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**

<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>
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<tbody>
<tr>
<td>00</td>
<td>9176</td>
<td>00X</td>
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<td>06</td>
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<table>
<thead>
<tr>
<th>Code</th>
<th>Accepted Wire Gauge</th>
<th>Wire Insulation</th>
<th>Cap Code Pages 21-22</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>18 Gauge Stranded</td>
<td>Ø 1.6-2.1</td>
<td>021</td>
</tr>
<tr>
<td>011</td>
<td>20 Gauge Solid or Stranded</td>
<td>Ø 1.6-2.1</td>
<td>021</td>
</tr>
<tr>
<td>022</td>
<td>22 Gauge Solid or Stranded</td>
<td>Ø 1.1-1.6</td>
<td>016</td>
</tr>
<tr>
<td>032</td>
<td>24 Gauge Solid or Stranded</td>
<td>Ø 1.1-1.6</td>
<td>016</td>
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</table>

Certification: UL File #E90723
## Connector/Tooling Part Number Matrix

<table>
<thead>
<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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</thead>
<tbody>
<tr>
<td>18</td>
<td>Ø 1.6 - 2.1</td>
<td>1p</td>
<td>Black</td>
<td>009176001001806</td>
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<td>609176003016000</td>
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*Hand Insertion Tooling - Universal Hand Tool 06700073001000; Consult Application Notes 201-01-124
18-24 AWG 1 WAY IDC CONNECTOR

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
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.

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

REEL QTY 1000
LEADER 480MM
TRAILER 120MM

Code | Accepted Wire Gauge | A | Wire Insulation | B
--- | --- | --- | --- | ---
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
18-24 AWG 2 WAY IDC CONNECTOR

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
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 ELECO 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

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<tr>
<th>REEL QTY</th>
<th>LEADER</th>
<th>TRAILER</th>
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<tr>
<td>1000</td>
<td>480MM</td>
<td>120MM</td>
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NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
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 ELECO 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.
18-24 AWG 3 WAY IDC CONNECTOR

NOTES:
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
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.

SMT PCB LAYOUT
PURE TIN PADS

PACKING DETAILS
REEL QTY 1000
LEADER 480MM
TRAILER 120MM

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 |
60-9176-00X-0XX-X00
ACCESSORY CAP – THROUGH WIRE

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.

<table>
<thead>
<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>
<td>1.60</td>
<td>Ø1.6</td>
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<td>021</td>
<td>1.50</td>
<td>2.10</td>
<td>Ø2.1</td>
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<td>100</td>
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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>
<thead>
<tr>
<th>Code</th>
<th>Slot A</th>
<th>Diameter B</th>
<th>Text</th>
<th>Color</th>
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<tr>
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<td>1.00</td>
<td>1.60</td>
<td>Ø1.6</td>
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<td>021</td>
<td>1.50</td>
<td>2.10</td>
<td>Ø2.1</td>
<td>White</td>
<td>100</td>
</tr>
</tbody>
</table>
Standard IDC 18-24 AWG: WTB

00-9176

HAND INSERTION TOOLING
FOR SINGLE 18/24 GAUGE WIRE

UNIVERSAL HANDLE

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

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

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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

AREA TO BE KEPT CLEAR FOR TOOLING

2 WAY

AREA TO BE KEPT CLEAR FOR TOOLING

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>
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<th>Tool Part Number</th>
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<tbody>
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<tr>
<td></td>
<td>Ø1.60</td>
<td>06 9176 7017 02 003</td>
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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
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.