

# SCORPION Series

Modular Power, Signal & Shielded Contact Connectors

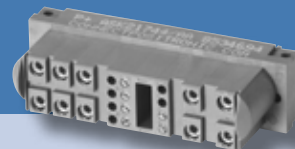


- Seven power contact options: 80 amps, 60 amps, 50 amps, 40 amps, 26 amps, 23 amps and 16 amps versions plus high density signal lines.
- Blindmating, float mount, panel mount and cable connector options with unique locking system.
- PC Mount, crimp, and press fit terminations.
- Ventilation option to offer increased air cooling.
- Blank modules to increase voltage performance.
- Solid machined, precision formed and hyperboloid contacts available
- Shielded contacts and high voltage options.
- Hyperboloid, high density, highly reliable contacts.

**NEW**



**POSITRONIC®**  
GLOBAL *Connector* SOLUTIONS

**Materials and Finishes:**

<b>Insulators:</b>	Glass-filled polyester, UL 94V-0. Blue color.
<b>Contacts:</b>	Precision machined copper alloy with gold flash over nickel plate. Other finishes available upon request.
15.7mm X 80mm	Size 22 PCB straight and right angle (90°) contact also available in precision formed copper alloy with selective gold flash over nickel at mating end and tin over nickel plate at termination end.
<b>Mounting Brackets:</b>	Brass with tin plate.
<b>Push-on Fasteners:</b>	Copper alloy with tin plate.
<b>Float Mount Bushings:</b>	Steel with zinc plate.
<b>Mounting clips:</b>	Beryllium copper with nickel plate.
<b>Jackscrew System:</b>	Passivated stainless steel.

**Electrical Characteristics:****Contact Current Rating (See Page 6 for details of Power Contacts)****Standard Conductivity Contacts:**

<b>Size 8 Contacts:</b>	50 amperes, continuous.
<b>Size 12 Contacts:</b>	40 amperes, continuous.
<b>Size 16 Contacts:</b>	26 amperes, continuous.
<b>Size 18 Contacts:</b>	16 amperes, continuous.
<b>Size 22 Contacts:</b>	3 amperes, nominal.

**Hyperboloid Contacts**

<b>0.60mm [0.0236] :</b>	4 amperes, nominal
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**High Conductivity Contacts:**

<b>Size 8 Contacts:</b>	80 amperes, continuous.
<b>Size 12 Contacts:</b>	60 amperes, continuous.
<b>Size 16 Contacts:</b>	40 amperes, continuous.
<b>Size 18 Contacts:</b>	23 amperes, continuous.

**Initial Contact Resistance (Standard Conductivity Contacts) per IEC 512-2, Test 2b:**

<b>Size 8 Contacts:</b>	0.0006 ohms, maximum.
<b>Size 12 Contacts:</b>	0.001 ohms, maximum.
<b>Size 16 Contacts:</b>	0.0016 ohms, maximum.
<b>Size 18 Contacts:</b>	0.003 ohms, maximum.
<b>Size 22 Contacts:</b>	0.005 ohms, maximum.

**Hyperboloid Contacts**

<b>0.60mm [0.0236] :</b>	0.005 ohms, maximum.
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**Initial Contact Resistance (High Conductivity Contacts) per IEC 512-2, Test 2b:**

<b>Size 8 Contacts:</b>	0.0004 ohms, maximum.
<b>Size 12 Contacts:</b>	0.0004 ohms, maximum.
<b>Size 16 Contacts:</b>	0.0007 ohms, maximum.
<b>Size 18 Contacts:</b>	0.0007 ohms, maximum.

**Insulation Resistance per IEC 512-2, Test 3a, Method A: 5 G ohms.****Voltage Proof per IEC 512-2, Test 4a, Method C:**

For size 8, 12, 16 and 18 contacts, 2200 V r.m.s. typical;  
**for size 22 contacts, 1600 V r.m.s. typical;**  
 for Hyperboloid contacts 0.60mm [0.0236], 1200 V r.m.s. typical.  
 Consult sales for your specific requirements.

**Working Voltage, Clearance and Creepage Distances:**

Consult factory for information about your specific connector choice.

**Hot Pluggable [50 Couplings per UL1977, paragraph 15]:**

<b>Size 12 Contacts:</b>	250 VAC at 25 amperes. Contact sales for details.
<b>Size 16 Contacts:</b>	Contact sales for availability.

**Climatic Characteristic:**

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

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Blue colored connectors shown in this catalog are a trademark of Positronic Industries, Inc., registered in the US. Patent and Trademark Office.

**Mechanical Characteristics:**

<b>Super Mating System:</b>	Integral guide feature allows for misalignment up to 3.80 mm [0.150 inch].
<b>Blind Mating System:</b>	Integral guide feature allows for misalignment up to 2.00 mm [0.079 inch].
<b>Locking Latch System:</b>	Design of connector body provides locking system for cable to cable, cable to printed board and cable to panel mount applications
<b>Jackscrew System:</b>	Standard threads, 4-40 UNC. Consult sales for other screw sizes
<b>Polarization:</b>	Design of connector body provides polarization features.
<b>Removable Contacts:</b>	Install contact from rear face of insulator, release from front face of insulator with a contact extraction tool, thereafter extract contact from rear face of insulator. Size 8, Size 12, Size 16, Size 18 and Size 22 female contacts feature "Closed entry" design for highest reliability. Consult sales for availability.
<b>Keying Features:</b>	Consult sales for availability.

**Removable Contact Retention in Connector Body per IEC 512-8, Test 15a:**

<b>Size 8, Size 12 and Size 16 Contacts:</b>	67N [15 lbs.] minimum.
<b>Size 18 Contacts:</b>	45N [10 lbs.] minimum.
<b>Size 22 Contacts:</b>	27N [6 lbs.] minimum.

**Non Removable Crimp Contact:**

Insert contact to rear face of insulator. Size 22 female contact has "closed entry" design for highest reliability.

**Non Removable Crimp Contact Retention in Connector Body per IEC 512-8, Test 15a:**

<b>Size 22 Contacts:</b>	27N [6 lbs.] minimum.
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**Fixed Contacts:**

Printed board terminations, both straight and right angle. Size 8, 12, 16, 18 and Hyperboloid 0.60mm [0.0236] female contacts feature "Closed entry" design for highest reliability. Size 22 female contact has "Open Entry" design.

**Fixed Contact Retention in Connector Body per IEC 512-8, Test 15a:**

<b>Size 8 Contacts:</b>	67N [15 lbs.] minimum.
<b>Size 12 and Size 16 Contacts:</b>	45N [10 lbs.] minimum.
<b>Size 18 Contacts:</b>	45N [10 lbs.] minimum.
<b>Size 22 Contacts:</b>	27N [6 lbs.] minimum.
<b>Size 22 Precision Formed Contact:</b>	27N [6 lbs.] minimum.
<b>Hyperboloid Contacts 0.60mm [0.0236]:</b>	27N [6 lbs.] minimum.

**Sequential Contact Mating System:**

<b>Size 8 Contacts:</b>	One level. Consult sales for two levels.
<b>Size 12 Contacts:</b>	Two levels. Consult sales for three levels.
<b>Size 16 Contacts:</b>	Two levels. Consult sales for three levels.
<b>Size 18 Contacts:</b>	Two levels. Consult sales for three levels.
<b>Size 22 Contacts:</b>	One level. Two levels for Printed Board mount connectors

**Hyperboloid Contacts 0.60mm [0.0236]:**

One level.

**Printed Board and Panel Mounting Holes:**

Mounting holes provided in connector body for both printed board and panel mounting. Self-tapping screws or push-on fastener options are available.

**Mechanical Operations per IEC 512-5:**

<b>Size 8, 12, 16 and 18 contacts:</b>	1000 cycles minimum.
<b>Size 22 contacts:</b>	500 cycles minimum.
<b>Size 22 Precision Formed contact:</b>	250 cycles minimum.
<b>Hyperboloid Contacts 0.60mm [0.0236] :</b>	Up to 100,000 cycles.

**Recognized:** UL in process. Consult sales for TÜV.

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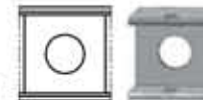




# Ordering Information - Code Numbering System

Specify complete connector by selecting an option from step 1 through 9  
(Consult sales for part numbers using more than 30 characters)

Coming soon:  
Size 4 power  
contact modules



Low Profile Scorpion Connectors:



Blind Mating System



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Positronic is proud to have participated in PICMG 3.8. The Scorpion series was chosen as the PICMG 3.8 power connector. For more information on the PICMG 3.8 connectors, see pages 18-22.

Step	1	2	3	4	5	6	7	8	9	10	11
Example	SP	2	YNKNB	4	M	0	N	9	A2	/AA	- XXX
<b>STEP 1: BASIC SERIES</b> SP : Scorpion Series.											
<b>STEP 2: GUIDE AND LOCKING OPTIONS</b> 1 : Super Blind Mating System, up to 3.80 [0.150] misalignment. 2 : Blind Mating System, up to 2.00 [0.079] misalignment. 3 : Locking Latch System, for cable to cable connectors only. 4 : Locking Latch System, for male cable to female panel/board connectors only. 5 : Locking Latch System, for female cable to male panel/board connectors only. 6 : End Module, for Use with Jackscrew System. 7 : Blind mating system, 4.50 [0.177] width, up to 2.00 [0.079] misalignment. Use with connectors with code 0, BS, or N in step 7 only.											
<b>STEP 3: CONNECTOR VARIANTS</b> Size 8 power contact module: Module R or S Size 12 power contact module: Module E or Y or G Size 16 power contact module: Module A or B or C or D Size 18 power contact module: Module X or Z Size 22 signal contact module: Module H or J or K or T Size 22 precision formed signal contact module: (For PCB mount only. Consult sales for availability of male straight PCB mount.) Module L or P or Q Hyperboloid 0.60mm [0.0236] Contact module: (Unique high density contact design with machined pin diameter Ø0.60 [0.0236], for straight and right angle (90°) PCB mount only. Consult sales for availability of crimp terminal.) Module V or W Blank module: Module N or N2 or N3 or N4 Consult sales for availability of size 4 and other modules. It is recommended signal contacts are positioned at the center of the connector.											
<b>STEP 4: CONTACT TERMINATION TYPE</b> 1 : Crimp contacts, order separately. 3 : Solder, straight PCB mount. Standard conductivity power contacts. 38 : Solder, straight PCB mount. High conductivity power contacts. 4 : Solder, right angle (90°) PCB mount. Standard conductivity power contacts. 48 : Solder, right angle (90°) PCB mount. High conductivity power contacts. *93 : Press-fit compliant terminations, straight PCB mount, for use with PCB not thinner than 2.29[0.090]. *938 : Press-fit compliant terminations, straight PCB mount, for use with PCB not thinner than 2.29[0.090]. High conductivity power contacts. * For contacts size 8, 12, 16, 18 and 22 only. Contact sales for press-fit tooling part number. Sequential mating options are available. Contact sales for availability of mixed contact termination type.											
<b>STEP 5: CONNECTOR GENDER</b> M : Male F : Female - Standard contacts S : Female - Posiband contacts *Float mount allows 0.60 [0.0236] floating per side. Consult sales for more floating options.											
<b>STEP 6: PANEL MOUNT</b> 0 : None. 6 : Easy release mounting clip for 1.50mm [0.059 inch] thick panel, for male panel mount connector only. 82 : Float mount for 1.50 mm [0.059 inch] thick panel. 83 : Float mount for 2.30 mm [0.091 inch] thick panel.											
<b>STEP 7: MOUNTING STYLE AND JACKSCREW SYSTEM</b> 0 : None. B : 90° metal mounting bracket (through hole), for right angle PCB mounted connectors using code 4 or 48, see step 4. LN : 90° metal mounting bracket (board lock), for right angle PCB mounted connectors using code 4 or 48, see step 4. BS : 90° metal mounting bracket (threaded), for right angle PCB mounted connectors using code 7 in step 2 only. N : Push-on fastener for PCB mounted connectors using code 3, or 38, or 4, or 48, see step 4.											
<b>STEP 8: VENT OPTIONS</b> (For power contacts only, except module A of step 3.) 0 : Connector body is not vented. 9 : Connector body vented for air cooling.											
<b>STEP 9: CONTACT PLATING:</b> 1 : Crimp contacts ordered separately. A1 : Gold flash over nickel on mating end termination end. A2 : Gold flash over nickel on mating end and 0.005[0.0002] tin-lead solder coat on termination end. Not available with code 93, 938 in step 4. C1 : 0.00076[0.000030] gold over nickel on mating end and termination end. C2 : 0.00076[0.000030] gold over nickel on mating end and 0.005[0.0002] tin-lead solder coat on termination end. Not available with code 93, 938 in step 4. D1 : 0.00127[0.000050] gold over nickel on mating end and termination end. D2 : 0.00127[0.000050] gold over nickel on mating end and 0.005[0.0002] tin-lead solder coat on termination end. Not available with code 93, 938 in step 4. Consult sales for availability of silver plating.											
<b>STEP 10: ENVIRONMENTAL COMPLIANCE OPTIONS</b> /AA : Compliant per EU Directive 2002/95/EC (RoHS). Example: SP2GNKNB4M0N9/AA <b>Note:</b> This step will not be used if compliance to environmental legislation is not required. Example: SP2GNKNB4M0N9											
<b>STEP 11: SPECIAL OPTIONS, CONSULT SALES FOR SPECIAL OPTIONS.</b>											

Products described within this catalog may be protected by one or more of the following U.S. patents:

#4,721,472 #4,900,261 #5,255,580  
#5,329,697 #6,260,268

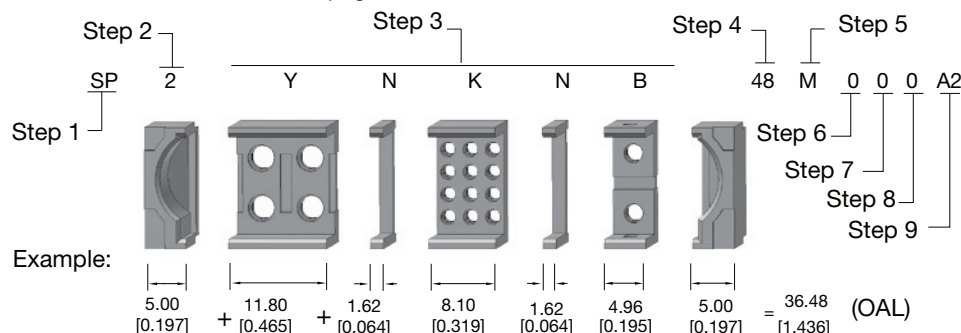
Patented in Canada, 1992.  
Other Patents Pending.





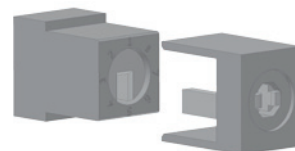
### How to calculate Over All Length (OAL) of a Scorpion connector:

Overall Length (OAL) of a connector is the sum of all the modules length. Refer to example below for OAL calculation. See page 7 and 8 for individual module dimensions.



### KEYING MODULES

The keying module is designed to offer maximum 8 keying positions. Consult sales for availability



### Notes:

- 1 A Scorpion part number can be a maximum of 30 characters. If the connector configuration exceeds this number, please consult sales for a special part number for your unique requirement.
- 2 Contact position numbers may not be continuous. Consult sales for more information.
- 3 Consult sales for connector length exceeding 101.00 mm [3.976 inch].
- 4 Consult sales for connector offering both fixed solder and crimp contacts.
- 5 Alignment bar is only available for size 16, size 18, size 22, and hyperboloid 0,60 [0.0236] right angle (90°) contacts.
- 6 Consult sales for availability of hood system.
- 7 ~~If a size 18 or size 22 crimp modules are placed immediately next to end modules, it is suggested to insert a blank module "N" between the end module and size 18 or size 22 module. THIS STATEMENT NOW OBSOLETE.~~
- 8 Posiband contacts available for size 12, 16, 18 and 22 contacts only. **Specify code F in step 5 when ordering crimp connector.**

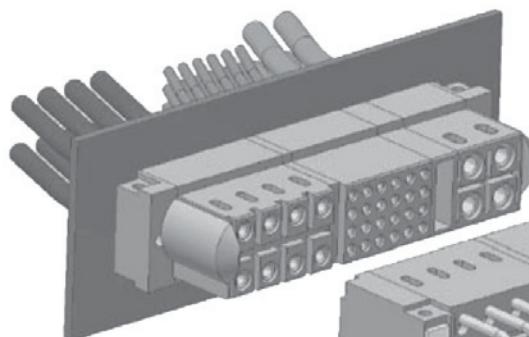
## Board to Panel with Blind Mating System

Female Panel Mount Connector

**Typical part number:**

SP2YN4TND1F0091

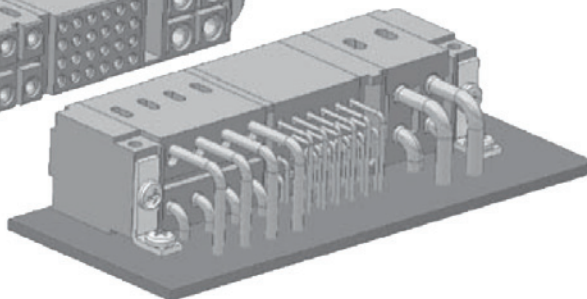
(Contacts ordered separately)



Male Right Angle PCB Mount Connector

**Typical part number:**

SP2YN4TND4M0B9A1



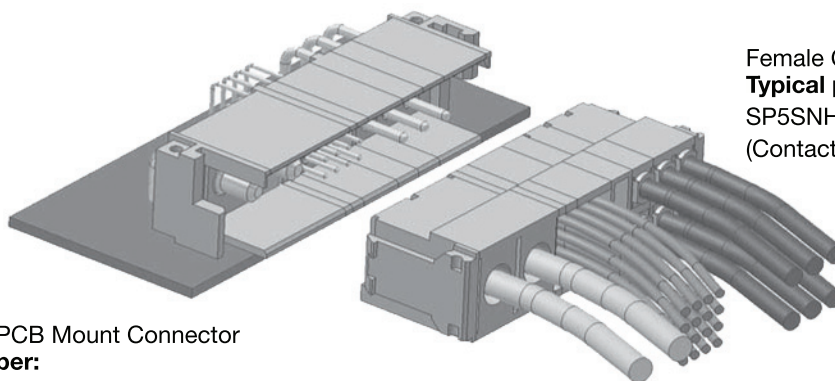
## Cable to Board with Locking Latch System

Female Cable Connector

**Typical part number:**

SP5SNHKN4BC1F0001

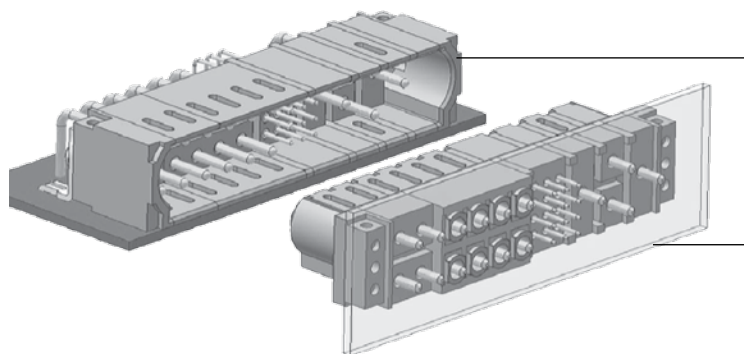
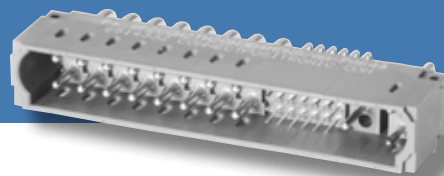
(Contacts ordered separately)



Male Right Angle PCB Mount Connector

**Typical part number:**

SP5SNHKN4BC4M000A1



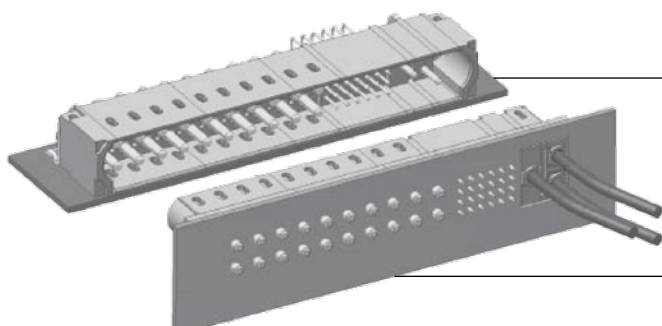
## Board to Board with Blind Mating System

Male Right Angle PCB Mount Connector

**Typical part number:**  
SP2CDNKNANBNA4M0LN9A1

Female Straight PCB Mount Connector

**Typical part number:**  
SP2CDNKNANBNA3F009A1



## Board to Cable with Crimp Contacts Pass-through

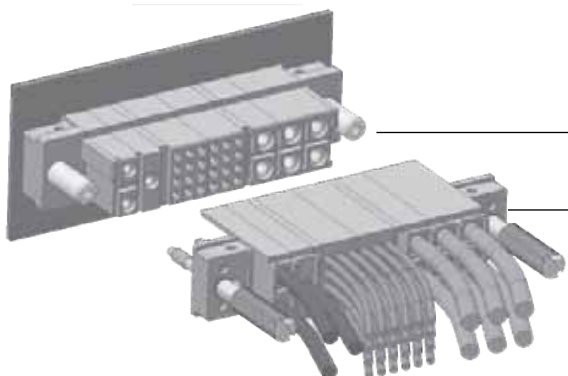
Male Right Angle (90°) PCB Mount Connector

**Typical part number:**  
SP2GGYNTN2ANB48M0LN9A1

Female Straight PCB Mount Connector  
with Crimp Contacts Pass-through

**Typical part number:**  
SP2GGYNTN2ANB38F0N9A1-PA\*\*\*  
(Crimp contacts ordered separately)

In Scorpion series, PCB mount and crimp contacts can be mixed in one insulator housing. Consult sales for your unique requirements.



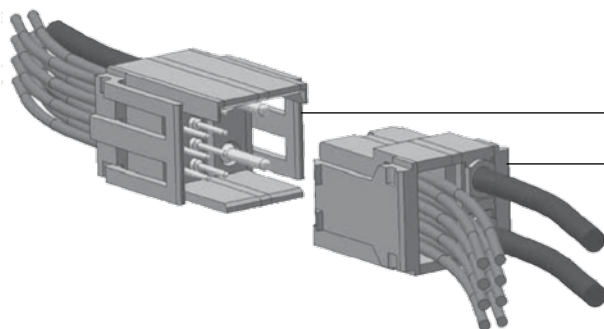
## Board to Cable with Jackscrew System

Female Cable Connector

**Typical part number:**  
SP3YENTNANB1F0T01  
(Contacts ordered separately)

Male Cable Connector

**Typical part number:**  
SP3YENTNANB1M0E01  
(Contacts ordered separately)



## Cable to Cable with Locking Latch System

Male Cable Connector

**Typical part number:**  
SP3JNB1M0001  
(Contacts ordered separately)

Female Cable Connector

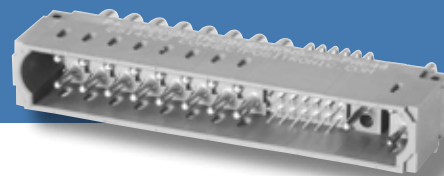
**Typical part number:**  
SP3JNB1F0001  
(Contacts ordered separately)

Unless otherwise specified, dimensional tolerances are:

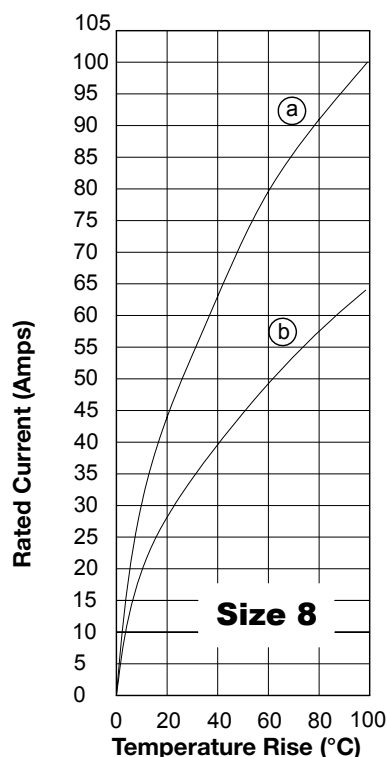
- 1) Male contact mating diameters :  $\pm 0.03$  [0.001]
- 2) Contact termination diameters :  $\pm 0.08$  [0.003]
- 3) All other diameters :  $\pm 0.13$  [0.005]
- 4) All other dimensions :  $\pm 0.38$  [0.015]

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

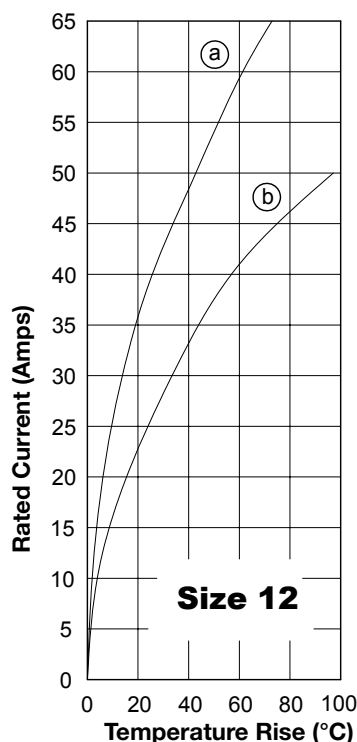




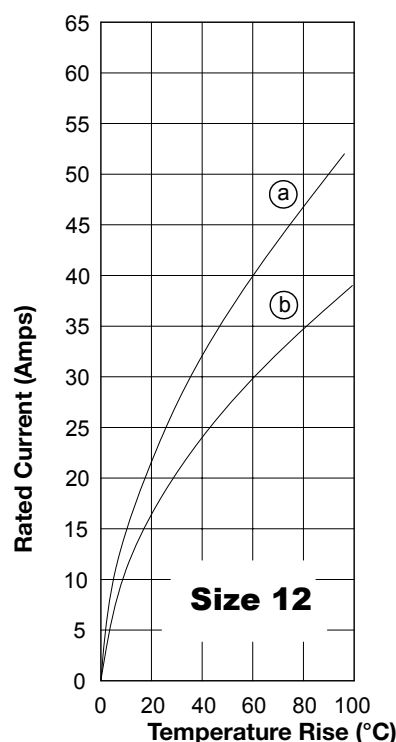
Tested per IEC Publication 512-3, Test 5a



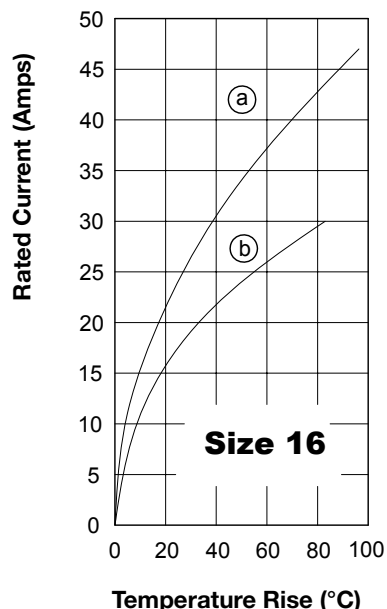
- (a) Developed with 2 size 8 high conductivity contacts seated in code RR modules.  
 (b) Developed with 2 size 8 standard conductivity contacts seated in code RR modules.



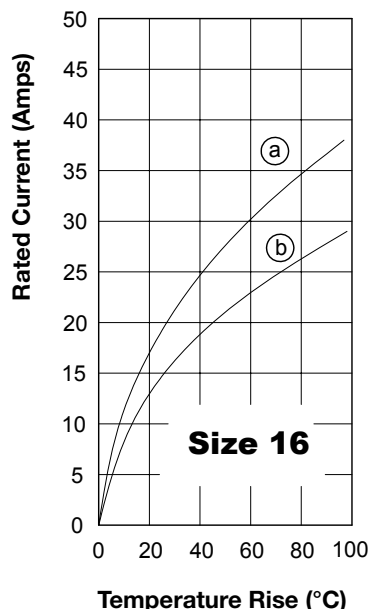
- (a) Developed with 2 size 12 high conductivity contacts seated in code E module.  
 (b) Developed with 2 size 12 standard conductivity contacts seated in code E module.



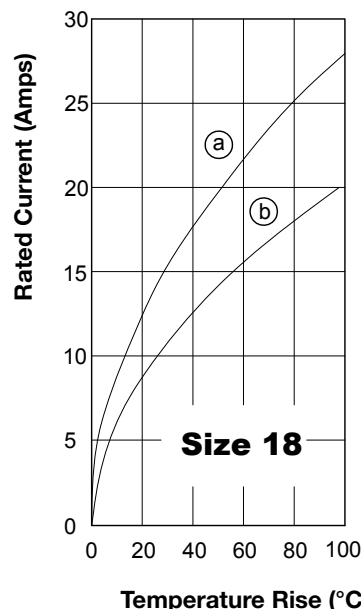
- (a) Developed with 10 size 12 high conductivity contacts seated in code EYY modules.  
 (b) Developed with 10 size 12 standard conductivity contacts seated in code EYY modules.



- (a) Developed with 2 size 16 high conductivity contacts seated in code B module.  
 (b) Developed with 2 size 16 standard conductivity contacts seated in code B module.



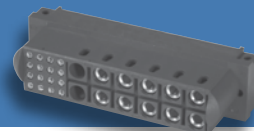
- (a) Developed with 8 size 16 high conductivity contacts seated in code CC modules.  
 (b) Developed with 8 size 16 standard conductivity contacts seated in code CC modules.



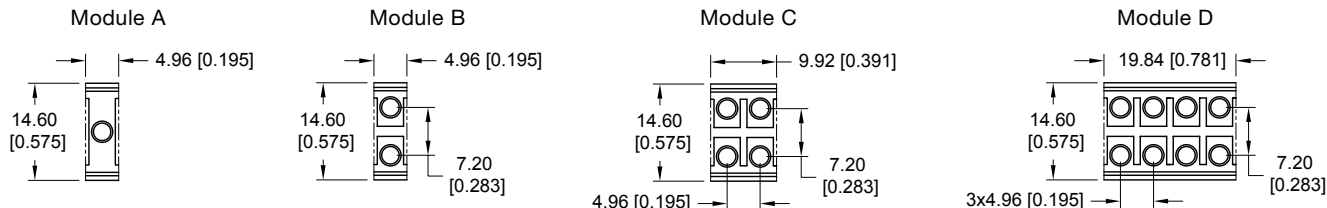
- (a) Developed with 6 size 18 high conductivity contact seated in code Z module.  
 (b) Developed with 6 size 18 standard conductivity contact seated in code Z module.

Contact sales if additional testings and current ratings are required.

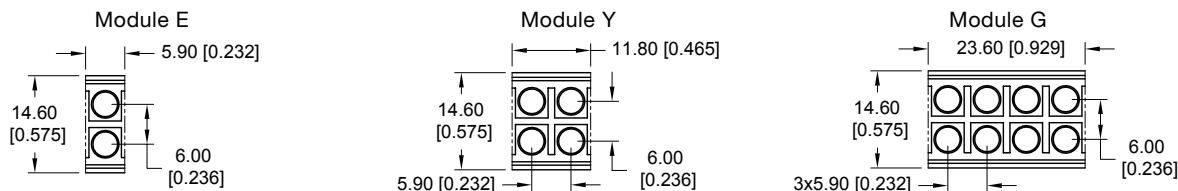




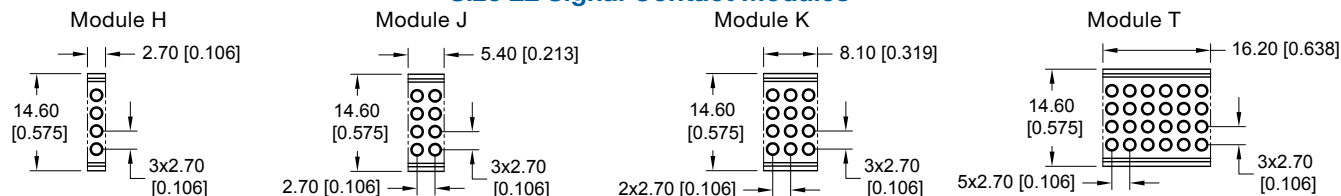
### Size 16 Power Contact Modules



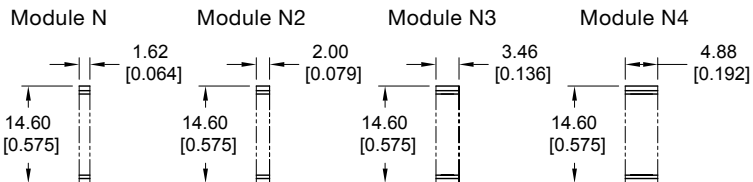
### Size 12 Power Contact Modules



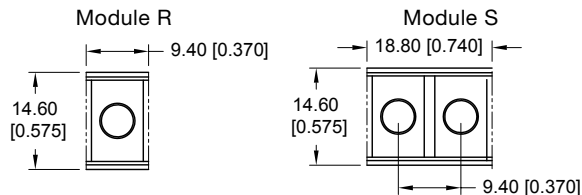
### Size 22 Signal Contact Modules



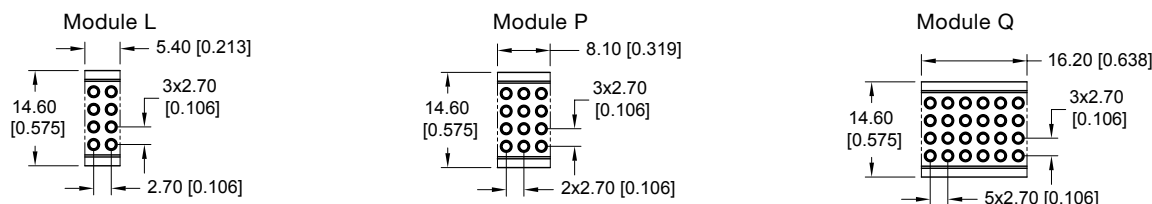
### Blank Modules



### Size 8 Power /Shielded Contact Modules

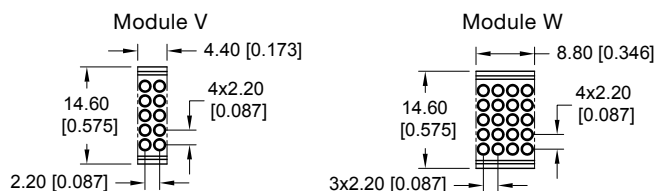


### Size 22 Precision Formed Female Signal Contact Modules



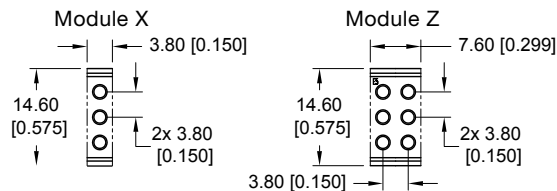
Available in female straight and male & female right angle (90°) PCB mount, consult sales for availability of male straight PCB mount.

### Hyperboloid 0.60mm [0.0236] Contact Modules

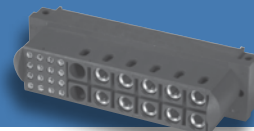


Available for PCB mount termination  
Consult sales for crimp contact terminations

### Size 18 Power Contact Modules



All modules shown above are male modules with the exception of size 22 precision formed female signal contact modules.  
Consult sales for availability of other modules.

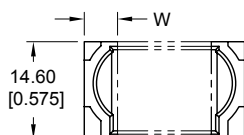


## Guide System and Locking Options

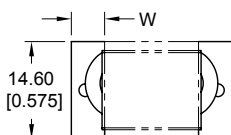
See Step 2 of Ordering Information

## Blind Mating Guide System

Specify Code 2 or Code 7 in Step 2



Male Connector



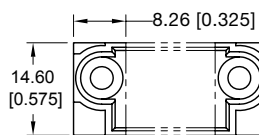
Female Connector

Dimension W

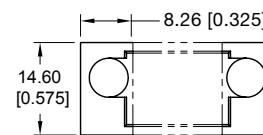
Code	"W"
2	5.00[0.197]
7	4.50[0.177]

## Super Blind Mating Guide System

Specify Code 1 in Step 2



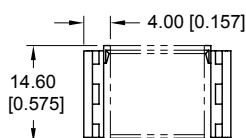
Male Connector



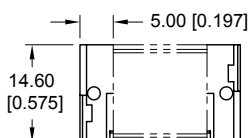
Female Connector

Male Cable to Female Panel/Board  
Locking Latch System

Specify Code 4 in Step 2



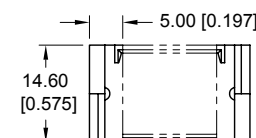
Male Connector



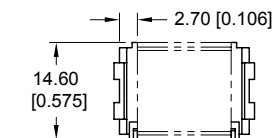
Female Connector

Female Cable to Male Panel/Board  
Locking Latch System

Specify Code 5 in Step 2



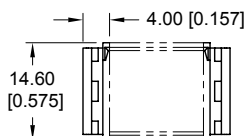
Male Connector



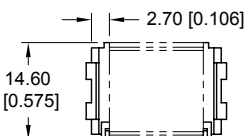
Female Connector

## Cable to Cable Locking Latch System

Specify Code 3 in Step 2



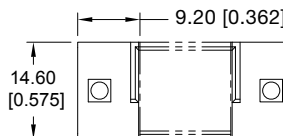
Male Connector



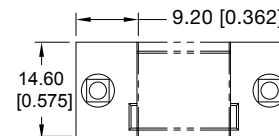
Female Connector

## Jackscrew System

Specify Code 6 in Step 2



Male Connector



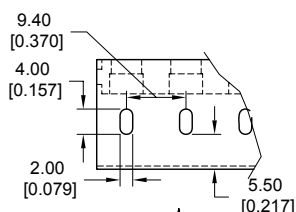
Female Connector

Consult sales for availability of 3.80 mm [0.150 inch] super blind mating system.

## Venting Features

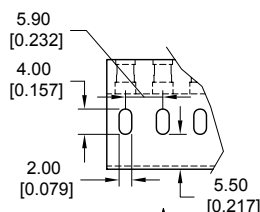
Specify code 9 in Step 8 of Ordering Information

## Size 8 Male



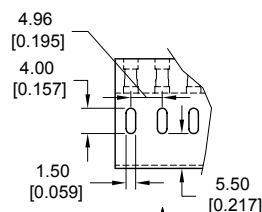
Mating Face

## Size 12 Male



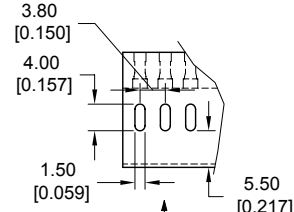
Mating Face

## Size 16 Male



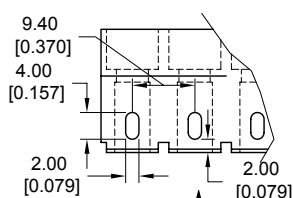
Mating Face

## Size 18 Male



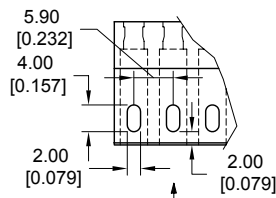
Mating Face

## Size 8 Female



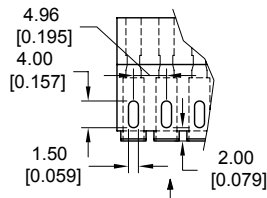
Mating Face

## Size 12 Female



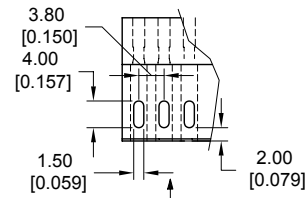
Mating Face

## Size 16 Female



Mating Face

## Size 18 Female



Mating Face

Venting feature is an outlet hole enabling air cooling onto a power contact.  
In compliance with UL 1977 safety standard, section 10.2 Accessibility of live parts.

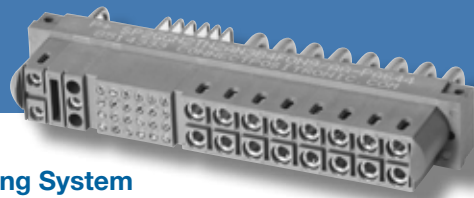






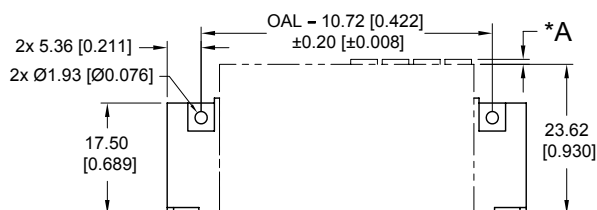
**Scorpion**

# Insulator Dimensions (When using Super Blind mating System & Locking Latch System)

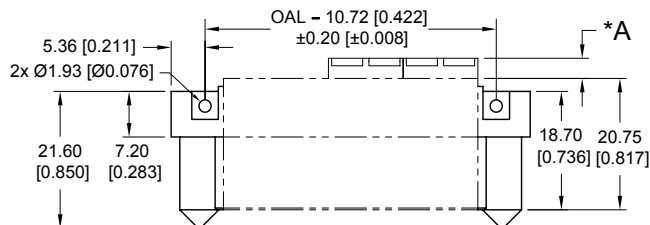


## Insulator Dimensions when using Super Blind Mating System

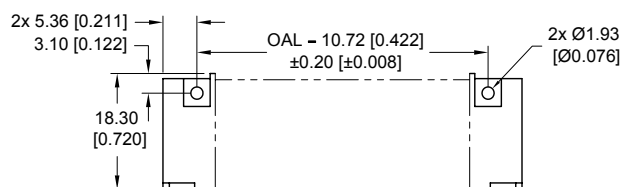
Specify Code 1 in Step 2 of ordering information



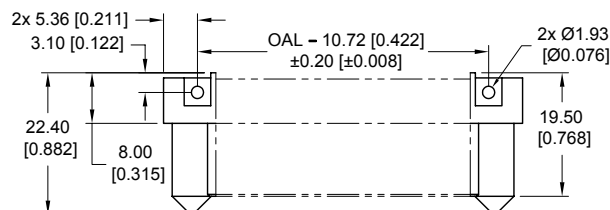
**Male Insulator for Cable/Panel Connector**



**Female Insulator for Cable/Panel Connector**



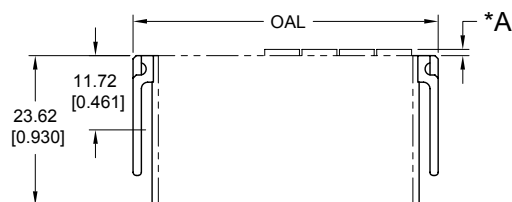
**Male Insulator for PCB Mount Connector**



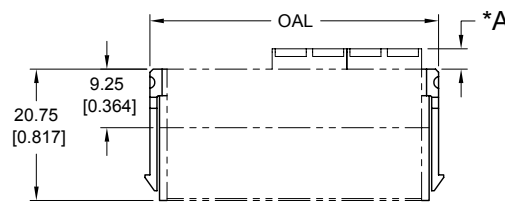
**Female Insulator for PCB Mount Connector**

## Insulator Dimensions when using Locking Latch System

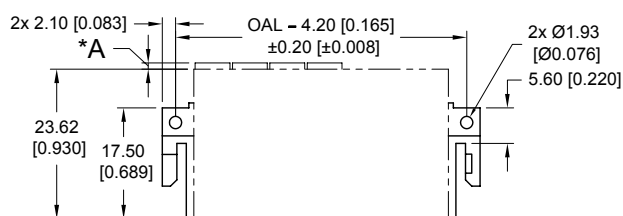
See Step 2 of ordering information



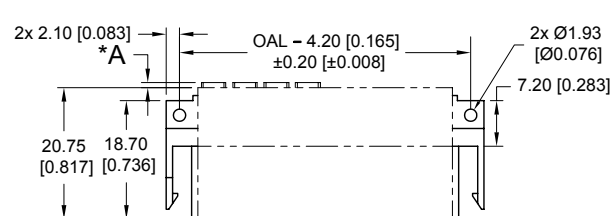
**Male Insulator for Cable Connector**



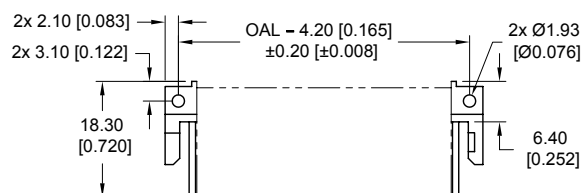
**Female Insulator for Cable Connector**



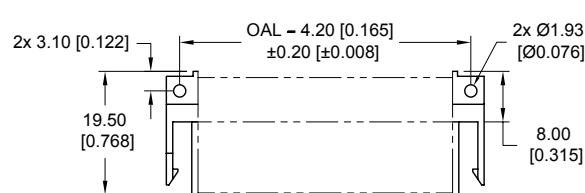
**Male Insulator for Panel Mount Connector**



**Female Insulator for Panel Mount Connector**



**Male Insulator for PCB Mount Connector**



**Female Insulator for PCB Mount Connector**

### Dimension A

Contact Module	Male	Female
Size 8	0	0
Size 12	2.20 [0.087]	3.20 [0.126]
Size 16	2.20 [0.087]	1.20 [0.047]
Size 18	0.60 [0.024]	0.60 [0.024]
Size 22	0	0

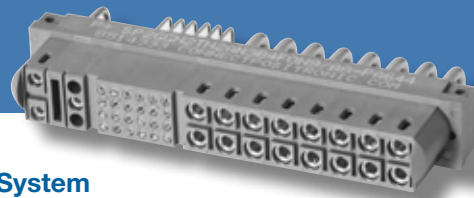


Positronic Industries  
www.connectpositronic.com  
www.positronicasia.com



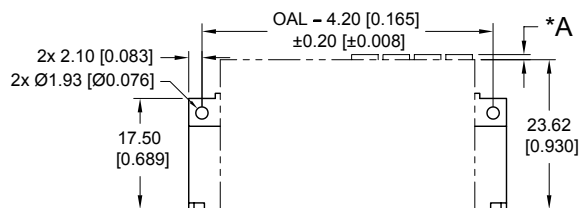
**Scorpion**

# Insulator Dimensions (when using Blind Mating Guide Systems & Jackscrew System)

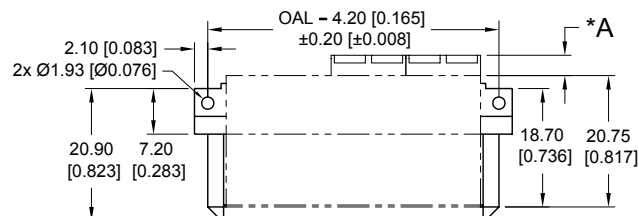


## Insulator Dimensions when using Blind Mating System

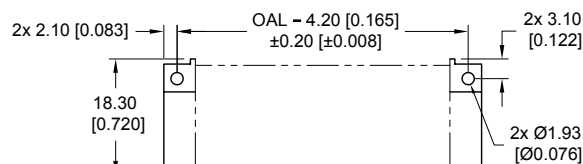
Specify Code 2 in Step 2 of ordering information



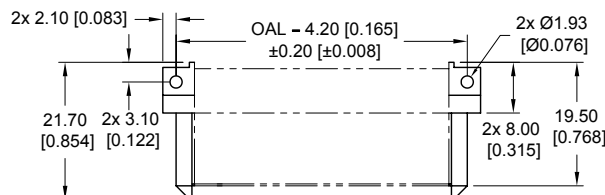
**Male Insulator for Cable/Panel Connector**



**Female Insulator for Cable/Panel Connector**

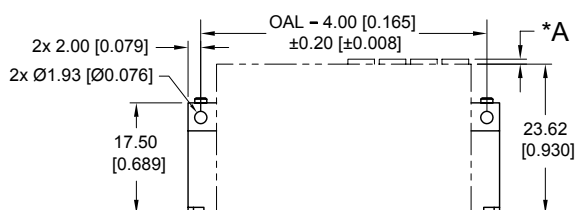


**Male Insulator for PCB Mount Connector**

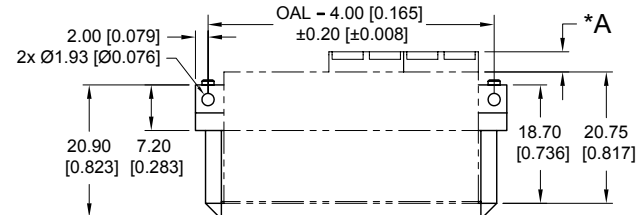


**Female Insulator for PCB Mount Connector**

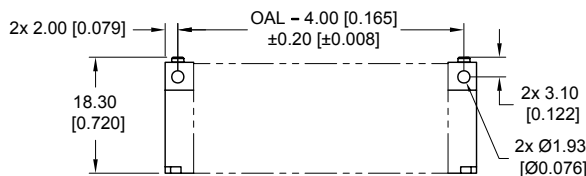
Specify Code 7 in Step 2 of ordering information



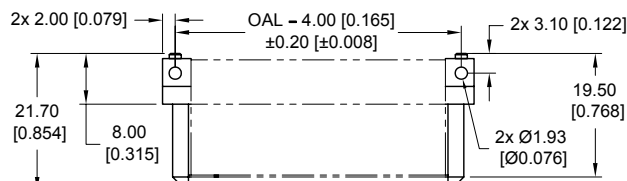
**Male Insulator for Cable/Panel Connector**



**Female Insulator for Cable/Panel Connector**



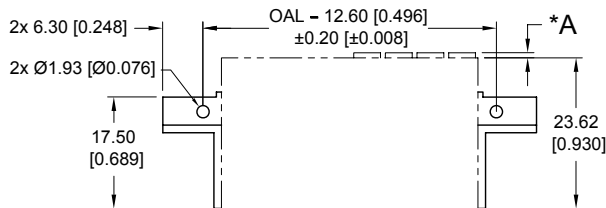
**Male Insulator for PCB Mount Connector**



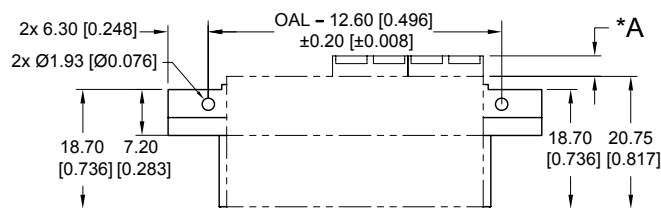
**Female Insulator for PCB Mount Connector**

## Insulator Dimensions when using Jackscrew System

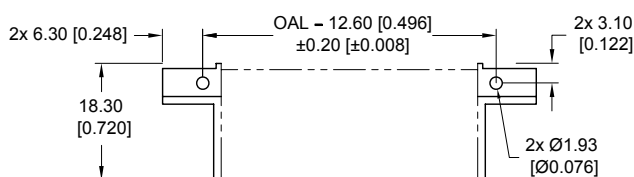
Specify Code 6 in Step 2 of ordering information



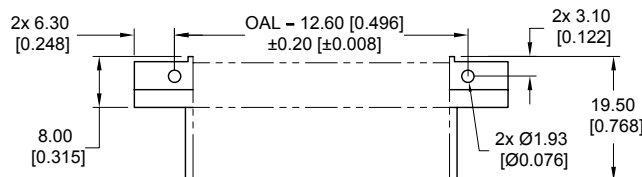
**Male Insulator for Cable/Panel Connector**



**Female Insulator for Cable/Panel Connector**



**Male Insulator for PCB Mount Connector**

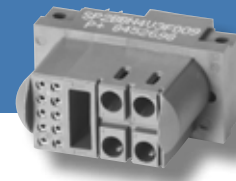


**Female Insulator for PCB Mount Connector**

\* See table on Page 9 for Dimension A.

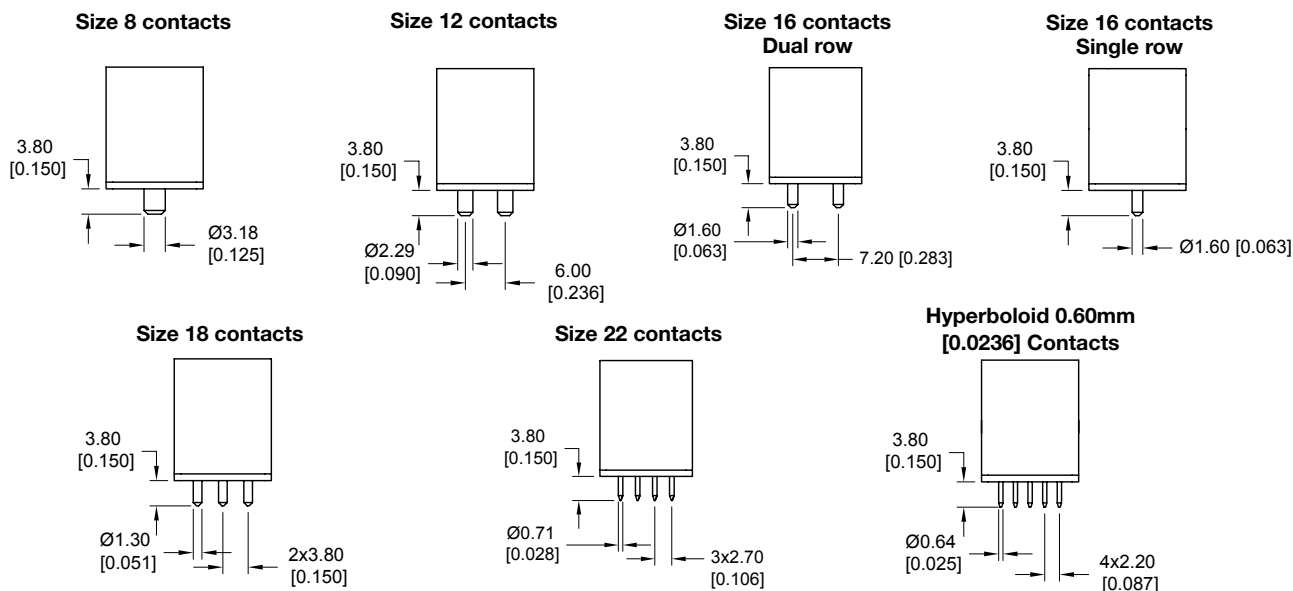
To calculate OAL of Connector See Example at bottom of Page 4 Ordering Information





## Straight PCB Mount Connectors

Specify Code 3 or 38 in Step 4 of ordering information

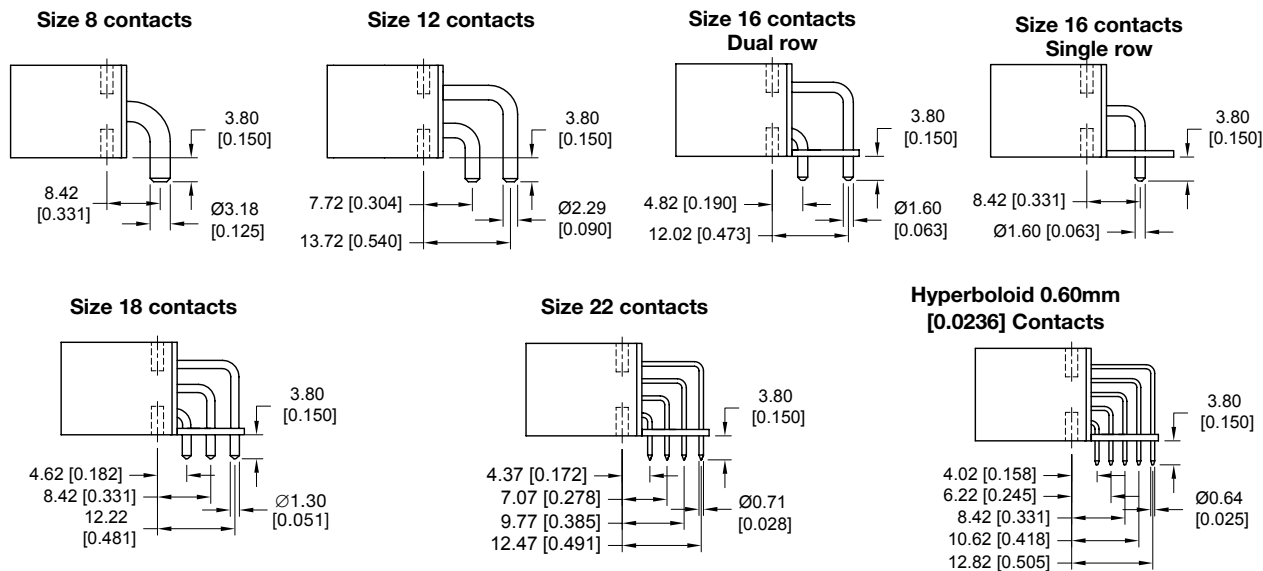


(Dimensions apply to both precision machined and precision formed contacts)

Code 3 is standard material contact and code 38 is high conductivity material contact.

## Right Angle (90°) PCB Mount Connectors

Specify Code 4 or 48 in Step 4 of ordering information



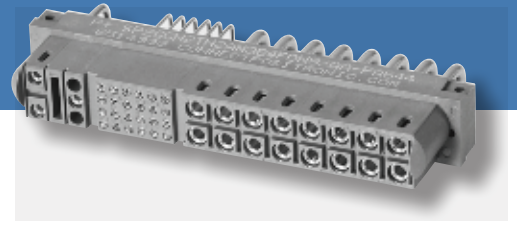
(Dimensions apply to both precision machined and precision formed contacts)

Code 4 is standard material contact and code 48 is high conductivity material contact.

Male connector shown for reference. Dimensions also apply to female connector.

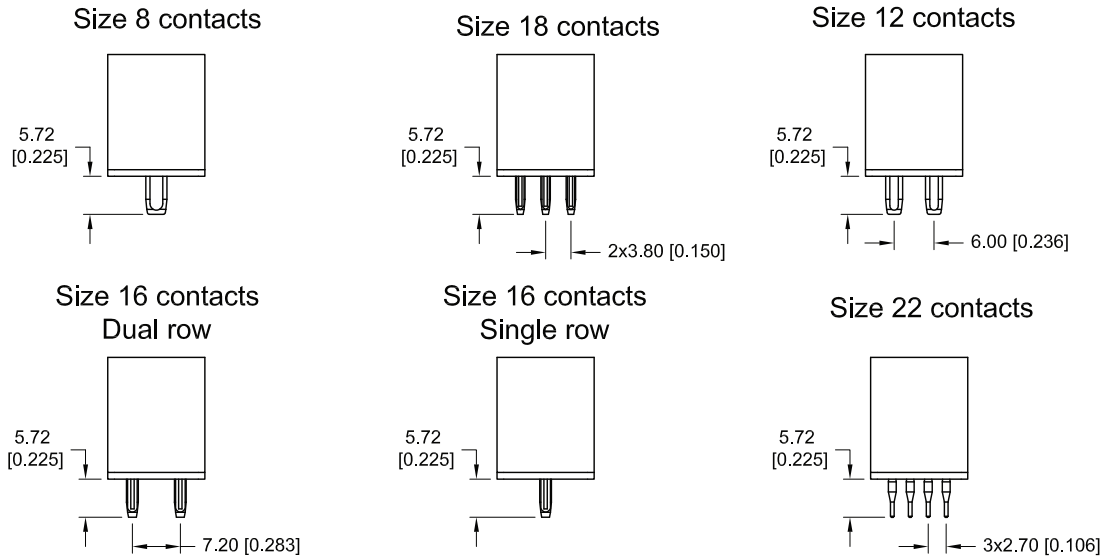
Consult Sales for Contact Hole Patterns of Straight PCB Mount and Right Angle (90°) PCB Mount Connectors.





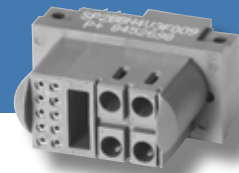
## Press-Fit Straight PCB Mount Connectors

Specify Code 93 or 938 in Step 4 of ordering information



Code 93 is standard material contact and code 938 is high conductivity material power contact.

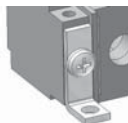
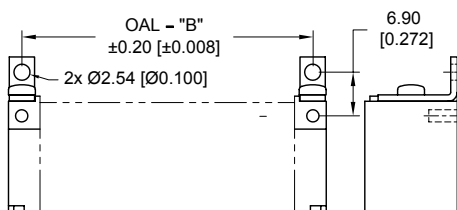
Male connector shown for reference. Dimensions also apply to female connector.  
Consult sales for Contact Hole Patterns of Straight PCB Mount.



## Accessories for PCB Mount See Step 7 of Ordering Information

## Right Angle (90°) Mounting Brackets

Specify code B in Step 7

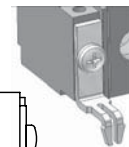
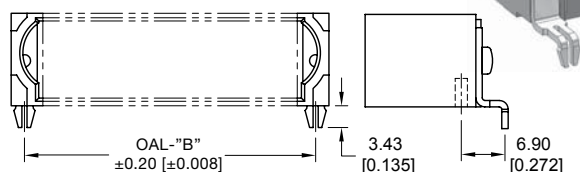


Dimension "B"

Module Types	"B"
Super Blind Mate	10.72 [0.422]
Others	4.20 [0.165]

## 90° Board Lock Brackets

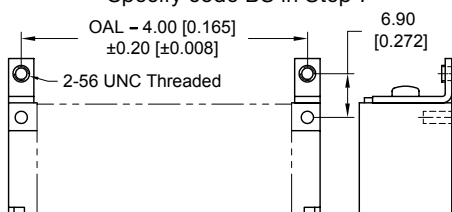
Specify code LN in Step 7



**Material and Finish:** Brass with tin plate.  
Male connector shown for reference only.

## Right Angle (90°) Mounting Threaded Brackets

Specify code BS in Step 7

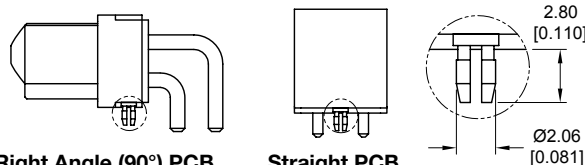


**Material and Finish:** Brass with tin plate.

Consult sales for mounting screw information.

## Push-on Fasteners

Specify code N in Step 7



**Right Angle (90°) PCB Mount Connector**

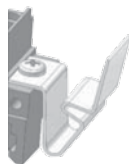
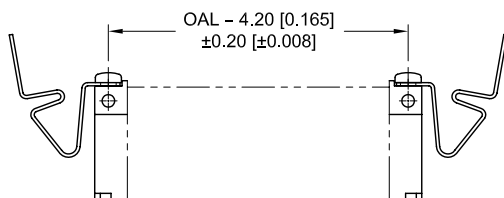
**Straight PCB Mount Connector**

**Material and Finish:** Copper alloy with tin plate.

## Accessories for Panel Mount See Step 6 of Ordering Information

## Easy Release Mounting Clips

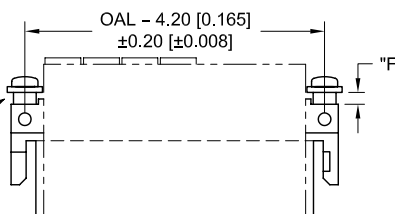
Specify code 6 in Step 6



**Material and Finish:** Steel with zinc plate.

## Float Mount Bushings

Specify Code 82 or 83 in Step 6



**Material and Finish:** Beryllium copper with nickel plate.  
For male connector only.

Consult sales for mounting screw information.

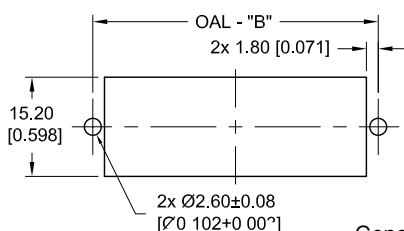
Code	Panel Thickness	Dimension F
82	1.50 [0.059]	1.80 [0.071]
83	2.30 [0.091]	2.60 [0.102]

## Panel Cutout Dimensions

## For Mounting Screws

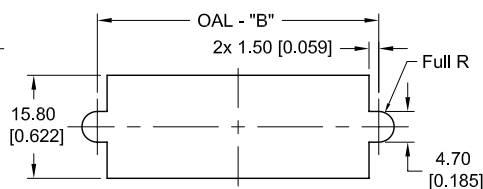
(Code 0 in Step 6)

\*Find dimension "B" in above chart\*



## For Float Mounting

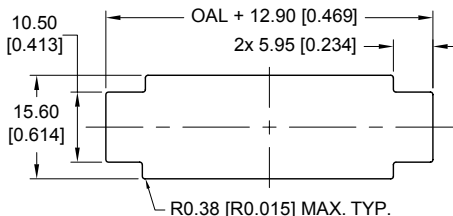
(Code 82 or 83 in Step 6)



## For Quick Release Mounting Clip

(Code 6 in Step 6)

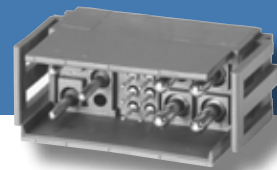
(Maximum panel thickness: 1.60 [0.063] nominal)



General tolerance for panel cutout dimensions is  $\pm 0.13$  [ $\pm 0.005$ ].

To calculate OAL of Connector See Example at top of Page 4 Ordering Information

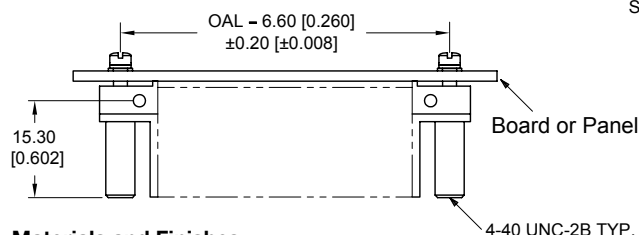


**Jackscrew System**

(See 7 of Ordering Information)

**Female Fixed Jackscrew**

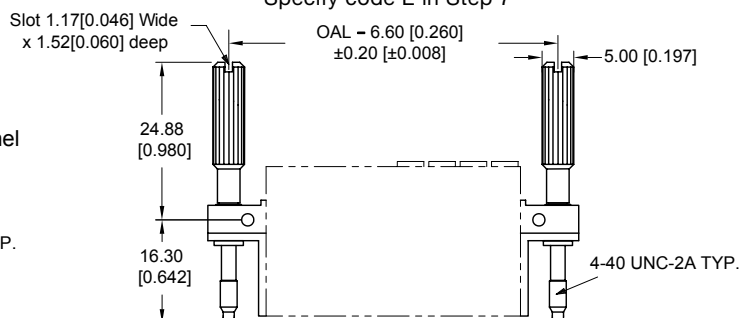
Specify code T in Step 6 or 7

**Materials and Finishes:**

Jackscrews, Hex Nut and Lockwashers  
- Stainless Steel, Passivated.  
Knob - Aluminium, Yellow Anodized.

**Male Turnable Jackscrew**

Specify code E in Step 7



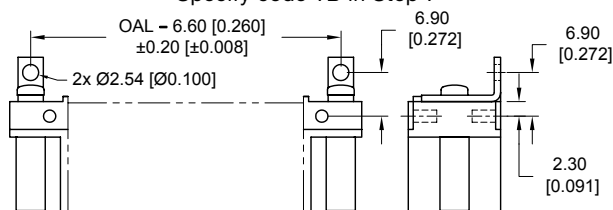
Male connector shown for reference. Contact sales about ordering components separately.

**Accessories for Jackscrew System**

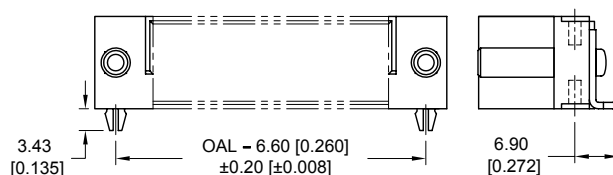
(See Step 6 &amp; 7 of Ordering Information)

**Female Fixed Jackscrew with Right Angle (90°)****Mounting Brackets**

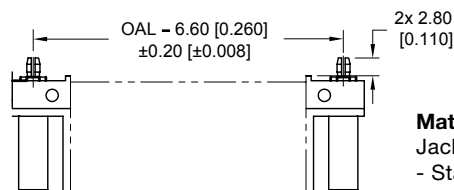
Specify code TB in Step 7

**Female Fixed Jackscrew with Right Angle (90°)****Board Lock Brackets**

Specify code TLN in Step 7

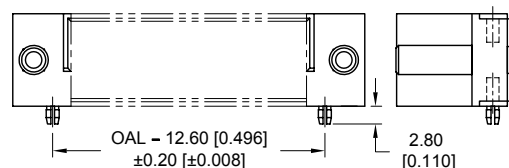
**Female Fixed Jackscrew with Push-on Fasteners**

Specify code TN in Step 7

**Materials and Finishes:**

Jackscrews, Hex Nut and Lockwashers  
- Stainless Steel, Passivated.  
Knob - Aluminium, Yellow Anodized.

Straight PCB Mount Connector

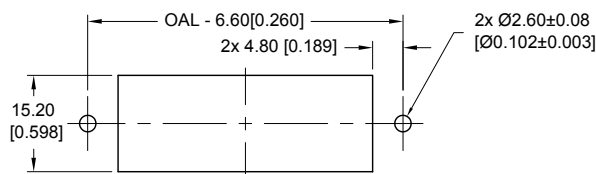


Right angle (90°) PCB Mount Connector

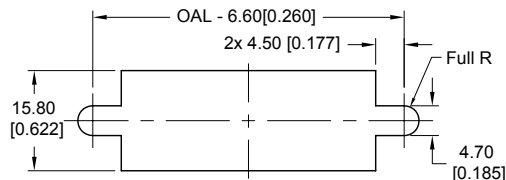
Male connector shown for reference. Contact sales about ordering components separately.

**Panel Cutout Dimensions When Using with Jackscrew System****For Mounting Screws**

(Code 0 in Step 6)

**For Float Mounting**

(Code 82 or 83 in Step 6)



General tolerance for panel cutout dimensions is ±0.13 [±0.005].

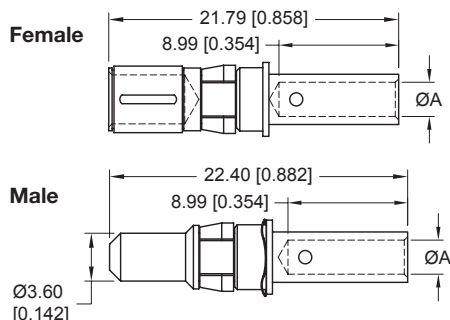
To calculate OAL of Connector See Example at top of Page 4 Ordering Information







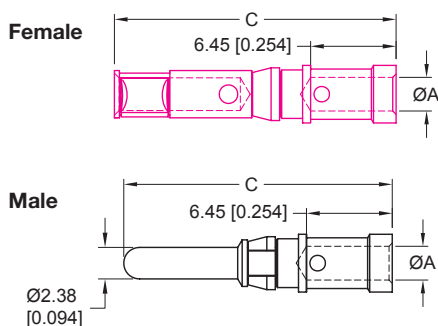
### Size 8 Removable Crimp Contacts



Female Contacts		Male Contacts		Wire Size AWG [mm²]	ØA
Part Number (Standard Conductivity Contacts)	Part Number (High Conductivity Contacts)	Part Number (Standard Conductivity Contacts)	Part Number (High Conductivity Contacts)		
N/A	FC4008DS	NA	MC4008DS	8 [10.0]	4.60 [0.181]
FC4010D	N/A	MC4010D	N/A	10 [ 5.3]	3.10 [0.122]
FC4012D		MC4012D		12 [ 4.0]	2.57 [0.101]
FC4016D		MC4016D		16 [ 1.5]	1.70 [0.067]

N/A - Not Applicable

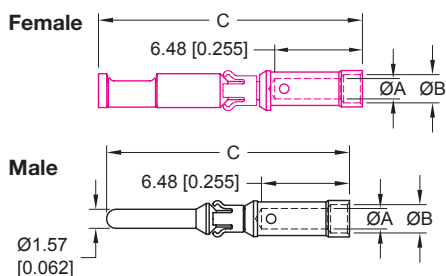
### Size 12 Removable Crimp Contacts



Part Number (Standard Conductivity Contacts)	Part Number (High Conductivity Contacts)	Wire Size AWG [mm²]	ØA	Sequential Mate	C
Female Contacts					
FC1210P2	FC1210P2S	10 [6.0]	3.10 [0.122]	N/A	21.25 [0.837]
FC1212P2	FC1212P2S	12 [4.0]	2.54 [0.100]		
Male Contacts					
MC1210N-PA563	MC1210NS-PA563	10 [6.0]	3.10 [0.122]	First	23.18 [0.912]
MC1210N	MC1210NS			Standard	20.18 [0.794]
MC1212N-PA563	MC1212NS-PA563	12 [4.0]	2.54 [0.100]	First	23.18 [0.912]
MC1212N	MC1212NS			Standard	20.18 [0.794]

N/A - Not Applicable

### Size 16 Removable Crimp Contacts



#### Materials and Finishes:

Precision machined copper alloy with gold flash over nickel.

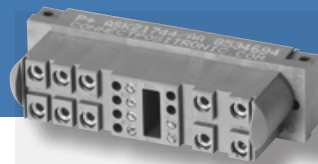
**Consult sales for other contact sizes, materials, finishes, termination styles and more details.**

Part Number (Standard Conductivity Contacts)	Part Number (High Conductivity Contacts)	Wire Size AWG [mm²]	ØA	ØB	Sequential Mate	C
Female Contacts						
FC112P2-PA907	FC112P2S-PA907	12 [4.0]	2.49 [0.098]	N/A	N/A	19.33 [0.761]
FC114P2-PA907	N/A	14-16 [2.5-1.5]	2.06 [0.081]	2.67 [0.105]		
FC116P2-PA907		16-18-20 [1.5-1.0-0.5]	1.70 [0.067]	2.36 [0.093]		
FC120P2-PA907		20-22-24 [0.5-0.3-0.25]	1.14 [0.045]	1.73 [0.068]		
Male Contacts						
MC112N-133.5	MC112NS-133.5	12 [4.0]	2.49 [0.098]	N/A	First	21.74 [0.856]
MC112N	MC112NS				Standard	19.41 [0.764]
MC114N-133.5	N/A	14-16 [2.5-1.5]	2.06 [0.081]	2.67 [0.105]	First	21.74 [0.856]
MC114N					Standard	19.41 [0.764]
MC116N-133.5		16-18-20 [1.5-1.0-0.5]	1.70 [0.067]	2.36 [0.093]	First	21.74 [0.856]
MC116N					Standard	19.41 [0.764]
MC120N-133.5		20-22-24 [0.5-0.3-0.25]	1.14 [0.045]	1.73 [0.068]	First	21.74 [0.856]
MC120N					Standard	19.41 [0.764]

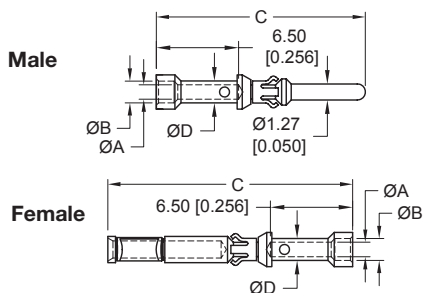
N/A - Not Applicable

Note: Please use correct wire size and it should be smaller than ØA of the contact. Some connectors may not accommodate some thicker insulation wires. Customer review for wire selection is recommended. Removable contacts should be allowed to float after installation in connector body. This enables superior mating performance. If floating is not enabled, some mating issues may occur; especially when wires/cables are bent at a severe angle.





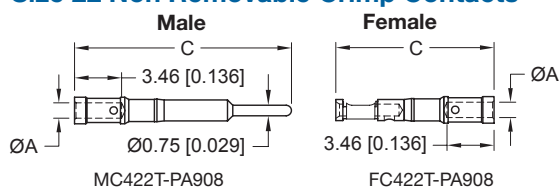
## Size 18 Removable Crimp Contacts



Part Number (Standard Conductivity Contacts)	Part Number (High Conductivity Contacts)	Wire Size AWG [mm²]	ØA	ØB	ØD	Sequential Mate	C
Female Contacts							
FC1816P2	FC1816P2S	16-18 [1.5-1.0]	1.70 [0.067]	1.70 [0.067]	2.43 [0.096]	N/A	19.34 [0.761]
FC1820P2	FC1820P2S	20 [0.5]	1.14 [0.045]	1.73 [0.068]	1.73 [0.068]		
Male Contacts							
MC1816N-PA561	MC1816NS-PA561	16-18 [1.5-1.0]	1.70 [0.067]	1.70 [0.067]	2.43 [0.096]	First	21.08 [0.830]
MC1816N	MC1816NS					Standard	19.08 [0.751]
MC1820N-PA561	MC1820NS-PA561	20 [0.5]	1.14 [0.045]	1.73 [0.068]	1.73 [0.068]	First	21.08 [0.830]
MC1820N	MC1820NS					Standard	19.08 [0.751]

N/A - Not Applicable

## Size 22 Non Removable Crimp Contacts



Removable Contacts	Non Removable Contact	Wire Size AWG [mm <sup>2</sup> ]	ØA	C
<b>Male</b>	<b>Male</b>			
MC422N9	MC422T-PA908	22-26 [0.3]-[0.12]	0.89 [0.035]	15.49 [0.610]
<b>Female</b>	<b>Female</b>			
FC422P9	FC422T-PA908	22-26 [0.3]-[0.12]	0.89 [0.035]	11.41 [0.449]

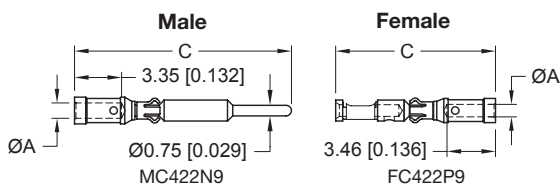
N/A - Not Applicable

**Materials and Finishes:**

Precision machined copper alloy with gold flash over nickel.

**Consult sales for other contact sizes, materials, finishes, termination styles and more details.**

## Size 22 Removable Crimp Contacts



## Recommended Tools for Crimp Contacts

Contact Extraction Tool



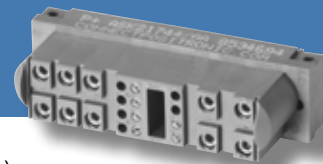
Contact Insertion Tool

Cycle-Controlled Step  
Adjustable Hand Crimp Tool

Contact Size	Contact Extraction Tool	Contact Insertion Tool	Hand Crimp Tool
Size 8	4311-0-0	Not Applicable	9504-19-0 (FC4008DS and MC4008DS contacts) 9509-0-0 (*C4010D, *C4012D, and *C4016D contacts)
Size 12	2711-0-0	9099-3-0	9509-6-1 with 9509-6-2 positioner (*C1210** contacts) 9501-0 with 9502-38-0 positioner (MC1212** contacts) 9501-0 with 9502-37-0 positioner (FC1212** contacts)
Size 16	9081-0-0	9099-0-0	9501-0 with 9502-1-0 positioner (FC1**P2, MC1**N) 9501-0 with 9502-17-0 positioner (MC1**N-133.5) 9509-3 (FC112N2S, MC112NS and MC112NS-133.5)
Size 18	9081-9-0	9099-6-0	9507-0 with 9502-32-0 positioner (male contacts) 9507-0 with 9502-30-0 positioner (female contacts)
Size 22	^ 9081-3-0	9099-7-0	9507-0 with 9502-12-0 positioner (male contacts) 9507-0 with 9502-13-0 positioner (female contacts)

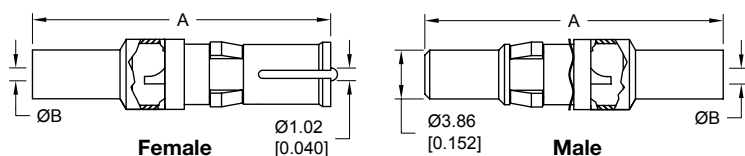
^ Not Applicable for Size 22 non-removable crimp contacts.

Consult sales for additional crimping tools and crimping information.

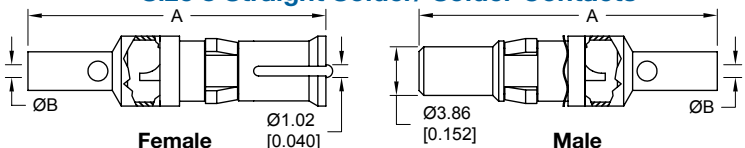


**Shielded Contacts, Removable Size 8** (Contacts Ordered Separately)  
(Specify Code 1 in Step 4 of Ordering Information, for use in Module R or S Only)

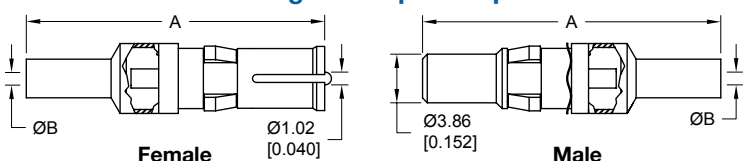
## Size 8 Straight Solder/ Crimp Contacts



## Size 8 Straight Solder/ Solder Contacts



## Size 8 Straight Crimp/ Crimp Contacts



## Electrical Characteristics:

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  
\* Proof Voltage : 1000 V r.m.s.

\* Above values measured using frequency domain techniques.

## Materials and Finishes:

Copper alloy with PTFE teflon insulator.  
Signal Contact: 0.76µ [0.000030] gold over nickel.  
Contact Body: Gold flash over nickel.

## Optional Finishes:

Signal Contact: 1.27µ [0.000050] gold over nickel by adding "-15" suffix onto part number.  
Example: MS4102D-15.  
Contact Body: 0.76µ [0.000030] gold over nickel.

Contact sales for more shielded contact options, high voltage contacts, air line couplers, more technical characteristics, soldering and crimping information.

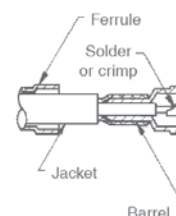
Solder / Crimp Part Number		Solder / Solder Part Number		Crimp / Crimp Part Number		A	ØB	RG Cable Number
Male	Female	Male	Female	Male	Female			
MC4101D	FC4101D	MS4101D	FS4101D	MCC4101D	FCC4101D	0.929 [23.60]	0.040 [1.02]	178 B/U 196 B/U
MC4102D	FC4102D	MS4102D	FS4102D	MCC4102D	FCC4102D	0.929 [23.60]	0.067 [1.70]	179 B/U 316 B/U
MC4103D	FC4103D	MS4103D	FS4103D	MCC4103D	FCC4103D	1.037 [26.34]	0.108 [2.74]	180 B/U
MC4104D	FC4104D	MS4104D	FS4104D	MCC4104D	FCC4104D	1.037 [26.34]	0.120 [3.05]	58 B/U

## Shielded Contact Hand Crimp Tool



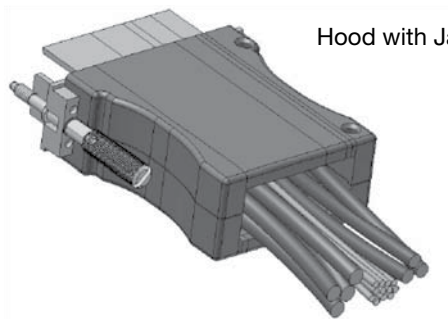
Contact sales for crimp tool part numbers.

Typical Part number  
FC4101D.

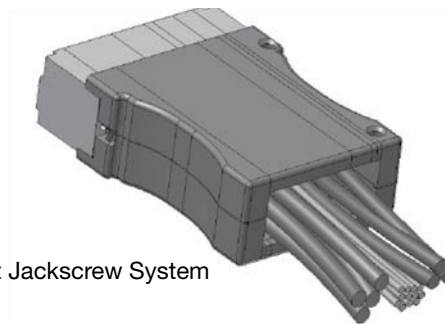


## Hood Options

(Consult Sales for Availability)



Hood with Jackscrew System



Hood without Jackscrew System





Scorpion

# COMPLIANT PRESS-FIT CONNECTORS

For Connector Variants Containing  
SIZE 8, 22, 16, 18 AND 22 Press-Fit Contacts Only



## SUGGESTED PRINTED BOARD HOLE SIZES FOR COMPLIANT PRESS-FIT CONNECTORS

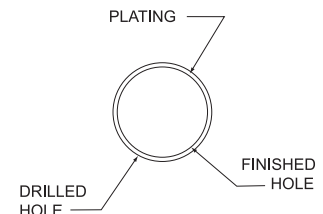
Traditionally, tin-lead has been a popular plating for PCB holes. However, many PCB hole platings must now be RoHS Compliant. Positronic is pleased to offer **PCB HOLE SIZE FOR RoHS!** PCB plating as shown below.

OMEGA & BI-SPRING COMPLIANT PRESS-FIT CONTACT HOLE				
BOARD TYPE	CONTACT SIZE / TYPE	RECOMMENDED DRILL HOLE SIZE	RECOMMENDED PLATING	FINISHED HOLE SIZES
TIN-LEAD SOLDER PCB	22 OMEGA	$\phi 1.150 \pm 0.025$ [ $\phi 0.0453 \pm 0.0010$ ]	15μ [0.0006] minimum solder over 25μ [0.0010] min. copper	$\phi 1.000 \pm 0.090 - 0.060$ [ $\phi 0.0394 \pm 0.0035 - 0.0024$ ]
	16 BI-SPRING	$\phi 1.750 \pm 0.025$ [ $\phi 0.069 \pm 0.001$ ]		$\phi 1.600 \pm 0.090 - 0.060$ [ $\phi 0.0630 \pm 0.0035 - 0.0024$ ]
	12 BI-SPRING	$\phi 2.59 \pm 0.025$ [ $\phi 0.102 \pm 0.001$ ]		$\phi 2.44 \pm 0.05$ [ $\phi 0.096 \pm 0.002$ ]
	8 BI-SPRING	$\phi 3.180 \pm 0.025$ [ $\phi 0.125 \pm 0.001$ ]		$\phi 3.02 \pm 0.05$ [ $\phi 0.119 \pm 0.002$ ]
RoHS PCB PLATING OPTIONS				
COPPER PCB	22 OMEGA	$\phi 1.19 \pm 0.025$ [ $\phi 0.047 \pm 0.001$ ]	25μ [0.0010] min. copper	$\phi 1.09 \pm 0.05$ [ $\phi 0.043 \pm 0.002$ ]
	16 BI-SPRING	$\phi 1.750 \pm 0.025$ [ $\phi 0.069 \pm 0.001$ ]		$\phi 1.600 \pm 0.090 - 0.060$ [ $\phi 0.0630 \pm 0.0035 - 0.0024$ ]
	12 BI-SPRING	$\phi 2.59 \pm 0.025$ [ $\phi 0.102 \pm 0.001$ ]		$\phi 2.44 \pm 0.05$ [ $\phi 0.096 \pm 0.002$ ]
	8 BI-SPRING	$\phi 3.180 \pm 0.025$ [ $\phi 0.125 \pm 0.001$ ]		$\phi 3.02 \pm 0.05$ [ $\phi 0.119 \pm 0.002$ ]
IMMERSION TIN PCB	22 OMEGA	$\phi 1.19 \pm 0.025$ [ $\phi 0.047 \pm 0.001$ ]	0.85±0.15μ [0.000033±0.000006] immersion tin over 25μ [0.0010] min. copper	$\phi 1.09 \pm 0.05$ [ $\phi 0.043 \pm 0.002$ ]
	16 BI-SPRING	$\phi 1.750 \pm 0.025$ [ $\phi 0.069 \pm 0.001$ ]		$\phi 1.600 \pm 0.090 - 0.060$ [ $\phi 0.0630 \pm 0.0035 - 0.0024$ ]
	12 BI-SPRING	$\phi 2.59 \pm 0.025$ [ $\phi 0.102 \pm 0.001$ ]		$\phi 2.44 \pm 0.05$ [ $\phi 0.096 \pm 0.002$ ]
	8 BI-SPRING	$\phi 3.180 \pm 0.025$ [ $\phi 0.125 \pm 0.001$ ]		$\phi 3.02 \pm 0.05$ [ $\phi 0.119 \pm 0.002$ ]
IMMERSION SILVER PCB	22 OMEGA	$\phi 1.19 \pm 0.025$ [ $\phi 0.047 \pm 0.001$ ]	0.34±0.17μ [0.000013±0.000007] immersion silver over 25μ [0.0010] min. copper	$\phi 1.09 \pm 0.05$ [ $\phi 0.043 \pm 0.002$ ]
	16 BI-SPRING	$\phi 1.750 \pm 0.025$ [ $\phi 0.069 \pm 0.001$ ]		$\phi 1.600 \pm 0.090 - 0.060$ [ $\phi 0.0630 \pm 0.0035 - 0.0024$ ]
	12 BI-SPRING	$\phi 2.59 \pm 0.025$ [ $\phi 0.102 \pm 0.001$ ]		$\phi 2.44 \pm 0.05$ [ $\phi 0.096 \pm 0.002$ ]
	8 BI-SPRING	$\phi 3.180 \pm 0.025$ [ $\phi 0.125 \pm 0.001$ ]		$\phi 3.02 \pm 0.05$ [ $\phi 0.119 \pm 0.002$ ]
ELECTROLESS NICKEL / IMMERSION GOLD PCB	22 OMEGA	$\phi 1.19 \pm 0.025$ [ $\phi 0.047 \pm 0.001$ ]	0.05μ [0.000002] min. immersion gold over 4.5±1.5μ [0.000177±0.000059] electroless nickel per IPC-4552 over 25μ [0.0010] min. copper	$\phi 1.09 \pm 0.05$ [ $\phi 0.043 \pm 0.002$ ]
	16 BI-SPRING	$\phi 1.750 \pm 0.025$ [ $\phi 0.069 \pm 0.001$ ]		$\phi 1.600 \pm 0.090 - 0.060$ [ $\phi 0.0630 \pm 0.0035 - 0.0024$ ]
	12 BI-SPRING	$\phi 2.59 \pm 0.025$ [ $\phi 0.102 \pm 0.001$ ]		$\phi 2.44 \pm 0.05$ [ $\phi 0.096 \pm 0.002$ ]
	8 BI-SPRING	$\phi 3.180 \pm 0.025$ [ $\phi 0.125 \pm 0.001$ ]		$\phi 3.02 \pm 0.05$ [ $\phi 0.119 \pm 0.002$ ]

### "Omega" Termination



### "Bi-Spring" Termination



### COMPLIANT PRESS-FIT TERMINATION CONTACT HOLE

**Note:** For PCB plating compositions not shown, consult Technical Sales.

## PRESS-FIT USER INFORMATION

When properly used, Positronic Industries Bi-Spring Power or Omega Signal Press-Fit terminations provide reliable service even under severe conditions.

**Connectors utilizing this leading technology press-fit contact are easy to install:**

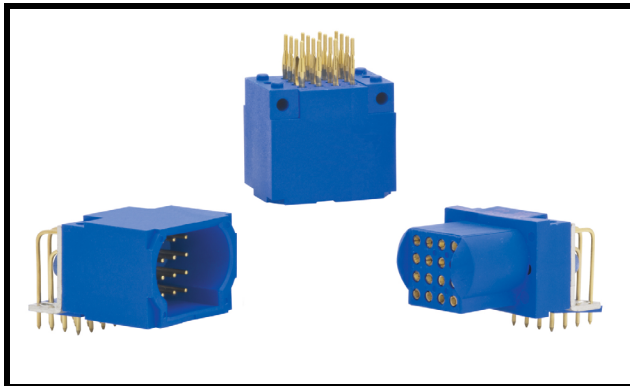
1. Inexpensive installation tooling is available from Positronic. To order installation tools, please contact Technical Sales.
2. Insert the connector into the printed circuit board or backplane and seat connector fully.
3. Secure the connector to the P.C. board or backplane using two self-tapping screws. The screws should be 2-28 Triplask II Trilobular threads supplied by customer, which can be purchase separately.



Positronic Industries  
www.connectpositronic.com  
www.positronicasia.com



## NEW PRODUCT RELEASE

**POSITRONIC INDUSTRIES, INC.**Springfield, Missouri USA • 800-641-4054 • [info@connectpositronic.com](mailto:info@connectpositronic.com)**POSITRONIC INDUSTRIES, S.A.S.**Auch, France • 33 5 62 63 44 91 • [contact@connectpositronic.com](mailto:contact@connectpositronic.com)**POSITRONIC ASIA PTE LTD.**Singapore • (65) 6842 1419 • [singapore@connectpositronic.com](mailto:singapore@connectpositronic.com)

*Positronic is proud to have participated in PICMG 3.8. The Scorpion series was chosen as the PICMG 3.8 power connector. For more information on the PICMG 3.8 connectors, see pages 19-22.*

December 15, 2011

### Positronic's Scorpion Series chosen for PICMG 3.8

AdvancedTCA was developed to define next generation carrier-grade telecommunications equipment. ATCA architecture enables increased mobility and improves reliability, availability, and serviceability. The ATCA specification allows the standard to keep up with an evolving and competitive industry.

One of the latest ATCA evolutions is the PICMG 3.8 standard. PICMG 3.8 specifies Zone 3 requirements for rear transition modules in ATCA systems. The standard also addresses power, cooling, and keying issues. This addition to the family of PICMG standards supports the use of ATCA in a variety of applications outside of telecommunications.

One of the key features of PICMG 3.8 is the definition of a power and system management connector. This allows a consistent means of supporting generic system requirements, while allowing the flexibility to utilize application specific connectors as needed.

Positronic's Scorpion connector series was chosen as the power and system management connector for the 3.8 standard. The Scorpion's high-density packaging of miniature power contacts made it the preferred choice for this application.

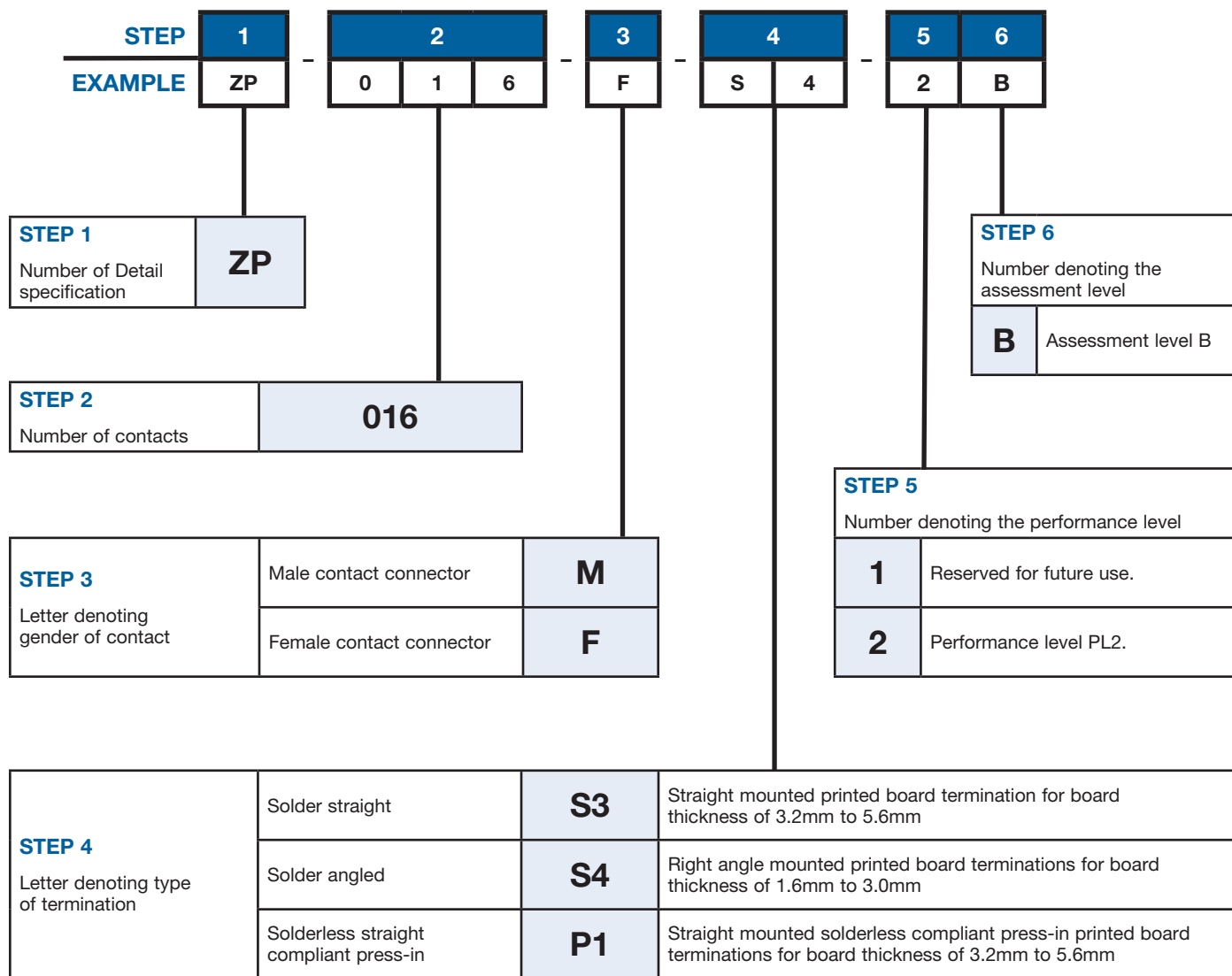
The PICMG 3.8 power connector has 16 contacts rated at 3 amperes each at a maximum temperature rise of 30 degrees C; all contacts energized. Contact resistance is 6 milliohms maximum. The connector package offers blind mating capability and is only 19.8 mm wide. Contact termination types include right angle solder and straight press-fit.





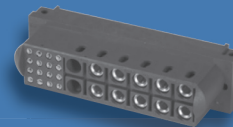
## ORDERING INFORMATION - CODE NUMBERING SYSTEM FOR PICMG 3.8 POWER CONNECTORS

Specify Complete Connector By Selecting An Option From Step 1 Through 6



*The 3.8 specification has it's own part number system. For your convenience, here is a cross reference to Positronic part numbers.*

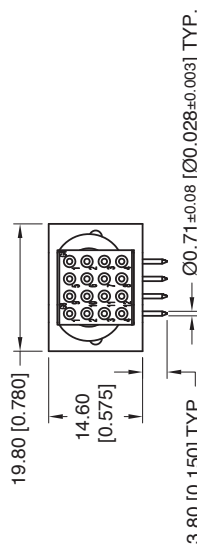
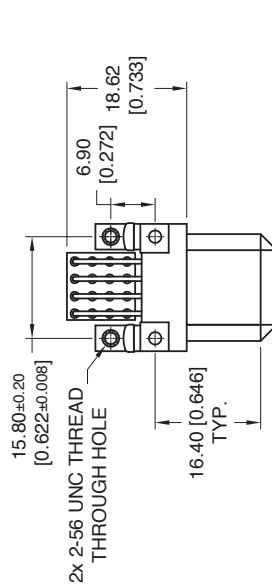
PART NUMBER CROSS REFERENCE			
GENDER / TERMINATION	PICMG PART NUMBER	POSITRONIC PART NUMBER	2-D DRAWING
female / right angle	ZP-016F-S4-2B	SP7KH4F0BS0A1/AA-PA778	See page 20
male / right angle	ZP-016M-S4-2B	SP7KH4M0BS0A1/AA-PA778	See page 21
male / straight compliant press-in	ZP-016M-P1-2B	SP7KH93M0000A1/AA-PA778	See page 22



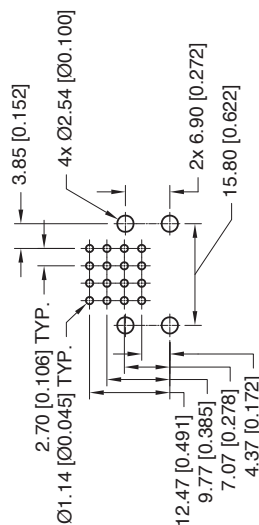
ASK22140-\* SHEET 1 OF 1

POSITRONIC ASIA PTE. LTD. BELIEVES THE DATA ON THE DRAWING TO BE CORRECT AND ACCURATE. THE USER EMPLOYING SUCH INFORMATION AT HIS OWN DISCRETION ASSUMES ALL LIABILITY FOR ANY DAMAGE OR INJURY TO PERSONS OR PROPERTY FROM USE OF SUCH INFORMATION IN WHOLE OR IN PART.

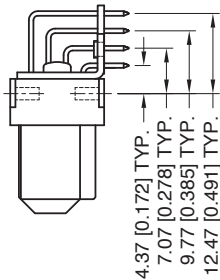
DATE	REV	REVISION RECORD	DRN	CKD	APP
09 Jun 10	E	PA ECO 10123	LP	RG	NK
23 Dec 10	F	PA ECO 10273	LP	EH	NK
04 Mar 11	G	PA ECO 11039	LP	EH	NK



## CONTACT HOLES PATTERN



## SIZE 22 CONTACTS



## NOTES:

- 1) MATERIALS AND FINISHES  
INSULATOR: GLASS-FILLED POLYESTER, UL 94V-0. COLOR: BLUE.  
CONTACTS: PRECISION MACHINED COPPER ALLOY WITH GOLD OVER NICKEL PLATE.  
ANGLE BRACKETS: BRASS, TIN PLATE OVER NICKEL.  
SCREWS: STEEL, ZINC PLATE WITH CHROMATE SEAL.
- 2) THIS MOS ALLOWS THE CONNECTOR TO BE PROVIDED WITH SPECIAL CONTACTS AT ALL POSITIONS.
- 3) DETAILED PRODUCT, ELECTRICAL, AND MECHANICAL INFORMATION IS AVAILABLE IN THE LATEST STANDARD SCORPION PRODUCT PUBLICATION. VISIT [CONNECTPOSITRONIC.COM/PRODUCTS/146/SCORPION](http://CONNECTPOSITRONIC.COM/PRODUCTS/146/SCORPION) OR [CONNECTPOSITRONIC.COM](http://CONNECTPOSITRONIC.COM).

DRAWING NO.	ORDERING PART NUMBER	REMARKS
ASK22140-1	SP7KH4F0BS0A1-PA778	-
ASK22140-2	SP7KH4F0BS0A1/AA-PA778	RoHS COMPLIANT PER RoHS DIRECTIVE 2002/95/EC OF 27 JAN 2006
<b>POSITRONIC ASIA PTE. LTD</b> Email: <a href="mailto:singapore@connectpositronic.com">singapore@connectpositronic.com</a> For more information, please visit website at <a href="http://www.connectpositronic.com">www.connectpositronic.com</a>		
 GENERAL TOL. LINEAR : ±0.25 [0.010] ANGULAR : ±3° UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS (INCHES)	SERIES SP SCALE NTS TITLE Physics xTCA Zone 3 Power Femal right angle solder front board connect	DRAWN LP CHECKED EH APPROV KV
DATE 03 SEP 09	DRAWING NUMBER ASK22140-*	SHEET 1 OF 1

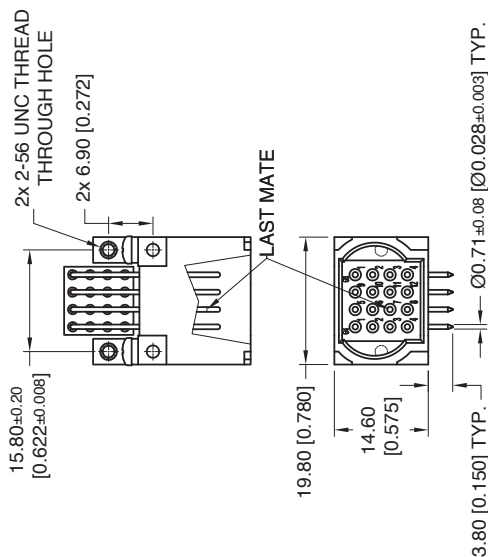




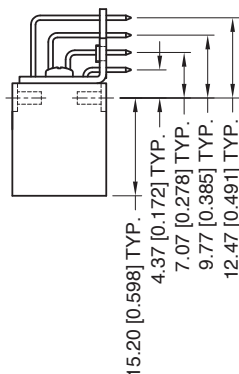


ASK22141-\* SHEET 1 OF 1

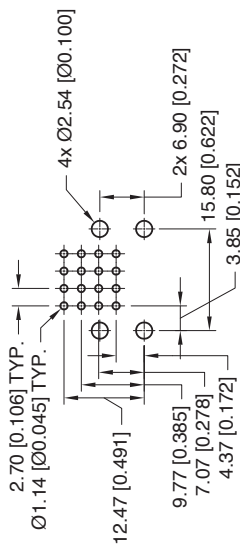
POSITRONIC ASIA PTE. LTD. BELIEVES THE DATA ON THE DRAWING IS CORRECT AND ACCURATE. THE USER ASSUMES ALL LIABILITY FOR ANY DAMAGE OR INJURY TO PERSONS OR PROPERTY, OR FOR ANY LOSS OF PROFITS OR BUSINESS, OR FOR ANY OTHER DAMAGES, INCLUDING REASONABLE ATTORNEY'S FEES, ARISING FROM THE USE OF SUCH INFORMATION IN WHOLE OR IN PART.



SIZE 22 CONTACTS



CONTACT HOLES PATTERN



## NOTES:

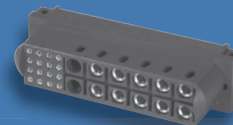
- 1) MATERIALS AND FINISHES  
INSULATOR: GLASS-FILLED POLYESTER, UL 94V-0. COLOR: BLUE.  
CONTACTS: PRECISION MACHINED COPPER ALLOY WITH GOLD OVER NICKEL PLATE.  
ANGLE BRACKETS: BRASS, TIN PLATE OVER NICKEL.  
SCREWS: STEEL, ZINC PLATE WITH CHROMATE SEAL.
- 2) THIS MOS ALLOWS THE CONNECTOR TO BE PROVIDED WITH 3.50mm MATING LENGTH AT POSITION 7 OF MODULE G4. 5.00mm MATING LENGTH AT ALL OTHER POSITIONS.
- 3) DETAILED PRODUCT, ELECTRICAL, AND MECHANICAL INFORMATION IS AVAILABLE IN THE LATEST STANDARD SCORPION PRODUCT PUBLICATION. VISIT [CONNECTPOSITRONIC.COM/PRODUCTS/146/SCORPION](http://CONNECTPOSITRONIC.COM/PRODUCTS/146/SCORPION) OR [CONNECTPOSITRONIC.COM](http://CONNECTPOSITRONIC.COM).

DATE	REV	REVISION RECORD	DRN	CKD	APP
09 Jan 10	E	PA ECO 10123	LP	RG	NK
23 Dec 10	F	PA ECO 10273	LP	EH	NK
28 Feb 11	G	PA ECO 11030	LP	EH	NK

DRAWING NO.	ORDERING PART NUMBER	REMARKS
ASK22141-1	SP7KH4M0BS0A1-PA778	-
ASK22141-2	SP7KH4M0BS0A1/AA-PA778	RoHS COMPLIANT PER RoHS DIRECTIVE 2002/95/EC OF 27 JAN 2001

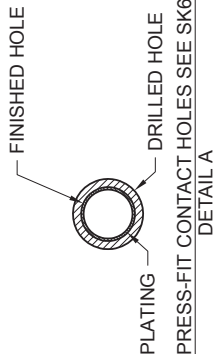
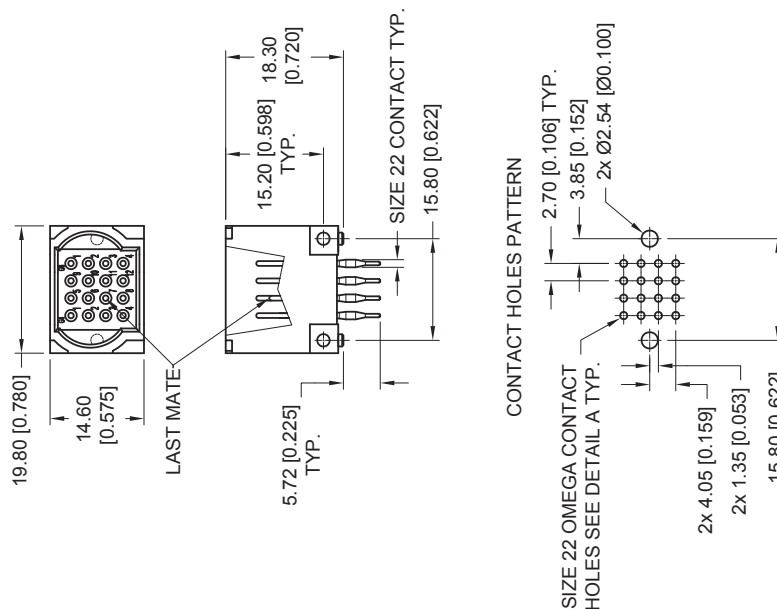
	<b>POSITRONIC ASIA PTE. LTD</b> Email: <a href="mailto:singapore@connectpositronic.com">singapore@connectpositronic.com</a> For more information, please visit website at <a href="http://www.connectpositronic.com">www.connectpositronic.com</a>
	GENERAL TOL. LINEAR : ±0.25 [0.010] ANGULAR : ±1°
	SERIES SP
	SCALE NTS
	DRAWING NUMBER ASK22141-*
	DATE 02 Sep 09
	REV. G

	DRAWING NUMBER ASK22141-*
	DATE 02 Sep 09
	REV. G



ASK22139-\* SHEET 1 OF 1

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NOTES:

- 1) MATERIALS AND FINISHES  
INSULATOR: GLASS-FILLED POLYESTER, UL 94V-0. COLOR: BLUE.  
CONTACTS: PRECISION MACHINED COPPER ALLOY WITH GOLD OVER NICKEL PLATE.
- 2) THIS MOS ALLOWS THE CONNECTOR TO BE PROVIDED WITH 3.50mm MATING LENGTH AT POSITION 7 OF MODULE G4, 5.00mm MATING LENGTH AT ALL OTHER POSITIONS.
- 3) DETAILED PRODUCT, ELECTRICAL, AND MECHANICAL INFORMATION IS AVAILABLE IN THE LATEST STANDARD SCORPION PRODUCT PUBLICATION. VISIT [CONNECTPOSITRONIC.COM/PRODUCTS/146/SCORPION](http://CONNECTPOSITRONIC.COM/PRODUCTS/146/SCORPION) OR [CONNECTPOSITRONIC.COM](http://CONNECTPOSITRONIC.COM).

DRAWING NO.	ORDERING PART NUMBER	REMARKS
ASK22139-1	SP7KH93M000A1-PA778	-
ASK22139-2	SP7KH93M000A1/AA-PA778	RoHS COMPLIANT PER RoHS DIRECTIVE 2002/95/EC OF 27 JAN 200

	<b>POSITRONIC ASIA PTE. LTD</b> Email: <a href="mailto:singapore@connectpositronic.com">singapore@connectpositronic.com</a> For more information, please visit website at <a href="http://www.connectpositronic.com">www.connectpositronic.com</a>
	SERIES SP
	SCALE NTS
	DRAWN LP
	CHECKED APPROV
	TITLE Physics xTCA Zone 3 Power
	DATE 02 Sep 09
	REV. F

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS (INCHES)	DRAWING NUMBER ASK22139-*	SHEET 1 OF 1
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