COMPACT POWER CONNECTORS

The power interface for plug-in power supplies or other chassis mount applications

Right Angle (90°) PCB Mount

Solid, Machined Power Contacts

AC Pass-Through

Panel Mount

Five Package Sizes

Catalog C-017 Rev H

www.connectpositronic.com
Experience

• Founded in 1966
• Involvement in the development of international connector specifications through EIA®, IEC and ISO as well as PICMG®.
• Introduction of new and unique connector products to the electronics industry.
• Patent holder for many unique connector features and manufacturing techniques.
• Vertically integrated manufacturing – raw materials to finished connectors.

Technology

• Expertise with solid machined contacts provides a variety of high reliability connectors including high current density power connectors.
• Quality Assurance lab is capable of testing to IEC, EIA, UL, CUL, military and customer-specified requirements.
• In-house design and development of connectors based on market need or individual customer requirements.
• Internal manufacturing capabilities include automatic precision contact machining, injection molding, stamping, plating operations and connector assembly.
• Manufacturing locations in southwest Missouri, U.S.A. (headquarters); Puerto Rico, France, China, Singapore, and India. Total square footage: 407,441.

Support

• Compliance to a variety of international and customer specific environmental requirements.
• Large in-house inventory of finished connectors. Customer specific stocking programs.
• Factory direct technical sales support in major cities worldwide.
• One-on-one customer support from worldwide factory locations.
• World class web site.
• Value-added solutions and willingness to develop custom products with reasonable price and delivery.

Regional Headquarters

Springfield, MO  Auch, France  Singapore

Positronic Provides Complete Capability

Mission Statement

“To utilize product flexibility and application assistance to present quality interconnect solutions which represent value to customers worldwide.”

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

POSITRONIC® IS AN ITAR REGISTERED COMPANY

Information in this catalog is proprietary to Positronic and its subsidiaries. Positronic 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 assumes no responsibility for results obtained or damages incurred from use of such information in whole or in part.

The following trademarks are registered to Positronic Industries, Inc. in the United States and many other countries: Positronic Industries, Inc.®, Positronic®, Connector Excellence®, P+ logo®, PosiBand®, PosiShop®, Positronic Global Connector Solutions®, Global Connector Solutions®. The color blue as it appears on various connectors is a trademark of Positronic Industries, Inc., Registered in U.S. Patent and Trademark Office.

Unless otherwise specified, dimensional tolerances are:

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

Positronic Industries’ FEDERAL SUPPLY CODE (Cage Code) FOR MANUFACTURERS is 28198
Positronic connectors can be modified to customers' specifications. **Examples:** select loading of contacts for cost savings or to gain creepage and clearance distances; longer PCB terminations; customer specified hardware.

Positronic can develop and tool new connector designs with reasonable price and delivery.

Contact Technical Sales with your particular requirements.
Compact Power Connector Applications

Please visit the website of the companies listed to view a wide variety of product offerings.

 Courtesy of One Stop Systems
 www.onestopsystems.com

 Courtesy of Kaparel Corporation
 www.kaparel.com

 Courtesy of Hybricon Corporation
 www.hybricon.com
Positronic is proud to participate in the important work of the following organizations....

PICMG® and PICMG® logo are registered trademarks of the PCI Industrial Computers Manufacturers Group.

www.picmg.com

www.psma.com
SAVE TIME AND MONEY! Let Positronic support you by cablizing your PICH / PCIA / PCIM / PCIB / PCIC connector selection.

For more details contact Technical Sales or visit our web site at: http://www.connectpositronic.com/cable-assemblies

Many Industries Served including:
- Aerospace
- Datacom / Telecom
- Medical
- Industrial
- Military / Defense
- Transit / Rail

Support Capabilities:
- Design, development, engineering support, and documentation
- Build to customer print
- Assist in expansion of qualified suppliers on BOM
- Select facilities certified to ISO 9001 and AS9100
- Adherence to IPC-620 standards
- Product prototyping and first articles
- Electrical and mechanical testing

Products & Services
- Cable and harness assemblies
- Flex circuit assemblies
- Coaxial cable assemblies
- Kitting services
- EMI/RFI shielded assemblies
- Box builds
- Hermetic assemblies

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
# TABLE OF CONTENTS

## GENERAL INFORMATION

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCI Connection Systems</td>
<td>1-2</td>
</tr>
<tr>
<td>Current Rating Information</td>
<td>3</td>
</tr>
<tr>
<td>Temperature Rise Curves</td>
<td>4-6</td>
</tr>
<tr>
<td>AC/DC Input Keying</td>
<td>6-7</td>
</tr>
<tr>
<td>Large Surface Area Contact Mating System</td>
<td>8</td>
</tr>
<tr>
<td>Compliant Terminations</td>
<td>9</td>
</tr>
<tr>
<td>Application Specific Arrangements</td>
<td>10</td>
</tr>
<tr>
<td>Special Options</td>
<td>11</td>
</tr>
</tbody>
</table>

## PCIH SERIES

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Product Information</td>
<td>12</td>
</tr>
<tr>
<td>Technical Characteristics</td>
<td>13-14</td>
</tr>
<tr>
<td>Connector Outline and Mating Dimensions</td>
<td>15</td>
</tr>
<tr>
<td>Code 3 Female - Straight Solder Connector, Straight Solder Connector</td>
<td>16-19</td>
</tr>
<tr>
<td>with A.C. Pass-Through and Other Special Options</td>
<td></td>
</tr>
<tr>
<td>Code 3 Male - Straight Solder Connector and Other Special Options</td>
<td>20-21</td>
</tr>
<tr>
<td>Code 4 Female - Right Angle (90º) Board Mount Connector</td>
<td>22-25</td>
</tr>
<tr>
<td>Right Angle (90º) Board Mount Connector with A.C. Pass-Through and</td>
<td></td>
</tr>
<tr>
<td>Other Special Options</td>
<td></td>
</tr>
<tr>
<td>Code 4 Male - Right Angle (90º) Board Mount Connector and Other</td>
<td>26-28</td>
</tr>
<tr>
<td>Special Options</td>
<td></td>
</tr>
<tr>
<td>Code 8 Female - Panel Mount Connector</td>
<td>29</td>
</tr>
<tr>
<td>Code 93 or 94 Female - Compliant Press-Fit Board Mount Connector</td>
<td>30-33</td>
</tr>
<tr>
<td>Compliant Press-Fit Board Mount Connector with A.C. Pass-Through and</td>
<td></td>
</tr>
<tr>
<td>Other Special Options</td>
<td></td>
</tr>
<tr>
<td>Code 93 or 94 Male - Compliant Press-Fit Board Mount Connector and</td>
<td>34-35</td>
</tr>
<tr>
<td>Other Special Options</td>
<td></td>
</tr>
<tr>
<td>Ordering Information</td>
<td>36</td>
</tr>
</tbody>
</table>

## PCIA SERIES

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Product Information</td>
<td>37</td>
</tr>
<tr>
<td>Technical Characteristics</td>
<td>38</td>
</tr>
<tr>
<td>Connector Outline and Mating Dimensions</td>
<td>39</td>
</tr>
<tr>
<td>Code 3 Female and Male - Straight Solder Connector</td>
<td>40</td>
</tr>
<tr>
<td>Code 4 Female - Right Angle (90º) Board Mount Connector</td>
<td>41</td>
</tr>
<tr>
<td>Code 4 Male - Right Angle (90º) Board Mount Connector</td>
<td>42</td>
</tr>
<tr>
<td>Code 8 Female - Panel Mount Connector</td>
<td>43</td>
</tr>
<tr>
<td>Code 93 or 94 Female and Male - Compliant Press-Fit Board Mount</td>
<td>44</td>
</tr>
<tr>
<td>Connector</td>
<td></td>
</tr>
<tr>
<td>Ordering Information</td>
<td>45</td>
</tr>
</tbody>
</table>

*continued on next page*

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
# TABLE OF CONTENTS

## PCIC SERIES

<table>
<thead>
<tr>
<th>Category</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Product Information</td>
<td>90</td>
</tr>
<tr>
<td>Technical Characteristics</td>
<td>91</td>
</tr>
<tr>
<td>Connector Outline and Mating Dimensions</td>
<td>92</td>
</tr>
<tr>
<td>Code 3 Female - Straight Solder Connector and</td>
<td>93</td>
</tr>
<tr>
<td>Straight Solder Connector with A.C. Pass-Through</td>
<td>93</td>
</tr>
<tr>
<td>Code 3 Male - Straight Solder Connector and</td>
<td>94</td>
</tr>
<tr>
<td>Straight Solder Connector with Jackscrew System</td>
<td>94</td>
</tr>
<tr>
<td>Code 4 Female - Right Angle (90°) Board Mount Connector</td>
<td>95</td>
</tr>
<tr>
<td>Code 4 Male - Right Angle (90°) Board Mount Connector</td>
<td>96</td>
</tr>
<tr>
<td>Code 8 Female - Panel Mount Connector</td>
<td>97</td>
</tr>
<tr>
<td>Code 93 or 94 Female - Compliant Press-Fit Board Mount Connector,</td>
<td>98-99</td>
</tr>
<tr>
<td>Compliant Press-Fit Board Mount Connector with A.C. Pass-Through and</td>
<td>98-99</td>
</tr>
<tr>
<td>Compliant Press-Fit Board Mount Connector with Jackscrew System</td>
<td>98-99</td>
</tr>
<tr>
<td>Code 93 or 94 Male - Compliant Press-Fit Board Mount Connector</td>
<td>100</td>
</tr>
<tr>
<td>Ordering Information</td>
<td>101</td>
</tr>
</tbody>
</table>

## REMOVABLE CONTACTS

<table>
<thead>
<tr>
<th>Category</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Removable Contact Technical Characteristics</td>
<td>102</td>
</tr>
<tr>
<td>Size 22 Removable Crimp Contacts</td>
<td>102</td>
</tr>
<tr>
<td>Size 20 and Size 16 Removable Crimp Contacts</td>
<td>103</td>
</tr>
</tbody>
</table>

## APPLICATION TOOLS

<table>
<thead>
<tr>
<th>Category</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Tools Introduction and Contact Reels For Automatic Pneumatic Crimp Tools</td>
<td>104</td>
</tr>
<tr>
<td>Compliant Press-Fit Connectors Printed Board Hole Sizes and Mounting Screws</td>
<td>105</td>
</tr>
<tr>
<td>Compliant Press-Fit Connector Installation Tools</td>
<td>106</td>
</tr>
</tbody>
</table>

## SPECIAL OPTION APPENDIX

<table>
<thead>
<tr>
<th>Category</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modification of Standard (MOS) Suffixes</td>
<td>107-108</td>
</tr>
</tbody>
</table>

---

Visit our website for the latest catalog updates and supplements at [www.connectpositronic.com/pci/catalog](http://www.connectpositronic.com/pci/catalog)
**SYSTEM 1**
MOTHER BOARD TO DAUGHTER BOARD

Female, Straight Solder or Press-fit Contacts
Typical part number: PCIH47F300A1
Currently available in: PCIH, PCIA, PCIM, PCIB, PCIC

Male, Straight Solder or Press-fit Contacts
Typical part number: PCIH47M300A1
Currently available in: PCIH and PCIA

Female, Right Angle (90º) Contacts
Typical part number: PCIH47F400A1
Currently available in: PCIH, PCIA, PCIM, PCIB, PCIC

Male, Right Angle (90º) Contacts
Typical part number: PCIH47M400A1
Currently available in: PCIH, PCIA, PCIM, PCIB, PCIC

**SYSTEM 2**
A.C. PASS-THROUGH TO RIGHT ANGLE (90º) BOARD MOUNT

Female, Straight Solder or Press-fit with AC Pass-Through Contacts Installed
Typical part number: PCIH47F300A1-246.0 with FC112N2S-1565.0 (Ordered Separately)
Currently available in: PCIH, PCIA, and PCIB.

Male, Right Angle (90º) Contacts
Typical part number: PCIH47M400A1
Currently available in: PCIH, PCIA, PCIM, PCIB, PCIC

**SYSTEM 3**
CABLE TO RIGHT ANGLE (90º) BOARD MOUNT

Female, Crimp Contacts Installed
Typical part number: PCIH47F8000 with FC112N2S-1565.0 (Ordered Separately)
Currently available in: PCIH, PCIA, PCIM, PCIB, PCIC

Male, Right Angle (90º) Contacts
Typical part number: PCIH47M400A1
Currently available in: PCIH, PCIA, PCIM, PCIB, PCIC

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
SYSTEM 4
RIGHT ANGLE (90°) BOARD MOUNT TO RIGHT ANGLE (90°) BOARD MOUNT

Female, Right Angle (90°) Contacts
Typical part number: PCIH47F400A1
Currently available in: PCIH, PCIA, PCIM, PCIB, PCIC

Male, Right Angle (90°) Contacts
Typical part number: PCIH47M400A1
Currently available in: PCIH, PCIA, PCIM, PCIB, PCIC

SYSTEM 5
RIGHT ANGLE (90°) BOARD MOUNT WITH A.C. PASS-THROUGH TO RIGHT ANGLE (90°) BOARD MOUNT

Female, Right Angle (90°) with AC Pass-Through Contacts Installed
Typical part number: PCIH47F400A1-246.4 with FC112N2S-1565.0 (Ordered Separately)
Currently available in: PCIH.

Male, Right Angle (90°) Contacts
Typical part number: PCIH47M400A1
Currently available in: PCIH, PCIA, PCIM, PCIB, PCIC
DEMYSTIFYING CURRENT RATINGS

Connector current ratings seem to be shrouded in mystery at times. The user wonders how a listed current rating is relevant to a particular application. Perhaps more mysterious is how similar connectors from various manufacturers list different current rating values. While it is true that material choices and design can enhance a connector’s current rating, the test method by which the rating was developed must be understood when evaluations are made.

Users of connectors for power applications are entitled to current rating test details in order to make an informed choice. Ideally, a connector’s current rating should be developed within the application for which it is being considered. Although ideal, this approach is not always practical given the many differing applications. In order for connector manufacturers to give potential product users an idea of what can be expected, connectors are given current ratings based on a specific test method.

A wide variety of test methods are employed in order to develop current ratings for connectors. Some of these methods come from standards that are recognized industry-wide, while others are unique to the manufacturer or user. These various test methods can produce different results for the same product. It is no wonder confusion sometimes results.

There are key factors that, when understood, can help in choosing the right power connector. All test methods used to rate current have similarities; however, there are variables in applying the test methods which explain differing results.

Current ratings are usually established by first developing a temperature rise curve. This curve plots temperature rise against increasing current levels. The curve is a reliable tool in understanding heat generation of the connector at various currents. When a defined failure is reached, the test ends. The highest current level achieved is usually listed as the current rating.

The temperature rise curve, and therefore the current rating, will change when certain key factors are varied. These are:

- **Where is the temperature sensing probe placed?** If placed on the contact in the mating area (the hottest spot), the results will be quite different than if placed on the outside of the connector body.
- **Are the contacts being tested and rated in free air or are they contained within the connector housing?** Contacts will obviously be cooler in free air.
- **Are all of the contacts in the connector under load?** If only part of the contacts are under load, the temperature rise could be less.
- **What is the defined failure?** Does the test end when the temperature rise reaches 30°C, 40°C, or some other number? Does it end when the temperature rise plus ambient temperature equal the operating limit of the connector housing? The current rating will be fixed by the defined failure point.
- **How were the test samples prepared?** Were the samples energized through a printed circuit board? How many layers? How large were the traces? What was the weight of the copper? Were the samples energized through wire? What size was the wire? How long was the wire? Was the sample tested in static or forced air conditions? All of these factors can affect cooling characteristics.

Clearly, a current rating value alone is not enough, and must be viewed in the context of the test used to develop the rating. When the test method is understood, evaluating and comparing power connectors for specific applications becomes much less of a mystery.
Tested per IEC Publication 60512-3, Test 5a

Test Detail: Curves were developed with all power contacts energized through 12 awg wire. Temperature rise was measured in the contact mating area. Test was conducted in static air.

Temperature curve developed using PCIH47M400A1 and PCIH47F9300A1 connectors and 12 AWG wire. All size 16 contacts under load.

Temperature curve developed using PCIa60W36M400A1 and PCIa60W36F9300A1 connectors and 12 AWG wire. All size 16 contacts under load.
Tested per IEC Publication 60512-3, Test 5a

Test Detail: Curves were developed with all power contacts energized through 12 awg wire. Temperature rise was measured in the contact mating area. Test was conducted in static air.

Temperature curve developed using PCIM30W15M400A1 and PCIM30W15F9300A1 connectors and 12 AWG wire. All size 16 contacts under load.

Temperature curve developed using PCIB26W11M400A1 and PCIB26W11F9300A1 connectors and 12 AWG wire. All size 16 contacts under load.
Tested per IEC Publication 60512-3, Test 5a

Test Detail: Curves were developed with all power contacts energized through 12 awg wire. Temperature rise was measured in the contact mating area. Test was conducted in static air.

Temperature curve developed using PCIC16W7M400A1 and PCIC16W7F9300A1 connectors and 12 AWG wire. All size 16 contacts under load.

AC/DC INPUT KEYING

The PCIH49W25 variant has two more contacts than the PCIH47 variant. This provides an “electrical keying” for dedicated AC and DC inputs in a single connector (see below). This prevents damage to power supplies if mechanical keying fails or is not used. **Contacts can be depopulated as creepage and clearance requirements dictate.** It is also important to note that male versions of the PCIH47 will mate to female versions of the PCIH49W25.

**Dedicated AC Input**
- Position 45 - Ground
- Positions 46, 47 - Line, Neutral
- Positions 48, 49 - Depopulated, if required.

**Dedicated DC Input**
- Position 45 - Ground (optional)
- Positions 48, 49 - D.C. Input
- Positions 46, 47 - Depopulated, if required.
MECHANICAL KEYING

Mechanical keying is valuable for applications which offer A.C. or D.C. input power supplies. Inserting a D.C. input power supply into an A.C. slot can damage the power supply. Mechanical keying prevents this.

**MATERIALS:** Nylon

**COLOR:** White

---

**MALE PLUG**

Ø2.79
[0.110]

15.39 [6.06]

---

**FEMALE PLUG**

Ø3.00
[0.118]

Flat slot allows for plug removal from female molding with screwdriver.

---

**PART NUMBER 2703-16-0-0**

To insert male plug use tool # 4311-0-0-0

**PART NUMBER 2704-26-0-0**

---

---

---

---

**NOTE:** Once keying plugs are installed, they can be removed. To change keying sequence, remove installed plugs and insert new male and female keying plugs.
The primary function of connector contact is electrical conductivity. Also, a mechanical function is required to provide normal force between male and female contacts.

In order to provide for proper mechanical characteristics, material that has good memory or "elasticity" must be chosen. This will ensure contact normal force in a coupled condition and allow for repeated coupling and uncoupling.

Unfortunately, many materials that have good memory characteristics have low electrical conductivity. For instance, beryllium copper is a good choice for mechanical function; however, some beryllium copper alloys are poor conductors and have relatively low conductivity rates.

The conductivity path of many contact designs goes directly through materials that have been chosen based on mechanical need. If these materials have a low conductivity rating, increased contact resistance will result.

Positronic Large Surface Area Contact System separates the mechanical and electrical functions. A spring retention member provides normal forces, while the electrical conductivity path is through highly conductive contact material. See above detail.

### WHY IS THE L.S.A. SYSTEM SUPERIOR?

- Separates mechanical and electrical functions for superior performance
- Low contact resistance provides minimized voltage drop across the contact
- True closed entry design prevents damage to female contacts and will not allow misaligned or bent contacts to enter
- Precision machined from solid, high conductivity copper alloy
- Stable insertion and withdrawal forces throughout repeated mating cycles
POSITRONIC
BI-SPRING POWER COMPLIANT TERMINATIONS

The Next Evolution In Compliant Technology. Fully Compliant, Fully Reliable.

Reliable, solderless connections from connectors to backplanes started with solid press-fit technology. Although these are still used today, concerns about board damage led to the use of compliant press-fit technology. This technology allows the connection to be made through compliance of the contact termination along with printed circuit board hole deformation. Although risk of damaged printed circuit boards and backplanes is lessened, damage can still occur due to relatively high insertion and extraction forces.

The next step in press-fit technology is a highly reliable connection between the contact termination and backplane that is accomplished with reduced insertion and extraction forces. This eliminates risk of printed circuit board and backplane damage. This technology exists today with Positronic Bi-Spring Power Press-Fit termination.

- Average insertion and extraction forces of size 16 contacts are 22N (5 lbs.) per contact and do not produce stresses in printed circuit boards and backplanes that can occur with higher insertion forces. These stresses can cause board warpage and hole damage.

- Connector systems utilizing Bi-Spring terminations use mounting screws to secure the connector to the printed circuit board or backplane. Stresses that occur during coupling, uncoupling or shock and vibration of systems are not transferred to the printed circuit boards or backplanes through the press-fit connection. The electrical integrity of the connector to board interface is maintained; this is particularly important in power applications. Bellcore GR1217 details a preference for mounting hardware when using press-fit terminations.

- Size 16 Bi-Spring terminations are designed to meet the performance requirements and hole diameters as listed in the internationally recognized specification IEC 60352-5.

- Lower insertion and extraction forces eliminate the need for expensive pressing equipment.

OMEGA SIGNAL LEVEL COMPLIANT TERMINATIONS

Today’s power supplies feature communication options with the host system. The power interface must have reliable signal level connections.

Positronic Omega Press-Fit terminations are the perfect solderless connection companion to the Bi-Spring Power Press-Fit terminations.
The Compact Power Connector Series design allows for the development of application specific contact arrangements in a timely manner and at a reasonable price. After reviewing the following basic information, contact Technical Sales with your current, voltage, and safety requirements. We look forward to working with you to develop a connector for your specific needs.

**BASIC CONNECTOR DIMENSIONS**

**RIGHT ANGLE (90º) BOARD MOUNT CONNECTOR**

**MALE CONNECTOR**

- 12.54 [0.494] REF.

**FEMALE CONNECTOR**

- 17.49 [0.689] REF.

**STRAIGHT BOARD MOUNT CONNECTOR**

**MALE CONNECTOR**

- 18.51 [0.729] REF.

**FEMALE CONNECTOR**

- 18.71 [0.736] REF.

**FOUR CONTACT SIZES TO CHOOSE FROM**

- Ø2.39 [0.094]
- Ø1.588 [0.0625]
- Ø1.02 [0.040]
- Ø0.76 [0.030]

**MANY TERMINATION TYPES CAN BE SUPPLIED**

- Straight Solder or Compliant Press-Fit
- Right Angle (90º) Solder
- Crimp Removable
- Different termination types can be mixed within a single connector

**POPULAR OPTIONS**

- Sequential Mating
- Recessed Female Contacts
- Selective Loading

**DIMENSIONS ARE IN MILLIMETERS [INCHES]. ALL DIMENSIONS ARE SUBJECT TO CHANGE.**
Why Pay For More Than You Need?

The current carrying capability of the Compact Power Connector is considerable. In many applications a customer may be paying for unused capacity if a fully loaded connector is used. Connectors are available with fewer power contacts loaded to allow for a cost savings.

The **PICMG® 2.11 Power Interface Specification** allows for three loading options of male contact, right angle (90°), free board connectors. Female contact fixed board connectors may not be selectively loaded. Consult PICMG 2.11 for details.

<table>
<thead>
<tr>
<th>Output Contact Position Loaded*†</th>
<th>Total Output Contacts*†</th>
<th>Positronic Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1: 1,3,4,5,6,7,8,9,11,</td>
<td>16</td>
<td>PCIH47M400A1-259.2</td>
</tr>
<tr>
<td>12,13,15,16,17,19,20</td>
<td></td>
<td>PCIH47M400A1-259.0</td>
</tr>
<tr>
<td>Option 2: 1,4,5,8,9,12,13,16,</td>
<td>10</td>
<td>PCIH47M400A1-259.1</td>
</tr>
<tr>
<td>19,20</td>
<td></td>
<td>PCIH47M400A1-259.1</td>
</tr>
<tr>
<td>Option 3: 1,5,9,13,19,20</td>
<td>6</td>
<td>PCIH47M400A1-259.1</td>
</tr>
</tbody>
</table>

*†All input and signal contact positions are loaded.

Additional savings can be gained when female contact connectors are supplied selectively loaded for applications not specific to PICMG® 2.11.

---

**PCI INVERTED TERMINATION OPTIONS**

**FEMALE CONNECTORS**  
Available in  
PCIH, PCIA, PCIM, PCIB, PCIC

**MALE CONNECTORS**  
Available in  
PCIH, PCIM, PCIB, PCIC

**Typical Part Number for Inverted Termination:**  
PCIH38RM400A1  
PCIH38RF400A1

**Typical Standard Part Number:**  
PCIH38F400A1  
PCIH38M400A1

Inverted termination options allow flexibility in positioning the connector as best suited for specific applications.
The PCIH series was developed specifically for use with CompactPCI® in-rack modular power supplies. The package size is ideal for use in all 3U and 6U based platforms. The PCIH series is an excellent choice in IEEE 1101.1, IEEE 1101.10, and VITA 30 applications where system power requirements have exceeded the capabilities of commonly used power connectors.

The PCIH47 variant is fully compliant to the PICMG® 2.11 Power Interface Specification. This Specification details standardized power for use with CompactPCI® systems. Visit www.picmg.com for details.

**PCIH SERIES CONTACT VARIANTS**

**FACE VIEW OF MALE AND REAR VIEW OF FEMALE**

**PCIH38 VARIANT**
23 Size 16 Power Contacts and 15 Size 20 Signal Contacts

**PCIH38R VARIANT** (Inverted Termination)
23 Size 16 Power Contacts and 15 Size 20 Signal Contacts

**PCIH47 VARIANT**
23 Size 16 Power Contacts and 24 Size 22 Signal Contacts

**PCIH47R VARIANT** (Inverted Termination)
23 Size 16 Power Contacts and 24 Size 22 Signal Contacts

**PCIH49W25 VARIANT**
25 Size 16 Power Contacts and 24 Size 22 Signal Contacts

**PCIH49W25R VARIANT**
25 Size 16 Power Contacts and 24 Size 22 Signal Contacts

Visit our website for the latest catalog updates and supplements at www.connectpositronic.com/pci/catalog
MATERIALS AND FINISHES:

Insulator: Glass-filled polyester, UL 94V-0, blue color.


Plating: Gold flash over nickel. Other plating options available, refer to Step 7 on page 36.

Mounting Screws: Steel, zinc plated.

ELECTRICAL CHARACTERISTICS:

PCIH Contact Current Ratings, per UL 1977
See Temperature Rise Curves on page 4 for details.

PCIH38:

PCIH47:

PCIH49:

MECHANICAL CHARACTERISTICS:

Blind Mating System: Male and female connector bodies provide "lead-in" for 1.3 mm [0.050 inch] diametral misalignment.

Polarization: Provided by connector body design.

Removable Contacts: Install contact from rear of insulator; release from front of insulator. Size 16, 20 and 22 female contacts feature "Closed Entry" design for highest reliability. "Closed Entry" contacts available, consult Technical Sales.

Removable Contact Retention in Connector Body:
- Size 16 Contacts: 67 N [15 lbs.]
- Size 20 Contacts: 45 N [10 lbs.]
- Size 22 Contacts: 27 N [6 lbs.]

Fixed Contacts: Printed board terminations, both straight and right angle (90°). Size 16 female contacts feature "Closed Entry" design. Size 20 and 22 feature rugged "Open Entry" contact design. "Closed Entry" contacts available, consult Technical Sales.
Fixed Contact Retention in Connector Body:
- Size 16 Contacts: 45 N [10 lbs.]
- Size 20 and 22 Contacts: 27 N [6 lbs.]

Resistance to Solder Heat: 260˚C [500˚F] for 10 seconds duration per IEC 60512-6, Test 12a, 25-watt soldering iron.

Sequential Contact Mating System:
- PCIH38: First mate contact 36 and last mate contact positions 22, 25 and 28.
- PCIH47 and PCIH49 with MOS: First mate contact 45 and last mate contact position 27.
  Consult Technical Sales for customer specified sequential mating.

Safety “Recessed in Insulator” Contacts:
- PCIH38: Contact positions 37 and 38.
- PCIH47 and PCIH49 with MOS: Contact positions 46 and 47.

Compliant Terminations: Size 16, 20 and 22 contacts are available with compliant contact terminations. Average insertion and extraction forces of size 16 contacts are 22N [5 lbs.] per contact.

Printed Board and Panel Mounting: Mounting holes provided in connector body for both printed board and panel mounting. Self-tapping screws are available.

Mechanical Operations: 250 couplings, minimum.

CLIMATIC CHARACTERISTICS:
- Working Temperature: -55˚C to +125˚C.

UL Recognized File #E49351
CSA Recognized File #LR54219
TUV Recognized File #215/99
PCIH CONNECTOR OUTLINE DIMENSIONS

RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR

MALE CONNECTOR

FEMALE CONNECTOR

STRAIGHT BOARD MOUNT CONNECTOR

MALE CONNECTOR

FEMALE CONNECTOR

PCIH CONNECTOR MATING DIMENSIONS

(FULLY MATED)

Straight Board Mount Male to Straight Board Mount or Panel Mount Female

Straight Board Mount Male to Right Angle (90°) Board Mount Female

Right Angle (90°) Board Mount Male to Straight Board Mount or Panel Mount Female

Right Angle (90°) Board Mount Male to Right Angle (90°) Board Mount Female

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
FEMALE STRAIGHT SOLDER CONNECTOR
CODE 3
STANDARD PART NUMBER
PCIH38F300A1

CONTACT HOLE PATTERN

CONNECTOR DIMENSIONS

Note: See below for suggested printed board hole sizes.

FEMALE STRAIGHT SOLDER CONNECTOR WITH A.C. PASS-THROUGH
CODE 3 WITH MOS** -245.0
CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

HIGH PROFILE PART NUMBER
PCIH38F300A1-245.0

** For MOS descriptions, see chart on pages 107-108.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.00 [0.039] holes for size 20 and size 22 contact holes.
Suggest Ø1.60 [0.063] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.
FEMALE STRAIGHT SOLDER CONNECTOR WITH A.C. PASS-THROUGH
CODE 3 WITH MOS\(^*\) -246.1
CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

LOW PROFILE PART NUMBER
PCIH38F300A1-246.1

\(^*\) For MOS descriptions, see chart on pages 107-108.

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.00 [0.039] holes for size 20 and size 22 contact holes.
Suggest Ø1.60 [0.063] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
FEMALE STRAIGHT SOLDER CONNECTOR WITH A.C. PASS-THROUGH
CODE 3 WITH MOS* -246.0
CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

LOW PROFILE PART NUMBER
PCIH47F300A1-246.0

*C For MOS descriptions, see chart on pages 107-108.

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.00 [0.039] holes for size 20 and size 22 contact holes.
Suggest Ø1.60 [0.063] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

FEMALE STRAIGHT SOLDER CONNECTOR WITH A.C. PASS-THROUGH
CODE 3 WITH MOS* -246.3
CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

LOW PROFILE PART NUMBER
PCIH49W25F300A1-246.3

*C For MOS descriptions, see chart on pages 107-108.

Note: See below for suggested printed board hole sizes.
FEMALE STRAIGHT SOLDER CONNECTOR
CODE 3 WITH MOS* -379.0

STANDARD PART NUMBER
PCIH49W25F300A1-379.0

CONTACT HOLE PATTERN

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.00 [0.039] holes for size 20 and size 22 contact holes.
Suggest Ø1.60 [0.063] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
MALE STRAIGHT SOLDER CONNECTOR
CODE 3
STANDARD PART NUMBER
PCIH38M300A1

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.00 [0.039] holes for size 20 and size 22 contact holes.
Suggest Ø1.60 [0.063] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
MALE STRAIGHT SOLDER CONNECTOR
CODE 3 WITH MOS* -378.0

STANDARD PART NUMBER
PCIH49W25M300A1-378.0

*S For MOS descriptions, see chart on pages 107-108.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.00 [0.039] holes for size 20 and size 22 contact holes.
Suggest Ø1.60 [0.063] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

CONNECTOR DIMENSIONS

DIMENSIONS ARE IN MILLIMETERS (INCHES).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
FEMALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4
STANDARD PART NUMBER
PCIH38F400A1

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 [0.045] holes for size 20 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
FEMALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR

CODE 4

STANDARD PART NUMBER

PCIH47F400A1

CONNECTOR DIMENSIONS

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:

Suggest Ø1.14 [0.045] holes for size 22 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.
FEMALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR WITH A.C. PASS-THROUGH
CODE 4 WITH MOS* -246.4
CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

STANDARD PART NUMBER
PCIH47F400A1-246.4

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

FEMALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR WITH A.C. PASS-THROUGH
CODE 4 WITH MOS* -246.4
CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

PART NUMBER FOR INVERTED TERMINATION
PCIH47RF400A1-246.4

CONTACT HOLE PATTERN

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 [0.045] holes for size 22 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
FEMALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4 WITH MOS* -379.0

STANDARD PART NUMBER
PCIH49W25F400A1-379.0

CONTACT HOLE PATTERN

CONNECTOR DIMENSIONS

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 [0.045] holes for size 22 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

DIMENSIONS ARE IN MILLIMETERS [INCHES]. ALL DIMENSIONS ARE SUBJECT TO CHANGE.
RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR, MALE

MALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4
STANDARD PART NUMBER
PCIH38M400A1

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 [0.045] holes for size 20 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.
MALE RIGHT ANGLE (90º) BOARD MOUNT CONNECTOR

STANDARD PART NUMBER
PCIH47M400A1

CONNECTOR DIMENSIONS

Note: See below for suggested printed board hole sizes.

MALE RIGHT ANGLE (90º) BOARD MOUNT CONNECTOR

PART NUMBER FOR INVERTED TERMINATION
PCIH47RM400A1

CONNECTOR DIMENSIONS

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 [0.045] holes for size 22 contact holes.
Suggest Ø 2.03 [0.080] holes for size 16 contact holes.
Suggest Ø 3.56±0.08 [0.140±0.003] holes for connector mounting holes.
MALE RIGHT ANGLE (90º) BOARD MOUNT CONNECTOR
CODE 4 WITH MOS*1-378.0

STANDARD PART NUMBER
PCIH49W25M400A1-378.0

CONTACT HOLE PATTERN

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 [0.045] holes for size 20 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

*1 For MOS descriptions, see chart on pages 107-108.
FEMALE PANEL MOUNT CRIMP CONTACT CONNECTORS
CODE 8
CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

STANDARD PART NUMBER
PCIH47F8000

CONNECTOR DIMENSIONS

For information regarding removable contacts, see Removable Contact section, pages 102-103.
FEMALE COMPLIANT PRESS-FIT CONNECTOR CODE 93 OR 94

STANDARD PART NUMBER
PCIH38F9300A1
PCIH38F9400A1

CONTACT TAIL LENGTH

<table>
<thead>
<tr>
<th>Code</th>
<th>&quot;L&quot; Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

FEMALE COMPLIANT PRESS-FIT CONNECTOR WITH A.C. PASS-THROUGH
CODE 93 OR 94 WITH MOS** -245.0
CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

HIGH PROFILE PART NUMBER
PCIH38F9300A1-245.0
PCIH38F9400A1-245.0

CONTACT TAIL LENGTH

<table>
<thead>
<tr>
<th>Code</th>
<th>&quot;L&quot; Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

DIMENSIONS ARE IN MILLIMETERS [INCHES]. ALL DIMENSIONS ARE SUBJECT TO CHANGE.
FEMALE COMPLIANT PRESS-FIT CONNECTOR WITH A.C. PASS-THROUGH
CODE 93 OR 94 WITH MOS*1-246.1
CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

LOW PROFILE PART NUMBER
PCIH38F9300A1-246.1
PCIH38F9400A1-246.1

POSITRONIC RECOMMENDS the practice of using mounting hardware to secure connector to printed circuit board.

CONTACT DIMENSIONS

CONTACT TAIL LENGTH

<table>
<thead>
<tr>
<th>Code</th>
<th>&quot;L&quot; Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[0.175 min.]</td>
</tr>
</tbody>
</table>

CONTACT TAIL LENGTH

<table>
<thead>
<tr>
<th>Code</th>
<th>&quot;L&quot; Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[0.175 min.]</td>
</tr>
</tbody>
</table>

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest 03.56±0.08 [0.140±0.003] holes for connector mounting holes.

NOTE: See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions.

For press-fit connector installation tools, see pages 105-106.

For mounting screw options, see page 105.
FEMALE COMPLIANT PRESS-FIT CONNECTOR WITH A.C. PASS-THROUGH
CODE 93 OR 94 WITH MOS\(^*\) - 246.0
CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

** For MOS descriptions, see chart on pages 107-108.

24X Size 22 Omega Style Press-fit Contacts
20X Size 16 Bi-Spring Style Press-Fit Contacts
44X "L" (see below)
2X Size 16 Contacts
5 mm Recess

CONTACT TAIL LENGTH

<table>
<thead>
<tr>
<th>Code</th>
<th>&quot;L&quot; Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

MINIMUM A.C. PASS-THROUGH Holes

37.70 [1.484]
32.65 [1.285]
27.60 [1.087]
2.70 [0.106]
9X 4.20 [0.165]
0.20 [0.008]
7X 2.70 [0.106]
2X 2.125 [0.0837]
4.10 [0.161]
4.25 [0.167]

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes, press-fit connector installation tools, and mounting screw options.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

NOTE: See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions. For press-fit connector installation tools, see pages 105-106. For mounting screw options, see page 105.

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
FEMALE COMPLIANT PRESS-FIT CONNECTOR
CODE 93 OR 94 WITH MOS*1 -379.0

STANDARD PART NUMBER
PCIH49W25F9300A1-379.0
PCIH49W25F9400A1-379.0

CONTACT TAIL LENGTH

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

NOTE: See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions.
For press-fit connector installation tools, see pages 105-106.
For mounting screw options, see page 105.

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

*1 For MOS descriptions, see chart on pages 107-108.
MALE COMPLIANT PRESS-FIT CONNECTOR

**CODE 93 OR 94**

**STANDARD PART NUMBER**
PCIH38M9300A1
PCIH38M9400A1

**CONTACT TAIL LENGTH**

<table>
<thead>
<tr>
<th>Code</th>
<th>&quot;L&quot; Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

**CONTACT HOLE PATTERN**

*Note: See below for suggested printed board hole sizes, press-fit connector installation tools, and mounting screw options.*

---

**MALE COMPLIANT PRESS-FIT CONNECTOR**

**CODE 93 OR 94**

**STANDARD PART NUMBER**
PCIH47M9300A1
PCIH47M9400A1

**CONTACT TAIL LENGTH**

<table>
<thead>
<tr>
<th>Code</th>
<th>&quot;L&quot; Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

**CONTACT HOLE PATTERN**

*Note: See below for suggested printed board hole sizes, press-fit connector installation tools, and mounting screw options.*

---

**SUGGESTED PRINTED BOARD HOLE SIZES:**
Suggest 03.56±0.08 [0.140±0.003] holes for connector mounting holes.

*Note: See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions.*

For press-fit connector installation tools, see pages 105-106.

For mounting screw options, see page 105.

---

**DIMENSIONS ARE IN MILLIMETERS [INCHES].**
**ALL DIMENSIONS ARE SUBJECT TO CHANGE.**
MALE COMPLIANT PRESS-FIT CONNECTOR
CODE 93 OR 94 WITH MOS*1 -378.0

STANDARD PART NUMBER
PCIH49W25M9300A1-378.0
PCIH49W25M9400A1-378.0

CONTACT TAIL LENGTH

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[0.175 min.]</td>
</tr>
</tbody>
</table>

CONTACT HOLE PATTERN

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

NOTE: See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions.
For press-fit connector installation tools, see pages 105-106.
For mounting screw options, see page 105.
## ORDERING INFORMATION - CODE NUMBERING SYSTEM

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

<table>
<thead>
<tr>
<th>STEP</th>
<th>EXAMPLE</th>
<th>CODE</th>
<th>NUMBERING</th>
<th>CODE</th>
<th>NUMBERING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PCIH</td>
<td>47</td>
<td>F</td>
<td>93</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A1</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>/AA</td>
</tr>
</tbody>
</table>

### STEP 1 - BASIC SERIES
- PCIH - PCIH Series

### STEP 2 - CONNECTOR VARIANTS
- **38** - 23 size 16 contacts and 15 size 20 contacts
- **38R** - 23 size 16 contacts and 15 size 20 contacts inverted termination style, use with contact type "4"
- **47** - 23 size 16 contacts and 24 size 22 contacts
- **47R** - 23 size 16 contacts and 24 size 22 contacts inverted termination style, use with contact type "4"
- **49W25** - 25 size 16 contacts and 24 size 22 contacts
- **49W25R** - 25 size 16 contacts and 24 size 22 contacts inverted termination style, use with contact type "4"

### STEP 3 - CONNECTOR GENDER
- **F** - Female
- **M** - Male

### STEP 4 - CONTACT TERMINATION TYPE
- **3** - Solder, Straight Printed Board Mount with 4.50 [0.177] tail extension for connection systems 1 and 2.
- **4** - Solder, Right Angle (90º) Printed Board Mount with 2.68 [0.106] tail extension for connection systems 1, 2, 3 and 4.
- **B** - Contacts must be ordered separately for Panel Mount Cable Connectors, connection system 3, see pages 102-103. Female connector only.
- **93** - Press-Fit, Compliant Termination size 16 and size 20 or size 22 Straight Printed Board Mount for use with board thicknesses of 2.29 to 4.45 [0.090 to 0.175]. Connection systems 1 and 2.
- **94** - Press-Fit, Compliant Termination size 16 and size 20 or size 22 Straight Printed Board Mount for use with board thickness of 4.45 minimum [0.175 minimum]. Connection systems 1 and 2.

### STEP 5 - MOUNTING STYLE
- **0** - Not Applicable
- See page 105 for mounting screw options.

### STEP 6 - HOODS
- **0** - Not applicable

### STEP 8 - CONTACT PLATING FOR PRINTED BOARD TYPE 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 5.00µ [0.00020 inch] tin-lead solder coat on termination end. Not available with code 93 or code 94 in step 4.
- **C1** - 0.76µ [0.000030 inch] gold over nickel on mating end and termination end.
- **C2** - 0.76µ [0.000030 inch] gold over nickel on mating end and 5.00µ [0.00020 inch] tin-lead solder coat on termination end. Not available with code 93 or code 94 in step 4.
- **D1** - 1.27µ [0.000050 inch] gold over nickel on mating end and termination end.
- **D2** - 1.27µ [0.000050 inch] gold over nickel on mating end and 5.00µ [0.00020 inch] tin-lead solder coat on termination end. Not available with code 93 or code 94 in step 4.

### STEP 10 - SPECIAL OPTIONS
- *For listing of special options, see Special Options Appendix on Pages 107-108.*

### STEP 11 - ENVIRONMENTAL COMPLIANCE OPTIONS
- **/AA** - RoHS Compliant

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

Example: PCIH47F9300A1

---

**NOTE:** If you would like a 2D drawing or 3D model, once you’ve made your connector selection, please visit www.connectpositronic.com.

If you can’t find your specific part number on our web site, contact Technical Sales to have one created.
The PCIA Series encompasses all of the features of the PCIH Series and provides greater input and output current capacity in a slightly larger package. The package size is suitable for 6U and larger based systems or in systems which do not conform to a particular standard. Reliability, high current capacity and many system management connections make the PCIA Series ideal for higher wattage power supplies which are used in telecom, computer, information systems and industrial applications.

**PCIA SERIES CONTACT VARIANTS**

**FACE VIEW OF MALE AND REAR VIEW OF FEMALE**

**PCIA60W36 VARIANT**

36 Size 16 Power Contacts and 24 Size 22 Signal Contacts

**PCIA60W36R VARIANT (Inverted Termination)**

36 Size 16 Power Contacts and 24 Size 22 Signal Contacts

Currently available in female only, use with contact type 4.
MATERIALS AND FINISHES:
Insulator: Glass-filled polyester, UL 94V-0, blue color.
Plating: Gold flash over nickel. Other plating options available, refer to Step 7 on page 45.
Mounting Screws: Steel, zinc plated.

MECHANICAL CHARACTERISTICS:
Blind Mating System: Male and female connector bodies provide “lead-in” for 1.3mm [0.050 inch] diametral misalignment.
Polarization: Provided by connector body design.
Removable Contacts: Install contact from rear of insulator; release from front of insulator. Size 16 and 22 female contacts feature “Closed Entry” design for highest reliability.
Removable Contact Retention in Connector Body:
Size 16 Contacts: 67 N [15 lbs.]
Size 22 Contacts: 27 N [6 lbs.]
Fixed Contacts: Printed board terminations, both straight and right angle (90°). Size 16 female contacts feature “Closed Entry” design. Size 22 feature rugged “Open Entry” contact design. “Closed Entry” contacts available, consult Technical Sales.
Fixed Contact Retention in Connector Body:
Size 16 Contacts: 45 N [10 lbs.]
Size 22 Contacts: 27 N [6 lbs.]
Resistance to Solder Heat: 260°C [500°F] for 10 seconds duration per IEC 60512-6, Test 12a, 25-watt soldering iron.
Sequential Contact Mating System:
PCIA60W36: First mate contacts 55 and 56 and last mate contact position 37.
Consult Technical Sales for customer specified sequential mating.
Safety “Recessed in Insulator” Contacts: The following size 16 contacts are recessed 5mm [0.197 inch] below the face of the female connector insulator for safety requirements.
PCIA60W36: Contact positions 57 through 60. Size 16 and 22 contacts are available with compliant contact terminations. Average insertion and extraction forces of size 16 contacts are 22N (5 lbs.) per contact.
Printed Board Mounting: Mounting holes provided in connector body for printed board mounting. Self-tapping screws are available.
Mechanical Operations: 250 couplings, minimum.

ELECTRICAL CHARACTERISTICS:
PCIA Contact Current Ratings, per UL 1977
See Temperature Rise Curves on page 4 for details.
Size 16 Power Contacts:
Positions 55 through 60: 38 amperes continuous, all contacts under load.
Positions 1 through 30: 28 amperes continuous, all contacts under load.
Size 22 Signal Contacts:
Initial Contact Resistance:
Size 16 Contact: 0.0007 ohms maximum.
Size 22 Contact: 0.005 ohms maximum.
Per IEC 60512-2, Test 2b.
Insulation Resistance: 5 G ohms per IEC 60512-2, Test 3a.
Voltage Proof:
PCIA60W36:
Contacts 55 through 60: 3,000 V r.m.s.
Contacts 1 through 30: 1,500 V r.m.s.
Contacts 31 through 54: 1,000 V r.m.s.
Creepage and Clearance Distance; minimum:
PCIA60W36:
Contacts 59 and 60 to Contacts 55 and 56: 3.2mm [0.126 inch]
Contacts 57 and 58 to Contacts 55 and 56: 3.2mm [0.126 inch]
Contacts 55 and 56 to Signal Contacts: 6.4mm [0.252 inch]
Contacts 57 and 58 to Signal Contacts: 6.4mm [0.252 inch]
Contacts 59 and 60 to Contacts 57 and 58: 2.5mm [0.098 inch]
Contacts 55 and 56 to Signal Contacts: 2.0mm [0.079 inch]
Working Voltage:
PCIA60W36:
Contacts 55 through 60: 1,000 V r.m.s.
Contacts 1 through 30: 500 V r.m.s.
Contacts 31 through 54: 333 V r.m.s.

CLIMATIC CHARACTERISTICS:
Working Temperature: -55°C to +125°C.
UL Recognized File #E49351
CSA Recognized File #LR54219
PCIA CONNECTOR OUTLINE DIMENSIONS

RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR

MALE CONNECTOR

FEMALE CONNECTOR

STRAIGHT BOARD MOUNT CONNECTOR

MALE CONNECTOR

FEMALE CONNECTOR

PCIA CONNECTOR MATING DIMENSIONS (FULLY MATED)

Straight Board Mount Male to Straight Board Mount or Panel Mount Female

Straight Board Mount Male to Right Angle (90°) Board Mount Female

Right Angle (90°) Board Mount Male to Straight Board Mount or Panel Mount Female

Right Angle (90°) Board Mount Male to Right Angle (90°) Board Mount Female

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

See page 43 for panel mount connector dimensions.
FEMALE STRAIGHT SOLDER CONNECTOR
CODE 3
STANDARD PART NUMBER
PCIA60W36F300A1

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

MALE STRAIGHT SOLDER CONNECTOR
CODE 3
STANDARD PART NUMBER
PCIA60W36M300A1

CONTACT HOLE PATTERN

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.00 [0.039] holes for size 22 contact holes.
Suggest Ø1.60 [0.063] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.
FEMALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR

CODE 4

STANDARD PART NUMBER

PCIA60W36F400A1

CONNECTOR DIMENSIONS

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:

Suggest Ø1.14 ±0.045 holes for size 22 contact holes.
Suggest Ø2.03 ±0.080 holes for size 16 contact holes.
Suggest Ø3.56 ±0.080 ±0.003 holes for connector mounting holes.
MALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4
STANDARD PART NUMBER
PCIA60W36M400A1

CONNECTOR DIMENSIONS

CONTACT HOLE PATTERN

SUGGESTED PRINTED BOARD HOLE SIZES:
- Suggest Ø1.14 [0.045] holes for size 22 contact holes.
- Suggest Ø2.03 [0.080] holes for size 16 contact holes.
- Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.
FEMALE PANEL MOUNT CRIMP CONTACT CONNECTOR
CODE 8
CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

STANDARD PART NUMBER
PCIA60W36F8000

CONNECTOR DIMENSIONS

PANEL CUT OUT

For information regarding removable contacts, see Removable Contact section, pages 102-103.
**FEMALE COMPLIANT PRESS-FIT CONNECTOR**

**CODE 93 OR 94**

**STANDARD PART NUMBER**
- PCIA60W36F9300A1
- PCIA60W36F9400A1

**CONTACT HOLE PATTERN**

**CONTACT TAIL LENGTH**

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

**MALE COMPLIANT PRESS-FIT CONNECTOR**

**CODE 93 OR 94**

**STANDARD PART NUMBER**
- PCIA60W36M9300A1
- PCIA60W36M9400A1

**CONTACT HOLE PATTERN**

**CONTACT TAIL LENGTH**

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

**SUGGESTED PRINTED BOARD HOLE SIZES:**

Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

**NOTE:** See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions. For press-fit connector installation tools, see pages 105-106. For mounting screw options, see page 105.
ORDERING INFORMATION - CODE NUMBERING SYSTEM
Specify Complete Connector By Selecting An Option From Step 1 Through 7

STEP 1 - BASIC SERIES
PCIA - PCIA Series

STEP 2 - CONNECTOR VARIANTS
60W36  -  36 size 16 contacts and 24 size 22 contacts
60W36R - 36 size 16 contacts and 24 size 22 contacts. Inverted termination style, use with contact Type “4”. Currently available in female only.

STEP 3 - CONNECTOR GENDER
F - Female
M - Male

STEP 4 - CONTACT TERMINATION TYPE
3 - Solder, Straight Printed Board Mount with 4.50 [0.177] tail extension for connection system 1.
4 - Solder, Right Angle (90º) Printed Board Mount with 2.68 [0.106] tail extension for connection systems 1, 3 and 4.
8 - Contacts must be ordered separately for Panel Mount Cable Connectors, connection system 3, see pages 102-103. Female connector only.
93 - Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thickness of 2.29 to 4.45 [0.090 to 0.175]. Connection system 1.
94 - Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thickness of 4.45 minimum [0.175 minimum]. Connection system 1.

STEP 5 - MOUNTING STYLE
0 - Not Applicable
See page 105 for mounting screw options.

STEP 6 - HOODS
0 - Not applicable

STEP 7 - CONTACT PLATING FOR PRINTED BOARD TYPE CONNECTORS

STEP 8 - ENVIRONMENTAL COMPLIANCE OPTIONS
/AA - RoHS Compliant
NOTE: If compliance to environmental legislation is not required, this step will not be used. Example: PCIA60W36M9300A1

STEP 9 - SPECIAL OPTIONS
FOR LISTING OF SPECIAL OPTIONS, SEE SPECIAL OPTIONS APPENDIX ON PAGES 107-108.

NOTE: If you would like a 2D drawing or 3D model, once you’ve made your connector selection, please visit www.connectpositronic.com. If you can’t find your specific part number on our web site, contact Technical Sales to have one created.

DIMENSIONS ARE IN MILLIMETERS [INCHES]. ALL DIMENSIONS ARE SUBJECT TO CHANGE.
The PCIM Series encompasses all of the features of the PCIH Series in a smaller package. Reliability, high current capacity and many system management connections make the PCIM Series ideal for use in telecom, computer, information systems and industrial applications.

PCIM SERIES CONTACT VARIANTS
FACE VIEW OF MALE AND REAR VIEW OF FEMALE

PCIM30W15 VARIANT
15 Size 16 Power Contacts and 15 Size 22 Signal Contacts

PCIM30W15R VARIANT (Inverted Termination)

PCIM33W18 VARIANT
18 Size 16 Power Contacts and 15 Size 22 Signal Contacts

PCIM33W18R VARIANT (Inverted Termination)

PCIM34W13 VARIANT
13 Size 16 Power Contacts and 21 Size 22 Signal Contacts

PCIM34W13R VARIANT (Inverted Termination)

PCIM37W16 VARIANT
16 Size 16 Power Contacts and 21 Size 22 Signal Contacts

PCIM37W16R VARIANT (Inverted Termination)
MATERIALS AND FINISHES:
Insulator: Glass-filled polyester, UL 94V-0, blue color.
Contacts: Size 16 contacts: High conductivity precision-machined copper alloy, Size 22 contacts: Precision-machined copper alloy
Plating: Gold flash over nickel. Other plating options available, refer to Step 7 on page 70.
Mounting Screws: Steel, zinc plated.

ELECTRICAL CHARACTERISTICS:
PCIM Contact Current Ratings, per UL 1977
See Temperature Rise Curves on page 5 for details.

**PCIM30W15:**
- Size 16 Power Contacts: 45 amperes continuous, all contacts under load.
- Positions 1 through 12: 32 amperes continuous, all contacts under load.
- Size 22 Signal Contacts: 3 amperes nominal rating.

**PCIM33W18:**
- Size 16 Power Contacts: 30 amperes continuous, all contacts under load.
- Positions 1 through 10: 25 amperes continuous, all contacts under load.
- Size 22 Signal Contacts: 3 amperes nominal rating.

**PCIM34W13:**
- Size 16 Power Contacts: 45 amperes continuous, all contacts under load.
- Positions 1 through 10: 32 amperes continuous, all contacts under load.
- Size 22 Signal Contacts: 3 amperes nominal rating.

**PCIM37W16:**
- Size 16 Power Contacts: 30 amperes continuous, all contacts under load.
- Positions 1 through 10: 25 amperes continuous, all contacts under load.
- Size 22 Signal Contacts: 3 amperes nominal rating.

Initial Contact Resistance:
- Size 16 Contact: 0.0007 ohms maximum.
- Size 22 Contact: 0.005 ohms maximum.

Insulation Resistance:
5 G ohms per IEC 60512-2, Test 3a.

Voltage Proof:
- **PCIM30W15:**
  - Contacts 28, 29, and 30: 3,000 V r.m.s.
  - Contacts 1 through 12: 1,500 V r.m.s.
  - Contacts 13 through 27: 1,000 V r.m.s.

- **PCIM33W18:**
  - Contacts 1 through 12 and 28 through 33: 1,500 V r.m.s.
  - Contacts 13 through 27: 1,000 V r.m.s.

- **PCIM34W13:**
  - Contacts 32, 33, and 34: 3,000 V r.m.s.
  - Contacts 1 through 10: 1,500 V r.m.s.
  - Contacts 11 through 31: 1,000 V r.m.s.

- **PCIM37W16:**
  - Contacts 1 through 10 and 32 through 37: 1,500 V r.m.s.
  - Contacts 11 through 31: 1,000 V r.m.s.

Creepage and Clearance Distance; minimum:
- **PCIM30W15:**
  - Contact 30 to Contact 28: 3.2mm [0.126 inch]
  - Contact 29 to Contact 28: 3.2mm [0.126 inch]
  - Contact 30 to Signal Contacts: 6.4mm [0.252 inch]
  - Contact 29 to Signal Contacts: 6.4mm [0.252 inch]

- **PCIM33W18:**
  - Contact 28 to Signal Contacts: 2.0mm [0.079 inch]

- **PCIM34W13:**
  - Contact 32 to Signal Contacts: 2.0mm [0.079 inch]

- **PCIM37W16:**
  - Contact 32 to Signal Contacts: 2.0mm [0.079 inch]

Working Voltage:
- **PCIM30W15:**
  - Contacts 28 through 30: 1,000 V r.m.s.
  - Contacts 1 through 12: 500 V r.m.s.
  - Contacts 13 through 27: 333 V r.m.s.

- **PCIM33W18:**
  - Contacts 1 through 12 and 28 through 33: 500 V r.m.s.
  - Contacts 13 through 27: 333 V r.m.s.

- **PCIM34W13:**
  - Contacts 32 through 34: 1,000 V r.m.s.
  - Contacts 1 through 10: 500 V r.m.s.
  - Contacts 11 through 31: 333 V r.m.s.

- **PCIM37W16:**
  - Contacts 1 through 12 and 32 through 37: 500 V r.m.s.
  - Contacts 13 through 31: 333 V r.m.s.

MECHANICAL CHARACTERISTICS:
Blind Mating System:
Male and female connector bodies provide “lead-in” for 1.3mm [0.050 inch] diametral misalignment.

Polarization:
Provided by connector body design.

Removable Contacts:
Install contact from rear of insulator; release from front of insulator. Size 16 and 22 female contacts feature “Closed Entry” design for highest reliability.

Removable Contact Retention in Connector Body:
- **Size 16 Contacts:** 67 N [15 lbs.]
- **Size 22 Contacts:** 27 N [6 lbs.]

Fixed Contacts:
Printed board terminations, both straight and right angle (90°). Size 16 female contacts feature “Closed Entry” design. Size 22 feature rugged “Open Entry” contact design. “Closed Entry” contacts available, consult Technical Sales.
Fixed Contact Retention in Connector Body:
- Size 16 Contacts: 45 N [10 lbs.]
- Size 22 Contacts: 27 N [6 lbs.]

Resistance to Solder Heat: 260˚C [500˚F] for 10 seconds duration per IEC 60512-6, Test 12e, 25-watt soldering iron.

Sequential Contact Mating System:
- **PCIM30W15:** First mate contact 28 and last mate contact position 13.
- **PCIM33W18:** Last mate contact position 13.
- **PCIM34W13:** First mate contact 32 and last mate contact position 17.
- **PCIM37W16:** Last mate contact position 17.

Consult Technical Sales for customer specified sequential mating.

Safety “Recessed in Insulator” Contacts:
- **PCIM30W15:** Contact positions 29 and 30.
- **PCIM33W18:** None
- **PCIM34W13:** Contact positions 33 and 34.
- **PCIM37W16:** None

Compliant Terminations: Size 16 and 22 contacts are available with compliant contact terminations. Average insertion and extraction forces of size 16 contacts are 22N (5 lbs.) per contact.

Printed Board Mounting: Mounting holes provided in connector body for printed board mounting. Self-tapping screws are available.

Mechanical Operations: 250 couplings, minimum.

CLIMATIC CHARACTERISTICS:
- **Working Temperature:** -55˚C to +125˚C.

UL Recognized File #E49351
CSA Recognized File #LR54219
PCIM CONNECTOR OUTLINE DIMENSIONS

RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR

FEMALE CONNECTOR

MALE CONNECTOR

STRAIGHT BOARD MOUNT CONNECTOR

FEMALE CONNECTOR

PCIM CONNECTOR MATING DIMENSIONS

(FULLY MATED)

Right Angle (90°) Board Mount Male to Straight Board Mount or Panel Mount Female

Right Angle (90°) Board Mount Male to Right Angle (90°) Board Mount Female

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

SEE PAGES 63 AND 64 FOR PANEL MOUNT CONNECTOR DIMENSIONS.
FEMALE STRAIGHT SOLDER CONNECTOR
CODE 3
STANDARD PART NUMBER
PCIM30W15F300A1

CONNECTOR DIMENSIONS

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

FEMALE STRAIGHT SOLDER CONNECTOR
CODE 3
STANDARD PART NUMBER
PCIM33W18F300A1

CONNECTOR DIMENSIONS

CONTACT HOLE PATTERN

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.00 [0.039] holes for size 22 contact holes.
Suggest Ø1.60 [0.063] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.
FEMALE STRAIGHT SOLDER CONNECTOR WITH A.C. PASS-THROUGH
CODE 3 WITH MOS*¹ -246.10
CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

LOW PROFILE PART NUMBER
PCIM33W18F300A1-246.10

*¹ For MOS descriptions, see chart on pages 107-108.

CONTACT HOLE PATTERN

CONNECTOR DIMENSIONS

Note: See below for suggested printed board hole sizes.

FEMALE STRAIGHT SOLDER CONNECTOR
CODE 3

STANDARD PART NUMBER
PCIM34W13F300A1

CONTACT HOLE PATTERN

CONNECTOR DIMENSIONS

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.00±0.039 holes for size 22 contact holes.
Suggest Ø1.60±0.063 holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.
FEMALE STRAIGHT SOLDER CONNECTOR
CODE 3

STANDARD PART NUMBER
PCIM37W16F300A1

CONTACT HOLE PATTERN

SUGGESTED PRINTED BOARD HOLE SIZES:
- Suggest Ø1.00 [0.039] holes for size 22 contact holes.
- Suggest Ø1.60 [0.063] holes for size 16 contact holes.
- Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

CONNECTOR DIMENSIONS

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
MALE STRAIGHT SOLDER CONNECTOR
CODE 3
STANDARD PART NUMBER
PCIM30W15M300A1

CONTACT HOLE PATTERN

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø0.61 [0.024] holes for size 22 contact holes.
Suggest Ø1.14 [0.045] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

Note: See below for suggested printed board hole sizes.
MALE STRAIGHT SOLDER CONNECTOR
CODE 3
STANDARD PART NUMBER
PCIM34W13M300A1

Note: See below for suggested printed board hole sizes.

MALE STRAIGHT SOLDER CONNECTOR
CODE 3
STANDARD PART NUMBER
PCIM37W16M300A1

SUGGESTED PRINTED BOARD HOLE SIZES:
- Suggest Ø1.00 [0.039] holes for size 22 contact holes.
- Suggest Ø1.60 [0.063] holes for size 16 contact holes.
- Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
FEMALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4
STANDARD PART NUMBER
PCIM30W15F400A1

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 [0.045] holes for size 22 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

CONNECTOR DIMENSIONS

FEMALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4
PART NUMBER FOR INVERTED TERMINATION
PCIM30W15RF400A1

CONTACT HOLE PATTERN

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 [0.045] holes for size 22 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

CONNECTOR DIMENSIONS

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
FEMALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTORS
CODE 4

STANDARD PART NUMBER
PCIM33W18F400A1

CONNECTOR DIMENSIONS

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 [0.045] holes for size 22 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

CONNECTOR DIMENSIONS
FEMALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4

STANDARD PART NUMBER
PCIM34W13F400A1

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 [0.045] holes for size 22 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.
FEMALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4
STANDARD PART NUMBER
PCIM37W16F400A1

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 [0.045] holes for size 22 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
MALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR

STANDARD PART NUMBER
PCIM30W15M400A1

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 [0.045] holes for size 22 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.
MALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR

CODE 4

STANDARD PART NUMBER:

PCIM33W18M400A1

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:

- Suggest Ø1.14 [0.045] holes for size 22 contact holes.
- Suggest Ø2.03 [0.080] holes for size 16 contact holes.
- Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
MALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4

STANDARD PART NUMBER:
PCIM34W13M400A1

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 [0.045] holes for size 22 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.
MALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4

STANDARD PART NUMBER
PCIM37W16M400A1

CONNECTOR DIMENSIONS

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 [0.045] holes for size 22 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.
FEMALE PANEL MOUNT CRIMP CONTACT CONNECTOR

CODE 8

CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

STANDARD PART NUMBER

PCIM30W15F8000

CONNECTOR DIMENSIONS

74.98 [2.952] 68.62 [2.702] 12.54 [0.494] 12.69 [0.500] 12.00 [0.472] 6.85 [0.270] 6.02 [0.237] 2X Ø4.19 [Ø0.165] C’Bore 3X Ø3.56 [Ø0.140] C’Bore

2X Size 16 Contacts 5mm Min. Recess

2X Ø2.54 [Ø0.100] Thru

PANEL CUT OUT

60.00 [2.362] 13.70 [0.539] 2X Ø3.56±0.08 [Ø0.140±0.003]

For information regarding removable contacts, see Removable Contact section, pages 102-103.
FEMALE PANEL MOUNT CRIMP CONTACT CONNECTOR

CODE 8

CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

STANDARD PART NUMBER

PCIM34W13F8000

CONNECTOR DIMENSIONS

12.00 [0.472]
12.69 [0.500]
12.54 [0.494]

2X Ø4.19 [0.165] C’Bore
3X Ø3.56 [0.140] C’Bore
10X Ø3.56±0.08 [Ø0.140±0.003] C’Bore

2X Ø3.56±0.08 [Ø0.140±0.003] Thru

60.00 [2.362]
2X 4.31 [0.170]

13.70 [0.539]

74.98 [2.952]
68.62 [2.702]
6.85 [0.270]

PANEL CUT OUT

2X Size 16 Contacts
5mm Min. Recess

2X Ø2.54 [Ø0.100] Thru

For information regarding removable contacts, see Removable Contact section, pages 102-103.
**FEMALE COMPLIANT PRESS-FIT CONNECTOR**

**CODE 93 OR 94**

**STANDARD PART NUMBER**
PCIM30W15F9300A1
PCIM30W15F9400A1

---

**CONTACT HOLE PATTERN**

**CONTACT TAIL LENGTH**

<table>
<thead>
<tr>
<th>Code</th>
<th>&quot;L&quot; Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.90 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

---

**SUGGESTED PRINTED BOARD HOLE SIZES:**
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

**NOTE:** See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions. For press-fit connector installation tools, see pages 105-106. For mounting screw options, see page 105.

---

**CONTACT TAIL LENGTH**

<table>
<thead>
<tr>
<th>Code</th>
<th>&quot;L&quot; Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.90 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

---

**DIMENSIONS ARE IN MILLIMETERS [INCHES].**
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
**FEMALE COMPLIANT PRESS-FIT CONNECTOR WITH A.C. PASS-THROUGH**

**CODE 93 OR 94 WITH MOS**

**CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY**

**LOW PROFILE PART NUMBER**

PCIM33W18F9300A1-246.10
PCIM33W18F9400A1-246.10

**CONTACT TAIL LENGTH**

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

**SUGGESTED PRINTED BOARD HOLE SIZES:**

Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

**NOTE:** See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions.

For press-fit connector installation tools, see pages 105-106.

For mounting screw options, see page 105.

---

**FEMALE COMPLIANT PRESS-FIT CONNECTOR**

**CODE 93 OR 94**

**STANDARD PART NUMBER**

PCIM34W13F9300A1
PCIM34W13F9400A1

**CONTACT TAIL LENGTH**

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

---

**CONNECTOR DIMENSIONS**

**SUGGESTED PRINTED BOARD HOLE SIZES:**

Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

**NOTE:** See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions.

For press-fit connector installation tools, see pages 105-106.

For mounting screw options, see page 105.
FEMALE COMPLIANT PRESS-FIT CONNECTOR
CODE 93 OR 94

STANDARD PART NUMBER
PCIM37W16F9300A1
PCIM37W16F9400A1

CONTACT TAIL LENGTH

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 mm. [0.175 min.]</td>
</tr>
</tbody>
</table>

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

NOTE: See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions.
For press-fit connector installation tools, see pages 105-106.
For mounting screw options, see page 105.
MALE COMPLIANT PRESS-FIT CONNECTOR
CODE 93 OR 94

STANDARD PART NUMBER
PCIM33W15M9300A1
PCIM33W15M9400A1

CONTACT TAIL LENGTH

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

NOTE: See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions. For press-fit connector installation tools, see pages 105-106. For mounting screw options, see page 105.

CONTACT TAIL LENGTH

Note: See below for suggested printed board hole sizes, press-fit connector installation tools, and mounting screw options.

MALE COMPLIANT PRESS-FIT CONNECTOR
CODE 93 OR 94

STANDARD PART NUMBER
PCIM33W18M9300A1
PCIM33W18M9400A1

Note: Positronic recommends the practice of using mounting hardware to secure connector to printed circuit board.
**MALE COMPLIANT PRESS-FIT CONNECTOR**

**CODE 93 OR 94**

**STANDARD PART NUMBER**

PCIM34W13M9300A1
PCIM34W13M9400A1

---

**CONTACT TAIL LENGTH**

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

---

**SUGGESTED PRINTED BOARD HOLE SIZES:**

Suggest 03.56±0.08 [0.140±0.003] holes for connector mounting holes.

**NOTE:** See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions.

For press-fit connector installation tools, see pages 105-106.

For mounting screw options, see page 105.
ORDERING INFORMATION - CODE NUMBERING SYSTEM
Specify Complete Connector By Selecting An Option From Step 1 Through 7

<table>
<thead>
<tr>
<th>STEP 1 - BASIC SERIES</th>
<th>STEP 2 - CONNECTOR VARIANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCIM - PCIM Series</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STEP 3 - CONNECTOR GENDER</th>
<th>F - Female</th>
<th>M - Male</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>STEP 4 - CONTACT TERMINATION TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - Solder, Straight Printed Board Mount with 4.50 [0.177] tail extension for connection system 1.</td>
</tr>
<tr>
<td>4 - Solder, Right Angle (90°) Printed Board Mount with 2.68 [0.106] tail extension for connection systems 1 and 4.</td>
</tr>
<tr>
<td>8 - Contacts must be ordered separately for Panel Mount Cable Connectors, connection system 3, see pages 102-103. Female connector only.</td>
</tr>
<tr>
<td>93 - Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thicknesses of 2.29 to 4.45 [0.090 to 0.175]. Connection system 1.</td>
</tr>
<tr>
<td>94 - Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thickness of 4.45 minimum [0.175 minimum]. Connection system 1.</td>
</tr>
</tbody>
</table>

NOTE: If you would like a 2D drawing or 3D model, once you’ve made your connector selection, please visit www.connectpositronic.com. If you can’t find your specific part number on our web site, contact Technical Sales to have one created.

ORDERING INFORMATION - CODE NUMBERING SYSTEM
Specify Complete Connector By Selecting An Option From Step 1 Through 7

<table>
<thead>
<tr>
<th>STEP 1 - BASIC SERIES</th>
<th>STEP 2 - CONNECTOR VARIANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCIM - PCIM Series</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STEP 3 - CONNECTOR GENDER</th>
<th>F - Female</th>
<th>M - Male</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>STEP 4 - CONTACT TERMINATION TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - Solder, Straight Printed Board Mount with 4.50 [0.177] tail extension for connection system 1.</td>
</tr>
<tr>
<td>4 - Solder, Right Angle (90°) Printed Board Mount with 2.68 [0.106] tail extension for connection systems 1 and 4.</td>
</tr>
<tr>
<td>8 - Contacts must be ordered separately for Panel Mount Cable Connectors, connection system 3, see pages 102-103. Female connector only.</td>
</tr>
<tr>
<td>93 - Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thicknesses of 2.29 to 4.45 [0.090 to 0.175]. Connection system 1.</td>
</tr>
<tr>
<td>94 - Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thickness of 4.45 minimum [0.175 minimum]. Connection system 1.</td>
</tr>
</tbody>
</table>

NOTE: If you would like a 2D drawing or 3D model, once you’ve made your connector selection, please visit www.connectpositronic.com. If you can’t find your specific part number on our web site, contact Technical Sales to have one created.

ORDERING INFORMATION - CODE NUMBERING SYSTEM
Specify Complete Connector By Selecting An Option From Step 1 Through 7

<table>
<thead>
<tr>
<th>STEP 1 - BASIC SERIES</th>
<th>STEP 2 - CONNECTOR VARIANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCIM - PCIM Series</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STEP 3 - CONNECTOR GENDER</th>
<th>F - Female</th>
<th>M - Male</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>STEP 4 - CONTACT TERMINATION TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - Solder, Straight Printed Board Mount with 4.50 [0.177] tail extension for connection system 1.</td>
</tr>
<tr>
<td>4 - Solder, Right Angle (90°) Printed Board Mount with 2.68 [0.106] tail extension for connection systems 1 and 4.</td>
</tr>
<tr>
<td>8 - Contacts must be ordered separately for Panel Mount Cable Connectors, connection system 3, see pages 102-103. Female connector only.</td>
</tr>
<tr>
<td>93 - Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thicknesses of 2.29 to 4.45 [0.090 to 0.175]. Connection system 1.</td>
</tr>
<tr>
<td>94 - Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thickness of 4.45 minimum [0.175 minimum]. Connection system 1.</td>
</tr>
</tbody>
</table>

NOTE: If you would like a 2D drawing or 3D model, once you’ve made your connector selection, please visit www.connectpositronic.com. If you can’t find your specific part number on our web site, contact Technical Sales to have one created.

ORDERING INFORMATION - CODE NUMBERING SYSTEM
Specify Complete Connector By Selecting An Option From Step 1 Through 7

<table>
<thead>
<tr>
<th>STEP 1 - BASIC SERIES</th>
<th>STEP 2 - CONNECTOR VARIANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCIM - PCIM Series</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STEP 3 - CONNECTOR GENDER</th>
<th>F - Female</th>
<th>M - Male</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>STEP 4 - CONTACT TERMINATION TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - Solder, Straight Printed Board Mount with 4.50 [0.177] tail extension for connection system 1.</td>
</tr>
<tr>
<td>4 - Solder, Right Angle (90°) Printed Board Mount with 2.68 [0.106] tail extension for connection systems 1 and 4.</td>
</tr>
<tr>
<td>8 - Contacts must be ordered separately for Panel Mount Cable Connectors, connection system 3, see pages 102-103. Female connector only.</td>
</tr>
<tr>
<td>93 - Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thicknesses of 2.29 to 4.45 [0.090 to 0.175]. Connection system 1.</td>
</tr>
<tr>
<td>94 - Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thickness of 4.45 minimum [0.175 minimum]. Connection system 1.</td>
</tr>
</tbody>
</table>

NOTE: If you would like a 2D drawing or 3D model, once you’ve made your connector selection, please visit www.connectpositronic.com. If you can’t find your specific part number on our web site, contact Technical Sales to have one created.

ORDERING INFORMATION - CODE NUMBERING SYSTEM
Specify Complete Connector By Selecting An Option From Step 1 Through 7

<table>
<thead>
<tr>
<th>STEP 1 - BASIC SERIES</th>
<th>STEP 2 - CONNECTOR VARIANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCIM - PCIM Series</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STEP 3 - CONNECTOR GENDER</th>
<th>F - Female</th>
<th>M - Male</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>STEP 4 - CONTACT TERMINATION TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - Solder, Straight Printed Board Mount with 4.50 [0.177] tail extension for connection system 1.</td>
</tr>
<tr>
<td>4 - Solder, Right Angle (90°) Printed Board Mount with 2.68 [0.106] tail extension for connection systems 1 and 4.</td>
</tr>
<tr>
<td>8 - Contacts must be ordered separately for Panel Mount Cable Connectors, connection system 3, see pages 102-103. Female connector only.</td>
</tr>
<tr>
<td>93 - Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thicknesses of 2.29 to 4.45 [0.090 to 0.175]. Connection system 1.</td>
</tr>
<tr>
<td>94 - Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thickness of 4.45 minimum [0.175 minimum]. Connection system 1.</td>
</tr>
</tbody>
</table>

NOTE: If you would like a 2D drawing or 3D model, once you’ve made your connector selection, please visit www.connectpositronic.com. If you can’t find your specific part number on our web site, contact Technical Sales to have one created.
The PCIB Series encompasses all of the features of the PCIH Series in a smaller package. Reliability, high current capacity and many system management connections make the PCIB Series ideal for use in telecom, computer, information systems and industrial applications.

**PCIB SERIES CONTACT VARIANTS**

**FACE VIEW OF MALE AND REAR VIEW OF FEMALE**

- **PCIB24W9 VARIANT**
  - 9 Size 16 Power Contacts and 15 Size 22 Signal Contacts

- **PCIB24W9R VARIANT** (Inverted Termination)

- **PCIB26W11 VARIANT**
  - 11 Size 16 Power Contacts and 15 Size 22 Signal Contacts

- **PCIB26W11R VARIANT** (Inverted Termination)

*Visit our website for the latest catalog updates and supplements at [www.connectpositronic.com/pci/catalog]*

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
MATERIALS AND FINISHES:
Insulator: Glass-filled polyester, UL 94V-0, blue color.
Plating: Gold flash over nickel. Other plating options available, refer to Step 7 on page 89.
Mounting Screws: Steel, zinc plated.
Jack screws: Stainless steel, passivated.

ELECTRICAL CHARACTERISTICS:
PCIB Contact Current Ratings, per UL 1977
See Temperature Rise Curves on page 5 for details.

PCIB24W9:
- Size 16 Power Contacts: 45 amperes continuous, all contacts under load.
- Positions 22, 23, and 24:
- Size 22 Signal Contacts: 3 amperes nominal rating.
PCIB26W11:
- Size 16 Power Contacts: 34 amperes continuous, all contacts under load.
- Size 22 Signal Contacts: 3 amperes nominal rating.

Initial Contact Resistance:
- Size 16 Contact: 0.0007 ohms maximum.
- Size 22 Contact: 0.005 ohms maximum.
Per IEC 60512-2, Test 2a.

Insulation Resistance: 5 G ohms per IEC 60512-2, Test 3a.

Voltage Proof:
PCIB24W9:
- Contacts 22, 23 and 24: 3,000 V r.m.s.
- Contacts 1 through 6: 1,500 V r.m.s.
- Contacts 7 through 21: 1,000 V r.m.s.
PCIB26W11:
- Contacts 1 through 6 and 22 through 26: 1,500 V r.m.s.
- Contacts 7 through 21: 1,000 V r.m.s.

Creepage and Clearance Distance; minimum:
PCIB24W9:
- Contact 24 to Contact 22: 3.2mm [0.126 inch]
- Contact 23 to Contact 22: 3.2mm [0.126 inch]
- Contact 24 to Signal Contacts: 6.4mm [0.252 inch]
- Contact 23 to Signal Contacts: 6.4mm [0.252 inch]
- Contact 24 to Contact 23: 2.5mm [0.098 inch]
- Contact 22 to Signal Contacts: 2.0mm [0.079 inch]
PCIB26W11:
- Contact 22 to Signal Contacts: 2.0mm [0.079 inch]

Working Voltage:
PCIB24W9:
- Contacts 22, 23 and 24: 1,000 V r.m.s.
- Contacts 1 through 6: 500 V r.m.s.
- Contacts 7 through 21: 333 V r.m.s.
PCIB26W11:
- Contacts 1 through 6 and 22 through 26: 500 V r.m.s.
- Contacts 7 through 21: 333 V r.m.s.

MECHANICAL CHARACTERISTICS:
Blind Mating System: Male and female connector bodies provide “lead-in” for 1.3 mm [0.050 inch] diametral misalignment.
Polarization: Provided by connector body design.
Removable Contacts: Install contact from rear of insulator; release from front of insulator. Size 16 and 22 female contacts feature “Closed Entry” design for highest reliability.

Removable Contact Retention in Connector Body:
- Size 16 Contacts: 67 N [15 lbs.]
- Size 22 Contacts: 27 N [6 lbs.]

Fixed Contacts:
Printed board terminations, both straight and right angle (90°). Size 16 female contacts feature “Closed Entry” design. Size 22 feature rugged “Open Entry” contact design. “Closed Entry” contacts available, consult Technical Sales.

Fixed Contact Retention in Connector Body:
- Size 16 Contacts: 45 N [10 lbs.]
- Size 22 Contacts: 27 N [6 lbs.]

Resistance to Solder Heat: 260°C [500°F] for 10 seconds duration per IEC 60512-6, Test 12a, 25-watt soldering iron.

Sequential Contact Mating System:
PCIB24W9:
First mate contact 22 and last mate contact position 7.
PCIB26W11:
Last mate contact position 7.
Consult Technical Sales for customer specified sequential mating.

Safety "Recessed in Insulator" Contacts:
The following size 16 contacts are recessed 5.00 mm [0.197 inch] below the face of the female connector insulator per safety requirements.

PCIB24W9:
- Contact positions 23 and 24.
PCIB26W11:
None

Compliant Terminations: Size 16 and 22 contacts are available with compliant contact terminations. Average insertion and extraction forces of size 16 contacts are 22N (5 lbs.) per contact.

Printed Board Mounting:
Mounting holes provided in connector body for printed board mounting. Self-tapping screws are available.

Mechanical Operations: 250 couplings, minimum.

CLIMATIC CHARACTERISTICS:
Working Temperature: -55°C to +125°C.

UL Recognized File #E49351
CSA Recognized File #LR54219
PCIB CONNECTOR OUTLINE DIMENSIONS

RIGHT ANGLE (90º) BOARD MOUNT CONNECTOR

FEMALE CONNECTOR

MALE CONNECTOR

STRAIGHT BOARD MOUNT CONNECTOR

FEMALE CONNECTOR

MALE CONNECTOR

PCIB CONNECTOR MATING DIMENSIONS

(FULLY MATED)

Right Angle (90º) Board Mount Male to Straight Board Mount or Panel Mount Female

Right Angle (90º) Board Mount Male to Right Angle (90º) Board Mount Female

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
FEMALE STRAIGHT SOLDER CONNECTOR
CODE 3
STANDARD PART NUMBER
PCIB24W9F300A1

CONNECTOR DIMENSIONS

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

FEMALE STRAIGHT SOLDER CONNECTOR WITH A.C. PASS-THROUGH
CODE 3 WITH MOS** -246.5
CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

LOW PROFILE PART NUMBER
PCIB24W9F300A1-246.5

** For MOS descriptions, see chart on pages 107-108.

CONNECTOR DIMENSIONS

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.00 [0.039] holes for size 22 contact holes.
Suggest Ø1.60 [0.063] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.
**FEMALE STRAIGHT SOLDER CONNECTOR**

**CODE 3**

**STANDARD PART NUMBER**

PCIB26W11F300A1

**CONNECTOR DIMENSIONS**

- **15X ø0.61 [0.024]**
- **11X ø1.14 [0.045]**
- **26X 4.50 [0.177]**

**CONTACT HOLE PATTERN**

- **2X 2.70 [0.106]**
- **4X 2.70 [0.106]**
- **10.45 [0.411]**
- **4.20 [0.165]**
- **4.25 [0.167]**
- **2.125 [0.0837]**
- **2X 4.20 [0.165]**
- **2X 4.20 [0.165]**
- **2X 4.20 [0.165]**
- **1.15 [0.045]**

**CONTACT HOLE PATTERN**

**FEMALE STRAIGHT SOLDER CONNECTOR WITH A.C. PASS-THROUGH**

**CODE 3 WITH MOS**

**LOW PROFILE PART NUMBER**

PCIB26W11F300A1-246.6

**CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY**

**SUGGESTED PRINTED BOARD HOLE SIZES:**

- Suggest Ø1.00 [0.039] holes for size 22 contact holes.
- Suggest Ø1.60 [0.063] holes for size 16 contact holes.
- Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

**Note:** See below for suggested printed board hole sizes.
MALE STRAIGHT SOLDER CONNECTOR
CODE 3
STANDARD PART NUMBER
PCIB24W9M300A1

CONNECTOR DIMENSIONS

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.00 [0.039] holes for size 22 contact holes.
Suggest Ø1.60 [0.063] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.
MALE STRAIGHT SOLDER CONNECTOR WITH JACKSCREW SYSTEM

CODE 3 WITH MOS* -444.0

OTHER JACKSCREW LENGTH OPTIONS AVAILABLE, CONTACT TECHNICAL SALES FOR DETAILS

STANDARD PART NUMBER
PCIB26W11M300A1-444.0

* For MOS descriptions, see chart on pages 107-108.

CONNECTOR DIMENSIONS

SUGGESTED PRINTED BOARD HOLES SIZES:
Suggest Ø1.00 [0.039] holes for size 22 contact holes.
Suggest Ø1.60 [0.063] holes for size 16 contact holes.
Suggest Ø2.67±0.08 [0.105±0.003] holes for connector mounting holes.
FEMALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4

STANDARD PART NUMBER
PCIB24W9F400A1

CONNECTOR DIMENSIONS

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

FEMALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4

PART NUMBER FOR INVERTED TERMINATION
PCIB24W9RF400A1

CONNECTOR DIMENSIONS

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest ø1.14 [0.045] holes for size 22 contact holes.
Suggest ø2.03 [0.080] holes for size 16 contact holes.
Suggest ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.
FEMALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR WITH A.C. PASS-THROUGH
CODE 4 WITH MOS*1 -422.0
CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

LOW PROFILE PART NUMBER
PCIB24W9F400A1-422.0

CONNECTOR DIMENSIONS

Crimp contacts ordered separately (see pages 102-103)

CONTACT HOLE PATTERN

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø0.14 [0.045] holes for size 22 contact holes.
Suggest Ø0.20 [0.080] holes for size 16 contact holes.
Suggest Ø0.36±0.08 [0.140±0.003] holes for connector mounting holes.

*1 For MOS descriptions, see chart on pages 107-108.
Female Right Angle (90°) Board Mount Connector, Female

Standard Part Number
PCIB26W11F400A1

Connecter Dimensions

Contact Hole Pattern

Note: See below for suggested printed board hole sizes.

Suggested Printed Board Hole Sizes:
- Suggest Ø1.14 [0.045] holes for size 22 contact holes.
- Suggest Ø2.03 [0.080] holes for size 16 contact holes.
- Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

Dimensions are in millimeters [inches]. All dimensions are subject to change.
MALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4
STANDARD PART NUMBER
PCIB24W9M400A1

CONNECTOR DIMENSIONS

MALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4
PART NUMBER FOR INVERTED TERMINATION
PCIB24W9RM400A1

CONNECTOR DIMENSIONS

CONTACT HOLE PATTERN

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø0.14 [0.045] holes for size 22 contact holes.
Suggest Ø0.20 [0.080] holes for size 16 contact holes.
Suggest Ø0.355±0.08 [0.140±0.003] holes for connector mounting holes.

Note: See below for suggested printed board hole sizes.

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
**MALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR**

**CODE 4**

**STANDARD PART NUMBER**

PCIB26W11M400A1

---

**CONTACT HOLE PATTERN**

---

**MALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR**

**CODE 4**

**PART NUMBER FOR INVERTED TERMINATION**

PCIB26W11RM400A1

---

**CONTACT HOLE PATTERN**

---

**CONNECTOR DIMENSIONS**

**SUGGESTED PRINTED BOARD HOLE SIZES:**

Suggest Ø1.14 [0.045] holes for size 22 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

---

**Dimensions are in millimeters [inches]. All dimensions are subject to change.**
FEMALE PANEL MOUNT CRIMP CONTACT CONNECTOR
CODE 8
CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

STANDARD PART NUMBER
PCIB24W9F8000

CONNECTOR DIMENSIONS

For information regarding removable contacts, see Removable Contact section, pages 102-103.
FEMALE PANEL MOUNT CRIMP CONTACT CONNECTOR WITH JACKSCREW SYSTEM
CODE 8 WITH MOS*-443.0
CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

STANDARD PART NUMBER
PCIB26W11F8000-443.0

CONNECTOR DIMENSIONS

For information regarding removable contacts, see Removable Contact section, pages 102-103.

* For MOS descriptions, see chart on pages 107-108.

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
FEMALE COMPLIANT PRESS-FIT CONNECTORS

**CODE 93 or 94**

**STANDARD PART NUMBER**

PCIB24W9F9300A1
PCIB24W9F9400A1

**CONNECTOR DIMENSIONS**

*Note:* See below for suggested printed board hole sizes, press-fit connector installation tools, and mounting screw options.

**CONTACT HOLE PATTERN**

<table>
<thead>
<tr>
<th>CONTACT TAIL LENGTH</th>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PCIB24W9F9300A1</strong></td>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td><strong>PCIB24W9F9400A1</strong></td>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

**LOW PROFILE PART NUMBER**

PCIB24W9F9300A1-246.5
PCIB24W9F9400A1-246.5

**CONTACT TAIL LENGTH**

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

**SUGGESTED PRINTED BOARD HOLE SIZES:**

Suggest Ø3.30±0.08 [0.140±0.003] holes for connector mounting holes.

**NOTE:** See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions.

For press-fit connector installation tools, see pages 105-106.

For mounting screw options, see page 105.
FEMALE COMPLIANT PRESS-FIT CONNECTOR
CODE 93 or 94

STANDARD PART NUMBER
PCIB26W11F9300A1
PCIB26W11F9400A1

CONNECTOR DIMENSIONS

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes, press-fit connector installation tools, and mounting screw options.

FEMALE COMPLIANT PRESS-FIT CONNECTOR WITH A.C. PASS-THROUGH
CODE 93 or 94 WITH MOS* -246.6

CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

LOW PROFILE PART NUMBER
PCIB26W11F9300A1-246.6
PCIB26W11F9400A1-246.6

CONNECTOR DIMENSIONS

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

NOTE: See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions.
For press-fit connector installation tools, see pages 105-106.
For mounting screw options, see page 105.
MALE COMPLIANT PRESS-FIT CONNECTOR
CODE 93 or 94

STANDARD PART NUMBER
PCIB24W9M9300A1
PCIB24W9M9400A1

CONTACT HOLE PATTERN

CONTACT TAIL LENGTH

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

SUGGESTED PRINTED BOARD HOLE SIZES:

Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

NOTE: See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions. For press-fit connector installation tools, see pages 105-106. For mounting screw options, see page 105.
**MALE COMPLIANT PRESS-FIT CONNECTOR WITH JACKSCREW SYSTEM**

CODE 93 OR 94 WITH MOS*1 -444.0

OTHER JACKSCREW LENGTH OPTIONS AVAILABLE, CONTACT TECHNICAL SALES FOR DETAILS

**STANDARD PART NUMBER**

PCIB26W11M9300A1-444.0  
PCIB26W11M9400A1-444.0

---

**SUGGESTED PRINTED BOARD HOLE SIZES:**

Suggest Ø2.67±0.08 [0.105±0.003] holes for connector mounting holes.

**NOTE:** See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions.

For press-fit connector installation tools, see pages 105-106.

For mounting screw options, see page 105.
### ORDERING INFORMATION - CODE NUMBERING SYSTEM
Specify Complete Connector By Selecting An Option From Step 1 Through 7

<table>
<thead>
<tr>
<th>STEP</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAMPLE</td>
<td>PCIB</td>
<td>26W11</td>
<td>F</td>
<td>93</td>
<td>0</td>
<td>0</td>
<td>A1</td>
<td>/AA</td>
<td></td>
</tr>
</tbody>
</table>

#### STEP 1 - BASIC SERIES
PCIB - PCIB Series

#### STEP 2 - CONNECTOR VARIANTS
- **24W9** - 9 size 16 contacts and 15 size 22 contacts
- **24W9R** - 9 size 16 contacts and 15 size 22 contacts. Inverted termination style, use with contact type “4”
- **26W11** - 11 size 16 contacts and 15 size 22 contacts
- **26W11R** - 11 size 16 contacts and 15 size 22 contacts. Inverted termination style, use with contact type “4”

#### STEP 3 - CONNECTOR GENDER
- **F** - Female
- **M** - Male

#### STEP 4 - CONTACT TERMINATION TYPE
- **3** - Solder, Straight Printed Board Mount with 4.50 [0.177] tail extension for connection system 1.
- **4** - Solder, Right Angle (90°) Printed Board Mount with 2.68 [0.106] tail extension for connection systems 1 and 4.
- **8** - Contacts must be ordered separately for Panel Mount Cable Connectors, connection system 3, see pages 102-103. Female connector only.
- **93** - Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thicknesses of 2.29 to 4.45 [0.090 to 0.175]. Connection system 1.
- **94** - Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thickness of 4.45 minimum [0.175 minimum]. Connection system 1.

#### STEP 5 - MOUNTING STYLE
- **0** - Standard Option
  See page 105 for mounting screw options.

#### STEP 6 - HOODS
- **0** - Not applicable

#### STEP 7 - CONTACT PLATING FOR PRINTED BOARD TYPE 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 5.00µ [0.00020 inch] tin-lead solder coat on termination end. Not available with code 93 or code 94 in step 4.
- **C1** - 0.76µ [0.000030 inch] gold over nickel on mating end and termination end.
- **C2** - 0.76µ [0.000030 inch] gold over nickel on mating end and 5.00µ [0.00020 inch] tin-lead solder coat on termination end. Not available with code 93 or code 94 in step 4.
- **D1** - 1.27µ [0.000050 inch] gold over nickel on mating end and termination end.
- **D2** - 1.27µ [0.000050 inch] gold over nickel on mating end and 5.00µ [0.00020 inch] tin-lead solder coat on termination end. Not available with code 93 or code 94 in step 4.

#### STEP 8 - ENVIRONMENTAL COMPLIANCE OPTIONS
/AA - RoHS Compliant

**NOTE:** If compliance to environmental legislation is not required, this step will not be used. Example: PCIB26W11F9300A1

#### STEP 9 - SPECIAL OPTIONS
FOR LISTING OF SPECIAL OPTIONS, SEE SPECIAL OPTIONS APPENDIX ON PAGES 107-108.

**NOTE:** If you would like a 2D drawing or 3D model, once you’ve made your connector selection, please visit www.connectositronic.com. If you can’t find your specific part number on our website, contact Technical Sales to have one created.
The PCIC Series encompasses all of the features of the PCIH Series in a 1U package. Reliability, high current capacity and many system management connections make the PCIC Series ideal for use in telecom, computer, information systems and industrial applications.

**PCIC SERIES CONTACT VARIANTS**

**FACE VIEW OF MALE AND REAR VIEW OF FEMALE**

- **PCIC16W7 VARIANT**
- **PCIC16W7R VARIANT (Inverted Termination)**

7 Size 16 Power Contacts and 9 Size 22 Signal Contacts

- **PCIC3W3 VARIANT**

Creepage and clearance for high voltage applications

3 Size 16 Power Contacts

Visit our website for the latest catalog updates and supplements at www.connectpositronic.com/pci/catalog
MATERIALS AND FINISHES:
Insulator: Glass-filled polyester, UL 94V-0, blue color.
Plating: Gold flash over nickel. Other plating options available, refer to Step 7 on page 101.
Mounting Screws: Steel, zinc plated.
Jackscrews: Stainless steel, passivated.

ELECTRICAL CHARACTERISTICS:
PCIC Contact Current Ratings, per UL 1977
See Temperature Rise Curves on page 6 for details.

- **PCIC3W3**: Size 16 Power Contacts: 32 amperes continuous, all contacts under load.
- **PCIC16W7**: Size 16 Power Contacts: Positions 14, 15, and 16: 40 amperes continuous, all contacts under load. Positions 1 through 4: 30 amperes continuous, all contacts under load. Size 22 Signal Contacts: 3 amperes nominal rating.

Initial Contact Resistance:
- Size 16 Contact: 0.0007 ohms maximum.
- Size 22 Contact: Per IEC 60512-2, Test 2b.

Insulation Resistance: 5 G ohms per IEC 60512-2, Test 3a.

Voltage Proof:
- **PCIC3W3**: 5,000 V r.m.s.
- **PCIC16W7**: Contacts 14, 15, and 16: 3,000 V r.m.s. Contacts 1 through 4: 1,500 V r.m.s. Contacts 5 through 13: 1,000 V r.m.s.

Creepage and Clearance Distance; minimum:
- **PCIC3W3**: 7.23mm [0.285 inch]
- **PCIC16W7**: Contact 16 to Contact 14: 3.2mm [0.126 inch]. Contact 15 to Contact 14: 3.2mm [0.126 inch]. Contact 16 to Signal Contacts: 6.4mm [0.252 inch]. Contact 15 to Signal Contacts: 6.4mm [0.252 inch]. Contact 16 to Contact 15: 2.5mm [0.098 inch]. Contact 14 to Signal Contacts: 2.0mm [0.079 inch].

Working Voltage:
- **PCIC3W3**: 2,000 V r.m.s.
- **PCIC16W7**: Contacts 14, 15 and 16: 1,000 V r.m.s. Contacts 1 through 4: 500 V r.m.s. Contacts 5 through 13: 333 V r.m.s.

MECHANICAL CHARACTERISTICS:
Blind Mating System: Male and female connector bodies provide “lead-in” for 1.3mm [0.050 inch] diametral misalignment.
Polarization: Provided by connector body design.

Removable Contacts: Install contact from rear of insulator; release from front of insulator. Size 16 and 22 female contacts feature “Closed Entry” design for highest reliability.

Removable Contact Retention in Connector Body:
- **Size 16 Contacts**: 67 N [15 lbs.]
- **Size 22 Contacts**: 27 N [6 lbs.]

Fixed Contacts: Printed board terminations, both straight and right angle (90°). Size 16 female contacts feature “Closed Entry” design. Size 22 feature rugged “Open Entry” contact design. “Closed Entry” contacts available, consult Technical Sales.

Fixed Contact Retention in Connector Body:
- **Size 16 Contacts**: 45 N [10 lbs.]
- **Size 22 Contacts**: 27 N [6 lbs.]

Resistance to Solder Heat: 260˚C [500˚F] for 10 seconds duration per IEC 60512-6, Test 12e, 25-watt soldering iron.

Sequencial Contact Mating System:
- **PCIC16W7**: First mate contact 14 and last mate contact position 5.
- **Consult Technical Sales for customer specified sequential mating.**

Safety “Recessed in Insulator” Contacts:
- The following size 16 contacts are recessed 5mm [0.197 inch] below the face of the female connector insulator per safety requirements. Contact positions 15 and 16.

Compliant Terminations: Size 16 and 22 contacts are available with compliant contact terminations. Average insertion and extraction forces of size 16 contacts are 22N (5 lbs.) per contact.

Printed Board Mounting: Mounting holes provided in connector body for printed board mounting. Self-tapping screws are available.

Mechanical Operations: 250 couplings, minimum.

CLIMATIC CHARACTERISTICS:
Working Temperature: -55˚C to +125˚C.
PCIC CONNECTOR OUTLINE DIMENSIONS

RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR

FEMALE CONNECTOR

MALE CONNECTOR

STRAIGHT BOARD MOUNT CONNECTOR

FEMALE CONNECTOR

MALE CONNECTOR

PCIC CONNECTOR MATING DIMENSIONS

(FULLY MATED)

Right Angle (90°) Board Mount Male to Straight Board Mount or Panel Mount Female

Right Angle (90°) Board Mount Male to Right Angle (90°) Board Mount Female

SEE PAGE 97 FOR PANEL MOUNT CONNECTOR DIMENSIONS.

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
FEMALE STRAIGHT SOLDER CONNECTOR
CODE 3
STANDARD PART NUMBER
PCIC16W7F300A1

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

FEMALE STRAIGHT SOLDER CONNECTOR WITH A.C. PASS-THROUGH
CODE 3 WITH MOS* -246.2
CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

LOW PROFILE PART NUMBER
PCIC16W7F300A1-246.2

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.00 [0.039] holes for size 22 contact holes.
Suggest Ø1.60 [0.063] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

DIMENSIONS ARE IN MILLIMETERS [INCHES]. ALL DIMENSIONS ARE SUBJECT TO CHANGE.
MALE STRAIGHT SOLDER CONNECTOR
CODE 3
STANDARD PART NUMBER
PCIC16W7M300A1

CONNECTOR DIMENSIONS

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

MALE STRAIGHT SOLDER CONNECTOR WITH JACKSCREW SYSTEM
CODE 3 WITH MOS*1-443.2
STANDARD PART NUMBER
PCIC3W3M300A1-443.2

CONNECTOR DIMENSIONS

CONTACT HOLE PATTERN

*1 For MOS descriptions, see chart on pages 107-108.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.00 [0.039] holes for size 22 contact holes.
Suggest Ø1.60 [0.063] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.
FEMALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4

STANDARD PART NUMBER
PCIC16W7F400A1

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes.

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 ±0.045 holes for size 22 contact holes.
Suggest Ø2.03 ±0.080 holes for size 16 contact holes.
Suggest Ø3.56 ±0.080 ±0.003 holes for connector mounting holes.
MALE RIGHT ANGLE (90°) BOARD MOUNT CONNECTOR
CODE 4

STANDARD PART NUMBER
PCIC16W7M400A1

CONNECTOR DIMENSIONS

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø1.14 [0.045] holes for size 22 contact holes.
Suggest Ø2.03 [0.080] holes for size 16 contact holes.
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

Note: See below for suggested printed board hole sizes.
FEMALE PANEL MOUNT CRIMP CONTACT CONNECTOR
CODE 8
CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

STANDARD PART NUMBER
PCIC16W7F8000

For information regarding removable contacts, see Removable Contact section, pages 102-103.

DIMENSIONS ARE IN MILLIMETERS [INCHES].
ALL DIMENSIONS ARE SUBJECT TO CHANGE.
FEMALE COMPLIANT PRESS-FIT CONNECTOR CODE 93 OR 94

STANDARD PART NUMBER
PCIC16W7F9300A1
PCIC16W7F9400A1

CONTACT TAIL LENGTH

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

CONTACT HOLE PATTERN

Note: See below for suggested printed board hole sizes, press-fit connector installation tools, and mounting screw options.

FEMALE COMPLIANT PRESS-FIT CONNECTOR WITH A.C. PASS-THROUGH CODE 93 OR 94 WITH MOS*1-246.2

CRIMP CONTACTS ARE NOT SUPPLIED WITH CONNECTOR AND MUST BE ORDERED SEPARATELY

LOW PROFILE PART NUMBER
PCIC16W7F9300A1-246.2
PCIC16W7F9400A1-246.2

CONTACT TAIL LENGTH

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

CONTACT HOLE PATTERN

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

NOTE: See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions.
For press-fit connector installation tools, see pages 105-106.
For mounting screw options, see page 105.
FEMALE COMPLIANT PRESS-FIT CONNECTOR WITH JACKSCREW SYSTEM
CODE 93 OR 94 WITH MOS*1 -444.2

STANDARD PART NUMBER
PCIC3W3F9300A1-444.2
PCIC3W3F9400A1-444.2

*1 For MOS descriptions, see chart on pages 107-108.

CONNECTOR DIMENSIONS

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.226]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø2.67±0.08 [0.105±0.003] holes for connector mounting holes.

NOTE: See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions. For press-fit connector installation tools, see pages 105-106. For mounting screw options, see page 105.

Positronic recommends the practice of using mounting hardware to secure connector to printed circuit board.
MALE COMPLIANT PRESS-FIT CONNECTOR
CODE 93 OR 94

STANDARD PART NUMBER
PCIC16W7M9300A1
PCIC16W7M9400A1

CONTACT TAIL LENGTH

<table>
<thead>
<tr>
<th>Code</th>
<th>“L” Length</th>
<th>Board Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>5.72 [0.225]</td>
<td>2.29 to 4.45 [0.090 to 0.175]</td>
</tr>
<tr>
<td>94</td>
<td>7.04 [0.277]</td>
<td>4.45 min. [0.175 min.]</td>
</tr>
</tbody>
</table>

SUGGESTED PRINTED BOARD HOLE SIZES:
Suggest Ø3.56±0.08 [0.140±0.003] holes for connector mounting holes.

NOTE: See page 105 for suggested printed board drill hole sizes, recommended plating and finished hole sizes for compliant contact termination positions.
For press-fit connector installation tools, see pages 105-106.
For mounting screw options, see page 105.
## ORDERING INFORMATION - CODE NUMBERING SYSTEM

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

### STEP 1 - BASIC SERIES

<table>
<thead>
<tr>
<th>EXAMPLE</th>
<th>PCIC</th>
<th>16W7</th>
<th>F</th>
<th>93</th>
<th>0</th>
<th>0</th>
<th>A1</th>
<th>/AA</th>
</tr>
</thead>
</table>

### STEP 2 - CONNECTOR VARIANTS

- **16W7**: 7 size 16 contacts and 9 size 22 contacts
- **16W7R**: 7 size 16 contacts and 9 size 22 contacts. Inverted termination style, use with contact type "4".
- **3W3**: 3 size 16 contacts

### STEP 3 - CONNECTOR GENDER

- **F**: Female
- **M**: Male

### STEP 4 - CONTACT TERMINATION TYPE

- **3**: Solder, Straight Printed Board Mount with 4.50 [0.177] tail extension for connection systems 1 and 2.
- **4**: Solder, Right Angle (90º) Printed Board Mount with 2.68 [0.106] tail extension for connection systems 1 and 4.
- **8**: Contacts must be ordered separately for Panel Mount Cable Connectors, connection system 3, see pages 102-103. Female connector only.
- **93**: Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thicknesses of 2.29 to 4.45 [0.090 to 0.175]. Connection system 1.
- **94**: Press-Fit, Compliant Termination size 16 and size 22 Straight Printed Board Mount for use with board thickness of 4.45 minimum [0.175 minimum]. Connection systems 1 and 2.

### STEP 5 - MOUNTING STYLE

- **0**: Standard Option
  See page 105 for mounting screw options.

### STEP 6 - HOODS

- **0**: Not applicable

### STEP 7 - CONTACT PLATING FOR PRINTED BOARD TYPE 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 5.00µ [0.00020 inch] tin-lead solder coat on termination end. Not available with code 93 or code 94 in step 4.
- **C1**: 0.76µ [0.000030 inch] gold over nickel on mating end and termination end.
- **C2**: 0.76µ [0.000030 inch] gold over nickel on mating end and 5.00µ [0.00020 inch] tin-lead solder coat on termination end. Not available with code 93 or code 94 in step 4.
- **D1**: 1.27µ [0.000050 inch] gold over nickel on mating end and termination end.
- **D2**: 1.27µ [0.000050 inch] gold over nickel on mating end and 5.00µ [0.00020 inch] tin-lead solder coat on termination end. Not available with code 93 or code 94 in step 4.

### STEP 8 - ENVIRONMENTAL COMPLIANCE OPTIONS

- **/AA**: RoHS Compliant

**NOTE**: If compliance to environmental legislation is not required, this step will not be used. Example: PCIC16W7F9300A1

### STEP 9 - SPECIAL OPTIONS

For listing of special options, see special options appendix on pages 107-108.

### ORDERING INFORMATION - CODE NUMBERING SYSTEM

* PCIC3W3 variant only available in these part numbers: PCIC3W3F9300A1-444.2 and PCIC3W3M300A1-443.2. Consult Technical Sales for other options to this variant.
REMOVABLE CONTACT TECHNICAL CHARACTERISTICS

SIZE 22 REMOVABLE CONTACT
MATERIALS AND FINISHES:
Precision machined copper alloy with gold flash over nickel. Other finishes are available, see optional finishes for -14 and -15.

MECHANICAL CHARACTERISTICS:
Insert contact to rear face of insulator, release from front face of insulator. Female contact feature “Closed Entry” design for highest reliability.

ELECTRICAL CHARACTERISTICS:
Contact Current Rating: 3 amperes nominal.
Initial Contact Resistance: 0.005 ohms max. per IEC 60512-2, test 2b.

SIZE 16 REMOVABLE CONTACT
MATERIALS AND FINISHES:
HIGH CONDUCTIVITY: Tellurium copper, gold flash over nickel. Other finishes are available, see optional plating finishes for -14 and -15.

MECHANICAL CHARACTERISTICS:
Insert contact to rear face of insulator, release from front face of insulator. Female contact feature “Closed Entry” design for highest reliability.

ELECTRICAL CHARACTERISTICS:
See Size 16 contact current ratings for individual variants:
- PCIH - refer to page 13
- PCIA - refer to page 38
- PCIM - refer to pages 47-48
- PCIB - refer to page 72
- PCIC - refer to page 91

Initial Contact Resistance: 0.0007 ohms max. per IEC 60512-2, test 2b.

SIZE 20 REMOVABLE CONTACT
MATERIALS AND FINISHES:
Precision machined copper alloy with gold flash over nickel. Other finishes are available, see optional finishes for -14 and -15.

MECHANICAL CHARACTERISTICS:
Insert contact to rear face of insulator, release from front face of insulator. Female contact feature “Closed Entry” design for highest reliability.

ELECTRICAL CHARACTERISTICS:
Contact Current Rating: 5 amperes nominal.
Initial Contact Resistance: 0.004 ohms max. per IEC 60512-2, test 2b.

OPTIONAL PLATING FINISHES
-14 0.000030 [0.76 µ] gold over nickel by adding “-14” suffix onto part number. Example: FC720N2-14.

-15 0.000050 inch [1.27µ] gold over nickel by adding “-15”. Example: FC720N2-15.

RoHS OPTIONS:
/AA Environmental Compliance Option: RoHS compliant can be achieved by adding “/AA” suffix onto part number. Examples: FC720N2/AA or for optional finishes use FC720N2/AA-14.

REMOVABLE CRIMP CONTACT
FOR USE WITH PCIH, PCIA, PCIM, PCIB & PCIC SERIES PANEL MOUNT VERSION
CONTACTS MUST BE ORDERED SEPARATELY
SIZE 22

What makes Positronic’s new PosiBand® contact interface a significant improvement?
- Higher reliability in harsh environments and repeated mating cycles, and durability in blind mate applications
- More stable price over time
- No need to anneal PosiBand contacts eliminating possibility of incorrect annealing causing reliability problems on the mating end of the contact
- PosiBand is protected by US Patent 7,115,002
For more information on PosiBand contacts, please contact Technical Sales.

Part Number: FC422N8
Wire size 0.3 mm² [22 AWG]

For information regarding crimp tool and crimping tool techniques, see Application Tools section, pages 104-106.
REMOVABLE CRIMP CONTACT
FOR USE WITH PCIH SERIES PANEL MOUNT VERSION
CONTACTS MUST BE ORDERED SEPARATELY
SIZE 20

FEMALE CONTACT
“CLOSED ENTRY” DESIGN

Part Number: FC720N2
Wire size 0.5-0.3-0.25 mm² [20-22-24 AWG]

NOTE: * Female contacts feature Large Surface Area (L.S.A.) closed entry contact design which provides maximum mating surfaces between male and female contact and reduced contact resistance during operation.

For information regarding crimp tool and crimping tool techniques, see Application Tools section, pages 104-106.
PCIH / PCIA / PCIM / PCIB / PCIC connectors are offered with removable crimp contacts. Positronic recognizes the importance of supplying application tooling to support our customers’ use of our products.

Information on application tooling is available on our web site at www.connectpositronic.com/design-tools/tooling

There you will find downloadable PDF cross reference charts for removable and compliant press-fit contacts. These charts will supply part numbers for insertion, removal and crimping tools, along with information regarding use of tools and techniques.

CONTACT REELS FOR AUTOMATIC PNEUMATIC CRIMP TOOLS

Contacts may be supplied in plastic carriers, packaged in reels holding 2,000 contacts for use with the automatic pneumatic crimp tools, catalog part numbers 9550-0-0-0 and 9550-1-0-0; packaged in reels holding 1,000 contacts for use with the automatic pneumatic crimp tools, catalog part number 9555-0-2-0. The same type carrier is used for both male and female contacts.

All female crimp contacts can be ordered in reels by adding letter “R” after the contact part number, such as FC720N2R for a female contact.
SUGGESTED PRINTED BOARD HOLE SIZES FOR COMPATIBLE PRESS-FIT CONNECTORS

Traditionally, tin-lead has been a popular plating for printed circuit board (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.

<table>
<thead>
<tr>
<th>BOARD TYPE</th>
<th>CONTACT SIZE / TYPE</th>
<th>RECOMMENDED DRILL HOLE SIZE</th>
<th>RECOMMENDED PLATING</th>
<th>FINISHED HOLE SIZES</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIN-LEAD SOLDER PCB</td>
<td>22 OMEGA</td>
<td>ø1.150±0.025 [0.0453±0.0010]</td>
<td>15µ [0.0006]</td>
<td>ø1.600±0.090-0.060 [0.0630±0.035-0.024]</td>
</tr>
<tr>
<td></td>
<td>20 OMEGA</td>
<td>ø1.150±0.025 [0.0453±0.0010]</td>
<td></td>
<td>ø1.600±0.090-0.060 [0.0630±0.035-0.024]</td>
</tr>
<tr>
<td></td>
<td>16 BI-SPRING</td>
<td>ø1.750±0.025 [0.0689±0.001]</td>
<td></td>
<td>ø1.600±0.090-0.060 [0.0630±0.035-0.024]</td>
</tr>
</tbody>
</table>

RoHS PCB PLATING OPTIONS

<table>
<thead>
<tr>
<th>BOARD TYPE</th>
<th>CONTACT SIZE / TYPE</th>
<th>RECOMMENDED DRILL HOLE SIZE</th>
<th>RECOMMENDED PLATING</th>
<th>FINISHED HOLE SIZES</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPPER PCB</td>
<td>22 OMEGA</td>
<td>ø1.19±0.025 [0.047±0.001]</td>
<td>25µ [0.0010]</td>
<td>ø1.69±0.05 [0.0669±0.002]</td>
</tr>
<tr>
<td></td>
<td>20 OMEGA</td>
<td>ø1.19±0.025 [0.047±0.001]</td>
<td></td>
<td>ø1.69±0.05 [0.0669±0.002]</td>
</tr>
<tr>
<td></td>
<td>16 BI-SPRING</td>
<td>ø1.750±0.025 [0.0689±0.001]</td>
<td></td>
<td>ø1.600±0.090-0.060 [0.0630±0.035-0.024]</td>
</tr>
<tr>
<td>IMMERSION TIN PCB</td>
<td>22 OMEGA</td>
<td>ø1.19±0.025 [0.047±0.001]</td>
<td>0.85µ±0.15µ [0.000033±0.00006] immersion tin</td>
<td>ø1.69±0.05 [0.0669±0.002]</td>
</tr>
<tr>
<td></td>
<td>20 OMEGA</td>
<td>ø1.19±0.025 [0.047±0.001]</td>
<td></td>
<td>ø1.69±0.05 [0.0669±0.002]</td>
</tr>
<tr>
<td></td>
<td>16 BI-SPRING</td>
<td>ø1.750±0.025 [0.0689±0.001]</td>
<td></td>
<td>ø1.600±0.090-0.060 [0.0630±0.035-0.024]</td>
</tr>
<tr>
<td>IMMERSION SILVER PCB</td>
<td>22 OMEGA</td>
<td>ø1.19±0.025 [0.047±0.001]</td>
<td>0.34µ±0.17µ [0.000013±0.000067] immersion silver</td>
<td>ø1.69±0.05 [0.0669±0.002]</td>
</tr>
<tr>
<td></td>
<td>20 OMEGA</td>
<td>ø1.19±0.025 [0.047±0.001]</td>
<td></td>
<td>ø1.69±0.05 [0.0669±0.002]</td>
</tr>
<tr>
<td></td>
<td>16 BI-SPRING</td>
<td>ø1.750±0.025 [0.0689±0.001]</td>
<td></td>
<td>ø1.600±0.090-0.060 [0.0630±0.035-0.024]</td>
</tr>
<tr>
<td>ELECTROLESS NICKEL / IMMERSION GOLD PCB</td>
<td>22 OMEGA</td>
<td>ø1.19±0.025 [0.047±0.001]</td>
<td>0.5µ [0.000020] immersion gold over 4.5±1.5µ [0.000177±0.000059] electroless nickel per IPC-4552 over 25µ [0.0010]</td>
<td>ø1.69±0.05 [0.0669±0.002]</td>
</tr>
<tr>
<td></td>
<td>20 OMEGA</td>
<td>ø1.19±0.025 [0.047±0.001]</td>
<td></td>
<td>ø1.69±0.05 [0.0669±0.002]</td>
</tr>
<tr>
<td></td>
<td>16 BI-SPRING</td>
<td>ø1.750±0.025 [0.0689±0.001]</td>
<td></td>
<td>ø1.600±0.090-0.060 [0.0630±0.035-0.024]</td>
</tr>
</tbody>
</table>

Note: The PCB-36 variant contains size 16 and size 20 contacts. All other variants contain size 16 and size 22 contacts.

MOUNTING SCREWS

Stresses that occur during coupling and uncoupling of power supplies or through shock and vibration of systems can be transferred to backplanes or printed circuit boards through press-fit connector terminations. Avoid concern over electrical integrity of the connector to board interface by using mounting screws. Bellcore GR1217 details a preference for the use of mounting hardware and we recommend this practice.

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>SCREW PART NUMBER</th>
<th>THREAD LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2076-16-1-16</td>
<td>7.92±0.00-0.76 [0.312+0.000-0.030]</td>
</tr>
<tr>
<td>A2076-16-2-16</td>
<td>9.53±0.00-0.76 [0.375+0.000-0.030]</td>
</tr>
<tr>
<td>A2076-16-3-16</td>
<td>11.1±0.00-0.76 [0.437+0.000-0.030]</td>
</tr>
<tr>
<td>A2076-16-4-16</td>
<td>12.7±0.00-0.76 [0.500+0.000-0.030]</td>
</tr>
</tbody>
</table>

SCREWS ARE #4 SELF-TAPPING FOR PLASTIC

DIMENSIONS ARE IN MILLIMETERS (INCHES). ALL DIMENSIONS ARE SUBJECT TO CHANGE.

COMPLIANT PRESS-FIT USER INFORMATION

When properly used, Positronic 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 choose the proper installation tool refer to page 106 for part number ordering information.
2. Insert the connector into the printed circuit board or backplane and seat connector fully.
3. Secure the connector to the printed circuit board or backplane using two self-tapping screws. The screws should be #4 self-tapping screws for plastic. Mounting screws can be ordered separately, see chart at the left.

“Omega” Termination

Utilized on signal contacts

“Bi-Spring” Termination

Utilized on power contacts
## Compliant Press-Fit Termination Connector Installation Tools

**Use Indicated Positronic Tools for Best Results**

### Support Tool

Positronic offers expert assistance in adapting application tooling to your manufacturing environment. Contact our application tooling specialist for assistance.

### Replaceable Seating Pins

#### 1/2 Inch Shaft for Arbor Press Application Tools

### Connector Setting Tool

- **PCIH38**
  - Male: 9513-300-13-41
  - Female: 9513-300-0-41
  - Male: 9513-300-33-41
  - Female: 9513-300-20-41
  - Positions 1 through 20: 855-347-2-0
  - Positions 21 through 35: 855-916-26-0
  - Positions 21 and 35: 855-916-12-0
  - Positions 37 and 38: 855-916-11-0

- **PCIH47**
  - Male: 9513-300-12-41
  - Female: 9513-300-3-41
  - Position: 9513-300-23-41
  - Position: 9513-300-19-41
  - Positions 21 through 35: 855-916-19-0
  - Positions 21 and 35: 855-916-12-0
  - Positions 46 and 47: 855-916-11-0

- **PCIH49W25**
  - Female: 9513-300-12-41
  - Male: 9513-300-3-41
  - Male: 9513-300-32-41
  - Male: 9513-300-67-41
  - Positions 1 through 20: 855-347-2-0
  - Positions 21 through 44: 855-916-19-0
  - Positions 21 and 35: 855-916-12-0
  - Positions 46 through 49: 855-916-11-0

- **PCIA60W36**
  - Male: 9513-300-44-41
  - Female: 9513-300-9-41
  - Female: 9513-300-64-41
  - Female: 9513-300-29-41
  - Positions 1 through 30: 855-347-2-0
  - Positions 31 through 54: 855-916-19-0
  - Positions 31 and 35: 855-916-12-0
  - Positions 46 through 49: 855-916-11-0

- **PCIM30W15**
  - Male: 9513-300-52-41
  - Female: 9513-300-17-41
  - Female: 9513-300-72-41
  - Female: 9513-300-37-41
  - Positions 1 through 12: 855-347-2-0
  - Positions 13 through 27: 855-916-19-0
  - Positions 13 and 27: 855-916-12-0
  - Positions 29 and 30: 855-916-11-0

- **PCIM33W18**
  - Male: 9513-300-53-41
  - Female: 9513-300-40-41
  - Female: 9513-300-73-41
  - Female: 9513-300-60-41
  - Positions 1 through 12: 855-347-2-0
  - Positions 13 through 31: 855-916-19-0
  - Positions 28 and 29: 855-916-11-0

- **PCIM34W13**
  - Male: 9513-300-54-41
  - Female: 9513-300-14-41
  - Female: 9513-300-74-41
  - Female: 9513-300-34-41
  - Positions 1 through 10: 855-347-2-0
  - Positions 11 through 31: 855-916-19-0
  - Positions 22 and 23: 855-916-12-0
  - Positions 32 and 33: 855-916-11-0

- **PCIM37W16**
  - Male: 9513-300-55-41
  - Female: 9513-300-48-41
  - Female: 9513-300-63-41
  - Female: 9513-300-75-41
  - Positions 1 through 10: 855-347-2-0
  - Positions 11 through 31: 855-916-19-0
  - Positions 11 and 31: 855-916-12-0
  - Positions 22 and 23: 855-916-11-0

- **PCIB24W9**
  - Male: 9513-300-50-41
  - Female: 9513-300-19-41
  - Female: 9513-300-70-41
  - Female: 9513-300-39-41
  - Positions 1 through 6: 855-347-2-0
  - Positions 7 through 21: 855-916-19-0
  - Positions 7 and 21: 855-916-12-0
  - Positions 22 through 23: 855-916-11-0

- **PCIB26W11**
  - Male: 9513-300-49-41
  - Female: 9513-300-42-41
  - Female: 9513-300-69-41
  - Female: 9513-300-62-41
  - Positions 1 through 6: 855-347-2-0
  - Positions 7 through 21: 855-916-19-0
  - Positions 7 and 21: 855-916-12-0
  - Positions 22 through 23: 855-916-11-0

- **PCIC16W7**
  - Male: 9513-300-68-41
  - Female: 9513-300-48-41
  - Female: 9513-300-63-41
  - Female: 9513-300-76-41
  - Positions 1 through 6: 855-347-2-0
  - Positions 5 through 13: 855-916-19-0
  - Positions 5 and 13: 855-916-12-0
  - Positions 15 and 16: 855-916-11-0

- **PCIC3W3**
  - Male: 9513-300-56-41
  - Female: 9513-300-57-41
  - Female: 9513-300-76-41
  - Female: 9513-300-9-41
  - Positions 1 through 6: 855-347-2-0
  - Positions 5 through 13: 855-916-19-0
  - Positions 5 and 13: 855-916-12-0
  - Positions 15 and 16: 855-916-11-0

---

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

---

[Compact Power Connectors](connectpositronic.com)
# Modification of Standard (MOS) Suffixes

Specify complete connector by selecting a base part number from the desired series Ordering Information Page. Once base part number is selected, add desired modification of standard (MOS) suffix below to the end of the part number.

**Example part number:** PCIH47F9300A1/AA-245.0  
*(Ordering information pages can be found at the end of each series)*

<table>
<thead>
<tr>
<th>Connector Variant Size</th>
<th>Gender</th>
<th>Termination Type Available</th>
<th>Modification of Standard (MOS) Suffixes</th>
<th>Description of Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>38 F 3, 93, 94</td>
<td></td>
<td>-245.0</td>
<td>System 2, Straight Printed Board Mount 38 contact connector with 3 high profile A.C. pass-through contact positions.</td>
<td></td>
</tr>
<tr>
<td>38 F 3, 93, 94</td>
<td></td>
<td>-246.1</td>
<td>System 2, Straight Printed Board Mount 38 contact connector with 3 low profile A.C. pass-through contact positions.</td>
<td></td>
</tr>
<tr>
<td>47 F 3, 93, 94</td>
<td></td>
<td>-246.0</td>
<td>System 2, Straight Printed Board Mount 47 contact connector with 3 low profile A.C. pass-through contact positions.</td>
<td></td>
</tr>
<tr>
<td>47 F 4</td>
<td></td>
<td>-246.4</td>
<td>System 5, Right Angle (90º) Board Mount 47 contact connector with 3 A.C. pass-through contacts positions.</td>
<td></td>
</tr>
<tr>
<td>47 M 4</td>
<td></td>
<td>259.0</td>
<td>Selectively loaded Right Angle (90º), 47 contact connector with six total output contacts loaded in 1, 5, 9, 13, 19, 20. See page 11.</td>
<td></td>
</tr>
<tr>
<td>47 M 4</td>
<td></td>
<td>259.1</td>
<td>Selectively loaded Right Angle (90º), 47 contact connector with six total output contacts loaded in 1, 5, 9, 13, 19, 20. See page 11.</td>
<td></td>
</tr>
<tr>
<td>47 M 4</td>
<td></td>
<td>259.2</td>
<td>Selectively loaded Right Angle (90º), 47 contact connector with sixteen total output contacts loaded in 1, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 15, 16, 17, 19, 20. See page 11.</td>
<td></td>
</tr>
<tr>
<td>47 M 3, 4, 93, 94</td>
<td></td>
<td>-441.0</td>
<td>System 1 &amp; 4, allows for any 47 male contact connector to be supplied with two additional contact positions, 48 and 49, to be left vacant in order to accept keying plugs. See page 7.</td>
<td></td>
</tr>
<tr>
<td>47 F 3, 4, 93, 94</td>
<td></td>
<td>-442.0</td>
<td>System 1 &amp; 4, allows for any 47 female contact connector to be supplied with two additional contact positions, 48 and 49, to be left vacant in order to accept keying plugs. See page 7.</td>
<td></td>
</tr>
<tr>
<td>49W25 F 3, 93, 94</td>
<td></td>
<td>-246.3</td>
<td>System 2, Straight Printed Board Mount 49 contact connector with 5 low profile A.C. pass-through contact positions.</td>
<td></td>
</tr>
<tr>
<td>49W25 M 3, 4, 93, 94</td>
<td></td>
<td>-378.0</td>
<td>Allows contacts 45-49 to be sequentially mated as follows: Position 45 is first mate, positions 46, 47, 48, and 49 are second mate. Male connector mates with female connector using MOS number -379.0.</td>
<td></td>
</tr>
<tr>
<td>49W25 *49W25R F 3, 4, 93, 94</td>
<td></td>
<td>-379.0</td>
<td>Allows for contact positions 46, 47, 48 and 49 to have 5mm recess. Contact 45 to have 2mm recess. Female connector mates with male connector using MOS number -378.0.</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Select loading of contact positions are available, contact Technical Sales.

---

*Inverted termination available on connectors with code 4 termination only.*

**DIMENSIONS ARE IN MILLIMETERS (INCHES).**

**ALL DIMENSIONS ARE SUBJECT TO CHANGE."
MODIFICATION OF STANDARD (MOS) SUFFIXES

Specify complete connector by selecting a base part number from the desired series **Ordering Information Page**. Once base part number is selected, add desired modification of standard (MOS) suffix below to the end of the part number.

Example part number: PCIH47F9300A1/AA-245.0

(Ordering information pages can be found at the end of each series)

<table>
<thead>
<tr>
<th>CONNECTOR VARIANT SIZE</th>
<th>GENDER</th>
<th>TERMINATION TYPE AVAILABLE</th>
<th>MODIFICATION OF STANDARD (MOS) SUFFIXES</th>
<th>DESCRIPTION OF MODIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCI-A</td>
<td></td>
<td></td>
<td>-246.10</td>
<td>System 2, Straight Printed Board Mount Connector with 3 low profile A.C pass-through contact positions.</td>
</tr>
<tr>
<td>33W18</td>
<td>F</td>
<td>3, 93, 94</td>
<td>-246.10</td>
<td>System 2, Straight Printed Board Mount Connector with 3 low profile A.C pass-through contact positions.</td>
</tr>
<tr>
<td>24W9</td>
<td>F</td>
<td>3, 93, 94</td>
<td>-246.5</td>
<td>System 2, Straight Printed Board Mount Connector with 3 low profile A.C pass-through contact positions.</td>
</tr>
<tr>
<td>24W9 *24W9R</td>
<td>F</td>
<td>4</td>
<td>-422.0</td>
<td>System 1 and 4, Right Angle (90º) Printed Board Mount Connector with 3 low profile A.C pass-through contact positions.</td>
</tr>
<tr>
<td>26W11</td>
<td>F</td>
<td>3, 93, 94</td>
<td>-246.6</td>
<td>System 2, Straight Printed Board Mount Connector with 5 low profile A.C pass-through contact positions.</td>
</tr>
<tr>
<td>26W11</td>
<td>M</td>
<td>3, 93, 94</td>
<td>-444.0</td>
<td>Fixed jackscrew system. Male connector mates with female connector using MOS number -443.0</td>
</tr>
<tr>
<td>26W11</td>
<td>F</td>
<td>8</td>
<td>-443.0</td>
<td>Rotating jackscrew system. Female connector mates with male connector using MOS number -444.0.</td>
</tr>
<tr>
<td>16W7</td>
<td>F</td>
<td>3, 93, 94</td>
<td>-246.2</td>
<td>System 2, Straight Printed Board Mount Connector with 3 low profile A.C Pass-Through contact positions.</td>
</tr>
<tr>
<td>3W3</td>
<td>F</td>
<td>93, 94</td>
<td>-444.2</td>
<td>Special molding, fixed female jackscrews. Female connector mates with male connector using MOS number -443.2.</td>
</tr>
<tr>
<td>3W3</td>
<td>M</td>
<td>3</td>
<td>-443.2</td>
<td>Special molding, special rotating male jackscrews. Male connector mates with female connector using MOS number -444.2.</td>
</tr>
</tbody>
</table>

*Inverted termination available on connectors with code 4 termination only.

**Note:** Select loading of contact positions are available, contact Technical Sales.
Positronic has the widest variety of Power Connector Solutions

Each of these series have one or more of the following features:

- Hot swap capability
- A.C./D.C. operation in a single connector
- Meets safety agency requirements
- Signal contacts for communication with host system
- Superior blind mating capability
- Cable and panel mount options
- Large surface area contact system
- Bi-Spring power press-fit terminations
- Single contact ratings up to 100 amperes
- Wide variety of variants & accessories
Positronic HIGH RELIABILITY Products

**POWER**

**FEATURES:**
- High current density
- Energy saving - low contact resistance
- Hot swap capability
- AC/DC operation in a single connector
- Signal contacts for hardwire management
- Blind mating
- Sequential mating
- Large surface area contact mating system
- Wide variety of accessories
- Customer-specified contact arrangements
- Modular tooling which produces a single piece connector insert

Contact Sizes: 0, 8, 12, 16, 20, 22 and 24
Current Ratings: To 200 amperes per contact
Terminations: Crimp and fixed cable connector, straight solder, right angle (90°)
solder, right angle compliant press-in and right angle (90°) compliant
press-in
Configurations: Multiple variants in a variety of package sizes
Compliance: PICMG 2.11, PICMG 3.0, VITA 41, DSCC, GSFC S-311-P-4,
GSFC S-311-P-10

**D-SUB MINIATURE**

**FEATURES:**
- Four performance levels available for best cost/performance ratio: professional, industrial, military and space-flight quality
- Options include high voltage, coax, thermocouple and air coupling contacts; environmentally sealed and dual port connector packages including mixed density
- Broad selection of accessories
- Size 20 and 22 contacts suitable for use in carrying power
- IP65, IP67

Contact Sizes: 8, 16, 20 and 22
Current Ratings: To 100 amperes
Terminations: Crimp, wire solder, straight solder, right angle (90°) solder, straight
compliant press-in and right angle (90°) compliant press-in
Configurations: Multiple variants in both standard and high densities, seven connector
housing sizes
Qualifications: MIL-DTL-28748, AS39029, CCITT V.35

**RECTANGULAR**

**FEATURES:**
- Two performance levels available: industrial quality and military quality
- A wide variety of accessories
- Broad selection of contact arrangement and package sizes
- Connector coding device (keying) options

Contact Sizes: 16, 20 and 22
Current Ratings: To 13 amperes nominal
Terminations: Crimp, wire solder, straight solder, right angle (90°) solder, and
straight compliant press-in
Configurations: Multiple variants in both standard and high densities,
forty package sizes
Qualifications: MIL-DTL-28748, AS39029, CCITT V.35

**CIRCULAR**

**FEATURES:**
- Four performance levels available for best cost/performance ratio: professional, industrial, military and space-flight quality
- Options include high voltage, coax, thermocouple and air coupling contacts; environmentally sealed and dual port connector packages including mixed density
- Broad selection of accessories
- Size 20 and 22 contacts suitable for use in carrying power
- IP65, IP67

Contact Sizes: 8, 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
Compliance: Space-D32

**CABLE**

**FEATURES:**
- Shorten the supply chain and reduce additional costs and delays by “cabling” your Positronic connector selection
- Overmolding available
- Shielded and environmentally sealed versions available
- Power cables and access boxes which meet the SAE J2496 specification

Design assemblies in accordance with customer specifications.
Prepare wire harness connector configuration and performance specifications.
Design each system in accordance with applicable customer, domestic, and international standards.
Define and conduct performance and verification testing.

**HERMETIC**

**FEATURES:**
- Intended for use as an electrical feedthrough in high vacuum applications
- Helium leakage rate at ambient temperature: ≤ 5x10^-9 mbar·l/s under
a vacuum of 1.5x10^-7 mbar
- Signal, power, coax and high voltage versions available
- Connectors can be mounted on flange assembly per customer specification

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

For more information, visit www.connectpositronic.com or call your nearest
Positronic sales office listed on the back of this catalog.
Divisional Headquarters

**Positronic | Americas**
423 N Campbell Ave
Springfield MO 65806 USA
+1 800 641 4054
info@connectpositronic.com

**Positronic | Europe**
Z.I. d’Engachies
46, route d’Engachies
F-32020 Auch Cedex 9 France
+33 5 6263 4491
contact@connectpositronic.com

**Positronic | Asia**
3014A Ubi Rd 1 #07-01
Singapore 408703
+65 6842 1419
singapore@connectpositronic.com

**Sales Offices**

Positronic has local sales representation all over the world. To find the nearest sales office, please visit [www.connectpositronic.com/sales](http://www.connectpositronic.com/sales)