



Positronic Industries  
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# PROFESSIONAL QUALITY REMOVABLE CONTACT STANDARD DENSITY D-SUBMINIATURE

D-Sub

**Size 20 Contacts,  
Removable**

**IEC Publication 60807-3  
Performance Level Two**

**U.L. Recognized  
File #E49351**

**CSA Recognized  
File #LR54219**

**Telecommunication  
U.L. File #14098**



Soli-D series connectors are professional quality connectors recommended for use in sheltered, non-corrosive indoor or outdoor environments having normal ventilation, but without temperature or humidity controls. This crimp removable contact connector will meet the Performance Level Two requirements of IEC 60807-3.

Soli-D series connectors utilize precision machined contacts with closed barrel, crimp terminations. The female contact features the Robi-Contact open entry design. Other contact terminations such as solder cup and printed board terminations are also available. The removable contact feature provides for rapid assembly and permits contact repairs or wiring changes.

Five standard contact variants are offered in arrangements of 9,

15, 25, 37 and 50 contacts. Soli-D series connectors are mateable and compatible with all D-subminiature connectors conforming to IEC 60807-2, IEC 60807-3 and MIL-DTL-24308.

A wide assortment of cable support hoods and locking systems is available from stock.



**For RoHS options  
see page 26.**

## SOLI-D SERIES TECHNICAL CHARACTERISTICS

### MATERIALS AND FINISHES:

|                                                                      |                                                                                                                                                       |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Insulator:</b>                                                    | Glass filled nylon resin, UL 94V-0, black color.                                                                                                      |
| <b>Contacts:</b>                                                     | Precision machined copper alloy.                                                                                                                      |
| <b>Contact Plating:</b>                                              | Professional performance - gold flash over nickel plate. Other finishes available upon request.                                                       |
| <b>Shells:</b>                                                       | Steel or brass with tin plate; zinc plate with chromate seal, stainless steel passivated. Other materials and finishes available upon request.        |
| <b>Mounting Spacers:</b>                                             | Nylon; copper alloy or steel with zinc plate and chromate seal or tin plate; phosphor bronze with tin plate; stainless steel, passivated.             |
| <b>Push-On Fasteners:</b>                                            | Phosphor bronze with tin plate.                                                                                                                       |
| <b>JackscREW Systems:</b>                                            | Brass or steel with zinc plate and chromate seal or clear zinc plate or tin plate; stainless steel, passivated.                                       |
| <b>Vibration Lock Systems:</b>                                       | Slide lock and lock tabs, steel with nickel plate.                                                                                                    |
| <b>Hoods:</b>                                                        | Composite and plastic, UL 94V-0; brass or steel with zinc plate and chromate seal; aluminum or aluminum with electroless nickel plate; die cast zinc. |
| <b>Non-magnetic versions are available, contact Technical Sales.</b> |                                                                                                                                                       |

### CLIMATIC CHARACTERISTICS:

|                                 |                  |
|---------------------------------|------------------|
| <b>Temperature Range:</b>       | -55°C to +125°C. |
| <b>Damp Heat, Steady State:</b> | 10 days.         |

### MECHANICAL CHARACTERISTICS:

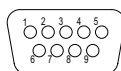
|                                        |                                                                                                                                                                                            |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Removable Contacts:</b>             | Insert contact to rear face of insulator and release from rear face of insulator. Size 20 contacts, male - 0.040 inch [1.02mm] mating diameter. Female - Robi-D contact open entry design. |
| <b>Contact Retention In Insulator:</b> | 6 lbs. [27 N].                                                                                                                                                                             |
| <b>Contact Terminations:</b>           | Closed barrel crimp, wire sizes 18 AWG [1.0mm <sup>2</sup> ] through 32 AWG [0.03mm <sup>2</sup> ]. Straight printed board mount terminations.                                             |
| <b>Shells:</b>                         | Male shells may be dimpled for EM/ESD ground paths.                                                                                                                                        |
| <b>Polarization:</b>                   | Trapezoidally shaped shells and polarized jackscrews.                                                                                                                                      |
| <b>Printed Board Mount:</b>            | Rapid installation push-on fasteners.                                                                                                                                                      |
| <b>Locking Systems:</b>                | Jackscrews and vibration locking systems.                                                                                                                                                  |
| <b>Mechanical Operations:</b>          | 500 operations minimum per IEC 60512-5.                                                                                                                                                    |

### ELECTRICAL CHARACTERISTICS:

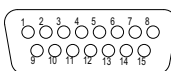
|                                                   |                      |
|---------------------------------------------------|----------------------|
| <b>Contact Current Rating:</b>                    | 7.5 amperes nominal. |
| <b>Initial Contact Resistance:</b>                | 0.008 ohms maximum.  |
| <b>Proof Voltage:</b>                             | 1000 V r.m.s.        |
| <b>Insulator Resistance:</b>                      | 5 G ohms.            |
| <b>Clearance and Creepage Distance [minimum]:</b> | 0.039 inch [1.0mm].  |
| <b>Working Voltage:</b>                           | 300 V r.m.s.         |

## CONTACT VARIANTS

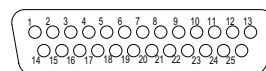
FACE VIEW OF MALE OR REAR VIEW OF FEMALE



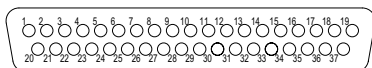
SD 9



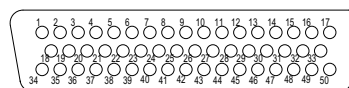
SD 15



SD 25

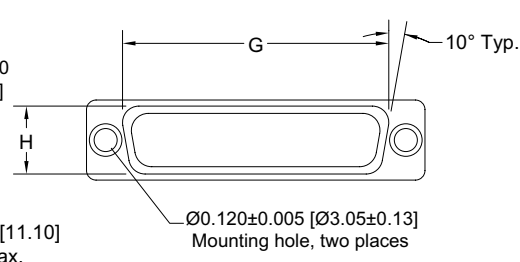
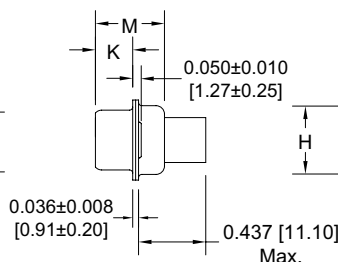
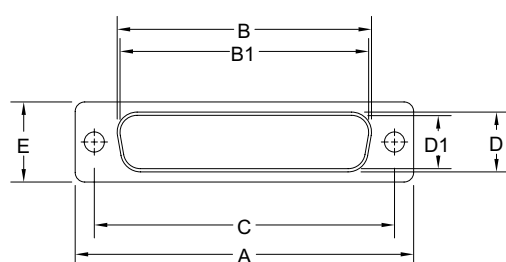


SD 37

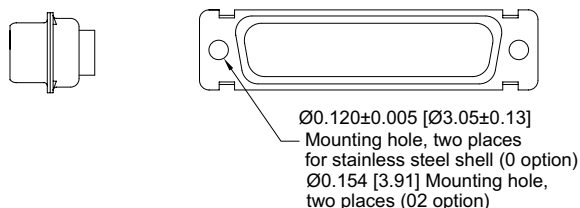


SD 50

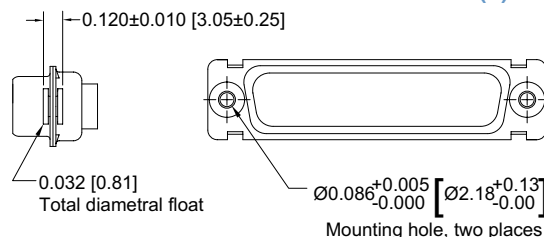
## STANDARD SHELL ASSEMBLY



### OPTIONAL SHELL ASSEMBLY (0, 02)



### OPTIONAL SHELL ASSEMBLY WITH UNIVERSAL FLOAT MOUNTS (F)



| CONNECTOR<br>VARIANT SIZES | A<br>±0.015<br>[0.38] | B<br>±0.005<br>[0.13] | B1<br>±0.005<br>[0.13] | C<br>±0.005<br>[0.13] | D<br>±0.005<br>[0.13] | D1<br>±0.005<br>[0.13] | E<br>±0.015<br>[0.38] | G<br>±0.010<br>[0.25] | H<br>±0.010<br>[0.25] | K<br>±0.005<br>[0.13] | M<br>±0.010<br>[0.25] |
|----------------------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| SD 9 M                     | 1.213<br>[30.81]      |                       | 0.666<br>[16.92]       | 0.984<br>[24.99]      |                       | 0.329<br>[8.36]        | 0.494<br>[12.55]      | 0.759<br>[19.28]      | 0.422<br>[10.72]      | 0.233<br>[5.92]       | 0.422<br>[10.72]      |
| SD 9 F                     | 1.213<br>[30.81]      | 0.643<br>[16.33]      |                        | 0.984<br>[24.99]      | 0.311<br>[7.90]       |                        | 0.494<br>[12.55]      | 0.759<br>[19.28]      | 0.422<br>[10.72]      | 0.243<br>[6.17]       | 0.429<br>[10.90]      |
| SD 15 M                    | 1.541<br>[39.14]      |                       | 0.994<br>[25.25]       | 1.312<br>[33.32]      |                       | 0.329<br>[8.36]        | 0.494<br>[12.55]      | 1.083<br>[27.51]      | 0.422<br>[10.72]      | 0.233<br>[5.92]       | 0.422<br>[10.72]      |
| SD 15 F                    | 1.541<br>[39.14]      | 0.971<br>[24.66]      |                        | 1.312<br>[33.32]      | 0.311<br>[7.90]       |                        | 0.494<br>[12.55]      | 1.083<br>[27.51]      | 0.422<br>[10.72]      | 0.243<br>[6.17]       | 0.429<br>[10.90]      |
| SD 25 M                    | 2.088<br>[53.04]      |                       | 1.534<br>[38.96]       | 1.852<br>[47.04]      |                       | 0.329<br>[8.36]        | 0.494<br>[12.55]      | 1.625<br>[41.28]      | 0.422<br>[10.72]      | 0.230<br>[5.84]       | 0.426<br>[10.82]      |
| SD 25 F                    | 2.088<br>[53.04]      | 1.511<br>[38.38]      |                        | 1.852<br>[47.04]      | 0.311<br>[7.90]       |                        | 0.494<br>[12.55]      | 1.625<br>[41.28]      | 0.422<br>[10.72]      | 0.243<br>[6.17]       | 0.429<br>[10.90]      |
| SD 37 M                    | 2.729<br>[69.32]      |                       | 2.182<br>[55.42]       | 2.500<br>[63.50]      |                       | 0.329<br>[8.36]        | 0.494<br>[12.55]      | 2.272<br>[57.71]      | 0.422<br>[10.72]      | 0.230<br>[5.84]       | 0.426<br>[10.82]      |
| SD 37 F                    | 2.729<br>[69.32]      | 2.159<br>[54.84]      |                        | 2.500<br>[63.50]      | 0.311<br>[7.90]       |                        | 0.494<br>[12.55]      | 2.272<br>[57.71]      | 0.422<br>[10.72]      | 0.243<br>[6.17]       | 0.429<br>[10.90]      |
| SD 50 M                    | 2.635<br>[66.93]      |                       | 2.079<br>[52.81]       | 2.406<br>[61.11]      |                       | 0.441<br>[11.20]       | 0.605<br>[15.37]      | 2.178<br>[55.32]      | 0.534<br>[13.56]      | 0.230<br>[5.84]       | 0.426<br>[10.82]      |
| SD 50 F                    | 2.635<br>[66.93]      | 2.064<br>[52.43]      |                        | 2.406<br>[61.11]      | 0.423<br>[10.74]      |                        | 0.605<br>[15.37]      | 2.178<br>[55.32]      | 0.534<br>[13.56]      | 0.243<br>[6.17]       | 0.429<br>[10.90]      |

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



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# PROFESSIONAL QUALITY REMOVABLE CONTACT STANDARD DENSITY D-SUBMINIATURE

D-Sub

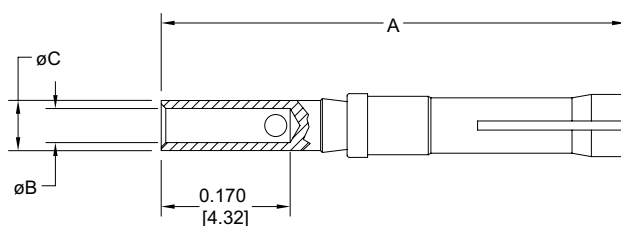
## REMOVABLE CRIMP CONTACTS

CODE 1 AND 12

CONTACTS MAY BE SUPPLIED WITH CONNECTOR OR ORDERED SEPARATELY.

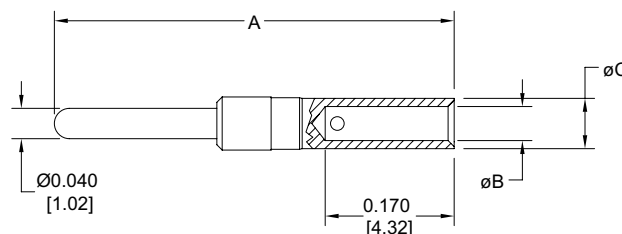
### CLOSED CRIMP BARREL

#### FEMALE CONTACT



| PART NUMBER | WIRE SIZE<br>AWG/[mm <sup>2</sup> ] | A                | ØB              | ØC              |
|-------------|-------------------------------------|------------------|-----------------|-----------------|
| FC7520D     | 20 / 22 / 24<br>[0.5/0.3/0.25]      | 0.612<br>[15.54] | 0.045<br>[1.14] | 0.066<br>[1.68] |
| FC7526D     | 26 / 28 / 30<br>[0.12/0.08/0.05]    | 0.612<br>[15.54] | 0.026<br>[0.66] | 0.066<br>[1.68] |

#### MALE CONTACT



| PART NUMBER | WIRE SIZE<br>AWG/[mm <sup>2</sup> ] | A                | ØB              | ØC              |
|-------------|-------------------------------------|------------------|-----------------|-----------------|
| MC7520D     | 20 / 22 / 24<br>[0.5/0.3/0.25]      | 0.618<br>[15.70] | 0.045<br>[1.14] | 0.066<br>[1.68] |
| MC7526D     | 26 / 28 / 30<br>[0.12/0.08/0.05]    | 0.618<br>[15.70] | 0.026<br>[0.66] | 0.066<br>[1.68] |

Note: \*C75\*\*D contacts can not be used in the RD series.

#### PLATING:

**STANDARD FINISH:** Gold flash over nickel plate.

**OPTIONAL FINISHES:** 0.000030 [0.76 µ] gold over nickel by adding "-14" suffix onto part number. Example: FC7520D-14  
0.000050 inch [1.27µ] gold over nickel by adding "-15" suffix onto part number. Example: MC7526D-15

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

## REMOVABLE CRIMP CONTACTS

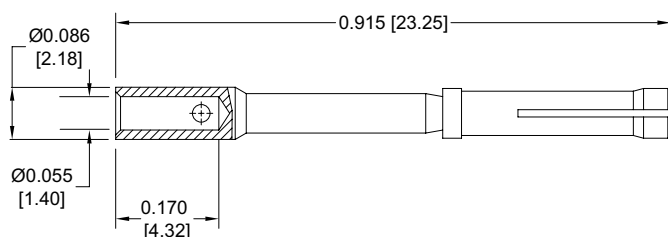
### 18 AWG CRIMP CONTACTS

18 AWG [1.0mm<sup>2</sup>]

CONTACTS MAY BE SUPPLIED WITH CONNECTOR OR ORDERED SEPARATELY.

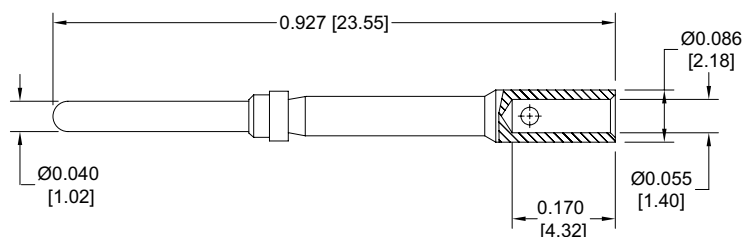
Note: Connectors can be kitted with all applicable crimp contacts, contact Technical Sales for connector part number.

#### FEMALE CONTACT



FC7518D

#### MALE CONTACT



MC7518D

#### PLATING:

**STANDARD FINISH:** Gold flash over nickel plate.

**OPTIONAL FINISHES:** 0.000030 [0.76 µ] gold over nickel by adding "-14" suffix onto part number. Example: FC7518D-14  
0.000050 inch [1.27µ] gold over nickel by adding "-15" suffix onto part number. Example: MC7518D-15

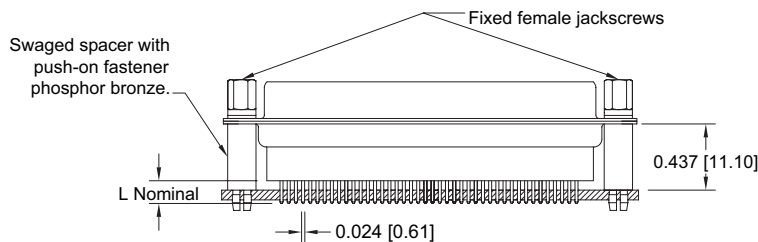
For information regarding crimp tool and crimping tool techniques, see Application Tools section, pages 78-83.

## STRAIGHT PRINTED BOARD MOUNT CONNECTOR

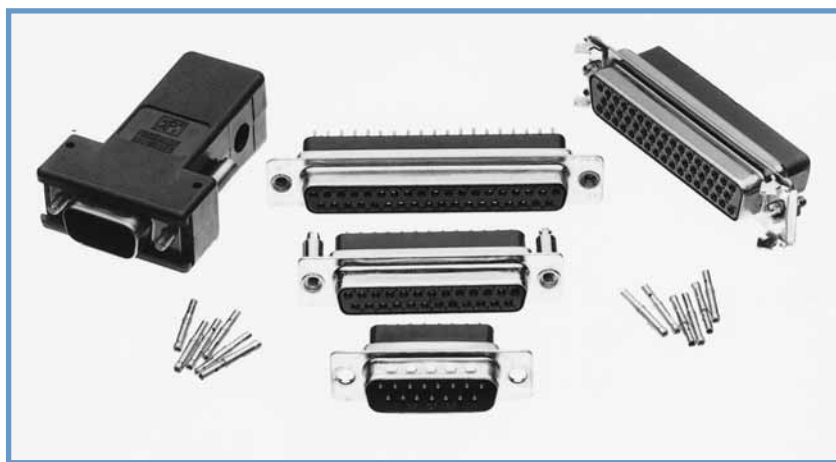
CODE 3 AND 32

| CODE NUMBER | L               |
|-------------|-----------------|
| 3           | 0.125<br>[3.18] |
| 32          | 0.188<br>[4.78] |

For straight printed board mount contacts specify code number in Step 4 of ordering information.



Typical Part Number:  
SD37F3S60T2X



# Connectors Designed To Customer Specifications

*Positronic 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.**

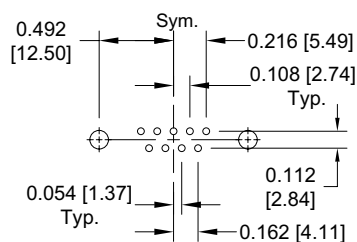


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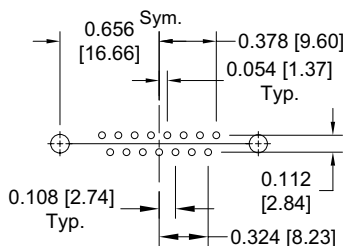
# PROFESSIONAL QUALITY REMOVABLE CONTACT STANDARD DENSITY D-SUBMINIATURE

D-Sub

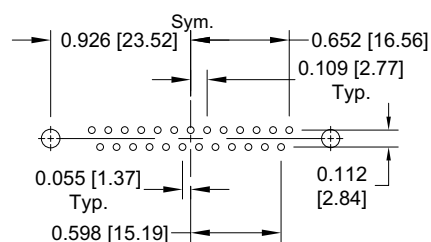
## STRAIGHT PRINTED BOARD CONTACT HOLE PATTERN



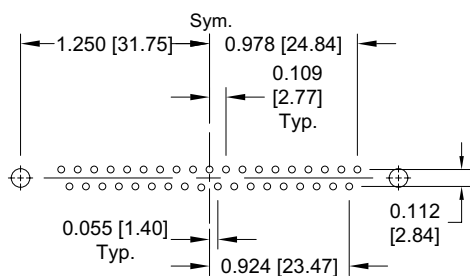
SD9



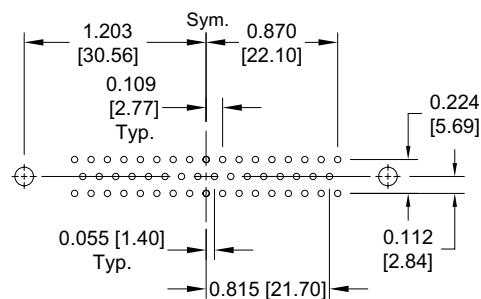
SD15



SD25



SD37



SD50

### SUGGESTED PRINTED BOARD HOLE SIZES:

Suggest 0.045 [1.14] Ø hole for contact termination positions.

Suggest 0.123 ±0.003 [3.12 ±0.08] Ø hole for mounting connector with push-on fasteners.



SD37M3S600Z



SD25F3S600X

## 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   | 10  |
|---------|----|----|---|---|---|---|---|---|-----|-----|
| EXAMPLE | SD | 15 | F | 0 | 0 | 0 | 0 | X | /AA | -14 |

**STEP 1 - BASIC SERIES**  
SD series.

**STEP 2 - CONNECTOR VARIANTS**  
9, 15, 25, 37, 50

**STEP 3 - CONNECTOR GENDER**  
M - Male  
F - Female

**STEP 4 - CONTACT TERMINATION TYPE**  
 0 - Order Contacts separately.  
 1 - Crimp, 20 AWG-24 AWG [0.5mm<sup>2</sup>-0.25mm<sup>2</sup>].  
 12 - Crimp, 26 AWG-30 AWG [0.12mm<sup>2</sup>-0.05mm<sup>2</sup>].  
 3 - Solder, Straight Printed Board Mount with 0.125 [3.18] Tail Length.  
 32 - Solder, Straight Printed Board Mount with 0.188 [4.78] Tail Length.

**\*1 STEP 5 - MOUNTING STYLE**  
 0 - Mounting Hole, 0.120 [3.05] Ø.  
 02 - Mounting Hole, 0.154 [3.91] Ø.  
 F - Float Mounts, Universal.  
 P - Threaded Post, Brass, 0.437 [11.10] Length.  
 P2 - Threaded Post, Nylon, 0.437 [11.10] Length.  
 S - Swaged Spacer, 4-40 Threads, 0.437 [11.10] 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, 0.437 [11.10] Length.

**\*1 STEP 6 - HOODS**  
 0 - None.  
 J - Hood, Top Opening, Plastic.  
 L - Hood, Side Opening, Plastic.  
 Y - Hood, Top Opening, Plastic with Rotating Male Jackscrews. Available in size 50 only.  
 Y6 - Hood, Top Opening, Plastic with Rotating Male and Female Polarized Jackscrews. Available in size 50 only.  
 Z - Hood, Top or Side Opening, Robust and Extended Height, Composite and Plastic with Rotating Male Jackscrews.  
 H - Hood, Top Opening, Metal. Available in size 15, 25, 37, and 50 only.  
 G - Hood, EMI/RFI, Metal.  
 AN - Lightweight Aluminum Hood, nickel finish.  
 AC - Lightweight Aluminum Hood, no finish.  
 W - Hood, Top or Side Opening, Plastic. Available in size 9, 15, and 25 only.

**STEP 10 - SPECIAL OPTIONS**  
 -14 - 0.000030 [0.76µ] gold over nickel.  
 -15 - 0.000050 [1.27µ] gold over nickel.

**CONTACT TECHNICAL SALES FOR SPECIAL OPTIONS**

**STEP 9 - ENVIRONMENTAL COMPLIANCE OPTIONS**  
 /AA - Compliant per EU Directive 2002/95/EC (RoHS)

**NOTE:** If compliance to environmental legislation is not required, this step will not be used. Example: SD15F0000X

**STEP 8 - Shell Options**  
 0 - Zinc Plated, with Chromate Seal.  
 \*3 S - Stainless steel, passivated.  
 X - Tin Plated.  
 Z - Tin Plated and Dimpled (male connectors only).

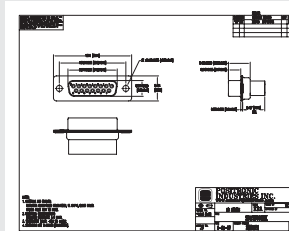
**\*1 STEP 7 - LOCKING AND POLARIZING SYSTEMS**  
 0 - None.  
 \*2 V3- Lock Tab, connector front panel mounted.  
 \*2 V5- Lock Tab, connector rear panel mounted.  
 \*2 VL - Lock Lever, used with Hoods Only.  
 T - Fixed Female Jackscrews.  
 T2 - Fixed Female Jackscrews.  
 T6 - Fixed Male and Female 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 For additional information on accessories listed in steps 5, 6 and 7, see Accessory Catalog.

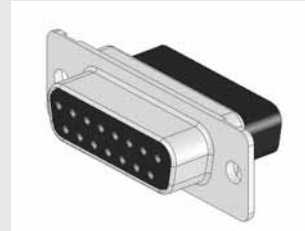
\*2 VL, V3 and V5 locking systems are not available for connector variants 37 and 50. Jackscrews are highly recommended to minimize damage to contacts on variants with high mating forces.

\*3 For stainless steel dimpled male versions contact Technical Sales.

**NOTE:** Once you have made a connector selection, contact Technical Sales if you would like to receive a drawing in DXF, PDF format or a 3-dimensional IGES, STEP, or SOLIDWORKS file.



SK Drawing



3-dimensional model