PV® WIRE-TO-BOARD CONNECTOR SYSTEM

Unique Design Provides High Reliability, High Durability And High Retention

OVERVIEW

The innovative PV® crimp-to-wire system connects discrete wire to printed circuit boards. High reliability dual-metal receptacle terminals plug to industry standard 0.025 inch (0.635mm) square posts. A variety of containment, protection and guidance options are available for both sides of the connector interface.

Wire side– PV® receptacle terminals can be terminated to wire and used discretely or inserted to multiple-circuit, MINI–LATCH connector housings that include optional polarizing keys.

Printed Circuit side– Shrouded multiple-post, headers include an integral friction feature that grips the sides of the mating MINI–LATCH housings and reduces the risk of disengagement. Other FCI header options include discrete staked pins or BergStik® un-shrouded headers.

FEATURES & BENEFITS

• Unique dual-metal PV® receptacle contact maintains contact pressure through 1000 mating cycles. A beryllium copper spring provides high normal force at the mating interface, while the brass contact body produces a reliable, gas-tight crimp termination

• Choice of three different spring pressures allows the user to customize insertion and withdrawal forces to individual application requirements

• Shrouded header side walls engage with the sides of the MINI–LATCH housing to provide additional retention

• MINI–LATCH housing firmly retains PV® wire contacts

• Available in single or double row configurations

• Keyed MINI–LATCH housings and header keyways provide polarization to prevent mis-mating

• Two wall header design provides mechanical benefits plus economy

• Application tooling is supported by FCI

TARGET MARKETS/APPLICATIONS

• Instrumentation and Medical

• Industrial equipment

• Consumer and white goods

• Automotive electronics

• Data and communications

• Military and avionics
MINI-LATCH RECEPTACLE HOUSINGS
0.100in. / 2.54mm pitch

SINGLE ROW, POLARIZED, 78211 SERIES
Range: 03 to 15 positions

DOUBLE ROW, POLARIZED, 65846 SERIES
Range: 04 to 72 positions

SINGLE ROW, 65039 SERIES
Range: 01 to 36 positions

DOUBLE ROW, 65043 SERIES
Range: 04 to 72 positions

Maximum wire diameter for use in these housings is 1.52mm

SHROUDED PCB HEADERS
0.100in. / 2.54mm pitch

SINGLE ROW, VERTICAL, 69167 SERIES
Range: 03 to 15 positions

DOUBLE ROW, VERTICAL, 69168 SERIES
Range: 04 to 30 positions

SINGLE ROW, 65039 SERIES
Range: 01 to 15 positions

DOUBLE ROW, 65043 SERIES
Range: 04 to 30 positions

For more information, please contact: Communications@fci.com or visit us at www.fci.com

Disclaimer
Please note that the above information is subject to change without notice.
**PV® WIRE-TO-BORD CONNECTOR SYSTEM**

**PART NUMBER CONSTRUCTION**

```
PPPPP  -  Z  -  NN  -  H  -  LF
```

- **PPPPP**
  - PCB Header Style
    - Single row, vertical: 69167
    - Single row, right angle: 78208
    - Double row, vertical: 69168
    - Double row, right angle: 78207

- **Z**
  - Plating Finish
    - 30µin. (0.76µm) Gold/GTX
    - 15µin. (0.38µm) Gold/GTX
    - Pure tin

- **NN**
  - Number of Positions
    - Available for single row: 03 to 15
    - Available for double row: 04 to 30

- **H**
  - Discrete contact posts
    - Ultra high

- **LF**
  - PV® Part Numbers
    - Standard
      - 18, 20: 48241-000LF 48231-000LF 48276-002LF 48250-000LF 48266-000LF
      - 22, 24, 26: 47445-000LF 48242-000LF 48049-000LF 47457-002LF 48251-000LF 48235-000LF
      - 28, 30, 32: 47446-000LF 48243-000LF 48048-002LF 47748-000LF 48254-000LF 48234-000LF
      - 32, 34, 36: 75543-015LF 75543-008LF 75543-014LF
    - High
      - 18, 20: 48244-000LF 48047-002LF 47566-002LF 47749-000LF 47750-000LF 48257-000LF 48236-000LF
      - 22, 24, 26: 47217-000LF 48245-000LF 48046-000LF 47439-002LF 47715-000LF 48254-000LF 48234-000LF
      - 28, 30, 32: 47213-000LF 48246-000LF 48045-000LF 47437-002LF 47714-000LF 48255-000LF 48237-000LF
      - 32, 34, 36: 75543-007LF 75543-013LF 75543-008LF 75543-014LF
    - Ultra-high
      - 18, 20: 47648-000LF 48252-000LF 47566-000LF 47749-000LF 47750-000LF 48258-000LF 48239-000LF
      - 22, 24, 26: 47649-000LF 48252-000LF 47566-000LF 47749-000LF 47750-000LF 48258-000LF 48239-000LF
      - 28, 30, 32: 47650-000LF 48252-000LF 47566-000LF 47749-000LF 47750-000LF 48258-000LF 48239-000LF
      - 32, 34, 36: 75543-011LF 75543-017LF 75543-012LF 75543-018LF
```

**PV® DUAL METAL CRIMP RECEPTACLE TERMINALS**

For mating to 0.025in. / 0.635mm square posts

```
<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select application</td>
<td>Select spring force</td>
<td>Select wire size (AWG)</td>
<td>Select plating</td>
</tr>
</tbody>
</table>
```

- **Step 1**
  - Application Housing
    - 40 – 72 contacts per housing: Standard
    - 10 – 50 contacts per housing: High
    - 02 – 20 contacts per housing: Ultra high
    - Discrete contact posts: Ultra high

- **Step 2**
  - Spring Force
    - Standard
    - High
    - Ultra high

- **Step 3**
  - Wire Size (AWG)
    - 18, 20 or two 22 or two 24
    - 22, 24, 26 or two 26 or two 28
    - 28, 30, 32 or two 30 or two 32
    - 32, 34, 36

- **Step 4**
  - Plating / Packaging
    - Reel
      - Tin
      - 15µ Gold (0.38µm)
      - 30µ Gold (0.76µm)
      - 40µ Gold (0.91µm)
    - Box (Loose piece)
      - Tin
      - 15µ Gold (0.38µm)
      - 30µ Gold (0.76µm)

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TECHNICAL INFORMATION

MATERIALS

- Contact material:
  - PV® wire terminals: Brass body and beryllium copper spring
  - PCB headers: Phosphor bronze

- Contact plating:
  - PV® wire terminals: Gold or lead-free pure tin over nickel
  - PCB headers: Gold or GXT™ (palladium–nickel with gold flash) or lead-free pure tin over nickel

- Housing material:
  - MINI–LATCH housings: Modified polyphenylene oxide UL94V–0
  - Shrouded PCB headers: Glass filled nylon UL94V–0

- All parts with “LF” suffix are RoHS–compliant

ELECTRICAL PERFORMANCE

- Current rating single circuit: 3.0A with 32 AWG wire; larger wires allow more; All applications require de-rating
- Withstanding voltage: 1000V RMS
- Insulation resistance, wire connector: >10000MΩ
- Insulation resistance, PCB header: >5000MΩ
- Contact resistance (LLCR), wire connector: <2mΩ
- Mating force (individual contact maximum)
  - High force spring: 450g
  - Ultra-high force spring: 1100g
- Un–mating force (individual contact minimum)
  - High force spring: 75g
  - Ultra–high force spring: 175g
- PV® contact retention in MINI–LATCH Housing: 4lbs per contact
- Durability: 1000 cycles
- Temperature: −40°C to +105°C

SPECIFICATIONS

- Product specification:
  - BUS–12–067 (PV® and MINI–LATCH wire connectors)
  - BUS–12–075 (Shrouded PCB headers)
- Application drawings: TA–75, TA–146, TA–531

APPROVALS AND CERTIFICATIONS

- UR E66906
- CSA LR46923
**PV® WIRE-TO-BOARD CONNECTOR SYSTEM**

## APPLICATION TOOLING

- **PV–250A Semi-automatic Crimping Machine**
  - Easy to use
  - Pneumatically operated
  - Estimated 1000 crimps per hour

  **Machine Part Number**
  - 107416–101 (18–20 AWG)
  - 107416–102 (22–26 AWG)
  - 107416–103 (28–32 AWG)

- **OL–740 Semi-automatic Two-Ton Bench Press**
  - Uses quick-changing, adjustable crimping applicators for different terminals and wire sizes
  - Most rugged construction
  - Easy to use
  - Electrically operated
  - Estimated 2400 crimps per hour

  **Machine Part Number**
  - 133911–102 (does not include applicator)

  **Applicator Tooling Part Numbers**
  - 133867–104 (18–20 AWG)
  - 133867–105 (22–26 AWG)
  - 133867–106 (28–32 AWG)

- **Ratcheting Hand Crimping Tool**
  - Part Number
  - HT–0073 (for 18–20 AWG Wire)
  - HT–0095 (for 22–32 AWG Wire)
  - HT–0112 (for 32–36 AWG Wire)

- **PV® Contact Removal Tool**
  - Part Number
  - HT–0080

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