

Safety Shrouded Connector to Prevent Unsafe Exposure to High Energy Circuits

- * Size 12 Power Contacts
- * Large Surface Area Mating System
- * Discriminating Locking System
- * Contact Current Rating to
40 Amperes
- *Board - Cable / Cable - Cable



TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Insulator:	Glass-filled polyester, UL 94V-0. Contact technical sales for availability of high temperature insulator material.
Contacts:	Precision machined copper alloy with gold flash over nickel, or 0.000030 inch [0.76 μ] gold over nickel, or 0.000050 [1.27 μ] gold over nickel. Solder coated terminations optional.
Push-on Fastener:	Spring tempered copper alloy, tin plate.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating:	40 amperes continuous, derated per IEC 512-3, test 5b. Higher currents available with high conductivity contacts, contact Technical Sales
Initial Contact Resistance:	0.001 ohms max. per IEC 512-2, test 2b.
Insulation Resistance:	5 G ohms per IEC 512-2, test 3a.
Voltage Proof:	3,000 minimum V r.m.s. per IEC 512-2, test 4a, method A.
Clearance and Creepage Distance:	0.220 [5.60] minimum
Working Voltage:	600 minimum V. r.m.s.
Hot Pluggable [50 couplings per UL 1977 paragraph 15]:	250 VAC at 20 amperes
Working Temperature:	-55°C to +125°C Contact technical sales for availability of high temperature insulator material.

MECHANICAL CHARACTERISTICS:

Removable Contacts:	Rear insertion/ front release. Female contact features "Closed Entry" design for highest reliability. 0.094 [2.39] diameter male contact.
Removable Contact Retention in Insulator:	15 lbs. [67N] per IEC 512-8, test 15a.
Fixed Contacts:	Printed board terminations, both straight and 90°. Female contact features "Closed Entry" design for highest reliability. 0.094 [2.39] diameter male contact.
Fixed Contact Retention in Insulator:	15 lbs. [67N], minimum.
Resistance to Soldering Iron Heat:	500°F [260°C] for 10 seconds duration per IEC 512-6, test 12e, 25 watt soldering iron.
Contact Terminations:	Crimp removable contacts for wire size 12 AWG [4.0 mm ²]. Straight and right angle (90°) solder printed board mount, 0.090 [2.29] tail diameter.
Connection Systems:	Cable to cable, cable to printed board 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.
Mounting to P.C. Board:	Rapid installation push-on fasteners.
Mechanical Operations:	500 operations

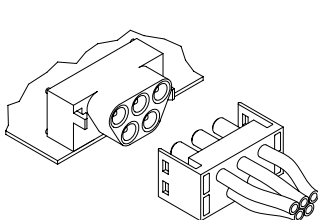


For RoHS options
see page 31.

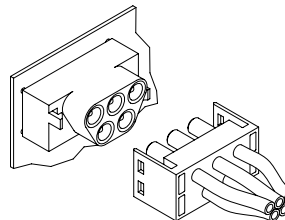


CONNECTION SYSTEMS

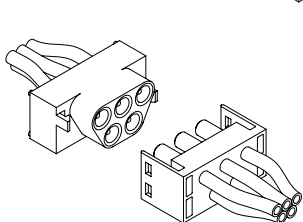
System 5
Cable to Right
Angle (90°)
Board Mount



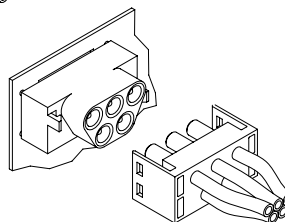
System 6
Cable to Straight
Board Mount



System 7
Cable to Cable

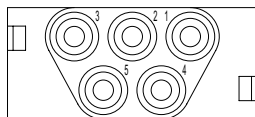


System 8
Panel Mounting
to Cable

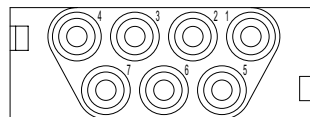


CONNECTOR VARIANTS

FACE VIEW OF MALE OR REAR VIEW OF FEMALE CONNECTOR



PLS5W5

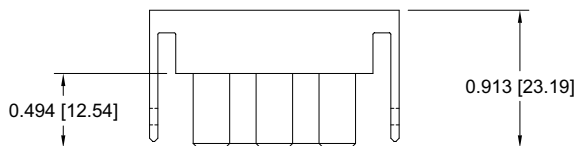


PLS7W7

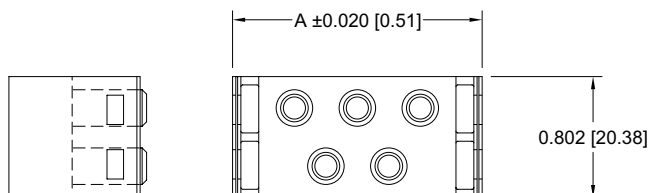
FEMALE CABLE CONNECTOR FOR CABLE CONNECTORS WITH SIZE 12 REMOVABLE CONTACTS CODE 0

CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

PART NUMBER	A
PLS5W5F0000	1.655 [42.04]
PLS7W7F0000	2.072 [52.64]



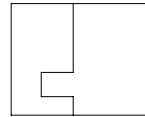
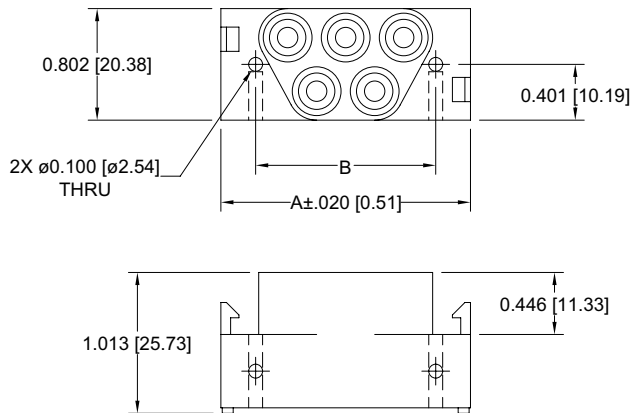
Typical part number:
PLS5W5F00000



For information regarding size 12 removable contacts, see Removable Contact section, pages 47-53.

**MALE PANEL MOUNT CONNECTOR
FOR PANEL MOUNT CONNECTORS WITH SIZE 12 REMOVABLE CONTACTS
CODE 1**

CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY



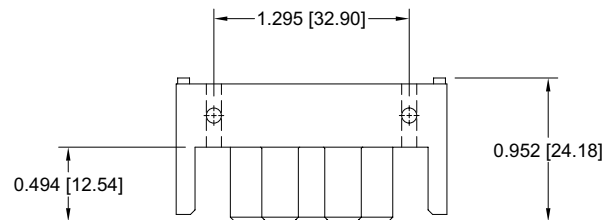
Typical part number:
PLS5W5M10000

PART NUMBER	A	B
PLS5W5M10000	1.795 [45.60]	1.295 [32.90]
PLS7W7M10000	2.213 [56.20]	1.713 [43.50]

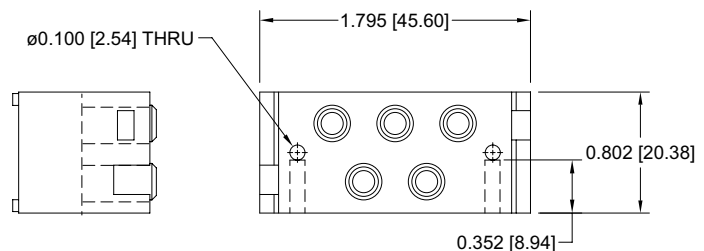
**FEMALE PANEL MOUNT CONNECTOR
FOR PANEL MOUNT CONNECTORS WITH SIZE 12 REMOVABLE CONTACTS
CODE 1**

CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

Typical part number:
PLS5W5F10000



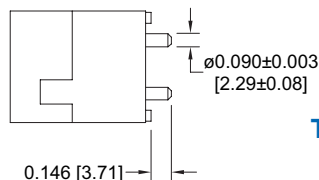
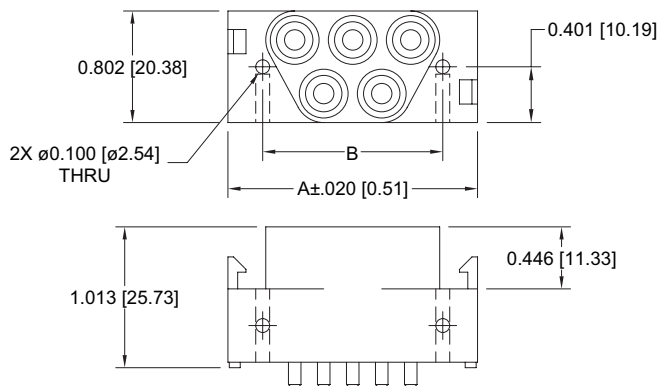
*CONTACT TECHNICAL SALES
FOR AVAILABILITY OF 7W7 VARIANT.



For information regarding size 12 removable contacts, see Removable Contact section, pages 47-53.



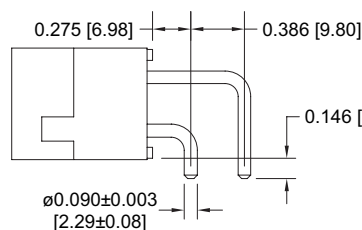
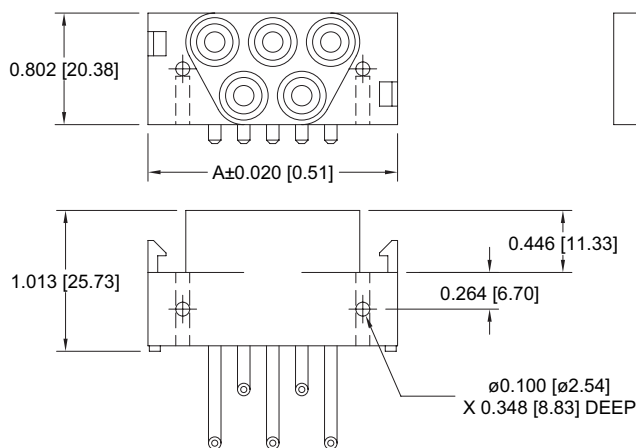
MALE STRAIGHT PRINTED BOARD MOUNT CONNECTOR CODE 3, 0.146 [3.71] CONTACT EXTENSION



Typical part number:
PLS5W5M300A1

PART NUMBER	A	B
PLS5W5M300A1	1.795 [45.60]	1.295 [32.90]
PLS7W7M300A1	2.213 [56.20]	1.713 [43.50]

MALE RIGHT ANGLE (90°) PRINTED BOARD MOUNT CONNECTOR CODE 4, 0.146 [3.71] CONTACT EXTENSION

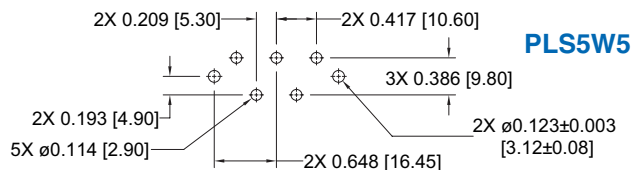


Typical part number:
PLS5W5M400A1

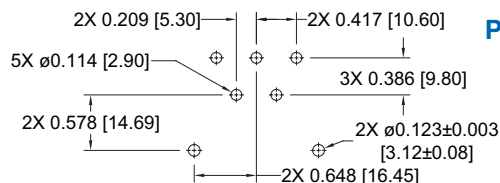
PART NUMBER	A	B
PLS5W5M400A1	1.795 [45.60]	1.295 [32.90]
PLS7W7M400A1	2.213 [56.20]	1.713 [43.50]

PRINTED BOARD CONTACT HOLE PATTERNS

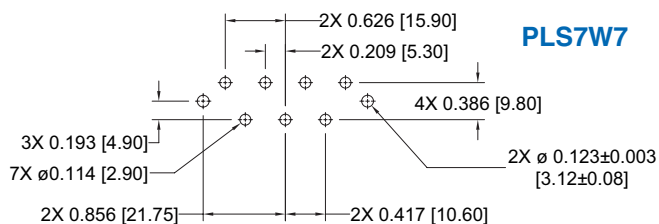
STRAIGHT SOLDER



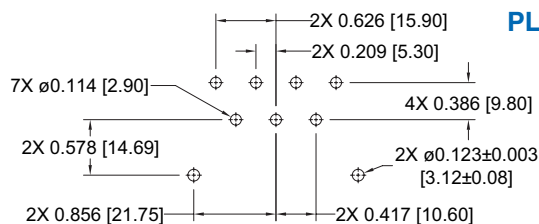
PLS5W5



PLS5W5



PLS7W7



PLS7W7



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	PLS	5W5	M	4	0	0	A1	/AA	—

STEP 1 - BASIC SERIES

PLS - PLS Series
PLSH - High conductivity contacts

STEP 2 - CONNECTOR VARIANTS

5W5 - Five size 12 contacts
7W7 - Seven size 12 contacts

STEP 3 - CONNECTOR GENDER

M - Male
F - Female

STEP 4 - CONTACT TERMINATION TYPE

- 0 - Order contacts separately for cable connectors for connection systems 5, 6, 7 and 8, see pages 47-53. Female connectors only. **
- 1 - Order contacts separately for Panel Mount connectors for connection system 7, see pages 47-53. For 7W7 female variant consult technical sales.
- 3 - Solder, Straight Printed Board Mount with 0.146 [3.71] tail extension for connection system 6. Male connectors only. ***
- 4 - Solder, Right Angle (90°) Printed Board Mount with 0.146 [3.71] tail extension for connection system 5. Male connectors only. ***

STEP 5 - MOUNTING STYLE

- 0 - None.
- N - Push-on Fastener for Straight Printed Board Mount Connectors

STEP 9 - SPECIAL OPTIONS

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: PLS5W5M400A1

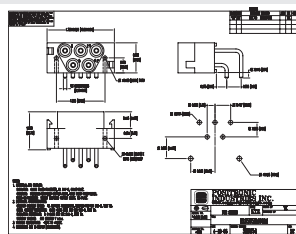
STEP 7 - CONTACT PLATING FOR PRINTED BOARD CONNECTORS

- 0 - Crimp Contacts ordered separately, see pages 47-53.
- A1 - Gold flash over nickel on mating end and termination end.
- A2 - Gold flash over nickel on mating end and 0.00020 inch [5.00µ] tin-lead solder coat on termination end.
- C1 - 0.000030 inch [0.76µ] gold over nickel on mating end and termination end.
- C2 - 0.000030 inch [0.76µ] gold over nickel on mating end and 0.00020 inch [5.00µ] tin-lead solder coated termination end.
- D1 - 0.000050 inch [1.27µ] gold over nickel on mating end and termination end.
- D2 - 0.000050 inch [1.27µ] gold over nickel on mating end and 0.00020 inch [5.00µ] tin-lead solder coated termination end.

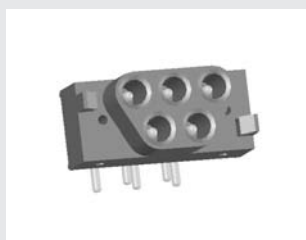
STEP 6 - CABLE ADAPTER

- 0 - None
- 5 - Top Opening Hood, see accessories section page 64.

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 file.



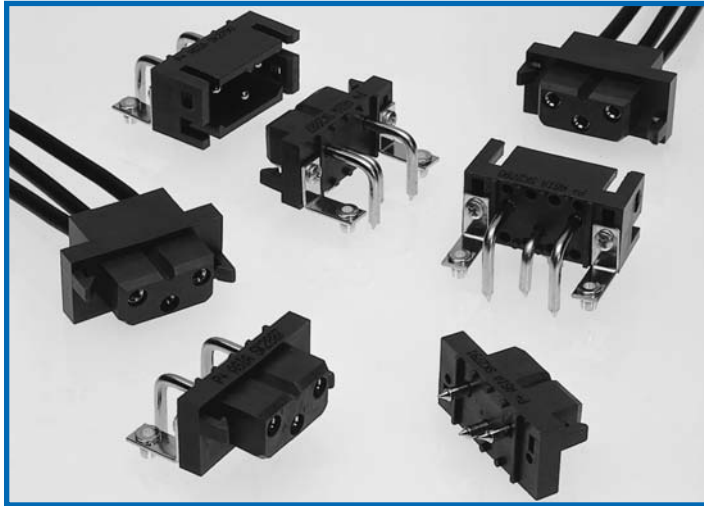
SK Drawing



3-dimensional model

** Consult technical sales for availability of male version of contact type 0.

*** Consult technical sales for availability of female version of contact type 3 and 4.



A.C. / D.C. INPUT CONNECTOR

- * Hot Plug Capability
- * Screw Termination Contacts
- * Size 12 Power Contacts
- * Large Surface Area Mating System
- * Contact Current Rating to 40 Amperes
- * Sequential Mating Options
- * Discriminating Locking System

TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Insulator:	Glass-filled polyester, UL 94V-0. Contact technical sales for availability of high temperature insulator material.
Contacts:	Precision machined copper alloy with gold flash over nickel, or 0.000030 inch [0.76µ] gold over nickel, or 0.000050 [1.27µ] gold over nickel. Solder coated terminations optional.
Hood:	Glass-filled polyester, UL 94V-0.
Mounting Bracket:	Brass, tin plate.
Push-on Fastener:	Spring tempered copper alloy, tin plate.
Mounting Screw:	Steel, zinc plate, or stainless steel passivated.

ELECTRICAL CHARACTERISTICS:

CONTACT CURRENT RATING:

Standard Contact Material:	40 amperes. See page 33 for details.
High Conductivity Contact Material:	55 amperes. See page 33 for details.

INITIAL CONTACT RESISTANCE:

Standard Contact Material:	0.001 ohms max. per IEC 512-2, Test 2b.
High Conductivity Contact Material:	0.00037 ohms max. per IEC 512-2, Test 2b.
Insulation Resistance:	5 G ohms per IEC 512-2, test 3a.
Voltage Proof:	3,750 V r.m.s. per IEC 512-2, test 4a, method A.
Clearance and Creepage Distance:	0.125 [3.18] minimum
Working Voltage:	1,250 V. r.m.s.
Hot Pluggable [50 couplings per UL 1977 paragraph 15]:	Contact technical sales
Working Temperature:	-55°C to +125°C Contact technical sales for availability of high temperature insulator material.

MECHANICAL CHARACTERISTICS:

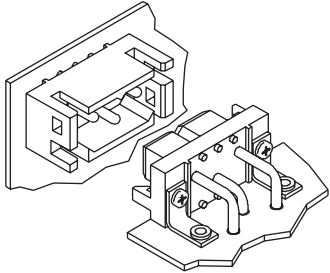
Removable Contacts:	Rear insertion/ front release. Female contact features "Closed Entry" design for highest reliability. 0.094 [2.39]
Removable Contact Retention in Insulator:	20 lbs. [89N] per IEC 512-8, test 15a.
Fixed Contacts:	Printed board terminations, both straight and right angle (90°). Female contact features "Closed Entry" design for highest reliability. 0.094 [2.39] diameter male contact.
Fixed Contact Retention in Insulator:	10 lbs. [44N], minimum.
Resistance to Soldering Iron Heat:	260°C [500°F] for 10 seconds duration per IEC 512-6, test 12e, 25 watt soldering iron.
Contact Terminations:	Crimp removable contacts and solder cup removable contacts for wire size 12 AWG [4.0 mm ²]. Straight and right angle (90°) solder printed board mount, 0.090 [2.29] tail diameter. Compliant termination press-fit.
Connection Systems:	Cable to cable, cable to printed board, cable to panel mount, and printed board to printed board.
Sequential Mating Systems:	Male contacts can provide two mating lengths.
Locking System:	Insulators provide locking between cable to cable, cable to printed board, and cable to panel mount applications.
Polarization:	Provided in insulator design.
Mounting to P.C. Board:	Rapid installation push-on fasteners.
Mechanical Operations:	500 operations



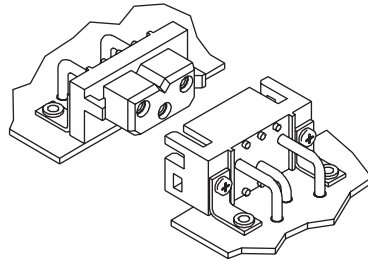


CONNECTION SYSTEMS

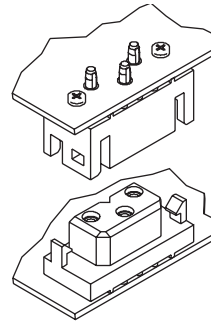
System 1
Mother Board -
Daughter Board



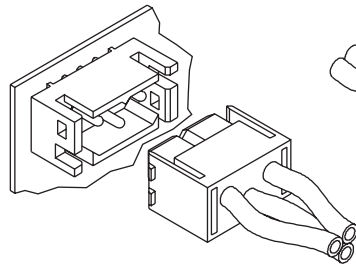
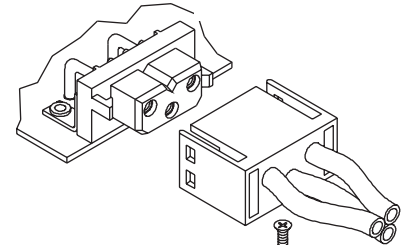
System 2
Side to Side
Board Mounting



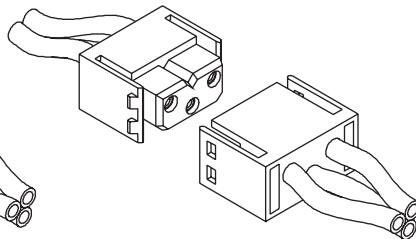
System 4
Sandwich Board
Mounting



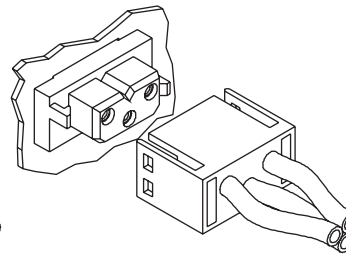
System 5
Cable to Right
Angle (90°)
Board Mount



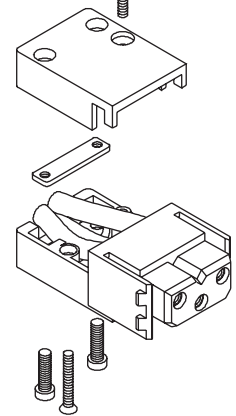
System 6
Cable to Straight
Board Mount



System 7
Cable to Cable



System 8
Panel Mounting
to Cable

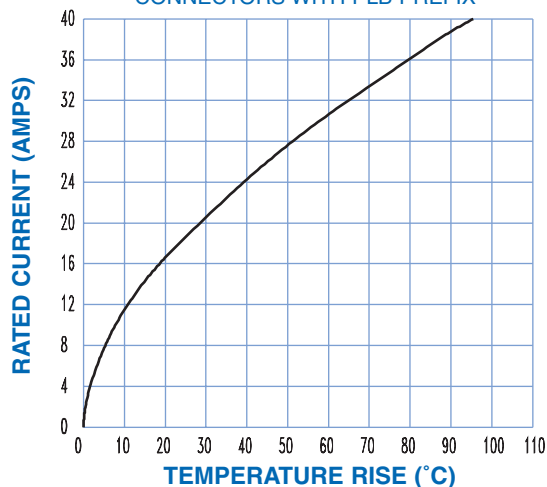


System 9
Cable Connector with
Cable Adapter

TEMPERATURE RISE CURVE

STANDARD CONTACT MATERIALS

CONNECTORS WITH PLB PREFIX



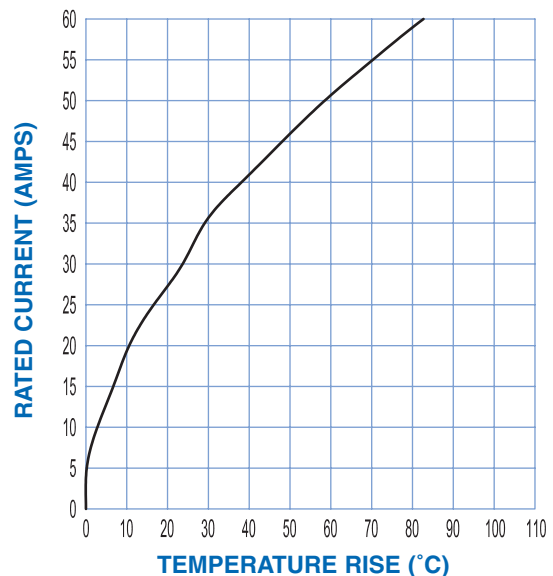
Test conducted per IEC Publication 512-3, Test 5a.
All power contacts under load.

Standard Density: Curve developed using PLB3W3M4BN0A1 and PLB3W3F300A1 mated connector terminated to 12 AWG wire.

High Conductivity: Curve developed using PLBH3W3M9300A1 and PLBH3W3F9300A1 mated connector terminated to 12 AWG wire

HIGH CONDUCTIVITY CONTACT MATERIALS

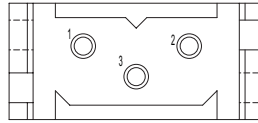
CONNECTORS WITH PLBH PREFIX OR "S" SUFFIX ON CRIMP CONTACTS



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



CONNECTOR VARIANT FACE VIEW OF MALE CONNECTOR

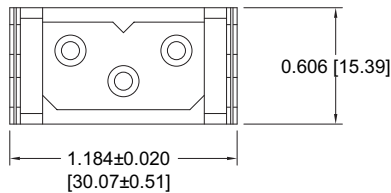


PLB3W3

CABLE CONNECTOR FOR USE WITH SIZE 12 REMOVABLE CONTACTS CODE 0

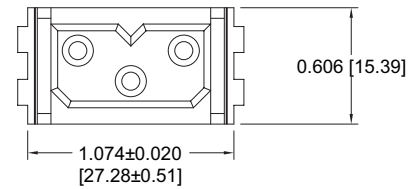
CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

MALE

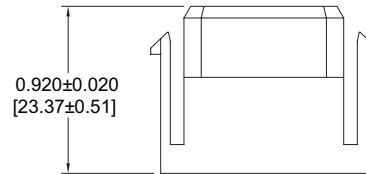
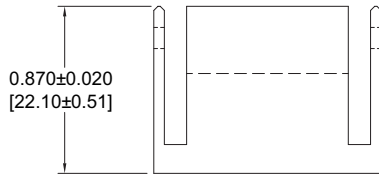


Part Number: PLB3W3M0000

FEMALE



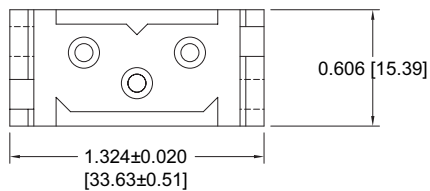
Part Number: PLB3W3F0000



PANEL MOUNT CONNECTOR FOR USE WITH SIZE 12 REMOVABLE CONTACTS CODE 1

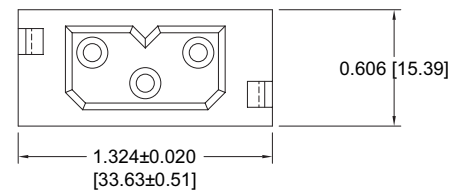
CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

MALE

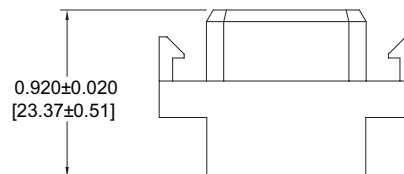
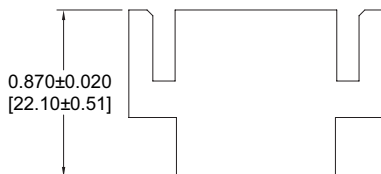


Part Number: PLB3W3M1000

FEMALE



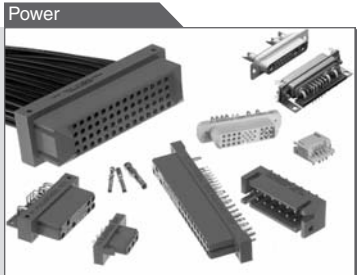
Part Number: PLB3W3F1000



For information regarding size 12 removable contacts, see Removable Contact section, pages 47-53.

POSITRONIC PRODUCTS

Contact Sizes: 0, 8, 12, 16, 20 and 22
Current Ratings: To 100 amperes
Terminations: Crimp, wire solder, straight solder, right angle solder, straight press-fit and right angle (90°) press-fit
Configurations: Multiple variants in a variety of package sizes
Compliance: PICMG 2.11, PICMG 3.0, VITA 41



FEATURES: Hot swap capability • AC/DC operation in a single connector • Signal contacts for hardware management • Blind mating • Sequential mating • Large surface area contact mating system • Wide variety of accessories • Customer specified contact arrangements

Contact Sizes: 8, 20 and 22
Current Ratings: To 40 amperes nominal
Terminations: Crimp, wire solder, straight solder, right angle (90°) solder and straight press-fit
Configurations: Multiple variants in both standard and high densities
Qualifications: MIL-DTL-24308, Goddard Space Flight S-311-P, SAE AS 39029, IP65, IP67



FEATURES: Three performance levels available: professional quality, military quality and space-flight quality provide multiple performance-to-cost choices • Options include thermocouple contacts, air coupling, environmentally sealed and dual port package including mixed density • Broad selection of accessories

Contact Sizes: 16, 20 and 22
Current Ratings: To 13 amperes
Terminations: Crimp, wire solder, straight solder and right angle (90°) solder
Configurations: Multiple variants in both standard and high densities
Qualifications: MIL-DTL-28748, SAE AS 39029, CCITT V.35



FEATURES: Two performance levels available: industrial quality and military quality provide two performance to cost choices • Large surface area contact mating system • A wide variety of accessories • Broad selection of contact variants and package sizes

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



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

All Positronic connector products can be supplied as part of cable assemblies whose technical characteristics would reflect those of the connectors being used within the assembly.



FEATURES: Shorten the supply chain and reduce additional costs and delays by "cablizing" • Overmolding available • Shielded and environmentally sealed versions available • Power cables and access boxes which meet the SAE J2496 specification

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



FEATURES: Intended for use as an electrical feedthrough in high vacuum applications • Leakage rate: 5×10^{-9} mbar.l/s @ vacuum 1.5×10^{-5} atm • Signal, power, coax and high voltage versions available • Connectors can be mounted on flange assembly per customer specification

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