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: 250 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**

<table>
<thead>
<tr>
<th>Code</th>
<th>No of Ways</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>1</td>
<td>Page 44</td>
</tr>
<tr>
<td>002</td>
<td>2</td>
<td>Page 45</td>
</tr>
<tr>
<td>003</td>
<td>3</td>
<td>Page 46</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wire Gauge Size</th>
<th>Cap Code Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 Gauge Stranded</td>
<td>021</td>
</tr>
<tr>
<td>20 Gauge Stranded</td>
<td>021</td>
</tr>
<tr>
<td>22 Gauge Stranded</td>
<td>016</td>
</tr>
<tr>
<td>24 Gauge Stranded</td>
<td>016</td>
</tr>
</tbody>
</table>

**CERTIFICATION**
Certification: UL File #E320991
SSL - Discrete Wire IDC
Series 9176

18-24 AWG 1 WAY IDC CONNECTOR

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHORE BRONZE.
   INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.
   COLOR REFER TO PAGE 43.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 24 AND 18 GAUGE
   STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND
   APPLICATION NOTES 201-01-124.
6. FOR PCB SPACE RESTRICTED BY WIRE ASSEMBLY TOOLING REFER TO PAGE 47.
7. FOR HAND WIRE ASSEMBLY TOOLING REFER TO PAGE 49.

PICK UP AREA 0.9 x 5.00mm MIN

ALL TAILS TO BE WITHIN 0.10mm COPLANARITY.

SMT PCB LAYOUT
PURE TIN PADS

PACKING DETAILS

<table>
<thead>
<tr>
<th>Code</th>
<th>Accepted Wire Gauge</th>
<th>A (Diameter)</th>
<th>Wire Insulation</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>18 Gauge Stranded</td>
<td>0.72</td>
<td>Ø 1.6-2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>011</td>
<td>20 Gauge Stranded</td>
<td>0.60</td>
<td>Ø 1.6-2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>022</td>
<td>22 Gauge Stranded</td>
<td>0.47</td>
<td>Ø 1.1-1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>032</td>
<td>24 Gauge Stranded</td>
<td>0.37</td>
<td>Ø 1.1-1.6</td>
<td>1.6</td>
</tr>
</tbody>
</table>

REEL QTY 1000
LEADER 480MM
TRAILER 120MM
18-24 AWG 2 WAY IDC CONNECTOR

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHORE BRONZE.
   INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.
   COLOR REFER TO PAGE 43.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 24 AND 18 GAUGE STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND APPLICATION
   NOTES 201-01-124.
6. FOR PCB SPACE RESTRICTED BY WIRE ASSEMBLY TOOLING REFER TO PAGE 47.
7. FOR HAND WIRE ASSEMBLY TOOLING REFER TO PAGE 49
8. FOR PRESS WIRE ASSEMBLY TOOLING REFER TO PAGE 50.
9. FOR ACCESSORY CAPS REFER TO PAGES 47 AND 48.

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PICK UP AREA 1.9 x 5.00mm MIN

ALL TAILS TO BE WITHIN 0.10mm COPLANARITY.

Code  Accepted Wire Gauge  A  Wire Insulation  B
001  18 Gauge Stranded  0.72  Ø 1.6-2.1  2.1
011  20 Gauge Stranded  0.80  Ø 1.6-2.1  2.1
022  22 Gauge Stranded  0.47  Ø 1.1-1.6  1.6
032  24 Gauge Stranded  0.37  Ø 1.1-1.6  1.6

SMT PCB LAYOUT
PURE TIN PADS

PACKING DETAILS

REEL QTY  1000
LEADER    480MM
TRAILER   120MM
18-24 AWG 3 WAY IDC CONNECTOR

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHORE BRONZE.
   INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.
   COLOR REFER TO PAGE 43.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 24 AND 18 GAUGE STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND APPLICATION
   NOTES 201-01-124.
6. FOR PCB SPACE RESTRICTED BY WIRE ASSEMBLY TOOLING REFER TO PAGE 47.
7. FOR HAND WIRE ASSEMBLY TOOLING REFER TO PAGE 49
8. FOR PRESS WIRE ASSEMBLY TOOLING REFER TO PAGE 50.
9. FOR ACCESSORY CAPS REFER TO PAGES 47 AND 48.

SMT PCB LAYOUT
PURE TIN PADS

PACKING DETAILS
REEL QTY 1000
LEADER 480MM
TRAILER 120MM

Code | Accepted Wire Gauge | A | Wire Insulation | B
--- | --------------------- | --- | ---------------- | ---
001 | 18 Gauge Stranded | 0.72 | Ø 1.6-2.1 | 2.1
011 | 20 Gauge Stranded | 0.60 | Ø 1.6-2.1 | 2.1
022 | 22 Gauge Stranded | 0.47 | Ø 1.1-1.6 | 1.6
032 | 24 Gauge Stranded | 0.37 | Ø 1.1-1.6 | 1.6
NOTES:
1. CAP FOR IDC WIRE TO BOARD CONNECTION, 2 AND 3 WAY, THROUGH WIRE.
2. FOR USE WITH STANDARD 9176 IDC CONNECTORS, SEE PAGE 43 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.
NOTES:
1. CAP FOR IDC WIRE TO BOARD CONNECTION, 2 AND 3 WAY, WITH WIRE STOP.
2. FOR USE WITH STANDARD 9176 IDC CONNECTORS, SEE PAGE 43 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.

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<thead>
<tr>
<th>Code</th>
<th>Slot A</th>
<th>Diameter B</th>
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<tr>
<td>016</td>
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<td>1.00</td>
<td>9176 01.6</td>
<td>Black 099</td>
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<tr>
<td>021</td>
<td>2.10</td>
<td>1.50</td>
<td>9176 02.1</td>
<td>White 199</td>
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HAND INSERTION TOOLING
FOR SINGLE 18/24 GAUGE WIRE

UNIVERSAL HANDLE

<table>
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<th>Details</th>
<th>Tool Part Number</th>
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<tr>
<td>Metal Handle</td>
<td>06 7000 7730 01 000</td>
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HIGH PRODUCTION
Metal

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<tbody>
<tr>
<td>2.10</td>
<td>06 9176 7017 01 000</td>
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<tr>
<td>1.60</td>
<td>06 9176 7017 02 000</td>
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MED PRODUCTION
Metal/Plastic

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<tr>
<td>1.60</td>
<td>06 9176 7016 02 000</td>
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</tbody>
</table>

CLEARANCE AREA ON PCB FOR HAND TOOLING

1 WAY

2 WAY

3 WAY

AREA TO BE KEPT CLEAR FOR TOOLING
INSERTION 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>Ø 2.10</td>
<td>06 9176 7017 01 002</td>
</tr>
<tr>
<td>2</td>
<td>Ø 1.60</td>
<td>06 9176 7017 02 002</td>
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<tr>
<td>3</td>
<td>Ø 2.10</td>
<td>06 9176 7017 01 003</td>
</tr>
<tr>
<td>3</td>
<td>Ø 1.60</td>
<td>06 9176 7017 02 003</td>
</tr>
</tbody>
</table>

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 47.