Single Tine SMT
18-24 AWG: WTB
9176-650

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

**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>Code</th>
<th>Description</th>
<th>Accepted Wire Gauge</th>
<th>Wire Gauges</th>
</tr>
</thead>
<tbody>
<tr>
<td>650</td>
<td>Capped IDC Connector</td>
<td>18 AWG Stranded</td>
<td>ø1.6-2.1</td>
</tr>
<tr>
<td>651</td>
<td></td>
<td>20 AWG Solid and Stranded</td>
<td>ø1.6-2.1</td>
</tr>
<tr>
<td>652</td>
<td>SMT Mount</td>
<td>22 AWG Solid and Stranded</td>
<td>ø1.1-1.6</td>
</tr>
<tr>
<td>653</td>
<td></td>
<td>24 AWG Solid and Stranded</td>
<td>ø1.1-1.6</td>
</tr>
</tbody>
</table>

**CONTACT STYLE**
- Through Wire
- Wire Stop

**COLOR OPTION**
- 9 = UL White

**CAP OPTIONS**
- Through Wire
- Wire Stop

**CURRENT RATING**

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

Certification: UL File #E90723
Single Tine SMT
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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 1.
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 1.

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>650</td>
<td>18 AWG Stranded</td>
<td>0.74</td>
<td>Ø 1.6-2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>651</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>652</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>653</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>
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18-24 AWG 1 WAY IDC CONNECTOR
WIRE STOP CAPPED

NOTES:
1. 1 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION, PRE-ASSEMBLED WIRE STOP CAP, CODE SEE PAGE 1.
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 1.
11. WIRE STOP CAP PROTECTS END OF WIRE.

PACKING DETAILS

SUGGESTED PCB LAYOUT
18-24 AWG ASSEMBLED CAPPE IDC CONNECTORS

NOMINAL ASSEMBLED HEIGHTS

TYPICAL THROUGH WIRE ASSEMBLIES

TYPICAL WIRE STOP ASSEMBLIES