

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 [0.76 μ] gold over nickel, or 0.000050 [1.27 μ] 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 RECOGNIZED FILE# E49351

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



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TECHNICAL INFORMATION AND TEMPERATURE RISE CURVES

Power
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PCS MIXED DENSITY

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:

Provided in insulator design.

Mounting to Printed Board:

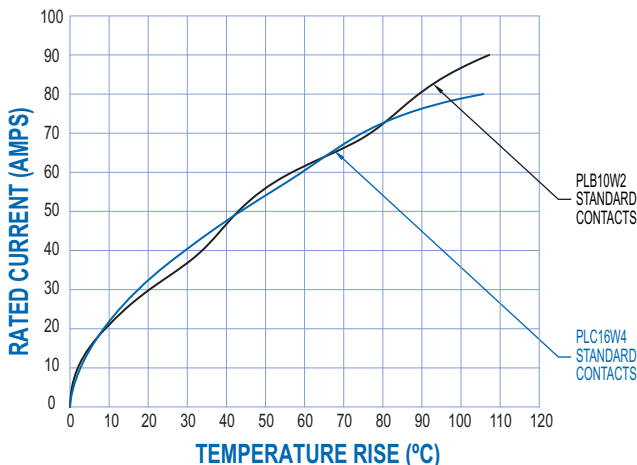
Rapid installation push-on fasteners. Self-tapping screws for compliant connectors.

Mechanical Operations:

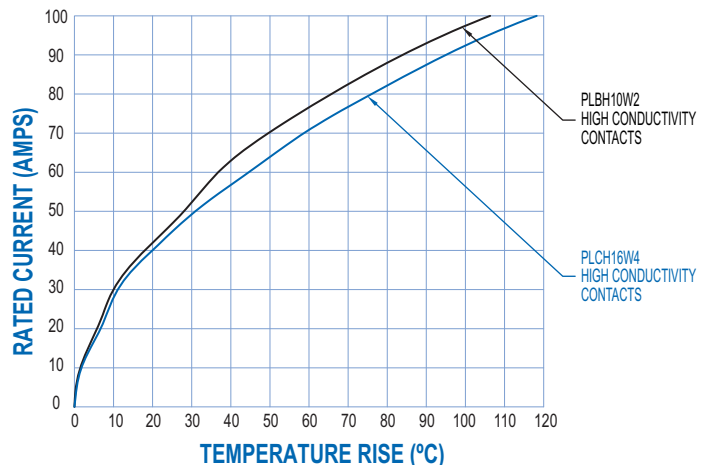
500 operations per IEC 512-5.

TEMPERATURE RISE CURVES

STANDARD CONTACT MATERIAL



HIGH CONDUCTIVITY 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.

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

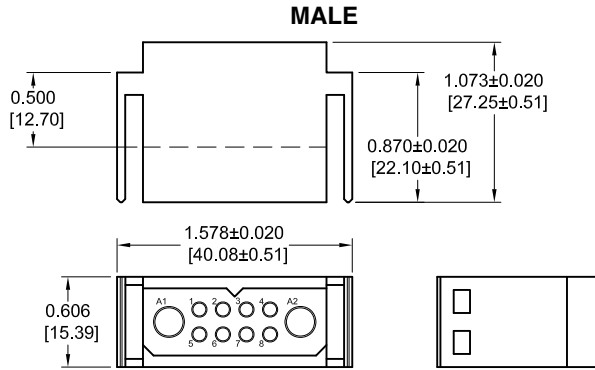
- 10W2:** Curve developed using PLBH10W2F9300A1 and PLBH10W2M0000* connectors with MC4008DS contacts terminated to 8 AWG wire .
- 16W4:** Curve developed using PLCH16W4F9300A1 and PLCH16W4M0000* connectors with MC4008DS contacts terminated to 8 AWG wire.

* Note: in the above part numbers PLBH10W2M0000 and PLCH16W4M0000, the "H" should not be included in the part number.

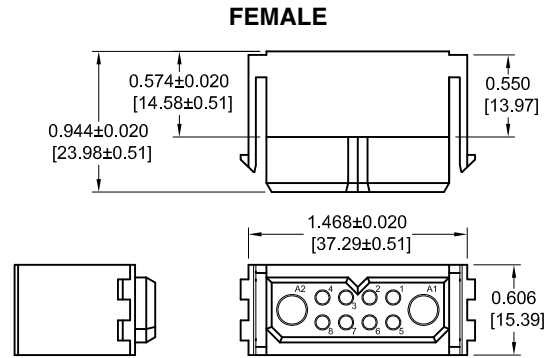


PLB(H)10W2 CABLE CONNECTOR
FOR USE WITH SIZE 20 AND SIZE 8 REMOVABLE CONTACTS
CODE 0

CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY



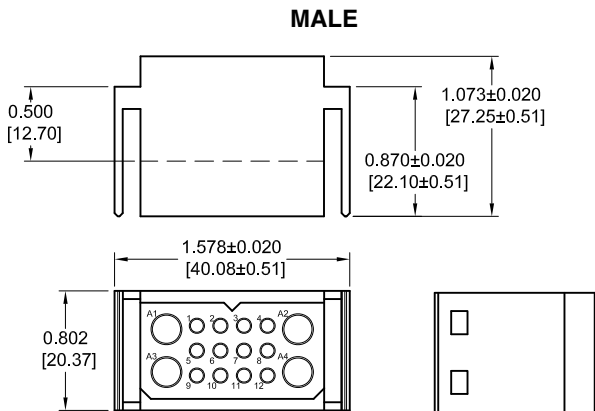
Part Number:
PLB10W2M0000
PLBH10W2M0000



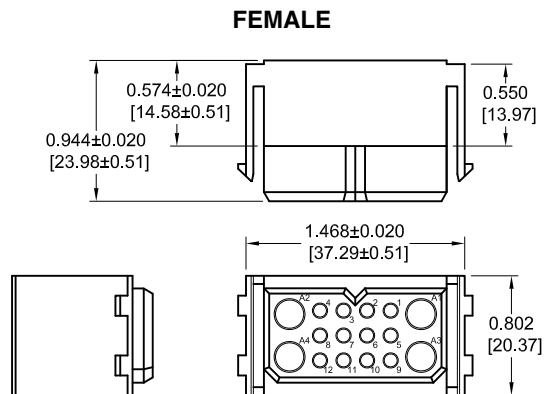
Part Number:
PLB10W2F0000
PLBH10W2F0000

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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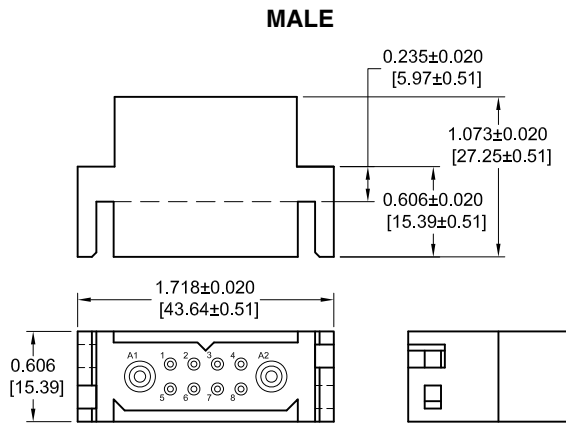
PANEL MOUNT CONNECTOR

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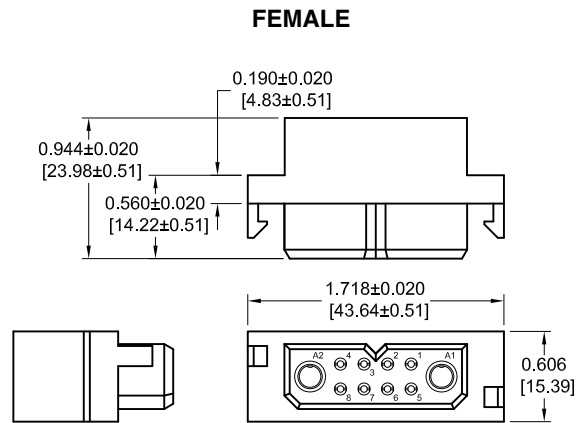
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PLB(H)10W2 PANEL MOUNT CONNECTOR FOR USE WITH SIZE 20 AND SIZE 8 REMOVABLE CONTACTS CODE 1

CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY



Part Number:
PLB10W2M1000
PLBH10W2M1000

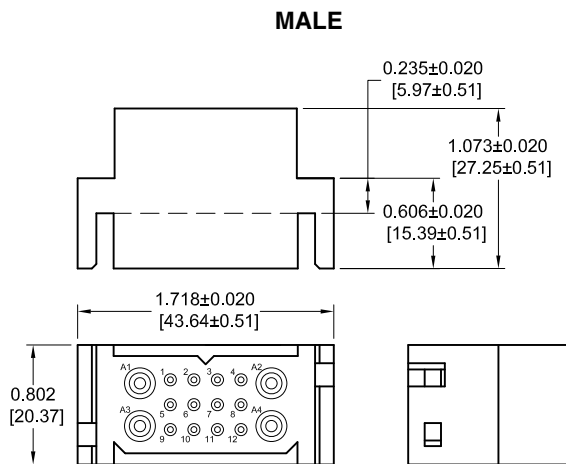


Part Number:
PLB10W2F1000
PLBH10W2F1000

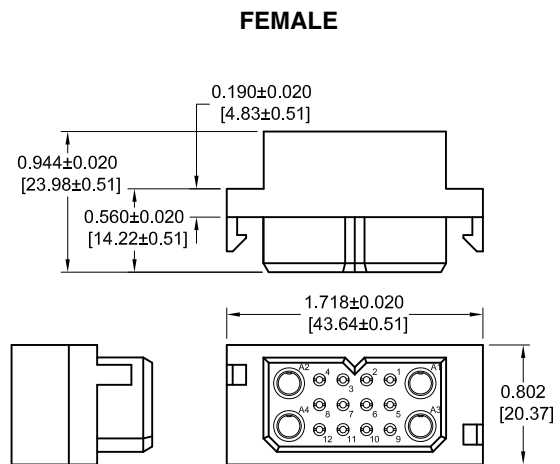
For panel cutout, see chart on page 67.

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



Part Number:
PLC16W4M1000
PLCH16W4M1000



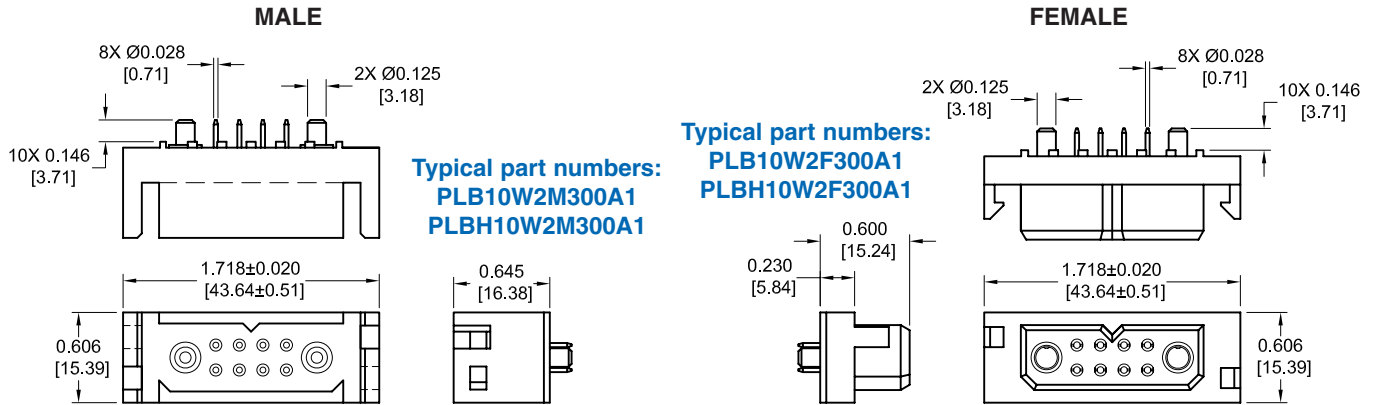
Part Number:
PLC16W4F1000
PLCH16W4F1000

For panel cutout, see chart on page 67.

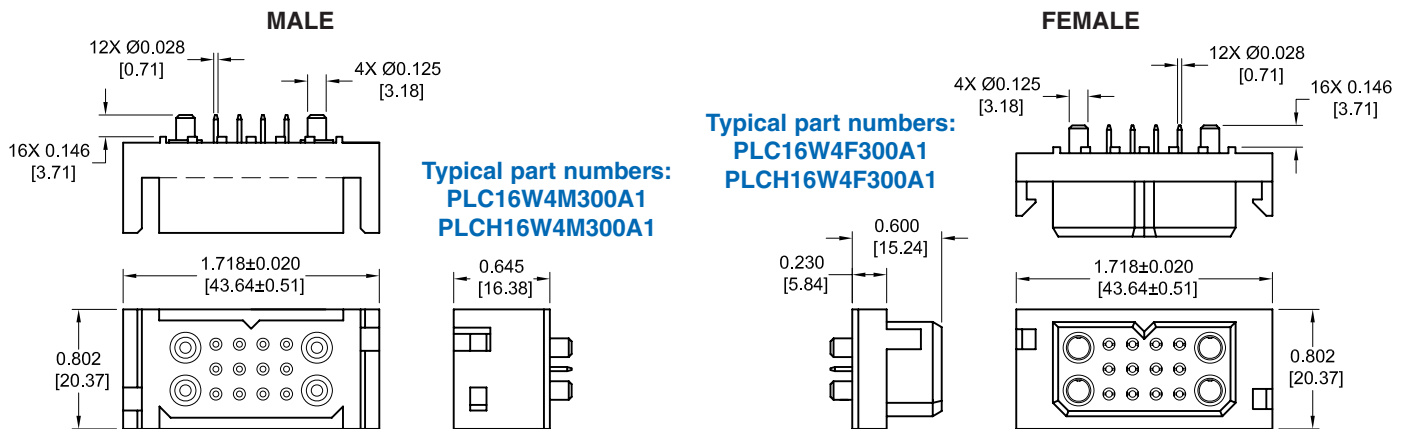
For information regarding size 20 and size 8 removable contacts, see Removable Contact section, pages 47-53.



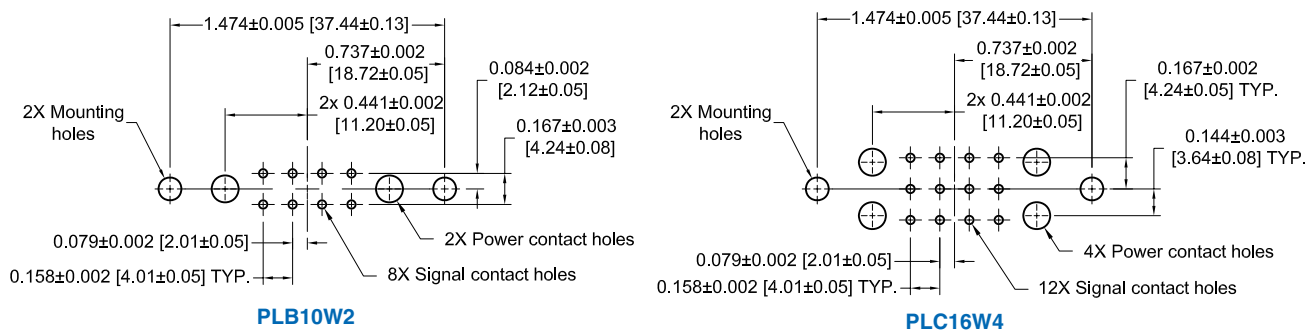
**PLB(H)10W3 STRAIGHT PRINTED BOARD MOUNT CONNECTOR
CODE 3, 0.146 [3.71] CONTACT EXTENSION**



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



STRAIGHT SOLDER AND COMPLIANT CONTACT HOLE PATTERN



SUGGESTED PRINTED BOARD HOLE SIZES:

- Suggest 0.145 [3.68] Ø hole in printed board for power contact termination positions.
- Suggest 0.045 [1.14] Ø hole for signal solder contact termination positions.
- Suggest 0.100 [2.54] Ø hole in printed board when mounting connectors with #2 thread forming screws.
- Suggest 0.123±0.003 [3.12±0.08] Ø 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.



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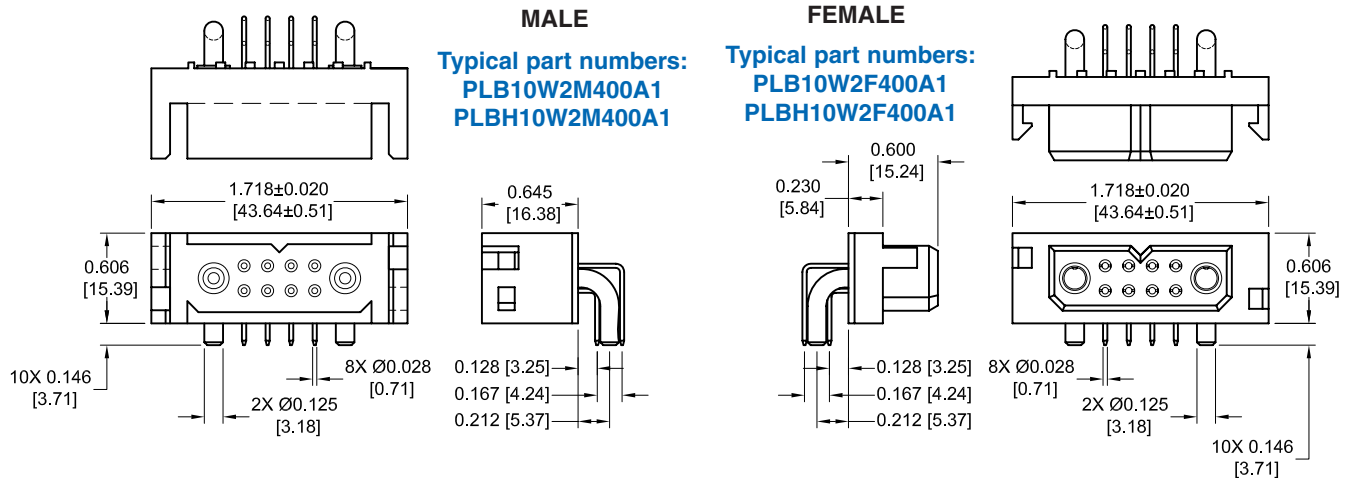


RIGHT ANGLE (90°) PRINTED BOARD CONNECTOR AND CONTACT HOLE PATTERN

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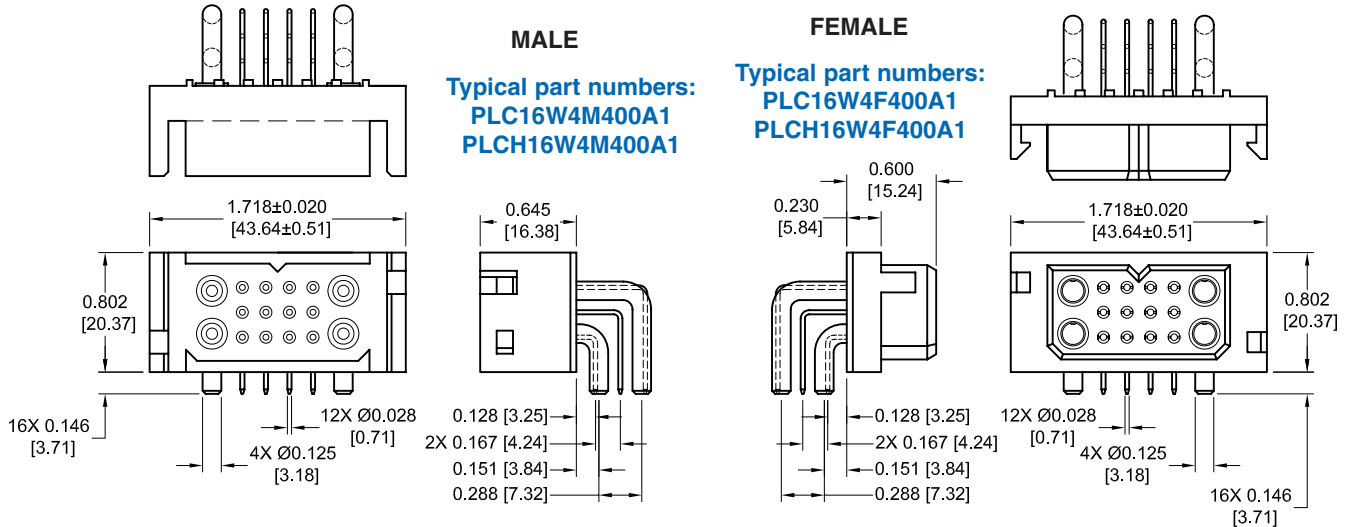
PLB(H)10W3 RIGHT ANGLE (90°) PRINTED BOARD MOUNT CONNECTOR

CODE 4, 0.146 [3.71] CONTACT EXTENSION

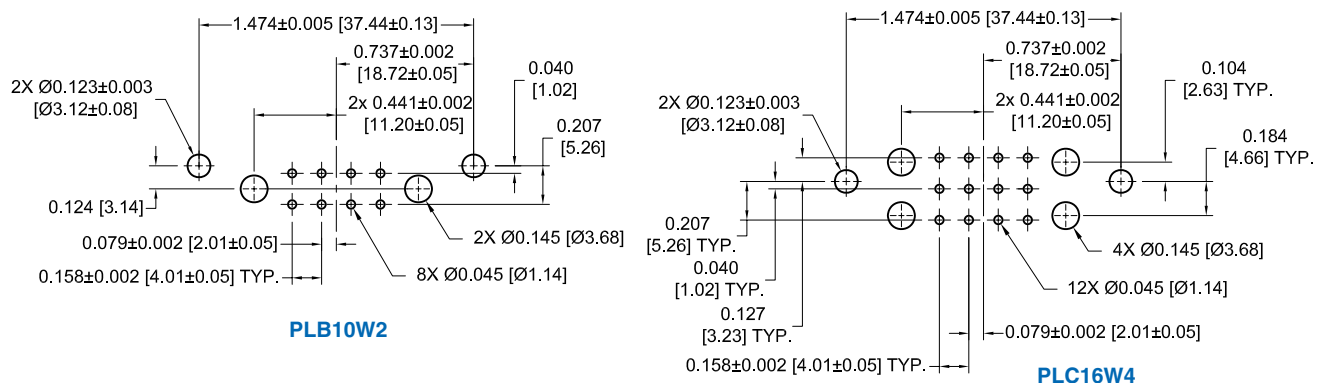


PLC(H)16W4 RIGHT ANGLE (90°) PRINTED BOARD MOUNT CONNECTOR

CODE 4, 0.146 [3.71] CONTACT EXTENSION



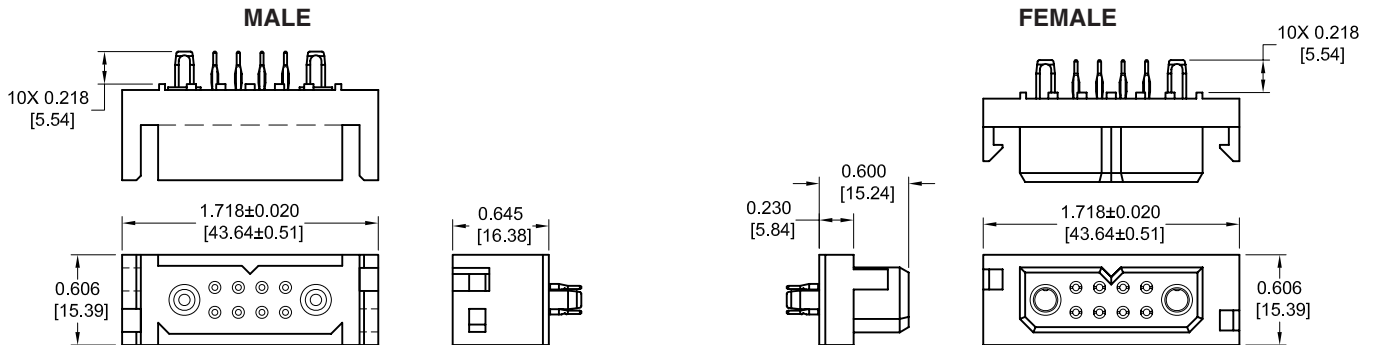
RIGHT ANGLE (90°) PRINTED BOARD MOUNT CONTACT HOLE PATTERN





PLB(H)10W2 COMPLIANT PRESS-FIT CONNECTOR

CODE 93



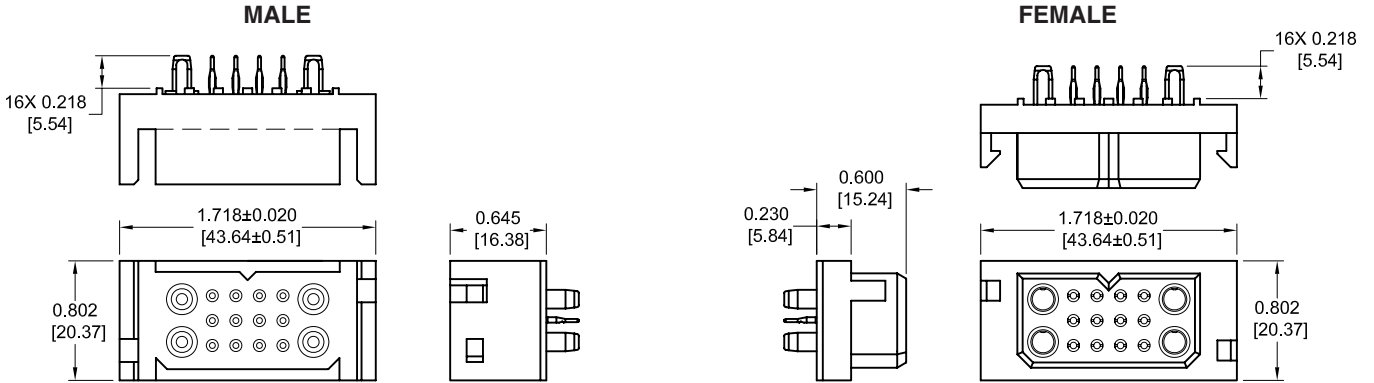
Typical part numbers:
PLB10W2M9300A1
PLBH10W2M9300A1

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

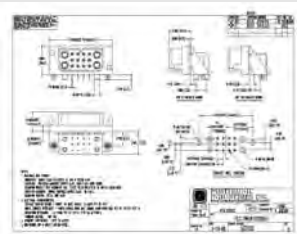
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ORDERING INFORMATION - CODE NUMBERING SYSTEM

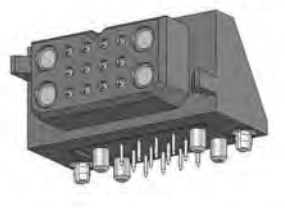
Specify Complete Connector By Selecting An Option From Step 1 Through 7

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 9 - SPECIAL OPTIONS CONTACT TECHNICAL SALES FOR SPECIAL OPTIONS
STEP 2 - CONNECTOR VARIANTS 2 Row - 10W2 3 Row - 16W4									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 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 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 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. <i>Use with contact code 93.</i> ST3 - Self-tapping steel screws 2-28 x 0.312+0.030 [7.92+0.76] length for 0.125 [3.18] thick board. <i>Use with contact code 93.</i> ST4 - Self-tapping steel screws 2-28 x 0.375+0.030 [9.53+0.76] length for 0.175 [4.45] thick board. <i>Use with contact code 93.</i> 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. <i>Use with contact code 93.</i> 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. <i>Use with contact code 93.</i> 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. <i>Use with contact code 93.</i>									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.

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