

Capped IDC

Series 9176-700



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
- Durability 3 Cycles

HOW TO ORDER

| 00 | 9176 | 00X | 7XX | X | X | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------|---------------------|---|---|-----------------|-------------|----------------|---|---------------|-----|---|---------------|-----|---|---------------|--|------|---------------------|-----------------|-----|-----------------|-------------|-----|-----------------|-------------|-----|-----------------|-------------|-----|-----------------|-------------|--|--|------|------------|-------------|--------|---|--------------|---|---------------|---|-----------|--|---------------|--------------------------|
| Prefix | Series | Number of Ways | Wire Gauge Size Capped - IDC Connector | Insulator Color | Cap Options | Plating Option | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <table border="1"> <thead> <tr> <th>Code</th> <th>No of Ways</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>001</td> <td>1</td> <td>Pages 25 & 28</td> </tr> <tr> <td>002</td> <td>2</td> <td>Pages 26 & 29</td> </tr> <tr> <td>003</td> <td>3</td> <td>Pages 27 & 30</td> </tr> </tbody> </table> | Code | No of Ways | Details | 001 | 1 | Pages 25 & 28 | 002 | 2 | Pages 26 & 29 | 003 | 3 | Pages 27 & 30 | <table border="1"> <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 Stranded</td> <td>Ø 1.1 - 1.6</td> </tr> <tr> <td>732</td> <td>24 AWG Stranded</td> <td>Ø 1.1 - 1.6</td> </tr> </tbody> </table> | Code | Accepted Wire Gauge | Wire Insulation | 701 | 18 AWG Stranded | Ø 1.6 - 2.1 | 711 | 20 AWG Stranded | Ø 1.6 - 2.1 | 722 | 22 AWG Stranded | Ø 1.1 - 1.6 | 732 | 24 AWG Stranded | Ø 1.1 - 1.6 | 9 = UL White 8 = UL Black Special Order 1 = White 0 = Black Special Order | <table border="1"> <thead> <tr> <th>Code</th> <th>Cap Option</th> <th>Description</th> <th>Detail</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Through Wire</td> <td>Allows wire to be terminated at any point</td> <td>Pages 25 - 27</td> </tr> <tr> <td>9</td> <td>Wire Stop</td> <td>Terminates end of wire End Protected by stop face</td> <td>Pages 28 - 30</td> </tr> </tbody> </table> | Code | Cap Option | Description | Detail | 0 | Through Wire | Allows wire to be terminated at any point | Pages 25 - 27 | 9 | Wire Stop | Terminates end of wire End Protected by stop face | Pages 28 - 30 | 6 = Pure Tin all over |
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| 001 | 1 | Pages 25 & 28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 002 | 2 | Pages 26 & 29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 003 | 3 | Pages 27 & 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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Certification: UL File #E90723

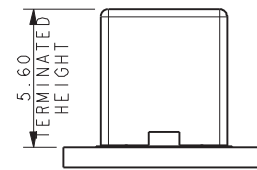
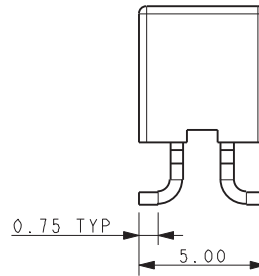
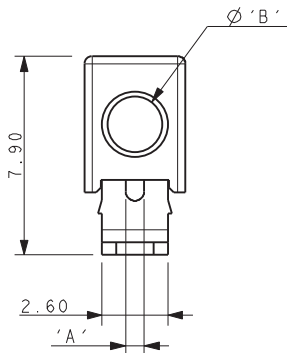
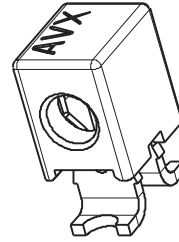
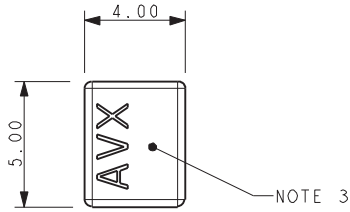


Capped IDC

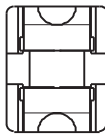
Series 9176-700



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



MOUNTED ON PCB

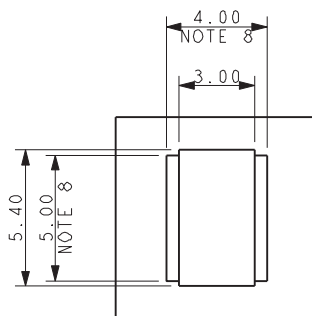


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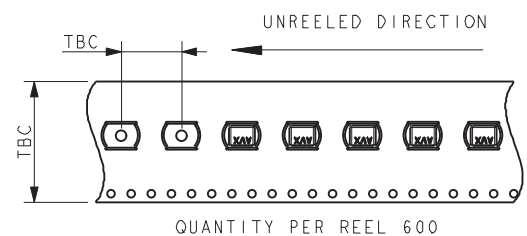
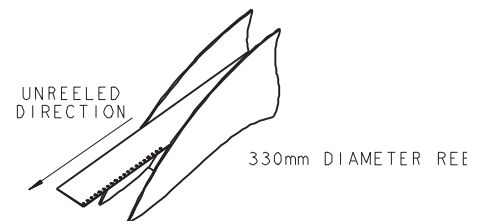
- 1 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION. PRE-ASSEMBLED THROUGH WIRE CAP.
- CONTACT/CAP TO MATCH 18-24 AWG STRANDED WIRE INSULATION DIAMETER RANGE AS IN TABLE.
- FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
- FOR FULL DETAILS REFER TO ELCO SPECIFICATION 201-01-139.
- ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-140.
- GENERAL TOLERANCE ± 0.20 UNLESS STATED.
- PACKED IN TAPE AND REEL, QUANTITY PER REEL 600.
- CONNECTOR OUTLINE.
- CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
- INSULATOR MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 24.

| Code | Accepted Wire Gauge | A | Wire Insulation | B |
|------|---------------------|------|-----------------|-----|
| 701 | 18 AWG Stranded | 0.74 | Ø 1.6-2.1 | 2.1 |
| 711 | 20 AWG Stranded | 0.60 | Ø 1.6-2.1 | 2.1 |
| 722 | 22 AWG Stranded | 0.47 | Ø 1.1-1.6 | 1.6 |
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PACKING DETAILS



SUGGEST PCB LAYOUT

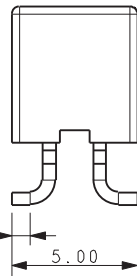
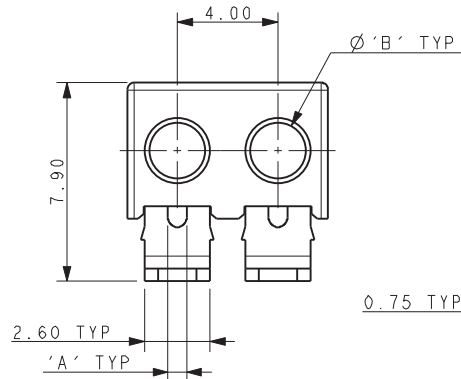
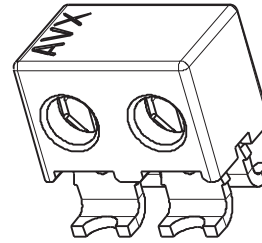
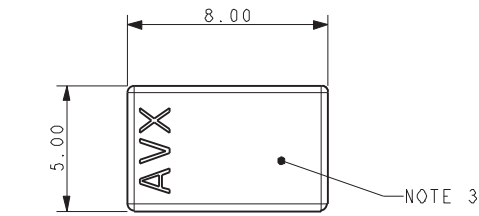


Capped IDC

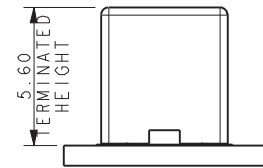
Series 9176-700



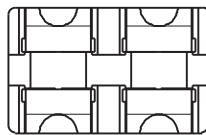
18 - 24 AWG 2 WAY IDC CONNECTOR THROUGH WIRE CAPPED IDC



ALL TAILS WITHIN 0.10 COPLANARITY TOLERANCE



MOUNTED ON PCB

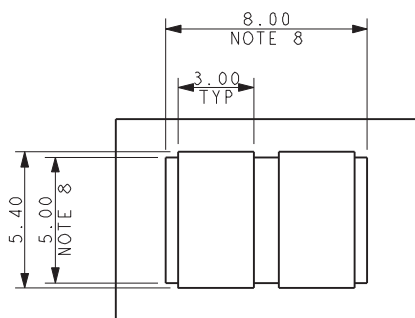


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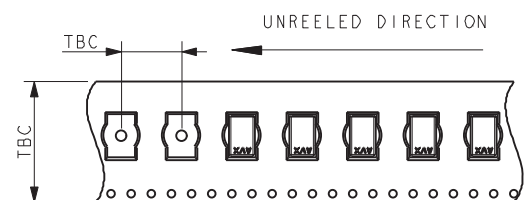
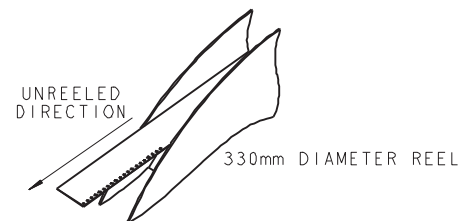
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- CONTACT/CAP TO MATCH 18-24 AWG STRANDED WIRE INSULATION DIAMETER RANGE AS IN TABLE.
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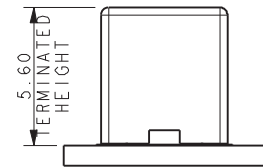
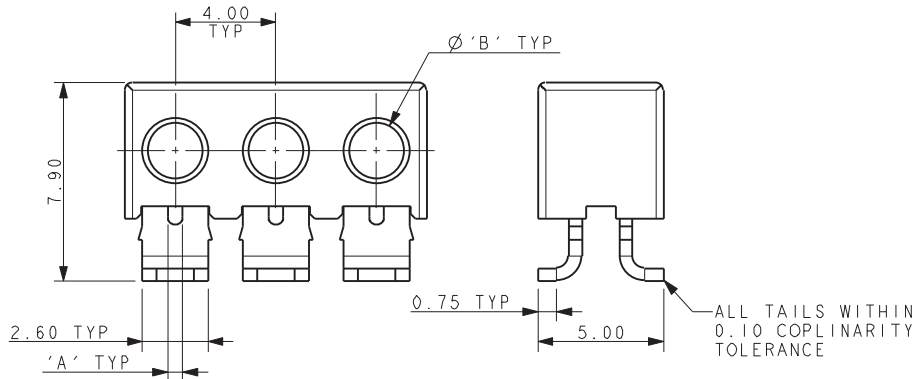
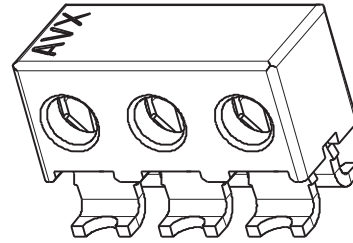
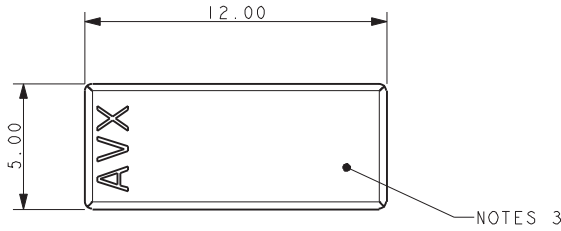
QUANTITY PER REEL 600

Capped IDC

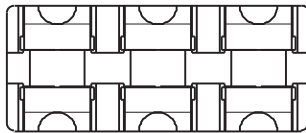
Series 9176-700



18 - 24 AWG 3 WAY IDC CONNECTOR THROUGH WIRE CAPPED IDC



MOUNTED ON PCB

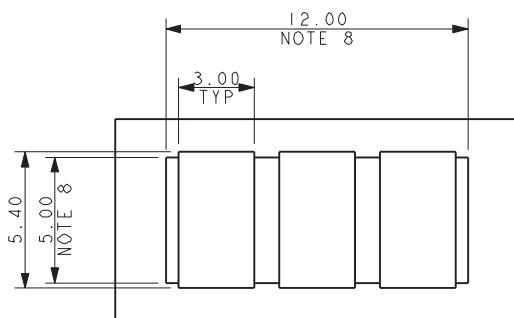


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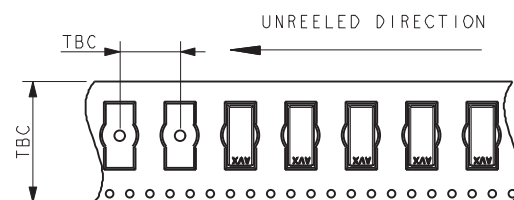
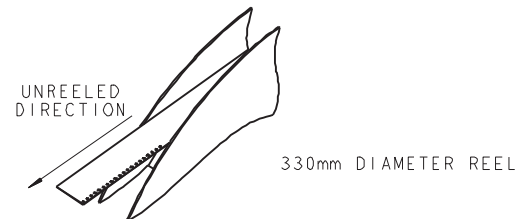
NOTES:

- 3 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION. PRE-ASSEMBLED THROUGH WIRE CAP.
- CONTACT/CAP TO MATCH 18-24 AWG STRANDED WIRE INSULATION DIAMETER RANGE AS IN TABLE.
- FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
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- ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-140.
- GENERAL TOLERANCE ± 0.20 UNLESS STATED.
- PACKED IN TAPE AND REEL, QUANTITY PER REEL 600.
- CONNECTOR OUTLINE.
- CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
- INSULATOR MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 24.

PACKING DETAILS



SUGGEST PCB LAYOUT



QUANTITY PER REEL 600

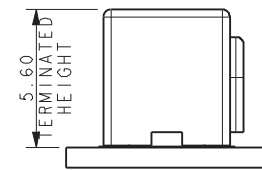
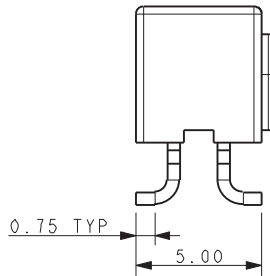
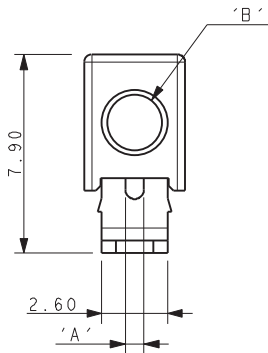
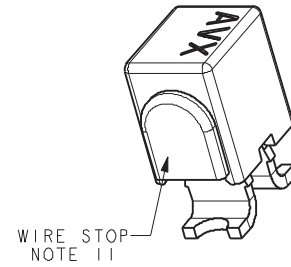
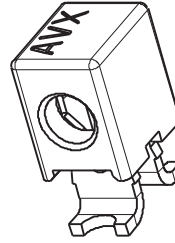
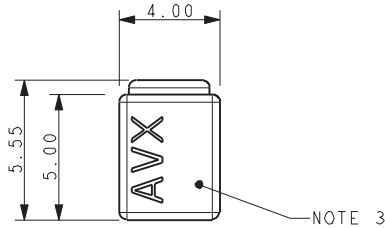


Capped IDC

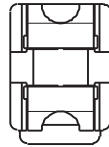
Series 9176-700



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



MOUNTED ON PCB

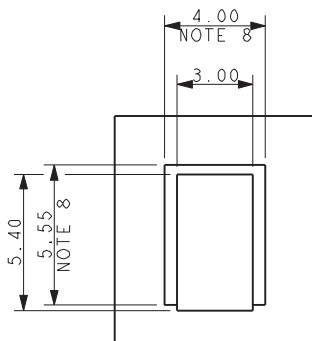


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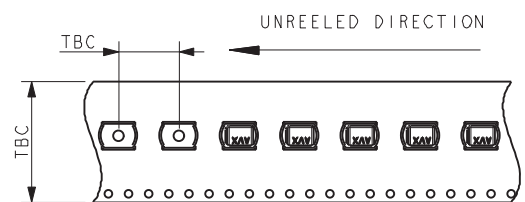
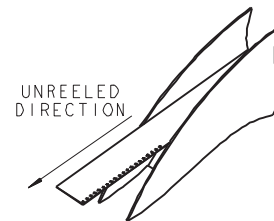
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PACKING DETAILS



SUGGEST PCB LAYOUT



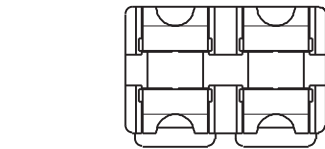
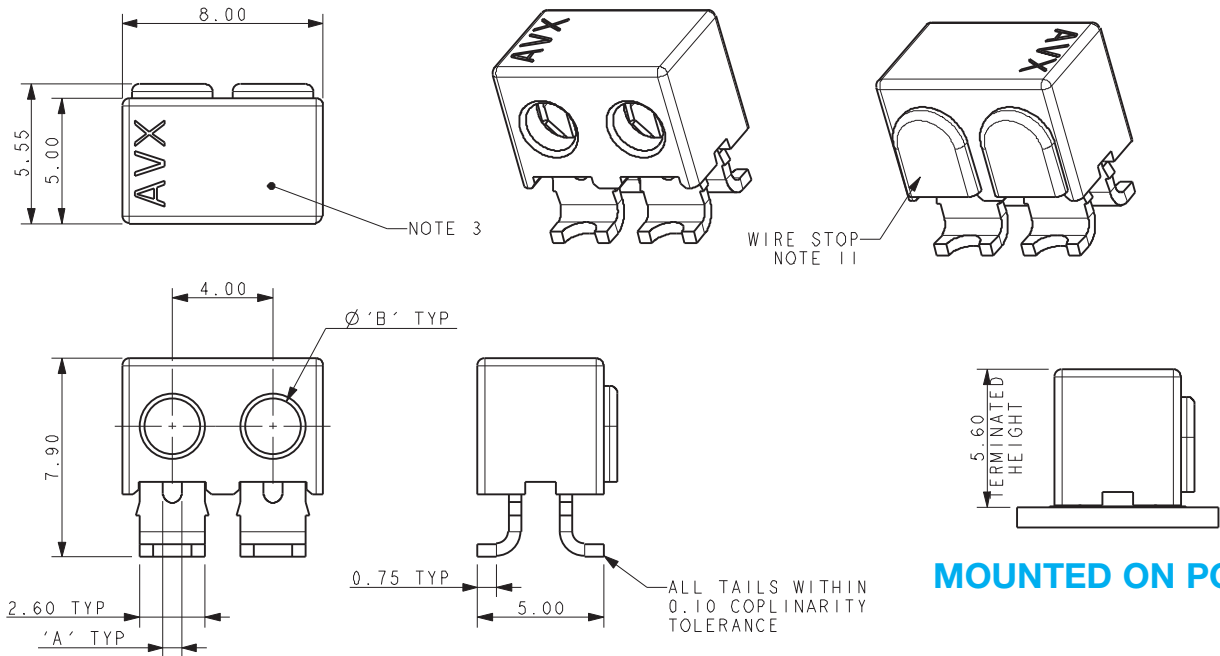
QUANTITY PER REEL 600

Capped IDC

Series 9176-700



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



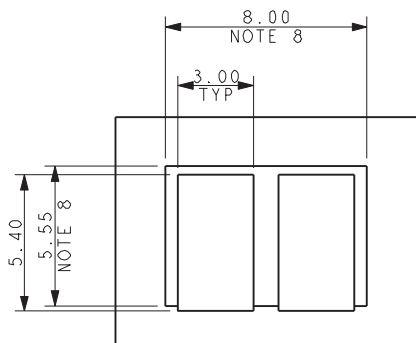
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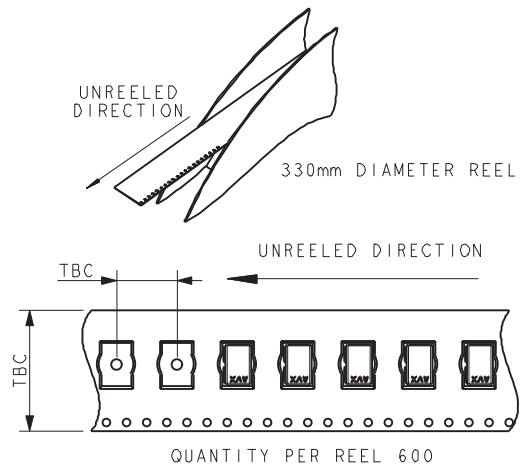
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MOUNTED ON PCB

PACKING DETAILS



SUGGEST PCB LAYOUT

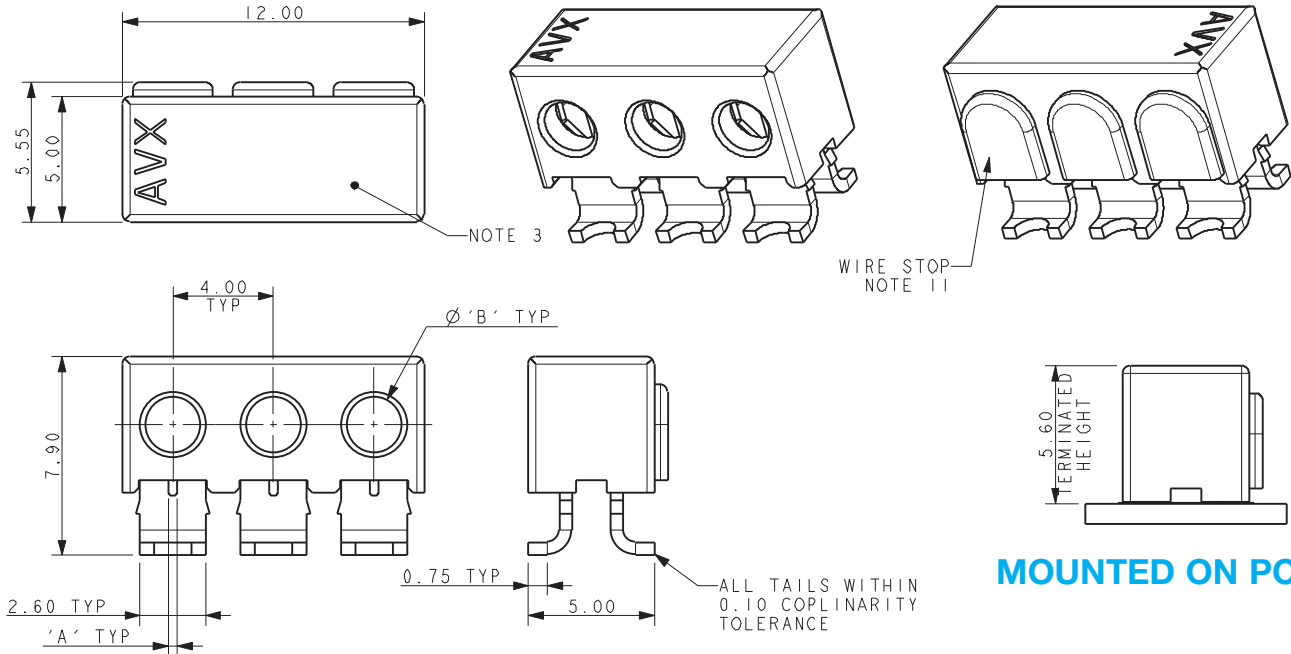


Capped IDC

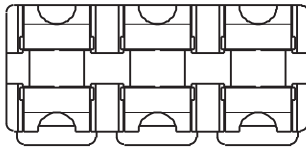
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18 - 24 AWG 3 WAY IDC CONNECTOR WIRE STOP CAPPED IDC



MOUNTED ON PCB

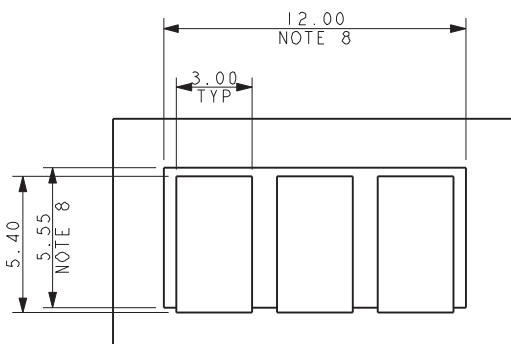


NOTES:

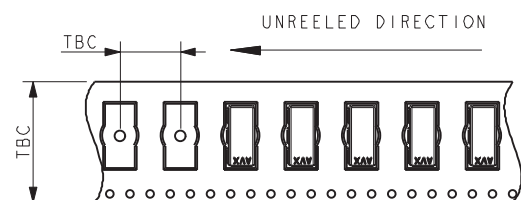
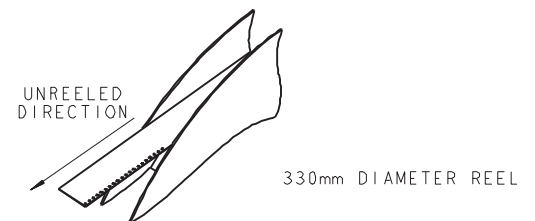
- 2 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION. PRE-ASSEMBLED WIRE SOFT CAP. CODE REFER TO PAGE 24.
- CONTACT/CAP TO MATCH 18-24 AWG STRANDED WIRE. INSULATION DIAMETER RANGE AS IN TABLE.
- FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
- FOR FULL DETAILS REFER TO ELCO SPECIFICATION 201-01-139.
- ASSEMBLY PROCEDURE, REFER TO APPLICATION NOTES 201-01-140.
- GENERAL TOLERANCE ± 0.20 UNLESS STATED.
- PACKED IN TAPE AND REEL, QUANTITY PER REEL 600.
- CONNECTOR OUTLINE.
- CONTACT MATERIAL: TIN PLATED COPPER ALLOY.
- INSULATOR MATERIAL: HIGH TEMPERATURE NYLON, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 24.
- WIRE STOP CAP PROTECTS END OF WIRE.

| Code | Accepted Wire Gauge | A | Wire Insulation | B |
|------|---------------------|------|-----------------------|-----|
| 701 | 18 AWG Stranded | 0.74 | \varnothing 1.6-2.1 | 2.1 |
| 711 | 20 AWG Stranded | 0.60 | \varnothing 1.6-2.1 | 2.1 |
| 722 | 22 AWG Stranded | 0.47 | \varnothing 1.1-1.6 | 1.6 |
| 732 | 24 AWG Stranded | 0.37 | \varnothing 1.1-1.6 | 1.6 |

PACKING DETAILS



SUGGEST PCB LAYOUT



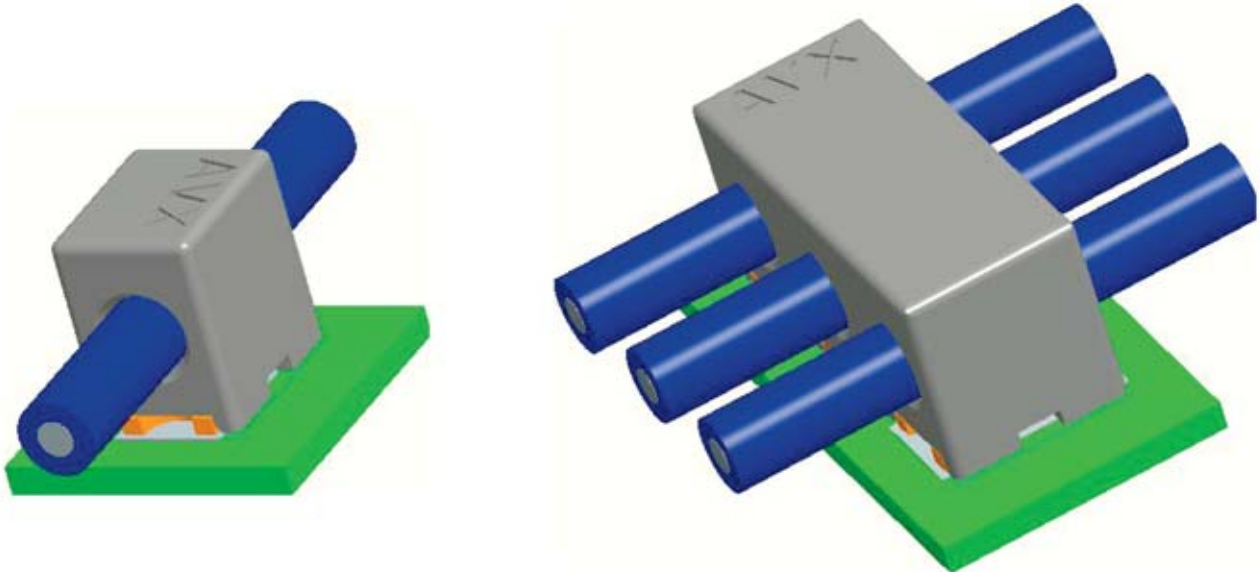
QUANTITY PER REEL 600

Discrete Wire IDC

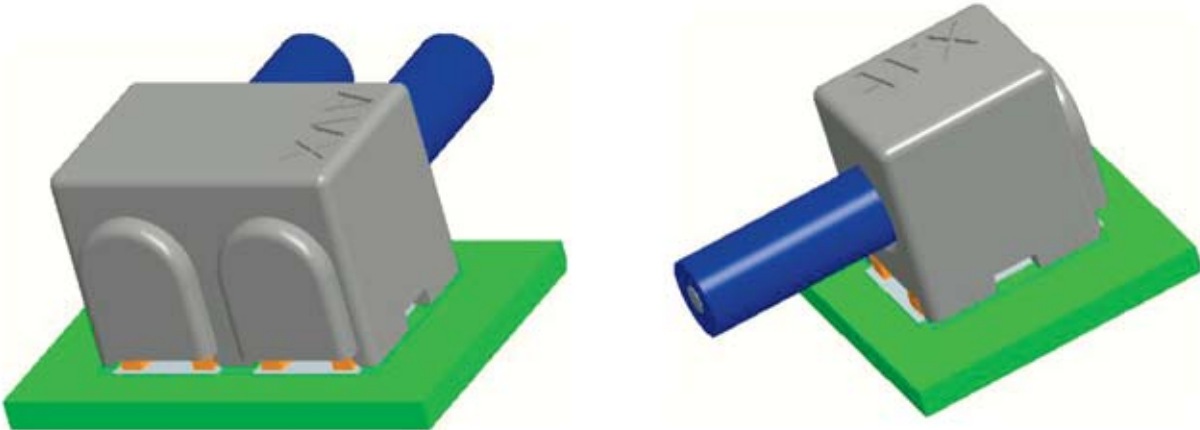
Series 9176-700



18-24 AWG ASSEMBLED CAPPED IDC CONNECTORS



TYPICAL THROUGH WIRE ASSEMBLY



TYPICAL WIRE STOP ASSEMBLY