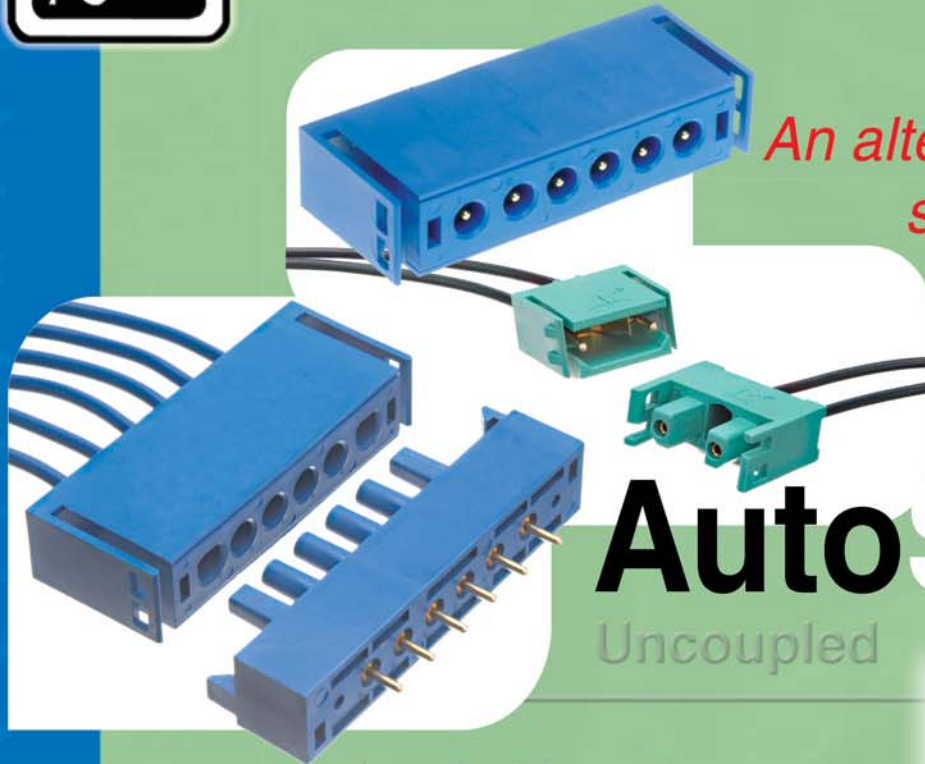


w w w . c o n n e c t p o s i t r o n i c . c o m



Positronic Industries



An alternative to CT shorting blocks

AutoShunt

Uncoupled

← To CT To meter/relay →

Look for our
NEW!
Products!

Features:

- Quick and easy alternative to commonly used CT shorting blocks
- Innovative design automatically shorts circuits together upon connector being uncoupled
- Selective load up to six contacts for use in six-line "Delta" configurations, or four-line "Y" configurations
- Two position connector is ideal for "Ground Fault Protection" configurations
- Accepts 10 (six pole version) and 12 AWG wire
- Reduces operating cost



RoHS Compliant options available!

Shorting device

Male contact

Female contact



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Six Pole AutoShunt

AutoShunt

SIX POLE

TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

| | |
|-----------------------|---|
| Insulator: | Glass-filled polyester, UL 94V-0. |
| Contacts: | Precision machined copper alloy with gold flash over nickel. Other finishes available upon request. |
| Shorting Clip: | Copper alloy with gold plate. |

ELECTRICAL CHARACTERISTICS:

| | |
|------------------------------------|---|
| Contact Current Rating: | 15 amperes, continuous. |
| Initial Contact Resistance: | 0.003 ohms max. per IEC 512-2, Test 2b. |
| Insulation Resistance: | 5 G ohms per IEC 512-2, Test 3a, Method A. |
| Voltage Proof: | 2,000 V rms per IEC 512-2, Test 4a, Method C. |
| Creepage Distance: | 4 mm [0.157 inch] minimum. |
| Clearance Distance: | 3.2 mm [0.125 inch] minimum. |
| Working Voltage: | Designed to meet UL 600 VAC and CSA 600 VAC. |
| Working Temperature: | -55°C to +125°C |

MECHANICAL CHARACTERISTICS:

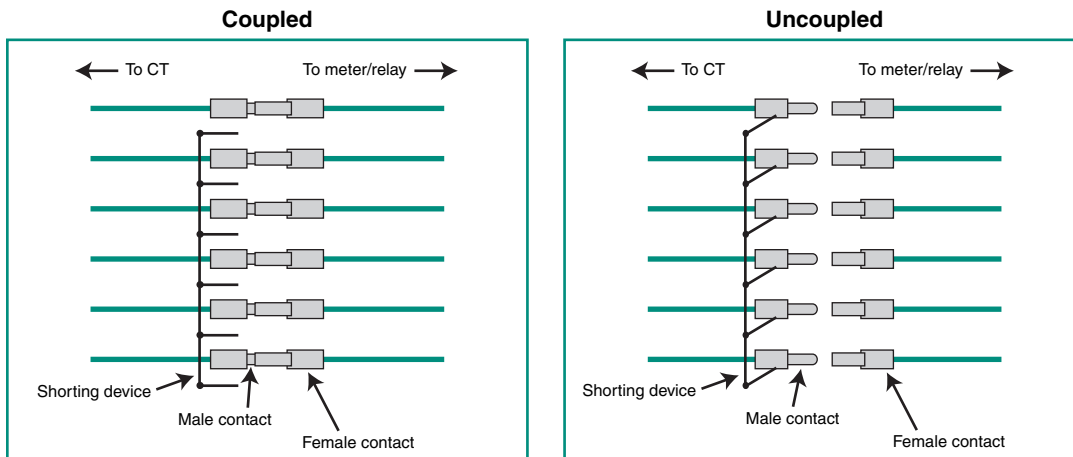
| | |
|--|--|
| Removable Contacts: | Insert contact to rear face of insulator. Size 16, 1.57 mm [0.062 inch] diameter male contact. Female contact "closed entry" design for highest reliability. |
| Removable Contact Retention in Insulator: | 67N [15 lbs.] per IEC 512-8 Test 15a. |
| Contact Insertion and Withdrawal Forces: | 2.2 N [8 oz.] nominal per contact. |
| Connection Systems: | Connector provides cable to cable and cable to panel mount. |
| Locking System: | Insulators provide locking between cable to cable, cable to printed board and cable to panel mount applications. |
| Polarization: | Provided in insulator design. |
| Mechanical Operations: | 50 operations per IEC 512-5. |

Positronic Industries, Inc. believes the data contained herein to be reliable. Since the technical information is given free of charge, the User employs such information at his own discretion and risk. Positronic Industries, Inc. assumes no responsibility for results obtained or damages incurred from use of such information in whole or in part.

Products described within this catalog may be protected by one or more of the following US. patents:
#4,900,261 #5,255,580 #5,329,697 #6,260,268 #6,835,079 #7,115,002
Patented in Canada, 1992 Other Patents Pending

AUTOSHUNT ELECTRICAL SCHEMATIC

SIX POSITION CONNECTOR USED AS AN EXAMPLE



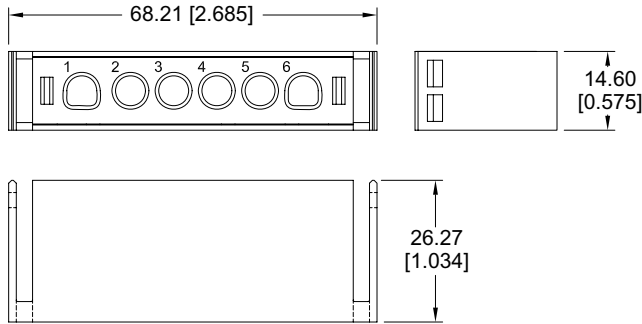
CABLE TYPE CONNECTORS

CODE 0

REMOVABLE CRIMP CONTACTS MUST BE ORDERED SEPARATELY

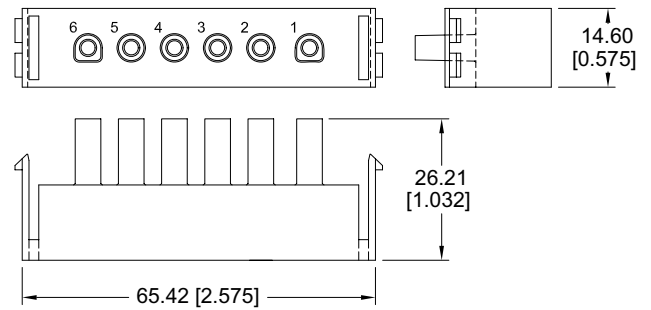
MALE CONNECTOR

(CONTAINS SHORTING DEVICE)



TYPICAL PART NUMBER: PLZ6W6M0000

FEMALE CONNECTOR



TYPICAL PART NUMBER: PLZ6W6F0000

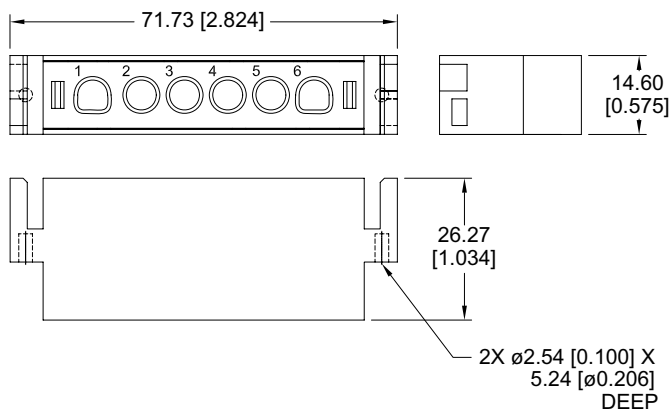
PANEL MOUNT CONNECTORS

CODE 1

REMOVABLE CRIMP CONTACTS MUST BE ORDERED SEPARATELY

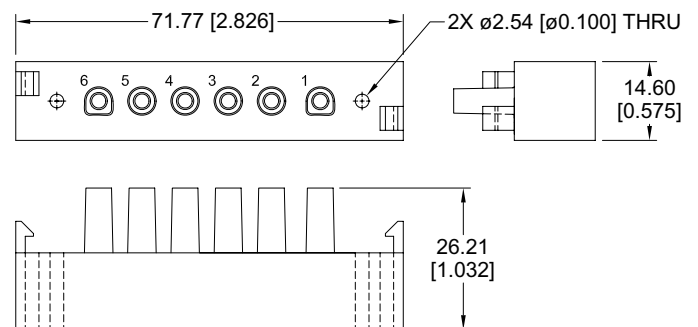
MALE CONNECTOR

(CONTAINS SHORTING DEVICE)



TYPICAL PART NUMBER: PLZ6W6M1000

FEMALE CONNECTOR



TYPICAL PART NUMBER: PLZ6W6F1000



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Six Pole AutoShunt

AutoShunt

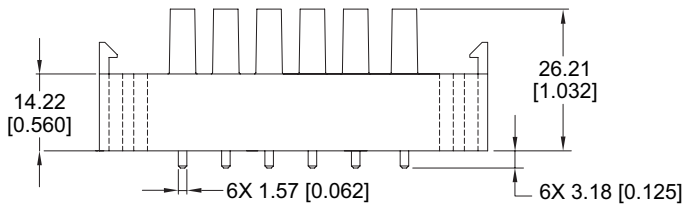
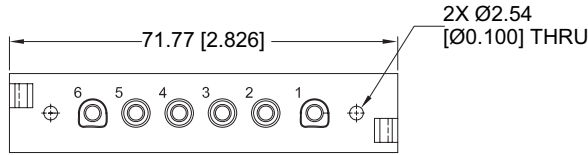


STRAIGHT SOLDER PRINTED BOARD MOUNT

CODE 3, 3.18 [0.125] CONTACT EXTENSION

SIX POLE

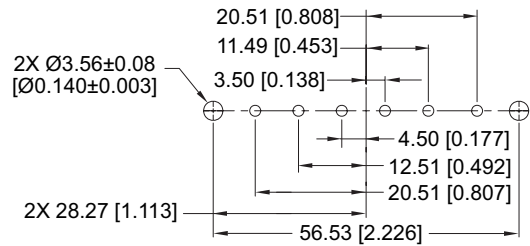
FEMALE CONNECTOR



TYPICAL PART NUMBER:
PLZ6W6F3000*

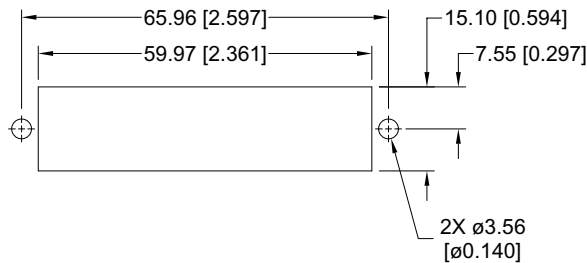
NOTE: *Indicates contact plating options for connectors.
See Step 7 of ordering information on page 6.

CONTACT HOLE PATTERN

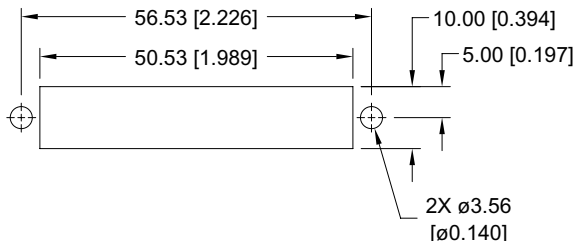


PANEL CUTOUTS

MALE CONNECTOR



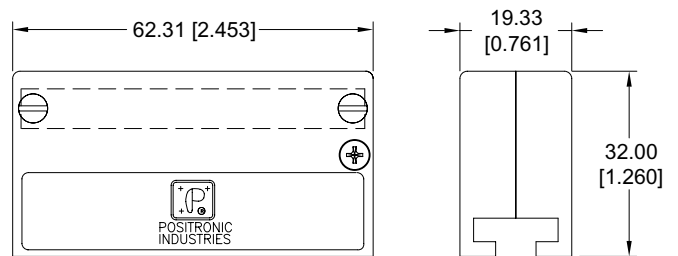
FEMALE CONNECTOR



HOOD

CODE 5

FOR USE WITH CABLE TYPE CONNECTORS



PART NUMBER: PLZ6W600050

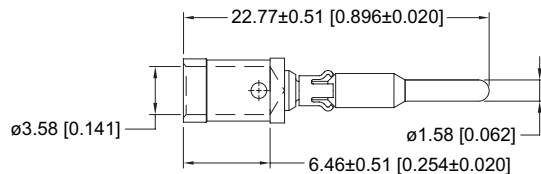
• To order hood with connector, use part numbers:
PLZ6W6M0050 or PLZ6W6F0050

REMOVABLE CRIMP CONTACTS SIZE 16

REMOVABLE CRIMP CONTACTS MUST BE ORDERED SEPARATELY

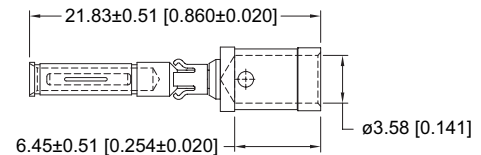
For 5.3 mm² [10 AWG] Wire

MALE CONTACT



PART NUMBER: MC110N

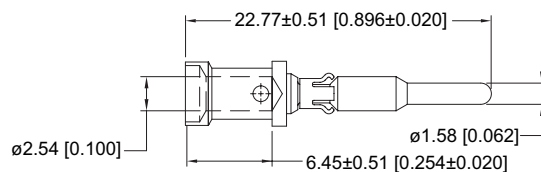
FEMALE CONTACT



PART NUMBER: FC110N2

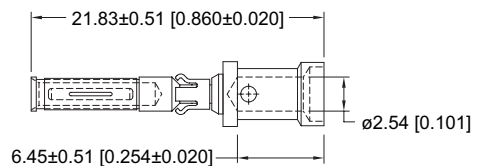
For 4.0 mm² [12 AWG] Wire

MALE CONTACT



PART NUMBER: MC112N-381.0

FEMALE CONTACT



PART NUMBER: FC112N2-381.0

MATERIALS:

Copper alloy

PLATING:

STANDARD FINISH: Gold flash over nickel plate.

OPTIONAL FINISHES: 0.76µ [0.000030] gold over nickel by adding -14 suffix onto part number. Example: FC110N2-14
1.27µ [0.000050 inch] gold over nickel by adding -15 suffix onto part number. Example: MC112N-15-381.0

RECOMMENDED TOOLS FOR CRIMP CONTACTS

CONTACT EXTRACTION TOOL
SHOWN FOR REFERENCE ONLY



**CYCLE-CONTROLLED STEP
ADJUSTABLE HAND CRIMP TOOL**
SHOWN FOR REFERENCE ONLY



| TOOL DESCRIPTION | MC110N | FC110N2 | MC112N-381.0 | FC112N2-381.0 |
|------------------|------------|------------|--|--|
| Crimp Tool | 9509-6-3-0 | 9509-6-3-0 | 9501-0-0-0 with 9502-19-0-0 Positioner | 9501-0-0-0 with 9502-19-0-0 Positioner |
| Extraction Tool | 9081-4-0-0 | 9081-4-0-0 | 9081-4-0-0 | 9081-4-0-0 |



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Six Pole AutoShunt

AutoShunt

ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 7

| STEP | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---------|-----|-----|---|---|---|---|----|-----|--------|
| EXAMPLE | PLZ | 6W6 | F | 3 | 0 | 0 | A1 | /AA | -XXX.X |

STEP 1 - BASIC SERIES

PLZ - PLZ Series

STEP 2 - CONNECTOR VARIANTS

6W6 - Six (6) size 16 contacts

STEP 3 - CONNECTOR GENDER

M - Male
F - Female

STEP 4 - CONTACT TERMINATION TYPE

- 0 - Order contacts separately for cable connectors.
- 1 - Removable contact, panel mount connector.
Order contacts separately.
- *3 - Solder, Straight Printed Board Mount with
3.18 [0.125] tail extension.

STEP 5 - MOUNTING STYLE

- 0 - None.
- ST2 - Self-tapping screws 2-28 x 6.35 [0.250] length for 2.36
[0.093] thick board or panel. Use with contact code 1 or 3.
- ST3 - Self-tapping screws 2-28 x 7.92 [0.312] length for 3.18
[0.125] thick board or panel. Use with contact code 1 or 3.

STEP 6 - CABLE ADAPTER AND BLIND MATE SYSTEM

- 0 - None.
- 5 - Top Opening Hood.

*Female only

STEP 9 - SPECIAL OPTIONS

- 14 - 0.76 μ [0.000030] gold over nickel
- 15 - 1.27 μ [0.000050 inch] gold over nickel

CONTACT TECHNICAL SALES FOR SPECIAL OPTIONS

STEP 8 - ENVIRONMENTAL COMPLIANCE OPTIONS

/AA - Compliant per EU Directive 2002/95/EC (RoHS)

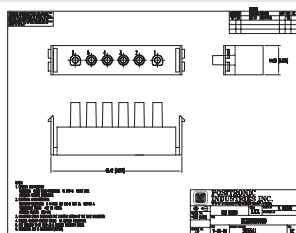


NOTE: If compliance to environmental legislation is not required, this step will not be used.
Example: PLZ6W6F300A1

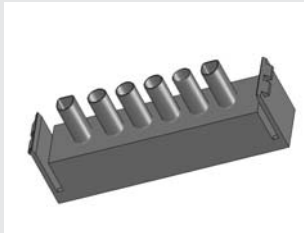
STEP 7 - CONTACT PLATING FOR PRINTED BOARD CONNECTORS

- 0 - Crimp Contacts ordered separately.
- A1 - Gold flash over nickel on mating end and termination end.
- A2 - Gold flash over nickel on mating end and 5.00 μ [0.00020 inch] tin-lead solder coat on termination end.
- C1 - 0.76 μ [0.000030 inch] gold over nickel on mating end and termination end.
- C2 - 0.76 μ [0.000030 inch] gold over nickel on mating end and 5.00 μ [0.00020 inch] tin-lead solder coated termination end.
- D1 - 1.27 μ [0.000050 inch] gold over nickel on mating end and termination end.
- D2 - 1.27 μ [0.000050 inch] gold over nickel on mating end and 0.00020 inch [5.00 μ] tin-lead solder coated termination end.

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

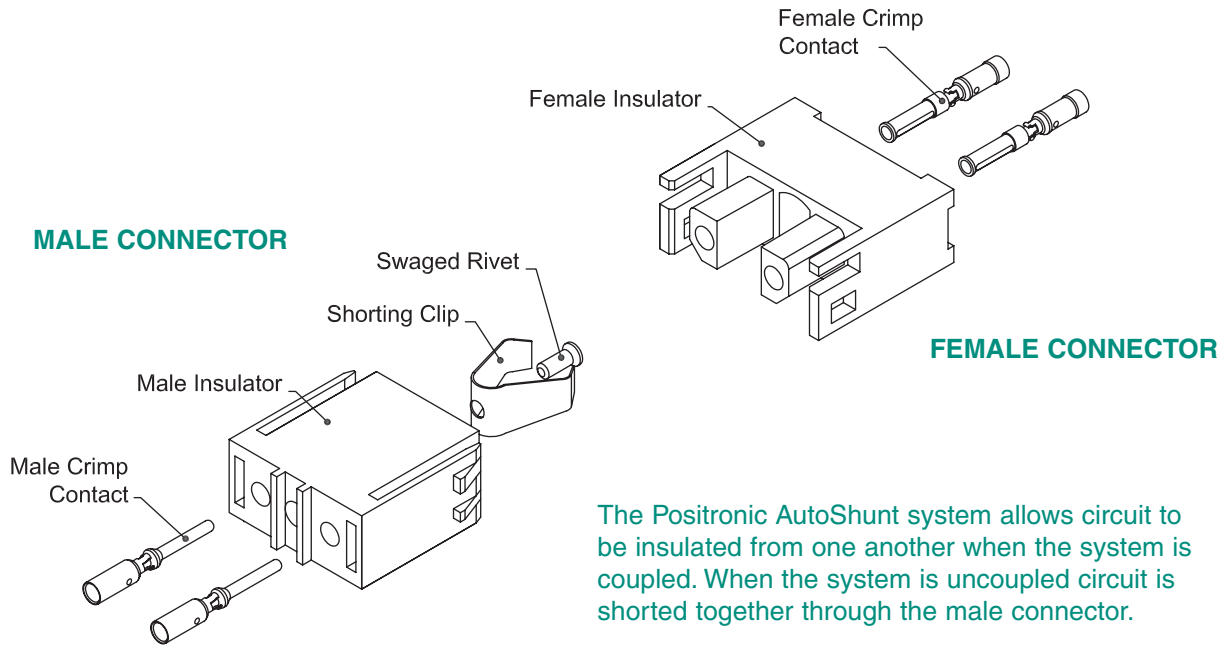


3-dimensional model

Unless otherwise specified, dimensional tolerances are:

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

TYPICAL CONNECTOR ASSEMBLY



The Positronic AutoShunt system allows circuit to be insulated from one another when the system is coupled. When the system is uncoupled circuit is shorted together through the male connector.

TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

| | |
|-----------------------|---|
| Insulator: | Glass-filled nylon, UL 94V-0, green color. |
| Contacts: | Precision machined copper alloy with gold flash over nickel plate. Other finishes available upon request. |
| Shorting Clip: | Copper alloy with gold plate. |
| Swaged Rivet: | Copper alloy with gold plate. |

ELECTRICAL CHARACTERISTICS:

| | |
|------------------------------------|---|
| Contact Current Rating: | 15 amperes, continuous. |
| Initial Contact Resistance: | 0.003 ohms max. per IEC 512-2, Test 2b. |
| Insulation Resistance: | 5 G ohms min. per IEC 512-2, Test 3a. |
| Voltage Proof: | 2,400 V rms |
| Creepage Distance: | 4 mm [0.157 inch] minimum. |
| Working Voltage: | 600 V rms |

MECHANICAL CHARACTERISTICS:

| | |
|--|---|
| Removable Contacts: | Insert contact to rear face of insulator, release from front face of insulator. Female contact feature "closed entry" design for highest reliability. |
| Removable Contact Retention in Insulator: | 67N [15 lbs.] min. per IEC 512-8 Test 15a. |
| Polarization: | Provided in insulator design. |
| Locking System: | Insulators provide locking between cable to cable, cable to printed board and cable to panel mount applications. |

CLIMATIC CHARACTERISTICS:

| | |
|-----------------------------|-----------------|
| Working Temperature: | -55° to +125° C |
|-----------------------------|-----------------|

RECOGNIZED:

UL and TÜV certification in process.



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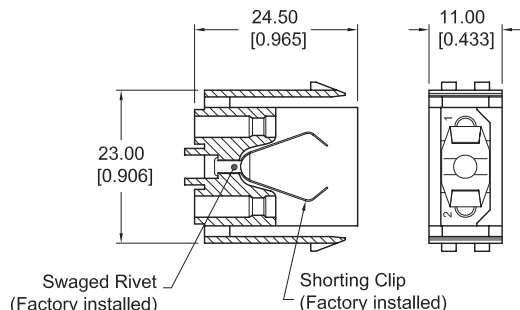
Two Pole AutoShunt

AutoShunt



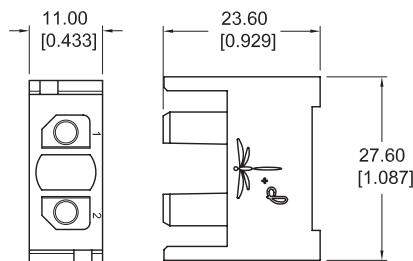
CONNECTOR OUTLINE DIMENSIONS

MALE CONNECTOR



TYPICAL PART NUMBER: DFS02M00

FEMALE CONNECTOR



TYPICAL PART NUMBER: DFS02F00

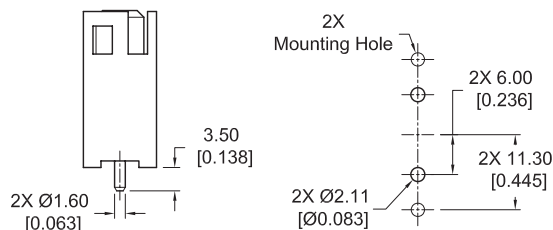
CONTACT TERMINATION DIMENSIONS AND HOLE PATTERNS

CODE F3 AND F4

FOR STRAIGHT SOLDER AND RIGHT ANGLE SOLDER (90°) PCB MOUNT FEMALE CONNECTORS

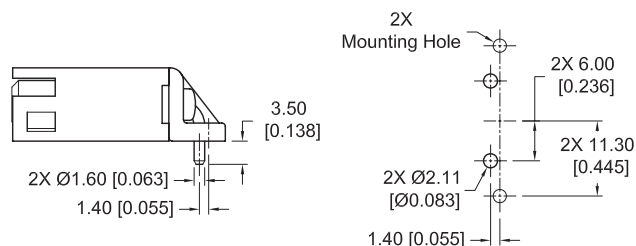
FEMALE, STRAIGHT PCB MOUNT

Specify Code F3 in Step 3



FEMALE, RIGHT ANGLE (90°) PCB MOUNT

Specify Code F4 in Step 3



SUGGESTED PRINTED BOARD HOLE SIZES:

Suggest Ø2.00±0.08 [0.079±0.003] holes for connector mounting holes with push-on fasteners.

Suggest Ø2.54 [0.100] holes for connector mounting holes with screws.

SCREW TERMINATION CONNECTOR

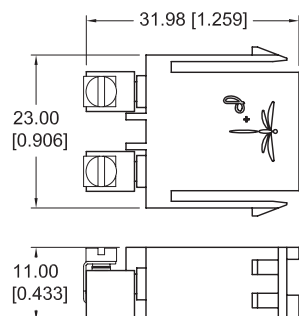
CODE M7

FOR MALE CONNECTORS

Screw terminations allow for convenient field installation when required.

MALE CONNECTOR

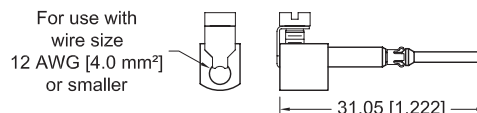
Specify Code M7 in Step 3



Supplied with two (2) contacts

TYPICAL PART NUMBER: DFS02M70

REPLACEMENT CONTACT



TYPICAL PART NUMBER: MST112N3

MATERIAL: Cooper alloy with gold plate.

PLATING:

STANDARD FINISH: Gold flash over nickel plate.

OPTIONAL FINISHES: 0.76µ [0.000030 inch] gold over nickel available by adding -14 suffix onto part number. Example: MST112N3-14.
 1.27µ [0.000050 inch] gold over nickel available by adding -15 suffix onto part number. Example: MST112N3-15.



PANEL MOUNT CONNECTOR

CODE PS

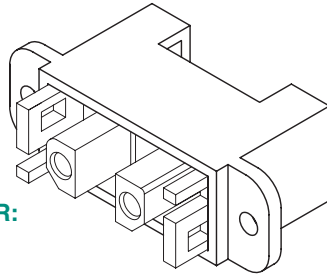
FOR FEMALE CONNECTORS

REMOVABLE CRIMP CONTACTS MUST BE ORDERED SEPARATELY

FEMALE CONNECTOR

Specify Code PS in Step 4

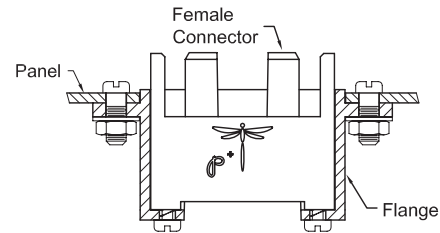
Female connector installed in flange



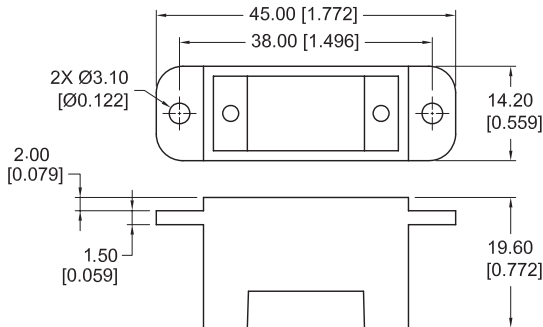
TYPICAL PART NUMBER:
DFS02F0PS

INSTALLATION TO PANEL

Suggested installation of DFS02F0PS to panel with screws and nuts. (Screws and nuts shown for reference only.)



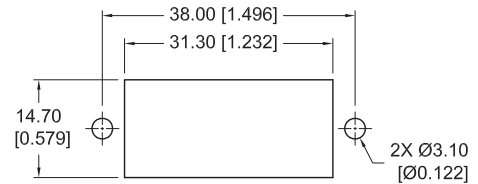
FLANGE DIMENSIONS



MATERIAL:

Flange:
Glass-filled, nylon, UL94V-0, black color.

PANEL CUTOUT

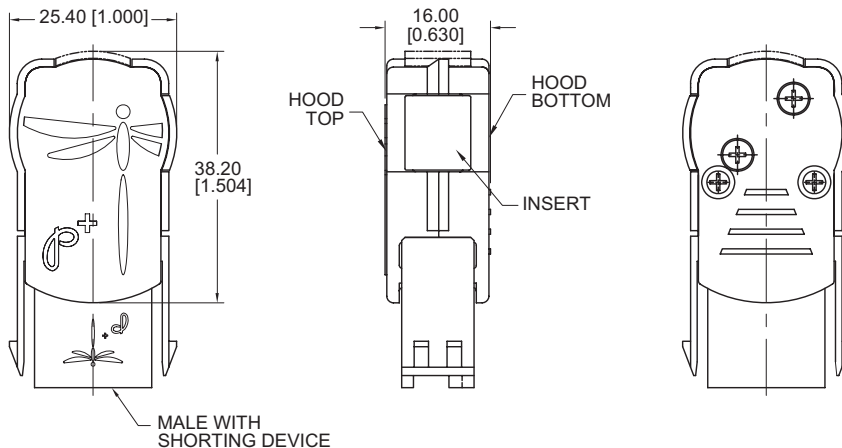


TWO POLE

HOOD OUTLINE DIMENSIONS

CODE W

FOR MALE CONNECTORS



MATERIALS:

Hood top and bottom, insert:
Polypropylene, UL94 V-0. Color: black.

Hood screws:
Steel with black oxide or Steel with zinc plate and chromate seal

Cable clamp (not shown):
Steel, nickel plate.

Cable clamp screws:
Steel with black oxide or Steel with zinc plate and chromate seal



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Two Pole AutoShunt

AutoShunt

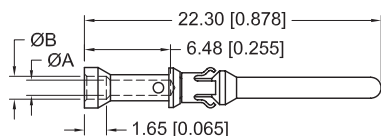


REMOVABLE CRIMP CONTACTS

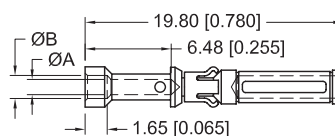
SIZE 16

REMOVABLE CRIMP CONTACTS MUST BE ORDERED SEPARATELY

MALE CONTACT



FEMALE CONTACT



MATERIAL: Cooper alloy with gold plate.

PLATING:

STANDARD FINISH: Gold flash over nickel plate.

OPTIONAL FINISHES: 0.76µ [0.000030 inch] gold over nickel available by adding -14 suffix onto part number. Example: MC112N3-14.

1.27µ [0.000050 inch] gold over nickel available by adding -15 suffix onto part number. Example: FC112N2-15-1565.0.

| MALE CONTACT | FEMALE CONTACT | WIRE SIZE AWG [MM ²] | ØA | ØB |
|--------------|----------------|----------------------------------|--------------|--------------|
| MC112N3 | FC112N2-1565.0 | 12 [4.0] | 2.49 [0.098] | N/A |
| MC114N3 | FC114N2-1565.0 | 14-16 [2.5-1.5] | 2.06 [0.081] | 2.64 [0.104] |
| MC116N3 | FC116N2-1565.0 | 16-18 [1.5-1.0] | 1.70 [0.067] | 2.36 [0.093] |
| MC120N3 | FC120N2-1565.0 | 20-22-24 [0.5-0.3-0.025] | 1.14 [0.045] | 1.73 [0.068] |

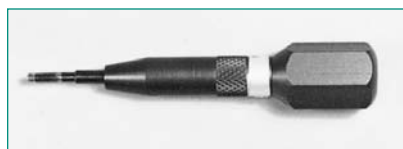
Please use correct wire size and it should be smaller than ØA of the contact. Connector body may not accommodate thick insulation AWG 12 wires. Customer review recommended.

TWO POLE

RECOMMENDED TOOLS FOR CRIMP CONTACTS

CONTACT EXTRACTION TOOL

SHOWN FOR REFERENCE ONLY



CONTACT INSERTION TOOL

SHOWN FOR REFERENCE ONLY



CYCLE-CONTROLLED STEP ADJUSTABLE HAND CRIMP TOOL

SHOWN FOR REFERENCE ONLY



| CONTACT SIZE | CONTACT EXTRACTION TOOL | CONTACT INSERTION TOOL | HAND CRIMP TOOL | SEMI-AUTOMATIC CRIMP MACHINE |
|--------------|-------------------------|------------------------|-------------------------------|------------------------------|
| SIZE 16 | 9081-8-0-0 | 9099-0 | 9501-0 with 9502-1 positioner | 9550-0 |



Two Pole AutoShunt



ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Selecting An Option From Step 1 Through 4

| STEP | 1 | 2 | 3 | 4 | 5 | 6 |
|---------|----|-----|----|---|-----|--------|
| EXAMPLE | DF | S02 | F0 | 0 | /AA | -XXX.X |

STEP 1 - BASIC SERIES

DF - DragonFly

STEP 2 - CONNECTOR VARIANTS

S02 - AutoShunt Connector
Two (2) size 16 power contacts

STEP 3 - CONNECTOR GENDER AND TYPE OF CONTACTS

- F0 - Female, removable contact. Order contacts separately.
- F3 - Female, solder, straight PCB mount.
- F4 - Female, solder, right angle (90°) PCB mount.
- M0 - Male, removable contact. Order contacts separately.
- M7 - Male, screw termination contact. Supplied with 2 contacts.

CONSULT FACTORY FOR OTHER VERSIONS

* For female connector only.

STEP 6 - SPECIAL OPTIONS

CONTACT TECHNICAL SALES
FOR SPECIAL OPTIONS

STEP 5 - ENVIRONMENTAL COMPLIANCE OPTIONS

/AA - Compliant per EU Directive 2002/95/EC (RoHS)

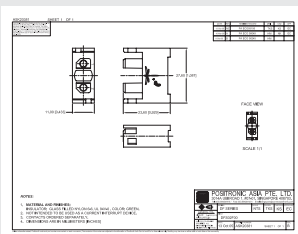
NOTE: If compliance to environmental legislation is not required, this step will not be used.
Example: DFS02F00



STEP 4 - MOUNTING STYLES

- 0 - None
- *N - Push-on fastener.
- *B - Plastic 90° mounting bracket.
- *BN - Plastic 90° mounting bracket with push-on fastener.
- *PS - Panel mount for female connector with removable contact only. Female connector installed to flange.
- W - Hood for male connector only.

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

Unless otherwise specified, dimensional tolerances are:

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

TWO POLE