



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:

<b>Connector Insert:</b>	Glass-filled polyester per ASTM-D-5927, UL 94V-0, ASTM E-595, NASA-RP-1124, blue color.
<b>Contacts:</b>	Precision machined high tensile copper alloy. 0.000050 inch [1.27 microns] gold over copper plate. Other finishes are available; see page 97.
<b>Connector Housing (Shells):</b>	Brass with 0.000050 inch [1.27 microns] gold over copper plate.
<b>Mounting Spacers and Brackets:</b>	Brass with 0.000050 inch [1.27 microns] gold over copper plate.
<b>Push-On Fasteners:</b>	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.



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# SDD SERIES

## MILITARY / SPACE FLIGHT QUALITY

### HIGH DENSITY REMOVABLE OR PCB CONTACTS

High  
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## TECHNICAL CHARACTERISTICS, *continued*

*continued from previous page. . .*

### MECHANICAL CHARACTERISTICS, continued:

<b>Contact Retention in Connector Insert:</b>	9 lbs. [40 N].
<b>Contact Terminations:</b>	Removable closed barrel crimp - wire sizes 20 AWG [0.5 mm <sup>2</sup> ] through 30 AWG [0.05 mm <sup>2</sup> ]. 0.020 inch [0.51 mm] diameter. Removable, closed barrel solder - wire size 22 AWG [0.3 mm <sup>2</sup> ] maximum; see <i>page 81 for details</i> . 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 <i>page 18</i> .
<b>Connector Housing (Shells):</b>	Male connector housings may be dimpled for EMI/ESD ground paths.
<b>Polarization:</b>	Trapezoidally-shaped connector housings and polarized jackscrews.
<b>Mounting to Angle Brackets:</b>	Jackscrews and riveted fasteners with 0.120 inch [3.05 mm] clearance hole, and threaded fasteners with 4-40 threads and polyester lock inserts.
<b>Mounting to Printed Board:</b>	Rapid installation push-on fasteners and mounting posts.
<b>Locking Systems:</b>	Jackscrews.
<b>Mechanical Operations:</b>	1,000 operations, minimum, per IEC 60512-5.

### ELECTRICAL CHARACTERISTICS:

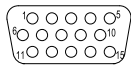
<b>Contact Current Rating, Tested per UL 1977:</b>	12 amperes, 2 contacts energized. 10 amperes, 6 contacts energized. 7.5 amperes, 26 contacts energized. 6.5 amperes, 65 contacts energized. 5.0 amperes, 104 contacts energized.
	See temperature rise curves on <i>page 2</i> for details.
<b>Initial Contact Resistance:</b>	0.005 ohms, maximum.
<b>Proof Voltage:</b>	1,000 V r.m.s.
<b>Insulation Resistance:</b>	5 G ohms.
<b>Clearance and Creepage</b>	
<b>Distance:</b>	0.042 inch [1.06 mm], minimum.
<b>Working Voltage:</b>	300 V r.m.s.

### CLIMATIC CHARACTERISTICS:

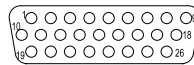
<b>Temperature Range:</b>	-55°C to +125°C.
<b>Damp Heat, Steady State:</b>	21 days.

## CONTACT VARIANTS

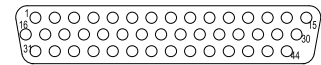
FACE VIEW OF MALE OR REAR VIEW OF FEMALE



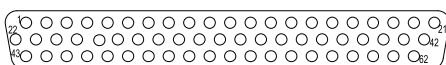
SDD 15



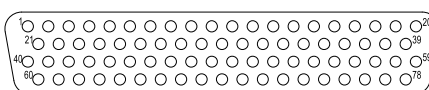
SDD 26



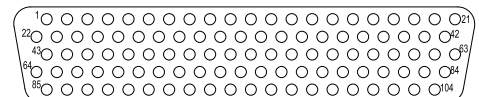
SDD 44



SDD 62



SDD 78



SDD 104

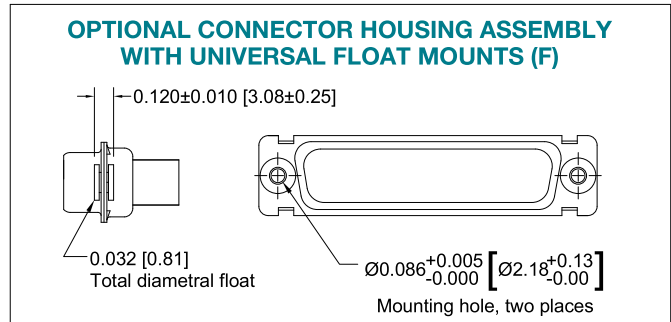
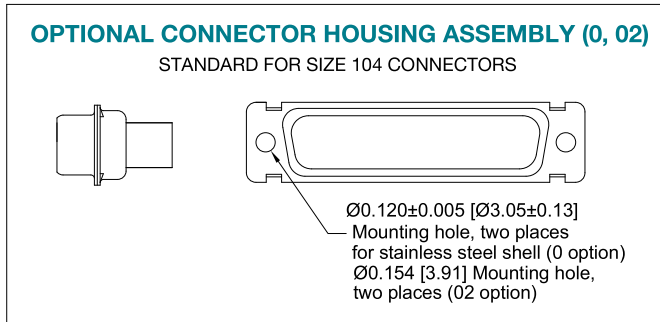
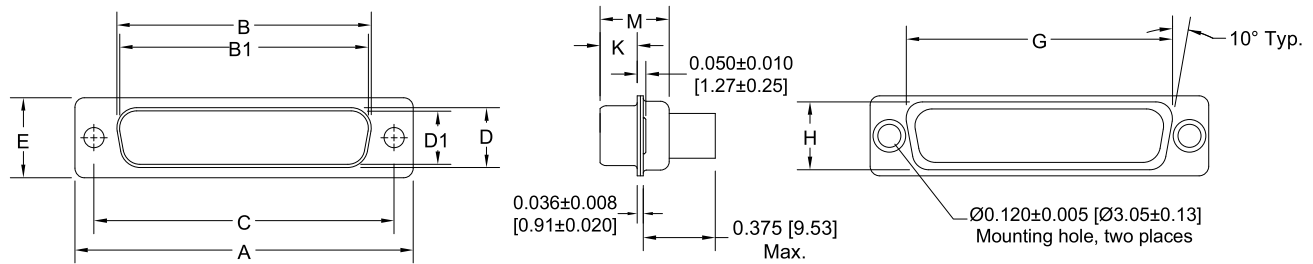
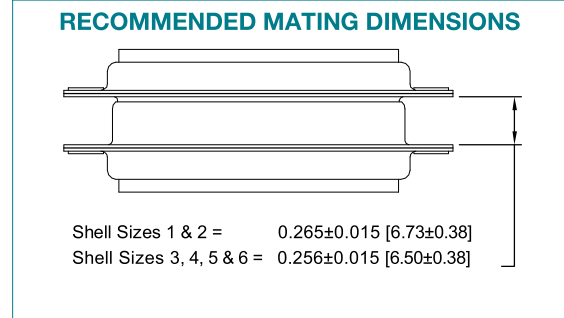
For information regarding **REMOVABLE CONTACTS**, see contact illustration drawings and charts on pages 79-87.

**STANDARD CONNECTOR HOUSING (SHELLS) ASSEMBLY**



SDD78M0000D

SDD15S0000G



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]



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# SDD SERIES

## MILITARY / SPACE FLIGHT QUALITY

### HIGH DENSITY REMOVABLE OR PCB CONTACTS

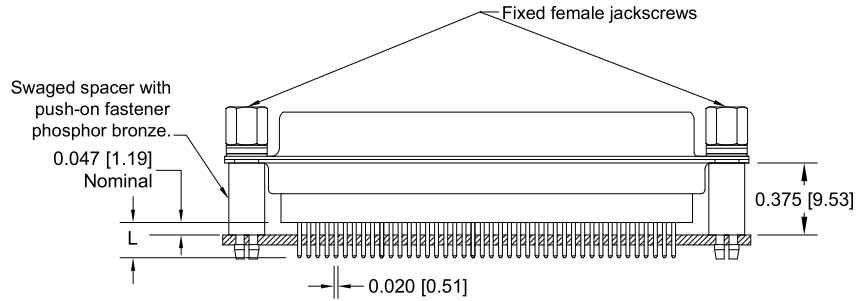
High  
Performance  
D-sub

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

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

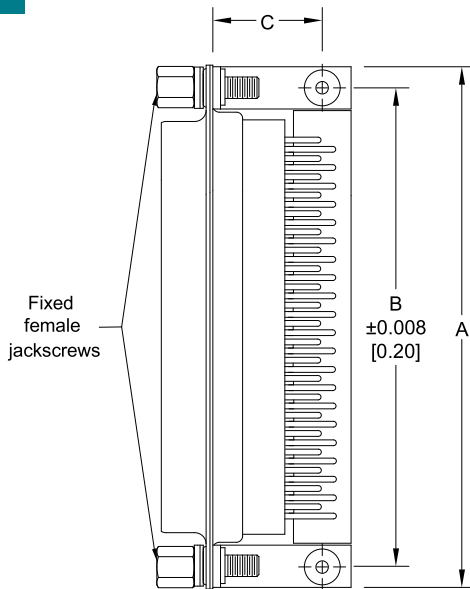
**NOTE:**

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

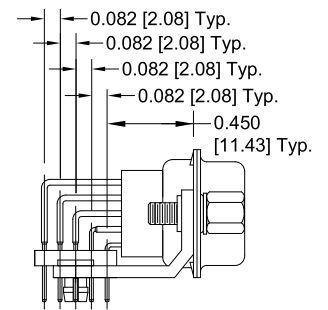


**TYPICAL PART NUMBER:**  
**SDD62S3S60T2G**

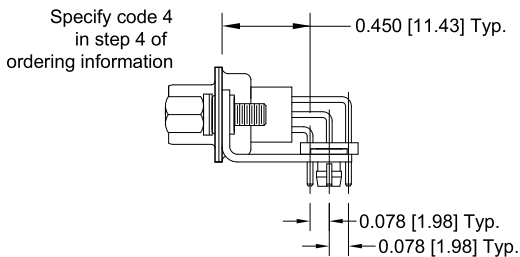
### RIGHT ANGLE (90°) PRINTED BOARD MOUNT TERMINATION CODE 4, 0.450 [11.43] CONTACT EXTENSION



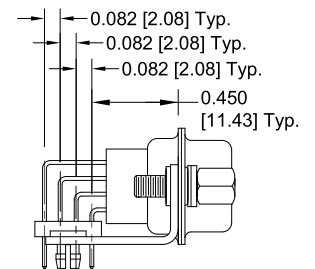
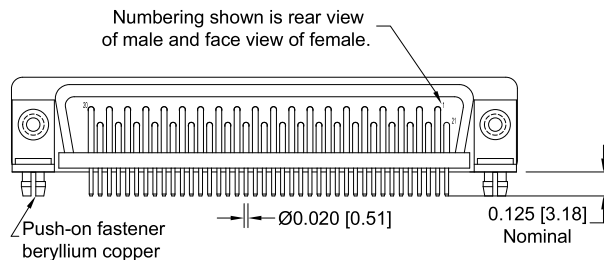
SDD**4**** 0.450 [11.43] CONTACT EXTENSION			
PART NUMBER	A	B	C
SDD15*4****	1.204 [30.58]	0.984 [24.99]	0.528 [13.41]
SDD26*4****	1.532 [38.91]	1.312 [33.32]	0.528 [13.41]
SDD44*4****	2.072 [52.63]	1.852 [47.04]	0.528 [13.41]
SDD62*4****	2.720 [69.09]	2.500 [63.50]	0.528 [13.41]
SDD78*5****	2.626 [66.70]	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:**  
**SDD104M4R7NT2G**



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

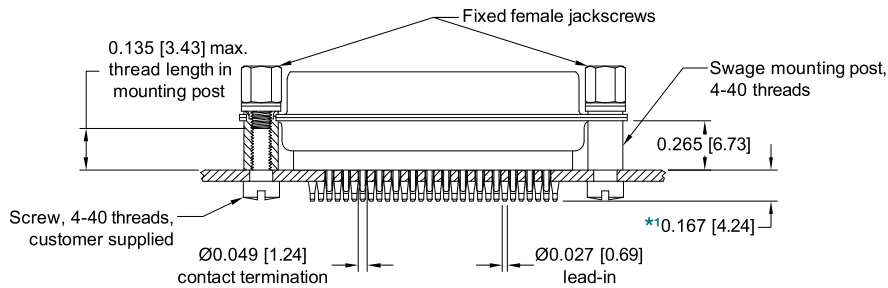


**TYPICAL PART NUMBER:**  
**SDD78M4R7NT2G**

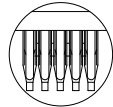


**STRAIGHT COMPLIANT PRESS-FIT TERMINATION**  
**CODE 97**

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



**TYPICAL PART NUMBER: SDD44M970T2G**



Detail of  
Omega contacts

For straight compliant press-fit contacts, specify code 97 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.



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# SDD SERIES

## MILITARY / SPACE FLIGHT QUALITY

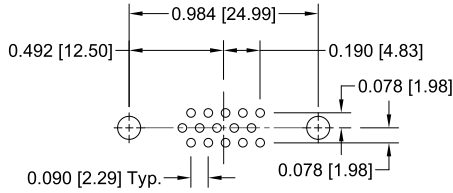
### HIGH DENSITY REMOVABLE OR PCB CONTACTS

High  
Performance  
D-sub

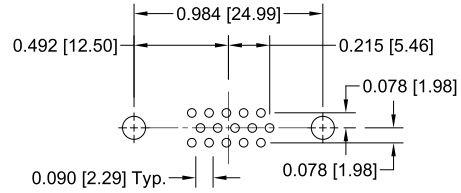
## RIGHT ANGLE (90°) AND STRAIGHT SOLDER PRINTED BOARD CONTACT HOLE PATTERN

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

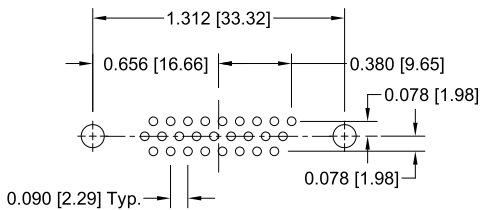
**SDD15 MALE**



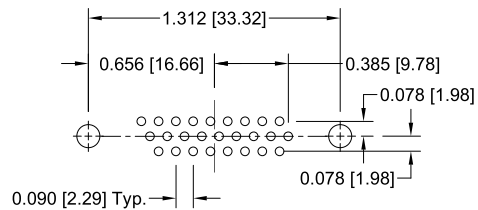
**SDD15 FEMALE**



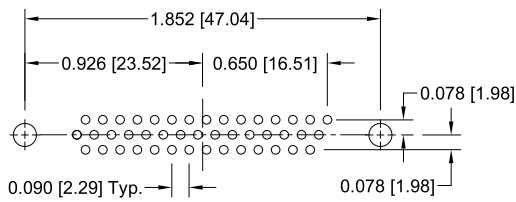
**SDD26 MALE**



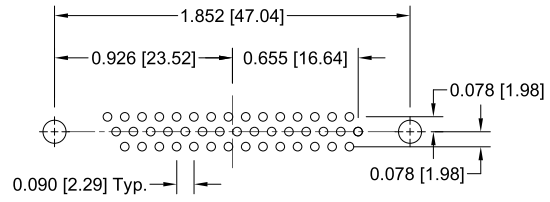
**SDD26 FEMALE**



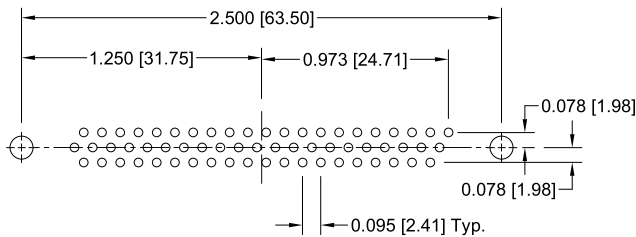
**SDD44 MALE**



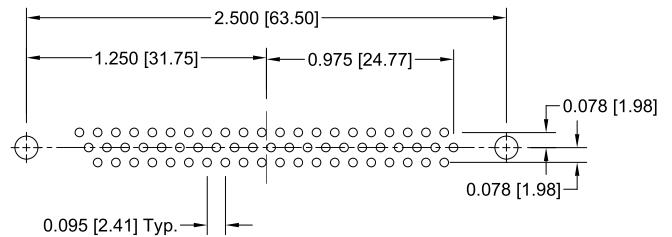
**SDD44 FEMALE**



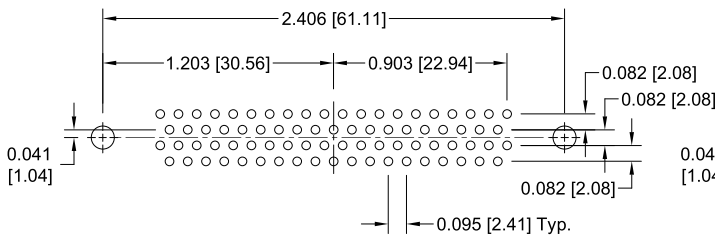
**SDD62 MALE**



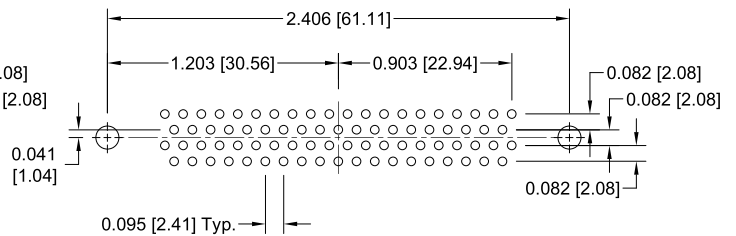
**SDD62 FEMALE**



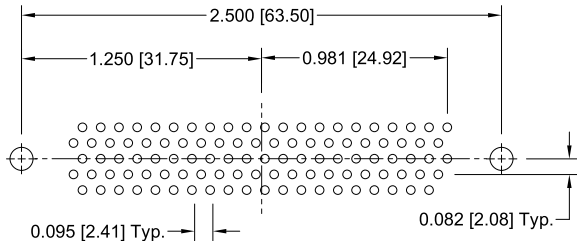
**SDD78 MALE**



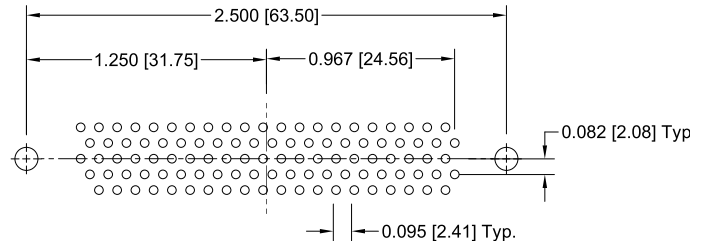
**SDD78 FEMALE**



**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.



## 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 [mm <sup>2</sup> ]
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 / 0.08 / 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<sup>2</sup> - 0.05 mm<sup>2</sup>].
- 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.
- 97 - Straight printed circuit board mount, compliant press-fit

### \*1 STEP 5 - MOUNTING STYLE

- 0 - Mounting hole, 0.120[3.05] Ø.
- \*2 02 - Mounting hole, 0.154[3.91] Ø.
- B3 - Bracket, mounting, right angle (90°) metal with cross bar.
- C5 - Swaged spacer, cul-de-sac style, 4-40 threads, 0.350 [8.89] length. For use with cable connectors only.
- C7 - Bracket, mounting, right angle (90°) metal, swaged to connector with cul-de-sac spacer and 4-40 threads with cross bar.
- F - Float mounts, universal.
- P - Threaded post, brass, 0.375 [9.53] length.
- R2 - Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 thread fixed female jackscrews with cross bar.
- R6 - Bracket, mounting, right angle (90°) metal, swaged to connector with 0.120 [3.05] Ø mounting hole with cross bar.
- R7 - Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 threads with cross bar.
- R8 - Bracket, mounting, right angle (90°) metal, swaged to connector with 4-40 locknut with cross bar.
- S - Swaged spacer, 4-40 threads, 0.375[9.53] length.
- S2 - Swaged spacer, 4-40 threads, 0.125[3.18] length.
- S5 - Swaged locknut, 4-40 threads.
- S6 - Swaged spacer with push-on fastener, 4-40 threads, 0.375[9.53] length.

### STEP 9 - SPECIAL OPTIONS

SEE APPENDIX ON PAGE 97.

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

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

### \*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.

### \*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.

### NOTE:

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

\*2 Code 02 mounting hole is only compatible with code 0 in steps 6 and 7.

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