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NOTICE: Specifications are subject to change without notice. Contact your nearest AVX Sales Office for the latest specifications. All statements, information and data given herein are believed to be accurate and reliable, but are presented without guarantee, warranty, or responsibility of any kind, expressed or implied. Statements or suggestions concerning possible use of our products are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should not assume that all safety measures are indicated or that other measures may not be required. Specifications are typical and may not apply to all applications.
The 917X series of surface mount Insulation Displacement Connectors (IDC) were developed to meet the harsh automotive and industrial market applications for connecting individual wires directly to a PCB ranging from 14 AWG to 28 AWG. This industry proven contact system has been tested to automotive levels of shock, vibration, and temperature cycling to prove their reliability and robustness. The simplicity of inserting a wire into the connector with a small tool allows a wide range of devices to be connected to the PCB without soldering. In SSL applications specifically, these connectors are used to bring power and signal onto the PCB or are used to daisy chain multiple boards together in a long string. While the IDC contact provides a gas-tight connection to the conductor of the wire, the housing has been designed to grab the insulation of the wire to provide a positive strain relief even in the harshest conditions. In case of repair, the wires can be removed and replace up to three times.

The 9175 series accepts 26 AWG to 28 AWG wires with an insulation diameter ranging from 0.7mm to 1.0mm. These single contact connectors support a 1 amp current rating and have a split SMT tail design to provide maximum stability on the PCB. Available in a 2p and 3p configuration, these connectors can be end stackable for higher pin counts.

### APPLICATIONS
- Connecting discrete wire components directly to the PCB
- Bringing power and signals onto a PCB
- Daisy chaining PCB’s together to create a continuous string of boards
- Application Notes: refer to 201-01-124

### FEATURES AND BENEFITS
- IDC contact provides a gas-tight connection to the PCB for long term reliability
- Connector housing captures the wire insulation for positive strain relief
- Tested to automotive levels on shock, vibration and temperature cycling for reliability
- Low and high volume assembly tools to match production volumes
- Reduced total applied cost versus solder or crimp processes
- High temperature insulator capable to 260 degrees C reflow soldering processes

### ELECTRICAL
- Current Rating: 1 Amp / Contact
- Voltage Rating: 150 VAC

### ENVIRONMENTAL
- Operating Temperature: -40ºC to +125ºC

### MECHANICAL
- Insulator Material: Nylon 46: UL94V0
- Contact Material: Phosphor Bronze
- Plating: Tin over Nickel
- Durability: 3 Cycles

### HOW TO ORDER

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**Certification:** UL File #E90723

*Hand Insertion Tooling - Universal Hand Tool 067000773001000; Consult Application Notes 201-01-124*
26-28 AWG 2 WAY IDC CONNECTOR

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
   INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.
   COLOR REFER TO PAGE 3.
3. CONNECTOR DESIGNED TO ACCEPT 26 AND 28 GAUGE SOLID OR
   STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS
   REFER TO ELCO SPEC 201-01-100, UL COMPONENTS REFER TO ELCO
   SPEC 201-01-100UL.
6. APPLICATION NOTES 201-01-124.
7. FOR UL PRODUCT CODES UL REFERENCE 390723 (US AND CANADA).
8. CONNECTOR OUTLINE.
9. ALL DIMENSIONS ±0.20 UNLESS TOLERANCE SPECIFIED.

Packing Details

<table>
<thead>
<tr>
<th>Code</th>
<th>Wire Gauge</th>
<th>A</th>
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<tbody>
<tr>
<td>001</td>
<td>28AWG</td>
<td>0.20</td>
</tr>
<tr>
<td>002</td>
<td>26AWG</td>
<td>0.28</td>
</tr>
</tbody>
</table>

SMT PCB LAYOUT

Pure Tin Pads
26-28 AWG 3 WAY IDC CONNECTOR

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
   INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.
   COLOR REFER TO PAGE 3.
3. CONNECTOR DESIGNED TO ACCEPT 26 AND 28 GAUGE SOLID OR
   STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS
   REFER TO ELCO SPEC 201-01-100, UL COMPONENTS REFER TO ELCO
   SPEC 201-01-100UL.
6. APPLICATION NOTES 201-01-124.
7. FOR UL PRODUCT CODES UL REFERENCE 390723 (US AND CANADA).
8. CONNECTOR OUTLINE.
9. ALL DIMENSIONS ±0.20 UNLESS TOLERANCE SPECIFIED.

SMT PCB LAYOUT

PACKING DETAILS

<table>
<thead>
<tr>
<th>Code</th>
<th>Wire Gauge</th>
<th>A</th>
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<tbody>
<tr>
<td>001</td>
<td>28AWG</td>
<td>0.20</td>
</tr>
<tr>
<td>002</td>
<td>26AWG</td>
<td>0.28</td>
</tr>
</tbody>
</table>

REEL QTY 2000
LEADER 500MM
TRAILER 500MM

Code    Wire Gauge    A
001 28AWG 0.20
002 26AWG 0.28

ALL TAILS WITHIN 0.10mm COPLANARITY TOLERANCE

2 PITCHES @ 2.50 ± 3.00

2.50 NOTE 9

1.10 TYP

1.10 TYP

9 SPACE BETWEEN PADS

1.60 REF

1.00 REF
NOTES:
1. CAP FOR IDC WIRE TO BOARD CONNECTION, 2 AND 3 WAY, THROUGH WIRE.
2. THROUGH WIRE CAP CAN BE USED AT ANY POSITION ALONG A WIRE.
3. FOR USE WITH STANDARD 9175 IDC CONNECTORS.
4. CAP MATERIAL: GLASS FILLED NYLON 46, FOR COLORS SEE PAGE 3.
5. CAPS DESIGNED TO ACCOMMODATE WIRES WITH INSULATION UP TO 1.00MM DIAMETERS.
6. GENERAL TOLERANCE ±0.20.
7. PACKED IN BAGS, 1000 PIECES PER BAG.
8. ALL DIMENSIONS ±0.20 UNLESS TOLERANCE SPECIFIED.
NOTES:
1. CAP FOR IDC WIRE TO BOARD CONNECTION, 2 AND 3 WAY, WIRE STOP.
2. WIRE STOP CAP FOR USE AT WIRE ENDS, STOP FACE PROTECTS THE WIRE ENDS.
3. FOR USE WITH STANDARD 9175 IDC CONNECTORS
4. CAP MATERIAL: GLASS FILLED NYLON 46, FOR COLORS SEE PAGE 3.
5. CAPS DESIGNED TO ACCOMMODATE WIRES WITH INSULATION UP TO 1.00MM DIAMETERS.
6. GENERAL TOLERANCE ±0.20.
7. PACKED IN BAGS, 1000 PIECES PER BAG.
8. ALL DIMENSIONS ±0.20 UNLESS TOLERANCE SPECIFIED.
### HAND INSERTION TOOLING

**SINGLE WIRE INSERTION TOOL FOR 26/28 GAUGE WIRE**

#### UNIVERSAL HANDLE

<table>
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<th>Details</th>
<th>Tool Part Number</th>
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<tr>
<td>6.35 A/F HEX BIT HOLDER</td>
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#### HIGH PRODUCTION

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#### MEDIUM PRODUCTION

**Metal/Plastic**

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<td>06-9175-7016-01-000</td>
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</table>

#### CLEARANCE AREA ON PCB FOR HAND TOOLING

**2 WAY**

- Area to be kept clear for tooling

- Dimensions: 6.00 x 5.00 x 2.50

**3 WAY**

- Area to be kept clear for tooling

- Dimensions: 8.50 x 7.50 x 2.50
INSERTION TOOLING
REQUIRES HAND PRESS WITH FLAT ROCK PLATES

2 WAY TOOL
TOOL NUMBER 06-9175-7017-01-002
SKETCH SHOWS PCB RESTRICTED AREAS FOR ASSEMBLY TOOLING

3 WAY TOOL
TOOL NUMBER 06-9175-7017-01-003
SKETCH SHOWS PCB RESTRICTED AREAS FOR ASSEMBLY TOOLING

NOTES:
1. DIMENSIONS SHOWN ARE REFERENCE DIMENSIONS.
2. MAXIMUM COMPONENT HEIGHT 0.80MM IN THIS AREA.
3. MAXIMUM COMPONENT HEIGHT 4.00MM IN THIS AREA.
4. THE SAME RESTRICTIONS APPLY TO ALL WIRE INSULATION DIAMETERS.

ASSEMBLED CONNECTOR

STANDARD CONNECTOR

CONNECTOR WITH CAP

NOTES:
1. ASSEMBLED HEIGHTS INCLUDE A 0.10MM ALLOWANCE FOR PAD AND SOLDER THICKNESS, NO ALLOWANCE HAS BEEN MADE FOR ANY SOLDER RESIST OR OTHER FEATURES.
2. WHEN THE WIRE IS ASSEMBLED THE INSULATION SHOULD BE TRAPPED BY THESE EDGES.
The market and applications for simple and reliable discrete Wire-to-Board connectors continue to evolve. AVX first introduced the 9175 series of surface mountable Insulation Displacement Connectors (IDC) in 2006. Developed for harsh industrial and automotive applications, these connectors have been used in hundreds of applications from today’s “Smart Meter” all the way down to a simple sensor termination to a PCB. Size and performance has been one of the key factors for selecting this connector in terminating 26-28AWG wires to a PCB.

The next generation of IDC connector moves beyond all of the technical and performance attributes to address the “User Friendliness” of the product. By changing the insulator from acting as a connector body and make it more like a contact carrier, the insulator becomes the wire location and insertion aid without any special tools. The wire is just inserted into the cap (no stripping required) and then pressed down to provide a secure “Gas Tight” termination. This configuration simplifies and cost reduces the entire wire termination process for connecting discrete wires to a PCB.

**APPLICATIONS**
- Connecting discrete wire components to a PCB
- Bringing power and signals onto a PCB
- Daisy chaining PCB’s together to create a continuous string
- Reference Product Specification 201-01-140

**FEATURES AND BENEFITS**
- IDC contact provides a gas-tight connection to the PCB for long term reliability
- Plastic cap retains the contacts in position prior to automatic placement, then acts as the assembly tool to terminate the wires; no special tooling.
- Tested to automotive levels on shock, vibration and temperature cycling for reliability
- Identical contact and footprint pattern to the existing 9175 for full backward compatibility and functionality
- The IDC contact reduces the total applied cost versus solder or crimp processes
- Connectors are available in two configurations for maximum flexibility; End and Through Wire

**ELECTRICAL**
- Current Rating: 1 Amps / Contact
- Voltage Rating: 150 VAC

**ENVIRONMENTAL**
- Operating Temperature: -40ºC to +125ºC

**MECHANICAL**
- Insulator Material: Nylon UL94VO
- Contact Material: Phosphor Bronze
- Plating: Tin over Nickel

**HOW TO ORDER**

<table>
<thead>
<tr>
<th>Code</th>
<th>No of Ways</th>
<th>Details</th>
<th>Accepted Wire Gauge</th>
<th>Wire Insulation</th>
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<tbody>
<tr>
<td>002</td>
<td>2</td>
<td>Pages 11 &amp; 13</td>
<td>28 Gauge Solid or Stranded</td>
<td>Min Ø 0.70</td>
</tr>
<tr>
<td>003</td>
<td>3</td>
<td>Pages 12 &amp; 14</td>
<td>28 Gauge Solid or Stranded</td>
<td>Min Ø 0.90</td>
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</tbody>
</table>

**Insulator Color**
- 9 = UL White
- 8 = UL Black

**Plating Option**
- 6 = Pure Tin all over

Certification: UL File #E90723
Capped IDC 26-28 AWG: WTB
9175-700

26-28 AWG 2 WAY IDC CONNECTOR THROUGH WIRE CAPPED IDC

NOTES:
1. 2 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
   PRE-ASSEMBLED THROUGH WIRE CAP.
2. CONTACT/CAP TO MATCH 26AWG AND 28AWG WIRES. SOLID OR STRANDED
   CONDUCTOR. MAXIMUM INSULATOR 1.00 MM DIAMETER.
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
4. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO
   ELCO SPEC 201-01-139. UL COMPONENTS REFER TO ELCO SPEC 201-01-139UL.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-140.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 1000.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
10. INSULATOR MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED, UL94 V-0.
    COLOR REFER TO PAGE 10.
11. FOR UL CODES UL REFERENCE E90723 (US AND CANADA).

SUGGEST PCB LAYOUT

PACKING DETAILS

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<tr>
<th>Code</th>
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<tr>
<td>701</td>
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<tr>
<td>702</td>
<td>26AWG</td>
<td>1.30</td>
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</table>
**26-28 AWG 3 WAY IDC CONNECTOR THROUGH WIRE CAPPED IDC**

**NOTES:**
1. 3 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION. PRE-ASSEMBLED THROUGH WIRE CAP.
2. CONTACT/CAP TO MATCH 26AWG AND 28AWG WIRES. SOLID OR STRANDED CONDUCTOR. MAXIMUM INSULATOR 1.00 MM DIAMETER.
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
4. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-139. UL COMPONENTS REFER TO ELCO SPEC 201-01-139UL.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-140.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 1000.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
10. INSULATOR MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 10.
11. FOR UL CODES UL REFERENCE E90723 (US AND CANADA).

**Packing Details**

**Suggest PCB Layout**

<table>
<thead>
<tr>
<th>Code</th>
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</tr>
</tbody>
</table>
Capped IDC 26-28 AWG: WTB
9175-700

26-28 AWG 2 WAY IDC CONNECTOR WIRE STOP CAPPED IDC

NOTES:
1. 2 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
   PRE-ASSEMBLED WIRE STOP CAP.
2. WIRE STOP CAP PROTECTS END OF WIRE.
3. CONTACT/CAP TO MATCH 26AWG AND 28AWG WIRES. SOLID OR STRANDED CONDUCTOR.
   MAXIMUM INSULATOR 1.00 MM DIAMETER.
4. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
5. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC
   201-01-139. UL COMPONENTS REFER TO ELCO SPEC 201-01-139UL.
6. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-140.
7. GENERAL TOLERANCE ±0.20 UNLESS STATED.
8. PACKED IN TAPE AND REEL, QUANTITY PER REEL 1000.
9. CONNECTOR OUTLINE.
10. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
11. INSULATOR MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED, UL94 V-0. COLOR
    REFER TO PAGE 10.
12. FOR UL CODES UL REFERENCE E90723 (US AND CANADA).

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<tr>
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<td>26AWG</td>
<td>1.30</td>
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PACKING DETAILS

SUGGEST PCB LAYOUT
### Capped IDC 26-28 AWG: WTB
9175-700

#### 26-28 AWG 3 WAY IDC CONNECTOR WIRE STOP CAPPED IDC

**NOTES:**

1. 3 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. PRE-ASSEMBLED WIRE STOP CAP.
3. WIRE STOP CAP PROTECTS END OF WIRE.
4. CONTACT/CAP TO MATCH 26AWG AND 28AWG WIRES. SOLID OR STRANDED CONDUCTOR.
5. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
6. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-139. UL COMPONENTS REFER TO ELCO SPEC 201-01-139UL.
7. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-140.
8. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
9. INSULATOR MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 10.
10. FOR UL CODES UL REFERENCE E90723 (US AND CANADA).

<table>
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</tr>
<tr>
<td>702</td>
<td>26AWG</td>
<td>1.30</td>
</tr>
</tbody>
</table>

#### PACKING DETAILS

- **UNREELED DIRECTION**
- **330mm DIAMETER REEL**
- **QUANTITY PER REEL 1000**

#### SUGGEST PCB LAYOUT
Capped IDC 26-28 AWG: WTB
9175-700

26-28 AWG ASSEMBLED CAPPED IDC CONNECTORS

MOUNTED ON PCB

TYPICAL THROUGH WIRE ASSEMBLY

TYPICAL WIRE STOP ASSEMBLY
The 917X series of surface mount Insulation Displacement Connectors (IDC) were developed to meet the harsh automotive and industrial market applications for connecting individual wires directly to a PCB ranging from 14 AWG to 28 AWG. This industry proven contact system has been tested to automotive levels of shock, vibration, and temperature cycling to prove their reliability and robustness. The simplicity of inserting a wire into the connector with a small tool allows a wide range of devices to be connected to the PCB without soldering. In SSL applications specifically, these connectors are used to bring power and signal onto the PCB or are used to daisy chain multiple boards together in a long string. While the IDC contact provides a gas-tight connection to conductor of the wire, the housing has been designed to grab the insulation of the wire to provide a positive strain relief even in the harshest conditions. In case of repair, the wires can be removed and replace up to three times.

The 9176 series accepts 18 AWG to 24 AWG wires with an insulation diameter ranging from 1.1mm to 2.1mm. These dual contact connectors support a 10 amp current rating with two large SMT solder tails per wire to provide maximum stability on the PCB. Available in 1p-3p configuration, these connectors can be end stackable for higher pin counts. The 9176 series also comes with optional locking strain relief caps that act as the termination tool for severe vibration applications.

**APPLICATIONS**
- Connecting discrete wire components directly to the PCB
- Bringing power and signals onto a PCB
- Daisy chaining PCB’s together to create a continuous string of boards
- Application Notes: refer to 201-01-124

**FEATURES AND BENEFITS**
- IDC contact provides a gas-tight connection to the PCB for long term reliability
- Connector housing captures the wire insulation for positive strain relief
- Tested to automotive levels on shock, vibration and temperature cycling for reliability
- Low and high volume assembly tools to match production volumes
- Reduced total applied cost versus solder or crimp processes
- Optional thru and end caps lock in place to provide maximum strain relief
- High temperature insulator capable to 260ºC reflow soldering processes

**ELECTRICAL**
- Current Rating: 10 Amp / Contact
- Voltage Rating: 300 VAC

**ENVIRONMENTAL**
- Operating Temperature: -40ºC to +125ºC

**MECHANICAL**
- Insulator Material: Nylon 46: UL94V0
- Contact Material: Phosphor Bronze
- Plating: Tin over Nickel
- Durability: 3 Cycles

**HOW TO ORDER**

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<tr>
<th>Prefix</th>
<th>9176</th>
<th>00X</th>
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<tr>
<td>Number of Ways</td>
<td>Wire Gauge Size</td>
<td>Insulator Color</td>
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<tr>
<td>001 = 1</td>
<td>18 Gauge Stranded</td>
<td>9 = UL White (Standard)</td>
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<tr>
<td>002 = 2</td>
<td>20 Gauge Solid or Stranded</td>
<td>8 = UL Black (Special Order)</td>
</tr>
<tr>
<td>003 = 3</td>
<td>22 Gauge Solid or Stranded</td>
<td>06 = Pure Tin all over</td>
</tr>
<tr>
<td>032</td>
<td>24 Gauge Solid or Stranded</td>
<td>One Way Only (Special Order)</td>
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Certification: UL File #E90723
### Connector/Tooling Part Number Matrix

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<tr>
<th>AWG</th>
<th>Wire Insulation</th>
<th>Positions</th>
<th>Color</th>
<th>Part Number</th>
<th>Plastic (medium volume)</th>
<th>Metal (high volume)</th>
<th>Mass Termination</th>
<th>Through Wire</th>
<th>Wire Stop</th>
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* Hand Insertion Tooling - Universal Hand Tool 067000773001000; Consult Application Notes 201-01-124
Standard IDC 18-24 AWG: WTB
00-9176

18-24 AWG 1 WAY IDC CONNECTOR

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
3. INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.
4. CONTACTS DESIGNED TO ACCEPT BETWEEN 20AWG AND 24AWG SOLID AND STRANDED WIRES. 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
5. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
6. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-106, UL COMPONENTS REFER TO ELECO SPEC 201-01-106U.
7. APPLICATION NOTES 201-01-124.
8. FOR PCB SPACE RESTRICTED BY WIRE ASSEMBLY TOOLING REFER TO PAGE 23.
9. FOR HAND WIRE ASSEMBLY TOOLING REFER TO PAGE 23.
10. FOR UL PRODUCT CODES UL REFERENCE E90723 (US AND CANADA).

PICK UP AREA 0.9 x 5.00mm MIN

ALL TAILS TO BE WITHIN 0.10mm COPLANARITY.

0.75 MIN

SMT PCB LAYOUT

PURE TIN PADS

PACKING DETAILS

<table>
<thead>
<tr>
<th>REEL QTY</th>
<th>LEADER</th>
<th>TRAILER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>490MM</td>
<td>120MM</td>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Accepted Wire Gauge</th>
<th>A</th>
<th>Wire Insulation</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>18AWG Stranded</td>
<td>0.72</td>
<td>Ø 1.6-2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>011</td>
<td>20AWG Solid and Stranded</td>
<td>0.60</td>
<td>Ø 1.6-2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>022</td>
<td>22AWG Solid and Stranded</td>
<td>0.47</td>
<td>Ø 1.3-1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>032</td>
<td>24AWG Solid and Stranded</td>
<td>0.37</td>
<td>Ø 1.3-1.6</td>
<td>1.6</td>
</tr>
</tbody>
</table>

NOTES: 1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
3. INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.
4. CONTACTS DESIGNED TO ACCEPT BETWEEN 20AWG AND 24AWG SOLID AND STRANDED WIRES. 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
5. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
6. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-106, UL COMPONENTS REFER TO ELECO SPEC 201-01-106U.
7. APPLICATION NOTES 201-01-124.
8. FOR PCB SPACE RESTRICTED BY WIRE ASSEMBLY TOOLING REFER TO PAGE 23.
9. FOR HAND WIRE ASSEMBLY TOOLING REFER TO PAGE 23.
10. FOR UL PRODUCT CODES UL REFERENCE E90723 (US AND CANADA).

ALL DIMENSIONS ±0.20 TOLERANCE SPECIFIED.
18-24 AWG 2 WAY IDC CONNECTOR

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
   INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.
   COLOR REFER TO PAGE 16.
3. CONTACTS DESIGNED TO ACCEPT BETWEEN 20AWG AND 24AWG SOLID AND
   STRANDED WIRES. 18AWG WILL ONLY ACCEPT STRANDED WIRES,
   SEE TABLE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO
   ELCO SPEC 201-01-106. UL COMPONENTS REFER TO ELCO SPEC 201-01-106U.
6. APPLICATION NOTES 201-01-124.
7. FOR PCB SPACE RESTRICTED BY WIRE ASSEMBLY TOOLING REFER TO PAGE 23.
8. FOR HAND WIRE ASSEMBLY TOOLING REFER TO PAGE 23.
9. FOR UL PRODUCT CODES UL REFERENCE E90723 (US AND CANADA).
10. ALL DIMENSIONS ±0.20 TOLERANCE SPECIFIED.

PACKING DETAILS

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<thead>
<tr>
<th>REEL QTY</th>
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<th>TRAILER</th>
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<tr>
<td>1000</td>
<td>480MM</td>
<td>120MM</td>
</tr>
</tbody>
</table>

SMT PCB LAYOUT

PURE TIN PADS

Code | Accepted Wire Gauge | A | Wire Insulation |
-----|---------------------|---|-----------------|
001  | 18AWG Stranded      | 0.72 | Ø 1.6-2.1       | 2.1 |
011  | 20AWG Solid and Stranded | 0.60 | Ø 1.6-2.1       | 2.1 |
022  | 22AWG Solid and Stranded | 0.47 | Ø 1.1-1.6       | 1.6 |
032  | 24AWG Solid and Stranded | 0.37 | Ø 1.1-1.6       | 1.6 |

COLOR REFER TO PAGE 16.
Standard IDC 18-24 AWG: WTB

00-9176

18-24 AWG 3 WAY IDC CONNECTOR

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
   INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.
   COLOR REFER TO PAGE 16.
3. CONTACTS DESIGNED TO ACCEPT BETWEEN 20AWG AND 24AWG SOLID AND STRANDED WIRES. 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-106. UL COMPONENTS REFER TO ELECO SPEC 201-01-106U.
6. APPLICATION NOTES 201-01-124.
7. FOR PCB SPACE RESTRICTED BY WIRE ASSEMBLY TOOLING REFER TO PAGE 23.
8. FOR HAND WIRE ASSEMBLY TOOLING REFER TO PAGE 23.
9. FOR UL PRODUCT CODES UL REFERENCE E90723 (US AND CANADA).
10. ALL DIMENSIONS ±0.20 TOLERANCE SPECIFIED.

SMT PCB LAYOUT
PURE TIN PADS

PACKING DETAILS

REEL QTY 1000
LEADER 480MM
TRAILER 120MM
NOTES:
1. CAP FOR IDC WIRE TO BOARD CONNECTION, 1, 2 AND 3 WAY, THROUGH WIRE.
2. FOR USE WITH STANDARD 9176 IDC CONNECTORS, SEE PAGE 17 FOR THE CORRECT PART CODE TO MATCH WIRE.
3. CAP MATERIAL: GLASS FILLED NYLON 46, FOR COLORS SEE TABLE BELOW.
4. DIMENSIONS A, B AND TEXT, SEE TABLE BELOW.
5. CAPS DESIGNED TO ACCOMMODATE WIRE INSULATION DIAMETERS 1.1MM TO 1.6MM AND 1.6MM TO 2.1MM.
6. ALL DIMENSIONS SHOWN ARE REFERENCE DIMENSIONS.
7. PACKED IN BAGS, 1000 PIECES PER BAG.
8. ONE WAY CAP ASSEMBLY AID, REFER TO PAGE 25.
9. ALL DIMENSIONS ±0.20 TOLERANCE SPECIFIED.
Standard IDC 18-24 AWG: WTB

00-9176

60-9176-00X-0XX-X99
ACCESSORY CAP – WIRE STOP

NOTES:
1. CAP FOR IDC WIRE TO BOARD CONNECTION, 1, 2 AND 3 WAY, WIRE STOP.
2. FOR USE WITH STANDARD 9176 IDC CONNECTORS, SEE PAGE 17 FOR THE CORRECT PART CODE TO MATCH WIRE.
3. CAP MATERIAL: GLASS FILLED NYLON 46, FOR COLORS SEE TABLE BELOW.
4. DIMENSIONS A, B AND TEXT, SEE TABLE BELOW.
5. CAPS DESIGNED TO ACCOMMODATE WIRE INSULATION DIAMETERS 1.1MM TO 1.6MM AND 1.6MM TO 2.1MM.
6. ALL DIMENSIONS SHOWN ARE REFERENCE DIMENSIONS.
7. PACKED IN BAGS, 1000 PIECES PER BAG.
8. ONE WAY CAP ASSEMBLY AID, REFER TO PAGE 25.
9. ALL DIMENSIONS ±0.20 TOLERANCE SPECIFIED.

<table>
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<tr>
<th>Code</th>
<th>Slot A</th>
<th>Diameter B</th>
<th>Text</th>
<th>Color</th>
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<tbody>
<tr>
<td>016</td>
<td>1.00</td>
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<td>Ø1.6</td>
<td>Black</td>
<td>000</td>
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<tr>
<td>021</td>
<td>1.50</td>
<td>2.10</td>
<td>Ø2.1</td>
<td>White</td>
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ASSEMBLED CONNECTOR
HAND INSERTION TOOLING
FOR SINGLE 18/24 GAUGE WIRE

UNIVERSAL HANDLE

<table>
<thead>
<tr>
<th>Details</th>
<th>Tool Part Number</th>
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<tbody>
<tr>
<td>6.35 AF HEX BIT HOLDER</td>
<td>06 7000 7730 01 000</td>
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HIGH PRODUCTION

Metal

<table>
<thead>
<tr>
<th>Max Insulation Dia</th>
<th>Tool Part Number</th>
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<tr>
<td>Ø2.10</td>
<td>06 9176 7017 01 000</td>
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<tr>
<td>Ø1.60</td>
<td>06 9176 7017 02 000</td>
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MEDIUM PRODUCTION

Metal/Plastic

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<thead>
<tr>
<th>Max Insulation Dia</th>
<th>Tool Part Number</th>
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</thead>
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<tr>
<td>Ø2.10</td>
<td>06 9176 7016 01 000</td>
</tr>
<tr>
<td>Ø1.60</td>
<td>06 9176 7016 02 000</td>
</tr>
</tbody>
</table>

CLEARANCE AREA ON PCB FOR HAND TOOLING

1 WAY

2 WAY

3 WAY

AREA TO BE KEPT CLEAR FOR TOOLING

AREA TO BE KEPT CLEAR FOR TOOLING

AREA TO BE KEPT CLEAR FOR TOOLING

031618 23
INTRODUCTION TOOLING
REQUIRES HAND PRESS WITH FLAT ROCK PLATES

2 WAY

3 WAY

HIGH PRODUCTION
Metal

<table>
<thead>
<tr>
<th>No. of Ways</th>
<th>Max Insulation Dia</th>
<th>Tool Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Ø2.10</td>
<td>06 9176 7017 01 002</td>
</tr>
<tr>
<td>2</td>
<td>Ø1.60</td>
<td>06 9176 7017 02 002</td>
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<tr>
<td>3</td>
<td>Ø2.10</td>
<td>06 9176 7017 01 003</td>
</tr>
<tr>
<td>3</td>
<td>Ø1.60</td>
<td>06 9176 7017 02 003</td>
</tr>
</tbody>
</table>

PCB RESTRICTED AREAS FOR PRESS ASSEMBLY TOOLING

2 WAY

3 WAY

NOTES:
1. DIMENSIONS SHOWN ARE REFERENCE DIMENSIONS.
2. MAXIMUM COMPONENT HEIGHT 1.00MM IN THIS AREA.
3. MAXIMUM COMPONENT HEIGHT 6.00MM IN THIS AREA.
4. THE SAME RESTRICTIONS APPLY TO ALL WIRE INSULATION DIAMETERS.
5. 2 AND 3 WAY TOOLS ONLY, FOR USE UNDER HAND PRESS WITH FLAT PLATES.
6. FOR HAND TOOLING REFER TO PAGE 23.
7. ALL DIMENSIONS ±0.20 UNLESS TOLERANCE SPECIFIED.
HAND INSERTION TOOLING
FOR ONE WAY CAP INSERTION

TO BE USED WITH 06-7000-7730-01-000
UNIVERSAL HANDLE

FOR ASSEMBLY INSTRUCTION REFER TO 201-01-124 APPLICATION NOTES

CLEARANCE AREA ON PCB FOR HAND TOOLING

AREA TO BE KEPT CLEAR FOR TOOLING
ASSEMBLED CONNECTOR

STANDARD CONNECTOR

CONNECTOR WITH CAP

NOTES:
1. ASSEMBLED HEIGHTS INCLUDE 0.10MM ALLOWANCE FOR PAD AND SOLDER THICKNESS. NO ALLOWANCE HAS BEEN MADE FOR ANY SOLDER RESIST OR OTHER FEATURES.
2. WHEN THE WIRE IS ASSEMBLED THE INSULATION SHOULD BE TRAPPED BY THESE EDGES.
The market and applications for simple and reliable discrete Wire-to-Board connectors continue to evolve. AVX first introduced the 9176 series of surface mountable Insulation Displacement Connectors (IDC) in 2007. Developed for harsh industrial and automotive applications, these connectors have been used in hundreds of applications from today’s “Smart Meter” all the way down to a simple sensor termination to a PCB. Size and performance has been one of the key factors for selecting this connector in terminating 18-24AWG wires to a PCB.

The next generation of IDC connector moves beyond all of the technical and performance attributes to address the “User Friendliness” of the product. By changing the insulator from acting as a connector body and make it more like a contact carrier, the insulator becomes the wire location and insertion aid without any special tools. The wire is just inserted into the cap (no stripping required) and then pressed down to provide a secure “Gas Tight” termination. This configuration simplifies and cost reduces the entire wire termination process for connecting discrete wires to a PCB.

### APPLICATIONS
- Connecting discrete wire components to a PCB
- Bringing power and signals onto a PCB
- Daisy chaining PCB’s together to create a continuous string
- Reference Product Specification 201-01-140

### FEATURES AND BENEFITS
- IDC contact provides a gas-tight connection to the PCB for long term reliability
- Plastic cap retains the contacts in position prior to automatic placement, then acts as the assembly tool to terminate the wires; no special tooling.
- Tested to automotive levels on shock, vibration and temperature cycling for reliability
- Identical contact and footprint pattern to the existing 9176 for full backward compatibility and functionality
- The IDC contact reduces the total applied cost versus solder or crimp processes
- Connectors are available in two configurations for maximum flexibility; End and Through Wire

### ELECTRICAL
- Current Rating: 10 Amps / Contact
- Voltage Rating: 300 VAC

### ENVIRONMENTAL
- Operating Temperature: -40°C to +125°C

### MECHANICAL
- Insulator Material: Nylon UL94VO
- Contact Material: Phosphor Bronze
- Plating: Tin over Nickel

### HOW TO ORDER

<table>
<thead>
<tr>
<th>Code</th>
<th>Accepted Wire Gauge</th>
<th>Wire Insulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>701</td>
<td>18 AWG Stranded</td>
<td>Ø 1.6 - 2.1</td>
</tr>
<tr>
<td>711</td>
<td>20 AWG Stranded</td>
<td>Ø 1.6 - 2.1</td>
</tr>
<tr>
<td>722</td>
<td>22 AWG Solid and Stranded</td>
<td>Ø 1.1 - 1.5</td>
</tr>
<tr>
<td>732</td>
<td>24 AWG Solid and Stranded</td>
<td>Ø 1.1 - 1.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Insulator Color</th>
<th>All Sizes</th>
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<tbody>
<tr>
<td>9 = UL White (Standard)</td>
<td></td>
</tr>
<tr>
<td>8 = UL Black (Special Order)</td>
<td></td>
</tr>
<tr>
<td>2 = UL Brown</td>
<td></td>
</tr>
<tr>
<td>3 = UL Blue</td>
<td></td>
</tr>
<tr>
<td>4 = UL Yellow</td>
<td></td>
</tr>
<tr>
<td>5 = UL Red</td>
<td></td>
</tr>
<tr>
<td>6 = UL Green</td>
<td></td>
</tr>
<tr>
<td>7 = UL Orange</td>
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</tbody>
</table>

Certification: UL File #E90723

042518
18 - 24 AWG 1 WAY IDC CONNECTOR THROUGH WIRE CAPPED IDC

NOTES:
1. 1 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
4. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-138, UL COMPONENTS REFER TO ELCO SPEC 201-01-138UL.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-140.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 600.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY,
10. INSULATION MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED, UL94 V-0, COLOR REFER TO PAGE 27.
11. GENERAL TOLERANCE ±0.20 UNLESS STATED.
12. FOR UL PRODUCT CODES UL REFERENCE E90723 (US AND CANADA).

PACKING DETAILS

SUGGEST PCB LAYOUT

CODE              ACCEPTED WIRE GAUGE  A    WIRE INSULATION  B
701 18 AWG Stranded                0.74  Ø 1.6-2.1     2.1
711 20 AWG Solid and Stranded     0.60  Ø 1.6-2.1     2.1
722 22 AWG Solid and Stranded     0.47  Ø 1.1-1.6     1.6
732 24 AWG Solid and Stranded     0.37  Ø 1.1-1.6     1.6
Capped 18-24 AWG: WTB
9176-700

18 - 24 AWG 2 WAY IDC CONNECTOR THROUGH WIRE CAPPED IDC

Notes:
1. 2 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
   PRE-ASSEMBLED THROUGH WIRE CAP, CODE REFER TO PAGE 27.
2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
4. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-138, UL COMPONENTS REFER TO ELCO SPEC 201-01-138UL.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-140.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 600.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
10. INSULATION MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED. UL94 V-0, COLOR REFER TO PAGE 27.
11. GENERAL TOLERANCE ±0.20 UNLESS STATED.
12. FOR UL PRODUCT CODES UL REFERENCE E90723 (US AND CANADA).

Packing Details

Suggest PCB Layout
18 - 24 AWG 3 WAY IDC CONNECTOR THROUGH WIRE CAPPED IDC

NOTES:
1. 3 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
4. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-138, UL COMPONENTS REFER TO ELCO SPEC 201-01-138UL.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-140.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 600.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
10. INSULATION MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED. UL94 V-0, COLOR REFER TO PAGE 27.
11. GENERAL TOLERANCE ±0.20 UNLESS STATED.
12. FOR UL PRODUCT CODES UL REFERENCE E90723 (US AND CANADA).

PACKING DETAILS

SUGGEST PCB LAYOUT

MOUNTED ON PCB

Packing Details Table:

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<thead>
<tr>
<th>Code</th>
<th>Accepted Wire Gauge</th>
<th>Wire A</th>
<th>Wire B</th>
</tr>
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<tbody>
<tr>
<td>701</td>
<td>18 AWG Stranded</td>
<td>0.74</td>
<td>2.1</td>
</tr>
<tr>
<td>711</td>
<td>20 AWG Solid and Stranded</td>
<td>0.60</td>
<td>2.1</td>
</tr>
<tr>
<td>722</td>
<td>22 AWG Solid and Stranded</td>
<td>0.47</td>
<td>1.6</td>
</tr>
<tr>
<td>732</td>
<td>24 AWG Solid and Stranded</td>
<td>0.37</td>
<td>1.6</td>
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</tbody>
</table>
Capped 18-24 AWG: WTB

9176-700

18 - 24 AWG 1 WAY IDC CONNECTOR WIRE STOP CAPPED IDC

NOTES:
1. 1 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES. 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
4. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-138, UL COMPONENTS REFER TO ELCO SPEC 201-01-138UL.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-140.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 600.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
10. INSULATION MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED. UL94 V-0, COLOR REFER TO PAGE 27.
11. GENERAL TOLERANCE ±0.20 UNLESS STATED.
12. FOR UL PRODUCT CODES UL REFERENCE E90723 (US AND CANADA).

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<tr>
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<tbody>
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<td>18 AWG Stranded</td>
<td>0.74</td>
<td>Ø 1.6-2.1</td>
<td>2.1</td>
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<td>22 AWG Solid and Stranded</td>
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<td>0.37</td>
<td>Ø 1.1-1.6</td>
<td>1.6</td>
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</tbody>
</table>

PACKING DETAILS

SUGGEST PCB LAYOUT
18 - 24 AWG 2 WAY IDC CONNECTOR WIRE STOP CAPPED IDC

NOTES:
1. 2 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION. 
PRE-ASSEMBLED WIRE STOP CAP, CODE REFER TO PAGE 27.
2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES. 18AWG WILL ONLY ACCEPT STRANDED WIRES. SEE TABLE.
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
4. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-138, UL COMPONENTS REFER TO ELCO SPEC 201-01-138UL.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-140.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 600.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
10. INSULATION MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED. UL94 V-0, COLOR REFER TO PAGE 27.
11. GENERAL TOLERANCE ±0.20 UNLESS STATED.
12. FOR UL PRODUCT CODES UL REFERENCE E90723 (US AND CANADA).

PACKING DETAILS

SUGGEST PCB LAYOUT
**18 - 24 AWG 3 WAY IDC CONNECTOR WIRE STOP CAPPED IDC**

**NOTES:**
1. 3 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
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11. GENERAL TOLERANCE ±0.20 UNLESS STATED.
12. FOR UL PRODUCT CODES UL REFERENCE E90723 (US AND CANADA).

**PACKING DETAILS**

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<td>2.1</td>
</tr>
<tr>
<td>711</td>
<td>20 AWG Solid and Stranded</td>
<td>0.60</td>
<td>Ø 1.6-2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>722</td>
<td>22 AWG Solid and Stranded</td>
<td>0.47</td>
<td>Ø 1.1-1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>732</td>
<td>24 AWG Solid and Stranded</td>
<td>0.37</td>
<td>Ø 1.1-1.6</td>
<td>1.6</td>
</tr>
</tbody>
</table>
18-24 AWG ASSEMBLED CAPPED IDC CONNECTORS

TYPICAL THROUGH WIRE ASSEMBLY

TYPICAL WIRE STOP ASSEMBLY
The 917X series of surface mount Insulation Displacement Connectors (IDC) were developed to meet the harsh automotive and industrial market applications for connecting individual wires directly to a PCB ranging from 14 AWG to 28 AWG. This industry proven contact system has been tested to automotive levels of shock, vibration, and temperature cycling to prove their reliability and robustness. This new single contact was developed as a standalone component to enhance the application uses with the IDC technology. The simplicity of inserting a wire into an SMT contact with a small tool or optional retention/termination cap allows a wide range of devices to be connected to the PCB without soldering. In SSL applications specifically, these contacts are used to bring power and signal onto the PCB or are used to daisy chain multiple boards together in a long string. While the IDC contact provides a gas-tight connection to conductor of the wire, the optional cap provides a positive strain relief even in the harshest conditions. In case of repair, the wires can be removed and replace up to three times.

The single 9176-400 series contact and cap accepts 22 AWG to 28 AWG wires with an insulation diameter ranging from 1.0mm to 1.5mm. These dual beam contacts support a 6 amp current rating with a large SMT solder base to provide maximum stability on the PCB. The optional locking strain relief cap acts as the termination tool for severe vibration applications.

**APPLICATIONS**
- Connecting discrete wire components directly to the PCB
- Bringing power and signals onto a PCB
- Daisy chaining PCB’s together to create a continuous string of boards
- Application notes: refer to 201-01-124

**FEATURES AND BENEFITS**
- IDC contact is supplied in T&R pockets for standard SMT placement
- IDC contact provides a gas-tight connection to the PCB for long term reliability
- Optional termination cap provides additional strain relief for severe environments
- Tested to automotive levels on shock, vibration and temperature cycling for reliability
- Reduced total applied cost versus solder or crimp processes
- Individual contacts can be located anywhere on the PCB based on specific application

**ELECTRICAL**
- Current Rating: 6 Amps/Contact
- Voltage Rating: Dependant on component proximity

**ENVIRONMENTAL**
- Operating Temperature: -40ºC to +125ºC

**MECHANICAL**
- Insulator Material: Nylon 46: UL94V0
- Contact Material: Phosphor Bronze
- Plating: Tin over Nickel
- Durability: 3 Cycles

**HOW TO ORDER – CONTACT OPTIONS**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series</th>
<th>Number of Ways</th>
<th>Wire Gauge Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>9176</td>
<td>001</td>
<td>4XX</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>No of Ways</th>
<th>Details</th>
<th>Accepted Wire Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>1</td>
<td>Page 36</td>
<td></td>
</tr>
</tbody>
</table>

**HOW TO ORDER – CAP OPTIONS**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series</th>
<th>Number of Ways</th>
<th>Wire Gauge Size</th>
<th>Insulator Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>9176</td>
<td>001</td>
<td>415</td>
<td>X00</td>
</tr>
</tbody>
</table>

**CONNECTOR/TOOLING PART NUMBER MATRIX**

<table>
<thead>
<tr>
<th>AWG</th>
<th>Wire Insulation</th>
<th>Positions</th>
<th>Part Number</th>
<th>Plastic (medium volume)</th>
<th>Metal (high volume)</th>
<th>Cap Application Tool</th>
<th>Accessory Caps</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>Ø 1.0 - 1.5</td>
<td>1p</td>
<td>709176001422006</td>
<td>0691761702021000</td>
<td>0691761702101000</td>
<td>0691761702101500</td>
<td>White</td>
</tr>
<tr>
<td>24</td>
<td>Ø 1.0 - 1.5</td>
<td>1p</td>
<td>709176001432006</td>
<td>0691761702021000</td>
<td>0691761702101000</td>
<td>0691761702101500</td>
<td>Black</td>
</tr>
<tr>
<td>26</td>
<td>Ø 0.7 - 1.0</td>
<td>1p</td>
<td>709176001442006</td>
<td>0691761702101500</td>
<td>0691761702101500</td>
<td>0691761702101500</td>
<td>White</td>
</tr>
<tr>
<td>28</td>
<td>Ø 0.7 - 1.0</td>
<td>1p</td>
<td>709176001443006</td>
<td>0691761702021000</td>
<td>0691761702101000</td>
<td>0691761702101500</td>
<td>Black</td>
</tr>
</tbody>
</table>

**Certification:** UL File #E90723

030818
**NOTES:**
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
3. CONTACT PLATING: PURE TIN.
4. CONNECTOR DESIGNED TO ACCEPT BETWEEN 22AWG AND 28AWG SOLID AND STRANDED WIRE, SEE TABLE.
5. ALL DIMENSIONS ±0.20 UNLESS TOLERANCED.
6. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-126 AND APPLICATION NOTES 201-01-124.
7. SMT PCB LAYOUT, REFER TO PAGE 37.
8. PACKING IN TAPE AND REEL, QUANTITY 2000 PER REEL.
9. WHEN REQUIRED, MATCHING CAP DETAILS ON DRAWING 60-9176-001-4XX-X06S.
10. ASSEMBLY TOOLING ON PAGE 39 FOR WIRE INTO CONTACT AND PAGE 38 FOR CAP.
11. UL REFERENCE E90723, THIS UL REFERENCE ALSO APPLIES WHEN COMBINED WITH AVX SPECIFIED OPTIONAL CAP.

---

**CONTACT DETAILS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Accepted Wire Gauge</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>422</td>
<td>22AWG Solid or Stranded</td>
<td>0.47</td>
</tr>
<tr>
<td>432</td>
<td>24AWG Solid or Stranded</td>
<td>0.37</td>
</tr>
<tr>
<td>442</td>
<td>26AWG Solid or Stranded</td>
<td>0.28</td>
</tr>
<tr>
<td>443</td>
<td>28AWG Solid or Stranded</td>
<td>0.20</td>
</tr>
</tbody>
</table>

---

**PACKING DETAILS**

<table>
<thead>
<tr>
<th>REEL QTY</th>
<th>2 000</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEADER</td>
<td>480MM</td>
</tr>
<tr>
<td>TRAILER</td>
<td>120MM</td>
</tr>
</tbody>
</table>
22-28 AWG IDC WIRE TO BOARD CONNECTOR
SINGLE CONTACT

SMT PCB LAYOUT

PURE TIN PADS

NOTES:
1. CONNECTOR CAN BE USED WITH CONTACT ONLY OR WITH OPTIONAL CAP.
2. OUTLINE OF CAP WHERE USED.
3. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-126 AND APPLICATION NOTES 201-01-124.
4. ALL DIMENSIONS ±0.20 UNLESS TOLERANCED.
5. ASSEMBLY TOOLING ON PAGE 39 FOR WIRE INTO CONTACT AND PAGE 38 FOR CAP.
6. WIRE CENTER LINE HEIGHT ABOVE THE PCB. THIS INCLUDES AN ALLOWANCE OF 0.10MM FOR SOLDER AND
   0.035MM FOR PAD THICKNESS. NO ALLOWANCE HAS BEEN MADE FOR SOLDER RESIST OR OTHER FEATURES.
ASSEMBLY TOOLING – CAP USED

NOTES:
1. ASSEMBLY TOOLING FOR CAP.
2. MINIMUM AREA OF PCB TO BE KEPT CLEAR OF COMPONENTS, TRACKS PERMISSIBLE.
3. WIRE AND CAP INSERTED IN ONE OPERATION.
4. REFER TO APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION.
5. REFER TO PAGE 39 FOR ASSEMBLY WITHOUT CAP.

CAP APPLICATION TOOL – PLASTIC
06-9176-7023-01-000

ORIENTATE CAP IN TOOL

METAL TOOL – HIGH VOLUME
06-9176-7024-01-000

UNIVERSAL HANDLE
06-7000-7730-01-000

CONNECTOR/TOOLING PART NUMBER MATRIX

<table>
<thead>
<tr>
<th>SERIES 9176-400 IDC</th>
<th>HAND INSERTION TOOLING*</th>
<th>ACCESSORY CAPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWG</td>
<td>Wire Insulation</td>
<td>Positions</td>
</tr>
<tr>
<td>22</td>
<td>Ø 1.0 - 1.5</td>
<td>1p</td>
</tr>
<tr>
<td>24</td>
<td>Ø 1.0 - 1.5</td>
<td>1p</td>
</tr>
<tr>
<td>26</td>
<td>Ø 0.7 - 1.0</td>
<td>1p</td>
</tr>
<tr>
<td>28</td>
<td>Ø 0.7 - 1.0</td>
<td>1p</td>
</tr>
</tbody>
</table>

* Hand Insertion Tooling and Cap Application - Universal Hand Tool 067000773001000; Consult Application Notes 201-01-124
ASSEMBLY TOOLING – CAP NOT USED
WIRE ONTO CONTACT

NOTES:
1. ASSEMBLY TOOLING FOR CONTACT ONLY. NO CAP USED.
2. MINIMUM AREA OF PCB TO BE KEPT CLEAR OF COMPONENTS, TRACKS PERMISSIBLE.
3. REFER TO APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION.
4. INSERT CORRECT TOOL INTO HANDLE, MAGNETIC RETENTION.
5. REFER TO PAGE 38 FOR ASSEMBLY WITH CAP.
NOTES:
1. CAP FOR IDC WIRE TO BOARD CONNECTION.
2. CAP MATERIAL: GLASS FILLED NYLON 46, COLOR SEE PAGE 35.
3. CAPS DESIGNED TO ACCOMMODATE WIRE INSULATION DIAMETERS 0.75MM TO 1.5MM.
4. ALL DIMENSIONS ±0.20 UNLESS TOLERANCED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-126, APPLICATION NOTES 201-01-124.
6. PACKING IN BAGS, QUANTITY 2000 PER BAG.
7. FOR INSTALLATION DETAILS REFER TO DRAWING 70-9176-001-4XX-006S.
The 917X series of surface mount Insulation Displacement Connectors (IDC) were developed to meet the harsh automotive and industrial market applications for connecting individual wires directly to a PCB ranging from 14 AWG to 28 AWG. This industry proven contact system has been tested to automotive levels of shock, vibration, and temperature cycling to prove their reliability and robustness. This new single contact was developed as a standalone component to enhance the application uses with the IDC technology. The simplicity of inserting a wire into an SMT contact with a small tool or optional retention / termination cap allows a wide range of devices to be connected to the PCB without soldering. In SSL applications specifically, these contacts are used to bring power and signal onto the PCB or are used to daisy chain multiple boards together in a long string. While the IDC contact provides a gas-tight connection to conductor of the wire, the optional cap provides a positive strain relief even in the harshest conditions. In case of repair, the wires can be removed and replace up to three times.

The single 917 series contact and cap accepts 18 AWG to 24 AWG wires with an insulation diameter ranging from 1.1mm to 2.1mm. These dual beam contacts support a 10 amp current rating with a large SMT solder base to provide maximum stability on the PCB. The optional locking strain relief cap acts as the termination tool for severe vibration applications.

**APPLICATIONS**
- Connecting discrete wire components directly to the PCB
- Bringing power and signals onto a PCB
- Daisy chaining PCB’s together to create a continuous string of boards
- Application notes: refer to 201-01-124

**FEATURES AND BENEFITS**
- IDC contact is supplied in T&R pockets for standard SMT placement
- IDC contact provides a gas-tight connection to the PCB for long term reliability
- Optional termination cap provides additional strain relief for severe environments
- Tested to automotive levels on shock, vibration and temperature cycling for reliability
- Reduced total applied cost versus solder or crimp processes
- Individual contacts can be located anywhere on the PCB based on specific application

**ELECTRICAL**
- Current Rating: 10 Amps/Contact
- Voltage Rating: Dependant on component proximity

**ENVIRONMENTAL**
- Operating Temperature: -40ºC to +125ºC

**MECHANICAL**
- Insulator Material: Nylon 46: UL94V0
- Contact Material: Phosphor Bronze
- Plating: Tin over Nickel
- Durability: 3 Cycles

**HOW TO ORDER – CONTACT OPTIONS**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>9176</td>
<td>001</td>
</tr>
<tr>
<td>5XX</td>
<td>006</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>No of Ways</th>
<th>Details</th>
<th>Page 39</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**HOW TO ORDER – CAP OPTIONS**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>9176</td>
<td>001</td>
</tr>
<tr>
<td>5XX</td>
<td>X00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Wire Insulation (AWG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>516</td>
<td>1.1-1.6 (22-24)</td>
</tr>
<tr>
<td>521</td>
<td>1.6-2.1 (18-20)</td>
</tr>
</tbody>
</table>

**CONNECTOR/TOOLING PART NUMBER MATRIX**

<table>
<thead>
<tr>
<th>SERIES 9176-500 IDC</th>
<th>HAND INSERTION TOOLING*</th>
<th>ACCESSORY CAPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWG</td>
<td>Wire Insulation</td>
<td>Positions</td>
</tr>
<tr>
<td>-----</td>
<td>----------------</td>
<td>-----------</td>
</tr>
<tr>
<td>18</td>
<td>Ø 1.6 - 2.1</td>
<td>1p</td>
</tr>
<tr>
<td>20</td>
<td>Ø 1.6 - 2.1</td>
<td>1p</td>
</tr>
<tr>
<td>22</td>
<td>Ø 1.1 - 1.6</td>
<td>1p</td>
</tr>
<tr>
<td>24</td>
<td>Ø 1.1 - 1.6</td>
<td>1p</td>
</tr>
</tbody>
</table>

* Hand Insertion Tooling and Cap Application - Universal Hand Tool 067000773001000; Consult Application Notes 201-01-124

Certification: UL File #E90723
CONTACT DETAILS

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
3. CONTACT PLATING: PURE TIN.
4. CONNECTOR DESIGNED TO ACCEPT BETWEEN 18 AND 24 GAUGE STRANDED WIRE. SEE TABLE.
5. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
6. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND APPLICATION NOTES 201-01-124.
7. SMT PCB LAYOUT, REFER TO PAGE 40.
8. PACKING IN TAPE AND REEL, QUANTITY 1000 PER REEL.
9. WHEN REQUIRED, MATCHING CAP DETAILS ON DRAWING 60-9176-001-5XX-X00S.
10. ASSEMBLY TOOLING ON PAGE 41 (WITH CAP AND WITHOUT CAP).

PACKING DETAILS

| REEL QTY | 1000 |
| LEADER  | 480MM |
| TRAILER  | 120MM |
18-24 AWG IDC WIRE TO BOARD CONNECTOR
SINGLE CONTACT

SMT PCB LAYOUT
PURE TIN PADS

ASSEMBLED/INSTALLED PRODUCTS

NOTES:
1. CONNECTOR CAN BE USED WITH CONTACT ONLY OR WITH OPTIONAL CAP.
2. OUTLINE OF CAP WHEN USED.
3. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND 201-01-124.
4. DIMENSIONS SHOWN ARE REFERENCED DIMENSIONS.
5. ASSEMBLY TOOLING ON PAGE 44 (WITH CAP AND WITHOUT CAP).
ASSEMBLY TOOLING – CAP USED

NOTES:
1. ASSEMBLY TOOLING FOR CAP.
2. AREA OF PCB TO BE KEPT CLEAR OF COMPONENTS, TACKS PERMISSIBLE.
3. WIRE AND CAP INSERTED IN ONE OPERATION.
4. REFER TO APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION.
5. REFER BELOW WHEN CONTACT USED WITHOUT CAP.

ASSEMBLY TOOLING – CAP NOT USED

WIRE ONTO CONTACT

NOTES:
1. ASSEMBLY TOOLING FOR CONTACT ONLY, NO CAP USED.
2. MINIMUM AREA OF PCB TO BE KEPT CLEAR OF COMPONENTS, TRACK PERMISSIBLE.
3. REFER TO TABLE FOR CORRECT TOOL/WIRE COMBINATION.
4. REFER TO APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION.

<table>
<thead>
<tr>
<th>Wire Gauge</th>
<th>Wire Insulation ø</th>
<th>Metal Tool High Volume</th>
<th>Plastic Tool Small to Medium Volume</th>
<th>Handle</th>
</tr>
</thead>
<tbody>
<tr>
<td>22-24 AWG</td>
<td>1.10 to 1.60</td>
<td>06-9176-7019-02-000</td>
<td>06-9176-7020-02-000</td>
<td>06-7000-7730-01-000</td>
</tr>
<tr>
<td>18-20 AWG</td>
<td>1.60 to 2.10</td>
<td>06-9176-7019-01-000</td>
<td>06-9176-7020-01-000</td>
<td>06-7000-7730-01-000</td>
</tr>
</tbody>
</table>
Single IDC Contact 18-24 AWG: WTB
9176-500

CAP DETAILS

NOTES:
1. CAP FOR IDC WIRE TO BOARD CONNECTION.
2. CAP MATERIAL: GLASS FILLED NYLON 46, COLOR SEE PAGE 41.
3. CAPS DESIGNED TO ACCOMMODATE WIRE INSULATION DIAMETERS 1.1MM TO 2.1MM.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106, APPLICATION NOTES 201-01-124.
6. PACKING IN BAGS, QUANTITY 1000 PER BAG.
7. FOR INSTALLATION DETAILS REFER TO DRAWING 70-9176-001-XX-006S.

<table>
<thead>
<tr>
<th>Code</th>
<th>Insulator Diameter (AWG)</th>
<th>B</th>
<th>Text C</th>
</tr>
</thead>
<tbody>
<tr>
<td>916</td>
<td>1.1 to 1.6 (22-24)</td>
<td>1.00</td>
<td>Ø 1.6</td>
</tr>
<tr>
<td>921</td>
<td>1.6 to 2.1 (18-20)</td>
<td>1.50</td>
<td>Ø 2.1</td>
</tr>
</tbody>
</table>
The market and applications for simple and reliable discrete Wire-to-Board (WTB) connectors continue to evolve. Developed for harsh industrial and automotive applications, Insulation Displacement Connectors (IDC) have been used in hundreds of applications connecting wires to PCB’s from transportation wiring to every day LED lighting and smart meter/sensor connections. Size, performance and simplicity have been the key factors for selecting this connector when long term reliability is critical.

This single contact version of the proven 9176 family of connectors is the first in Plated Through Hole (PTH) termination. While supporting all of the features and benefits from the SMT offering, this connector provides a new option for a small, cost effective and high performance WTB solution.

**APPLICATIONS**
- Machine Controls: motors, drives, solenoids, sensors, fans and pumps
- Commercial Buildings: controls, security, fire and sensors
- Smart Grid: meters, breakers and panels
- SSL/LED: bulbs, fixtures, signage and streetlights
- Application notes: reference 201-01-142

**FEATURES AND BENEFITS**
- IDC contact provides a gas-tight connection to the PCB for long term reliability
- Plastic cap retains the contact and then acts as the assembly tool to terminate the wires; no special tooling.
- Tested to automotive levels on shock, vibration and temperature cycling for reliability
- The IDC contact reduces the total applied cost versus solder or crimp processes
- Connectors are available in two configurations for maximum flexibility: End and Through Wire

**ELECTRICAL**
- Current Rating: See matrix below
- Voltage Rating: 600 VAC

**ENVIRONMENTAL**
- Operating Temperature: -40ºC to +125ºC

**MECHANICAL**
- Contact Material: Phosphor Bronze
- Contact Plating: Tin over Nickel
- Durability: 3 Cycles

**HOW TO ORDER**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series</th>
<th>Number of Ways</th>
<th>Color Option</th>
<th>Contact Style</th>
<th>Cap Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>9176</td>
<td>001</td>
<td>9 = UL White</td>
<td>60X Capped IDC</td>
<td>Through Wire</td>
</tr>
</tbody>
</table>

**CURRENT RATING**

<table>
<thead>
<tr>
<th>Wire Gauge</th>
<th>Current Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 AWG</td>
<td>9A</td>
</tr>
<tr>
<td>20 AWG</td>
<td>8A</td>
</tr>
<tr>
<td>22 AWG</td>
<td>6A</td>
</tr>
<tr>
<td>24 AWG</td>
<td>5A</td>
</tr>
</tbody>
</table>

Certification: UL File #E90723
Single Tine PTH
18-24 AWG: WTB
9176-600

18-24 AWG 1 WAY PTH CONNECTOR
THROUGH WIRE CAPPED

NOTES:
1. 1 WAY CONNECTOR FOR PTH WIRE TO BOARD CONNECTION, PRE-ASSEMBLED THROUGH WIRE CAP, CODE SEE PAGE 46.
2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY, MAXIMUM DIAMETER 1.8MM.
4. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-163.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-142.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 500.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
10. INSULATION MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED, UL94 V-O. COLOR REFER TO PAGE 46.

PACKING DETAILS

SUGGESTED PCB LAYOUT

<table>
<thead>
<tr>
<th>Code</th>
<th>Accepted Wire Gauge</th>
<th>A</th>
<th>Wire Insulation</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>600</td>
<td>18 AWG Stranded</td>
<td>0.74</td>
<td>Ø 1.6-2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>601</td>
<td>20 AWG Solid or Stranded</td>
<td>0.60</td>
<td>Ø 1.6-2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>602</td>
<td>22 AWG Solid or Stranded</td>
<td>0.47</td>
<td>Ø 1.1-1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>603</td>
<td>24 AWG Solid or Stranded</td>
<td>0.37</td>
<td>Ø 1.1-1.6</td>
<td>1.6</td>
</tr>
</tbody>
</table>
Single Tine PTH
18-24 AWG: WTB
9176-600

18-24 AWG 1 WAY PTH CONNECTOR
WIRE STOP CAPPED

NOTES:
1. 1 WAY CONNECTOR FOR PTH WIRE TO BOARD CONNECTION, PRE-ASSEMBLED WIRE STOP CAP, CODE SEE PAGE 46.
2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY, MAXIMUM DIAMETER 1.8MM.
4. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-163.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-142.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 500.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
10. INSULATION MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 46.
11. WIRE STOP CAP PROTECTS END OF WIRE.

PACKING DETAILS

Packing Details

330mm DIAMETER REEL

QUANTITY PER REEL 500
Single Tine PTH
18-24 AWG: WTB
9176-600

18-24 AWG ASSEMBLED CAPPED PTH CONNECTORS

NOMINAL ASSEMBLED HEIGHTS

TYPICAL THROUGH WIRE ASSEMBLIES

TYPICAL WIRE STOP ASSEMBLIES
The market and applications for simple and reliable discrete Wire-to-Board (WTB) connectors continue to evolve. Developed for harsh industrial and automotive applications, Insulation Displacement Connectors (IDC) have been used in hundreds of applications connecting wires to PCB’s from transportation wiring to every day LED lighting and smart meter/sensor connections. Size, performance and simplicity have been the key factors for selecting this connector when long term reliability is critical.

This single contact version of the proven 9176 family of connectors offers a lower cost solution to the market with only a 10% reduction in current rating. The SMT footprint is backward compatible with the standard dual contact configurations; offers all the same wire gauges and termination benefits of the integrated cap and provides a 10% height reduction.

**APPLICATIONS**
- Machine Controls: motors, drives, solenoids, sensors, fans and pumps
- Commercial Buildings: controls, security, fire and sensors
- Smart Grid: meters, breakers and panels
- SSL/LED: bulbs, fixtures, signage and streetlights
- Application notes: reference 201-01-142

**ELECTRICAL**
- Current Rating: See matrix below
- Voltage Rating: 600 VAC

**ENVIROMENTAL**
- Operating Temperature: -40ºC to +125ºC

**FEATURES AND BENEFITS**
- IDC contact provides a gas-tight connection to the PCB for long term reliability
- Plastic cap retains the contact in position prior to automatic placement, then acts as the assembly tool to terminate the wires; no special tooling.
- Tested to automotive levels on shock, vibration and temperature cycling for reliability
- Identical contact and footprint pattern to the existing 9176 for full backward compatibility and functionality
- The IDC contact reduces the total applied cost versus solder or crimp processes
- Connectors are available in two configurations for maximum flexibility: End and Through Wire

**MECHANICAL**
- Contact Material: Phosphor Bronze
- Contact Plating: Tin over Nickel
- Durability: 3 Cycles

**HOW TO ORDER**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Accepted Wire Gauge</th>
<th>Wire Gauges</th>
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</thead>
<tbody>
<tr>
<td>650</td>
<td>Capped IDC Connector</td>
<td>18 AWG Stranded</td>
<td>ø1.6-2.1</td>
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<tr>
<td>651</td>
<td>20 AWG Solid and Stranded</td>
<td>ø1.6-2.1</td>
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<tr>
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**CURRENT RATING**

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<th>22AWG</th>
<th>24AWG</th>
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<tr>
<td>Current</td>
<td>9A</td>
<td>8A</td>
<td>6A</td>
<td>5A</td>
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Certification: UL File #E90723
Single Tine SMT
18-24 AWG: WTB
9176-650

18-24 AWG 1 WAY IDC CONNECTOR
THROUGH WIRE CAPPED

NOTES:
1. 1 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION, PRE-ASSEMBLED THROUGH WIRE CAP, CODE SEE PAGE 50.
2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY, MAXIMUM DIAMETER 1.8MM.
4. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-163.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-142.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 700.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
10. INSULATION MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED, UL94 V-O. COLOR REFER TO PAGE 50.

Packing Details

Unreel Direction

330mm Diameter Reel

Quantity per Reel 700

Suggested PCB Layout

NOTES:
1. 1 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION, PRE-ASSEMBLED THROUGH WIRE CAP, CODE SEE PAGE 50.
2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY, MAXIMUM DIAMETER 1.8MM.
4. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-163.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-142.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 700.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
10. INSULATION MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED, UL94 V-O. COLOR REFER TO PAGE 50.
SUGGESTED PCB LAYOUT

NOTES:
1. 1 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION, PRE-ASSEMBLED WIRE STOP CAP. CODE SEE PAGE 50.
2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY, MAXIMUM DIAMETER 1.8MM.
4. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-163.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-142.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 700.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
10. INSULATION MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED, UL94 V-O. COLOR REFER TO PAGE 50.
11. WIRE STOP CAP PROTECTS END OF WIRE.
18-24 AWG ASSEMBLED CAPPED IDC CONNECTORS

NOMINAL ASSEMBLED HEIGHTS

TYPICAL THROUGH WIRE ASSEMBLIES

TYPICAL WIRE STOP ASSEMBLIES
Low Profile IDC 22-26AWG

9176-800

AVX industrial/transportation grade insulation displacement connectors (IDC) have been proven in the market for over ten years. Providing a very simple one-step termination process, these connectors proved a robust wire-to-board (WTB) termination in harsh applications.

The 9176-800 series has been developed specifically for 22-26AWG discrete wires in size critical applications. By reducing the “Z” axis height by 1.0mm and the overall volume by up to 50%, this new package size is an ideal choice in space constrained applications over previous IDC connectors. In addition, an expanded size range is available starting from a 1 position up to 4 positions in each wire gauge. The entire range provides new packaging solutions in industrial, medical and transportation applications such as smart metering, LED lighting, industrial controls and portable monitoring and measurement devices.

APPLICATIONS
- Connecting discrete wires and components to a PCB
- Bringing power and signals onto a PCB
- Daisy chaining or interconnecting PCB’s together
- Application Notes: Refer to 201-01-216

FEATURES AND BENEFITS
- Redundant and fatigue resistant phosphor bronze material provides a gas tight, cold welded connection to the wire
- IDC connectors can be potted or over molded to encapsulate electronic modules and provide environmental protection
- The 1p version is available in industry standard colors to match individual wires for error free wire termination

ELECTRICAL
- Current Rating: 22AWG: 6 amps
  24AWG: 5 amps
  26AWG: 4 amps
- Voltage Rating: 1p: 600V
  2p-4p: 100V
- Durability: 1 Cycle

ENVIROMENTAL
- Operating Temperature: -40ºC to +125ºC

MECHANICAL
- Insulator Material: Glass-Filled Nylon 46; UL94V0
- Contact Material: Phosphor Bronze
- Plating: Lead-Free Tin Over Nickel

HOW TO ORDER

Prefix
00

Series
9176

Number of Ways
001 = 1
002 = 2
003 = 3
004 = 4

Wire Gauge Size
853 = 22 AWG Solid and Stranded
863 = 24 AWG Solid and Stranded
873 = 26 AWG Solid and Stranded

Insulator Color
9 = White Standard
Solid Colors (1p only)
2 = Brown
3 = Blue
4 = Yellow
5 = Red
6 = Green
7 = Orange
8 = Black

Plating Option
06 = Pure Tin
All Over Nickel

Certification: UL File #E90723
Low Profile IDC 22-26AWG

9176-800

00-9176-001-8X3-X06

1 WAY

NOTES:
1. 1 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTOR.
2. CONTACT/CAP TO MATCH 22AWG TO 26AWG STRANDED AND SOLID WIRE, MAXIMUM INSULATOR 1.40 DIAMETER.
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
4. FOR FULL PRODUCT SPECIFICATION REFER TO AVX SPEC 201-01-215.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-216.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 1700.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
10. INSULATOR MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED. UL94 V-0. COLOR REFER TO PAGE 54.

PART NUMBER | WIRE GAUGE | A
-------------|-------------|-------
00-9176-001-853-X06 | 22AWG Solid and Stranded | 0.47
00-9176-001-863-X06 | 24AWG Solid and Stranded | 0.37
00-9176-001-873-X06 | 26AWG Solid and Stranded | 0.28

SUGGESTED PCB LAYOUT

PACKING DETAILS

330mm DIAMETER REEL

QUANTITY PER REEL 1700
Low Profile IDC 22-26AWG
9176-800

00-9176-001-8X3-X06
2 WAY

NOTES:
1. 2 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTOR.
2. CONTACT/CAP TO MATCH 22AWG TO 26AWG STRANDED AND SOLID WIRE, MAXIMUM INSULATOR 1.40 DIAMETER.
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
4. FOR FULL PRODUCT SPECIFICATION REFER TO AVX SPEC 201-01-215.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-216.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 1700.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
10. INSULATOR MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED. UL94 V-0. COLOR REFER TO PAGE 54.

SUGGESTED PCB LAYOUT

PART NUMBER | WIRE GAUGE | A
-------------|-------------|-----
00-9176-002-853-X06 | 22AWG Solid and Stranded | 0.47
00-9176-002-863-X06 | 24AWG Solid and Stranded | 0.37
00-9176-002-873-X06 | 26AWG Solid and Stranded | 0.28

PACKING DETAILS
Low Profile IDC 22-26AWG
9176-800

00-9176-001-8X3-X06

3 WAY

NOTES:
1. 3 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTOR.
2. CONTACT/CAP TO MATCH 22AWG TO 26AWG STRANDED AND SOLID WIRE, MAXIMUM INSULATOR 1.40 DIAMETER.
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
4. FOR FULL PRODUCT SPECIFICATION REFER TO AVX SPEC 201-01-215.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-216.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 1700.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
10. INSULATOR MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED. UL94 V-0, COLOR REFER TO PAGE 54.

SUGGESTED PCB LAYOUT

Packing Details

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<tr>
<th>PART NUMBER</th>
<th>WIRE GAUGE</th>
<th>A</th>
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<td>00-9176-003-853-X06</td>
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<td>0.47</td>
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<tr>
<td>00-9176-003-863-X06</td>
<td>24AWG Solid and Stranded</td>
<td>0.37</td>
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<tr>
<td>00-9176-003-873-X06</td>
<td>26AWG Solid and Stranded</td>
<td>0.28</td>
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</table>
Low Profile IDC 22-26AWG
9176-800

00-9176-001-8X3-X06
4 WAY

NOTES:
1. 4 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTOR.
2. CONTACT/CAP TO MATCH 22AWG TO 26AWG STRANDED AND SOLID WIRE, MAXIMUM INSULATOR 1.40 DIAMETER
3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
4. FOR FULL PRODUCT SPECIFICATION REFER TO AVX SPEC 201-01-215.
5. ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-216.
6. GENERAL TOLERANCE ±0.20 UNLESS STATED.
7. PACKED IN TAPE AND REEL, QUANTITY PER REEL 1700.
8. CONNECTOR OUTLINE.
9. CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
10. INSULATOR MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED. UL94 V-0, COLOR REFER TO PAGE 54.

SUGGESTED PCB LAYOUT

PACKING DETAILS

PART NUMBER                  WIRE GAUGE                  A
00-9176-004-853-X06         22AWG Solid and Stranded  0.47
00-9176-004-863-X06         24AWG Solid and Stranded  0.37
00-9176-004-873-X06         26AWG Solid and Stranded  0.28
Low Profile IDC 22-26AWG
9176-800

CONNECTOR DETAILS
The 917X series of surface mount Insulation Displacement Connectors (IDC) were developed to meet the harsh automotive and industrial market applications for connecting individual wires directly to a PCB ranging from 14 AWG to 28 AWG. This industry proven contact system has been tested to automotive levels of shock, vibration, and temperature cycling to prove their reliability and robustness. The simplicity of inserting a wire into the connector with a small tool allows a wide range of devices to be connected to the PCB without soldering. In SSL applications specifically, these connectors are used to bring power and signal onto the PCB or are used to daisy chain multiple boards together in a long string. While the IDC contact provides a gas-tight connection to conductor of the wire, the housing has been designed to grab the insulation of the wire to provide a positive strain relief even in the harshest conditions. In case of repair, the wires can be removed and replace up to three times.

The 9177 series accepts 14 AWG to 20 AWG wires with an insulation diameter ranging from 2.75mm to 4.25mm. These dual contact connectors support a 15 amp current rating with two large SMT solder tails per wire to provide maximum stability on the PCB. Available in 1p-3p configuration, these connectors can be end stackable for higher pin counts.

**APPLICATIONS**
- Connecting discrete wire components directly to the PCB
- Bringing power and signals onto a PCB
- Daisy chaining PCB’s together to create a continuous string of boards
- Application Notes: refer to 201-01-124

**FEATURES AND BENEFITS**
- IDC contact provides a gas-tight connection to the PCB for long term reliability
- Connector housing captures the wire insulation for positive strain relief
- Tested to automotive levels on shock, vibration and temperature cycling for reliability
- Low and high volume assembly tools to match production volumes
- Reduced total applied cost versus solder or crimp processes
- High temperature insulator capable to 260°C reflow soldering processes

**ELECTRICAL**
- Current Rating: 15 Amp / Contact
- Voltage Rating: 600 VAC

**ENVIRONMENTAL**
- Operating Temperature: -40ºC to +125ºC

**MECHANICAL**
- Insulator Material: Nylon 46: UL94V0
- Contact Material: Phosphor Bronze
- Plating: Tin over Nickel
- Durability: 3 Cycles

**HOW TO ORDER**

Prefix  | Series  | Number of Ways |
--- | --- | --- |
00  | 9177  | 00X |

Wire Gauge Size

<table>
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<tr>
<th>Code</th>
<th>Accepted Wire Gauge</th>
<th>Wire Insulation</th>
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<tbody>
<tr>
<td>001</td>
<td>14 AWG Solid or Stranded</td>
<td>Ø 4.25</td>
</tr>
<tr>
<td>012</td>
<td>16 AWG Solid or Stranded</td>
<td>Ø 3.50</td>
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<tr>
<td>022</td>
<td>18 AWG Solid or Stranded</td>
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Color/Approval

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</table>

Plating Option

06 = Pure Tin all over

**HOW TO ORDER – CAP OPTIONS – THROUGH WIRE**

Prefix  | Series  | Number of Ways |
--- | --- | --- |
60  | 9177  | 00X |

Insulator Color

<table>
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**HOW TO ORDER – CAP OPTIONS – WIRE STOP**

Prefix  | Series  | Number of Ways |
--- | --- | --- |
60  | 9177  | 00X |

Insulator Color

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<th>Part Number Metal (high volume)</th>
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<td>Ø 3.50</td>
<td>3p</td>
<td>Black</td>
<td>0091770030322106</td>
<td>0091770030322106</td>
<td>609177001035000</td>
<td>609177001035099</td>
</tr>
<tr>
<td>20</td>
<td>Ø 2.75</td>
<td>1p</td>
<td>White</td>
<td>009177001033106</td>
<td>009177001033106</td>
<td>609177001027100</td>
<td>609177001027199</td>
</tr>
<tr>
<td>20</td>
<td>Ø 2.75</td>
<td>1p</td>
<td>Black</td>
<td>009177001033106</td>
<td>009177001033106</td>
<td>609177001027000</td>
<td>609177001027099</td>
</tr>
<tr>
<td>20</td>
<td>Ø 2.75</td>
<td>2p</td>
<td>White</td>
<td>009177002033106</td>
<td>009177002033106</td>
<td>609177001027100</td>
<td>609177001027199</td>
</tr>
<tr>
<td>20</td>
<td>Ø 2.75</td>
<td>2p</td>
<td>Black</td>
<td>009177002033106</td>
<td>009177002033106</td>
<td>609177001027000</td>
<td>609177001027099</td>
</tr>
<tr>
<td>20</td>
<td>Ø 2.75</td>
<td>3p</td>
<td>White</td>
<td>009177003033106</td>
<td>009177003033106</td>
<td>609177001027100</td>
<td>609177001027199</td>
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<tr>
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<td>Black</td>
<td>009177003033106</td>
<td>009177003033106</td>
<td>609177001027000</td>
<td>609177001027099</td>
</tr>
</tbody>
</table>

* Insertion Tooling - Requires Hand Press with Flat Rock Plates; Consult Application Notes 201-01-124
14-20 AWG 1 WAY IDC CONNECTOR

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
   INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.
   COLOR REFER TO PAGE 60.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 14 AND 20 GAUGE STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-109.
6. FOR PCB SPACE RESTRICTED BY ASSEMBLY TOOLING REFER TO PAGE 67.

SMT PCB LAYOUT
PURE TIN PADS

PACKING DETAILS

<table>
<thead>
<tr>
<th>Code</th>
<th>Accepted Wire Gauge</th>
<th>A</th>
<th>Wire Insulation</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>14 AWG Solid or Stranded</td>
<td>1.10</td>
<td>Ø 4.25 max</td>
<td>4.25</td>
</tr>
<tr>
<td>012</td>
<td>16 AWG Solid or Stranded</td>
<td>0.82</td>
<td>Ø 3.50 max</td>
<td>3.50</td>
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<tr>
<td>022</td>
<td>18 AWG Solid or Stranded</td>
<td>0.72</td>
<td>Ø 3.50 max</td>
<td>3.50</td>
</tr>
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<td>033</td>
<td>20 AWG Solid or Stranded</td>
<td>0.60</td>
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AVX INTERCONNECT
A KYOCERA GROUP COMPANY

Standard 14-20 AWG: WTB
00-9177
14-20 AWG 2 WAY IDC CONNECTOR

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
   INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.
   COLOR REFER TO PAGE 60.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 14 AND 20 GAUGE STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-109.
6. FOR PCB SPACE RESTRICTED BY ASSEMBLY TOOLING REFER TO PAGE 67.

SMT PCB LAYOUT
PURE TIN PADS

<table>
<thead>
<tr>
<th>Code</th>
<th>Accepted Wire</th>
<th>A</th>
<th>Wire Insulation</th>
<th>B</th>
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</thead>
<tbody>
<tr>
<td>001</td>
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<td>Ø 4.25 max</td>
<td>4.25</td>
</tr>
<tr>
<td>012</td>
<td>16 AWG Solid or Stranded</td>
<td>0.82</td>
<td>Ø 3.50 max</td>
<td>3.50</td>
</tr>
<tr>
<td>022</td>
<td>18 AWG Solid or Stranded</td>
<td>0.72</td>
<td>Ø 3.50 max</td>
<td>3.50</td>
</tr>
<tr>
<td>033</td>
<td>20 AWG Solid or Stranded</td>
<td>0.60</td>
<td>Ø 2.75 max</td>
<td>2.75</td>
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</table>

Packing Details

<table>
<thead>
<tr>
<th>REEL QTY</th>
<th>LEADER</th>
<th>TRAILER</th>
<th>REEL/BOX</th>
<th>PACK QTY</th>
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<tbody>
<tr>
<td>400</td>
<td>500MM</td>
<td>400MM</td>
<td>4</td>
<td>1600</td>
</tr>
</tbody>
</table>

Connector Outline
14-20 AWG 3 WAY IDC CONNECTOR

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.
COLOR REFER TO PAGE 60.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 14 AND 20 GAUGE STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-109.
6. FOR PCB SPACE RESTRICTED BY ASSEMBLY TOOLING REFER TO PAGE 67.

PACKING DETAILS

<table>
<thead>
<tr>
<th>Code</th>
<th>Accepted Wire Gauge</th>
<th>A</th>
<th>Wire Insulation</th>
<th>B</th>
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</thead>
<tbody>
<tr>
<td>001</td>
<td>14 AWG Solid or Stranded</td>
<td>1.10</td>
<td>Ø 4.25 max</td>
<td>4.25</td>
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<tr>
<td>012</td>
<td>16 AWG Solid or Stranded</td>
<td>0.82</td>
<td>Ø 3.50 max</td>
<td>3.50</td>
</tr>
<tr>
<td>022</td>
<td>18 AWG Solid or Stranded</td>
<td>0.72</td>
<td>Ø 3.50 max</td>
<td>3.50</td>
</tr>
<tr>
<td>033</td>
<td>20 AWG Solid or Stranded</td>
<td>0.60</td>
<td>Ø 2.75 max</td>
<td>2.75</td>
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SMT PCB LAYOUT
PURE TIN PADS

CONNECTOR OUTLINE

<table>
<thead>
<tr>
<th>REEL QTY</th>
<th>LEADER</th>
<th>TRAILER</th>
<th>REEL/BOX</th>
<th>PACK QTY</th>
</tr>
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<tbody>
<tr>
<td>400</td>
<td>500MM</td>
<td>400MM</td>
<td>4</td>
<td>1600</td>
</tr>
</tbody>
</table>
ACCESSORY CAP – THROUGH WIRE

NOTES:
1. CAP FOR 9177 IDC WIRE TO BOARD CONNECTOR.
2. THROUGH WIRE CAP CAN BE USED AT ANY POSITION ALONG WIRE.
3. REFERS TO CAP, FOR WIRE MATCH TO CONNECTOR REFER TO TABLE ON PAGE 60.
4. MATERIAL: GLASS FILLED NYLON 46. FOR COLOR REFER TO PAGE 60.
5. CAPS DESIGNED TO ACCOMMODATE INSULATION DIAMETERS REFER TO PAGE 60.
6. GENERAL TOLERANCE ±0.20MM.
7. PACKED IN BAGS, 400 PIECES PER BAG.
8. APPLICATION NOTES REFER TO ELCO SPECIFICATION 201-01-124.
NOTES:
1. CAP FOR 9177 IDC WIRE TO BOARD CONNECTOR.
2. THROUGH WIRE CAP CAN BE USED AT ANY POSITION ALONG WIRE.
3. REFERS TO CAP, FOR WIRE MATCH TO CONNECTOR REFER TO TABLE ON PAGE 60.
4. MATERIAL: GLASS FILLED NYLON 46. FOR COLOR REFER TO PAGE 60.
5. CAPS DESIGNED TO ACCOMMODATE INSULATION DIAMETERS REFER TO PAGE 60.
6. GENERAL TOLERANCE ±0.20MM.
7. PACKED IN BAGS, 400 PIECES PER BAG.
8. APPLICATION NOTES REFER TO ELCO SPECIFICATION 201-01-124.
INSERTION TOOLING – REQUIRES HAND PRESS WITH FLAT ROCK PLATES

1 WAY
2 WAY
3 WAY

HIGH PRODUCTION

<table>
<thead>
<tr>
<th>No. of Ways</th>
<th>Max Insulation Dia (AWG)</th>
<th>Tool Part Number</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>4.25 (14)</td>
<td>06 9177 7017 01 001</td>
</tr>
<tr>
<td></td>
<td>3.50 (16-18)</td>
<td>06 9177 7017 02 001</td>
</tr>
<tr>
<td></td>
<td>2.75 (20)</td>
<td>06 9177 7017 03 001</td>
</tr>
<tr>
<td>2</td>
<td>4.25 (14)</td>
<td>06 9177 7017 01 002</td>
</tr>
<tr>
<td></td>
<td>3.50 (16-18)</td>
<td>06 9177 7017 02 002</td>
</tr>
<tr>
<td></td>
<td>2.75 (20)</td>
<td>06 9177 7017 03 002</td>
</tr>
<tr>
<td>3</td>
<td>3.50 (16-18)</td>
<td>06 9177 7017 02 003</td>
</tr>
<tr>
<td></td>
<td>2.75 (20)</td>
<td>06 9177 7017 03 003</td>
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</table>

MEDIUM PRODUCTION

<table>
<thead>
<tr>
<th>No. of Ways</th>
<th>Max Insulation Dia (AWG)</th>
<th>Tool Part Number</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>4.25 (14)</td>
<td>06 9177 7016 01 001</td>
</tr>
<tr>
<td></td>
<td>3.50 (16-18)</td>
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</tr>
<tr>
<td></td>
<td>2.75 (20)</td>
<td>06 9177 7016 03 001</td>
</tr>
<tr>
<td>2</td>
<td>4.25 (14)</td>
<td>06 9177 7016 01 002</td>
</tr>
<tr>
<td></td>
<td>3.50 (16-18)</td>
<td>06 9177 7016 02 002</td>
</tr>
<tr>
<td></td>
<td>2.75 (20)</td>
<td>06 9177 7016 03 002</td>
</tr>
<tr>
<td>3</td>
<td>3.50 (16-18)</td>
<td>06 9177 7016 02 003</td>
</tr>
<tr>
<td></td>
<td>2.75 (20)</td>
<td>06 9177 7016 03 003</td>
</tr>
</tbody>
</table>

Metal

Plastic

NOTES:
1. ALL DIMENSIONS FOR REFERENCE DIMENSIONS.
2. MAXIMUM COMPONENT HEIGHT 0.80MM IN THIS AREA.
3. MAXIMUM COMPONENT HEIGHT 11.00 MM IN THIS AREA.
4. THE SAME RESTRICTIONS APPLY TO ALL WIRE INSULATION DIAMETERS.

INSERTION TOOLING – PCB RESTRICTED AREAS FOR ASSEMBLY TOOLING

1 WAY
2 WAY
3 WAY

The assembly tooling restricts the available space/component heights on the PCB. For details see below.
AVX developed the initial SMT discrete wire IDC connector 5 years ago for 26-28AWG AVX wires. Since then, we have seen this Wire-to-Board (WTB) contact technology spread to multiple wire gauges and multiple configurations; standard connectors, capped connectors and single contacts. All of which addresses specific application or cost parameters set forth by our customer in demanding industrial, transportation or commercial applications. The heart of the IDC connector is the true “gas tight” WTB termination that is achieved once the wire is inserted between the dual phosphor bronze contact tines. These opposing tines provide enough spring characteristics to allow the termination to remain stable over extreme levels of temperature, shock and vibration.

The new 9177-600 family of contacts incorporates all of the above mentioned capabilities. From low cost single contacts to fully integrated capped contacts. The unique feature of the 600 series is the fact that it was developed for Plated Through Hole (PTH) termination to the PCB. This addresses the rugged power type boards that have to handle larger wire gauges up to 12AWG and 15 Amps per contact of current. The PTH option provides robust PCB attachment and high current capabilities to replace older technology connectors or in most cases soldering stripped wires directly to the PCB.

**APPLICATIONS**
- Industrial pumps, motors and driver boards
- Solar and alternative energy products
- Commercial electrical equipment
- Reference Product Specification & application notes 201-01-141/142

**FEATURES AND BENEFITS**
- IDC contact provides a “gas tight” wire termination to the PCB to meet harsh industrial environments
- Simple, robust design offers a high performance solution to hand soldering large gauge wires to a PCB
- A single contact an handle up to 15A for high current applications with wire replacement up to 3 times
- The versatile family of IDC contact can accept 12-18AWG of stranded wires and can be tested for compliance with solid wires

**ELECTRICAL**
- Current Rating: 15A
- Voltage Rating: 600 VAC

**ENVIRONMENTAL**
- Operating Temperature: -40ºC to +125ºC

**MECHANICAL**
- Insulator Material: Nylon 46, UL94VO
- Contact Material: Phosphor Bronze
- Plating: Tin over Nickel
- Durability: Wires can be replaced up to 3 times

**HOW TO ORDER**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series</th>
<th>Number of Ways</th>
<th>6XX</th>
<th>XX</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>9177</td>
<td>00X</td>
<td>6XX</td>
<td>XX</td>
</tr>
<tr>
<td>Code</td>
<td>No of Ways</td>
<td>Details</td>
<td>Wire Insulation/Gauge Size</td>
<td>Color &amp; Type</td>
</tr>
<tr>
<td>691</td>
<td>1</td>
<td>Page 69</td>
<td>Though Hole Mount</td>
<td>12 AWG Solid or Stranded</td>
</tr>
<tr>
<td>601</td>
<td></td>
<td></td>
<td>Though Hole Mount</td>
<td>14 AWG Solid or Stranded</td>
</tr>
<tr>
<td>612</td>
<td></td>
<td></td>
<td>Though Hole Mount</td>
<td>16 AWG Solid or Stranded</td>
</tr>
<tr>
<td>622</td>
<td></td>
<td></td>
<td>Though Hole Mount</td>
<td>18 AWG Solid or Stranded</td>
</tr>
</tbody>
</table>

**ELECTRICAL**
- Current Rating: 15A
- Voltage Rating: 600 VAC

**ENVIRONMENTAL**
- Operating Temperature: -40ºC to +125ºC

**MECHANICAL**
- Insulator Material: Nylon 46, UL94VO
- Contact Material: Phosphor Bronze
- Plating: Tin over Nickel
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**HOW TO ORDER**

<table>
<thead>
<tr>
<th>Code</th>
<th>Insulator Color</th>
<th>Cap Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>Black - Special Order</td>
<td>Through Wire</td>
<td>Any Position Along Wire</td>
</tr>
<tr>
<td>09</td>
<td>Black - Special Order</td>
<td>Wire Stop</td>
<td>End of Wire - Includes Stop</td>
</tr>
<tr>
<td>10</td>
<td>White - Standard</td>
<td>Through Wire</td>
<td>Any Position Along Wire</td>
</tr>
<tr>
<td>19</td>
<td>White - Standard</td>
<td>Wire Stop</td>
<td>End of Wire - Includes Stop</td>
</tr>
</tbody>
</table>

**Plating Option**
- 6 = Pure Tin all over

**RoHS COMPLIANT**
**12 - 18 AWG 1 WAY IDC CONNECTOR WIRE THROUGH CAP**

**NOTES:**
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION, WIRE THROUGH CAP, CAN BE ASSEMBLED AT ANY POSITION ALONG A WIRE.
2. CONTACT MATERIAL: PHOSPHOR BRONZE. INSULATION MATERIAL: HIGH TEMP NYLON 46, UL94 V-0. COLOR REFER TO PAGE 68.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 12 AND 18 AWG STRANDED WIRE.
4. ALL DIMENSIONS ±0.20 UNLESS TOLERANCED.
5. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-141.
6. APPLICATION NOTES 201-01-142.
7. OUTLINE OF CAP. NO SPACE FOR COMPONENTS.
8. TEST TO INDICATE MAXIMUM INSULATION DIAMETER.

**PACKING DETAILS**

**SMT PCB LAYOUT**

**Packing Details**

- **Code**
  - 691: 12 AWG Solid or Stranded
  - 601: 14 AWG Solid or Stranded
  - 612: 16 AWG Solid or Stranded
  - 622: 18 AWG Solid or Stranded

- **Acceptance Wire Gauge**
  - 12 AWG: 1.50
  - 14 AWG: 1.10
  - 16 AWG: 0.82
  - 18 AWG: 0.72

- **A**
  - 4.25

- **Wire Insulation**
  - 4.25
  - 4.25
  - 4.25
  - 3.50

- **B**
  - 4.25
  - 4.25
  - 3.50
  - 3.50

**SMT PCB Layout**

- **Quantity Per Reel**: 800
- **Pure Tin Pads**
- **Diameter**: 330mm
- **Reel Diameter**: 9.00
- **Notes**: 5.00
12 - 18 AWG 1 WAY IDC CONNECTOR WIRE STOP CAP

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION, WIRE STOP CAP, FOR USE AT WIRE END.
2. CONTACT MATERIAL: PHOSPHOR BRONZE. INSULATION MATERIAL: HIGH TEMP NYLON 46, UL94 V-0. COLOR REFER TO PAGE 68.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 12 AND 18 AWG STRANDED WIRE.
4. ALL DIMENSIONS ±0.20 UNLESS TOLERANCED.
5. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-141.
6. APPLICATION NOTES 201-01-142.
7. OUTLINE OF CAP. NO SPACE FOR COMPONENTS.
8. TEST TO INDICATE MAXIMUM INSULATION DIAMETER.
9. SLOT TO CHECK WIRE POSITION BEFORE ASSEMBLY.

PACKING DETAILS

SMT PCB LAYOUT

UNREELED DIRECTION
AVX developed the initial SMT discrete wire IDC connector 5 years ago for 26-28AWG AVX wires. Since then, we have seen this Wire-to-Board (WTB) contact technology spread to multiple wire gauges and multiple configurations; standard connectors, capped connectors and single contacts. All of which addresses specific application or cost parameters set forth by our customer in demanding industrial, transportation or commercial applications. The heart of the IDC connector is the true “gas tight” WTB termination that is achieved once the wire is inserted between the dual phosphor bronze contact tines. These opposing tines provide enough spring characteristics to allow the termination to remain stable over extreme levels of temperature, shock and vibration.

The new 9177-600 family of contacts incorporates all of the above mentioned capabilities. From low cost single contacts to fully integrated capped contacts. The unique feature of the 600 series is the fact that it was developed for Plated Through Hole (PTH) termination to the PCB. This addresses the rugged power type boards that have to handle larger wire gauges up to 12AWG and 15 Amps per contact of current. The PTH option provides robust PCB attachment and high current capabilities to replace older technology connectors or in most cases soldering stripped wires directly to the PCB.

**APPLICATIONS**
- Industrial pumps, motors and driver boards
- Solar and alternative energy products
- Commercial electrical equipment
- Reference Product Specification & application notes 201-01-141/142

**FEATURES AND BENEFITS**
- IDC contact provides a “gas tight” wire termination to the PCB to meet harsh industrial environments
- Simple, robust design offers a high performance solution to hand soldering large gauge wires to a PCB
- A single contact an handle up to 15A for high current applications with wire replacement up to 3 times
- The versatile family of IDC contact can accept 12-18AWG of stranded wires and can be tested for compliance with solid wires

**ELECTRICAL**
- Current Rating: 15A
- Voltage Rating: 600 VAC

**ENVIRONMENTAL**
- Operating Temperature: -40ºC to +125ºC

**MECHANICAL**
- Insulator Material: Nylon 46, UL94VO
- Contact Material: Phosphor Bronze
- Plating: Tin over Nickel
- Durability: Wires can be replaced up to 3 times

**HOW TO ORDER – CONTACT OPTIONS**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series</th>
<th>Number of Ways</th>
<th>Wire Gauge Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>9177</td>
<td>001</td>
<td>Code Accepted Wire Gauge</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>691 12 AWG Solid or Stranded</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>601 14 AWG Solid or Stranded</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>612 16 AWG Solid or Stranded</td>
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<td>622 18 AWG Solid or Stranded</td>
</tr>
<tr>
<td>006</td>
<td></td>
<td></td>
<td>Plating Option</td>
</tr>
</tbody>
</table>

**HOW TO ORDER – CAP OPTIONS**

<table>
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<th>Number of Ways</th>
<th>Wire Insulation Diameter</th>
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<td>9177</td>
<td>001</td>
<td>Code Diameter “A”</td>
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<tr>
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<td></td>
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<td>627 Ø 2.10 - 2.75 2.75</td>
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<td></td>
<td></td>
<td></td>
<td>635 Ø 2.75 - 3.50 3.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>642 Ø 3.50 - 4.25 4.25</td>
</tr>
</tbody>
</table>

**RoHS COMPLIANT**

**Color Options**
- 0 Black Special Order
- 1 White Standard

**Assembly Options**
- 00 Through Wire
- 99 With Stop

072117
Single Thru Hole IDC Contact
12-18 AWG: WTB
9177-600

70-9177-001-6XX-006
CONTACT DETAILS

NOTES:
1. IDC CONTACT ACCEPT WIRES FROM 12 AWG TO 18 AWG.
2. MATERIAL: PHOSPHOR BRONZE.
3. PLATING PURE TIN OVER NICKEL.
4. ALL DIMENSIONS ±0.20 UNLESS SPECIFIED.
5. PACKING IN BAGS, 800 PIECES PER BAG.
6. PRODUCT SPECIFICATION REFER TO 201-01-141.
7. OUTLINE OF CONTACT SEE PAGE 71 FOR ADDITIONAL CLEARANCE REQUIRED FOR WIRE INSERTION TOOL.
8. FOR ASSEMBLY DETAILS REFER TO APPLICATION NOTES 201-01-142.

PCB LAYOUT FOR CONTACT

<table>
<thead>
<tr>
<th>Code</th>
<th>Accepted Wire Gauge</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>691</td>
<td>12 AWG Solid or Stranded</td>
<td>1.50</td>
</tr>
<tr>
<td>601</td>
<td>14 AWG Solid or Stranded</td>
<td>1.10</td>
</tr>
<tr>
<td>612</td>
<td>16 AWG Solid or Stranded</td>
<td>0.82</td>
</tr>
<tr>
<td>622</td>
<td>18 AWG Solid or Stranded</td>
<td>0.72</td>
</tr>
</tbody>
</table>
Single Thru Hole IDC Contact
12-18 AWG: WTB
9177-600

ASSEMBLY TOOLING

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Wire Insulation</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>06-9177-7021-01-000</td>
<td>Ø 3.50 - 4.25</td>
<td>4.25</td>
</tr>
<tr>
<td>06-9177-7021-02-000</td>
<td>Ø 3.50 - 4.50</td>
<td>3.50</td>
</tr>
<tr>
<td>06-9177-7021-03-000</td>
<td>Ø 3.50 - 2.75</td>
<td>2.75</td>
</tr>
</tbody>
</table>

NOTES:
1. WIRE INSERTION TOOL 06-9177-7021-0X-000, FULL PART NUMBER REFER TO TABLE.
2. TOOL PART NUMBER DEPENDENT ON WIRE INSULATION DIAMETER NOT WIRE GAUGE OR CONTACT NUMBER.
3. ASSEMBLY DETAILS REFER TO APPLICATION NOTES 201-01-142
4. MATERIAL: TOOL STEEL.
5. APACE REQUIRED ON PCB FOR TOOL. NO COMPONENTS IN THIS AREA.

PCB CLEARANCE AREA FOR TOOL
Single Thru Hole IDC Contact
12-18 AWG: WTB
9177-600

60-9177-001-6XX-X00 1 WAY WIRE THROUGH
CAP DETAILS

NOTES:
1. CAP FOR IDC WIRE TO BOARD CONNECTION, 1 WAY WITH THROUGH WIRE.
2. WIRE THROUGH CAP FOR ASSEMBLY AT ANY POSITION ON A WIRE.
3. CAP MATERIAL: GLASS FILLED NYLON 46, UL94 V-0. COLOR SEE PAGE 71.
4. CAP DESIGNED TO ACCOMMODATE WIRE INSULATION.
   DIAMETERS 2.10MM TO 2.75MM, 2.75MM TO 3.50MM AND 3.50MM TO 4.25MM.
5. ALL DIMENSIONS ±0.20 UNLESS STATED.
6. PACKED IN BAGS, QUANTITY 800 PIECES PER BAG.
7. PRODUCT SPECIFICATION REFER TO 201-01-141.
8. FOR ASSEMBLY DETAILS REFER TO APPLICATION NOTES 201-01-142.
Single Thru Hole IDC Contact
12-18 AWG: WTB
9177-600

60-9177-001-6XX-X99 1 WAY WIRE STOP

CAP DETAILS

NOTE 3

NOTE 5

AVX Ø3.50

NOTES:
1. CAP FOR IDC WIRE TO BOARD CONNECTION, 1 WAY WITH WIRE STOP.
2. WIRE STOP FOR USE AT END OF WIRE.
3. SLOT TO CHECK WIRE POSITION BEFORE ASSEMBLY.
4. CAP MATERIAL: GLASS FILLED NYLON 46, UL94 V-0. COLOR SEE PAGE 71.
5. CAP DESIGNED TO ACCOMMODATE WIRE INSULATION.
   DIAMETERS 2.10MM TO 2.75MM, 2.75MM TO 3.50MM AND 3.50MM TO 4.25MM.
6. ALL DIMENSIONS ±0.20 UNLESS STATED.
7. PACKED IN BAGS, QUANTITY 800 PIECES PER BAG.
8. PRODUCT SPECIFICATION REFER TO 201-01-141.
9. FOR ASSEMBLY DETAILS REFER TO APPLICATION NOTES 201-01-142.

<table>
<thead>
<tr>
<th>Code</th>
<th>Diameter</th>
<th>Text</th>
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<tbody>
<tr>
<td>627</td>
<td>2.75</td>
<td>2.75</td>
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<tr>
<td>635</td>
<td>3.50</td>
<td>3.50</td>
</tr>
<tr>
<td>642</td>
<td>4.25</td>
<td>4.25</td>
</tr>
</tbody>
</table>
The new 9276 series connector provides a quick and reliable wire-to-board termination in a sleek 2.5mm pitch SMT package for a broad range of industrial and commercial markets. With almost every product on the market today having to deal with a small number of discrete wires to connect components to a board, the 9276 series connectors meet this challenge by simply stripping the wire and inserting them into the connector. This makes the connector very termination friendly within the factory as well as in the field by electrical installers. Developed for harsh industrial and Solid State Lighting (SSL) applications, the connector was designed with a high spring force Beryllium Copper upper spring contact to accept a wide range (18-26 AWG solid or stranded) of wire to meet multiple applications with a single connector. By incorporating a dual-contact design we were able to maximize current rating (6 Amps) and minimize PCB space. For example, the 4p connector has a footprint of 90 sq-mm while competing products are 160 sq-mm. The dual-contact design also provides two solder points for each wire eliminating the need for external anchor tabs. AVX provides a small insertion / extraction tool which will allow the wires to easily be replaced up to 5 times.

**APPLICATIONS**
- Connecting discrete wire components directly to the PCB
- Bringing power and signals onto a PCB
- Daisy chaining PCB’s together to create a continuous string of boards
- Application notes: refer to 201-01-127

**FEATURES AND BENEFITS**
- Simple strip, insert and removal design
- SMT RoHS termination to the PCB with minimal footprint
- Accepts 18-26 AWG Solid and Stranded wires
- Expanded size offering to maximize application potential; 1, 2, 3, 4, 6 & 8 positions
- High spring force top contact provides a lance type retention to capture and retain the wire
- Available in standard white and optional black color

**ELECTRICAL**
- Current Rating: 6 Amps / Contact
- Voltage Rating: 300 VAC

**ENVIRONMENTAL**
- Operating Temperature: -40°C to +125°C

**MECHANICAL**
- Insulator Material: Glass-Filled Nylon 46; UL94V0
- Contact Material: Beryllium Copper / Phosphor Bronze
- Plating: Tin over Nickel
- Replaceability: 5 Cycles

**HOW TO ORDER**

<table>
<thead>
<tr>
<th>Code</th>
<th>001</th>
<th>002</th>
<th>003</th>
<th>004</th>
<th>006</th>
<th>008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wire to Board Connector</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>00X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>9276</td>
</tr>
<tr>
<td>Number of Ways</td>
<td>0</td>
</tr>
<tr>
<td>Horizontal Mounting</td>
<td>21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Accepted Wire Gauge</th>
<th>Max Conductor</th>
<th>Max Insulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>18 - 26 AWG Solid or Stranded</td>
<td>1.20mm Diameter</td>
<td>2.10mm Diameter</td>
</tr>
</tbody>
</table>

Certification: UL File #E90723
WIRE ASSEMBLY

FOR FURTHER DETAILS REFER TO APPLICATION NOTES 201-01-127

TRIM INSULATION.
DO NOT CRUSH CENTER OF WIRE.
STRANDED WIRES TWISTED TOGETHER BEFORE INSERTION.
CHECK ALL STANDS OF WIRE ARE CORRECTLY ALIGNED
AFTER THE INSULATION IS REMOVED.

PUSH WIRE INTO HOLE IN FRONT OF CONNECTOR
DO NOT BEND CONNECTOR

CONTINUED TO PUSH WIRE UNTIL STOP IS REACHED.

WIRE EXTRACTION

PUSH BLADE (NOT SHARP) INTO SLOT ABOVE WIRE.
WHEN WIRE IS FREE, PULL TO EXTRACT.
Poke-Home: Horizontal
18-26 AWG: WTB
00-9276

1 WAY WIRE TO BOARD CONNECTOR

NOTES:
1. 9276 ONE WAY CONNECTOR, REFER TO ELCO SPECIFICATION 201-01-125 AND APPLICATION NOTES 201-01-127 FOR FURTHER DETAILS
2. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0, COLOR REFER TO PAGE 76.
3. CONTACT MATERIAL: COPPER ALLOY, 0.20MM THICK, TIN PLATED.
4. OUTLINE OF CONNECTOR.
5. WIRE ASSEMBLY / EXTRACTION, REFER TO PAGE 77.
6. FRONT FACE OF CONNECTOR CAN BE IN LINE WITH EDGE OF PCB.
7. PACKING TAPE AND REEL, QUANTITY 1000 PER REEL.

1 WAY PCB BOARD LAYOUT
**Poke-Home: Horizontal**

**18-26 AWG: WTB**

**00-9276**

---

**2 WAY WIRE TO BOARD CONNECTOR**

![Diagram of 2 WAY WIRE TO BOARD CONNECTOR](image)

**SECTION ON A-A**

![Diagram of SECTION ON A-A WITH WIRE](image)

**PACKING DETAILS**

![Diagram of PACKING DETAILS](image)

---

**NOTES:**

1. 9276 TWO WAY CONNECTOR, REFER TO ELCO SPECIFICATION 201-01-125 AND APPLICATION NOTES 201-01-127 FOR FURTHER DETAILS.
2. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0, COLOR REFER TO PAGE 76.
3. CONTACT MATERIAL: COPPER ALLOY, 0.20MM THICK, TIN PLATED.
4. OUTLINE OF CONNECTOR.
5. WIRE ASSEMBLY / EXTRACTION, REFER TO PAGE 77.
6. FRONT FACE OF CONNECTOR CAN BE IN LINE WITH EDGE OF PCB.
7. PACKING TAPE AND REEL, QUANTITY 1000 PER REEL.

---

**2 WAY PCB BOARD LAYOUT**

![Diagram of 2 WAY PCB BOARD LAYOUT](image)
3 WAY WIRE TO BOARD CONNECTOR

NOTES:
1. 9276 THREE WAY CONNECTOR, REFER TO ELCO SPECIFICATION 201-01-125 AND APPLICATION NOTES 201-01-127 FOR FURTHER DETAILS.
2. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0, COLOR REFER TO PAGE 76.
3. CONTACT MATERIAL: COPPER ALLOY, 0.20MM THICK, TIN PLATED.
4. OUTLINE OF CONNECTOR.
5. WIRE ASSEMBLY / EXTRACTION, REFER TO PAGE 77.
6. FRONT FACE OF CONNECTOR CAN BE IN LINE WITH EDGE OF PCB.
7. PACKING TAPE AND REEL, QUANTITY 1000 PER REEL.

3 WAY PCB BOARD LAYOUT

PACKING DETAILS
NOTES:
1. 9276 FOUR WAY CONNECTOR, REFER TO ELCO SPECIFICATION 201-01-125 AND APPLICATION NOTES 201-01-127 FOR FURTHER DETAILS
2. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0, COLOR REFER TO PAGE 76.
3. CONTACT MATERIAL: COPPER ALLOY, 0.20MM THICK, TIN PLATED.
4. OUTLINE OF CONNECTOR.
5. WIRE ASSEMBLY / EXTRACTION, REFER TO PAGE 77.
6. FRONT FACE OF CONNECTOR CAN BE IN LINE WITH EDGE OF PCB.
7. PACKING TAPE AND REEL, QUANTITY 1000 PER REEL.

4 WAY PCB BOARD LAYOUT

Packing Details
6 WAY WIRE TO BOARD CONNECTOR

NOTES:
1. 9276 SIX WAY CONNECTOR, REFER TO ELCO SPECIFICATION 201-01-125 AND APPLICATION NOTES 201-01-127 FOR FURTHER DETAILS
2. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0, COLOR REFER TO PAGE 76.
3. CONTACT MATERIAL: COPPER ALLOY, 0.20MM THICK, TIN PLATED.
4. OUTLINE OF CONNECTOR.
5. WIRE ASSEMBLY / EXTRACTION, REFER TO PAGE 77.
6. FRONT FACE OF CONNECTOR CAN BE IN LINE WITH EDGE OF PCB.
7. PACKING TAPE AND REEL, QUANTITY 1000 PER REEL.

6 WAY PCB BOARD LAYOUT

PICK AND PLACE AREA

SECTION ON A-A WITH WIRE

PACKING DETAILS
NOTES:
1. 9276 EIGHT WAY CONNECTOR, REFER TO ELCO SPECIFICATION 201-01-125 AND APPLICATION NOTES 201-01-127 FOR FURTHER DETAILS.
2. INSULATOR MATERIAL: NYLON 46, GLASS FILLED, UL94 V-0, COLOR REFER TO PAGE 76.
3. CONTACT MATERIAL: COPPER ALLOY, 0.20MM THICK, TIN PLATED.
4. OUTLINE OF CONNECTOR.
5. WIRE ASSEMBLY / EXTRACTION, REFER TO PAGE 77.
6. FRONT FACE OF CONNECTOR CAN BE IN LINE WITH EDGE OF PCB.
7. PACKING TAPE AND REEL, QUANTITY 1000 PER REEL.

8 WAY PCB BOARD LAYOUT
Poke-Home: Single Horizontal Contact
12-28 AWG: WTB
70-9296

The widespread market adaptation of the AVX STRIPT™ contact systems continue to drive new product developments. The 70-9296 series of dual beam, boxed contacts provide a simple, yet reliable wire-to-board alternative to full sized 1pc and 2pc connector solutions. Contacts are SMT onto the PCB, then either solid or stranded wires can be stripped to length and inserted into the contact. Contacts are designed with dual beam high force contacts to maximize wire retention. Integral wire guides and stop assures proper positioning of the wire.

In this round of product expansion, the 2.5mm has been added to offer a new size when trying to maximize AWG and keep the smallest profile contact available is size critical applications. Additionally, this contact has been designed without a wire stop to facilitate solid pin insertion capabilities for board-to-board and module-to-module applications (see BTB Jumper data sheet for 109296001xxx906).

### Applications
- Industrial/Ruggedized Wire-to-Board applications
- Replace hard soldering of wire to a PCB
- Reference Product Specification 201-01-143
- Reference Application Notes 201-01-150
- Linear Board-to-Board capabilities with 109296001xxx906 jumpers

### Features and Benefits
- Dual Beam box contact provides maximum mechanical stability and wire retention
- Tape and reel packaged for automated SMT placement
- Staged current rating based on AWG, maximum is 20A (12AWG)
- 2.5mm w/o wire stop allows for variable PCB mating tolerances in linear BTB applications

### Electrical
- Voltage Rating: 300V
  - Based on placement distance
- Current Rating: See Matrix Below

### Environmental
- Operating Temperature: -40°C to +125°C

### Mechanical
- Contact Material: Phosphor Bronze
- Contact Plating: Pure Tin
- Durability 5 Cycles

### How to Order

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series</th>
<th>Number of Ways</th>
<th>Contact Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>9296</td>
<td>001</td>
<td>0XX</td>
</tr>
</tbody>
</table>

### Current Rating

<table>
<thead>
<tr>
<th>Size</th>
<th>Part Number</th>
<th>12AWG</th>
<th>14AWG</th>
<th>16AWG</th>
<th>18AWG</th>
<th>20AWG</th>
<th>22AWG</th>
<th>24AWG</th>
<th>26AWG</th>
<th>28AWG</th>
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</thead>
<tbody>
<tr>
<td>4mm</td>
<td>709296001004006</td>
<td>20A</td>
<td>16A</td>
<td>14A</td>
<td>12A</td>
<td>10A</td>
<td>8A</td>
<td>7A</td>
<td>5A</td>
<td></td>
</tr>
<tr>
<td>3mm</td>
<td>709296001003006</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5mm</td>
<td>709296001025006</td>
<td>12A</td>
<td>10A</td>
<td>8A</td>
<td>7A</td>
<td>5A</td>
<td>3A</td>
<td>4A</td>
<td></td>
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</tr>
<tr>
<td>2mm</td>
<td>709296001002006</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.7mm</td>
<td>709296001017006</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SUGGESTED PCB LAYOUT

PACKING DETAILS

NOTES:
1. FOR FURTHER INFORMATION REFER TO ELCO SPECIFICATION 201-01-143 AND APPLICATION NOTES 201-01-150.
2. MATERIAL: TIN PLATED PHOSPHOR BRONZE.
3. PACKING IN TAPE AND REEL, 4000 PIECES PER REEL.
4. FOR WIRE TRIM DETAILS REFER TO PAGE 91.
5. AREA AVAILABLE FOR PICK AND PLACE.
6. UL REFERENCE 90723.
7. GENERAL TOLERANCE ±0.10.

Poke-Home: Single Horizontal Contact
12-28 AWG: WTB
70-9296
Poke-Home: Single Horizontal Contact
12-28 AWG: WTB
70-9296

70-9296-001-002-006
2MM POKE HOME CONTACT

NOTES:
1. FOR FURTHER INFORMATION REFER TO ELCO SPECIFICATION 201-01-143
   AND APPLICATION NOTES 201-01-150.
2. MATERIAL: TIN PLATED PHOSPHOR BRONZE.
3. PACKING IN TAPE AND REEL, 3500 PIECES PER REEL.
4. FOR WIRE TRIM DETAILS REFER TO PAGE 91.
5. AREA AVAILABLE FOR PICK AND PLACE.
6. UL REFERENCE 90723.
7. GENERAL TOLERANCE ±0.10.

SUGGESTED PCB LAYOUT

PACKING DETAILS
Poke-Home: Single Horizontal Contact
12-28 AWG: WTB

70-9296

70-9296-001-025-006
2.5MM POKE HOME CONTACT

NOTES:
1. FOR FURTHER INFORMATION REFER TO ELCO SPECIFICATION 201-01-143 AND APPLICATION NOTES 201-01-150.
2. MATERIAL: TIN PLATED PHOSPHOR BRONZE.
3. PACKING IN TAPE AND REEL, 2500 PIECES PER REEL.
4. FOR WIRE TRIM DETAILS REFER TO PAGE 91.
5. AREA AVAILABLE FOR PICK AND PLACE.
6. THIS COMPONENT IS NOT CURRENTLY UL CERTIFIED.
7. GENERAL TOLERANCE ±0.10.

SUGGESTED PCB LAYOUT

PACKING DETAILS

2500 PIECES PER REEL

330mm DIAMETER REEL
Poke-Home: Single Horizontal Contact
12-28 AWG: WTB
70-9296

70-9296-001-025-016
2.5MM POKE HOME CONTACT – NO STOP

NOTES:
1. FOR FURTHER INFORMATION REFER TO ELCO SPECIFICATION 201-01-143
   AND APPLICATION NOTES 201-01-150.
2. MATERIAL: TIN PLATED PHOSPHOR BRONZE.
3. PACKING IN TAPE AND REEL, 2500 PIECES PER REEL.
4. FOR WIRE TRIM DETAILS REFER TO PAGE 91.
5. AREA AVAILABLE FOR PICK AND PLACE.
6. THIS COMPONENT IS NOT CURRENTLY UL CERTIFIED.
7. GENERAL TOLERANCE ±0.10.

SUGGESTED PCB LAYOUT

PACKING DETAILS
Poke-Home: Single Horizontal Contact
12-28 AWG: WTB
70-9296

NOTES:
1. FOR FURTHER INFORMATION REFER TO ELCO SPECIFICATION 201-01-143 AND APPLICATION NOTES 201-01-150.
2. MATERIAL: TIN PLATED PHOSPHOR BRONZE.
3. PACKING IN TAPE AND REEL, 2500 PIECES PER REEL.
4. FOR WIRE TRIM DETAILS REFER TO PAGE 91.
5. AREA AVAILABLE FOR PICK AND PLACE.
6. UL REFERENCE 90723.
7. GENERAL TOLERANCE ±0.10.

SUGGESTED PCB LAYOUT

PACKING DETAILS
Poke-Home: Single Horizontal Contact
12-28 AWG: WTB
70-9296

NOTES:
1. FOR FURTHER INFORMATION REFER TO ELCO SPECIFICATION 201-01-143
   AND APPLICATION NOTES 201-01-150.
2. MATERIAL: TIN PLATED PHOSPHOR BRONZE.
3. PACKING IN TAPE AND REEL, 2000 PIECES PER REEL.
4. FOR WIRE TRIM DETAILS REFER TO PAGE 91.
5. AREA AVAILABLE FOR PICK AND PLACE.
6. UL REFERENCE 90723.
7. GENERAL TOLERANCE ±0.10.

SUGGESTED PCB LAYOUT

PACKING DETAILS
Poke-Home: Single Horizontal Contact
12-28 AWG: WTB
70-9296

CONNECTOR ASSEMBLY
FOR FULL DETAILS REFER TO APPLICATION NOTES 201-01-150

<table>
<thead>
<tr>
<th>CONTACT</th>
<th>WIRE SIZE</th>
<th>INSULATOR DIAMETER</th>
<th>TRIM LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>70-9296-001-004-006</td>
<td>12AWG and 14AWG</td>
<td>Max 3.4mm</td>
<td>6.5 ± 0.5mm</td>
</tr>
<tr>
<td>70-9296-001-004-006</td>
<td>16AWG, 18AWG and 20AWG</td>
<td>Max 2.5mm</td>
<td>5.5 ± 0.5mm</td>
</tr>
<tr>
<td>70-9296-001-003-006</td>
<td>18AWG to 20AWG</td>
<td>Max 2.5mm</td>
<td>4.5 ± 0.5mm</td>
</tr>
<tr>
<td>70-9296-001-025-006</td>
<td>20AWG to 26AWG</td>
<td>Max 2.0mm</td>
<td>3.5 ± 0.5mm</td>
</tr>
<tr>
<td>70-9296-001-025-006</td>
<td>20AWG to 26AWG</td>
<td>2.0mm to 2.50mm</td>
<td>6.0 ± 0.5mm*</td>
</tr>
<tr>
<td>70-9296-001-025-016</td>
<td>20AWG to 26AWG</td>
<td>Max 2.0mm</td>
<td>3.0mm Minimum – No Stop on Contact</td>
</tr>
<tr>
<td>70-9296-001-002-006</td>
<td>22AWG to 28AWG</td>
<td>Max 1.5mm</td>
<td>3.5 ± 0.5mm</td>
</tr>
<tr>
<td>70-9296-001-002-006</td>
<td>22AWG to 28AWG</td>
<td>1.5mm to 2.0mm</td>
<td>5.5 ± 0.5mm*</td>
</tr>
<tr>
<td>70-9296-001-017-006</td>
<td>22AWG to 26AWG</td>
<td>Max 1.3mm</td>
<td>4.0 ± 0.5mm</td>
</tr>
<tr>
<td>70-9296-001-017-006</td>
<td>22AWG to 26AWG</td>
<td>1.3mm to 1.7mm</td>
<td>6.0 ± 0.5mm*</td>
</tr>
</tbody>
</table>

* Wire insulation butts on end of contact

CONTACT OPENING TOOL
06-9296-7001-01-000

TOOL TO OPEN THE CONTACT TO INSERT/Withdraw WIRE.
REFER TO APPLICATION NOTES 201-01-150.
AVX continues to develop innovative connectors for the industrial electronics market that provide significant benefits over existing, outdated connector solutions. Listening to the design engineering community, there are ongoing applications where they cannot find an off-the-shelf solution that will satisfy a high percentage of the projects configuration, performance and cost goals.

The newest addition to AVX’s broadening line of Wire-to-Board (WTB) connectors offers a cost effective, single Poke-Home connector solution that will meet the cost and performance targets in demanding, yet user friendly applications. At the heart of the connector is the industry proven dual tine, 3mm high spring force box contact that has been on the market as a stand-alone horizontal contact only solution.

The new SMT vertical top entry connector allows for 18AWG to 26AWG wires to be simply stripped and inserted into the connector body at 180 degree orientation to the top side of the PCB. This single connector will replace existing 2-Piece WTB solutions where a header is soldered onto the PCB and a secondary crimp-to-wire receptacle assembly is plugged in. Available in 1-6 positions, each connector will accept the entire wire gauge range for either solid or stranded wires at varying current ratings supported by each wire size. Once inserted, wires can easily be removed or replaced by twisting/unscrewing or by using a small blade extraction tool.

### APPLICATIONS
- Industrial/Ruggedized Wire-to-Board applications
- Replace hard soldering of wire to a PCB
- Replace costly 2-Piece header and receptacle products
- Reference Product Specification 201-01-151
- Reference Application Notes 201-01-152

### FEATURES AND BENEFITS
- Dual Beam box contact provides maximum mechanical stability and wire retention
- Tape and reel packaged for automated SMT placement
- Will accept either solid or stranded wire, 18-26AWG, plated or un-plated wires
- Simple strip and insert for wire loading, with easy twist and pull for wire removal

### ELECTRICAL
- Voltage Rating: 600 VAC 1 way; 300 VAC 2 - 6 way
- Current Rating: See matrix below

### ENVIRONMENTAL
- Operating Temperature: -40ºC to +125ºC

### MECHANICAL
- Contact Material: Copper Alloy
- Contact Plating: Tin over Nickel
- Durability: 5 Cycles

### HOW TO ORDER

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series</th>
<th>00X</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>9296</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wire Gauge Size</th>
<th>Code</th>
<th>Accepted Wire Gauge</th>
<th>Max Insulation</th>
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<tbody>
<tr>
<td>553</td>
<td>18 - 26 AWG Solid or Stranded</td>
<td>2.2mm</td>
<td></td>
</tr>
</tbody>
</table>

- **Insulator Color**
  - All Sizes
    - 9 = UL White (Standard)
    - 8 = UL Black (Special Order)
  - One Way Only (Special Order)
    - 2 = UL Brown
    - 3 = UL Blue
    - 4 = UL Yellow
    - 5 = UL Red
    - 6 = UL Green
    - 7 = UL Orange

<table>
<thead>
<tr>
<th>Plating Option</th>
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**CURRENT RATING**

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<th>18AWG</th>
<th>20AWG</th>
<th>22AWG</th>
<th>24AWG</th>
<th>26AWG</th>
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<tbody>
<tr>
<td>7A</td>
<td>6A</td>
<td>5A</td>
<td>4A</td>
<td>3A</td>
</tr>
</tbody>
</table>

Certification: UL File #E90723
**Poke-Home: Vertical Top Entry**

**18-26 AWG: WTB**

**00-9296**

---

**9296 TOP MOUNT POKE HOME CONNECTOR**

1 WAY

---

**NOTES:**

1. TOP MOUNT 1 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.

2. SUITABLE FOR WIRE 18AWG TO 26AWG. MAXIMUM INSULATION 2.20MM DIAMETER.

3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 92.

4. CONTACT: TIN PLATE COPPER ALLOY.

5. PACKING IN TAPE AND REEL. QTY PER REEL 400, 330MM REEL.

6. CAPTON TAPE TO AID PICK AND PLACE, 4MM DIAMETER MAX AVAILABLE.

7. CONNECTOR OUTLINE.

8. GENERAL TOLERANCE ±0.20.

9. UL REFERENCE E90723.

---

**SUGGESTED PCB LAYOUT**

---

**PACKING DETAILS**

---

**AVX INTERCONNECT**

**AVX**
NOTES:
1. TOP MOUNT 2 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.
2. SUITABLE FOR WIRES 18AWG TO 26AWG. MAXIMUM INSULATION 2.20MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 92.
4. CONTACT: TIN PLATE COPPER ALLOY.
5. PACKING IN TAPE AND REEL. QTY PER REEL 400, 330MM REEL.
6. CAPTON TAPE TO AID PICK AND PLACE, 4MM DIAMETER MAX AVAILABLE.
7. CONNECTOR OUTLINE.
8. GENERAL TOLERANCE ±0.20.
9. UL REFERENCE E90723.
Poke-Home: Vertical Top Entry
18-26 AWG: WTB
00-9296

9296 TOP MOUNT POKE HOME CONNECTOR
3 WAY

NOTES:
1. TOP MOUNT 3 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.
2. SUITABLE FOR WIRES 18AWG TO 26AWG. MAXIMUM INSULATION 2.20MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 92.
4. CONTACT: TIN PLATE COPPER ALLOY.
5. PACKING IN TAPE AND REEL. QTY PER REEL 400, 330MM REEL.
6. CAPTON TAPE TO AID PICK AND PLACE, 4MM DIAMETER MAX AVAILABLE.
7. CONNECTOR OUTLINE.
8. GENERAL TOLERANCE ±0.20.
9. UL REFERENCE E90723.

PACKING DETAILS

SUGGESTED PCB LAYOUT
Poke-Home: Vertical Top Entry
18-26 AWG: WTB

00-9296

9296 TOP MOUNT POKE HOME CONNECTOR

4 WAY

NOTES:
1. TOP MOUNT 4 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO
PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.
2. SUITABLE FOR WIRES 18AWG TO 26AWG. MAXIMUM INSULATION 2.20MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 92.
4. CONTACT: TIN PLATE COPPER ALLOY.
5. PACKING IN TAPE AND REEL. QTY PER REEL 400, 330MM REEL.
6. CAPTON TAPE TO AID PICK AND PLACE, 4MM DIAMETER MAX AVAILABLE.
7. CONNECTOR OUTLINE.
8. GENERAL TOLERANCE ±0.20.
9. UL REFERENCE E90723.

SUGGESTED PCB LAYOUT

PACKING DETAILS

UNREELED DIRECTION

330mm DIAMETER REEL

UNREELED DIRECTION
Poke-Home: Vertical Top Entry
18-26 AWG: WTB
00-9296

9296 TOP MOUNT POKE HOME CONNECTOR
5 WAY

NOTES:
1. TOP MOUNT 5 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO
   PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.
2. SUITABLE FOR WIRES 18AWG TO 26AWG. MAXIMUM INSULATION 2.20MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 92.
4. CONTACT: TIN PLATE COPPER ALLOY.
5. PACKING IN TAPE AND REEL. QTY PER REEL 400, 330MM REEL.
6. CAPTON TAPE TO AID PICK AND PLACE, 4MM DIAMETER MAX AVAILABLE.
7. CONNECTOR OUTLINE.
8. GENERAL TOLERANCE ±0.20.
9. UL REFERENCE E90723.

SUGGESTED PCB LAYOUT

PACKING DETAILS
NOTES:
1. TOP MOUNT 6 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.
2. SUITABLE FOR WIRES 18AWG TO 26AWG. MAXIMUM INSULATION 2.20MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 92.
4. CONTACT: TIN PLATE COPPER ALLOY.
5. PACKING IN TAPE AND REEL. QTY PER REEL 400, 330MM REEL.
6. CAPTON TAPE TO AID PICK AND PLACE, 4MM DIAMETER MAX AVAILABLE.
7. CONNECTOR OUTLINE.
8. GENERAL TOLERANCE ±0.20.
9. UL REFERENCE E90723.

SUGGESTED PCB LAYOUT

PACKING DETAILS

UNREELED DIRECTION

330mm DIAMETER REEL

UNREELED DIRECTION

QUANTITY PER REEL 400
9296 TOP MOUNT POKE HOME CONNECTOR

ASSEMBLY

Refer to application notes 201-01-152 for full assembly procedure.

9296 TOP MOUNT POKE HOME CONNECTOR

WIRE EXTRACTION TOOL

Refer to application notes 201-01-152 for full wire extraction procedure.
AVX continues to develop innovative connectors for the industrial electronics market that provide significant benefits over existing, outdated connector solutions. Listening to the design engineering community, there are ongoing applications where they cannot find an off-the-shelf solution that will satisfy a high percentage of the projects configuration, performance and cost goals.

The newest addition to AVX’s broadening line of Wire-to-Board (WTB) connectors offers a cost effective, single Poke-Home connector solution that will meet the cost and performance targets in demanding, yet user friendly applications. At the heart of the connector is the industry proven dual tine, 3mm high spring force box contact that has been on the market as a stand-alone horizontal contact only solution.

The new SMT vertical through board connector allows for 18AWG to 26AWG wires to be simply stripped and inserted into the connector body at 180 degree orientation to the bottom side of the PCB with an above board height of 0.80mm. This single connector will replace existing 2-Piece WTB solutions where a header is soldered onto the PCB and a secondary crimp-to-wire receptacle assembly is plugged in. Available in 1-6 positions, each connector will accept the entire wire gauge range for either solid or stranded wires at varying current ratings supported by each wire size. Once inserted, wires can easily be removed or replaced by twisting/unscrewing or by using a small blade extraction tool.

### APPLICATIONS
- Industrial/Ruggedized Wire-to-Board applications
- Replace hard soldering of wire to a PCB
- Replace costly 2-Piece header and receptacle products
- Reference Product Specification 201-01-151
- Reference Application Notes 201-01-152

### FEATURES AND BENEFITS
- Dual Beam box contact provides maximum mechanical stability and wire retention
- Tape and reel packaged for automated SMT placement
- Will accept either solid or stranded wire, 18-26AWG, plated or un-plated wires
- Simple strip and insert for wire loading, with easy twist and pull for wire removal

### ELECTRICAL
- Voltage Rating: 600 VAC 1 way
- 300 VAC 2 - 6 way
- Current Rating: See matrix below

### ENVIROMENTAL
- Operating Temperature: 
  -40°C to +125°C

### MECHANICAL
- Contact Material: Copper Alloy
- Contact Plating: Tin over Nickel
- Durability: 5 Cycles

### HOW TO ORDER

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series</th>
<th>Number of Ways</th>
<th>Wire Gauge Size</th>
<th>Insulator Color</th>
<th>Plating Option</th>
</tr>
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<tr>
<td>00</td>
<td>9296</td>
<td>00X</td>
<td>503</td>
<td>X</td>
<td>06</td>
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</tbody>
</table>

- **Code**: Acceptable Wire Gauge
- **Max Insulation**: 2.2mm

### CURRENT RATING

<table>
<thead>
<tr>
<th>Wire Gauge Size</th>
<th>18AWG</th>
<th>20AWG</th>
<th>22AWG</th>
<th>24AWG</th>
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<tr>
<td>7A</td>
<td>6A</td>
<td>5A</td>
<td>4A</td>
<td>3A</td>
<td></td>
</tr>
</tbody>
</table>

Certification: UL File #E90723
Poke-Home: Inverted Thru Board
18-26 AWG: WTB
00-9296

9296 THROUGH BOARD MOUNT POKE HOME CONNECTOR 1 WAY

NOTES:
1. THROUGH BOARD SMT MOUNT 1 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.
2. SUITABLE FOR WIRES 18AWG TO 26AWG. MAXIMUM INSULATION 2.20MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 100.
4. CONTACT: TIN PLATED COPPER ALLOY.
5. PACKING IN TAPE AND REEL, QTY. PER REEL 400, 330MM REEL.
6. GENERAL TOLERANCE ±0.20.
7. CLEARANCE HOLE FOR CONNECTOR.
8. UL REFERENCE E90723.

PACKING DETAILS

SUGGESTED PCB LAYOUT
Poke-Home: Inverted Thru Board
18-26 AWG: WTB
00-9296

9296 THROUGH BOARD MOUNT POKE HOME CONNECTOR 2 WAY

NOTES:
1. THROUGH BOARD SMT MOUNT 2 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.
2. SUITABLE FOR WIRES 18AWG TO 26AWG. MAXIMUM INSULATION 2.20MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 100.
4. CONTACT: TIN PLATED COPPER ALLOY.
5. PACKING IN TAPE AND REEL, QTY. PER REEL 400, 330MM REEL.
6. GENERAL TOLERANCE ±0.20.
7. CLEARANCE HOLE FOR CONNECTOR.
8. UL REFERENCE E90723.

SUGGESTED PCB LAYOUT

PACKING DETAILS
Poke-Home: Inverted Thru Board
18-26 AWG: WTB
00-9296

9296 THROUGH BOARD MOUNT POKE HOME CONNECTOR 3 WAY

NOTES:
1. THROUGH BOARD SMT MOUNT 3 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.
2. SUITABLE FOR WIRES 18AWG TO 26AWG. MAXIMUM INSULATION 2.20MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 100.
4. CONTACT: TIN PLATED COPPER ALLOY.
5. PACKING IN TAPE AND REEL. QTY. PER REEL 400, 330MM REEL.
6. GENERAL TOLERANCE ±0.20.
7. CLEARANCE HOLE FOR CONNECTOR.
8. UL REFERENCE E90723.

SUGGESTED PCB LAYOUT

PACKING DETAILS
Poke-Home: Inverted Thru Board
18-26 AWG: WTB
00-9296

9296 THROUGH BOARD MOUNT POKE HOME CONNECTOR 4 WAY

NOTES:
1. THROUGH BOARD SMT MOUNT 4 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.
2. SUITABLE FOR WIRES 18AWG TO 26AWG. MAXIMUM INSULATION 2.20MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 100.
4. CONTACT: TIN PLATED COPPER ALLOY.
5. PACKING IN TAPE AND REEL, QTY. PER REEL 400, 330MM REEL.
6. GENERAL TOLERANCE ±0.20.
7. CLEARANCE HOLE FOR CONNECTOR.
8. UL REFERENCE E90723.

SUGGESTED PCB LAYOUT

PACKING DETAILS

QUANTITY PER REEL 400
Poke-Home: Inverted Thru Board
18-26 AWG: WTB
00-9296

9296 THROUGH BOARD MOUNT POKE HOME CONNECTOR 5 WAY

NOTES:
1. THROUGH BOARD SMT MOUNT 5 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.
2. SUITABLE FOR WIRES 18AWG TO 26AWG. MAXIMUM INSULATION 2.20MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 100.
4. CONTACT: TIN PLATED COPPER ALLOY.
5. PACKING IN TAPE AND REEL, QTY. PER REEL 400, 330MM REEL.
6. GENERAL TOLERANCE ±0.20.
7. CLEARANCE HOLE FOR CONNECTOR.
8. UL REFERENCE E90723.

SUGGESTED PCB LAYOUT

PACKING DETAILS

UNREELED DIRECTION

330mm DIAMETER REEL

UNREELED DIRECTION

QUANTITY PER REEL 400
Poke-Home: Inverted Thru Board
18-26 AWG: WTB
00-9296

9296 THROUGH BOARD MOUNT POKE HOME CONNECTOR 6 WAY

NOTES:
1. THROUGH BOARD SMT MOUNT 6 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.
2. SUITABLE FOR WIRES 18AWG TO 26AWG. MAXIMUM INSULATION 2.20MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 100.
4. CONTACT: TIN PLATED COPPER ALLOY.
5. PACKING IN TAPE AND REEL, QTY. PER REEL 400, 330MM REEL.
6. GENERAL TOLERANCE ±0.20.
7. CLEARANCE HOLE FOR CONNECTOR.
8. UL REFERENCE E90723.

PACKING DETAILS

SUGGESTED PCB LAYOUT
Poke-Home: Inverted Thru Board
18-26 AWG: WTB
00-9296

9296 THROUGH BOARD MOUNT POKE HOME CONNECTOR ASSEMBLY

WIRE STRIP LENGTH

Refer to application notes 201-01-152 for full assembly procedure.

THROUGH BOARD MOUNT POKE HOME CONNECTOR WIRE EXTRACTION TOOL

06-9296-7003-01-000 – PLASTIC TOOL
06-9296-7004-03-000 – METAL TOOL

Refer to application notes 201-01-152 for full wire extraction procedure.
Vertical poke-home connectors were introduced into the market a few years ago to provide a reliable, yet cost effective discrete wire-to-board termination in perpendicular applications. Designed to bridge the gap between inconsistent hand soldering of wires and costly 2-piece connector systems, these connectors are available in a range of positions and configurations while accepting 18 to 26AWG solid or stranded wires.

This latest connector was developed specifically to support the high volume 18AWG wire applications used in power supply, LED driver and industrial control products where PCB space is limited. This new 9296 connector offers a robust single beam contact which securely captures and retains the wire in a 23% smaller package size.

### APPLICATIONS
- Replace inconsistent hand soldered perpendicular wire terminations onto PCB’s in:
  - Power Supplies
  - LED Drivers
  - Industrial/Motor Controls
- Offer a simple and cost reduced solution to existing 2-Piece connector systems

### FEATURES AND BENEFITS
- Pre-Plated phosphor bronze contact material provides excellent spring performance with high fatigue and corrosion resistance
- The single stamped and formed box contact maximizes board attachment and wire capture strength
- Tight tolerance and wire insulation stop helps to prevent potting from flowing into the connector during encapsulation processes
- Integral molded in flange provides a generous vacuum pick-up point for automated SMT placement

### ELECTRICAL
- Current Rating: 8 Amps
- Voltage Rating: 600 VAC

### ENVIRONMENTAL
- Operating Temperature: -40°C to +130°C

### MECHANICAL
- Insulator Material: Glass-Filled Nylon 46, UL94V0
- Contact Material: Phosphor Bronze
- Plating: Pure Tin
- Durability: 3 Cycles

### HOW TO ORDER
582960001000014
NOTES:
1. HOUSING MATERIAL: GLASS-FILLED, HIGH TEMP. THERMOPLASTIC; UL94V-0; COLOR: NATURAL.
2. CONTACT MATERIAL: HIGH STRENGTH PHOSPHORB BRONZE ALLOY; PRE-PLATED LEAD-FREE TIN OVER NICKEL PLATING.
3. PACKAGING: POCKET TAPE ON REELS; 1,250 PARTS PER REEL.
AVX continues to develop innovative connectors for the industrial electronics market that provide significant benefits over existing, outdated connector solutions. The latest release is single vertical Wire-to-Board (WTB) contacts that provide cost effective, yet robust discrete wire termination without the expense of an insulator and assembly costs. This new family of top and bottom entry contacts compliments the existing vertical poke home connectors already on the market, providing a lower cost solution without jeopardizing performance.

The new contacts support both solid and stranded wires ranging from 24AWG down to 18AWG and current ratings as high as 12 amps. The set of four contacts provide both top and bottom entry for FR4 and metal core printed circuit boards.

**APPLICATIONS**
- Machine Controls: motors, drives, solenoids, sensors, fans and pumps
- Commercial Buildings: controls, security, fire and sensors
- Smart Grid: meters, breakers and panels
- SSL/LED: bulbs, fixtures, signage and streetlights

**FEATURES AND BENEFITS**
- Dual Beam contact provides maximum mechanical stability and wire retention
- Tape and reel packaged for automated SMT placement
- Staged current rating based on AWG, maximum is 12A (18AWG)
- Increased functionality with the single contact placement: multiple contacts and/or specific individual locations

**ELECTRICAL**
- Voltage Rating: 300V
  Based on placement distance
- Current Rating: See matrix below

**ENVIRONMENTAL**
- Operating Temperature: -40°C to +125°C

**MECHANICAL**
- Contact Material: Phosphor Bronze
- Contact Plating: Pure Tin
- Durability: 5 Cycles

**HOW TO ORDER**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series</th>
<th>Number of Ways</th>
<th>Contact Style</th>
<th>Wire Insertion</th>
<th>Recommended For Board Type</th>
<th>Wire Gauges</th>
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<tr>
<td>70</td>
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<td>001</td>
<td>1X3</td>
<td>Top Side</td>
<td>Bottom Entry</td>
<td>FR4</td>
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<td></td>
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<td>Top Side</td>
<td>Top Entry</td>
<td>FR4</td>
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<td></td>
<td></td>
<td></td>
<td>Through Board</td>
<td>Top Entry</td>
<td>Metal Clad</td>
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<td></td>
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<td>Through Board</td>
<td>Metal Clad</td>
<td>Metal Clad</td>
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</table>

**CURRENT RATING**

<table>
<thead>
<tr>
<th>Code</th>
<th>Contact Location</th>
<th>Wire Insertion</th>
<th>Recommended For Board Type</th>
<th>Wire Gauges</th>
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<tr>
<td>103</td>
<td>Top Side</td>
<td>Bottom Entry</td>
<td>FR4</td>
<td>18 – 24 AWG</td>
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<tr>
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<td>Top Entry</td>
<td>FR4</td>
<td>18 – 24 AWG</td>
</tr>
<tr>
<td>123</td>
<td>Top Side</td>
<td>Bottom Entry</td>
<td>Metal Clad</td>
<td>18 – 24 AWG</td>
</tr>
<tr>
<td>133</td>
<td>Through Board</td>
<td>Top Entry</td>
<td>Metal Clad</td>
<td>18 – 24 AWG</td>
</tr>
</tbody>
</table>

Certification: UL File #E90723
Poke-Home: Single Vertical Contact
18-24 AWG: WTB
70-9296

70-9296-001-103-006
9296 VERTICAL MOUNT SMT CONTACT
TOP SIDE CONTACT – BOTTOM ENTRY WIRE (FR4 BOARD)

SUGGESTED PCB LAYOUT

NOTES:
1. CONTACT MOUNTS ON TOP SIDE OF BOARD, WIRE INSERTED FROM UNDERSIDE OF BOARD.
2. STYLE RECOMMENDED FOR FR4 BOARDS WHERE MINIMUM CLEARANCE REQUIRED TO CONTACT AND MOUNTING PADS.
3. FOR FURTHER INFORMATION REFER TO ELCO SPECIFICATION 201-01-161 AND APPLICATION NOTES 201-01-175.
4. MATERIAL: TIN PLATED PHOSPHOR BRONZE.
5. HOLE FOR WIRE INSERTION.
6. PACING IN TAPE AND REEL, 2000 PIECES PER REEL.
7. FOR WIRE TRIM DETAILS REFER TO PAGE 115.
8. UL REFERENCE E90723.
9. GENERAL TOLERANCE ±0.10.

PACKING DETAILS

090517
Poke-Home: Single Vertical Contact
18-24 AWG: WTB
70-9296

70-9296-001-113-006
9296 VERTICAL MOUNT SMT CONTACT
THROUGH BOARD CONTACT – TOP ENTRY WIRE (FR4 BOARD)

SUGGESTED PCB LAYOUT

NOTES:
1. CONTACT MOUNTS THROUGH THE BOARD, WIRE INSERTED FROM TOP SIDE
   OF BOARD.
2. STYLE RECOMMENDED FOR FR4 BOARDS WHERE MINIMUM CLEARANCE
   REQUIRED TO CONTACT AND MOUNTING PADS.
3. FOR FURTHER INFORMATION REFER TO ELCO SPECIFICATION 201-01-161
   AND APPLICATION NOTES 201-01-175.
4. MATERIAL: TIN PLATED PHOSPHOR BRONZE.
5. HOLE DIMENSIONS FOR CONTACT.
6. PACING IN TAPE AND REEL, 2000 PIECES PER REEL.
7. FOR WIRE TRIM DETAILS REFER TO PAGE 115.
8. UL REFERENCE E90723.
9. GENERAL TOLERANCE ±0.10.

PACKING DETAILS

UNREELLED DIRECTION

4.00

3.40

3.20

NOTE 5

UNREELLED DIRECTION

330mm DIAMETER REEL

QUANTITY 2000 PER REEL
70-9296

9296 VERTICAL MOUNT SMT CONTACT
TOP SIDE CONTACT – BOTTOM ENTRY WIRE (METAL BOARD)

SUGGESTED PCB LAYOUT

NOTES:
1. CONTACT MOUNTS ON TOP SIDE OF BOARD, WIRE INSERTED FROM UNDERSIDE OF BOARD.
2. STYLE RECOMMENDED FOR METAL CLAD BOARDS WHERE MAXIMUM CLEARANCE REQUIRED TO CONTACT AND MOUNTING PADS.
3. FOR FURTHER INFORMATION REFER TO ELCO SPECIFICATION 201-01-161 AND APPLICATION NOTES 201-01-175.
4. MATERIAL: TIN PLATED PHOSPHOR BRONZE.
5. HOLE FOR WIRE INSERTION.
6. PACKING IN TAPE AND REEL, 1600 PIECES PER REEL.
7. FOR WIRE TRIM DETAILS REFER TO PAGE 115.
8. UL REFERENCE E90723.
9. GENERAL TOLERANCE ±0.10.

PACKING DETAILS

QUANTITY 1600 PER REEL

330mm DIAMETER REEL
70-9296

9296 VERTICAL MOUNT SMT CONTACT
THROUGH BOARD CONTACT – TOP ENTRY WIRE (METAL BOARD)

NOTES:
1. CONTACT MOUNTS THROUGH THE BOARD, WIRE INSERTED FROM TOP SIDE OF BOARD.
2. STYLE RECOMMENDED FOR METAL CLAD BOARDS WHERE ADDITIONAL CLEARANCE REQUIRED TO CONTACT AND MOUNTING PADS.
3. FOR FURTHER INFORMATION REFER TO ELCO SPECIFICATION 201-01-161 AND APPLICATION NOTES 201-01-175.
4. MATERIAL: TIN PLATED PHOSPHOR BRONZE.
5. HOLE DIMENSIONS FOR CONTACT.
6. PACING IN TAPE AND REEL, 2000 PIECES PER REEL.
7. FOR WIRE TRIM DETAILS REFER TO PAGE 115.
8. UL REFERENCE E90723.
9. GENERAL TOLERANCE ±0.10.

PACKING DETAILS

UNREELED DIRECTION

QUANTITY 2000 PER REEL

330mm DIAMETER REEL
Poke-Home: Single Vertical Contact
18-24 AWG: WTB
70-9296

9296 VERTICAL MOUNT SMT CONTACT
WIRE TRIM DETAILS

NOTES:
1. FOR FULL ASSEMBLY PROCEDURE REFER TO APPLICATION NOTES 201-01-175.
2. THE SAME WIRE STRIP LENGTH APPLIES TO ALL STYLES.
3. STRANDED WIRES SHOULD BE TWISTED TO PREVENT SINGLE STRANDS BECOMING DETACHED WHEN INSERTED INTO CONTACT.
AVX continues to develop innovative connectors for the industrial electronics market that provide significant benefits over existing, outdated connector solutions. The latest release is single vertical Wire-to-Board (WTB) contacts that provide cost effective, yet robust discrete wire termination without the expense of an insulator and assembly costs. This new family of top and bottom entry contacts compliments the existing vertical poke home connectors already on the market, providing a lower cost solution without jeopardizing performance.

The new contacts support both solid and stranded wires ranging from 26AWG down to 22AWG and current ratings as high as 8 amps. Due to the mechanical stiffness of the small contact, 26AWG stranded wires may need to be pre-tinned to facilitate insertion. The set of four contacts provide both top and bottom entry for FR4 and metal core printed circuit boards.

**APPLICATIONS**
- Machine Controls: motors, drives, solenoids, sensors, fans and pumps
- Commercial Buildings: controls, security, fire and sensors
- Smart Grid: meters, breakers and panels
- SSL/LED: bulbs, fixtures, signage and streetlights
- Application notes: refer to 201-01-175

**FEATURES AND BENEFITS**
- Dual Beam contact provides maximum mechanical stability and wire retention
- Tape and reel packaged for automated SMT placement
- Staged current rating based on AWG, maximum is 8A (22AWG)
- Increased functionality with the single contact placement: multiple contacts and/or specific individual locations

**ELECTRICAL**
- Voltage Rating: 300V
  Based on placement distance
- Current Rating: See matrix below

**ENVIRONMENTAL**
- Operating Temperature: -40°C to +125°C

**MECHANICAL**
- Contact Material: Phosphor Bronze
- Contact Plating: Tin over Nickel
- Durability: 5 Cycles

**HOW TO ORDER**

<table>
<thead>
<tr>
<th>Code</th>
<th>Contact Location</th>
<th>Wire Insertion Direction</th>
<th>Recommended For Board Type</th>
<th>Wire Gauges*</th>
</tr>
</thead>
<tbody>
<tr>
<td>102</td>
<td>Top Side</td>
<td>Bottom Entry</td>
<td>FR4</td>
<td>22 AWG - 26 AWG</td>
</tr>
<tr>
<td>112</td>
<td>Through Board</td>
<td>Top Entry</td>
<td>FR4</td>
<td>22 AWG - 26 AWG</td>
</tr>
<tr>
<td>122</td>
<td>Top Side</td>
<td>Bottom Entry</td>
<td>Metal Based</td>
<td>22 AWG - 26 AWG</td>
</tr>
<tr>
<td>132</td>
<td>Through Board</td>
<td>Top Entry</td>
<td>Metal Based</td>
<td>22 AWG - 26 AWG</td>
</tr>
</tbody>
</table>

*26 AWG stranded wires may require tinning to aid insertion.

**CURRENT RATING**

<table>
<thead>
<tr>
<th>Wire Gauge</th>
<th>22AWG</th>
<th>24AWG</th>
<th>26AWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>8A</td>
<td>6A</td>
<td>5A</td>
</tr>
</tbody>
</table>

Certification: UL File #E90723
Poke-Home: Micro Single Vertical Contact

22-26 AWG: WTB

70-9296

9296 VERTICAL MOUNT SMT CONTACT
TOP SIDE CONTACT – BOTTOM ENTRY WIRE (FR4 BOARD)

NOTES:
1. CONTACT MOUNTS ON TOP SIDE OF BOARD, WIRE INSERTED FROM UNDER-SIDE OF BOARD.
2. STYLE RECOMMENDED FOR FR4 BOARDS WHERE ADDITIONAL CLEARANCE REQUIRED TO CONTACTS AND MOUNTING PADS.
3. FOR FURTHER INFORMATION REFER TO ELCO SPECIFICATION 201-01-161 AND APPLICATION NOTES 201-01-175.
4. MATERIAL: TIN PLATED PHOSPHOR BRONZE.
5. HOLE FOR WIRE INSERTION.
6. PACKING IN TAPE AND REEL, 2000 PIECES PER REEL.
7. FOR WIRE TRIM DETAILS REFER TO PAGE 121.
8. WIRE SIZES REFER TO PAGE 116.
9. GENERAL TOLERANCE ±0.10.
10. UL REFERENCE E90723 (US AND CANADA).

PACKING DETAILS

UNREELLED DIRECTION

QUANTITY 2000 PER REEL

330mm DIAMETER REEL
9296 VERTICAL MOUNT SMT CONTACT
THROUGH BOARD CONTACT – TOP ENTRY WIRE (FR4 BOARD)

NOTES:
1. CONTACT MOUNTS THROUGH THE BOARD, WIRE INSERTED FROM TOP SIDE OF BOARD.
2. STYLE RECOMMENDED FOR FR4 BOARDS WHERE ADDITIONAL CLEARANCE REQUIRED TO CONTACT AND MOUNTING PADS.
3. FOR FURTHER INFORMATION REFER TO ELCO SPECIFICATION 201-01-161 AND APPLICATION NOTES 201-01-175.
4. MATERIAL: TIN PLATED PHOSPHOR BRONZE.
5. HOLE DIMENSIONS FOR CONTACT.
6. PACKING IN TAPE AND REEL, 2000 PIECES PER REEL.
7. FOR WIRE TRIM DETAILS REFER TO PAGE 121.
8. WIRE SIZES REFER TO PAGE 116.
9. GENERAL TOLERANCE ±0.10.
10. UL REFERENCE E90723 (US AND CANADA).

PACKING DETAILS

QUANTITY 2000 PER REEL
330mm DIAMETER REEL
70-9296-001-122-006
9296 VERTICAL MOUNT SMT CONTACT
TOP SIDE CONTACT – BOTTOM ENTRY WIRE (METAL BOARD)

NOTES:
1. CONTACT MOUNTS ON TOP SIDE OF BOARD, WIRE INSERTED FROM UNDERSIDE OF BOARD.
2. STYLE RECOMMENDED FOR METAL CLAD BOARDS WHERE ADDITIONAL CLEARANCE REQUIRED TO CONTACTS AND MOUNTING PADS.
3. FOR FURTHER INFORMATION REFER TO ELOO SPECIFICATION 201-01-161 AND APPLICATION NOTES 201-01-150.
4. MATERIAL: TIN PLATED PHOSPHOR BRONZE.
5. HOLE FOR WIRE INSERTION.
6. PACKING IN TAPE AND REEL, 1600 PIECES PER REEL.
7. FOR WIRE TRIM DETAILS REFER TO PAGE 121.
8. WIRE SIZES REFER TO PAGE 116.
9. GENERAL TOLERANCE ±0.10.
10. UL REFERENCE E90723 (US AND CANADA).

PACKING DETAILS

UNREELD DIRECTION

QUANTITY 1600 PER REEL

330mm DIAMETER REEL

032018
SUGGESTED PCB LAYOUT

NOTES:
1. CONTACT MOUNTS ON TOP SIDE OF BOARD, WIRE INSERTED FROM UNDERSIDE OF BOARD.
2. STYLE RECOMMENDED FOR METAL CLAD BOARDS WHERE ADDITIONAL CLEARANCE REQUIRED TO CONTACTS AND MOUNTING PADS.
3. FOR FURTHER INFORMATION REFER TO ELCO SPECIFICATION 201-01-161 AND APPLICATION NOTES 201-01-175.
4. MATERIAL: TIN PLATED PHOSPHOR BRONZE.
5. HOLE FOR WIRE INSERTION.
6. PACKING IN TAPE AND REEL, 2000 PIECES PER REEL.
7. FOR WIRE TRIM DETAILS REFER TO PAGE 121.
8. WIRE SIZES REFER TO PAGE 116.
9. GENERAL TOLERANCE ±0.10.
10. UL REFERENCE E90723 (US AND CANADA).
NOTES:
1. FOR FULL ASSEMBLY PROCEDURE REFER TO APPLICATION NOTES 201-01-175.
2. THE SAME WIRE STRIP LENGTH APPLIES TO ALL STYLES.
3. STRANDED WIRES SHOULD BE TWISTED TO PREVENT SINGLE STRANDS BECOMING DETACHED WHEN INSERTED INTO CONTACT.
4. SUITABLE FOR SOLID AND STRANDED WIRES 22AWG, 24AWG AND 26AWG. STRANDED WIRES 26AWG MAY REQUIRE TINNING TO AID INSERTION.
The new 9296 series connector provides a quick and reliable wire-to-board termination in a sleek 3.0mm pitch by 2.5mm high SMT package for a broad range of industrial and commercial applications. With almost every product on the market having to deal with a small number of discrete wires connecting components to a PCB, the 9296 connector series meets this challenge by simply stripping the wire and inserting them into a 1 to 6 position connector. This makes the connector very cost effective and termination friendly within the factory as well as in the field by electrical installers.

Developed for harsh industrial applications, the connector integrates the already proven 2mm dual beam poke-home contact into a connector housing. The high spring force Phosphor Bronze contact accepts a wide range (20-26AWG solid or stranded) of wire to accommodate any wire combination within a single connector.

**APPLICATIONS**
- Machine Controls: motors, drives, solenoids, sensors, fans and pumps
- Commercial Buildings: controls, security, fire and sensors
- Smart Grid: meters, breakers and panels
- SSL/LED: bulbs, fixtures, signage and streetlights
- Application notes: refer to 201-01-167

**FEATURES AND BENEFITS**
- Simple strip and poke-home wire insertion with easy twist and pull wire extraction
- 2.5mm height achieves the lowest height possible for this AWG range
- Accepts 20-26 AWG solid and stranded wires
- High spring force dual beam box contact provides maximum mechanical stability and wire retention

**ELECTRICAL**
- Current Rating: See matrix below
- Voltage Rating: 300 VAC

**ENVIRONMENTAL**
- Operating Temperature: -40ºC to +130ºC

**MECHANICAL**
- Insulator Material: Glass-Filled Nylon 46; UL94V0
- Contact Material: Phosphor Bronze
- Plating: Tin over Nickel
- Durability: 3 Cycles

**HOW TO ORDER**

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Series</th>
<th>Number of Ways</th>
<th>Description</th>
<th>Wire Gauge Size</th>
<th>Insulator Color</th>
<th>Plating Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>9296</td>
<td>001 = 1</td>
<td>Horizontal</td>
<td>20AWG to 26AWG</td>
<td>9 = UL White</td>
<td>06 Pure Tin</td>
</tr>
<tr>
<td>00</td>
<td>9296</td>
<td>002 = 2</td>
<td>SMT Mount</td>
<td>Max ø 1.60mm</td>
<td>8 = UL Black</td>
<td>over Nickel</td>
</tr>
<tr>
<td>00</td>
<td>9296</td>
<td>003 = 3</td>
<td>Poke Home</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00</td>
<td>9296</td>
<td>004 = 4</td>
<td>Connector</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>00</td>
<td>9296</td>
<td>005 = 5</td>
<td></td>
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<td>00</td>
<td>9296</td>
<td>006 = 6</td>
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**CURRENT RATING**

<table>
<thead>
<tr>
<th></th>
<th>20AWG</th>
<th>22AWG</th>
<th>24AWG</th>
<th>26AWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>UL</td>
<td>8A</td>
<td>7A</td>
<td>6A</td>
<td>5A</td>
</tr>
<tr>
<td>cUL</td>
<td>6A</td>
<td>5A</td>
<td>3.75A</td>
<td>3.75A</td>
</tr>
</tbody>
</table>

Certification: UL File #E90723
9296 HORIZONTAL MOUNT POKE HOME CONNECTOR – 1 WAY

NOTES:
1. HORIZONTAL SMT MOUNT 1 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-166 AND APPLICATION NOTES 201-01-167.
2. SUITABLE FOR WIRES 20AWG TO 26AWG, MAXIMUM INSULATION 1.60MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-O, COLOR SEE PAGE 122.
4. CONTACT: TIN PLATED COPPER ALLOY.
5. PACKING IN TAPE AND REEL, QTY PER REEL 2000, 330MM REEL.
6. GENERAL TOLERANCE ±0.20.
7. OUTLINE OF CONNECTOR.
8. UL REFERENCE E90723 (US AND CANADA).

SUGGESTED PCB LAYOUT

PACKING DETAILS

UNREELED DIRECTION
330mm DIAMETER REEL

QUANTITY PER REEL 2000
9296 HORIZONTAL MOUNT POKE HOME CONNECTOR – 2 WAY

NOTES:
1. HORIZONTAL SMT MOUNT 2 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-166 AND APPLICATION NOTES 201-01-167.
2. SUITABLE FOR WIRES 20AWG TO 26AWG, MAXIMUM INSULATION 1.60MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-0, COLOR SEE PAGE 122.
4. CONTACT: TIN PLATED COPPER ALLOY.
5. PACKING IN TAPE AND REEL, QTY PER REEL 2000, 330MM REEL.
6. GENERAL TOLERANCE ±0.20.
7. OUTLINE OF CONNECTOR.
8. UL REFERENCE E90723 (US AND CANADA).

SUGGESTED PCB LAYOUT

PACKING DETAILS
Poke-Home: Low Profile Horizontal
20-26 AWG: WTB
00-9296

9296 HORIZONTAL MOUNT POKE HOME CONNECTOR – 3 WAY

NOTES:
1. HORIZONTAL SMT MOUNT 3 WAY POKE HOME CONNECTOR.
   FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-166
   AND APPLICATION NOTES 201-01-167.
2. SUITABLE FOR WIRES 20AWG TO 26AWG, MAXIMUM INSULATION
   1.60MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-O, COLOR SEE PAGE 122.
4. CONTACT: TIN PLATED COPPER ALLOY.
5. PACKING IN TAPE AND REEL, QTY PER REEL 2000, 330MM REEL.
6. GENERAL TOLERANCE ±0.20.
7. OUTLINE OF CONNECTOR.
8. UL REFERENCE E90723 (US AND CANADA).

SUGGESTED PCB LAYOUT

PACKING DETAILS

UNREELLED DIRECTION

330mm DIAMETER REEL

UNREELLED DIRECTION

QUANTITY PER REEL 2000
**Poke-Home: Low Profile Horizontal**

**20-26 AWG: WTB**

00-9296

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**9296 HORIZONTAL MOUNT POKE HOME CONNECTOR – 4 WAY**

**NOTES:**

1. HORIZONTAL SMT MOUNT 4 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-166 AND APPLICATION NOTES 201-01-167.
2. SUITABLE FOR WIRES 20AWG TO 26AWG, MAXIMUM INSULATION 1.60MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-O, COLOR SEE PAGE 122.
4. CONTACT: TIN PLATED COPPER ALLOY.
5. PACKING IN TAPE AND REEL, QTY PER REEL 2000, 330MM REEL.
6. GENERAL TOLERANCE ±0.20.
7. OUTLINE OF CONNECTOR.
8. UL REFERENCE E90723 (US AND CANADA).

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**SUGGESTED PCB LAYOUT**

**PACKING DETAILS**

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**AVX INTERCONNECT**

A KYOCERA GROUP COMPANY

---

**AVX**

031618
9296 HORIZONTAL MOUNT POKE HOME CONNECTOR – 5 WAY

NOTES:
1. HORIZONTAL SMT MOUNT 5 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-166 AND APPLICATION NOTES 201-01-167.
2. SUITABLE FOR WIRES 20AWG TO 26AWG, MAXIMUM INSULATION 1.60MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-O, COLOR SEE PAGE 122.
4. CONTACT: TIN PLATED COPPER ALLOY.
5. PACKING IN TAPE AND REEL, QTY PER REEL 2000, 330MM REEL.
6. GENERAL TOLERANCE ±0.20.
7. OUTLINE OF CONNECTOR.
8. UL REFERENCE E90723 (US AND CANADA).

SUGGESTED PCB LAYOUT

PACKING DETAILS
Poke-Home: Low Profile Horizontal
20-26 AWG: WTB
00-9296

9296 HORIZONTAL MOUNT POKE HOME CONNECTOR – 6 WAY

NOTES:
1. HORIZONTAL SMT MOUNT 6 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-166 AND APPLICATION NOTES 201-01-167.
2. SUITABLE FOR WIRES 20AWG TO 26AWG, MAXIMUM INSULATION 1.60MM DIAMETER.
3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-O, COLOR SEE PAGE 122.
4. CONTACT: TIN PLATED COPPER ALLOY.
5. PACKING IN TAPE AND REEL, QTY PER REEL 2000, 330MM REEL.
6. GENERAL TOLERANCE ±0.20.
7. OUTLINE OF CONNECTOR.
8. UL REFERENCE E90723 (US AND CANADA).

SUGGESTED PCB LAYOUT

PACKING DETAILS
Poke-Home: Low Profile Horizontal
20-26 AWG: WTB
00-9296

9296 HORIZONTAL MOUNT POKE HOME CONNECTOR – ASSEMBLY

REFER TO APPLICATION NOTES 201-01-167
FOR FULL ASSEMBLY PROCEDURE
Contact:

AVX Greenville, SC
Tel: 864-967-2150

AVX Limited, England
Tel: +44-1276-697000

AVX S.A.S., France
Tel: +33-1-69-18-46-00

AVX GmbH, Germany
Tel: +49-0611-95949-0

AVX SRL, Italy
Tel: +39-02-614-571

AVX Czech Republic
Tel: +420-57-57-57-521

AVX/ELCO UK
Tel: +44-1638-675000

ELCO Europe GmbH
Tel: +49-2741-299-0

AVX S.A., Spain
Tel: +34-91-63-97-197

AVX Benelux
Tel: +31-187-489-337

AVX Japan
Tel: +81-740-32-1250

AVX/Kyocera (S) Pte Ltd.,
Singapore
Tel: +65-6286-7555

AVX/Kyocera, Asia,
Limited,
Hong Kong
Tel: +852-2363-3303

AVX/Kyocera Yuhan Hoesa,
South Korea
Tel: +82-2785-6504

AVX/Kyocera HK Ltd.,
Taiwan
Tel: +886-2-2656-0258

AVX/Kyocera (M) Sdn Bhd,
Malaysia
Tel: +60-4228-1190

AVX/Kyocera International
Trading Co. Ltd.,
Shanghai
Tel: +86-21-3255 1933

AVX/Kyocera Asia Ltd.,
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AVX/Kyocera International
Trading Co. Ltd.,
Beijing
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AVX/Kyocera India
Liaison Office
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