

# Wire-to-Board Connectors





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# **WIRE-TO-BOARD CONNECTORS**





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# **WIRE-TO-BOARD CONNECTORS**





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|--|----------|
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|  |          |
| 2mm  |          |
| 2.5mm  |          |
| 2.5mm - No Stop                                    |          |
| 3mm  |          |
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# STANDARD 26-28 AWG: 00-9175

#### **General Information**





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 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

9159

Voltage Rating: 150 VAC

#### **ENVIRONMENTAL**

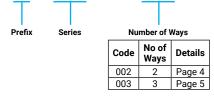
Operating Temperature: -40°C to +125°C

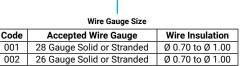
#### **MECHANICAL**

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

#### **HOW TO ORDER**

00





00X







#### **CONNECTOR/TOOLING PART NUMBER MATRIX**

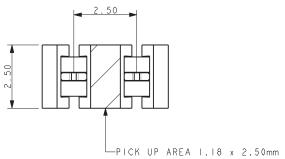
00X

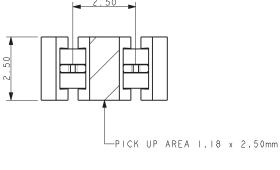
| SERIES 9175 IDC |                    |           | HAND INSERTION TOOLING* |                        | ACCESSORY CAPS              |                           |                             |                 |                 |
|-----------------|--------------------|-----------|-------------------------|------------------------|-----------------------------|---------------------------|-----------------------------|-----------------|-----------------|
| AWG             | Wire<br>Insulation | Positions | Color                   | Part Number            | Plastic<br>(medium volume)  | Metal<br>(high volume)    | Mass<br>Termination         | Though Wire     | Wire Stop       |
| 26              | Ø 0.7 - 1.0        | 2p        | White                   | 009175002002906        | 069175701601000             | 069175701701000           | 069175701701002             | 609175002010100 | 609175002010199 |
| 26              | Ø 0.7 - 1.0        | 2p        | Black                   | 009175002002806        | 069175701601000             | 069175701701000           | 069175701701002             | 609175002010000 | 609175002010099 |
| 26              | Ø 0.7 - 1.0        | 3р        | White                   | 009175003002906        | 069175701601000             | 069175701701000           | 069175701701003             | 609175003010100 | 609175003010199 |
| 26              | Ø 0.7 - 1.0        | 3р        | Black                   | 009175003002806        | 069175701601000             | 069175701701000           | 069175701701003             | 609175003010000 | 609175003010099 |
| 28              | Ø 0.7 - 1.0        | 2p        | White                   | 009175002001906        | 069175701601000             | 069175701701000           | 069175701701002             | 609175002010100 | 609175002010199 |
| 28              | Ø 0.7 - 1.0        | 2p        | Black                   | 009175002001806        | 069175701601000             | 069175701701000           | 069175701701002             | 609175002010000 | 609175002010099 |
| 28              | Ø 0.7 - 1.0        | 3р        | White                   | 009175003001906        | 069175701601000             | 069175701701000           | 069175701701003             | 609175003010100 | 609175003010199 |
| 28              | Ø 0.7 - 1.0        | 3р        | Black                   | 009175003001806        | 069175701601000             | 069175701701000           | 069175701701003             | 609175003010000 | 609175003010099 |
|                 |                    |           |                         | * Hand Insertion Tooli | ng - Universal Hand Tool 06 | 7000773001000; Consult Ap | pplication Notes 201-01-124 | ı               |                 |

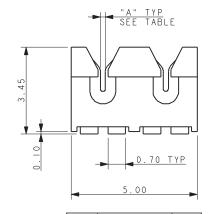
Certification: UL File #E90723



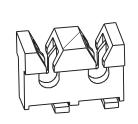
#### 26-28 AWG 2 WAY IDC CONNECTOR

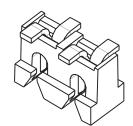






| Code | Wire Gauge | Α    |
|------|------------|------|
| 001  | 28AWG      | 0.20 |
| 002  | 26AWG      | 0.28 |



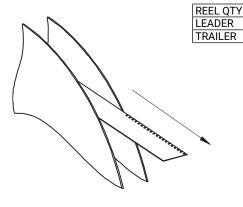


#### **PACKING DETAILS**

2000

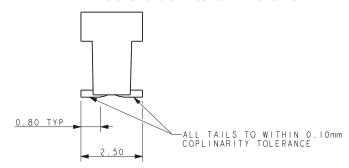
500MM

500MM

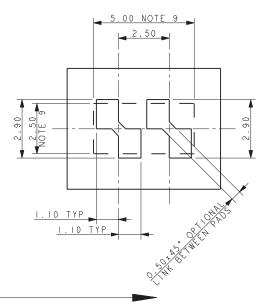


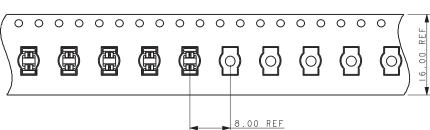
#### NOTES:

- 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.



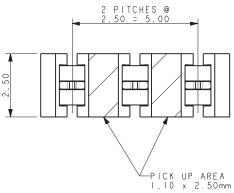
#### **SMT PCB LAYOUT** PURE TIN PADS

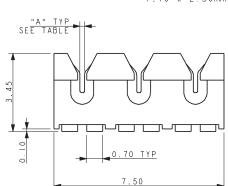




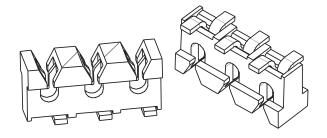


#### 26-28 AWG 3 WAY IDC CONNECTOR





| Code | Wire Gauge | Α    |
|------|------------|------|
| 001  | 28AWG      | 0.20 |
| 002  | 26AWG      | 0.28 |

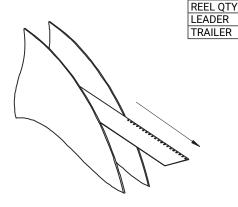


#### **PACKING DETAILS**

2000

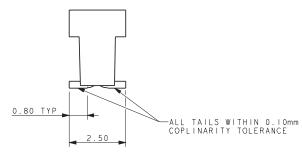
500MM

500MM

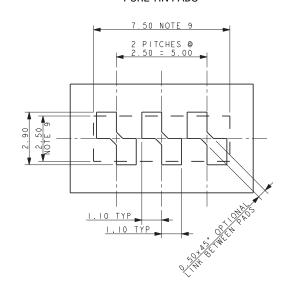


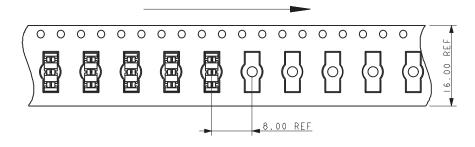
#### NOTES:

- 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.



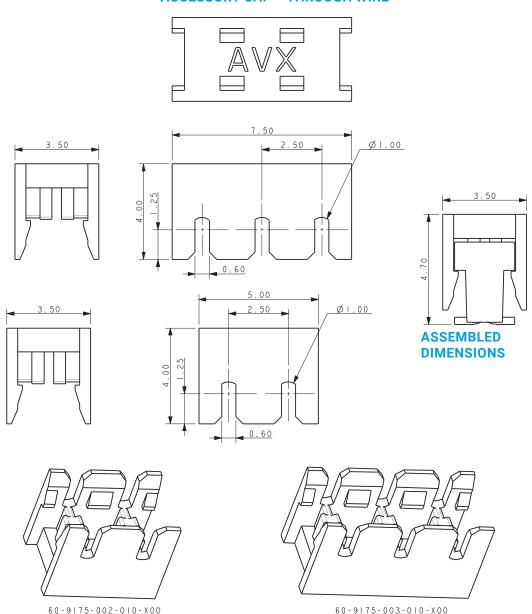
#### **SMT PCB LAYOUT** PURE TIN PADS







#### 60-9175-00X-010-X00 **ACCESSORY CAP - THROUGH WIRE**

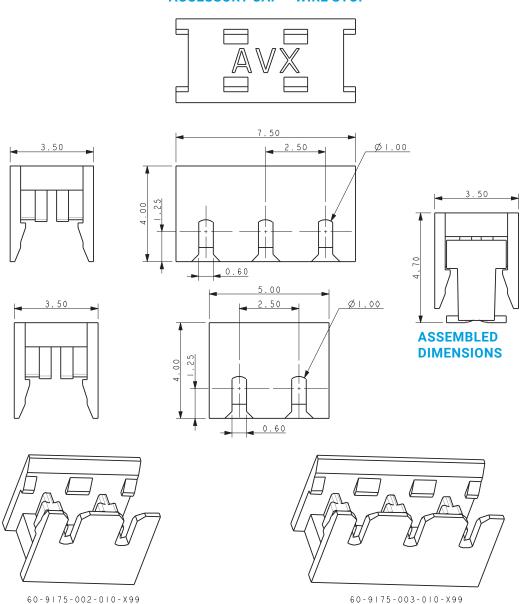


- 1. CAP FOR IDC WIRE TO BOARD CONNECTION, 2 AND 3 WAY, THROUGH WIRE.
- 2. THROUGH WIRE CAP CAN BE USED AT ANY POSTION ALONG A WIRE.
- 3. FOR USE WITH STANDARD 9175 IDC CONNECTORS
- 4. CAP MATERIAL: GLASS FILLED NYLON 46, FOR COLORS SEE PAGE 3.
- 5. CAPS DESIGNED TO ACCOMMODATE WIRES WITH INSULATION 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.

090721



#### 60-9175-00X-0XX-010-X99 **ACCESSORY CAP - WIRE STOP**



#### NOTES:

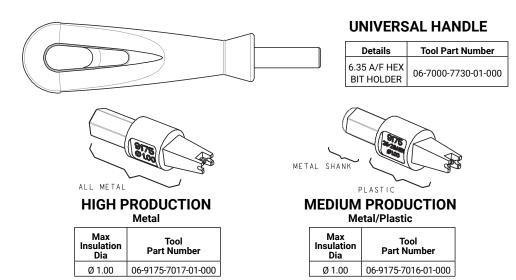
- 1. CAP FOR IDC WIRE TO BOARD CONNECTION, 2 AND 3 WAY, WIRE STOP.
- 2. WIRE STOP CAP FOR USE AT WIRE ENDS, STOP FACE PROTECTS THE WIRE ENDS.
- 3. FOR USE WITH STANDARD 9175 IDC CONNECTORS
- 4. CAP MATERIAL: GLASS FILLED NYLON 46, FOR COLORS SEE PAGE 3.
- 5. CAPS DESIGNED TO ACCOMMODATE WIRES WITH INSULATION 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.

# STANDARD 26-28 AWG: 00-9175

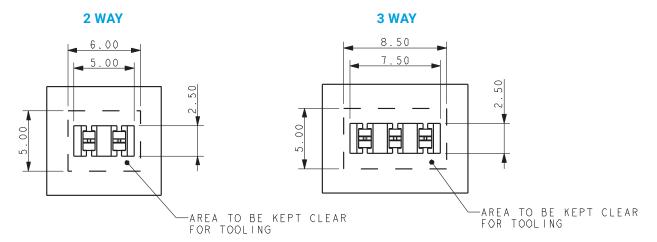


# Hand Insertion Tooling / Clearance Area on PCB for Hand Tooling

#### HAND INSERTION TOOLING SINGLE WIRE INSERTION TOOL FOR 26/28 GAUGE WIRE



#### **CLEARANCE AREA ON PCB FOR HAND TOOLING**



# STANDARD 26-28 AWG: 00-9175

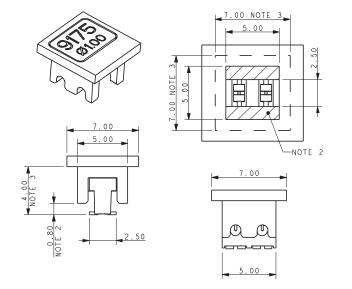


# **Insertion Tooling Requires Hand Press with Flat Rock Plates**

#### **INSERTION TOOLING REQUIRES HAND PRESS WITH FLAT ROCK PLATES**

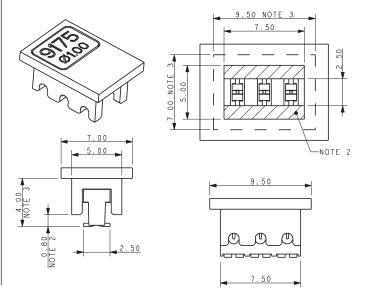
# 2 WAY TOOL

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



#### **3 WAY TOOL**

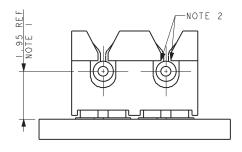
TOOL NUMBER 06-9175-7017-01-003 SKETCH SHOWS PCB RESTRICTED AREAS FOR ASSEMBLY TOOLING



#### 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**



**CONNECTOR WITH CAP** 

#### STANDARD CONNECTOR

#### 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.

# **CAPPED IDC 26-28 AWG: 9175-700**

#### **General Information**





The market and applications for simple and reliable discrete Wire-to-Board connectors continue to evolve. KYOCERA 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
- 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
- Connectors are available in two configurations for maximum flexibility; End and Through Wire

#### **ELECTRICAL**

#### Current Rating: 1 Amps / Contact

Voltage Rating: 150 VAC

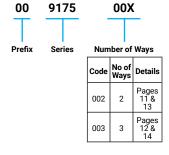
#### **ENVIRONMENTAL**

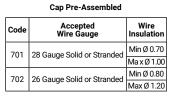
· Operating Temperature: -40°C to +125°C

#### **MECHANICAL**

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

#### **HOW TO ORDER**

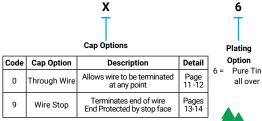




70X

Wire Gauge Size





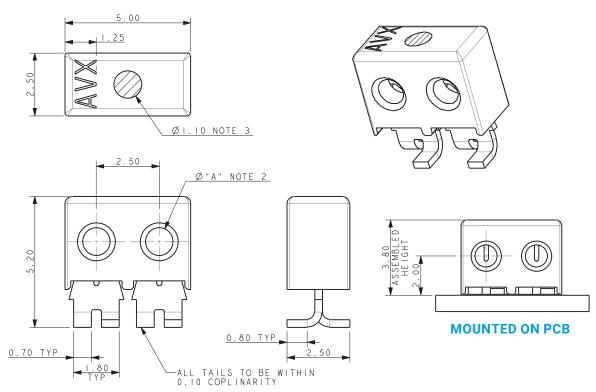


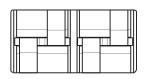
Certification: UL File #E90723

090721



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

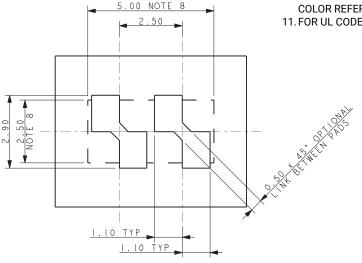




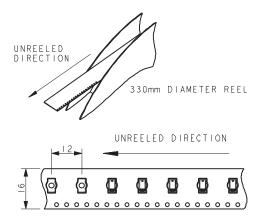
| Code | Wire<br>Gauge | Diameter<br>A |
|------|---------------|---------------|
| 701  | 28AWG         | 1.10          |
| 702  | 26AWG         | 1.30          |

#### 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).



#### **PACKING DETAILS**



QUANTITY PER REEL 1000

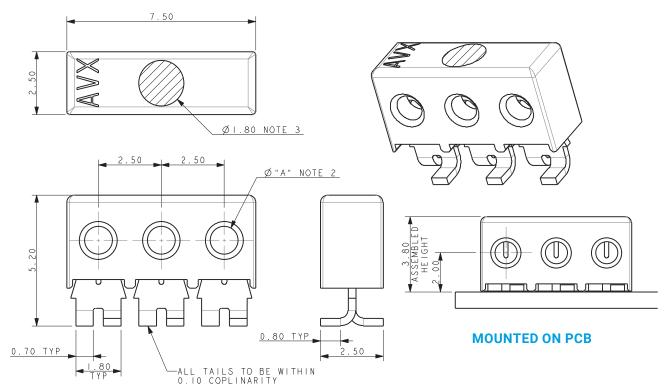
SUGGEST PCB LAYOUT

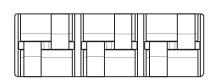
online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.

# 3 Position - Through Wire



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

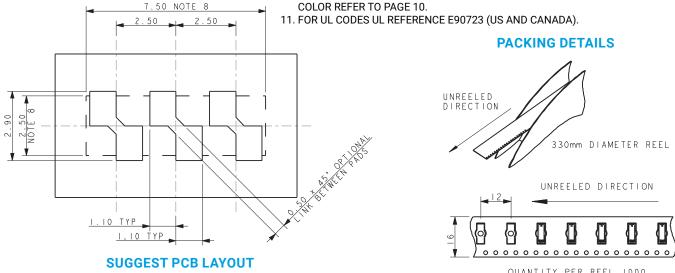




| Code | Wire  | Diameter |
|------|-------|----------|
|      | Gauge | Α        |
| 701  | 28AWG | 1.10     |
| 702  | 26AWG | 1.30     |

#### NOTES:

- 1. 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.



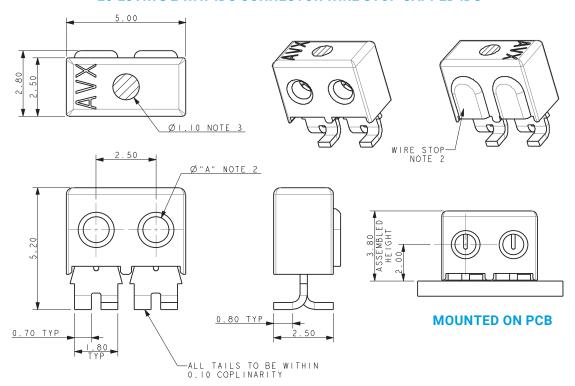


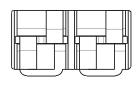
QUANTITY PER REEL 1000

10



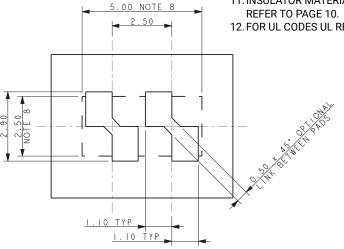
#### 26-28 AWG 2 WAY IDC CONNECTOR WIRE STOP CAPPED IDC





| Code | Wire<br>Gauge | Diameter<br>A |
|------|---------------|---------------|
| 701  | 28AWG         | 1.10          |
| 702  | 26AWG         | 1.30          |

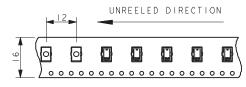
- 1. 2 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION. PRE-ASSEMBLED WIRE STOP CAP.
- 2. WIRE STOP CAP PROTECTS END OF WIRE.
- 3. CONTACT/CAP TO MATCH 26AWG AND 28AWG WIRES. SOLID OR STRANDED CONDUCTOR. MAXIMUM INSULATOR 1.00 MM DIAMETER.
- 4. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
- 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).



#### SUGGEST PCB LAYOUT

# UNREELED DIRECTION 330mm DIAMETER REEL

**PACKING DETAILS** 

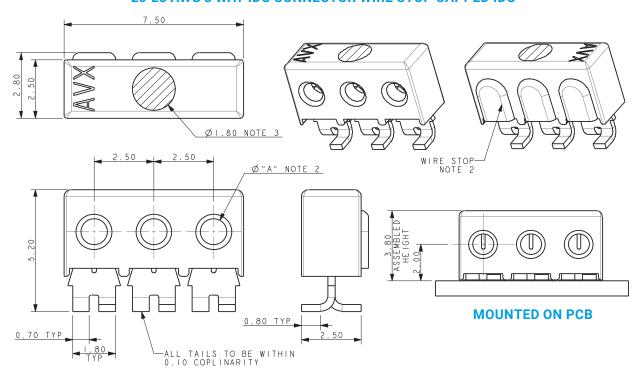


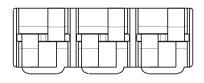
QUANTITY PER REEL 1000





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

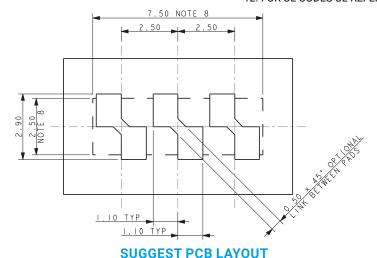




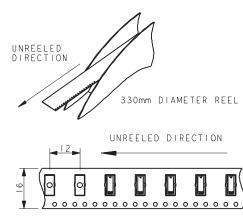
| Code | Wire  | Diameter |
|------|-------|----------|
|      | Gauge | Α        |
| 701  | 28AWG | 1.10     |
| 702  | 26AWG | 1.30     |

#### NOTES:

- 1. 3 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION. PRE-ASSEMBLED WIRE STOP CAP.
- WIRE STOP CAP PROTECTS END OF WIRE.
- CONTACT/CAP TO MATCH 26AWG AND 28AWG WIRES. SOLID OR STRANDED CONDUCTOR. MAXIMUM INSULATOR 1.00 MM DIAMETER.
- 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).



# **PACKING DETAILS**



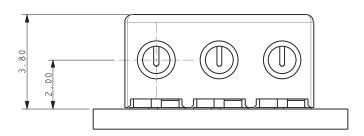
QUANTITY PER REEL 1000



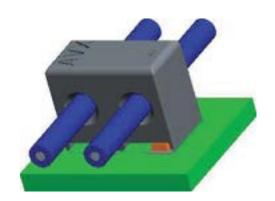
KYDCER3 | The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.

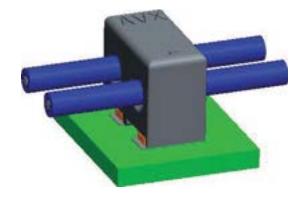


#### 26-28 AWG ASSEMBLED CAPPED IDC CONNECTORS

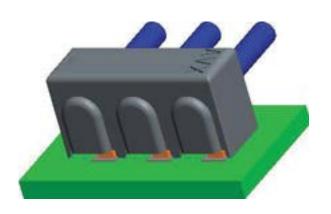


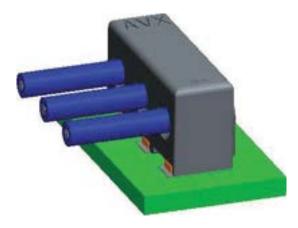
**MOUNTED ON PCB** 





**TYPICAL THROUGH WIRE ASSEMBLY** 

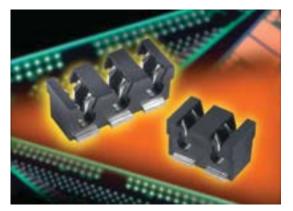




**TYPICAL WIRE STOP ASSEMBLY** 

#### **General Information**





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 260°C reflow soldering processes

#### **ELECTRICAL**

Current Rating: 10 Amp / Contact

Voltage Rating: 300 VAC

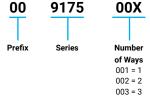
#### **ENVIRONMENTAL**

· Operating Temperature: -40°C to +125°C

#### **MECHANICAL**

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

#### **HOW TO ORDER**





| Code | Accepted Wire Gauge           | Wire<br>Insulation | Cap Code<br>Pages 21-22 |
|------|-------------------------------|--------------------|-------------------------|
| 001  | 18 Gauge<br>Stranded          | Ø 1.6-2.1          | 021                     |
| 011  | 20 Gauge<br>Solid or Stranded | Ø 1.6-2.1          | 021                     |
| 022  | 22 Gauge<br>Solid or Stranded | Ø 1.1-1.6          | 016                     |
| 032  | 24 Gauge<br>Solid or Stranded | Ø 1.1-1.6          | 016                     |

Insulator Color All Sizes 9 = UL White (Standard) 8 = UL Black (Special Order)

One Way Only (Special Order) 2 = III Brown 3 = UL Blue 4 = UL Yellow 5 = UL Red 6 = UL Green

7 = UL Orange





Certification: UL File #E90723





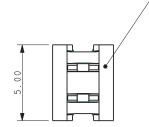
#### **CONNECTOR/TOOLING PART NUMBER MATRIX**

| SERIES 9176 IDC |                    |           | HAI   | ND INSERTION TOOLI | NG*                        | ACCESSORY CAPS         |                     |                 |                 |
|-----------------|--------------------|-----------|-------|--------------------|----------------------------|------------------------|---------------------|-----------------|-----------------|
| AWG             | Wire<br>Insulation | Positions | Color | Part Number        | Plastic<br>(medium volume) | Metal<br>(high volume) | Mass<br>Termination | Though Wire     | Wire Stop       |
| 18              | Ø 1.6 - 2.1        | 1p        | Black | 009176001001806    | 069176701601000            | 069176701701000        | N/A                 | 609176001021000 | 609176001021099 |
| 18              | Ø 1.6 - 2.1        | 1p        | White | 009176001001906    | 069176701601000            | 069176701701000        | N/A                 | 609176001021100 | 609176001021199 |
| 18              | Ø 1.6 - 2.1        | 2p        | Black | 009176002001806    | 069176701601000            | 069176701701000        | 069176701701002     | 609176002021000 | 609176002021099 |
| 18              | Ø 1.6 - 2.1        | 2p        | White | 009176002001906    | 069176701601000            | 069176701701000        | 069176701701002     | 609176002021100 | 609176002021199 |
| 18              | Ø 1.6 - 2.1        | 3р        | Black | 009176003001806    | 069176701601000            | 069176701701000        | 069176701701003     | 609176003021000 | 609176003021099 |
| 18              | Ø 1.6 - 2.1        | 3р        | White | 009176003001906    | 069176701601000            | 069176701701000        | 069176701701003     | 609176003021100 | 609176003021199 |
| 20              | Ø 1.6 - 2.1        | 1p        | Black | 009176001011806    | 069176701601000            | 069176701701000        | N/A                 | 609176001021000 | 609176001021099 |
| 20              | Ø 1.6 - 2.1        | 1p        | White | 009176001011906    | 069176701601000            | 069176701701000        | N/A                 | 609176001021100 | 609176001021199 |
| 20              | Ø 1.6 - 2.1        | 2p        | Black | 009176002011806    | 069176701601000            | 069176701701000        | 069176701701002     | 609176002021000 | 609176002021099 |
| 20              | Ø 1.6 - 2.1        | 2p        | White | 009176002011906    | 069176701601000            | 069176701701000        | 069176701701002     | 609176002021100 | 609176002021199 |
| 20              | Ø 1.6 - 2.1        | 3р        | Black | 009176003011806    | 069176701601000            | 069176701701000        | 069176701701003     | 609176003021000 | 609176003021099 |
| 20              | Ø 1.6 - 2.1        | 3р        | White | 009176003011906    | 069176701601000            | 069176701701000        | 069176701701003     | 609176003021100 | 609176003021199 |
| 22              | Ø 1.1 - 1.6        | 1p        | Black | 009176001022806    | 069176701602000            | 069176701702000        | N/A                 | 609176001016000 | 609176001016099 |
| 22              | Ø 1.1 - 1.6        | 1p        | White | 009176001022906    | 069176701602000            | 069176701702000        | N/A                 | 609176001016100 | 609176001016199 |
| 22              | Ø 1.1 - 1.6        | 2p        | Black | 009176002022806    | 069176701602000            | 069176701702000        | 069176701702002     | 609176002016000 | 609176002016099 |
| 22              | Ø 1.1 - 1.6        | 2p        | White | 009176002022906    | 069176701602000            | 069176701702000        | 069176701702002     | 609176002016100 | 609176002016199 |
| 22              | Ø 1.1 - 1.6        | 3p        | Black | 009176003022806    | 069176701602000            | 069176701702000        | 069176701702003     | 609176003016000 | 609176003016099 |
| 22              | Ø 1.1 - 1.6        | 3р        | White | 009176003022906    | 069176701602000            | 069176701702000        | 069176701702003     | 609176003016100 | 609176003016199 |
| 24              | Ø 1.1 - 1.6        | 1p        | White | 009176001032106    | 069176701602000            | 069176701702000        | N/A                 | 609176001016100 | 609176001016199 |
| 24              | Ø 1.1 - 1.6        | 1p        | Black | 009176001032806    | 069176701602000            | 069176701702000        | N/A                 | 609176001016000 | 609176001016099 |
| 24              | Ø 1.1 - 1.6        | 1p        | White | 009176001032906    | 069176701602000            | 069176701702000        | N/A                 | 609176001016100 | 609176001016199 |
| 24              | Ø 1.1 - 1.6        | 2p        | Black | 009176002032806    | 069176701602000            | 069176701702000        | 069176701702002     | 609176002016000 | 609176002016099 |
| 24              | Ø 1.1 - 1.6        | 2p        | White | 009176002032906    | 069176701602000            | 069176701702000        | 069176701702002     | 609176002016100 | 609176002016199 |
| 24              | Ø 1.1 - 1.6        | 3р        | Black | 009176003032806    | 069176701602000            | 069176701702000        | 069176701702003     | 609176003016000 | 609176003016099 |
| 24              | Ø 1.1 - 1.6        | 3р        | White | 009176003032906    | 069176701602000            | 069176701702000        | 069176701702003     | 609176003016100 | 609176003016199 |

<sup>\*</sup> Hand Insertion Tooling - Universal Hand Tool 067000773001000; Consult Application Notes 201-01-124



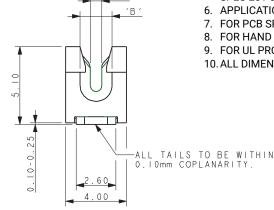
#### 18-24 AWG 1 WAY IDC CONNECTOR

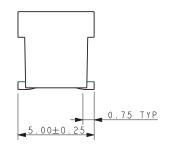


# -PICK UP AREA 0.9 x 5.00mm MIN

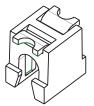
#### NOTES:

- 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.



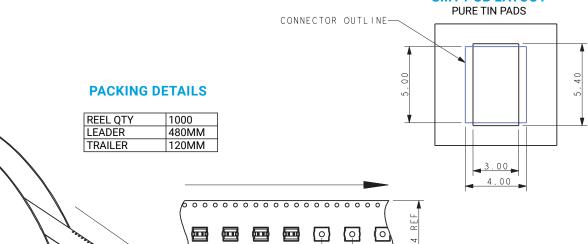






| Code | Accepted<br>Wire Gauge   | A    | Wire<br>Insulation | В   |
|------|--------------------------|------|--------------------|-----|
| 001  | 18AWG Stranded           | 0.72 | Ø1.6-2.1           | 2.1 |
| 011  | 20AWG Solid and Stranded | 0.60 | Ø1.6-2.1           | 2.1 |
| 022  | 22AWG Solid and Stranded | 0.47 | Ø 1.1-1.6          | 1.6 |
| 032  | 24AWG Solid and Stranded | 0.37 | Ø1.1-1.6           | 1.6 |

#### **SMT PCB LAYOUT**



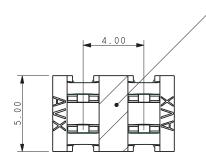


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12 REF



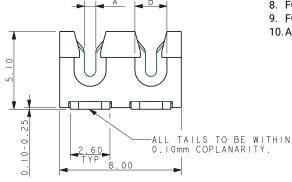
#### 18-24 AWG 2 WAY IDC CONNECTOR

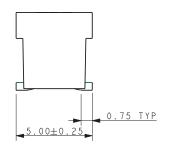


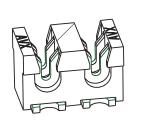
# -PICK UP AREA I.9 x 5.00mm MIN

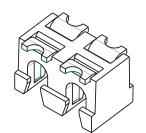
NOTES:

- 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.





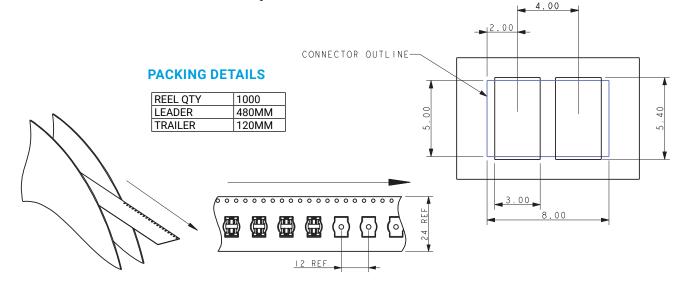




| Code | Accepted Wire Gauge      | A    | Wire<br>Insulation | В   |
|------|--------------------------|------|--------------------|-----|
| 001  | 18AWG Stranded           | 0.72 | Ø 1.6-2.1          | 2.1 |
| 011  | 20AWG Solid and Stranded | 0.60 | Ø 1.6-2.1          | 2.1 |
| 022  | 22AWG Solid 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 |

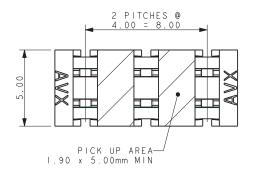
#### **SMT PCB LAYOUT**

**PURE TIN PADS** 

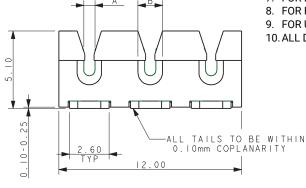


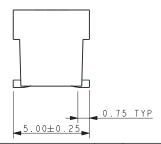


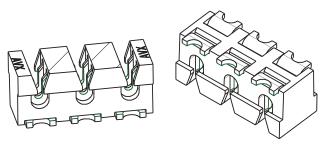
#### 18-24 AWG 3 WAY IDC CONNECTOR



- 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.



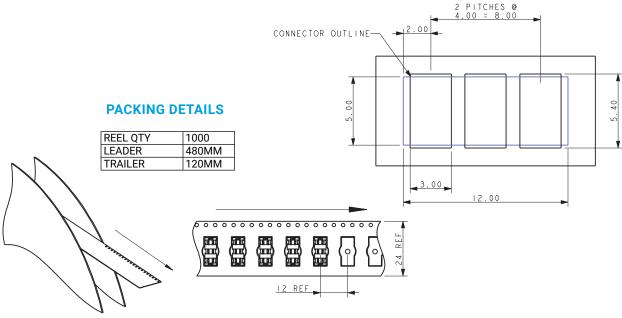




| Code | le Accepted Wire Gauge   |      | Wire<br>Insulation | В   |
|------|--------------------------|------|--------------------|-----|
| 001  | 18AWG Stranded           | 0.72 | Ø 1.6-2.1          | 2.1 |
| 011  | 20AWG Solid and Stranded | 0.60 | Ø1.6-2.1           | 2.1 |
| 022  | 22AWG Solid and Stranded | 0.47 | Ø 1.1-1.6          | 1.6 |
| 032  | 24AWG Solid and Stranded | 0.37 | Ø1.1-1.6           | 1.6 |

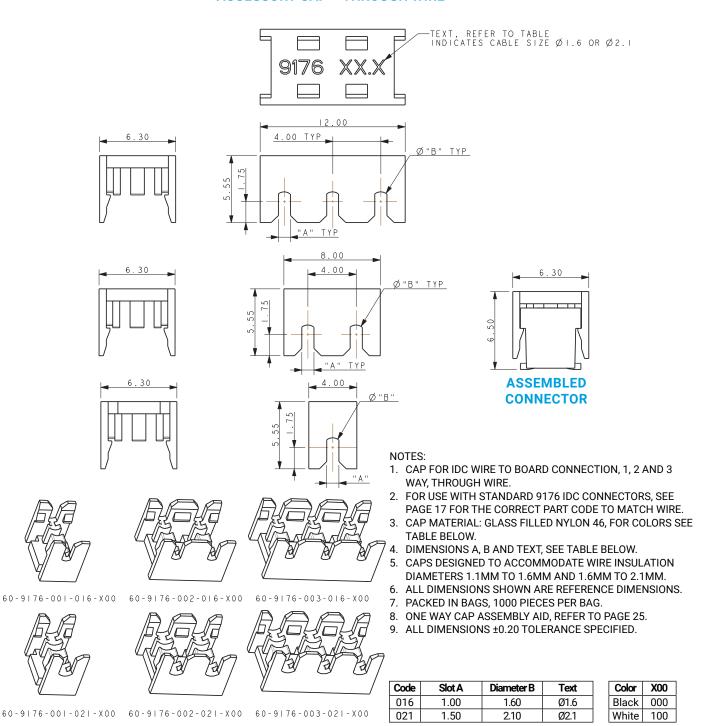
# **SMT PCB LAYOUT**

**PURE TIN PADS** 



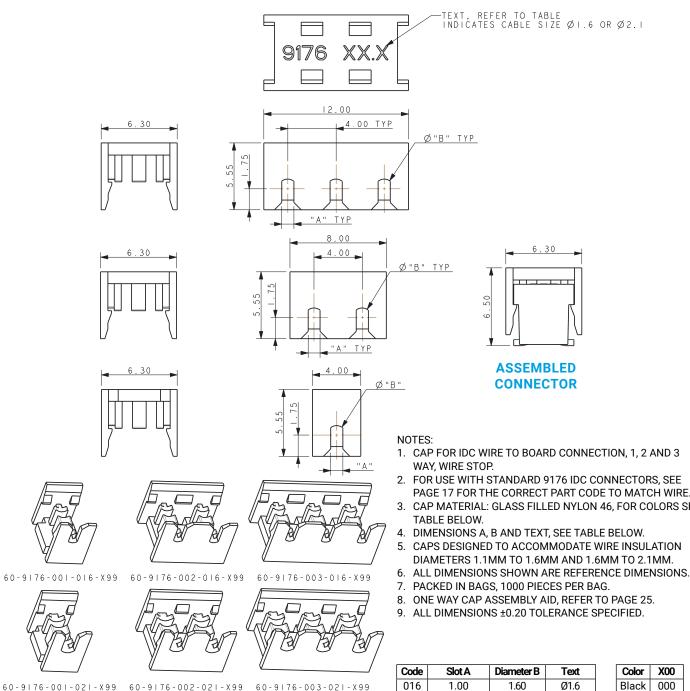


# 60-9176-00X-0XX-X00 **ACCESSORY CAP - THROUGH WIRE**





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



| <u> </u>   |
|--|
| 6.30   |
| ASSEMBLED<br>CONNECTOR   |
| IDC WIRE TO BOARD CONNECTION, 1, 2 AND 3<br>E STOP.                                      |
| WITH STANDARD 9176 IDC CONNECTORS, SEE   |
| FOR THE CORRECT PART CODE TO MATCH WIRE.<br>ERIAL: GLASS FILLED NYLON 46, FOR COLORS SEE |
| LOW.   |
| ONS A, B AND TEXT, SEE TABLE BELOW.  |
| SIGNED TO ACCOMMODATE WIRE INSULATION  |
| RS 1 1MM TO 1 6MM AND 1 6MM TO 2 1MM   |

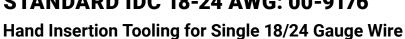
| Ο. | ALL DIVILINGIONS SHOWN ARE REFERENCE DIVILING |
|----|---|
| 7. | PACKED IN BAGS, 1000 PIECES PER BAG.          |

- 8. ONE WAY CAP ASSEMBLY AID, REFER TO PAGE 25.
- 9. ALL DIMENSIONS ±0.20 TOLERANCE SPECIFIED.

| Code | Slot A | Diameter B | Text |
|------|--------|------------|------|
| 016  | 1.00   | 1.60       | Ø1.6 |
| 021  | 1.50   | 2.10       | Ø2.1 |

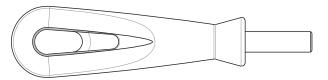
| Color | X00 |
|-------|-----|
| Black | 000 |
| White | 100 |

090721



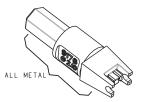


# HAND INSERTION TOOLING **FOR SINGLE 18/24 GAUGE WIRE**



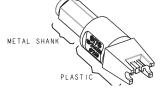
#### **UNIVERSAL HANDLE**

| Details                    | Tool<br>Part Number |  |  |
|----------------------------|---------------------|--|--|
| 6.35 A/F HEX<br>BIT HOLDER | 06 7000 7730 01 000 |  |  |



# **HIGH PRODUCTION**

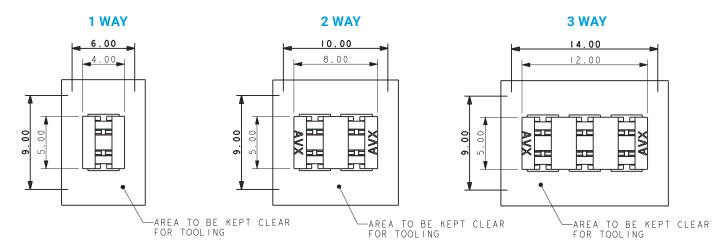
| Max<br>Insulation<br>Dia | Tool<br>Part Number |  |  |
|--------------------------|---------------------|--|--|
| Ø2.10                    | 06 9176 7017 01 000 |  |  |
| Ø1 60                    | 06 9176 7017 02 000 |  |  |



#### **MEDIUM PRODUCTION** Metal/Plastic

| Max<br>Insulation<br>Dia | Tool<br>Part Number |
|--------------------------|---------------------|
| Ø2.10                    | 06 9176 7016 01 000 |
| Ø1.60                    | 06 9176 7016 02 000 |

#### **CLEARANCE AREA ON PCB FOR HAND TOOLING**

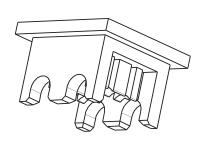


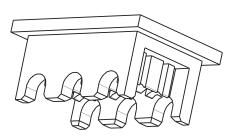


# **Insertion Tooling Requires Hand Press with Flat Rock Plates**

#### **INSERTION TOOLING** REQUIRES HAND PRESS WITH FLAT ROCK PLATES

**2 WAY** 3 WAY





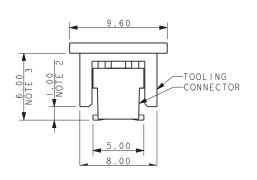
# **HIGH PRODUCTION**

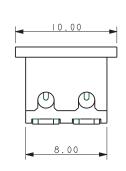
Metal

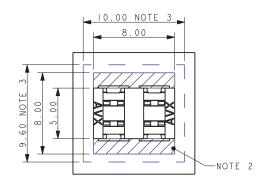
| No. of Ways | Max<br>Insulation<br>Dia | Tool<br>Part Number |
|-------------|--------------------------|---------------------|
| 2           | Ø2.10                    | 06 9176 7017 01 002 |
| 2           | Ø1.60                    | 06 9176 7017 02 002 |
| 3           | Ø2.10                    | 06 9176 7017 01 003 |
| 3           | Ø1.60                    | 06 9176 7017 02 003 |

#### PCB RESTRICTED AREAS FOR PRESS ASSEMBLY TOOLING

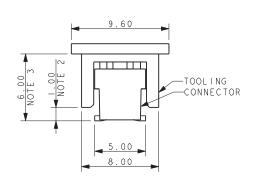
#### 2 WAY

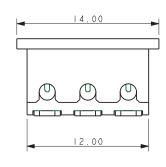


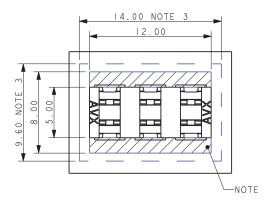




#### 3 WAY







#### NOTES:

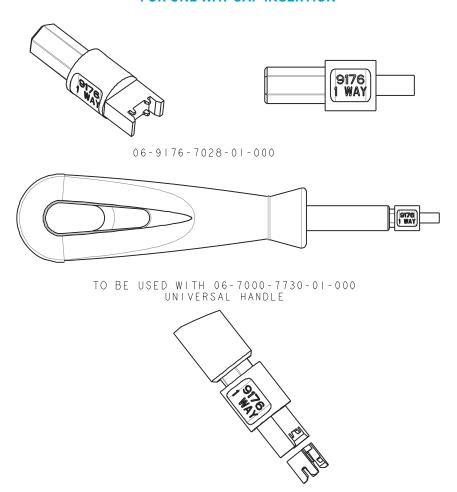
- 1. DIMENSIONS SHOWN ARE REFERENCE DIMENSIONS.
- 2. MAXIMUM COMPONENT HEIGHT 1.00MM IN THIS AREA.
- 3. MAXIMUM COMPONENT HEIGHT 6.00MM IN THIS AREA.
- 4. THE SAME RESTRICTIONS APPLY TO ALL WIRE INSULATION DIAMETERS.
- 5. 2 AND 3 WAY TOOLS ONLY, FOR USE UNDER HAND PRESS WITH FLAT PLATES.
- 6. FOR HAND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



# Hand Insertion Tooling for One Way Cap Insertion / **Clearance Area on PCB for Hand Tooling**

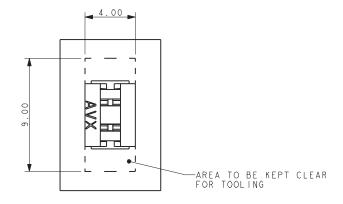


# **HAND INSERTION TOOLING** FOR ONE WAY CAP INSERTION



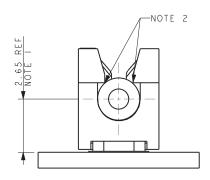
FOR ASSEMBLY INSTRUCTION REFER TO 201-01-124 APPLICATION NOTES

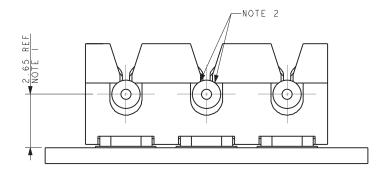
#### **CLEARANCE AREA ON PCB FOR HAND TOOLING**



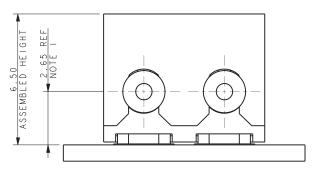


#### **ASSEMBLED CONNECTOR**





**ASSEMBLED 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 INSULTATION SHOULD BE TRAPPED BY THESE EDGES.

# CAPPED 18-24 AWG: 9176-700

#### **General Information**





The market and applications for simple and reliable discrete Wire-to-Board connectors continue to evolve. KYOCERA 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

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
- 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

continuous string

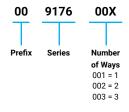
#### **ENVIRONMENTAL**

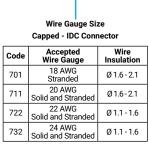
· Operating Temperature: -40°C to +125°C

#### **MECHANICAL**

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

#### **HOW TO ORDER**





**7XX** 







X



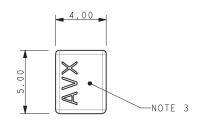


Certification: UL File #E90723

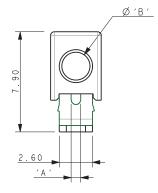
# 1 Position - Through Wire

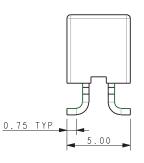


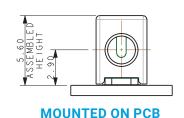
#### 18 - 24 AWG 1 WAY IDC CONNECTOR THROUGH WIRE CAPPED IDC







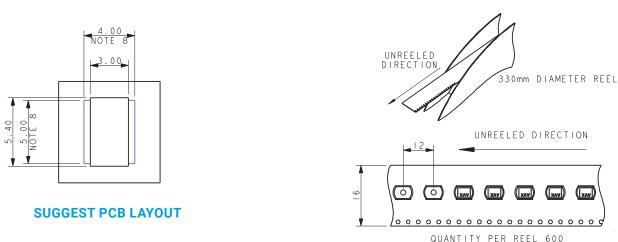




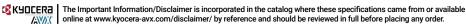
#### NOTES:

- 1. 1 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).

#### Accepted Wire В Wire Gauge Insulation 701 18 AWG Stranded 0.74 Ø1.6-2.1 2.1 711 20 AWG Solid and Stranded 0.60 Ø1.6-2.1 2.1 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

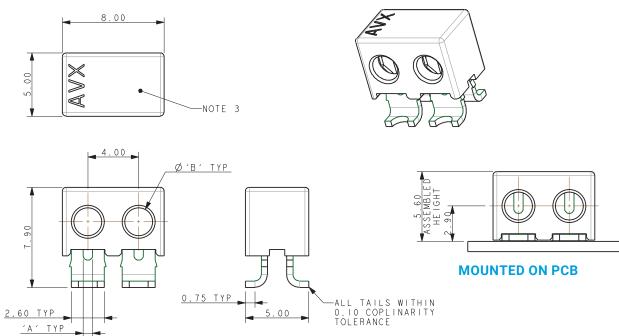


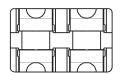






#### 18 - 24 AWG 2 WAY IDC CONNECTOR THROUGH WIRE CAPPED IDC

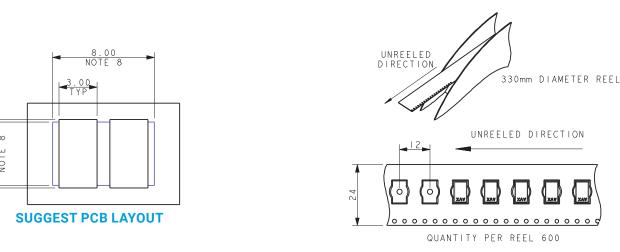




| Code | ode Accepted              |      | Wire       | В   |
|------|---------------------------|------|------------|-----|
|      | Wire Gauge                |      | Insulation |     |
| 701  | 18 AWG Stranded           | 0.74 | Ø1.6-2.1   | 2.1 |
| 711  | 20 AWG Solid and Stranded | 0.60 | Ø1.6-2.1   | 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 |

#### NOTES:

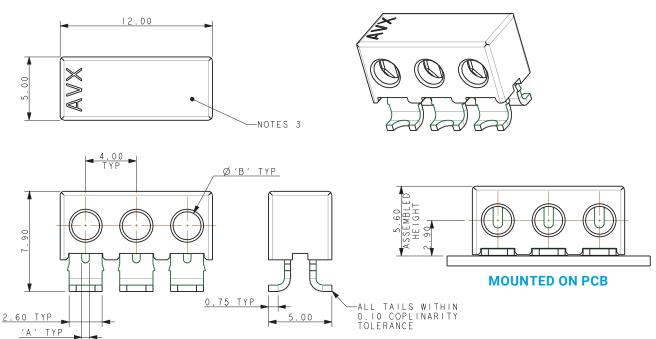
- 1. 2 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION. PRE-ASSEMBLED THROUGH WIRE CAP, CODE REFER TO PAGE 27.
- 2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
- 3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
- 4. FOR FULL PRODUCT 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).

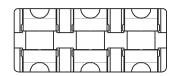




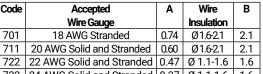


#### 18 - 24 AWG 3 WAY IDC CONNECTOR THROUGH WIRE CAPPED IDC



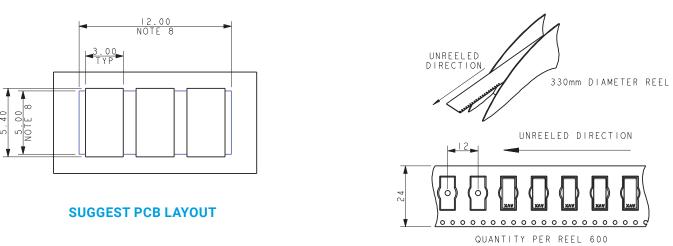


| Code | Accepted                  | Α    | Wire       | В   |
|------|---------------------------|------|------------|-----|
|      | Wire Gauge                |      | Insulation |     |
| 701  | 18 AWG Stranded           | 0.74 | Ø1.6-2.1   | 2.1 |
| 711  | 20 AWG Solid and Stranded | 0.60 | Ø1.6-2.1   | 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 |



#### NOTES:

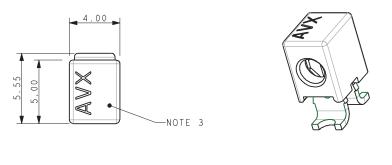
- 1. 3 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION. PRE-ASSEMBLED THROUGH WIRE CAP, CODE REFER TO PAGE 27.
- 2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
- 3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
- 4. FOR FULL PRODUCT 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).

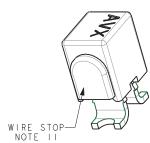


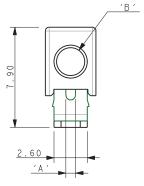


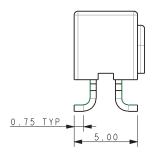


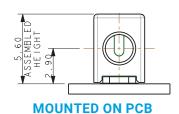
#### 18 - 24 AWG 1 WAY IDC CONNECTOR WIRE STOP CAPPED IDC











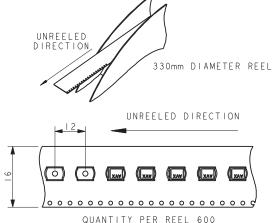


- 1. 1 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION. PRE-ASSEMBLED WIRE STOP CAP, CODE REFER TO PAGE 27.
- 2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
- 3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
- 4. FOR FULL PRODUCT 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).

#### Code Accepted Α Wire В Wire Gauge Insulation 701 18 AWG Stranded 0.74 2.1 Ø1.6-2.1 711 2.1 20 AWG Solid and Stranded 0.60 Ø1.6-2.1 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

SUGGEST PCB LAYOUT

#### **PACKING DETAILS**



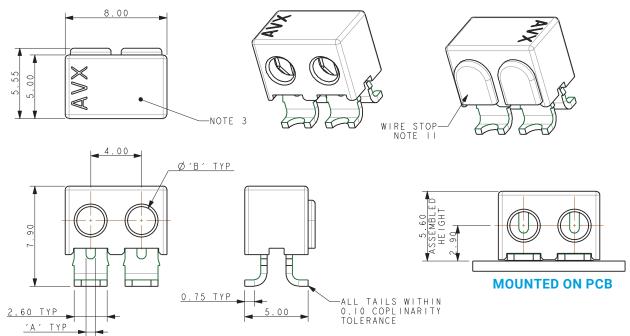
QUANTITY PER REEL 600

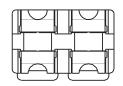


KYDCER3 | The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.



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



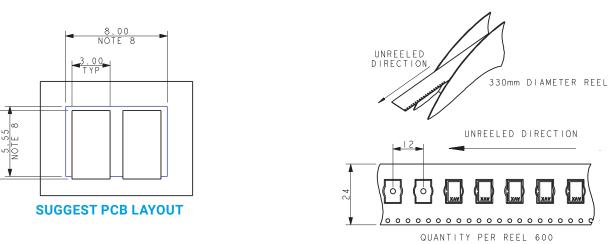


| Code | Accepted                  | Α    | Wire       | В   |
|------|---------------------------|------|------------|-----|
|      | Wire Gauge                |      | Insulation |     |
| 701  | 18 AWG Stranded           | 0.74 | Ø1.6-2.1   | 2.1 |
| 711  | 20 AWG Solid and Stranded | 0.60 | Ø1.6-2.1   | 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 |

#### 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**

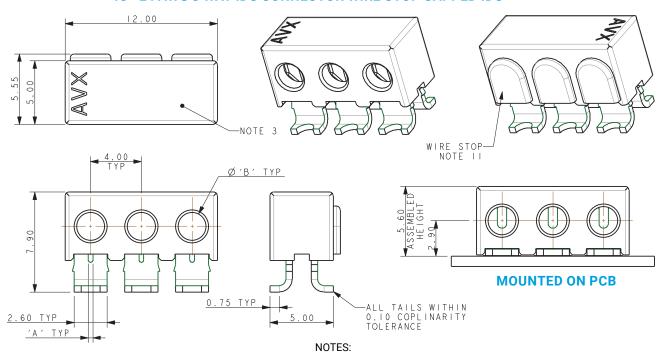


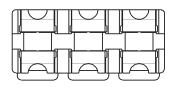


KYDCER3 | The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.



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

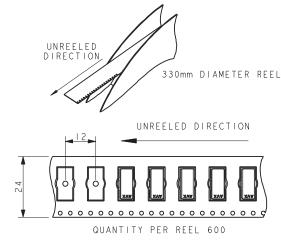




| Code | Accepted                  | Α    | Wire       | В   |
|------|---------------------------|------|------------|-----|
|      | Wire Gauge                |      | Insulation |     |
| 701  | 18 AWG Stranded           | 0.74 | Ø1.6-2.1   | 2.1 |
| 711  | 20 AWG Solid and Stranded | 0.60 | Ø1.6-2.1   | 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 |

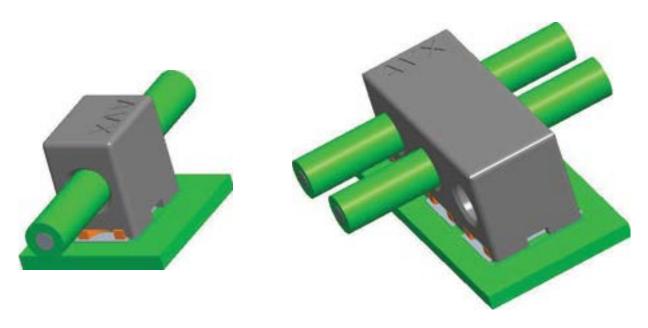
- 1. 3 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION. PRE-ASSEMBLED WIRE STOP CAP, CODE REFER TO PAGE 27.
- 2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
- 3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
- 4. FOR FULL PRODUCT 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).

# 12.00 NOTE 8 SUGGEST PCB LAYOUT

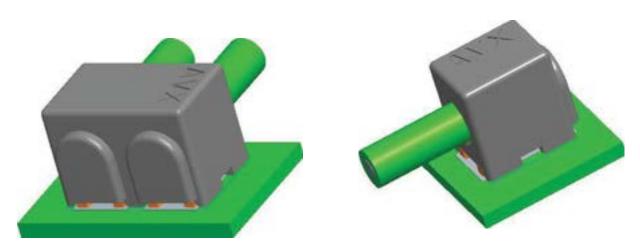




#### 18-24 AWG ASSEMBLED CAPPED IDC CONNECTORS



**TYPICAL THROUGH WIRE ASSEMBLY** 



**TYPICAL WIRE STOP ASSEMBLY** 

# **General Information**





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

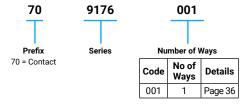
# **ENVIRONMENTAL**

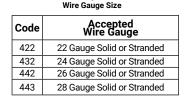
 Operating Temperature: -40°C to +125°C

## **MECHANICAL**

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

## **HOW TO ORDER - CONTACT OPTIONS**

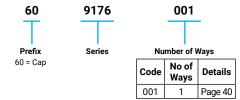


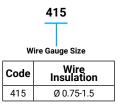


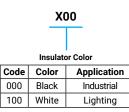
4XX



## **HOW TO ORDER - CAP OPTIONS**









## CONNECTOR/TOOLING PART NUMBER MATRIX

| SERIES 9176-400 IDC |                    |           | HAND INSERTION TOOLING* ACCE |                            | ACCESSORY CAPS         | CESSORY CAPS            |                 |                 |
|---------------------|--------------------|-----------|------------------------------|----------------------------|------------------------|-------------------------|-----------------|-----------------|
| AWG                 | Wire<br>Insulation | Positions | Part Number                  | Plastic<br>(medium volume) | Metal<br>(high volume) | Cap Application<br>Tool | White           | Black           |
| 22                  | Ø 1.0 - 1.5        | 1p        | 709176001422006              | 069176702201000            | 069176702101000        | 069176702301000         | 609176001415100 | 609176001415000 |
| 24                  | Ø 1.0 - 1.5        | 1p        | 709176001432006              | 069176702201000            | 069176702101000        | 069176702301000         | 609176001415100 | 609176001415000 |
| 26                  | Ø 0.7 - 1.0        | 1p        | 709176001442006              | 069176702201000            | 069176702101000        | 069176702301000         | 609176001415100 | 609176001415000 |
| 28                  | Ø 0.7 - 1.0        | 1p        | 709176001443006              | 069176702201000            | 069176702101000        | 069176702301000         | 609176001415100 | 609176001415000 |

<sup>\*</sup> Hand Insertion Tooling and Cap Application - Universal Hand Tool 067000773001000; Consult Application Notes 201-01-124

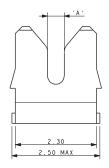
Certification: UL File #E90723

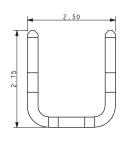


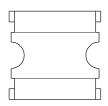
# **Contact Details**



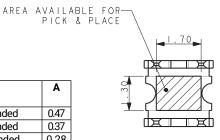
## **CONTACT DETAILS**





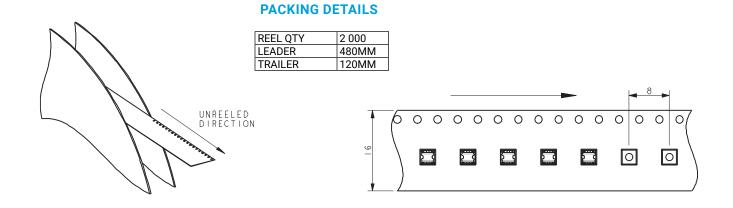


| Code | Accepted                |      |
|------|-------------------------|------|
|      | Wire Gauge              |      |
| 422  | 22AWG Solid or Stranded | 0.47 |
| 432  | 24AWG Solid or Stranded | 0.37 |
| 442  | 26AWG Solid or Stranded | 0.28 |
| 443  | 28AWG Solid or Stranded | 0.20 |



## 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 KYOCERA AVX SPECIFIED OPTIONAL CAP.



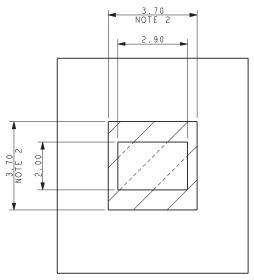
090721

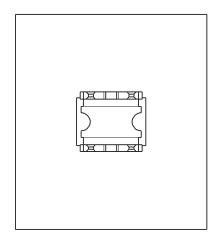


## 22-28 AWG IDC WIRE TO BOARD CONNECTOR SINGLE CONTACT

## **SMT PCB LAYOUT**

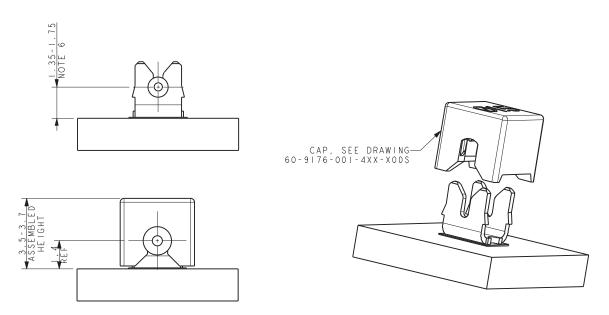
**PURE TIN PADS** 





ORIENTATION OF CONTACT ON PAD

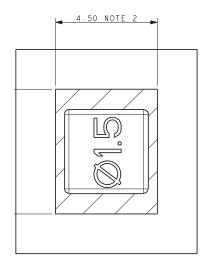
## ASSEMBLED/INSTALLED PRODUCTS



- 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**

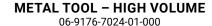


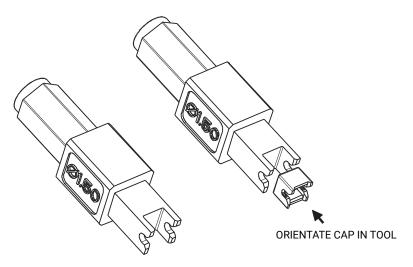
## NOTES:

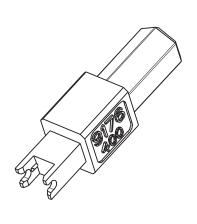
- 1. ASSEMBLY TOOLING FOR CAP.
- 2. MINIMUM AREA OF PCB TO BE KEPT CLEAR OF COMPONENTS, TRACKS PERMISSIBLE.
- 3. WIRE AND CAP INSERTED IN ONE OPERATION.
- 4. REFER TO APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION.
- 5. REFER TO PAGE 39 FOR ASSEMBLY WITHOUT CAP.

## **CAP APPLICATION TOOL - PLASTIC**

06-9176-7023-01-000

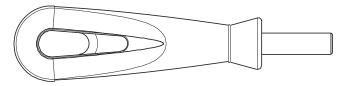






# **UNIVERSAL HANDLE**

06-7000-7730-01-000

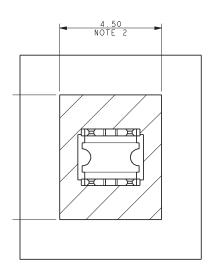


## **CONNECTOR/TOOLING PART NUMBER MATRIX**

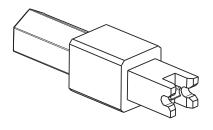
| SERIES 9176-400 IDC |  |           | 00 IDC          | HAND INSERTION TOOLING* |                        | ACCESSORY CAPS          |                 |                 |
|---------------------|--|-----------|-----------------|-------------------------|------------------------|-------------------------|-----------------|-----------------|
| AWG                 | Wire<br>Insulation   | Positions | Part Number     | Plastic (medium volume) | Metal<br>(high volume) | Cap Application<br>Tool | White           | Black           |
| 22                  | Ø 1.0 - 1.5  | 1p        | 709176001422006 | 069176702201000         | 069176702101000        | 069176702301000         | 609176001415100 | 609176001415000 |
| 24                  | Ø 1.0 - 1.5  | 1p        | 709176001432006 | 069176702201000         | 069176702101000        | 069176702301000         | 609176001415100 | 609176001415000 |
| 26                  | Ø 0.7 - 1.0  | 1p        | 709176001442006 | 069176702201000         | 069176702101000        | 069176702301000         | 609176001415100 | 609176001415000 |
| 28                  | Ø 0.7 - 1.0  | 1p        | 709176001443006 | 069176702201000         | 069176702101000        | 069176702301000         | 609176001415100 | 609176001415000 |
|                     | * Hand Insertion Tooling and Cap Application - Universal Hand Tool 067000773001000; Consult Application Notes 201-01-124 |           |                 |                         |                        |                         |                 |                 |



## **ASSEMBLY TOOLING - CAP NOT USED WIRE ONTO CONTACT**

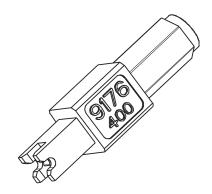


## **METAL TOOL HIGH VOLUME** 06-9176-7021-01-000



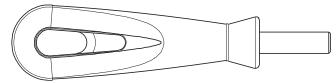
# **PLASTIC TOOL LOW/MEDIUM VOLUME**

06-9176-7022-01-000



# **UNIVERSAL HANDLE**

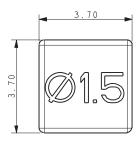
06-7000-7730-01-000

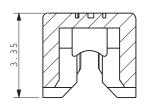


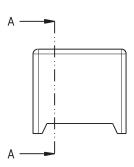
- 1. ASSEMBLY TOOLING FOR CONTACT ONLY. NO CAP USED.
- 2. MINIMUM AREA OF PCB TO BE KEPT CLEAR OF COMPONENTS, TRACKS PERMISSIBLE.
- 3. REFER TO APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION.
- 4. INSERT CORRECT TOOL INTO HANDLE, MAGNETIC RETENTION.
- 5. REFER TO PAGE 38 FOR ASSEMBLY WITH CAP.

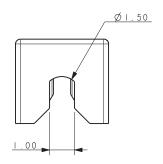


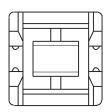
## **CAP DETAILS**











- 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 INSTALATION DETAILS REFER TO DRAWING 70-9176-001-4XX-006S.

# **General Information**





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 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

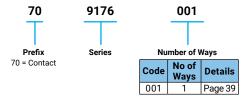
## **ENVIRONMENTAL**

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

## **MECHANICAL**

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

## **HOW TO ORDER - CONTACT OPTIONS**

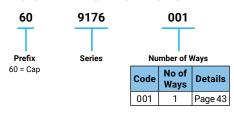


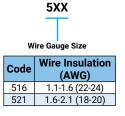


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## **HOW TO ORDER - CAP OPTIONS**









## CONNECTOR/TOOLING PART NUMBER MATRIX

|     | SERIES 9176-500 IDC |           |                 | HAND INSERTION TOOLING* |                        | ACCESSORY CAPS          |                 |                 |
|-----|---------------------|-----------|-----------------|-------------------------|------------------------|-------------------------|-----------------|-----------------|
| AWG | Wire<br>Insulation  | Positions | Part Number     | Plastic (medium volume) | Metal<br>(high volume) | Cap Application<br>Tool | White           | Black           |
| 18  | Ø 1.6 - 2.1         | 1p        | 709176001501006 | 069176702001000         | 069176701901000        | 069176701801000         | 609176001521100 | 609176001521000 |
| 20  | Ø 1.6 - 2.1         | 1p        | 709176001511006 | 069176702001000         | 069176701901000        | 069176701801000         | 609176001521100 | 609176001521000 |
| 22  | Ø 1.1 - 1.6         | 1p        | 709176001522006 | 069176702002000         | 069176701902000        | 069176701801000         | 609176001516100 | 609176001516000 |
| 24  | Ø 1.1 - 1.6         | 1p        | 709176001532006 | 069176702002000         | 069176701902000        | 069176701801000         | 609176001516100 | 609176001516000 |

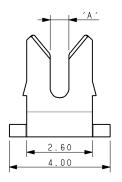
\* Hand Insertion Tooling and Cap Application - Universal Hand Tool 067000773001000; Consult Application Notes 201-01-124

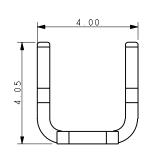
Certification: UL File #E90723

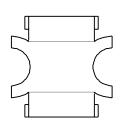




## **CONTACT DETAILS**







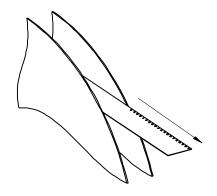


| Code | Accepted Wire Gauge       | Α    |
|------|---------------------------|------|
| 501  | 18 AWG Stranded           | 0.74 |
| 511  | 20 AWG Solid and Stranded | 0.60 |
| 522  | 22 AWG Solid and Stranded | 0.47 |
| 532  | 24 AWG Solid and Stranded | 0.37 |

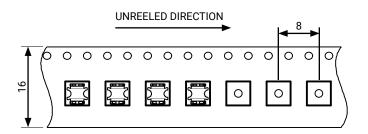
## AREA AVAILABLE FOR 1 PICK & PLACE 2.00mm SQUARE

#### 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 20AWG AND 24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, 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 SHEET 3.
- 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 SHEETS 4 (WITH CAP) AND 5 (WITHOUT CAP).



| REEL QTY | 1000  |
|----------|-------|
| LEADER   | 480mm |
| TRAILER  | 120mm |



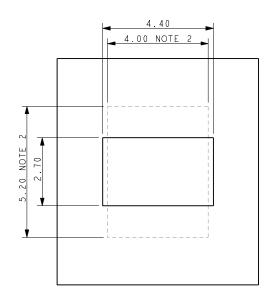
# **PBC Layout**

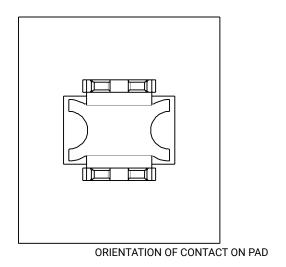


## 18-24 AWG IDC WIRE TO BOARD CONNECTOR SINGLE CONTACT

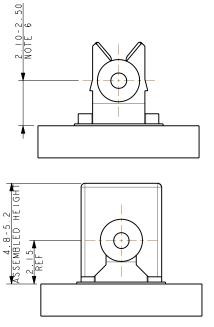
# **SMT PCB LAYOUT**

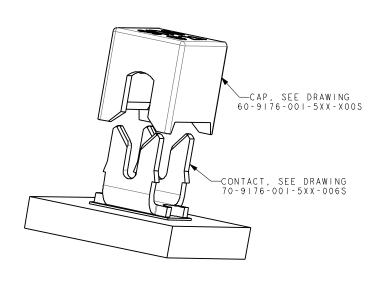
**PURE TIN PADS** 





## ASSEMBLED/INSTALLED PRODUCTS



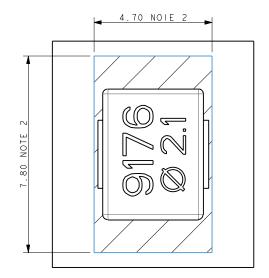


- 1. CONNECTOR CAN BE USED WITH CONTACT ONLY OR WITH OPTIONAL CAP.
- 2. OUTLINE OF CAP WHEN USED.
- 3. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-126 AND 201-01-124.
- 4. ALL DIMENSIONS ±0.20 UNLESS TOLERANCED.
- 5. ASSEMBLY TOOLING ON SHEETS 4 (WITH CAP) AND 5 (WITHOUT CAP).
- 6. WIRE CENTRE LINE HEIGHT ABOVE THE PCB, THIS INCLUDES AN ALLOWANCE OF 0.10MM FOR SOLDER AND

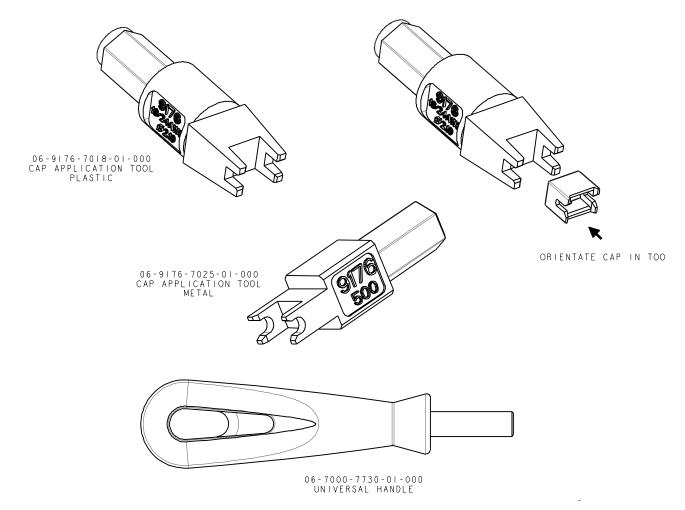




## **ASSEMBLY TOOLING - CAP USED**



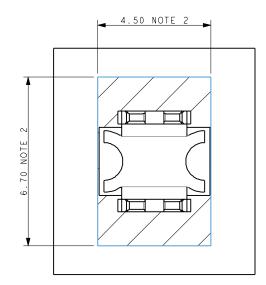
- 1. ASSEMBLY TOOLING FOR CAP.
- 2. AREA OF PCB TO BE KEPT CLEAR OF COMPONENTS, TACKS PERMISSIBLE.
- 3. WIRE AND CAP INSERTED IN ONE OPERATION.
- 4. REFER TO APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION.
- 5. REFER BELOW WHEN CONTACT USED WITHOUT CAP.





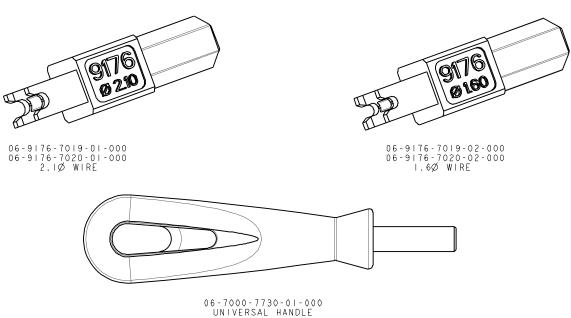


## ASSEMBLY TOOLING - CAP NOT USED WIRE ONTO CONTACT



- 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 TABLE FOR CORRECT TOOL/WIRE COMBINATION.
- 4. REFER TO APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION

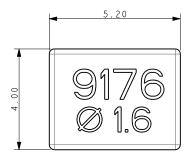
| WIRE INSULATION Ø | METAL TOOL<br>HIGH VOLUME | PLASTIC TOOL<br>SMALL TO MEDIUM VOLUME | HANDLE              |
|-------------------|---------------------------|--|---------------------|
| 1.10 to 1.60      | 06-9176-7019-02-000       | 06-9176-7020-02-000                    | 06-7000-7730-01-000 |
| 1.60 to 2.10      | 06-9176-7019-01-000       | 06-9176-7020-01-000                    | 06-7000-7730-01-000 |

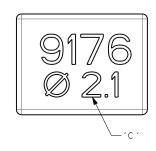


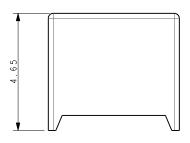


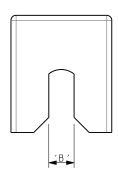


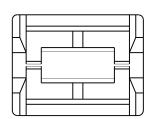
## **CAP DETAILS**











| Code | Insulator<br>Diameter<br>(AWG) | В    | Text C |
|------|--------------------------------|------|--------|
| 516  | 1.1 to 1.6 (22-24)             | 1.00 | Ø 1.6  |
| 521  | 1.6 to 2.1 (18-20)             | 1.50 | Ø 2.1  |

- 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 INSTALATION DETAILS REFER TO DRAWING 70-9176-001-XX-006S.

# SINGLE IDC CONTACT 12-18 AWG: 9177-500

# **General Information**





## **GENERAL DESCRIPTION**

AVX's STRIPT™, insulation displacement naked contact technology provides cost effective, insulator-less, wire-to-board connection for discrete wire applications. Designed from the ground up to function just like a traditional insulated connector, these UL certified contacts have been industry proven for many years. This 9177-500 series has been designed to support the larger wire gauges from a robustness and current rating perspective.

## **APPLICATIONS**

- · Industrial motor controls, drives & pumps
- · Commercial building wiring and electrical systems
- Outdoor/Transportation lighting
- Solar and alternative energy

#### **ELECTRICAL**

- · Current Rating: 15
- · Voltage Rating: 600 VAC

## **ENVIRONMENTAL**

• Operating Temperature: -40°C to +125°C

## **HOW TO ORDER**

70 001 9177 Prefix Series No. of Ways 001 = 1

Description 591 = 12AWG Stranded and Solid 501 = 14AWG Stranded and Solid 512 = 16AWG Stranded and Solid 522 = 18AWG Stranded and Solid

5XX

006 Plating 006 = Pure Tin



## **FEATURES AND BENEFITS**

- · Proven "gas tight" cold welded wire termination
- · Redundant contact systems provides enhanced wire retention and high current carrying capabilities
- Cost effective STRIPT™ insulator-less contact system

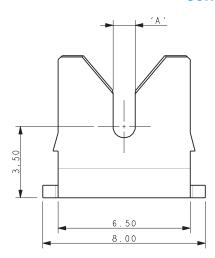
## **MECHANICAL**

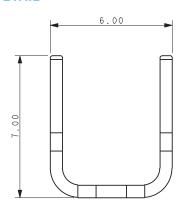
- · Contact Material: Phosphor Bronze
- · Contact Plating: Pure tin over nickel
- · Durability: 3 termination cycles

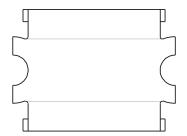
Certification: UL File #E90723



## **CONTACT DETAIL**



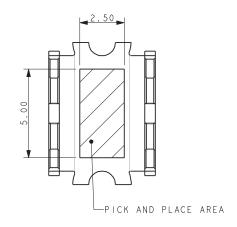


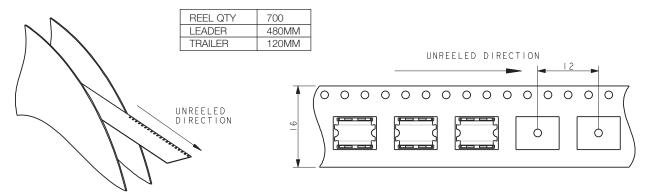


| Code |                          | Α    |
|------|--------------------------|------|
|      | Wire Gauge               |      |
| 591  | 12AWG Stranded and Solid | 1.50 |
| 501  | 14AWG Stranded and Solid | 1.10 |
| 512  | 16AWG Stranded and Solid | 0.82 |
| 522  | 18AWG Stranded and Solid | 0.72 |

## NOTES:

- 1. CONNECTOR FO IDC WIRE TO BOARD CONNECTION.
- CONTACT MATERIAL: PHOSPHORE BRONZE.
- CONTACT PLATING: PURE TIN.
- CONTACTS DESIGNED TO ACCEPT BETWEEN 12 AND 18 GAUGE STANDED WIRE, SEE TABLE.
- 5. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
- 6. FOR FULL PRODUCT SPECIFICATIONS REFER TO AVX SPECIFICATION 201-01-208 AND APPLICATION NOTES 201-01-209.
- 7. SMT PCB LAYOUT, REFER TO PAGE 3.
- 8. PACKING IN TAPE AND REEL, QUANTITY PER REEL 700.
- 9. ASSEMBLY TOOLING ON PAGE 4.
- 10. UL REFERENCE E90723 (US AND CANADA).



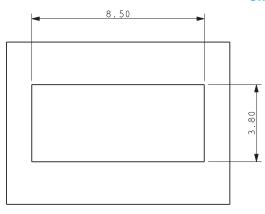


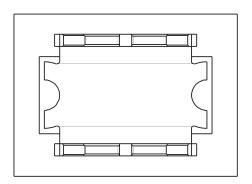
# **SINGLE IDC CONTACT 12-18 AWG: 9177-500**



# **IDC Wire to Board Connector Single Contact**

# 12-18 AWG IDC WIRE TO BOARD CONNECTOR **SINGLE CONTACT**





**SUGGESTED PCB LAYOUT** 

**ORIENTATION OF CONTENT ON PAD** 

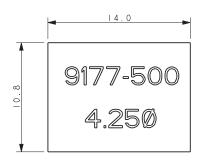
- 1. FOR FULL PRODUCT SPECIFICATION REFER TO AVX SPEC 201-01-208 AND 201-01-209
- 2. DIMENSIONS SHOWN ARE REFERENCE DIMENSIONS.
- 3. ASSEMBLY TOOLING ON PAGE 4.

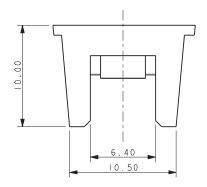
# **SINGLE IDC CONTACT 12-18 AWG: 9177-500**

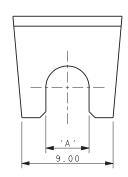




## **ASSEMBLY TOOLING**

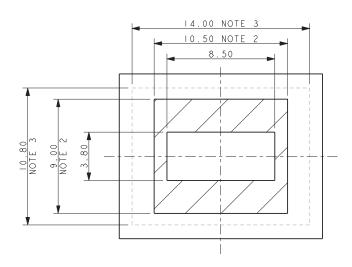






| Wire Guage | Max Insulation<br>(Dimensions 'A') | Tool Number<br>Metal Tool for<br>High Volume | Tool Numbere<br>Plastic Tool for<br>Small to Medium Volume |
|------------|------------------------------------|--|--|
| 12-18 AWG  | ø 4.25                             | 06-9177-7020-01-001                          | 06-9177-7022-01-001  |
| 12-18 AWG  | ø 3.50                             | 06-9177-7020-02-001                          | 06-9177-7022-02-001  |
| 12-18 AWG  | ø 2.75                             | 06-9177-7020-03-001                          | 06-9177-7022-03-001  |

- 1. ASSEMBLY TOOLING FOR CONTACTS 70-9177-001-5XX-006 ONLY.
- 2. MINIMUM AREA OF PCB TO BE KEPT CLEAR OF COMPONENTS. TRACKS PERMISSIBLE.
- 3. MAXIMUM COMPONENT HEIGHT 9.0MM IN THIS AREA.
- 4. REFER TO TABLE FOR CORRECT TOOL/WIRE COMBINATION.
- 5. REFER TO APPLICATION NOTE 201-01-209 FOR FURTHER INFORMATION.
- 6. DIMENSIONS FOR TOOL ARE REFERENCE DIMENSIONS.

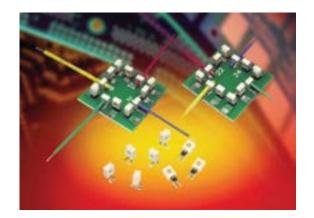




# **SINGLE TINE PTH 18-24 AWG: 9176-600**

# **General Information**





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

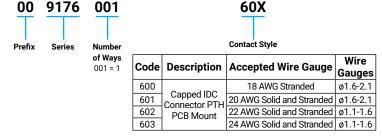
# **ENVIRONMENTAL**

· Operating Temperature: -40°C to +125°C

## **MECHANICAL**

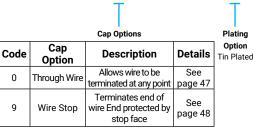
- · Contact Material: Phosphor Bronze
- Contact Plating: Tin over Nickel
- **Durability: 3 Cycles**

## **HOW TO ORDER**





9



X

## **CURRENT RATING**

| 18AWG | 20AWG | 22AWG | 24AWG |
|-------|-------|-------|-------|
| 9A    | 8A    | 6A    | 5A    |

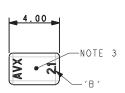
Certification: UL File #E90723

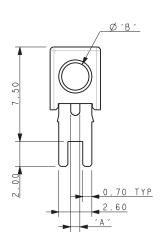


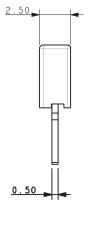
6

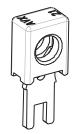


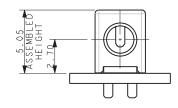
# 18-24 AWG 1 WAY PTH CONNECTOR **THROUGH WIRE CAPPED**





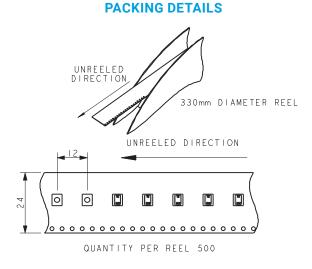




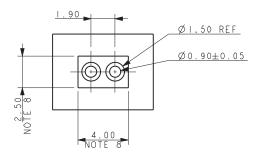


| Code | Accepted<br>Wire Gauge   | Α    | Wire<br>Insulation | В   |
|------|--------------------------|------|--------------------|-----|
| 600  | 18 AWG Stranded          | 0.74 | Ø 1.6-2.1          | 2.1 |
| 601  | 20 AWG Solid or Stranded | 0.60 | Ø 1.6-2.1          | 2.1 |
| 602  | 22 AWG Solid or Stranded | 0.47 | Ø 1.1-1.6          | 1.6 |
| 603  | 24 AWG Solid or Stranded | 0.37 | Ø 1.1-1.6          | 1.6 |





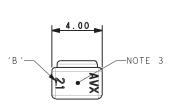
# SUGGESTED PCB LAYOUT

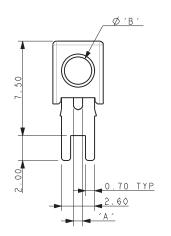


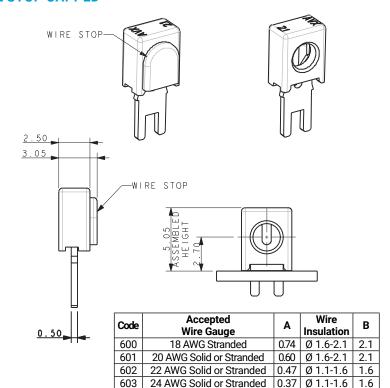
- 1. 1 WAY CONNECTOR FOR PTH WIRE TO BOARD CONNECTION, PRE-ASSEMBLED THROUGH WIRE CAP, CODE SEE PAGE 46.
- 2. CONTAT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
- 3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY, MAXIMUM DIAMETER 1.8MM.
- 4. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-163.
- 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.



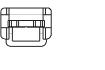
# 18-24 AWG 1 WAY PTH CONNECTOR **WIRE STOP CAPPED**



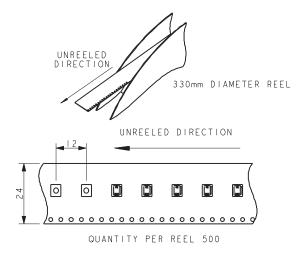


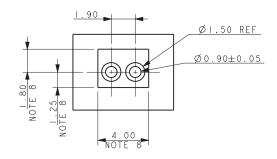


## SUGGESTED PCB LAYOUT



# **PACKING DETAILS**

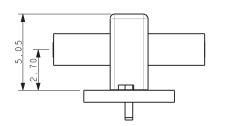


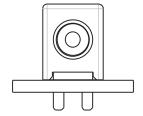


- 1. 1 WAY CONNECTOR FOR PTH WIRE TO BOARD CONNECTION, PRE-ASSEMBLED WIRE STOP CAP, CODE SEE PAGE 46.
- 2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
- 3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY, MAXIMUM DIAMETER 1.8MM.
- 4. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-163.
- 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.
- 11. WIRE STOP CAP PROTECTS END OF WIRE.

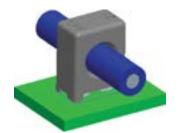


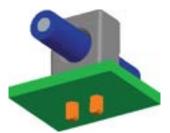
## 18-24 AWG ASSEMBLED CAPPED PTH CONNECTORS





**NOMINAL ASSEMBLED HEIGHTS** 





**TYPICAL THROUGH WIRE ASSEMBLIES** 





**TYPICAL WIRE STOP ASSEMBLIES** 

# **SINGLE TINE SMT 18-24 AWG: 9176-650**

# **General Information**





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

## **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
- Connectors are available in two configurations for maximum flexibility: End and Through Wire

## **ELECTRICAL**

Current Rating: See matrix below

9176

001

Voltage Rating: 600 VAC

## **ENVIRONMENTAL**

65X

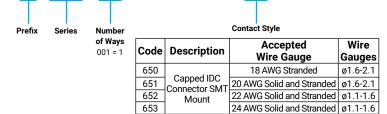
· Operating Temperature: -40°C to +125°C

## **MECHANICAL**

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

## **HOW TO ORDER**

00









6 Plating Option

Tin Plated

Cap Code Description **Details** Option Allows wire to be See n Through Wire terminated at any point page 51 Terminates end of See 9 Wire Stop wire End protected by page 52 stop face

## **CURRENT RATING**

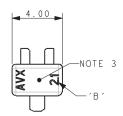
| 18AWG | 20AWG | 22AWG | 24AWG |
|-------|-------|-------|-------|
| 9A    | 8A    | 6A    | 5A    |

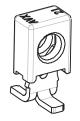
Certification: UL File #E90723

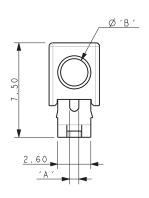


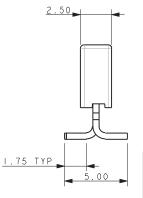


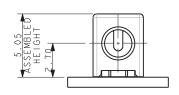
# 18-24 AWG 1 WAY IDC CONNECTOR **THROUGH WIRE CAPPED**







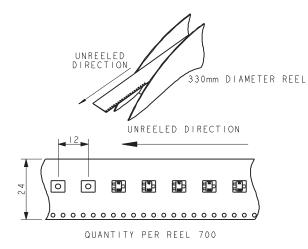




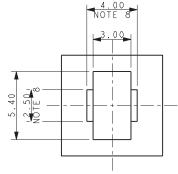
| Code | Wire Gauge               |      | Wire<br>Insulation | В   |
|------|--------------------------|------|--------------------|-----|
| 600  | 18 AWG Stranded          | 0.74 | Ø 1.6-2.1          | 2.1 |
| 601  | 20 AWG Solid or Stranded | 0.60 | Ø 1.6-2.1          | 2.1 |
| 602  | 22 AWG Solid or Stranded | 0.47 | Ø 1.1-1.6          | 1.6 |
| 603  | 24 AWG Solid or Stranded | 0.37 | Ø 1.1-1.6          | 1.6 |



## **PACKING DETAILS**



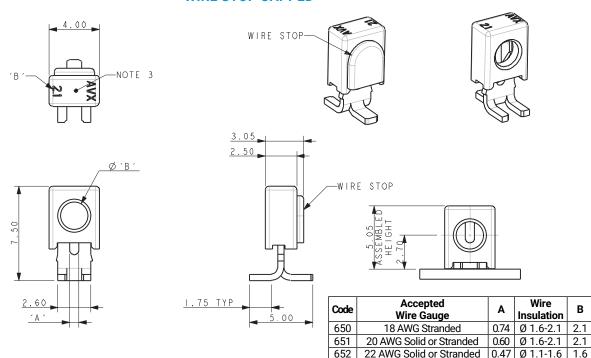
## SUGGESTED PCB LAYOUT



- 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.
- 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.



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

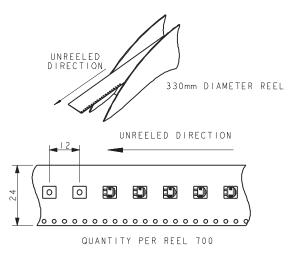


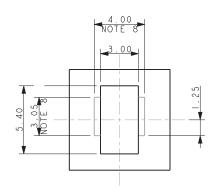
## **SUGGESTED PCB LAYOUT**

24 AWG Solid or Stranded | 0.37 | Ø 1.1-1.6 | 1.6



## **PACKING DETAILS**

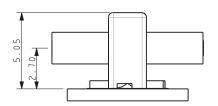


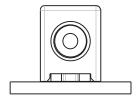


- 1. 1 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTION, PRE-ASSEMBLED WIRE STOP CAP, CODE SEE PAGE 50.
- 2. CONTACT/CAP TO MATCH 20AWG-24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
- 3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY, MAXIMUM DIAMETER 1.8MM.
- 4. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-163.
- 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.

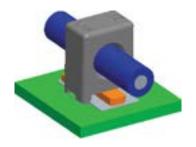


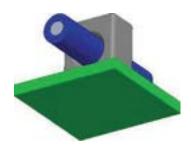
## 18-24 AWG ASSEMBLED CAPPED IDC CONNECTORS



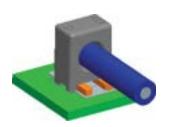


# **NOMINAL ASSEMBLED HEIGHTS**





**TYPICAL THROUGH WIRE ASSEMBLIES** 





**TYPICAL WIRE STOP ASSEMBLIES** 

# **General Information**





## **GENERAL DESCRIPTION**

KYOCERA 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: 7 amps

24AWG: 6 amps 26AWG: 5 amps 28AWG: 4 amps 30AWG: 3 amps

Voltage Rating: 1p: 600V

2p-4p: 100V

Durability: 1 Cycle

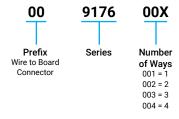
## **ENVIRONMENTAL**

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

## **MECHANICAL**

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

## **HOW TO ORDER**





| Code | Accepted Wire Guage      | Maximum Wire<br>Isulation Diameter | UL<br>Approved |  |  |
|------|--------------------------|------------------------------------|----------------|--|--|
| 853  | 22AWG Solid and Stranded | 1.40                               | Approved       |  |  |
| 863  | 24AWG Solid and Stranded | 1.40                               | Approved       |  |  |
| 873  | 26AWG Solid and Stranded | 1.40                               | Approved       |  |  |
| 883  | 28AWG Solid and Stranded | 0.80 to 1.40                       | Approved       |  |  |
| 884  | 28AWG Solid and Stranded | 0.80                               | Approved       |  |  |
| 893  | 30AWG Solid and Stranded | 0.80 to 1.40                       | Approved       |  |  |
| 894  | 30AWG Solid and Stranded | 0.80                               | Approved       |  |  |



4 = Yellow 5 = Red 6 = Green

7 = Orange 8 = Black

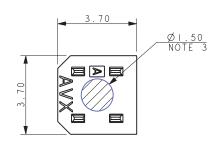


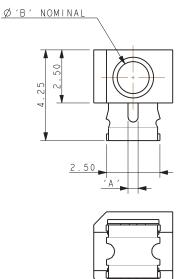
Certification: UL File #E90723

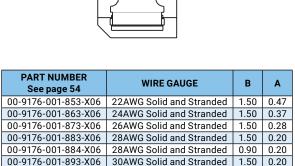
# 1 Position



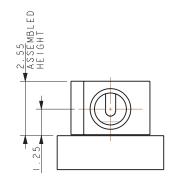
# 00-9176-001-8XX-X06 1 WAY

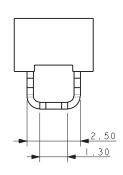






00-9176-001-894-X06 | 30AWG Solid and Stranded | 0.90 | 0.20

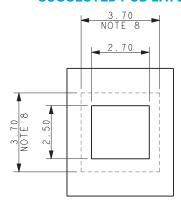




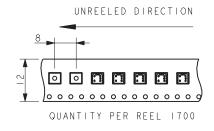
## NOTES:

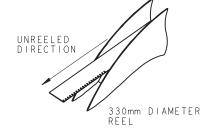
- 1. 1 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTOR.
- 2. CONTACT/CAP TO MATCH 22AWG TO 26AWG STRANDED AND SOLID WIRE, MAXIMUM INSULATOR 1.40 DIAMETER
- 3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
- 4. FOR FULL PRODUCT SPECIFICATION REFER TO KYOCERA AVX SPEC 201-01-215.
- 5. ASSEMBLY 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.
- 11. UL REFERENCE E90723 (US AND CANADA).

## SUGGESTED PCB LAYOUT



## **PACKING DETAILS**





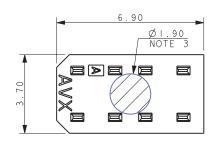


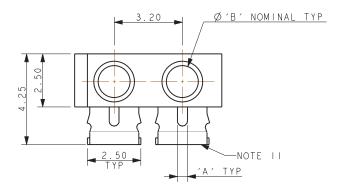
KYDEER3 | The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.

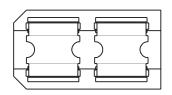
# 2 Position



# 00-9176-001-8XX-X06 **2 WAY**

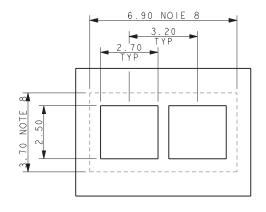


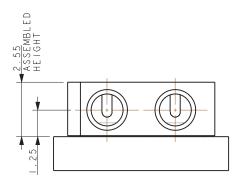


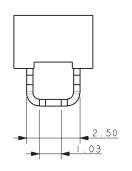


| PART NUMBER<br>See page 54 | WIRE GAUGE               | В    | A    |
|----------------------------|--------------------------|------|------|
| 00-9176-002-853-X06        | 22AWG Solid and Stranded | 1.50 | 0.47 |
| 00-9176-002-863-X06        | 24AWG Solid and Stranded | 1.50 | 0.37 |
| 00-9176-002-873-X06        | 26AWG Solid and Stranded | 1.50 | 0.28 |
| 00-9176-002-883-X06        | 28AWG Solid and Stranded | 1.50 | 0.20 |
| 00-9176-002-884-X06        | 28AWG Solid and Stranded | 0.90 | 0.20 |
| 00-9176-002-893-X06        | 30AWG Solid and Stranded | 1.50 | 0.20 |
| 00-9176-002-894-X06        | 30AWG Solid and Stranded | 0.90 | 0.20 |

## SUGGESTED PCB LAYOUT

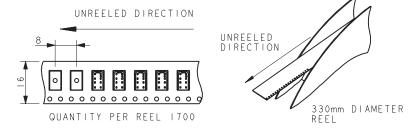






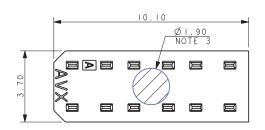
## NOTES:

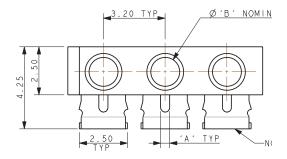
- 1. 2 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTOR.
- 2. CONTACT/CAP TO MATCH 22AWG TO 26AWG STRANDED AND SOLID WIRE, MAXIMUM INSULATOR 1.40 DIAMETER
- 3. FLAT FACE ON TOP OF CAP TO AID PICK AND PLACE ASSEMBLY.
- 4. FOR FULL PRODUCT SPECIFICATION REFER TO KYOCERA AVX SPEC 201-01-215.
- 5. ASSEMBLY 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.
- 11. UL REFERENCE E90723 (US AND CANADA).

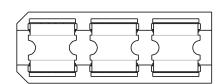




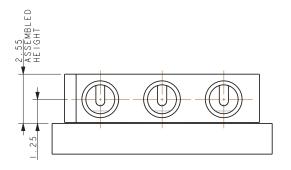
# 00-9176-001-8XX-X06 3 WAY

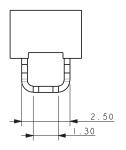






| PART NUMBER<br>See page 54 | WIRE GAUGE               | В    | A    |
|----------------------------|--------------------------|------|------|
| 00-9176-003-853-X06        | 22AWG Solid and Stranded | 1.50 | 0.47 |
| 00-9176-003-863-X06        | 24AWG Solid and Stranded | 1.50 | 0.37 |
| 00-9176-003-873-X06        | 26AWG Solid and Stranded | 1.50 | 0.28 |
| 00-9176-003-883-X06        | 28AWG Solid and Stranded | 1.50 | 0.20 |
| 00-9176-003-884-X06        | 28AWG Solid and Stranded | 0.90 | 0.20 |
| 00-9176-003-893-X06        | 30AWG Solid and Stranded | 1.50 | 0.20 |
| 00-9176-003-894-X06        | 30AWG Solid and Stranded | 0.90 | 0.20 |

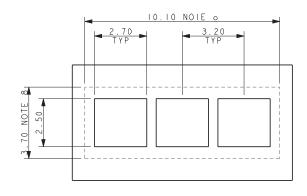


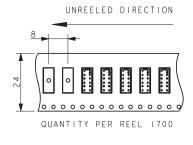


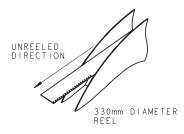
## NOTES:

- 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 KYOCERA 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.
- 11. UL REFERENCE E90723 (US AND CANADA).

## SUGGESTED PCB LAYOUT



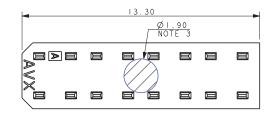


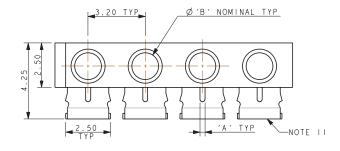


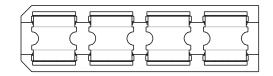
# 4 Position



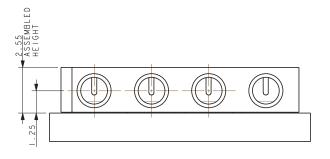
# 00-9176-001-8X3-X06 4 WAY

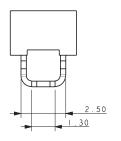






| PART NUMBER<br>See page 54 | WIRE GAUGE               | В    | Α    |
|----------------------------|--------------------------|------|------|
| 00-9176-004-853-X06        | 22AWG Solid and Stranded | 1.50 | 0.47 |
| 00-9176-004-863-X06        | 24AWG Solid and Stranded | 1.50 | 0.37 |
| 00-9176-004-873-X06        | 26AWG Solid and Stranded | 1.50 | 0.28 |
| 00-9176-004-883-X06        | 28AWG Solid and Stranded | 1.50 | 0.20 |
| 00-9176-004-884-X06        | 28AWG Solid and Stranded | 0.90 | 0.20 |
| 00-9176-004-893-X06        | 30AWG Solid and Stranded | 1.50 | 0.20 |
| 00-9176-004-894-X06        | 30AWG Solid and Stranded | 0.90 | 0.20 |

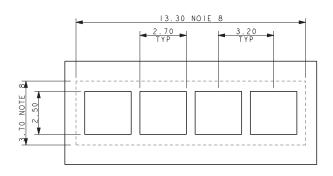


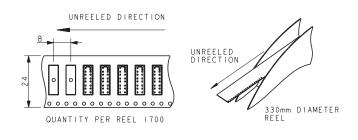


#### NOTES:

- 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 KYOCERA 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.
- 11. UL REFERENCE E90723 (US AND CANADA).

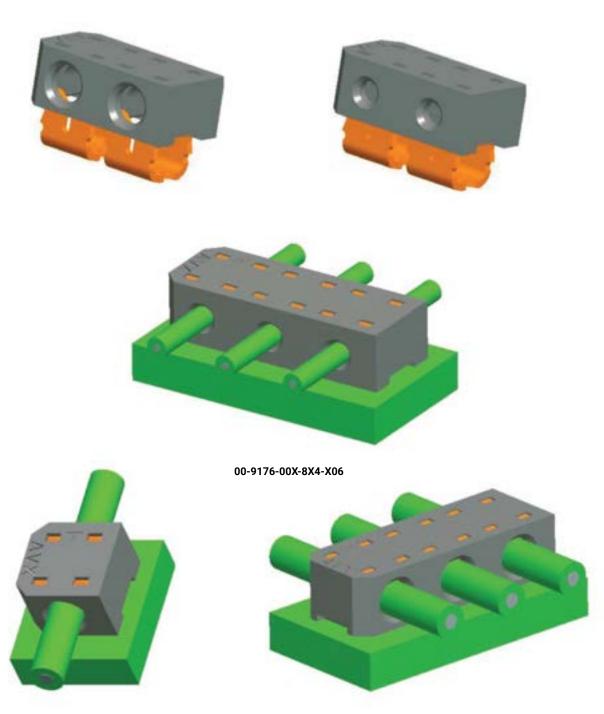
## SUGGESTED PCB LAYOUT







## **CONNECTOR DETAILS**



00-9176-00X-8X3-X06

# STANDARD 14-20 AWG: 00-9177

# **General Information**





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

00X

## **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**

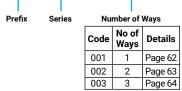
· Operating Temperature: -40°C to +125°C

## **MECHANICAL**

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

# **HOW TO ORDER** 9177

00





0XX

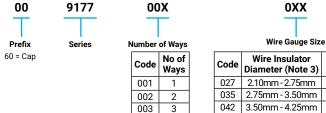


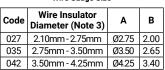
| Code | Color | Approval                    |  |
|------|-------|-----------------------------|--|
| 0    | Black | Special Order - NON-UL      |  |
| 1    | White | Special Order - NON-UL      |  |
| 8    | Black | Special Order - UL APPROVED |  |
| 9    | White | Standard - UL APPROVED      |  |





## **HOW TO ORDER - CAP OPTIONS - THROUGH WIRE**





0XX

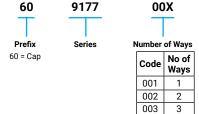
042 3 50mm - 4 25mm | Ø4 25 3 40

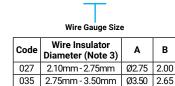
0XX



X00

## **HOW TO ORDER - CAP OPTIONS - WIRE STOP**







X00

Certification: UL File # E320991, check UL conditions of use for specific ratings and details



☑ KU□CER∃ | The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.

В

# **STANDARD 14-20 AWG: 00-9177**





## **CONNECTOR/TOOLING PART NUMBER MATRIX**

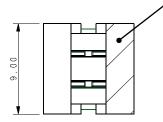
| SERIES 9177 IDC |   |           | HAND INSERTION TOOLING* |                 | ACCESSORY CAPS          |                        |                 |                 |
|-----------------|---|-----------|-------------------------|-----------------|-------------------------|------------------------|-----------------|-----------------|
| AWG             | Wire<br>Insulation  | Positions | Color                   | Part Number     | Plastic<br>(low volume) | Metal<br>(high volume) | Through Wire    | Wire Stop       |
| 14              | Ø 4.25  | 1p        | White                   | 009177001001106 | 069177701601001         | 069177701701001        | 609177001042100 | 609177001042199 |
| 14              | Ø 4.25  | 1p        | Black                   | 009177001001006 | 069177701601001         | 069177701701001        | 609177001042000 | 609177001042099 |
| 14              | Ø 4.25  | 2p        | White                   | 009177002001106 | 069177701601002         | 069177701701002        | 609177002042100 | 609177002042199 |
| 14              | Ø 4.25  | 2p        | Black                   | 009177002001006 | 069177701601002         | 069177701701002        | 609177002042000 | 609177002042099 |
| 14              | Ø 4.25  | 3p        | White                   | 009177003001106 | 069177701601003         | 069177701701003        | 609177003042100 | 609177003042199 |
| 14              | Ø 4.25  | 3p        | Black                   | 009177003001006 | 069177701601003         | 069177701701003        | 609177003042000 | 609177003042099 |
| 16              | Ø 3.50  | 1p        | White                   | 009177001012106 | 069177701602001         | 069177701702001        | 609177001035100 | 609177001035199 |
| 16              | Ø 3.50  | 1p        | Black                   | 009177001012006 | 069177701602001         | 069177701702001        | 609177001035000 | 609177001035099 |
| 16              | Ø 3.50  | 2p        | White                   | 009177002012106 | 069177701602002         | 069177701702002        | 609177002035100 | 609177002035199 |
| 16              | Ø 3.50  | 2p        | Black                   | 009177002012006 | 069177701602002         | 069177701702002        | 609177002035000 | 609177002035099 |
| 16              | Ø 3.50  | 3p        | White                   | 009177003012106 | 069177701602003         | 069177701702003        | 609177003035100 | 609177003035199 |
| 16              | Ø 3.50  | 3р        | Black                   | 009177003012006 | 069177701602003         | 069177701702003        | 609177003035000 | 609177003035099 |
| 18              | Ø 3.50  | 1p        | White                   | 009177001022106 | 069177701602001         | 069177701702001        | 609177001035100 | 609177001035199 |
| 18              | Ø 3.50  | 1p        | Black                   | 009177001022006 | 069177701602001         | 069177701702001        | 609177001035000 | 609177001035099 |
| 18              | Ø 3.50  | 2p        | White                   | 009177002022106 | 069177701602002         | 069177701702002        | 609177002035100 | 609177002035199 |
| 18              | Ø 3.50  | 2p        | Black                   | 009177002022006 | 069177701602002         | 069177701702002        | 609177002035000 | 609177002035099 |
| 18              | Ø 3.50  | 3p        | White                   | 009177003022106 | 069177701602003         | 069177701702003        | 609177003035100 | 609177003035199 |
| 18              | Ø 3.50  | 3р        | Black                   | 009177003022006 | 069177701602003         | 069177701702003        | 609177003035000 | 609177003035099 |
| 20              | Ø 2.75  | 1p        | White                   | 009177001033106 | 069177701603001         | 069177701703001        | 609177001027100 | 609177001027199 |
| 20              | Ø 2.75  | 1p        | Black                   | 009177001033006 | 069177701603001         | 069177701703001        | 609177001027000 | 609177001027099 |
| 20              | Ø 2.75  | 2p        | White                   | 009177002033106 | 069177701603002         | 069177701703002        | 609177002027100 | 609177002027199 |
| 20              | Ø 2.75  | 2p        | Black                   | 009177002033006 | 069177701603002         | 069177701703002        | 609177002027000 | 609177002027099 |
| 20              | Ø 2.75  | 3p        | White                   | 009177003033106 | 069177701603003         | 069177701703003        | 609177003027100 | 609177003027199 |
| 20              | Ø 2.75  | 3р        | Black                   | 009177003033006 | 069177701603003         | 069177701703003        | 609177003027000 | 609177003027099 |
|                 | * Insertion Tooling - Requires Hand Press with Flat Rock Plates; Consult Application Notes 201-01-124 |           |                         |                 |                         |                        |                 |                 |



## 14-20 AWG 1 WAY IDC CONNECTOR

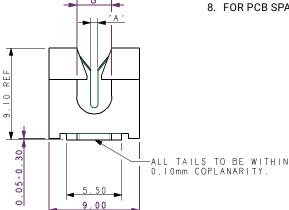
→ Pick and place area 2.375 x 9.00mm MIN

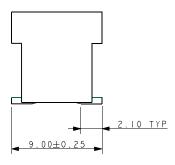




#### NOTES:

- 1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
- 2. CONTACT MATERIAL: PHOSPHOR BRONZE. INSULATION MATERIAL: HIGH TEMP NYLON 46, COLOUR REFER TO SHEET 1.
- 3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 14AWG AND 20AWG SOLID AND STRANDED WIRE.
- 4. ALL DIMENSIONS ±0.20 UNLESS TOLERANCED
- 5. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-109, UL COMPONENTS REFER TO ELCO SPEC 201-01-109UL.
- 6. APPLICATION NOTES 201-01-124
- 7. FOR UL PRODUCT CODES UL REFERENCE E320991.
- 8. FOR PCB SPACE RESTRICTED BY ASSEMBLY TOOLING REFER TO SHEET 6





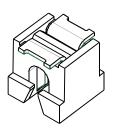
| Code | Accepted Wire Gauge      | Α    | Wire<br>Insulation | В    |
|------|--------------------------|------|--------------------|------|
| 001  | 14 AWG Solid or Stranded | 1.10 | Ø 4.25 max         | 4.25 |
| 012  | 16 AWG Solid or Stranded | 0.82 | Ø 3.50 max         | 3.50 |
| 022  | 18 AWG Solid or Stranded | 0.72 | Ø 3.50 max         | 3.50 |
| 033  | 20 AWG Solid or Stranded | 0.60 | Ø 2.75 max         | 2.75 |

9.00

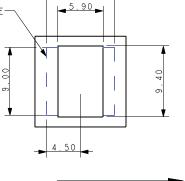


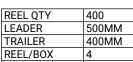
# **SMT PCB LAYOUT**

**PURE TIN PADS** 

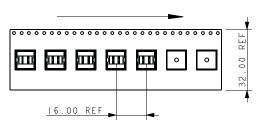








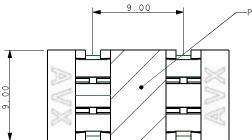
| EL QTY | 400   |
|--------|-------|
| ADER   | 500MM |
| AILER  | 400MM |
| EL/BOX | 4     |
| CK QTY | 1600  |
|        |       |



# 2 Position



## 14-20 AWG 2 WAY IDC CONNECTOR

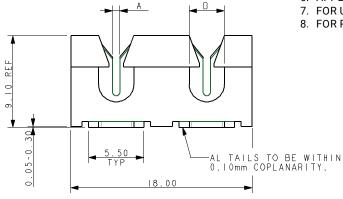


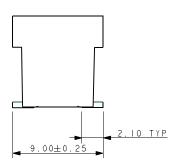
-PICK UP AREA 4.75 x 9.00mm MIN

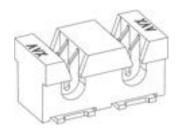


#### NOTES:

- 1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
- 2. CONTACT MATERIAL: PHOSPHOR BRONZE. INSULATION MATERIAL: HIGH TEMP NYLON 46, COLOUR REFER TO SHEET 1.
- 3. CONNECTOR DESIGN TO ACCEPT BETWEEN 14AWG AND 20AWG SOLID AND STRANDED WIRE.
- 4. ALL DIMENSIONS ±0.20 UNLESS TOLLERANCED.
- 5. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-109, UL COMPONENTS REFER TO ELCO SPEC 201-01-109UL.
- 6. APPLICATION NTOES 201-01-124.
- 7. FOR UL PRODUCT CODES UL REFERENCE E320991
- 8. FOR PCB SPACE RESTRICTED BY ASSEMBLY TOOLING REFER TO SHEET 6



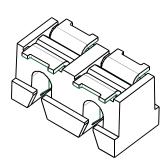




| Code | Accepted Wire Gauge      | Α    | Wire Insulation | В    |
|------|--------------------------|------|-----------------|------|
| 001  | 14 AWG Solid or Stranded | 1.10 | Ø 4.25 max      | 4.25 |
| 012  | 16 AWG Solid or Stranded | 0.82 | Ø 3.50 max      | 3.50 |
| 022  | 18 AWG Solid or Stranded | 0.72 | Ø 3.50 max      | 3.50 |
| 033  | 20 AWG Solid or Stranded | 0.60 | Ø 2.75 max      | 2.75 |

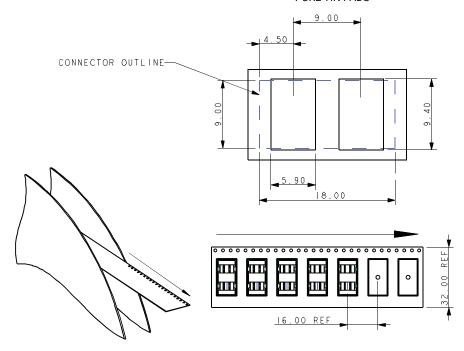
## **SMT PCB LAYOUT**

**PURE TIN PADS** 



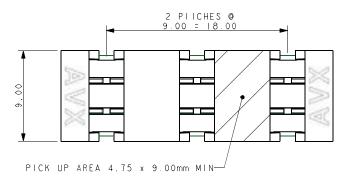


| REEL QTY      | 400   |
|---------------|-------|
| LEADER        | 500mm |
| TRAILER       | 400mm |
| REEL DIAMETER | 330mm |



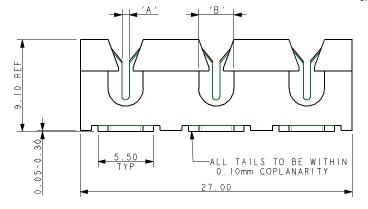


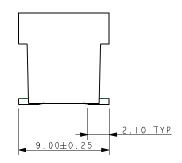
# 14-20 AWG 3 WAY IDC CONNECTOR



#### NOTES:

- 1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
- 2. CONTACT MATERIAL: PHOSPHOR BRONZE.
  - INSULATION MATERIAL: HIGH TEMP NYLON 46, COLOUR REFER TO SHEET 1
- 3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 14AWG AND 20AWG SOLID AND STRANDED WIRE.
- 4. ALL DIMENSIONS ±0.20 UNLESS TOLERANCED.
- 5. FOR FULL PRODUCT SPECIFICATION ON STANDARD CONNECTORS REFER TO ELCO SPEC 201-01-109, UL COMPONENTS REFER TO ELCO SPEC 201-01-109UL.
- 6. APPLICATION NOTES 201-01-124.
- 7. FOR UL PRODUCT CODES UL REFERENCE E320991.
- 8. FOR PCO SPACE RESTICTED BY ASSEMBLY TOOLING REFER TO SHEET 6



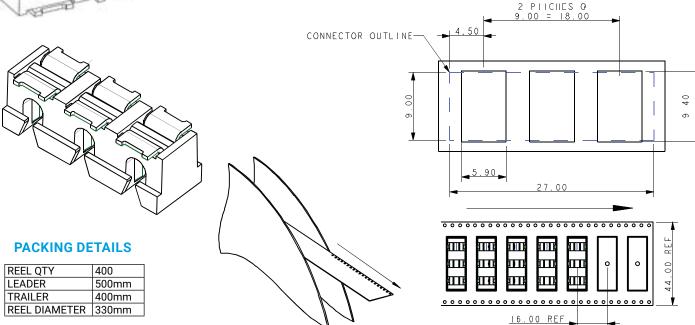


| Code | Accepted Wire Gauge      | Α    | Wire Insulation | В    |
|------|--------------------------|------|-----------------|------|
| 001  | 14 AWG Solid or Stranded | 1.10 | Ø 4.25 max      | 4.25 |
| 012  | 16 AWG Solid or Stranded | 0.82 | Ø 3.50 max      | 3.50 |
| 022  | 18 AWG Solid or Stranded | 0.72 | Ø 3.50 max      | 3.50 |
| 033  | 20 AWG Solid or Stranded | 0.60 | Ø 2.75 max      | 2.75 |

# NO THE

# **SMT PCB LAYOUT**

**PURE TIN PADS** 



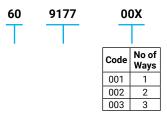
# STANDARD 14-20 AWG: 00-9177

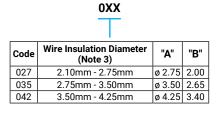
# **Assessory Cap - Through Wire**



## **ACCESSORY CAP - THROUGH WIRE**

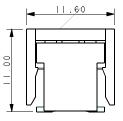
## **HOW TO ORDER**

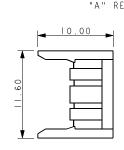


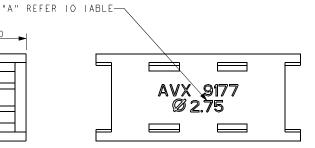




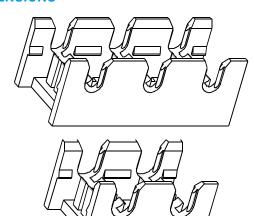


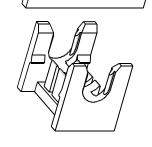


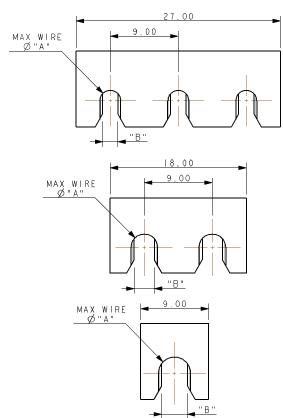




## **ASSEMBLED DIMENSIONS**







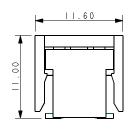
- 1. CAP FOR 9177 IDC WIRE TO BOARD CONNECTOR.
- 2. THROUGH WIRE CAP CAN BE USED AT ANY POSITION ALONG WIRE.
- 3. REFERS TO CAP, FOR WIRE MATCH TO CONNECTOR REFER TO TABLE ON SHEET
- 4. MATERIAL: GLASS FILLED NYLON 46, FOR COLOUR REFER TO TABLE
- 5. CAPS DESIGNED TO ACCOODATE INSULATION DIAMETERS REFER TO TABLE.
- 6. GENERAL TOLERANCE ±0.20mm.
- 7. PACKED IN BAGS, 400 PIECES PER BAG
- 8. APPLICATION NOTES REFER TO ELCO SPECIFICATION 201-01-124

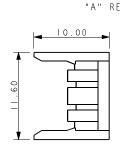
# STANDARD 14-20 AWG: 00-9177

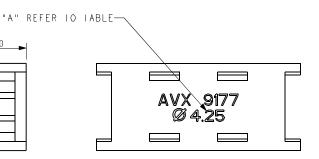
# **Assessory Cap - Wire Stop**



#### **ACCESSORY CAP - WIRE STOP**

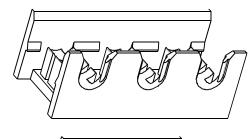


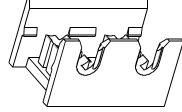


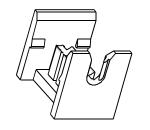


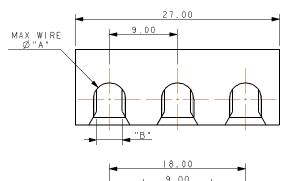


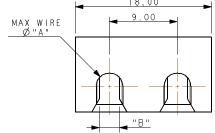
#### ASSEMBLED DIMENSIONS

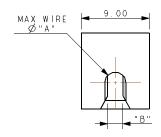












#### NOTES:

- 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.

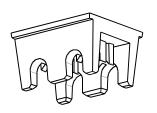


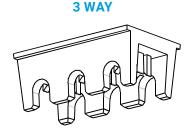


#### **INSERTION TOOLING - REQUIRES HAND PRESS WITH FLAT ROCK PLATES**

#### 1 WAY









**HIGH PRODUCTION** Metal

| No.<br>of Ways | Max<br>Insulation Dia<br>(AWG) | Tool<br>Part Number |
|----------------|--------------------------------|---------------------|
|                | ø 4.25                         | 06-9177-7017-01-001 |
| 1              | ø 3.50                         | 06-9177-7017-02-001 |
|                | ø 2.75                         | 06-9177-7017-03-001 |
|                | ø 4.25                         | 06-9177-7017-01-002 |
| 2              | ø 3.50                         | 06-9177-7017-02-002 |
|                | ø 2.75                         | 06-9177-7017-03-002 |
|                | ø 4.25                         | 06-9177-7017-01-003 |
| 3              | ø 3.50                         | 06-9177-7017-02-003 |
|                | ø 2.75                         | 06-9177-7017-03-003 |

MEDIUM PRODUCTION **Plastic** 

| No.<br>of Ways | Max<br>Insulation Dia<br>(AWG) | Tool<br>Part Number  |
|----------------|--------------------------------|----------------------|
|                | ø 4.25                         | 06-9177-7016-01-001  |
| 1              | ø 3.50                         | 06-9177-7016-02-001  |
|                | ø 2.75                         | 06-9177-7016-03-001  |
|                | ø 4.25                         | 06-9177-7016-01-002  |
| 2              | ø 3.50                         | 06-9177-7016-02-002  |
|                | ø 2.75                         | 06-9177-7016-03-002  |
|                | ø 4.25                         | 06-9177-7016-01-003  |
| 3              | ø 3.50                         | 06-9177-7016-02-003  |
|                | ø 2.75                         | 06-9177-7016-03- 003 |

The assembly tooling restricts the available space/component heights on the PCB. For details see below.

#### NOTES:

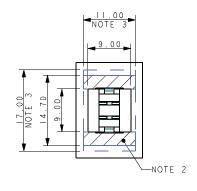
- 1. ALL DIMENSIONS FOR REFERENCE DIMENSIONS.
- MAXIMUM COMPONENT HEIGHT 0.80MM IN THIS AREA.
- MAXIMUM COMPONENT HEIGHT 11.00 MM IN THIS AREA.
- THE SAME RESTRICTIONS APPLY TO ALL WIRE INSULATION DIAMETERS.

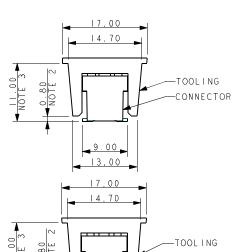
#### **INSERTION TOOLING - PCB RESTRICTED AREAS FOR ASSEMBLY TOOLING**

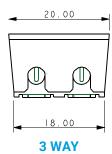
1 WAY

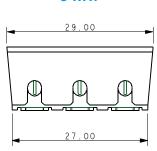
# 17.00 14.70 TOOLING CONNECTOR 9.00 13.00

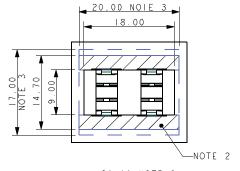


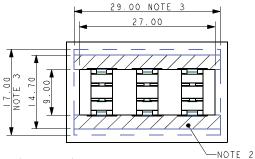












9.00

13.00

CONNECTOR

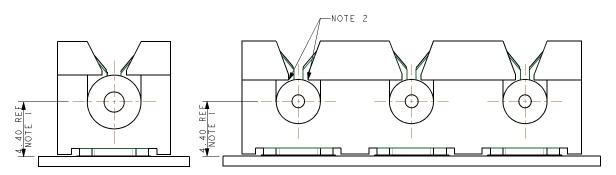
KYDERA | The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.

# **STANDARD 14-20 AWG: 00-9177**



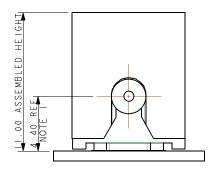


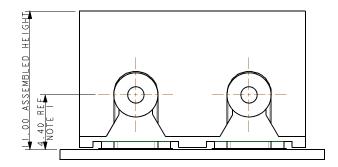
#### STANDARD CONNECTOR





#### **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.

# **CAPPED THRU HOLE 12-18 AWG: 00-9177**

#### **General Information**





KYOCERA AVX developed the initial SMT discrete wire IDC connector 5 years ago for 26-28AWG 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
- 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**

OXX

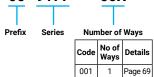
Operating Temperature: -40°C to +125°C

#### **MECHANICAL**

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

#### **HOW TO ORDER**

00 9177



00X

| Ways    |      | Wire Insula       | ation/Gauge Size            |                    |
|---------|------|-------------------|-----------------------------|--------------------|
| Details | Code | Style             | Accepted<br>Wire Gauge      | Wire<br>Insulation |
| Page 69 | 691  | Though Hole Mount | 12 AWG<br>Solid or Stranded | Ø 4.25 Max         |
|         | 601  | Though Hole Mount | 14 AWG<br>Solid or Stranded | Ø 4.25 Max         |
|         | 612  | Though Hole Mount | 16 AWG<br>Solid or Stranded | Ø 3.50 Max         |
|         | 622  | Though Hole Mount | 18 AWG<br>Solid or Stranded | Ø 3.50 Max         |



| Code | Insulator Color       | Cap Type     | Description                 |
|------|-----------------------|--------------|-----------------------------|
| 00   | Black - Special Order | Through Wire | Any Position Along Wire     |
| 09   | Black - Special Order | Wire Stop    | End of Wire - Includes Stop |
| 10   | White - Standard      | Through Wire | Any Position Along Wire     |
| 19   | White - Standard      | Wire Stop    | End of Wire - Includes Stop |



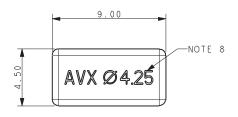


# **CAPPED THRU HOLE 12-18 AWG: 00-9177**



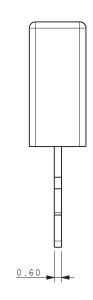


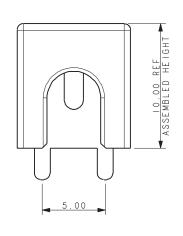
#### 12 - 18 AWG 1 WAY IDC CONNECTOR WIRE THROUGH CAP



#### NOTES:

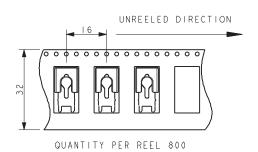
- 1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION, WIRE THROUGH CAP, CAN BE ASSEMBLED AT ANY POSITION ALONG A WIRE.
- 2. CONTACT MATERIAL: PHOSPHOR BRONZE. INSULATION MATERIAL: HIGH TEMP NYLON 46, UL94 V-0, COLOR REFER TO PAGE 68.
- 3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 12 AND 18 AWG STRANDED WIRE.
- 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**

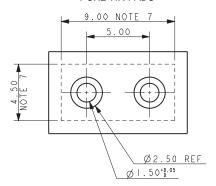




| Code | Accepted Wire Gauge      | Α    | Wire       | В    |
|------|--------------------------|------|------------|------|
|      |                          |      | Insulation |      |
| 691  | 12 AWG Solid or Stranded | 1.50 | Ø 4.25 Max | 4.25 |
| 601  | 14 AWG Solid or Stranded | 1.10 | Ø 4.25 Max | 4.25 |
| 612  | 16 AWG Solid or Stranded | 0.82 | Ø 3.50 Max | 3.50 |
| 622  | 18 AWG Solid or Stranded | 0.72 | Ø 3.50 Max | 3.50 |

#### **SMT PCB LAYOUT**

**PURE TIN PADS** 

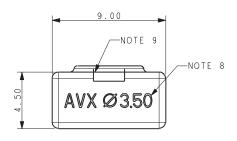


# **CAPPED THRU HOLE 12-18 AWG: 00-9177**

# 1 Position - Wire Stop

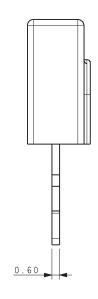


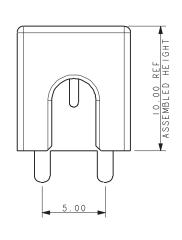
#### 12 - 18 AWG 1 WAY IDC CONNECTOR WIRE STOP CAP



# ′B ′ 25 TYP

- 1. CONNECTOR FOR IDC WIRE TO BORAD 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.

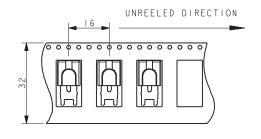




#### **PACKING DETAILS**



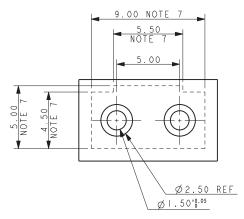
330mm DIAMETER REEL



| Code | Accepted Wire Gauge      | A    | Wire<br>Insulation | В    |
|------|--------------------------|------|--------------------|------|
| 691  | 12 AWG Solid or Stranded | 1.50 | Ø 4.25 Max         | 4.25 |
| 601  | 14 AWG Solid or Stranded | 1.10 | Ø 4.25 Max         | 4.25 |
| 612  | 16 AWG Solid or Stranded | 0.82 | Ø 3.50 Max         | 3.50 |
| 622  | 18 AWG Solid or Stranded | 0.72 | Ø 3.50 Max         | 3.50 |

#### **SMT PCB LAYOUT**

**PURE TIN PADS** 



# SINGLE THRU HOLE IDC CONTACT 12-18 AWG: 9177-600

#### **General Information**





KYOCERA AVX developed the initial SMT discrete wire IDC connector 5 years ago for 26-28AWG 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
- 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

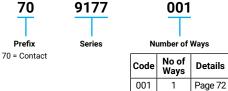
#### **ENVIRONMENTAL**

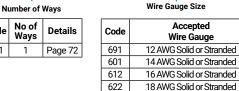
Operating Temperature: -40°C to +125°C

#### **MECHANICAL**

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

#### **HOW TO ORDER - CONTACT OPTIONS**

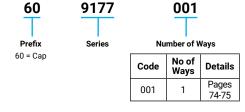


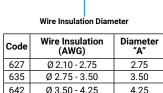






#### **HOW TO ORDER - CAP OPTIONS**

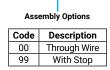




6XX

6XX





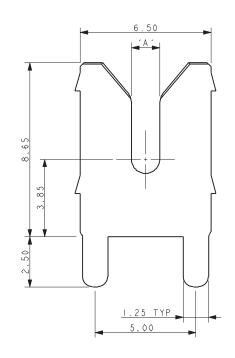
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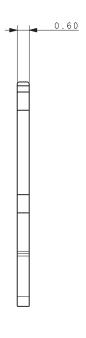
# SINGLE THRU HOLE IDC CONTACT 12-18 AWG: 9177-600

**Contact Details** 

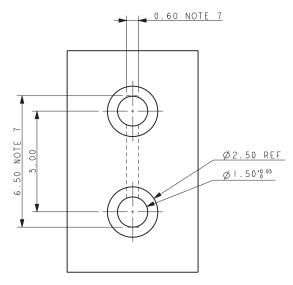


#### 70-9177-001-6XX-006 **CONTACT DETAILS**





#### **PCB LAYOUT FOR CONTACT**



| Code | Accepted Wire Gauge      | Α    |
|------|--------------------------|------|
| 691  | 12 AWG Solid or Stranded | 1.50 |
| 601  | 14 AWG Solid or Stranded | 1.10 |
| 612  | 16 AWG Solid or Stranded | 0.82 |
| 622  | 18 AWG Solid or Stranded | 0.72 |

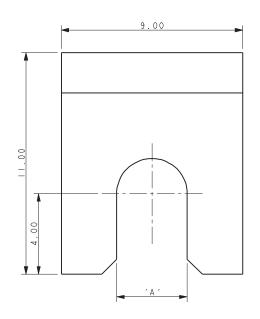
- 1. IDC CONTACT OT ACCEPT WIRES FROM 12 AWG TO 18 AWG.
- 2. MATERIAL: PHOSPHOR BRONZE.
- 3. PLATING PURE TIN OVER NICKEL.
- 4. ALL DIMENSIONS ±0.20 UNLESS SPECIFIED.
- 5. PACKING IN BAGS, 800 PIECES PER BAG.
- 6. PRODUCT SPECIFICATION REFER TO 201-01-141.
- 7. OUTLINE OF CONTACT SEE PAGE 71 FOR ADDITIONAL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

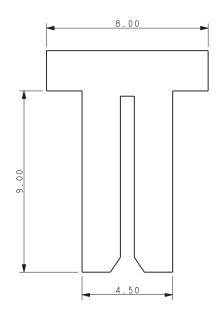




#### **ASSEMBLY TOOLING**

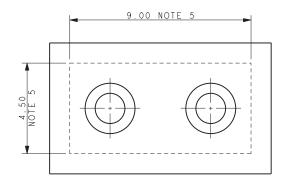
| Part Number         | Wire Insulation | Α    |
|---------------------|-----------------|------|
| 06-9177-7021-01-000 | Ø 3.50 - 4.25   | 4.25 |
| 06-9177-7021-02-000 | Ø 3.50 - 4.50   | 3.50 |
| 06-9177-7021-03-000 | Ø 3.50 - 2.75   | 275  |





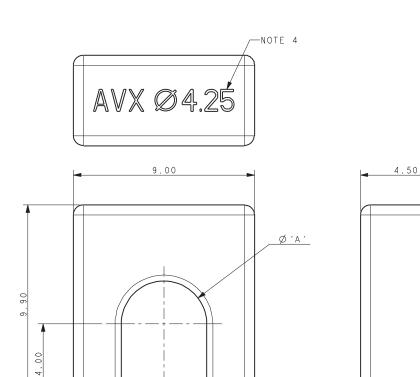
- 1. WIRE INSERTION TOOL 06-9177-7021-0X-000, FULL PART NUMBER REFER TO TABLE.
- 2. TOOL PART NUMBER DEPENDENT ON WIRE INSULATION DIAMETER NOT WIRE GAUGE OR CONTACT NUMBER.
- 3. ASSEMBLY DETAILS REFER TO APPLICATION NOTES 201-01-142
- 4. MATERIAL: TOOL STEEL.
- 5. APACE REQUIRED ON PCB FOR TOO. NO COMPONENTS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

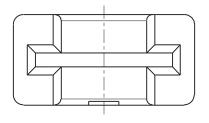
#### **PCB CLEARANCE AREA FOR TOOL**





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





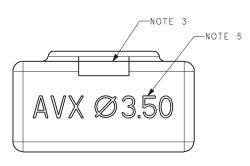
| Code<br>page 71 | Diameter<br>A | Text<br>Note 4 |
|-----------------|---------------|----------------|
| 627             | 2.75          | 1.50           |
| 635             | 3.50          | 1.10           |
| 642             | 4.25          | 0.82           |

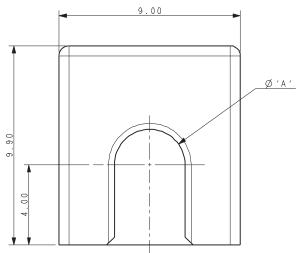
#### NOTES:

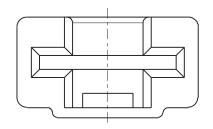
- 1. CAP FOR IDC WIRE TO BOARD CONNECTION, 1 WAY WITH THROUGH WIRE.
- 2. WIRE THROUGH CAP FOR ASSEMBLY AT ANY POSITION ON A WIRE.
- 3. CAP MATERIAL: GLASS FILLED NYLON 46, UL94 V-0. COLOR SEE PAGE 71.
- 4. CAP DESIGNED TO ACCOMMODATE WIRE INSULTATION. DIAMETERS 2.10MM TO 2.75MM, 2.75MM TO 3.50MM AND 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.

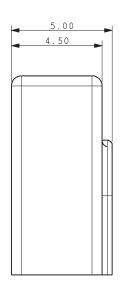


#### 60-9177-001-6XX-X99 1 WAY WIRE STOP **CAP DETAILS**









| Code<br>page 71 | Diameter<br>A | Text<br>Note 4 |
|-----------------|---------------|----------------|
| 627             | 2.75          | 2.75           |
| 635             | 3.50          | 3.50           |
| 642             | 4.25          | 4.25           |

#### NOTES:

- 1. CCAP 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 INSULTATION. 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.

# **POKE-HOME: HORIZONTAL**

26 AWG: 00-9276

#### **General Information**





The new 9276 series connector provides a guick 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 meets 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. KYOCERA 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

0

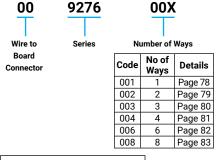
Horizontal

Mountin

#### **MECHANICAL**

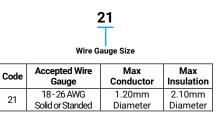
- Insulator Material: Glass-Filled Nylon 46; UL94V0
- Contact Material: Beryllium Copper / Phosphor Bronze
- Plating: Tin over Nickel
- · Replaceability: 5 Cycles

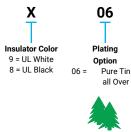
#### **HOW TO ORDER**



Thin Blade Removal Tool Part Number 06-9276-7001-01-000

Certification: UL File #E90723







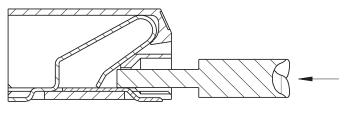
# Wire Assembly/Wire Extraction

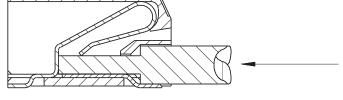


#### **WIRE ASSEMBLY** FOR FURTHER DETAILS REFER TO APPLICATION NOTES 201-01-127



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.

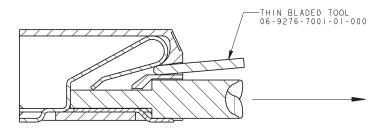




PUSH WIRE INTO HOLE IN FRONT OF CONNECTOR DO NOT BEND CONNECTOR

CONTINUED TO PUSH WIRE UNTIL STOP IS REACHED.

#### **WIRE EXTRACTION**



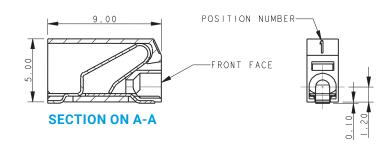
PUSH BLADE (NOT SHARP) INTO SLOT ABOVE WIRE. WHEN WIRE IS FREE, PULL TO EXTRACT.

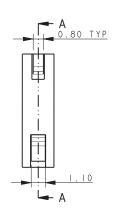
#### 1 Position

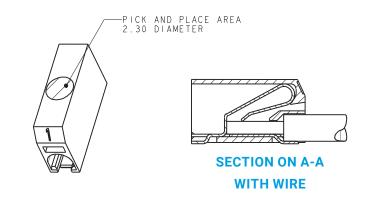


#### 1 WAY WIRE TO BOARD CONNECTOR





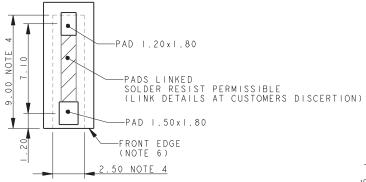


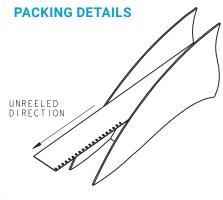


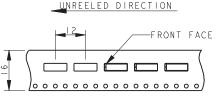
#### NOTES:

- 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



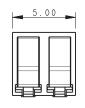


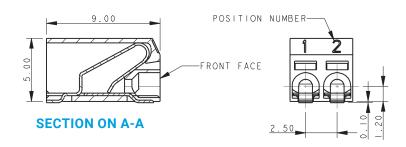


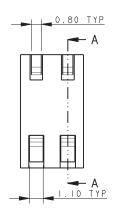
## 2 Position

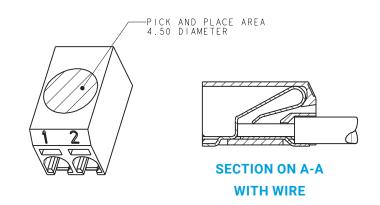


#### 2 WAY WIRE TO BOARD CONNECTOR





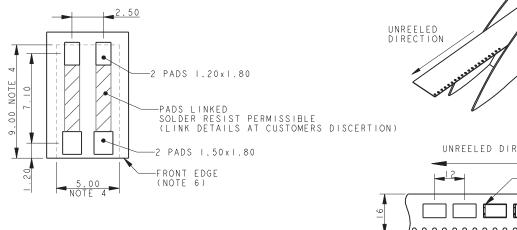


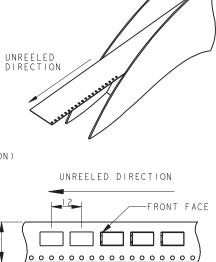


#### NOTES:

- 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**



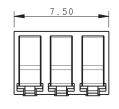


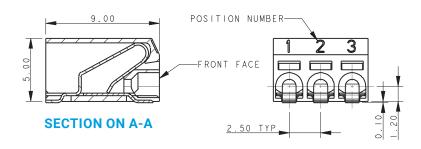
**PACKING DETAILS** 

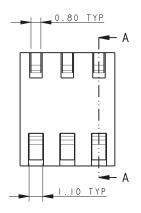
#### 3 Position

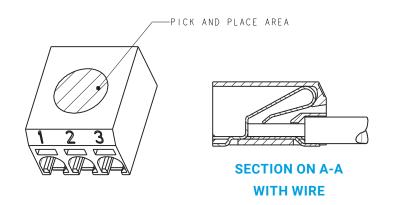


#### 3 WAY WIRE TO BOARD CONNECTOR







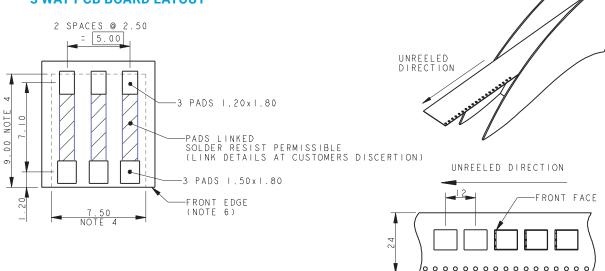


**PACKING DETAILS** 

#### 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.

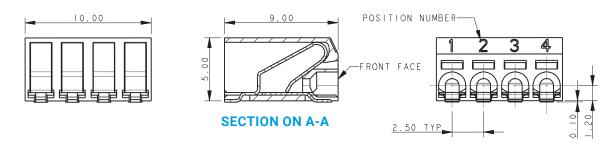
#### **3 WAY PCB BOARD LAYOUT**

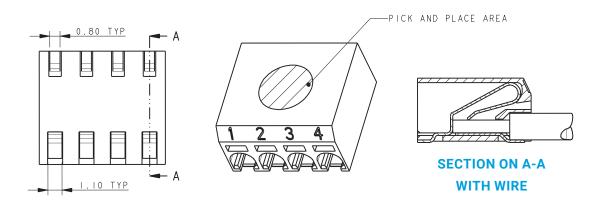


#### 4 Position



#### 4 WAY WIRE TO BOARD CONNECTOR

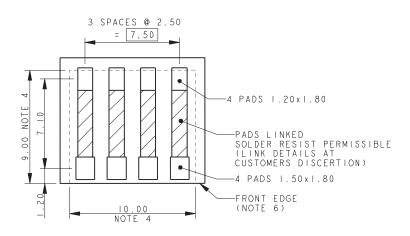


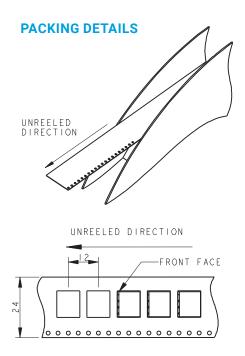


#### NOTES:

- 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.
- 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**



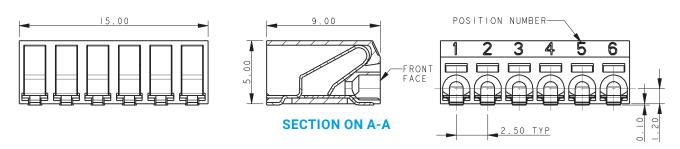


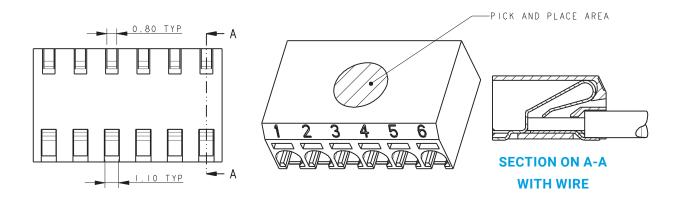


#### **6 Position**



#### **6 WAY WIRE TO BOARD CONNECTOR**

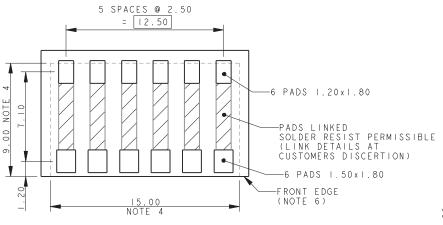


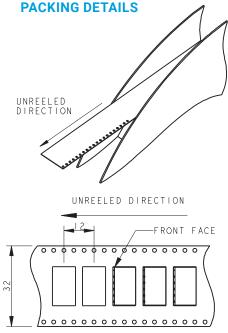


#### NOTES:

- 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**





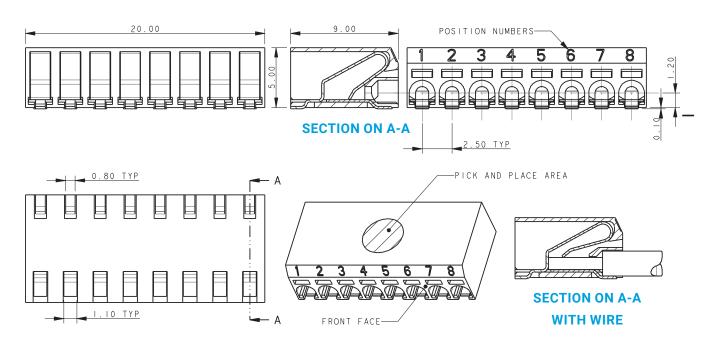


KYDER3 The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.

#### **8 Position**



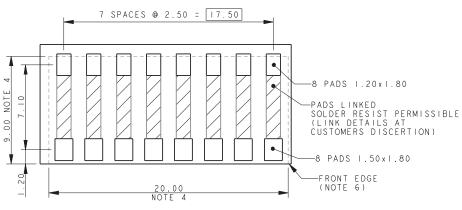
#### 8 WAY WIRE TO BOARD CONNECTOR

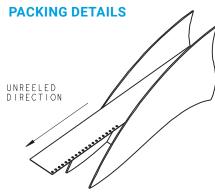


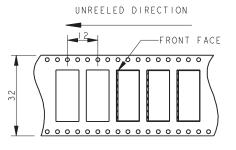
#### NOTES:

- 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**







12-28 AWG: 70-9296

#### **General Information**





The widespread market adaptation of the KYOCERA 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

#### **ELECTRICAL**

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

#### **ENVIRONMENTAL**

· Operating Temperature: -40°C to +125°C

#### **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 10A (12AWG)
- 2.5mm w/o wire stop allows for variable PCB mating tolerances in linear BTB applications

#### **MECHANICAL**

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

#### **HOW TO ORDER**





| Code | Contact Size          | Wire Gauge        | Max<br>Insulation | UL<br>Approved<br>E90723 |
|------|-----------------------|-------------------|-------------------|--------------------------|
| 017  | 1.7mm Contact         | 22-26 AWG         | 1.3mm Ø           | Yes                      |
|      |                       | Solid or Stranded | (See page 85)     |                          |
| 002  | 2mm Contact           | 22-28 AWG         | 1.5mm Ø           | Yes                      |
| 002  | 02   Zillill Colltact | Solid or Stranded | (See page 85)     | 165                      |
| 025  | 2.5mm Contact         | 18-26 AWG         | Max 2mm Ø         | Yes                      |
| 025  | 2.5mm Contact         | Solid or Standed  | (See page 85)     | res                      |
| 003  | 3mm Contact           | 18-26 AWG         | 2 Emarro Ø        | Vaa                      |
| 003  | 3mm Contact           | Solid or Stranded | 2.5mm Ø           | Yes                      |
| 004  | Amama Camtaat         | 12-20 AWG         |                   | Yes                      |
| 004  | 4mm Contact           | Solid or Stranded | 3.4mm Ø           |                          |



| Code | Wire Stop Variations | Plating      |
|------|----------------------|--------------|
| 006  | With wire stop       | Pure tin all |
| 016* | Without wire stop    | over         |

\*2mm, 2.5mm, and 3mm contact only



#### **CURRENT RATING**

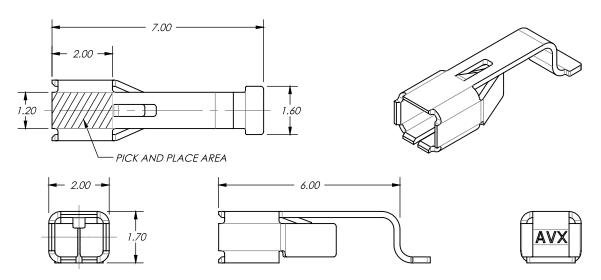
| Size  | Part Number     | 12AWG | 14AWG | 16AWG | 18AWG | 20AWG | 22AWG | 24AWG | 26AWG | 28AWG |
|-------|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 4mm   | 709296001004006 | 20A   | 16A   | 14A   | 12A   | 10A   |       |       |       |       |
| 3mm   | 7092960010030x6 |       |       |       | 15A   | 14A   | 10A   | 9A    | 7A    |       |
| 2.5mm | 7092960010250x6 |       |       |       | 14A   | 12A   | 11A   | 9A    | 7A    |       |
| 2mm   | 709296001002006 |       |       |       |       |       | 11A   | 9A    | 7A    | 6A    |
| 1.7mm | 709296001017006 |       |       |       |       |       | 11A   | 9A    | 7A    | 6A    |

12-28 AWG: 70-9296

#### 1.7mm



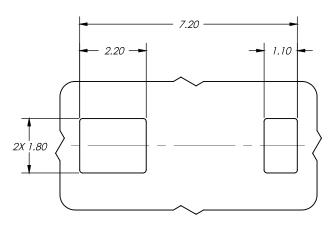
#### 70-9296-001-017-006 1.7MM POKE HOME CONTACT



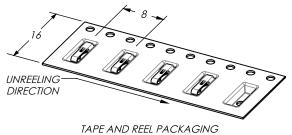
#### NOTES:

- 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, 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.

#### SUGGESTED PCB LAYOUT



#### **PACKING DETAILS**



**QUANTITY PER REEL: 4,000** 

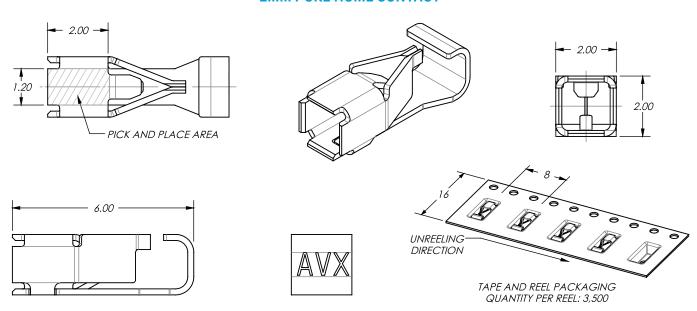


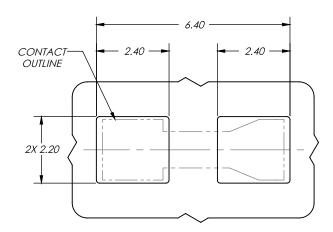
12-28 AWG: 70-9296

2<sub>m</sub>m



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



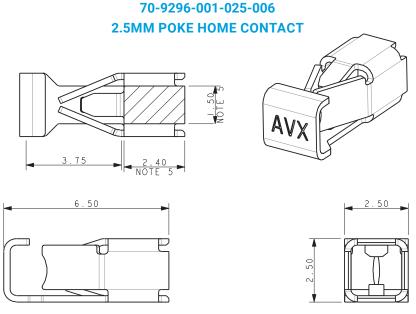


090721

12-28 AWG: 70-9296

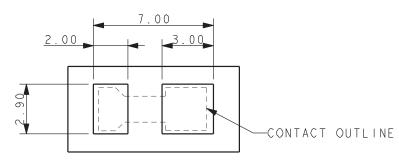
#### 2.5mm

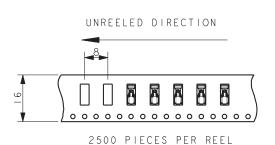


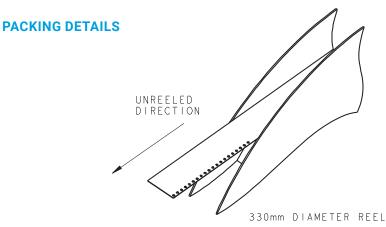


#### NOTES:

- 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.









12-28 AWG: 70-9296

2.5mm - No Stop

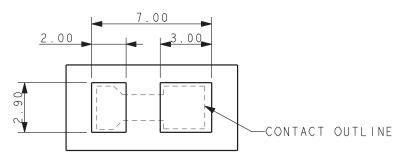


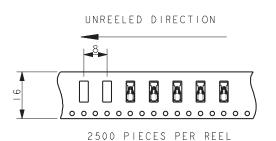
#### 70-9296-001-025-016 2.5MM POKE HOME CONTACT - NO STOP

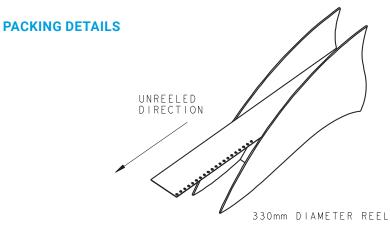


#### NOTES:

- 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. UL REFERENCE 90723.
- 7. GENERAL TOLERANCE ±0.10.



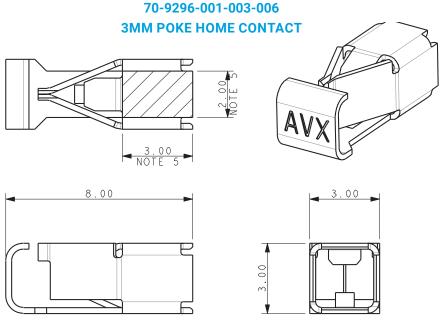




12-28 AWG: 70-9296

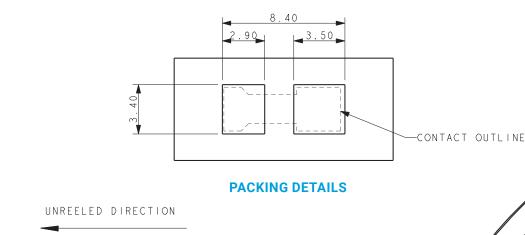
3<sub>mm</sub>

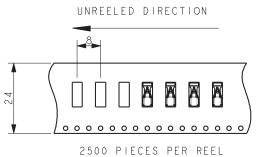


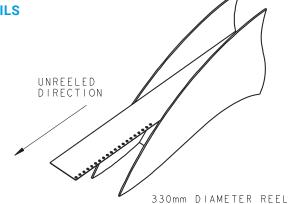


#### NOTES:

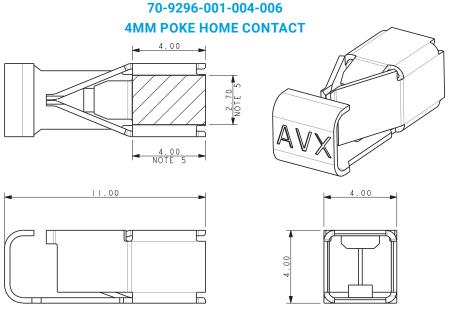
- 1. FOR FURTHER INFORMATION REFER TO ELCO SPECIFICATION 201-01-143 AND APPLICATION NOTES 201-01-150.
- 2. MATERIAL: TIN PLATED PHOSPHOR BRONZE.
- 3. PACKING IN TAPE AND REEL, 2500 PIECES PER REEL.
- 4. FOR WIRE TRIM DETAILS REFER TO PAGE 91.
- 5. AREA AVAILABLE FOR PICK AND PLACE.
- 6. UL REFERENCE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





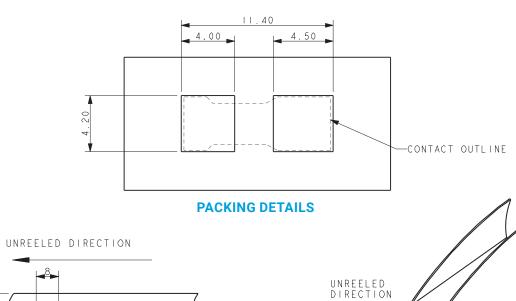


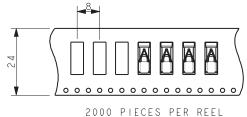


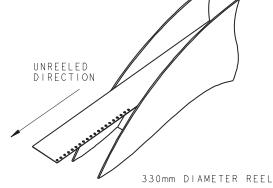


#### NOTES:

- 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.









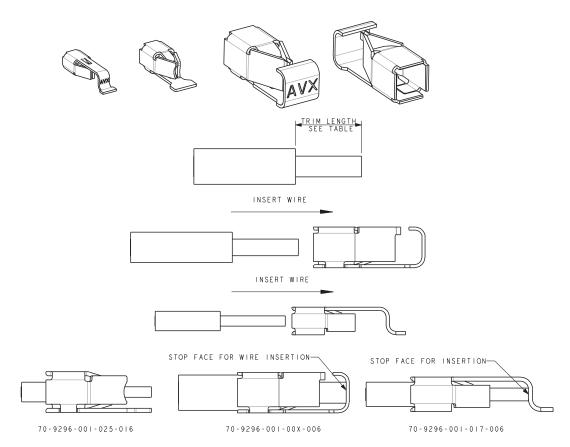
12-28 AWG: 70-9296

# **Connector Assembly / Contact Opening Tool**



#### **CONNECTOR ASSEMBLY**

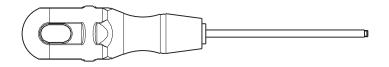
#### FOR FULL DETAILS REFER TO APPLICATION NOTES 201-01-150



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

<sup>\*</sup> 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.



18-26 AWG: 00-9296

#### **General Information**





KYOCERA 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-theshelf solution that will satisfy a high percentage of the projects configuration, performance and cost goals.

The newest addition to KYOCERA 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 standalone 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
- 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

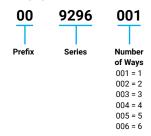
#### **ENVIRONMENTAL**

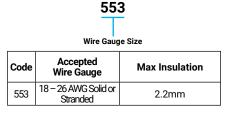
Operating Temperature: -40°C to +125°C

#### **MECHANICAL**

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

#### **HOW TO ORDER**











One Way Only (Special Order) 2 = UL Brown 3 = UL Blue 4 = UL Yellow 5 = UL Red 6 = UL Green

7 = UL Orange

#### **CURRENT RATING**

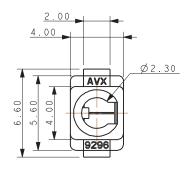
| 18AWG | 20AWG | 22AWG | 24AWG | 26AWG | - |
|-------|-------|-------|-------|-------|---|
| IOAWG | ZUAWG | ZZAWG | Z4AWG | ZUAWU |   |
| 7A    | 6A    | 5A    | 4A    | 3A    |   |

Certification: UL File #E90723

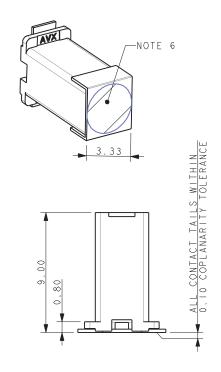
#### 1 Position



#### 9296 TOP MOUNT POKE HOME CONNECTOR 1 WAY





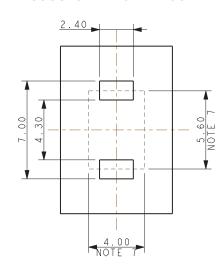




#### NOTES:

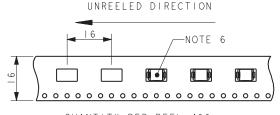
- 1. TOP MOUNT 1 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.
- 2. SUITABLE FOR WIRES 18AWG TO 26AWG. MAXIMUM INSULATION 2.20MM DIAMETER.
- 3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-0. COLOR REFER TO PAGE 92.
- 4. CONTACT: 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**





QUANTITY PER REEL 400

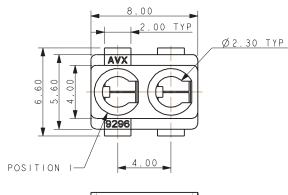


#### 2 Position

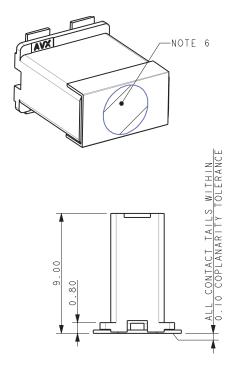


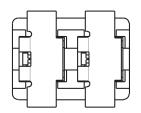
# 9296 TOP MOUNT POKE HOME CONNECTOR

#### **2 WAY**





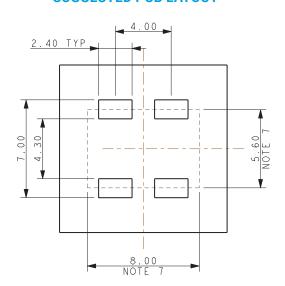


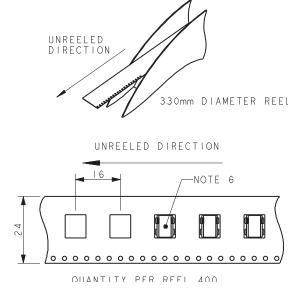


#### NOTES:

- 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.
- CONNECTOR OUTLINE.
- 8. GENERAL TOLERANCE ±0.20.
- 9. UL REFERENCE E90723.

#### **PACKING DETAILS**



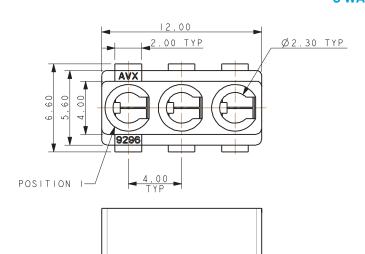


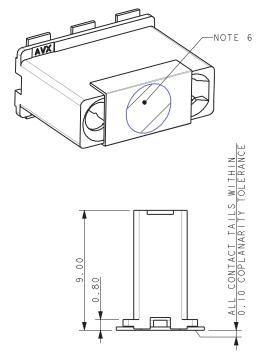
18-26 AWG: 00-9296

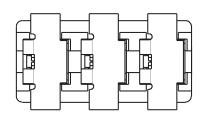
3 Position



#### 9296 TOP MOUNT POKE HOME CONNECTOR 3 WAY



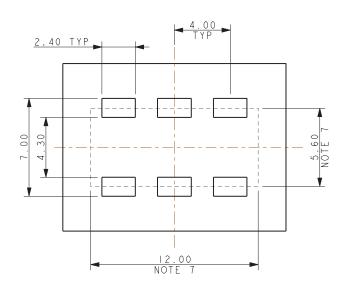




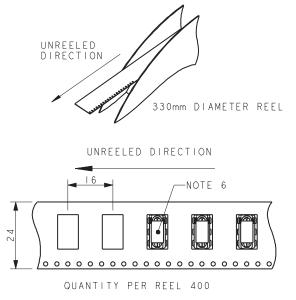
#### NOTES:

- 1. TOP MOUNT 3 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.
- 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.
- CONNECTOR OUTLINE.
- 8. GENERAL TOLERANCE ±0.20.
- 9. UL REFERENCE E90723.

#### **SUGGESTED PCB LAYOUT**



# **PACKING DETAILS**



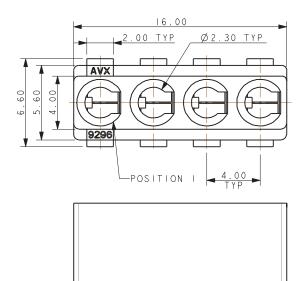
18-26 AWG: 00-9296

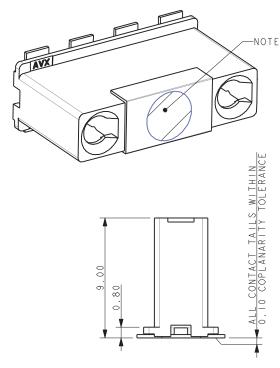
#### 4 Position



#### 9296 TOP MOUNT POKE HOME CONNECTOR

#### 4 WAY

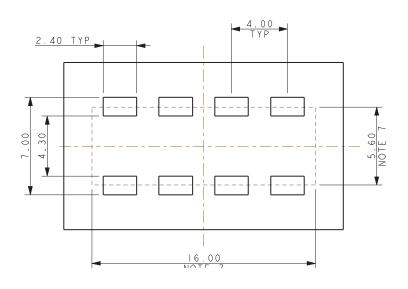


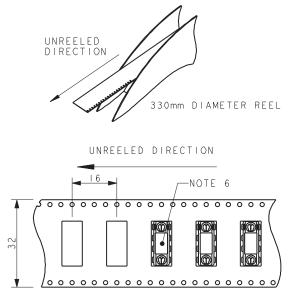


#### NOTES:

- 1. TOP MOUNT 4 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.
- 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.
- 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**





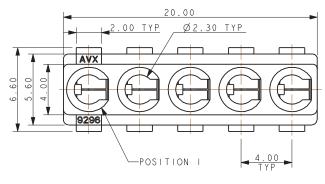
18-26 AWG: 00-9296

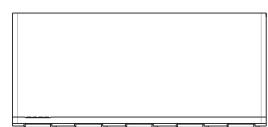
**5 Position** 

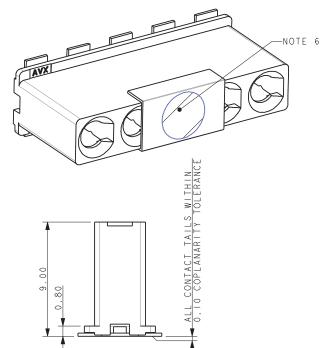


# 9296 TOP MOUNT POKE HOME CONNECTOR

5 WAY







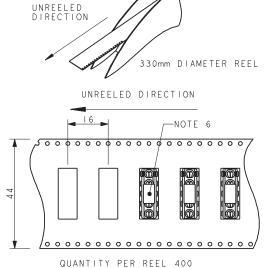
#### NOTES:

- 1. TOP MOUNT 5 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-151 AND APPLICATION NOTES 201-01-152.
- 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.
- CONTACT: TIN PLATE COPPER ALLOY.
- 5. PACKING IN TAPE AND REEL. QTY PER REEL 400, 330MM REEL.
- CAPTON TAPE TO AID PICK AND PLACE, 4MM DIAMETER MAX AVAILABLE.
- 7. CONNECTOR OUTLINE.
- GENERAL TOLERANCE ±0.20.
- 9. UL REFERENCE E90723.

#### **SUGGESTED PCB LAYOUT**

# 2.40 TYP 7.00 30

# **PACKING DETAILS**

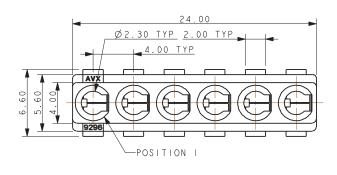


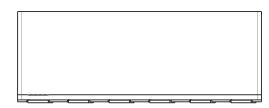
**6 Position** 

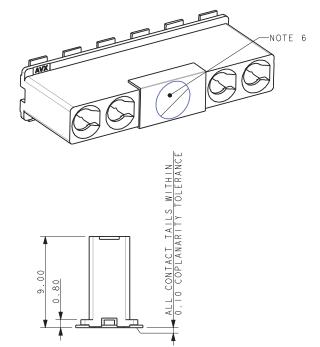


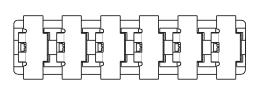
# 9296 TOP MOUNT POKE HOME CONNECTOR

6 WAY





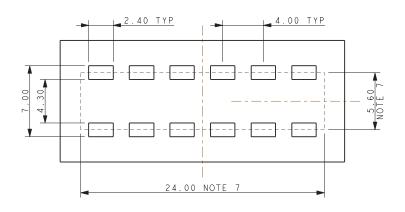




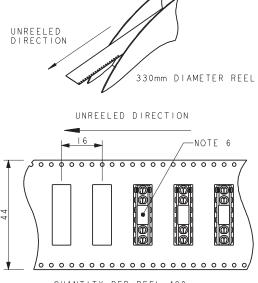
#### NOTES:

- 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**



QUANTITY PER REEL 400

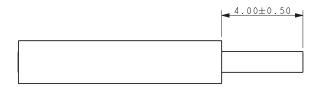


18-26 AWG: 00-9296

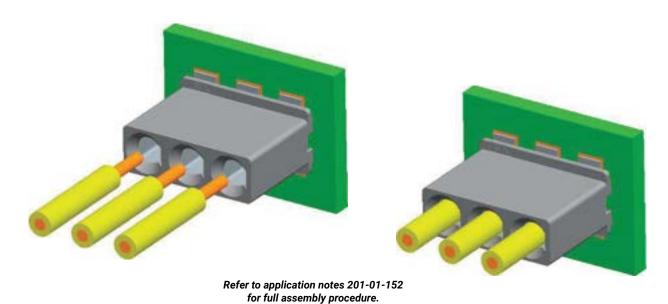
# **Connector Assembly / Contact Opening Tool**



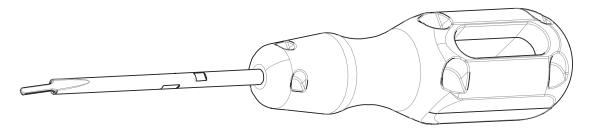
#### 9296 TOP MOUNT POKE HOME CONNECTOR **ASSEMBLY**



WIRE STRIP LENGTH



# 9296 TOP MOUNT POKE HOME CONNECTOR **WIRE EXTRACTION TOOL**



06-9296-7003-01-000

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

# POKE-HOME: INVERTED THRU BOARD

18-26 AWG: 00-9296

#### **General Information**





KYOCERA 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-theshelf solution that will satisfy a high percentage of the projects configuration, performance and

The newest addition to KYOCERA 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 standalone 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
- 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: -40°C to +125°C

#### **MECHANICAL**

- · Contact Material: Copper Alloy
- Contact Plating: Tin over Nickel

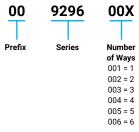
06

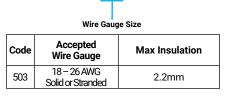
Options

06 = Tin Plated

· Durability: 5 Cycles

#### **HOW TO ORDER**





503







#### **CURRENT RATING**

104

| 18AWG | 20AWG | 22AWG | 24AWG | 26AWG |
|-------|-------|-------|-------|-------|
| 7A    | 6A    | 5A    | 4A    | 3A    |

Certification: UL File #E90723

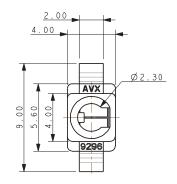
# **POKE-HOME: INVERTED THRU BOARD**

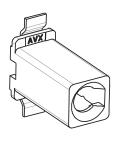
18-26 AWG: 00-9296

# 1 Position

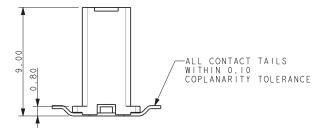


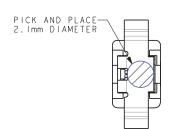
# 9296 THROUGH BOARD MOUNT POKE HOME CONNECTOR 1 WAY







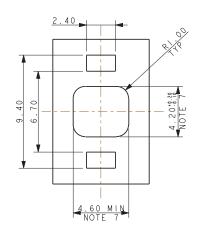


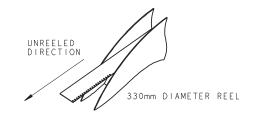


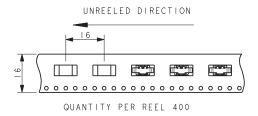
### NOTES:

- 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**





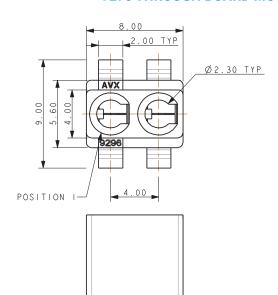


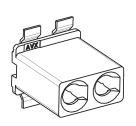
18-26 AWG: 00-9296

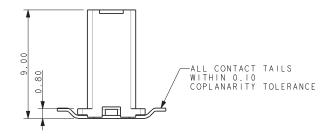
# 2 Position

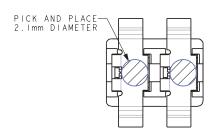


# 9296 THROUGH BOARD MOUNT POKE HOME CONNECTOR 2 WAY





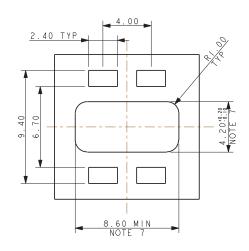


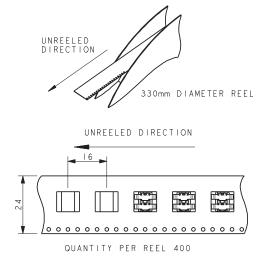


### NOTES:

- 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.
- 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**





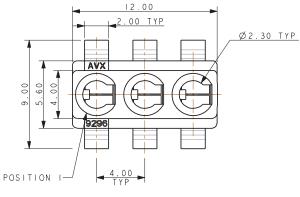
**POKE-HOME: INVERTED THRU BOARD** 

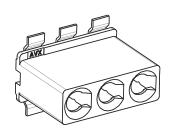
18-26 AWG: 00-9296

# 3 Position

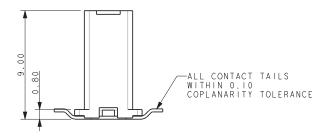


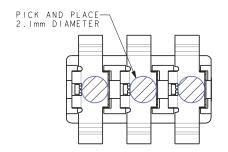
### 9296 THROUGH BOARD MOUNT POKE HOME CONNECTOR 3 WAY









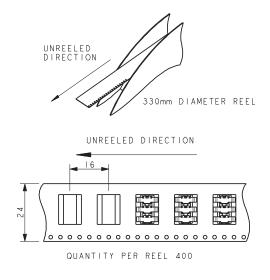


### NOTES:

- 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

# 2.40 TYP 40 7 0 12.60 MIN NOTE 7

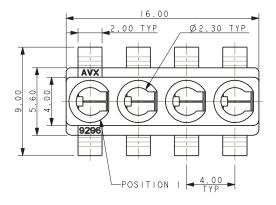


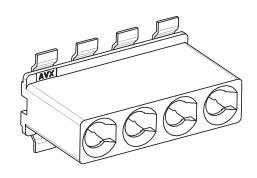
18-26 AWG: 00-9296

# 4 Position

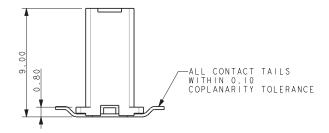


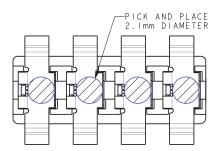
# 9296 THROUGH BOARD MOUNT POKE HOME CONNECTOR 4 WAY







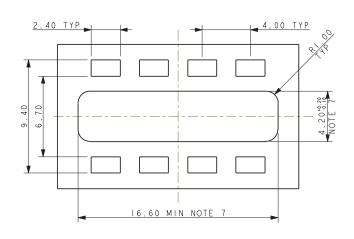


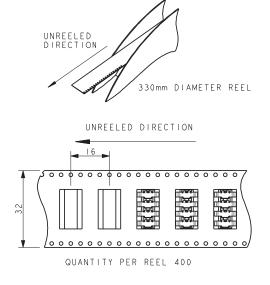


### NOTES:

- 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.

# **PACKING DETAILS**





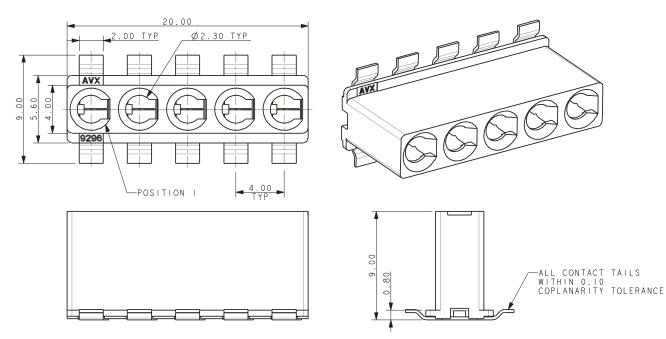
**POKE-HOME: INVERTED THRU BOARD** 

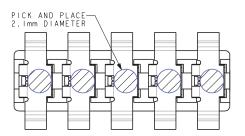
18-26 AWG: 00-9296

**5 Position** 



# 9296 THROUGH BOARD MOUNT POKE HOME CONNECTOR 5 WAY

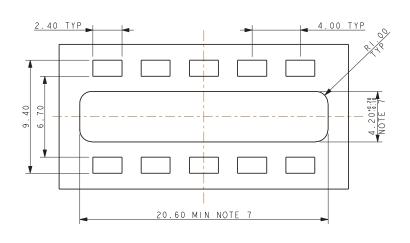


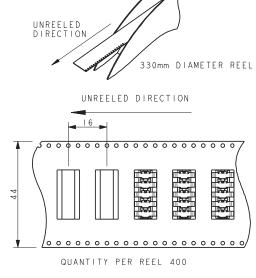


### NOTES:

- 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.

# **PACKING DETAILS**





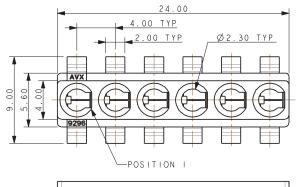
18-26 AWG: 00-9296

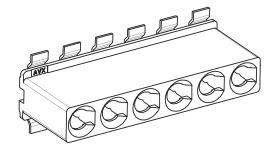
PICK AND PLACE 2.Imm DIAMETER

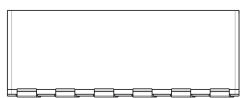
**6 Position** 

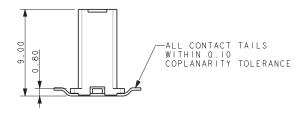


# 9296 THROUGH BOARD MOUNT POKE HOME CONNECTOR 6 WAY





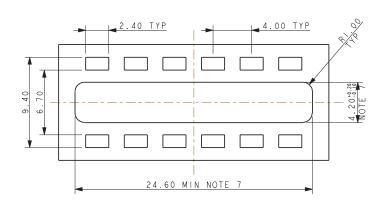




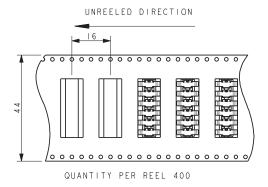
# NOTES:

- 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.
- CONTACT: TIN PLATED COPPER ALLOY.
- 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**







18-26 AWG: 00-9296

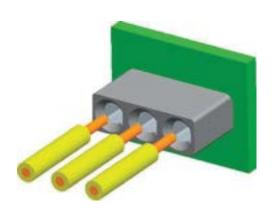
**Wire Strip Length** 



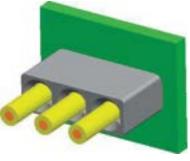
# 9296 THROUGH BOARD MOUNT POKE HOME CONNECTOR ASSEMBLY

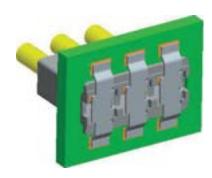


WIRE STRIP LENGTH

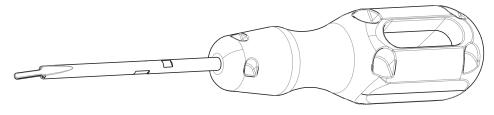


Refer to application notes 201-01-152 for full assembly procedure.





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.

# SINGLE VERTICAL TOP ENTRY 18 AWG: 58-9296

# **General Information**





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 +125°C

# **MECHANICAL**

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

# **HOW TO ORDER**

589296001000014

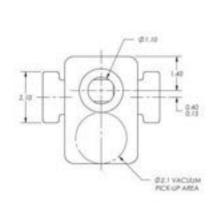


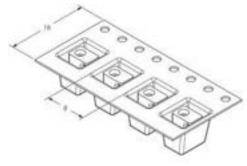
# SINGLE VERTICAL TOP ENTRY 18 AWG: 58-9296

# **Single Vertical Top Entry**

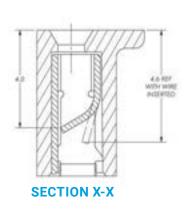


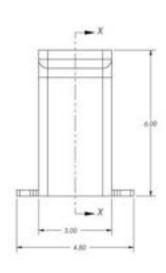


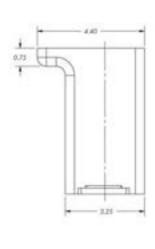


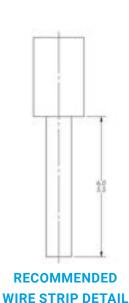


**PARTS IN POCKET TAPE SCALE 2.5:1** 









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.

**RECOMMENDED PCB LAYOUT** 

# STANDARD VERTICAL TOP ENTRY 18-22AWG

# 00-9296





### GENERAL DESCRIPTION

Vertical poke-home connectors were introduced into the market several years ago to provide a reliable, yet cost effective discrete wire-to-board termination in perpendicular applications. These were designed to bridge the gap between inconsistent and challenging hand soldering of wires and costly 2-piece connector systems in low pin count applications

This latest connector was developed specifically to support 18 to 22AWG solid or stranded wire terminations 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 over previous versions

### **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

# **ELECTRICAL**

- Current Rating: See Below
- · Voltage Rating: 600 VAC

### **ENVIRONMENTAL**

· Operating Temperature: -40°C to +130°C

# **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
- Integral molded in flange provides a generous vacuum pick-up point for automated SMT placement
- UL approved color range to match individual wires for easy and accurate final product assembly

# **MECHANICAL**

- Insulator Material; Glass-Filled Nylon 46: UL94V0
- · Contact Material: Phosphor Bronze
- · Plating: Lead-Free Tin Over Nickel
- · Durability: 3 Cycles

# **HOW TO ORDER**

Prefix Wire to Board Connector

00

9296 001

Series

No. of Ways

603

Description 603 = 18-22AWG Solid or Stranded

Plating 2 = Brown 3 = Blue

Χ

4 = Yellow

5 = Red 6 = Green

7 = Orange 8 = Black

9 = White

06 Plating 006 = Tin Plated



# **CURRENT RATING**

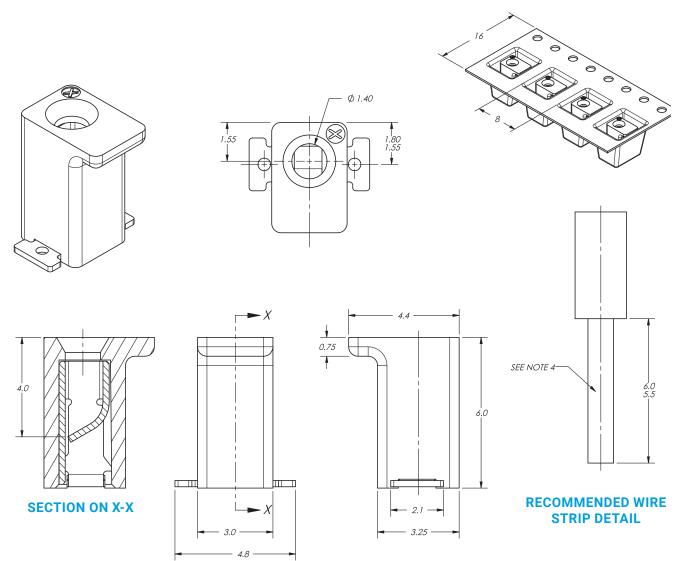
| 18AWG | 20AWG | 22AWG |
|-------|-------|-------|
| 8A    | 7A    | 6A    |

Certification: UL File #F90723

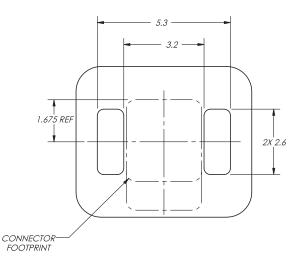
090721







# **RECOMMENDED PCB LAYOUT**



# NOTES:

- 1. HOUSING MATERIAL: GLASS-FILLED, HIGH TEMP. THERMOPLASTIC; UL94V-0; COLOR: SEE PAGE 1.
- 2. CONTACT MATERIAL: HIGH STRENGTH PHOSPHOR BRONZE ALLOY; PRE-PLATED LEAD-FREE TIN OVER NICKEL PLATING.
- 3. PACKAGING: POCKET TAPE ON REELS; 1,250 PARTS PER REEL.
- 4. STRANDED WIRE MUST BE SUFFICIENTLY TWISTED OR TIN DIPPED FOR PROPER INSERTION.

18-24 AWG: 70-9296

# **General Information**





KYOCERA 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**





| Code | Contact Location | Wire Insertion<br>Direction | Recommended For Board Type | Wire Gauges |
|------|------------------|-----------------------------|----------------------------|-------------|
| 103  | Top Side         | Bottom Entry                | FR4                        | 18 – 24 AWG |
| 113  | Through Board    | Top Entry                   | FR4                        | 18 - 24 AWG |
| 123  | Top Side         | Bottom Entry                | Metal Clad                 | 18 - 24 AWG |
| 133  | Through Board    | Top Entry                   | Metal Clad                 | 18 - 24 AWG |
|      |                  |                             |                            |             |





# **CURRENT RATING**

116

| 18AWG | 20AWG | 22AWG | 24AWG |
|-------|-------|-------|-------|
| 15A   | 14A   | 10A   | 9A    |

Certification: UL File #E90723

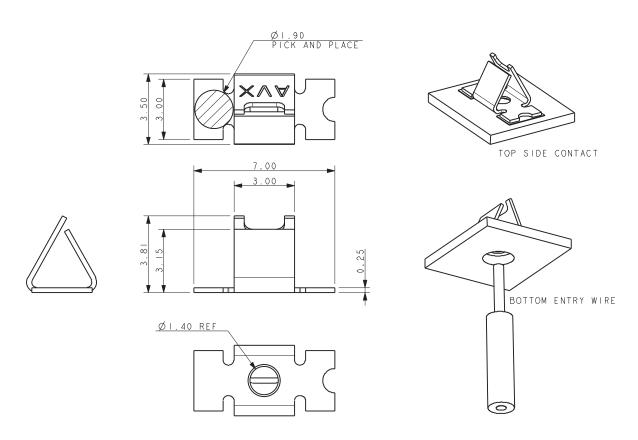
090721

18-24 AWG: 70-9296

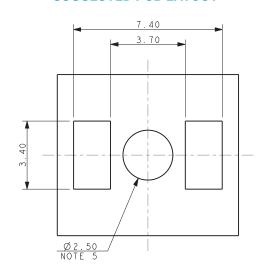
Top Side Contact - Bottom Entry Wire (FR4 Board)



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

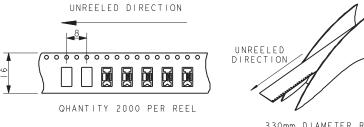


# SUGGESTED PCB LAYOUT



# 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.



330mm DIAMETER REEL



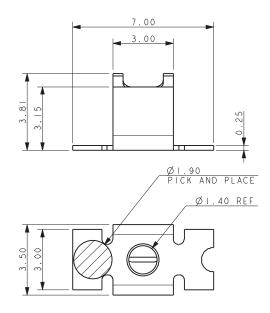
18-24 AWG: 70-9296

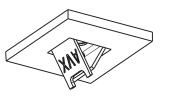
**Through Board Contact - Top Entry Wire (FR4 Board)** 



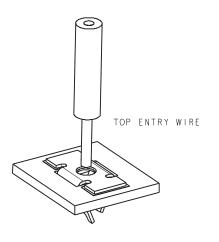
# 70-9296-001-113-006 9296 VERTICAL MOUNT SMT CONTACT THROUGH BOARD CONTACT - TOP ENTRY WIRE (FR4 BOARD)



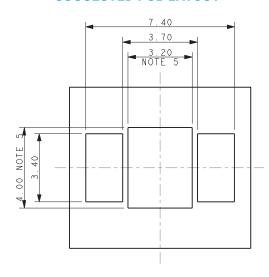




THROUGH BOARD CONTACT

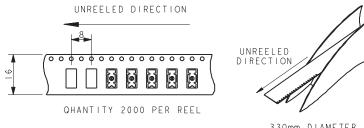


# **SUGGESTED PCB LAYOUT**



# NOTES:

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



330mm DIAMETER REEL

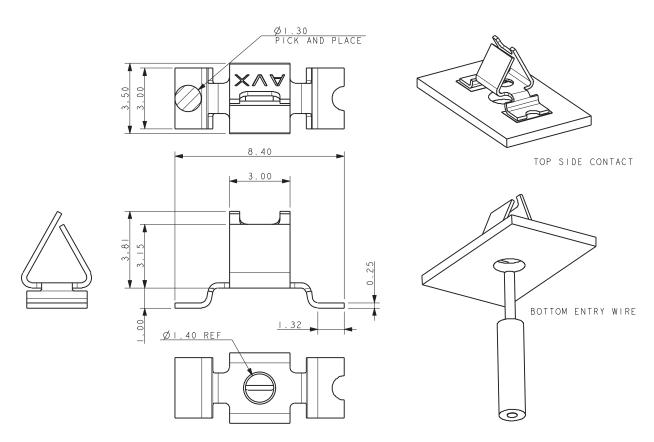


18-24 AWG: 70-9296

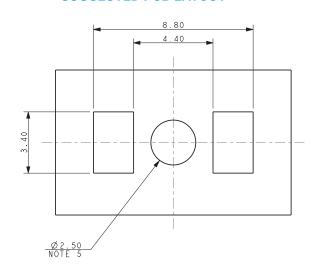
**Top Side Contact - Bottom Entry Wire (Metal Board)** 



# 70-9296-001-123-006 9296 VERTICAL MOUNT SMT CONTACT **TOP SIDE CONTACT - BOTTOM ENTRY WIRE (METAL BOARD)**

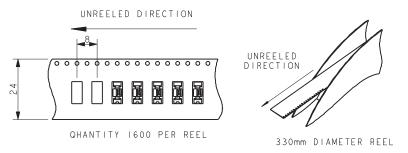


# SUGGESTED PCB LAYOUT



# 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. PACING 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.

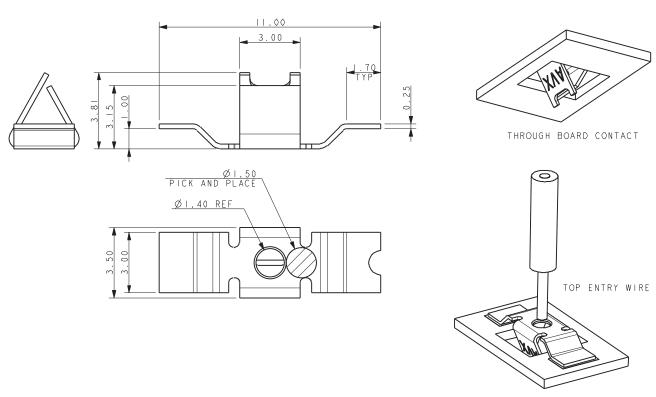


18-24 AWG: 70-9296

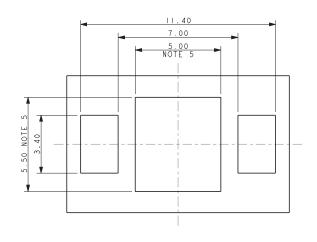
**Through Board Contact - Top Entry Wire (Metal Board)** 



# 70-9296-001-133-006 9296 VERTICAL MOUNT SMT CONTACT THROUGH BOARD CONTACT - TOP ENTRY WIRE (METAL BOARD)

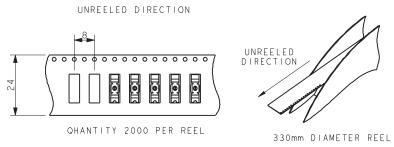


# **SUGGESTED PCB LAYOUT**



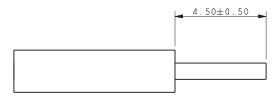
# NOTES:

- 1. CONTACT MOUNTS THROUGH THE BOARD, WIRE INSERTED FROM TOP SIDE OF
- 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.

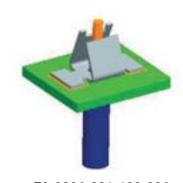




# 9296 VERTIAL MOUNT SMT CONTACT **WIRE TRIM DETAILS**



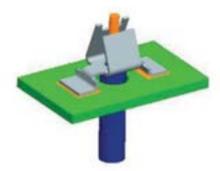
WIRE STRIP LENGTH, ALL STYLES



70-9296-001-103-006



70-9296-001-113-006



70-9296-001-123-006



70-9296-001-133-006

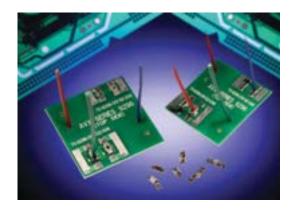
# NOTES:

- 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.

22-26 AWG: 70-9296

# **General Information**





KYOCERA 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
- 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**





Contact Style

| Code | Contact<br>Location | Wire Insertion<br>Direction | Recommended For Board Type | Wire Gauges*    |
|------|---------------------|-----------------------------|----------------------------|-----------------|
| 102  | Top Side            | Bottom Entry                | FR4                        | 22 AWG - 26 AWG |
| 112  | Through Board       | Top Entry                   | FR4                        | 22 AWG - 26 AWG |
| 122  | Top Side            | Bottom Entry                | Metal Based                | 22 AWG - 26 AWG |
| 132  | Through Board       | Top Entry                   | Metal Based                | 22 AWG - 26 AWG |

<sup>006</sup> **Plating Options** 006 = Pure Tin All Over



# **CURRENT RATING**

| 22AWG | 24AWG | 26AWG |
|-------|-------|-------|
| 8A    | 6A    | 5A    |

Certification: UL File #E90723

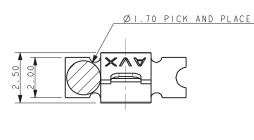
<sup>\* 26</sup> AWG stranded wires may require tinning to aid insertion.

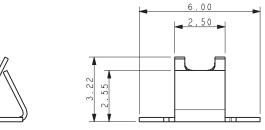
22-26 AWG: 70-9296

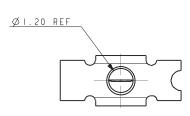
Top Side Contact - Bottom Entry Wire (FR4 Board)

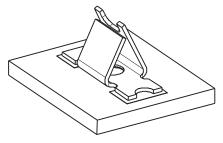


# 70-9296-001-102-006 9296 VERTICAL MOUNT SMT CONTACT **TOP SIDE CONTACT - BOTTOM ENTRY WIRE (FR4 BOARD)**

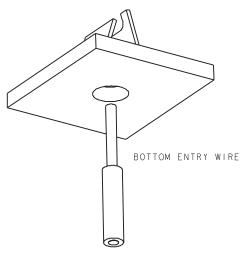




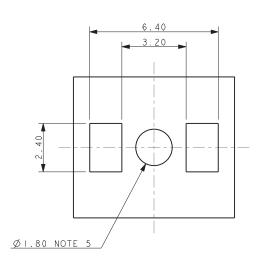






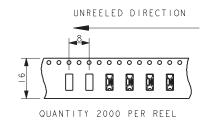


### SUGGESTED PCB LAYOUT



# NOTES:

- 1. CONTACT MOUNTS ON TOP SIDE OF BOARD, WIRE INSERTED FROM UNDERSIDE OF BOARD.
- 2. STYLE RECOMMENDED FOR FR4 BOARDS WHERE 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).



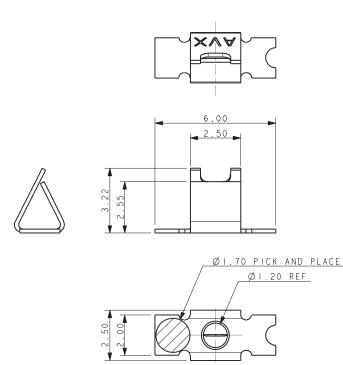


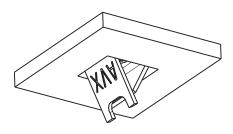
22-26 AWG: 70-9296

**Through Board Contact - Top Entry Wire (FR4 Board)** 

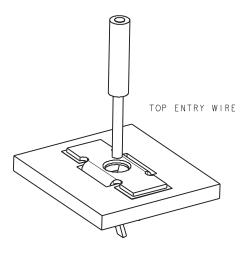


# 70-9296-001-112-006 9296 VERTICAL MOUNT SMT CONTACT THROUGH BOARD CONTACT - TOP ENTRY WIRE (FR4 BOARD)

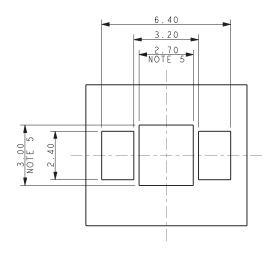




THROUGH BOARD CONTACT

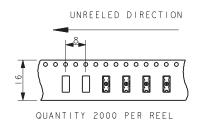


# SUGGESTED PCB LAYOUT



# NOTES:

- 1. CONTACT MOUNTS THROUGH THE BOARD, WIRE INSERTED FROM TOP SIDE OF
- 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).





330mm DIAMETER REEL

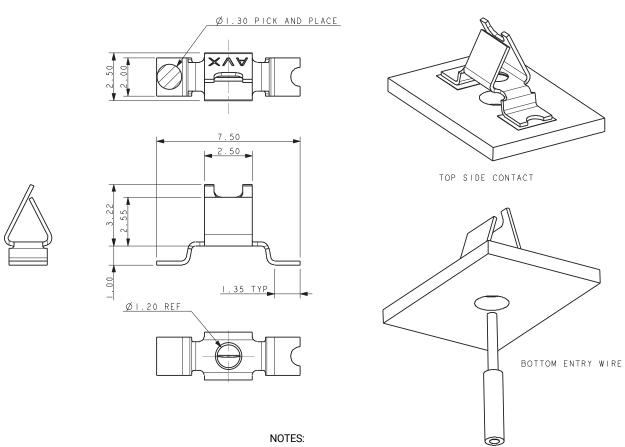


22-26 AWG: 70-9296

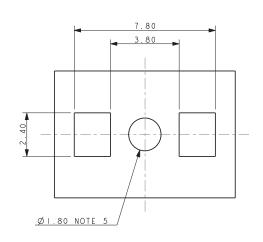
Top Side Contact - Bottom Entry Wire (Metal Board)



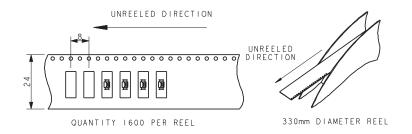
# 70-9296-001-122-006 9296 VERTICAL MOUNT SMT CONTACT **TOP SIDE CONTACT - BOTTOM ENTRY WIRE (METAL BOARD)**



### SUGGESTED PCB LAYOUT



- 1. CONTACT MOUNTS ON TOP SIDE OF BOARD, WIRE INSERTED FROM UNDERSIDE
- 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 201-01-150.
- 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).

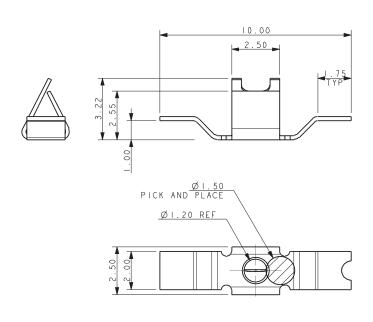


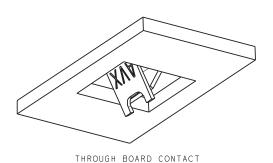
22-26 AWG: 70-9296

**Through Board Contact - Top Entry Wire (Metal Board)** 



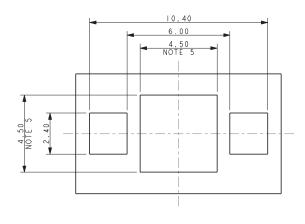
# 70-9296-001-132-006 9296 VERTICAL MOUNT SMT CONTACT THROUGH BOARD CONTACT - TOP ENTRY WIRE (METAL BOARD)





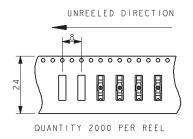
TOP ENTRY WIRE

# **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).





330mm DIAMETER REEL

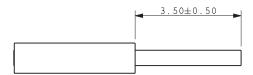


22-26 AWG: 70-9296

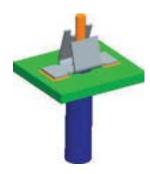
**Wire Trim Details** 



# 9296 VERTIAL MOUNT SMT CONTACT **WIRE TRIM DETAILS**



WIRE STRIP LENGTH, ALL STYLES



70-9296-001-103-006



70-9296-001-113-006



70-9296-001-123-006



70-9296-001-133-006

# NOTES:

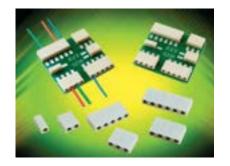
- 1. FOR FULL ASSEMBLY PROCEDURE REFER TO APPLICATION NOTES 201-01-175.
- 2. THE SAME WIRE STRIP LENGTH APPLIES TO ALL STYLES.
- 3. STRANDED WIRES SHOULD BE TWISTED TO PREVENT SINGLE STRANDS BECOMING DETACHED WHEN INSERTED INTO CONTACT.
- 4. SUITABLE FOR SOLID AND STRANDED WIRES 22AWG, 24AWG AND 26AWG. STRANDED WIRES 26AWG MAY REQUIRE TINNING TO AID INSERTION.

# **POKE-HOME: LOW PROFILE HORIZONTAL**

20-26 AWG: 9296-200

# **General Information**





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
- 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
- UL approved
- Halogen free

# **ELECTRICAL**

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

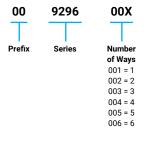
# **ENVIRONMENTAL**

· Operating Temperature: -40°C to +130°C

# **MECHANICAL**

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

# **HOW TO ORDER**



Description 20 = Horizontal SMT Mount Poke Home Connector 21 = Horizontal SMT Mount Poke Home Connector for pass through mating pins

2X

2 Wire Gauge Size 20AWG to 26AWG Max ø 1 60mm

Insulator Color All Sizes 9 = UL White (Standard) 8 = UL Black (Special Order)

X

One Way Only (Special Order) 2 = UL Brown 3 = UL Blue

> 4 = UL Yellow 5 = UL Red 6 = UL Green

7 = UL Orange

X 6 Halogen Free **Plating Options** 0 = No6 = Pure Tin over 1 = Yes Nickel



# **CURRENT RATING**

|   |     | 20AWG | 22AWG | 24AWG | 26AWG |
|---|-----|-------|-------|-------|-------|
| ſ | UL  | 8A    | 7A    | 6A    | 5A    |
| ĺ | cUL | 6A    | 5A    | 3.75A | 3.75A |

Certification: UL File #E90723

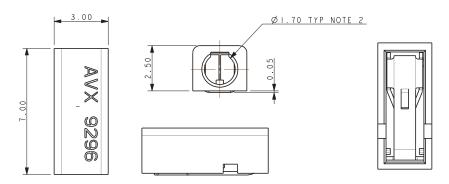
# **POKE-HOME: LOW PROFILE HORIZONTAL**

20-26 AWG: 9296-200

# 1 Position

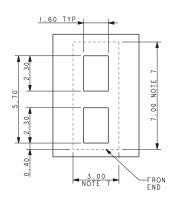


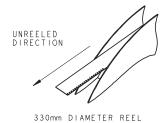
# 9296 HORIZONTAL MOUNT POKE HOME CONNECTOR - 1 WAY

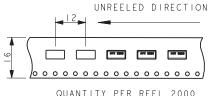


- 1. HORIZONTAL SMT MOUNT 1 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-166 AND APPLICATION NOTES 201-01-167.
- 2. SUITABLE FOR WIRES 20AWG TO 26AWG, MAXIMUM INSULATION 1.60MM DIAMETER.
- INSULATOR: NYLON 46, GLASS FILLED, UL94 V-O, COLOR SEE PAGE 122.
- 4. CONTACT: 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**





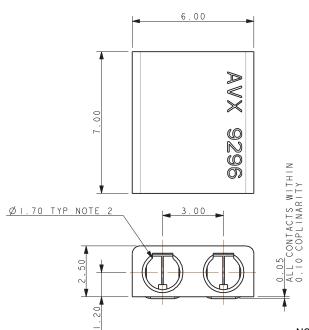


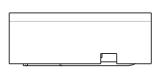
QUANTITY PER REEL 2000

# 2 Position



### 9296 HORIZONTAL MOUNT POKE HOME CONNECTOR – 2 WAY

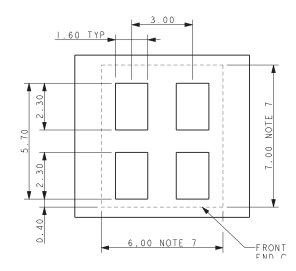


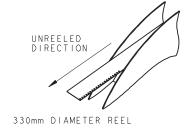


# NOTES:

- 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-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





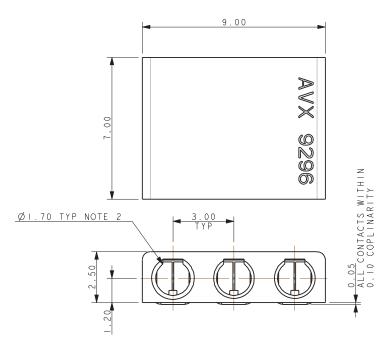
UNREELED DIRECTION 000000000000000

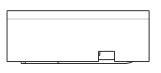
QUANTITY PER REEL 2000

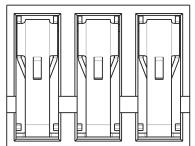
# 3 Position



# 9296 HORIZONTAL MOUNT POKE HOME CONNECTOR - 3 WAY







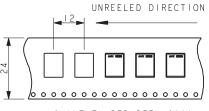
# NOTES:

- 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.
- PACKING IN TAPE AND REEL, QTY PER REEL 2000, 330MM REEL.
- GENERAL TOLERANCE ±0.20.
- 7. OUTLINE OF CONNECTOR.
- 8. UL REFERENCE E90723 (US AND CANADA).

# SUGGESTED PCB LAYOUT

# 1.60 TYP. -FRONT (WIRE ENTRY) END OF CONNECTOR Q OO NOTE 7



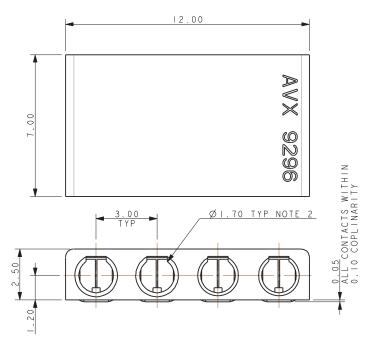


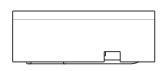
QUANTITY PER REEL 2000

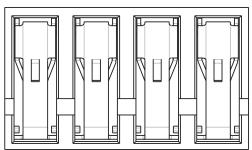




# 9296 HORIZONTAL MOUNT POKE HOME CONNECTOR - 4 WAY



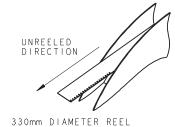


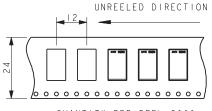


- 1. HORIZONTAL SMT MOUNT 4 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-166 AND APPLICATION NOTES 201-01-167.
- 2. SUITABLE FOR WIRES 20AWG TO 26AWG, MAXIMUM INSULATION 1.60MM DIAMETER.
- 3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-O, COLOR SEE PAGE 122.
- 4. CONTACT: 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).

# SUGGESTED PCB LAYOUT

# 1.60 TYP NOTE 40 -FRONT (WIRE ENTRY) END OF CONNECTOR IO AA MATE 7





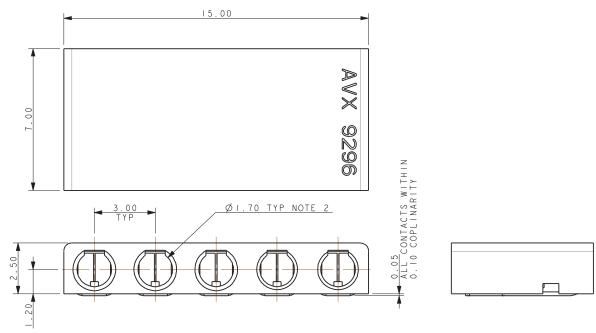
QUANTITY PER REEL 2000

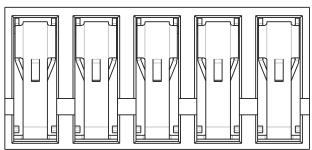
20-26 AWG: 9296-200

**5 Position** 



# 9296 HORIZONTAL MOUNT POKE HOME CONNECTOR - 5 WAY



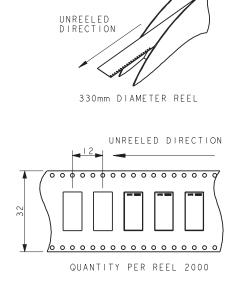


# NOTES:

- 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.
- PACKING IN TAPE AND REEL, QTY PER REEL 2000, 330MM REEL.
- GENERAL TOLERANCE ±0.20.
- OUTLINE OF CONNECTOR.
- 8. UL REFERENCE E90723 (US AND CANADA).

# SUGGESTED PCB LAYOUT

# 1.60 TYP 7 40 RONT (WIRE ENTRY) END OF CONNECTOR IS ON NOTE 7

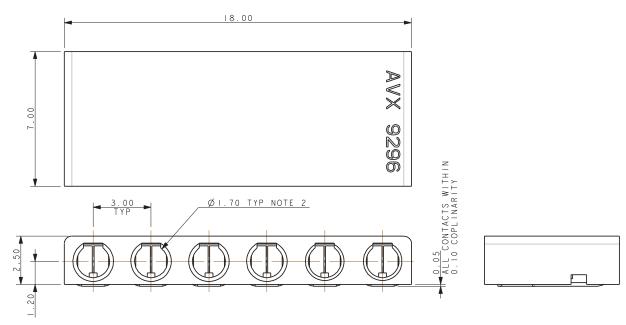


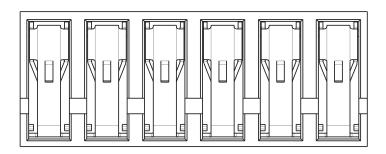


6 Position



# 9296 HORIZONTAL MOUNT POKE HOME CONNECTOR – 6 WAY





### NOTES:

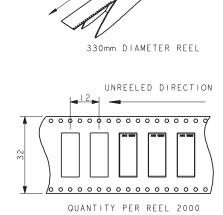
- 1. HORIZONTAL SMT MOUNT 6 WAY POKE HOME CONNECTOR. FOR FURTHER DETAILS REFER TO PRODUCT SPECIFICATION 201-01-166
  - AND APPLICATION NOTES 201-01-167.
- 2. SUITABLE FOR WIRES 20AWG TO 26AWG, MAXIMUM INSULATION 1.60MM DIAMETER.
- 3. INSULATOR: NYLON 46, GLASS FILLED, UL94 V-O, COLOR SEE PAGE 122.
-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

UNREELED DIRECTION

- 6. GENERAL TOLERANCE ±0.20.
- 7. OUTLINE OF CONNECTOR.
- 8. UL REFERENCE E90723 (US AND CANADA).

# **SUGGESTED PCB LAYOUT**

# 1.60 TYP 70 00 -FRONT (WIRE ENTRY) END OF CONNECTOR



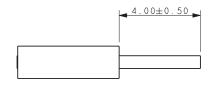
# **POKE-HOME: LOW PROFILE HORIZONTAL**

20-26 AWG: 9296-200

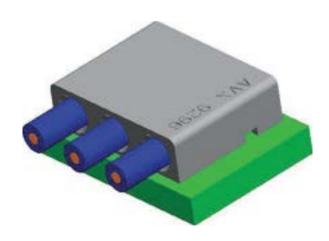
**Assembly** 



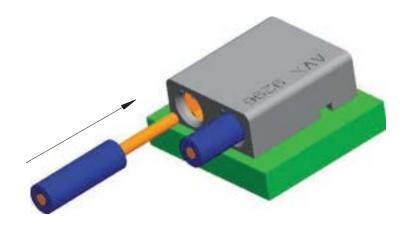
# 9296 HORIZONTAL MOUNT POKE HOME CONNECTOR - ASSEMBLY



WIRE STRIP LENGTH



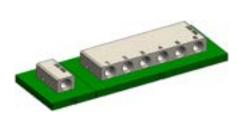
REFER TO APPLICATION NOTES 201-01-167 FOR FULL ASSEMBLY PROCEDURE



# **POKE-HOME: HORIZONTAL CONNECTOR 4MM PITCH** 18-26AWG 9296-400

9296-400





# GENERAL DESCRIPTION

KYOCERA AVX Interconnect continues to develop unique connectors to support market needs. Many product designs must accommodate small numbers of discrete wires connecting components to PCBs; the new 9296-400 series meets this challenge by providing quick and reliable wire-to-board terminations. Its compact SMT package: 4mm pitch, 3mm height, 1 to 6 positions; makes it ideal for a broad range of industrial and commercial applications. Wires are easily terminated with a simple strip and insertion step. This cost-effective connector enables easy assembly in factory settings or field termination by electrical installers for non-UL applications.

Developed for various industrial applications, the connector integrates the already proven 2.5mm dual beam poke-home contact into a connector housing. Dual spring Phosphor Bronze contact accepts a wide range (18-26AWG solid or stranded) of wire to accommodate any wire combination within a single connector. Optional version with pass-through holes and no wire stop contacts allow mating with KYOCERA AVX jumper pins. Optional visibility windows allow visual verification of full wire insertion.

# **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

### **ELECTRICAL**

- · Current Rating: See matrix below
- Voltage Rating: 600 VAC(RMS) or VDC

# **ENVIRONMENTAL**

• Operating Temperature: -40°C to +130°C

### **MECHANICAL**

- · Insulator Material: Glass-Filled Nylon 46; halogen free; UL94V-0 rated
- Contact Material: Phosphor Bronze
- Plating: Lead-free Tin
- · Durability: 5 Cycles

# **FEATURES AND BENEFITS**

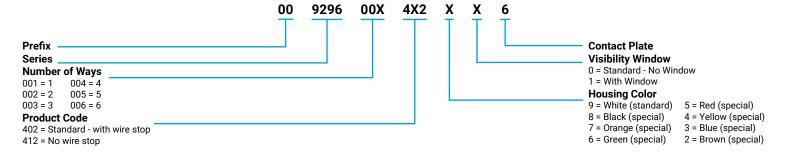
- Simple strip and poke-home wire insertion with easy twist and pull wire extraction
- 3mm height achieves the lowest height possible for this AWG range
- Accepts 18-26 AWG solid and stranded wires or jumper pins
- Dual spring beam box contact provides maximum mechanical stability and wire retention
- Optional visibility windows allow visual verification of full wire insertion.
- · UL approved

# **CURRENT RATING**

|     | 18AWG | 20AWG | 22AWG | 24AWG | 26AWG | Jumper |
|-----|-------|-------|-------|-------|-------|--------|
| UL  | 10A   | 9A    | 8A    | 7     | 6A    | 6.5A   |
| cUL | 8A    | 7A    | 6A    | 5A    | 4A    | 4.5A   |

Certification: UL File #E90723

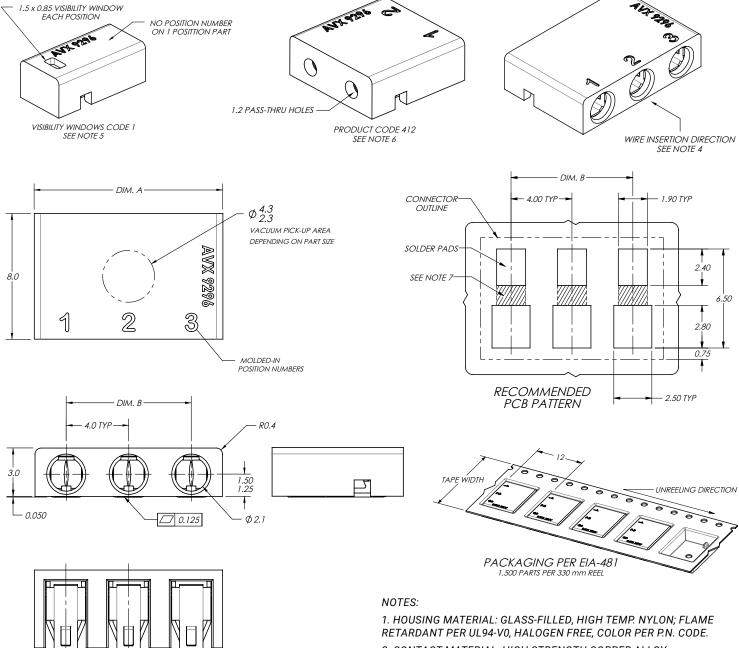
# **HOW TO ORDER**



# **POKE-HOME: HORIZONTAL CONNECTOR 4MM PITCH** 18-26AWG 9296-400

9296-400





2. CONTACT MATERIAL: HIGH STRENGTH COPPER ALLOY;

# LEAD-FREE TIN PLATING.

- 3. FOR FURTHER INFORMATION, SEE KAVX PRODUCTS SPEC 201-01-230 AND APPLICATION NOTES 201-01-167.
- 4. WIRE STRIP LENGTH TO BE 0.5±0.5 mm. STRANDED WIRE SHOULD BE PROPERLY TWISTED AND/OR PROPER FUNCTIONALITY.
- 5. VISIBILITY WINDOWS, IF SPECIFIED, ALLOW VISUAL VERIFICATION OF FULL WIRE INSERTION.
- 6. PASS-THROUGH HOLES ALLOW MATING WITH KAVX JUMPER PIN PART NUMBER 10-9296-00X-XXX-906, REGARDLESS OF PIN LENGTH.
- 7. SHADED AREA MAY BE COPPER COVERED WITH SOLDIER RESIST TO PRODUCT TWO SEPARATE SOLDER PADS PER CONTACT.
- 8. UL REFERENCE E90723 (US AND CANADA).



# RF COAXIAL IDC

# 00-6791





# **GENERAL DESCRIPTION**

Designed to simplify the connection process, the new 6791 series wire to board connectors for coaxial cables enable simple termination with one press. Expanded the proven-reliable IDC ( Insulation displacement connector) from signal/power transmission to high frequency transmission field up to 6Ghz, the IDC contact pierces the jacket and insulation of the cable and makes direct contact with the strands and conductor of the wire at the same time. Comparing with direct soldering the soldering quality is no more depending on operator's skill which is hard to be unified and controlled. Hand soldering is now not preferred/allows in automotive field. Comparing with costly traditional 2-piece solution which is generally taller than 10mm, the new 6791 Series offers a cost-effective solution and the on board height in less than 5mm after the cap is pressed. Process to prepare coaxial cable with a 2-piece connector is time consuming and costly, with the launch of the new 6791 series the process is nowsimplified and the cost is reduced.

# **APPLICATIONS**

- · The connector comes in multiple types for different coaxial cables.
- Small package size and mechanical strength allows usage in automotive and industrial antenna applications
- Reference Application Notes 201-01-214

# **ELECTRICAL**

- · Current Rating: 0.5 Amps (Current limit is cable dependent)
- · Voltage Rating: 125Vac

# **ENVIRONMENTAL**

• Operating Temperature: -40°C to +105°C

# **HOW TO ORDER**

| 00     | 6791   | 001         |
|--------|--------|-------------|
| Prefix | Series | No. of Ways |
|        |        | 001 = 1     |

005 00X Plating Description

001 = 50Ω: Outer Jacket 2.33mm-2.60mm 003 = 50Ω: Outer Jacket 2.70mm-3.10mm See comparison of cable dimensions in below chart

# **FEATURES AND BENEFITS**

- · Can replace costly traditional RF connector systems
- · Good RF performance up to 6GHz
- Mechanically strong with peel off force up to 70N
- · Easy assembly process with ability to automate

# **MECHANICAL**

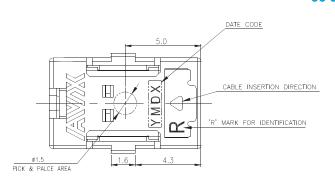
- · Insulator Material: Glass-Filled Nylon 46; UL94V-0
- · Contact Material: Copper Alloy
- · Plating: Lead-Free Tin Over Nickel

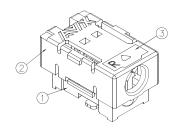


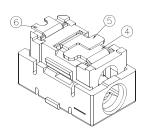
# **IDC COAX CABLE SIZE**

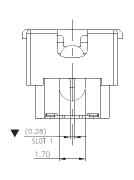
|              | Diameter (mm) |             |             |             |  |
|--------------|---------------|-------------|-------------|-------------|--|
| Component    | -001          |             | -003        |             |  |
|              | Lower Limit   | Upper Limit | Lower Limit | Upper Limit |  |
| Conductor    | 0.43          | 0.54        | 0.46        | 0.57        |  |
| Dielectric   | 1.44          | 1.68        | 1.45        | 1.70        |  |
| Braid Shield | 1.84          | 2.08        | 1.85        | 2.10        |  |
| Jacket       | 2.33          | 2.60        | 2.70        | 3.10        |  |

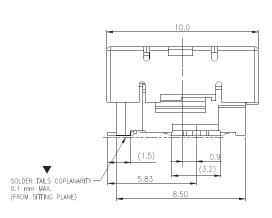


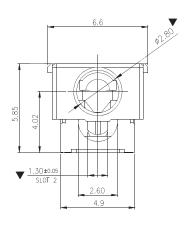


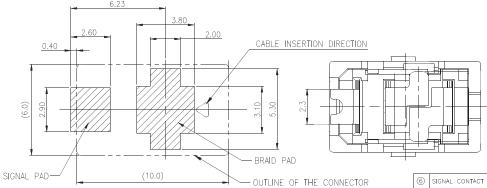












RECOMMENDED PCB LAYOUT NOTE: TOLERANCE FOR PCB LAYOUT IS ±0.05mm

- NOTES:

  1. VOLTAGE RATING: 125V.

  2. OPERATING TEMPERATURE: -40°C TO +105°C.

  3. FOR REFLOW SOLDERING LEAD-FREE PROCESS.

  4. SOLDERING HEAT RESISTANCE REFLOW SOLDERING 260°C.

  5. RECOMMENDED PRESSING STOP HEIGHT AS 3.9±0.2mm.

  6. ALLOW CABLE INSERT TOLERANCE: 0.3mm MAX.

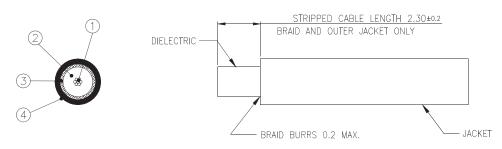
  7. CRITICAL DIMENSION: ¥

  8. GENERAL TOLERANCE ±0.20mm.

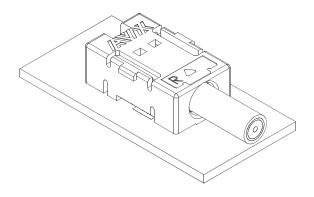
| 6    | SIGNAL CONTACT   | COPPER ALLOY    | Tin OVERALL, NICKEL UNDERPLATED | 1    |      |
|------|------------------|-----------------|---------------------------------|------|------|
| (3)  | BRAID CONTACT(2) | COPPER ALLOY    | Tin OVERALL, NICKEL UNDERPLATED | 1    |      |
| 4    | BRAID CONTACT(1) | COPPER ALLOY    | Tin OVERALL, NICKEL UNDERPLATED | 1    |      |
| 3    | SUPPORT PLATE    | STAINLESS STEEL |                                 | 1    |      |
| 2    | CAP              | PA-46           | UL94HB,BLACK                    | 1    |      |
| (    | HOUSING          | PA-46           | UL94HB,BLACK                    | 1    |      |
| ITEM | DESCRIPTION      | MATERIAL        | FINISH                          | Q'TY | NOTE |



# CONSTRUCTION

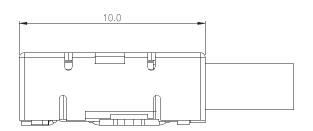


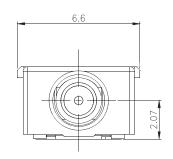
NOTE: JACKET STRIP OD DEFORMED MUST BE THAN LESS Ø2.75mm AFTER CUT OFF.



APPLICABLE COAXIAL CABLE DIMENSIONS:

| COMPONENT        | DIAMETER (mm) |             |  |  |
|------------------|---------------|-------------|--|--|
| COMPONENT        | LOWER LIMIT   | UPPER LIMIT |  |  |
| (1) CONDUCTOR    | Ø0.43         | Ø0.54       |  |  |
| (2) DIELECTRIC   | Ø1.44         | ø1.68       |  |  |
| (3) BRAID SHIELD | ø1.84         | ø2.08       |  |  |
| (4) JACKET       | ø2.33         | ø2.60       |  |  |

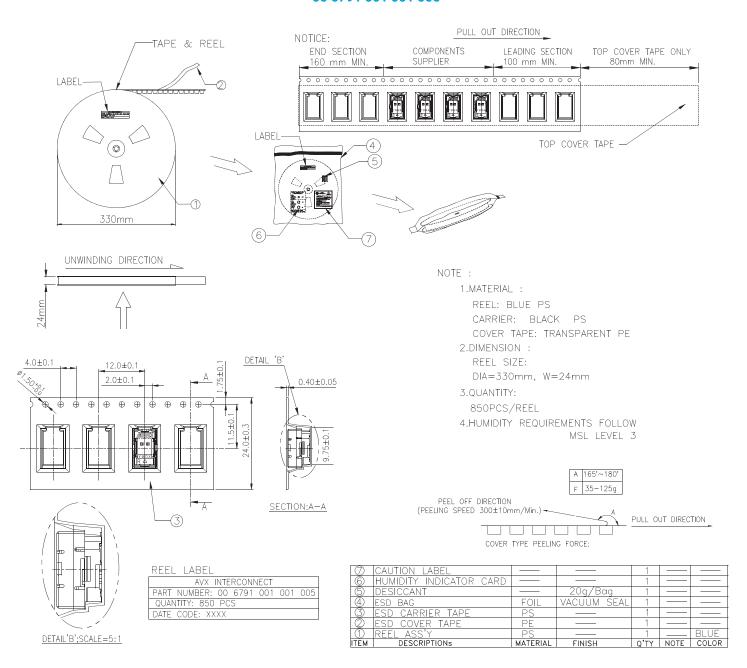




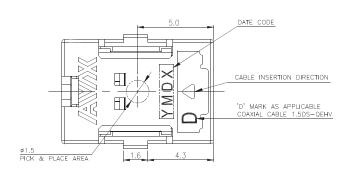
WIRED CONNECTOR

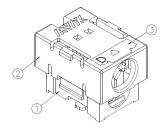
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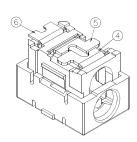


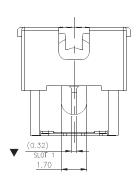


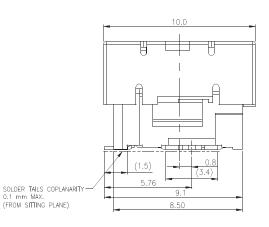


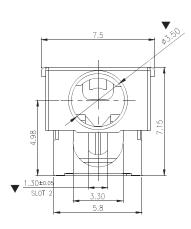


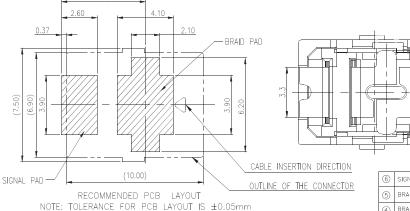












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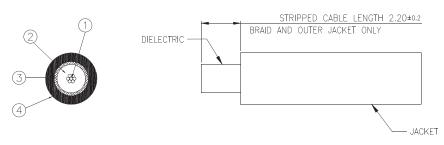
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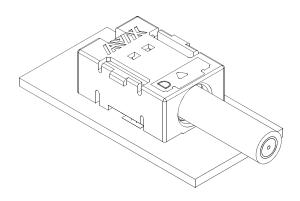
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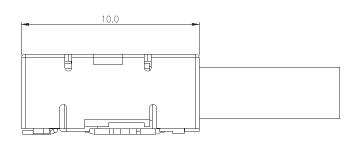


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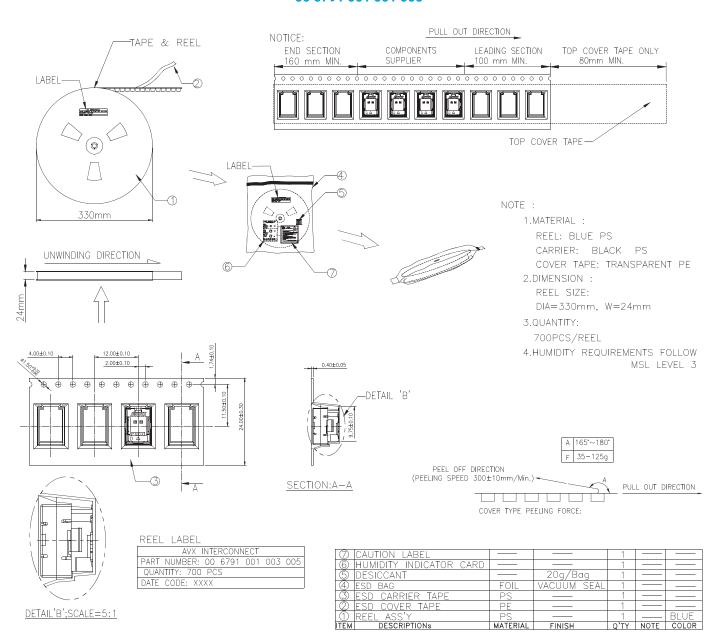
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|------------------|---------------|-------------|
|                  | LOWER LIMIT   | UPPER LIMIT |
| (1) CONDUCTOR    | Ø0.46         | Ø0.57       |
| (2) DIELECTRIC   | ø1.45         | ø1.70       |
| (3) BRAID SHIELD | ø1.85         | ø2.10       |
| (4) JACKET       | ø2.70         | ø3.10       |



WIRED CONNECTOR







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