0-0 | HX4 | M22520/5-01 | 9504-13-1-0 | Y937 | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **MCC4103M** | | 9504-13-0-0 | HX4 | M22520/5-01 | 9504-13-1-0 | Y937 | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **MCC4104M** | | 9504-15-0-0 | HX4 | M22520/5-01 | 9504-15-1-0 | Y877 | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **MDS4***M** | 8 | | | | | | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **MRT4***M** | | | | | | | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **MS4008M** | | | | | | | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **MS401*M** | | | | | | | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **MS4*20M** | | | | | | | | N/A | | N/A | 4311-0-0-0 | P+ | |
| **MS6020M2** | 20 | | | | | | | 4711-2-0-0 | 91067-2 | M81969/1-02 | 4711-2-0-0 | 91067-2 | M81969/1-02 |
| **MS8022M2** | 22 | | | | | | | 4811-2-0-0 | 91067-1 | M81969/1-04 | 4811-2-0-0 | 91067-1 | M81969/1-04 |
| **PSK43636-*** | In-Line Splice | 9504-18-0-0 | 9504-1-0-0 | M22520/5-01 | 9504-18-1-0 | Y516 | | N/A | | N/A | N/A | | |
| **PSK43637-*** | | 9504-18-0-0 | 9504-1-0-0 | M22520/5-01 | 9504-18-1-0 | Y516 | | N/A | | N/A | N/A | | |
| **PSK43638-*** | | 9504-18-0-0 | 9504-1-0-0 | M22520/5-01 | 9504-18-1-0 | Y516 | | N/A | | N/A | N/A | | |

To download a PDF file, visit our web site at http://www.connectpositronic.com/tooling

* for complete listing of contact part numbers, see removable contact section pages 79-87.





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# Positronic® offers a variety of QPL connector products

## D-SUBMINIATURE CONNECTORS

| MIL PREFIX | POSITRONIC SERIES |
|---|---|
| **MIL-DTL-24308/1** | HDC |
| **MIL-DTL-24308/2** | RD, DD |
| **MIL-DTL-24308/3** | HDC |
| **MIL-DTL-24308/4** | RD, DD |
| **MIL-DTL-24308/5** | HDC |
| **MIL-DTL-24308/6** | RD, DD |
| **MIL-DTL-24308/7** | HDC |
| **MIL-DTL-24308/8** | RD, DD |
| **MIL-DTL-24308/23** | HDC, DD |

| MIL PREFIX | POSITRONIC SERIES |
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| **MIL-DTL-24308/24** | HDC, DD |
| **MIL-DTL-24308/25** | HDC, RD, DD |
| **MIL-DTL-24308/26** | HDC, RD, DD |
| **GSFC S-311-P4** | SND, SDD, SCBC, SCBM |
| **GSFC S-311-P10** | SND, SCBM |
| **SAE AS39029/57** | DD |
| **SAE AS39029/58** | DD |
| **SAE AS39029/63** | RD |
| **SAE AS39029/64** | RD |

## RECTANGULAR CONNECTORS

| MIL PREFIX | POSITRONIC SERIES |
|---|---|
| **MIL-DTL-28748/3** | GMCT |
| **MIL-DTL-28748/4** | GMCT |
| **MIL-DTL-28748/5** | GM |
| **MIL-DTL-28748/6** | GM |
| **MIL-DTL-28748/7** | SGM |

| MIL PREFIX | POSITRONIC SERIES |
|---|---|
| **MIL-DTL-28748/8** | SGM |
| **MIL-C-28748/13** | SGMC |
| **MIL-C-28748/14** | SGMC |
| **SAE AS39029/34** | SGMC, GMCT |
| **SAE AS39029/35** | SGMC, GMCT |

For a complete QPL listing available to download in PDF format, visit our website at:

https://www.connectpositronic.com/catalogs

# Positronic Hermetic Connector Assemblies

- **Leakage Rate: $5x10^{-9}$ mbar.l/s @ vacuum $1.5 \times 10^{-5}$ 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.


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ALL DIMENSIONS ARE SUBJECT TO CHANGE.

# Connector Excellence®

## Positronic HIGH RELIABILITY Products

### POWER

**FEATURES:**

- High current density • Energy saving - low contact resistance • Hot swap capability
- AC/DC operation in a single connector
- Signal contacts for hardware management
- Blind mating • Sequential mating
- Large surface area contact mating system
- Wide variety of accessories
- Customer-specified contact arrangements
- Modular tooling which produces a single piece connector insert

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

### D-SUBMINIATURE

**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

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

### RECTANGULAR

**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

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

### CIRCULAR

**FEATURES:**

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

**Contact Sizes:** 12, 16, 20 and 22
**Current Ratings:** To 25 amperes nominal
**Terminations:** Crimp, wire solder, straight solder, and right angle (90°) solder
**Configurations:** Multiple variants in four package sizes
**Qualifications:** Environmental protection to IP67

### CABLE

**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

- ✓ Design assemblies in accordance with customer specifications.
- ✓ Prepare cablized connector configuration and performance specifications.
- ✓ Design each system in accordance with applicable customer, domestic, and international standards.
- ✓ Define and conduct performance and verification testing.

### HERMETIC

**FEATURES:**

- Intended for use as an electrical feed-through 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

**Contact Sizes:** 8, 12, 16, 20 and 22
**Current Ratings:** To 40 amperes nominal
**Terminations:** Feedthrough is standard; flying leads and board mount available upon request
**Configurations:** See D-subminiature and circular configurations above
**Compliance:** Space-D32

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an **Amphenol** company

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