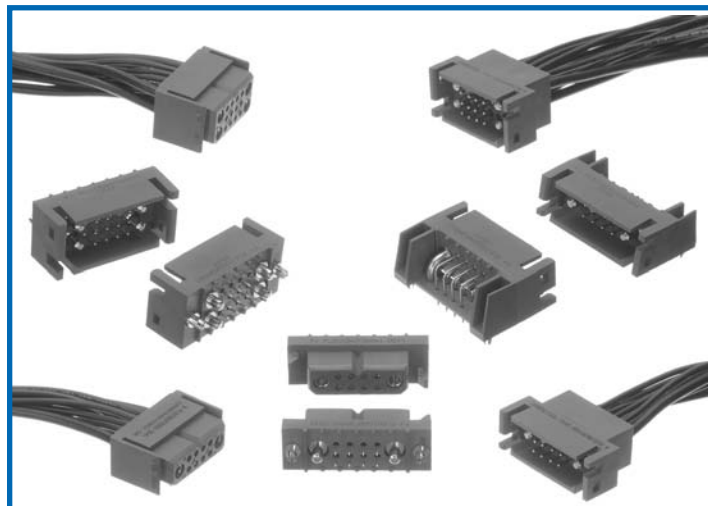




PCS SERIES POWER CONNECTORS WITH MIXED DENSITY CONTACTS

- * Mixed density contacts
- Power contacts have a resistance as low as 0.0003 ohms and carry up to 85 amps per U.L. 1977
- Available with two power contacts and eight signal; or four power contacts and twelve signal
- Solder, press-fit or cable terminations
- Integral locking on cable connectors

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.
Mounting Clip:	Beryllium copper with tin plate.
Hood:	Glass filled polyester, UL 94V-0.
Mounting Bracket:	Brass with tin plate.
Push-on Fastener:	Spring tempered copper alloy, tin plate

ELECTRICAL CHARACTERISTICS:

SIGNAL CONTACTS

Contact Current Rating:	7.5 amperes nominal.
Initial Contact Resistance:	0.007 ohms max. per IEC 512-2, Test 2b

POWER CONTACTS

Contact Current Rating:	See temperature rise curves on page 40. For additional information see pages 47-53.
Initial Contact Resistance:	0.0005 ohms max. per IEC 512-2, Test 2b.
Standard Conductivity:	0.0003 ohms max. per IEC 512-2, Test 2b.
High Conductivity:	0.0003 ohms max. per IEC 512-2, Test 2b.

SHIELDED CONTACTS

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
Above values measured using frequency domain techniques.	
Proof Voltage:	1000 V r.m.s.

ELECTRICAL CHARACTERISTICS, CONTINUED:

HIGH VOLTAGE CONTACTS

Flash over Voltage:	3600 V r.m.s.
Proof Voltage:	2700 V r.m.s.
Initial Contact Resistance:	0.008 ohms maximum.

CONNECTOR

Insulation Resistance:	5 G ohms per IEC 512-2, Test 3a, Method A.
Working Voltage:	600 V rms.
Voltage Proof:	2200 V rms per IEC 512-2, Test 4a, Method C.
Clearance and Creepage Distance:	0.080 inch [2.03 mm]
Working Temperature:	-55°C to +125°C.

MECHANICAL CHARACTERISTICS:

SIGNAL CONTACTS

Removable:	Insert contact to rear face of insulator, release from front face of insulator. Size 20 contacts, 0.040 inch [1.02 mm] diameter male contacts, closed entry design female contacts.
Fixed:	Straight solder, right angle (90°) solder and straight compliant press-fit printed board mount terminations. Size 20 contacts, 0.040 inch [1.02 mm] diameter male contacts, open entry design female contacts.

... Continued on next page



For RoHS options
see page 46.

UL AND CSA RECOGNITION IS IN PROCESS.



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TECHNICAL INFORMATION AND TEMPERATURE RISE CURVES

Power
Connection
Systems

Continued from previous page . . .

MECHANICAL CHARACTERISTICS, CONTINUED:

POWER CONTACTS:

Removable:

Insert contact to rear face of insulator, release from front face of insulator. Size 8 contacts, 0.142 inch [3.61 mm] diameter male contacts, closed entry design female contacts.

Printed Board Mount:

Straight solder, right angle (90°) solder and straight compliant press-fit printed board mount terminations. Size 8 contacts, 0.142 inch [3.61 mm] male contacts, closed entry design female contacts.

SHIELDED CONTACTS:

Removable:

Insert contact to rear face of insulator, release from front face of insulator. Size 8 contacts. See page 53 table of cable sizes for contact termination dimensions.

HIGH VOLTAGE CONTACTS:

Removable:

Insert contact to rear face of insulator, release from front face of insulator.

Size 8 contacts. Straight and right angle (90°) terminations. 0.041 inch [1.04 mm] minimum hole diameter.

Contact Terminations:

20-24 AWG [0.5-0.25mm²] removable crimp signal, 0.028 inch [0.71 mm] diameter straight and right angle (90°) solder printed board mount, 8-16

AWG [10.0-1.0mm²] removable solder and crimp power, 0.125 inch [3.18 mm] diameter straight and right angle (90°) solder printed board mount, power, shielded, high voltage cable, and straight compliant press-fit terminations.

Contact Retention in Insulator:

Fixed signal - 9 lbs. [40 N].
Removable Signal - 10 lbs. [44N].
Power, shielded and high voltage - 22 lbs. [98 N].

Resistance to Solder Iron Heat:

500° F [260° C] for 10 second duration per IEC 512-6, test 12e, 25 watt soldering iron.

Connection Systems:

Connector provides cable to cable, cable to printed board, cable to panel mount and printed board to printed board application.

Locking System:

Insulators provide locking between cable to cable, cable to printed board and cable to panel mount applications.

Polarizations: Mounting to Printed Board:

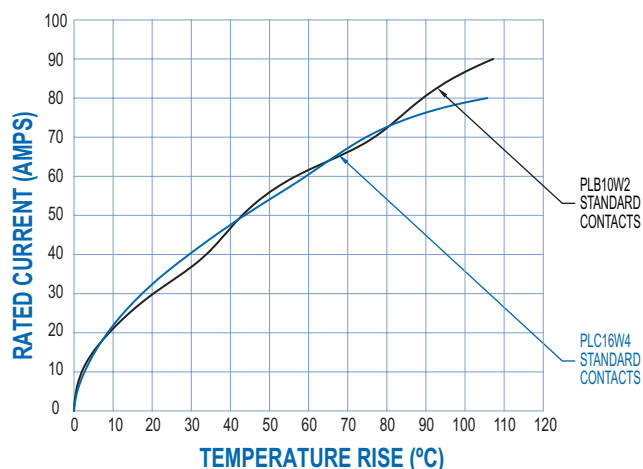
Provided in insulator design.
Rapid installation push-on fasteners. Self-tapping screws for compliant connectors.

Mechanical Operations:

500 operations per IEC 512-5.

TEMPERATURE RISE CURVES

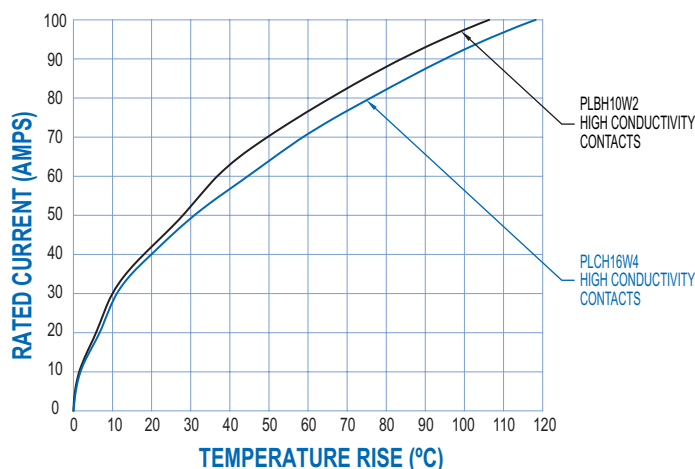
STANDARD CONTACT MATERIAL



Test conducted in accordance with UL1977.
All power contacts under load.

- 10W2:** Curve developed using PLB10W2F9300A1 and PLB10W2M0000 connectors with MC4008D contacts terminated to 8 AWG wire .
- 16W4:** Curve developed using PLC16W4F9300A1 and PLC16W4M0000 connectors with MC4008D contacts terminated to 8 AWG wire.

HIGH CONDUCTIVITY CONTACT MATERIAL



Test conducted in accordance with UL1977.
All power contacts under load.

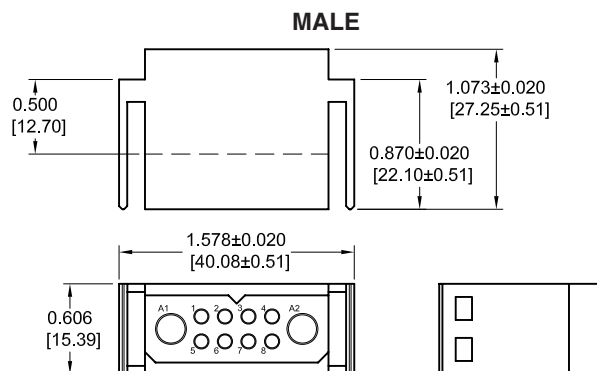
- 10W2:** Curve developed using PLBH10W2F9300A1 and PLBH10W2M0000 connectors with MC4008DS contacts terminated to 8 AWG wire .
- 16W4:** Curve developed using PLCH16W4F9300A1 and PLCH16W4M0000 connectors with MC4008DS contacts terminated to 8 AWG wire.



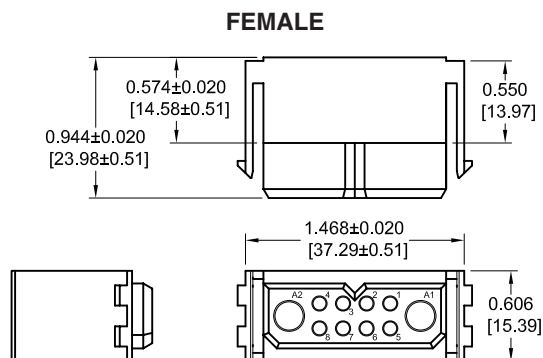
PLB(H)10W2 CABLE CONNECTOR
FOR USE WITH SIZE 20 AND SIZE 8 REMOVABLE CONTACTS

CODE 0

CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY



Part Number:
PLB10W2M0000
PLBH10W2M0000

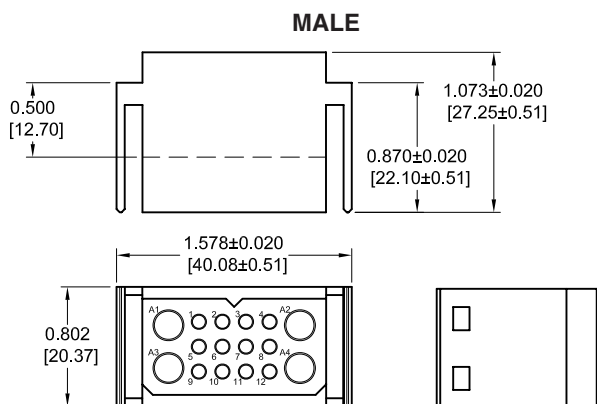


Part Number:
PLB10W2F0000
PLBH10W2F0000

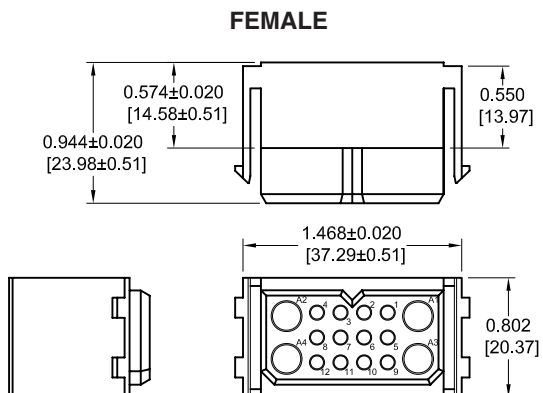
PLC(H)16W4 CABLE CONNECTOR
FOR USE WITH SIZE 20 AND SIZE 8 REMOVABLE CONTACTS

CODE 0

CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY



Part Number:
PLC16W4M0000
PLCH16W4M0000



Part Number:
PLC16W4F0000
PLCH16W4F0000

For information regarding size 20 and size 8 removable contacts, see Removable Contact section, pages 47-53.



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PANEL MOUNT CONNECTOR

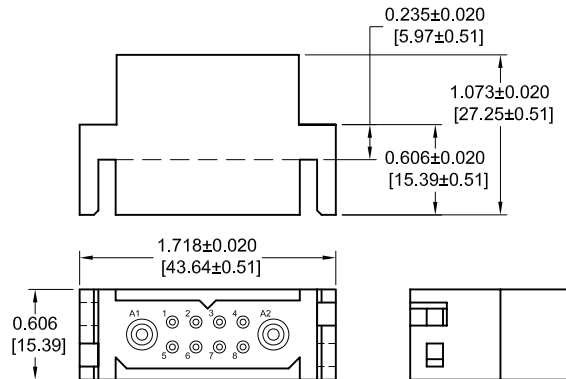
Power
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Systems

PLB(H)10W2 PANEL MOUNT CONNECTOR FOR USE WITH SIZE 20 AND SIZE 8 REMOVABLE CONTACTS

CODE 1

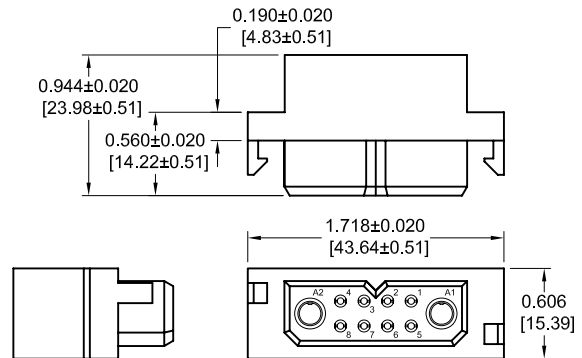
CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

MALE



Part Number:
PLB10W2M1000
PLBH10W2M1000

FEMALE



Part Number:
PLB10W2F1000
PLBH10W2F1000

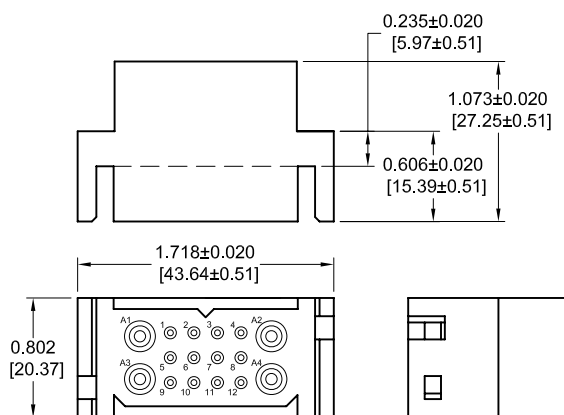
For panel cutout, see chart on page 67.

PLC(H)16W4 PANEL MOUNT CONNECTOR FOR USE WITH SIZE 20 AND SIZE 8 REMOVABLE CONTACTS

CODE 1

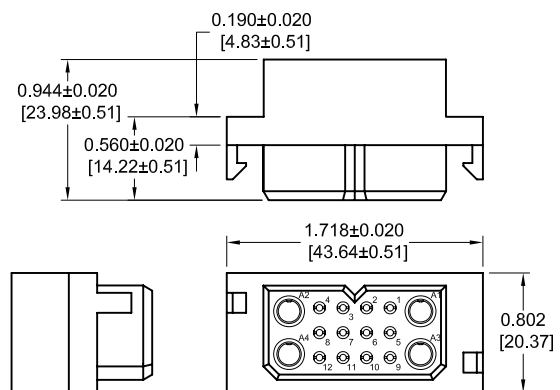
CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

MALE



Part Number:
PLC16W4M1000
PLCH16W4M1000

FEMALE



Part Number:
PLC16W4F1000
PLCH16W4F1000

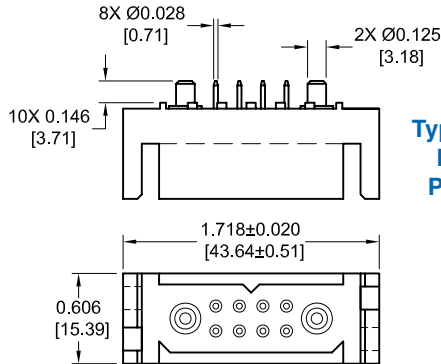
For panel cutout, see chart on page 67.

For information regarding size 20 and size 8 removable contacts, see Removable Contact section, pages 47-53.



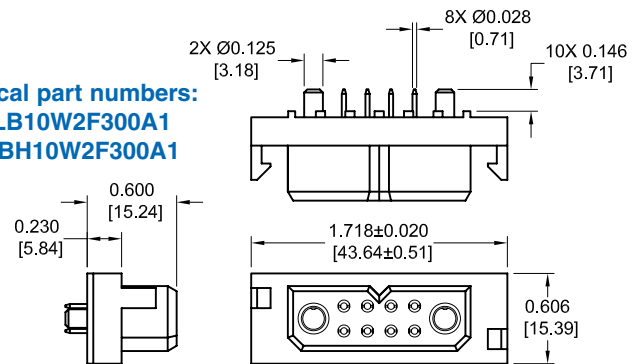
PLB(H)10W3 STRAIGHT PRINTED BOARD MOUNT CONNECTOR CODE 3, 0.146 [3.71] CONTACT EXTENSION

MALE



Typical part numbers:
PLB10W2M300A1
PLBH10W2M300A1

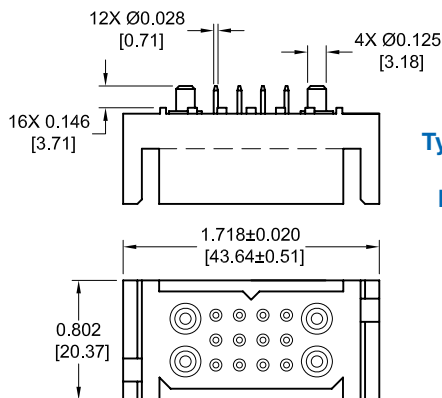
FEMALE



Typical part numbers:
PLB10W2F300A1
PLBH10W2F300A1

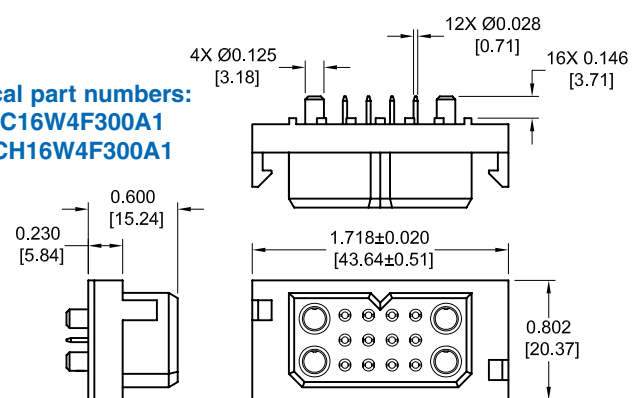
PLC(H)16W4 STRAIGHT PRINTED BOARD MOUNT CONNECTOR CODE 3, 0.146 [3.71] CONTACT EXTENSION

MALE



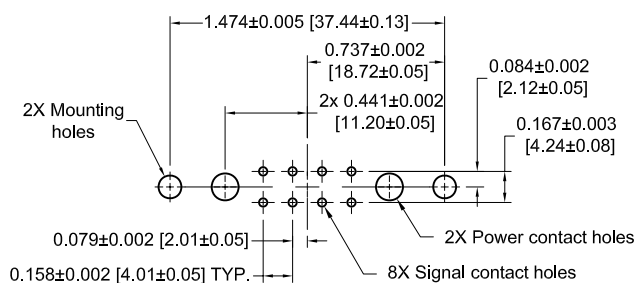
Typical part numbers:
PLC16W4M300A1
PLCH16W4M300A1

FEMALE

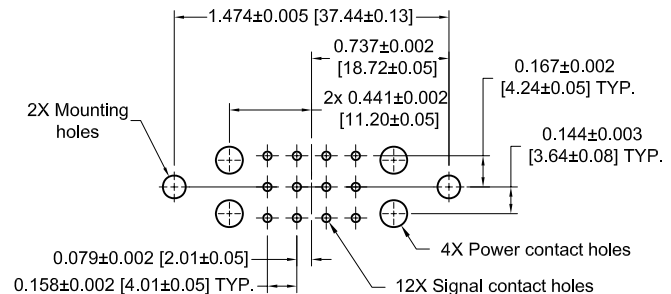


Typical part numbers:
PLC16W4F300A1
PLCH16W4F300A1

STRAIGHT SOLDER AND COMPLIANT CONTACT HOLE PATTERN



PLB10W2



PLC16W4

SUGGESTED PRINTED BOARD HOLE SIZES:

Suggest 0.145 [3.68] $\varnothing$ hole in printed board for power contact termination positions.
 Suggest 0.045 [1.14] $\varnothing$ hole for signal solder contact termination positions.
 Suggest 0.100 [2.54] $\varnothing$ hole in printed board when mounting connectors with #2 thread forming screws.
 Suggest 0.123 $\pm$ 0.003 [3.12 $\pm$ 0.08] $\varnothing$ hole in printed board for mounting connector with push-on fasteners.

NOTE: See page 61 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions.

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



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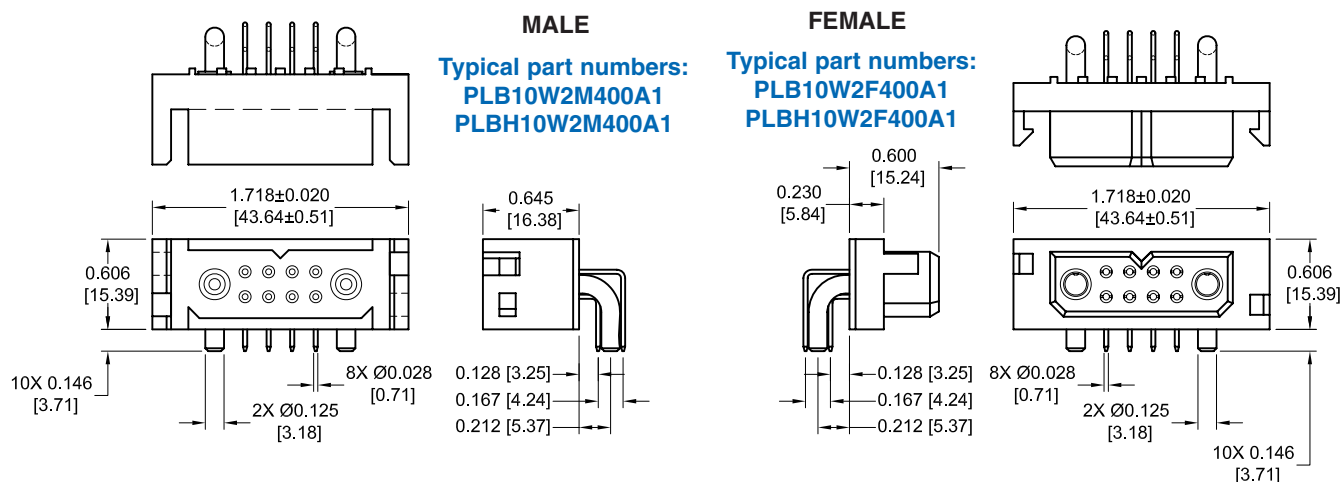


RIGHT ANGLE (90°) PRINTED BOARD CONNECTOR AND CONTACT HOLE PATTERN

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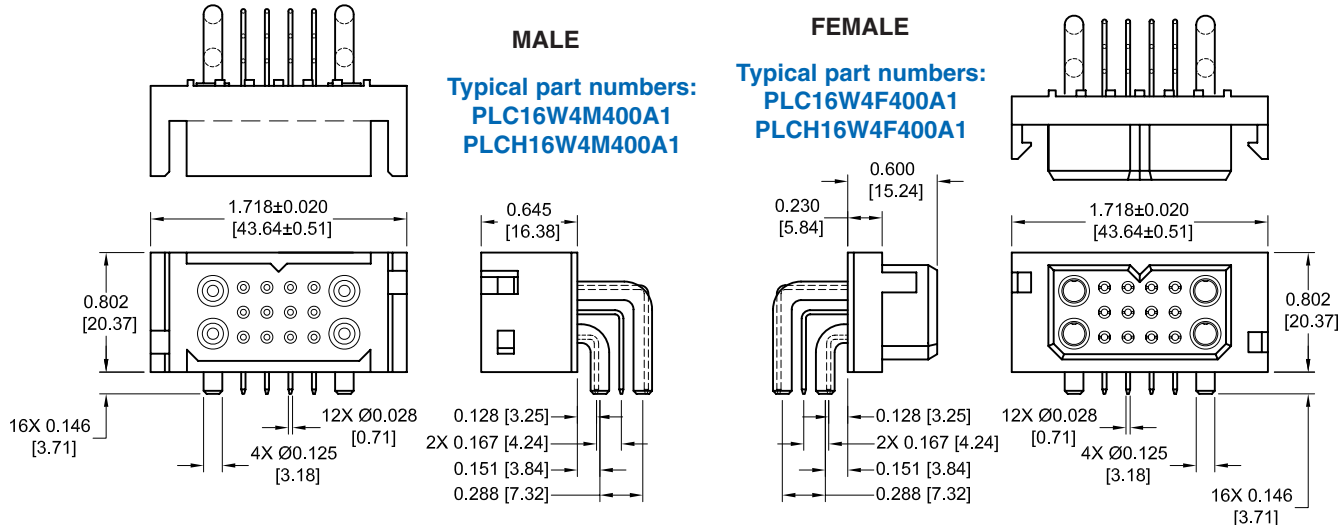
PLB(H)10W3 RIGHT ANGLE (90°) PRINTED BOARD MOUNT CONNECTOR

CODE 4, 0.146 [3.71] CONTACT EXTENSION

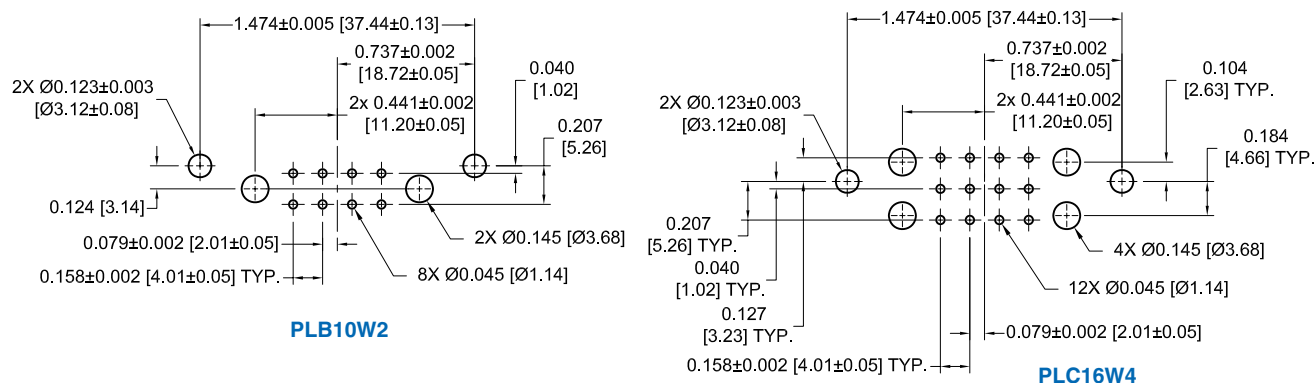


PLC(H)16W4 RIGHT ANGLE (90°) PRINTED BOARD MOUNT CONNECTOR

CODE 4, 0.146 [3.71] CONTACT EXTENSION

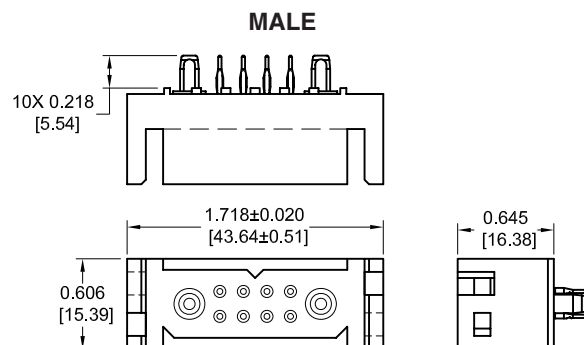


RIGHT ANGLE (90°) PRINTED BOARD MOUNT CONTACT HOLE PATTERN

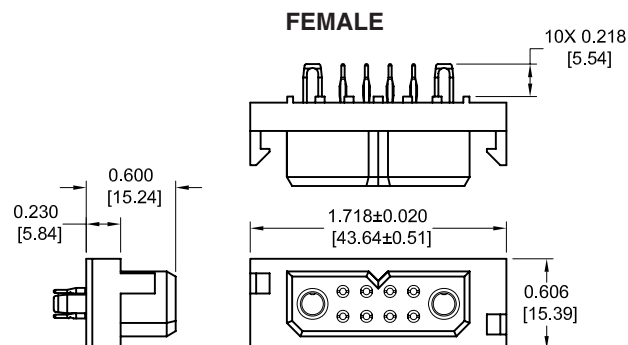




PLB(H)10W2 COMPLIANT PRESS-FIT CONNECTOR
CODE 93



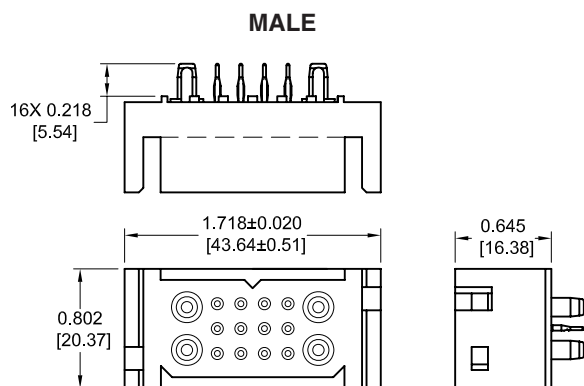
Typical part numbers:
PLB10W2M9300A1
PLBH10W2M9300A1



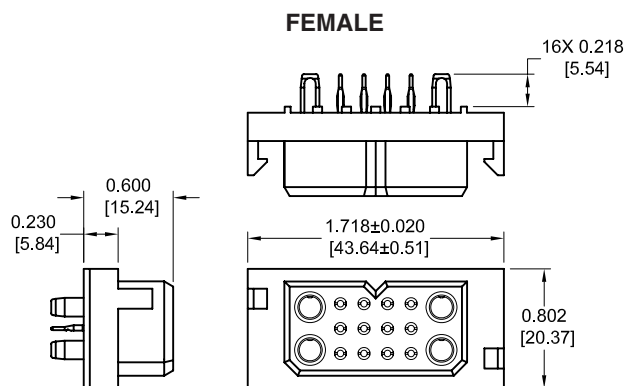
Typical part numbers:
PLB10W2F9300A1
PLBH10W2F9300A1

NOTE: Connectors are designed to be mounted to the PCB with screws, see page 63 for mounting screw information.
See page 43 for contact hole pattern.

PLC(H)16W4 COMPLIANT PRESS-FIT CONNECTOR
CODE 93



Typical part numbers:
PLC16W4M9300A1
PLCH16W4M9300A1



Typical part numbers:
PLC16W4F9300A1
PLCH16W4F9300A1

NOTE: Connectors are designed to be mounted to the PCB with screws, see page 63 for mounting screw information.
See page 43 for contact hole pattern.



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PCS MIXED DENSITY CONNECTOR ORDERING INFORMATION

Power
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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	PLC	16W4	F	4	B3N	0	A1	/AA	

STEP 1 - BASIC SERIES

- PLB - 2 Row
- PLBH - 2 Row High conductivity contacts
- PLC - 3 Row
- PLCH - 3 Row High conductivity contacts

STEP 2 - CONNECTOR VARIANTS

- 2 Row - 10W2
- 3 Row - 16W4

STEP 3 - CONNECTOR GENDER

- M - Male
- F - Female

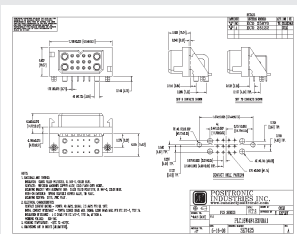
STEP 4 - CONTACT TERMINATION TYPE

- 0 - Removable contact, cable connector. Order contacts separately, see pages 47-53.
- 1 - Removable contact, panel mounted connector. Order contacts separately, see pages 47-53.
- 3 - Solder, Straight Printed Board Mount with 0.146 [3.71] tail extension.
- 4 - Solder, Right Angle (90°) Printed Board Mount with 0.146 [3.71] tail extension.
- 93 - Straight PCB Mount, Press-Fit, length 0.218 [5.54] for 0.125 inch [3.18] thick board.

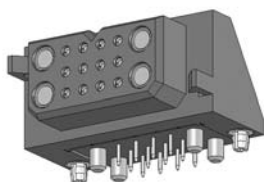
STEP 5 - MOUNTING STYLE

- 0 - None.
- B - Metal Right Angle (90°) Mounting Bracket.
- BN - Metal Right Angle (90°) Mounting Bracket with Push-on Fastener.
- B3 - Plastic Right Angle (90°) Mounting Bracket with Cross Bar.
- B3N - Plastic Right Angle (90°) Mounting Bracket with Cross Bar and Push-on Fastener.
- N - Push-On Fastener For Straight Printed Board Mount Connectors
- ST2 - Self-tapping steel screws 2-28 x 0.250+0.030 [6.35+0.76] length for 0.093 [2.36] thick board. Use with contact code 93.
- ST3 - Self-tapping steel screws 2-28 x 0.312+0.030 [7.92+0.76] length for 0.125 [3.18] thick board. Use with contact code 93.
- ST4 - Self-tapping steel screws 2-28 x 0.375+0.030 [9.53+0.76] length for 0.175 [4.45] thick board. Use with contact code 93.
- SS2 - Self-tapping stainless steel screws 2-28 x 0.250+0.030 [6.35+0.76] length for 0.093 [2.36] thick board. Use with contact code 93.
- SS3 - Self-tapping stainless steel screws 2-28 x 0.312+0.030 [7.92+0.76] length for 0.125 [3.18] thick board. Use with contact code 93.
- SS4 - Self-tapping stainless steel screws 2-28 x 0.375+0.030 [9.53+0.76] length for 0.175 [4.45] thick board. Use with contact code 93.

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

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: PLC16W4F4B3N0A1

STEP 7 - CONTACT PLATING FOR PRINTED BOARD CONNECTORS

- 0 - Crimp Contacts ordered separately, see page 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. Not available with code 93 in step 4.
- 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. Not available with code 93 in step 4.
- 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. Not available with code 93 in step 4.

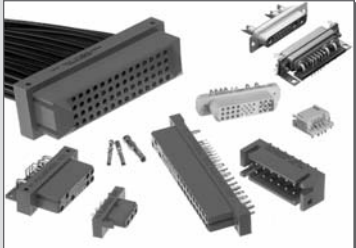
STEP 6 - HOODS AND PANEL MOUNT

- 0 - None.
- 51 - Top Opening Hood.
- 6 - Panel Mount, quick release.
- 81 - Panel Mount, fixed for 0.040 [1.02] thick panel.
- 82 - Panel Mount, fixed for 0.060 [1.52] thick panel.
- 83 - Panel Mount, fixed for 0.090 [2.29] thick panel.
- 11 - Blind Mating System for 0.040 [1.02] thick panel.
- 12 - Blind Mating System for 0.060 [1.52] thick panel.
- 13 - Blind Mating System for 0.090 [2.29] thick panel.
- 14 - Blind Mating System for 0.120 [3.05] thick panel.

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

Power



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

D-subminiature



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

Rectangular



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

Circular



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.

Cable



FEATURES: Shorten the supply chain and reduce additional costs and delays by "cabling" • 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

Hermetic



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

NORTH AMERICAN LOCATIONS

UNITED STATES, Springfield, Missouri, Corporate Headquarters

Factory Sales and Engineering Offices (800) 641-4054

PUERTO RICO, Ponce Factory

Factory Sales and Engineering Offices (800) 641-4054

MEXICO

Factory Sales and Engineering Offices (800) 872-7674

CANADA

Factory Sales and Engineering Offices (800) 327-8272

ASIA/PACIFIC LOCATIONS

SINGAPORE, Asia/Pacific Headquarters

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singapore@connectpositronic.com

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shenzhen@connectpositronic.com

China -Shanghai Sales Office (86) 158 2907 9779

shanghai@connectpositronic.com

China -Xian/Beijing Sales Office (86) 29 8839 5306

xian@connectpositronic.com

Korea Sales Office (82) 31 909 8047 or 8

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INDIA, Direct Sales Offices

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contact@connectpositronic.com

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