

Discrete Wire IDC Contact & Cap



Series 9176-400



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 24 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

| 70 | 9176 | 001 | | | | | | |
|--------------|------------|---|------|------------|---------|-----|---|---------|
| Prefix | Series | Number of Ways | | | | | | |
| 70 = Contact | | <table><thead><tr><th>Code</th><th>No of Ways</th><th>Details</th></tr></thead><tbody><tr><td>001</td><td>1</td><td>Page 20</td></tr></tbody></table> | Code | No of Ways | Details | 001 | 1 | Page 20 |
| Code | No of Ways | Details | | | | | | |
| 001 | 1 | Page 20 | | | | | | |

| 4XX | 006 | | | | | | | | |
|---|-------------------------|---------------------|-----|-------------------|-----|-------------------|-----|----------------------|--|
| Prefix | Plating Option | | | | | | | | |
| 4XX = T | 006 = Pure Tin all over | | | | | | | | |
| Wire Gauge Size | | | | | | | | | |
| <table><thead><tr><th>Code</th><th>Accepted Wire Gauge</th></tr></thead><tbody><tr><td>422</td><td>22 Gauge Stranded</td></tr><tr><td>432</td><td>24 Gauge Stranded</td></tr><tr><td>443</td><td>26-28 Gauge Stranded</td></tr></tbody></table> | Code | Accepted Wire Gauge | 422 | 22 Gauge Stranded | 432 | 24 Gauge Stranded | 443 | 26-28 Gauge Stranded | |
| Code | Accepted Wire Gauge | | | | | | | | |
| 422 | 22 Gauge Stranded | | | | | | | | |
| 432 | 24 Gauge Stranded | | | | | | | | |
| 443 | 26-28 Gauge Stranded | | | | | | | | |

HOW TO ORDER - CAP OPTIONS

| 60 | 9176 | 001 | | | | | | |
|----------|------------|---|------|------------|---------|-----|---|---------|
| Prefix | Series | Number of Ways | | | | | | |
| 60 = Cap | | <table><thead><tr><th>Code</th><th>No of Ways</th><th>Details</th></tr></thead><tbody><tr><td>001</td><td>1</td><td>Page 20</td></tr></tbody></table> | Code | No of Ways | Details | 001 | 1 | Page 20 |
| Code | No of Ways | Details | | | | | | |
| 001 | 1 | Page 20 | | | | | | |

| 4XX | X00 | | | | | | | | | | | | | |
|--|-----------------|-----------------|-----|-----------|---|------|-------|-------------|-----|-------|------------|-----|-------|----------|
| Prefix | Insulator Color | | | | | | | | | | | | | |
| 4XX = T | | | | | | | | | | | | | | |
| Wire Gauge Size | | | | | | | | | | | | | | |
| <table><thead><tr><th>Code</th><th>Wire Insulation</th></tr></thead><tbody><tr><td>415</td><td>Ø 1.0-1.5</td></tr></tbody></table> | Code | Wire Insulation | 415 | Ø 1.0-1.5 | <table><thead><tr><th>Code</th><th>Color</th><th>Application</th></tr></thead><tbody><tr><td>000</td><td>Black</td><td>Industrial</td></tr><tr><td>100</td><td>White</td><td>Lighting</td></tr></tbody></table> | Code | Color | Application | 000 | Black | Industrial | 100 | White | Lighting |
| Code | Wire Insulation | | | | | | | | | | | | | |
| 415 | Ø 1.0-1.5 | | | | | | | | | | | | | |
| Code | Color | Application | | | | | | | | | | | | |
| 000 | Black | Industrial | | | | | | | | | | | | |
| 100 | White | Lighting | | | | | | | | | | | | |

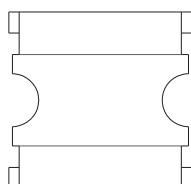
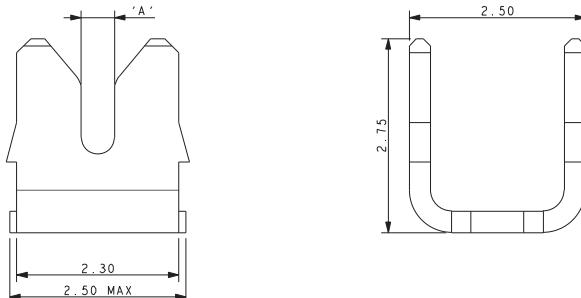


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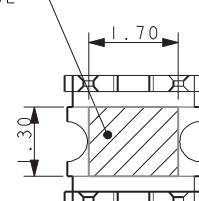
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CONTACT DETAILS



| Code | Accepted Wire Gauge | A |
|------|----------------------|------|
| 422 | 22 Gauge Stranded | 0.47 |
| 432 | 24 Gauge Stranded | 0.37 |
| 443 | 26-28 Gauge Stranded | 0.20 |

AREA AVAILABLE FOR PICK & PLACE

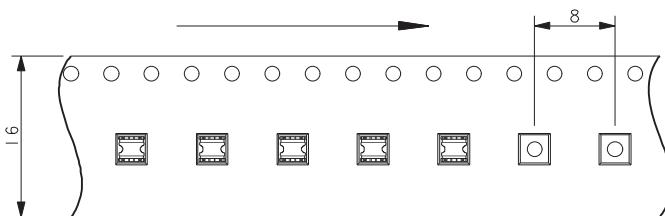
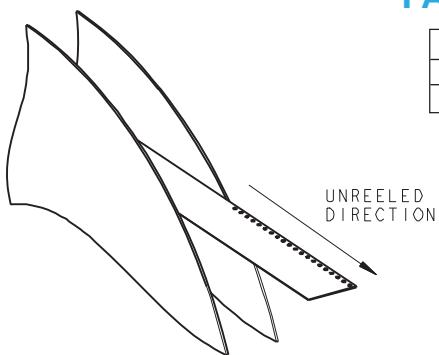


NOTES:

1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
3. CONTACT PLATING: PURE TIN.
4. CONNECTOR DESIGNED TO ACCEPT BETWEEN 22 AND 28 GAUGE STRANDED WIRE. SEE TABLE.
5. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
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 20.
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 21 FOR WIRE INTO CONTACT.

PACKING DETAILS

| | |
|----------|-------|
| REEL QTY | 2 000 |
| LEADER | 480MM |
| TRAILER | 120MM |



Discrete Wire IDC Contact & Cap

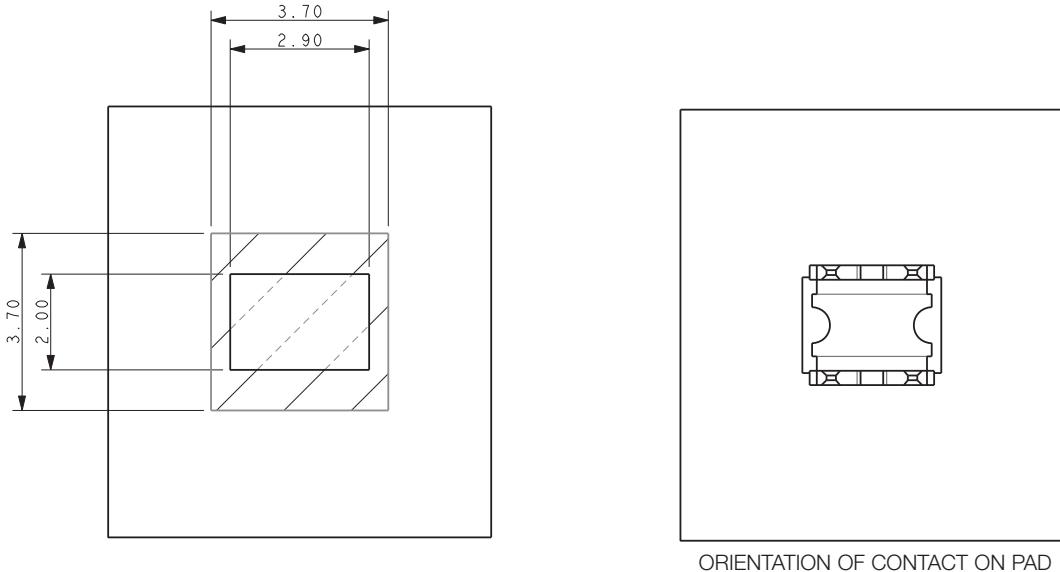


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22-24 AWG IDC WIRE TO BOARD CONNECTOR SINGLE CONTACT

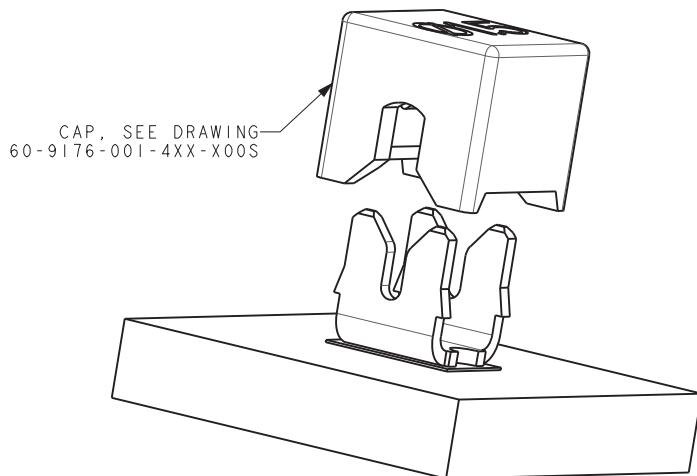
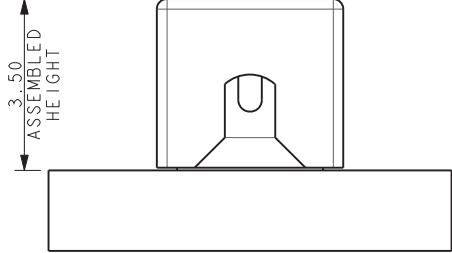
SMT PCB LAYOUT

PURE TIN PADS



ORIENTATION OF CONTACT ON PAD

ASSEMBLED/INSTALLED PRODUCTS



NOTES:

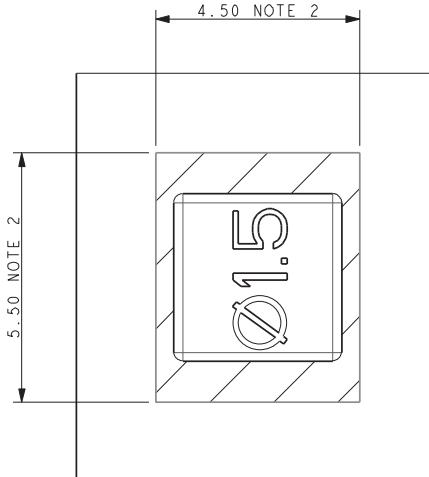
1. CONNECTOR CAN BE USED WITH CONTACT ONLY OR WITH OPTIONAL CAP.
2. OUTLINE OF CAP WHEN USED.
3. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND APPLICATION NOTES 201-01-124.
4. DIMENSIONS SHOWN ARE REFERENCED DIMENSIONS.
5. ASSEMBLY TOOLING FOR WIRE INTO CONTACT SEE PAGE 21.

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ASSEMBLY TOOLING – CAP NOT USED WIRE INTO CONTACT

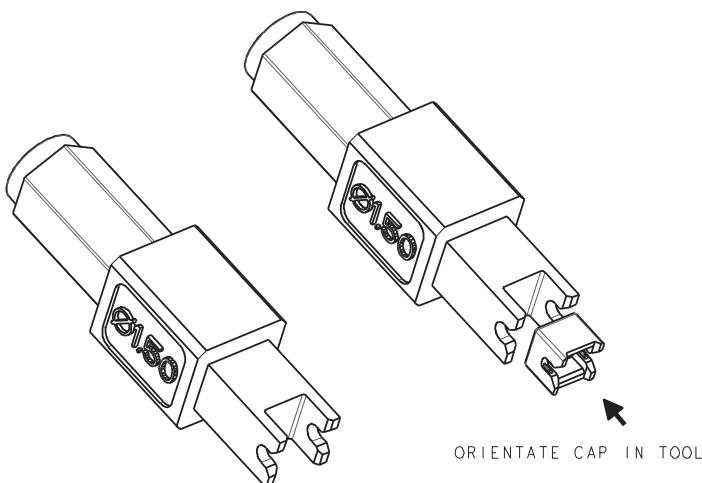


NOTES:

1. ASSEMBLY TOOLING FOR CAP.
2. MINIMUM 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.

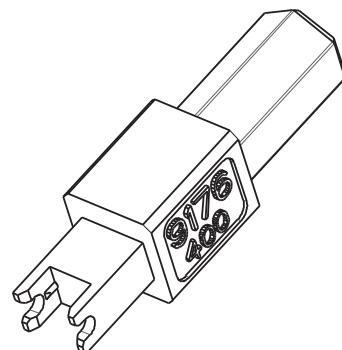
PLASTIC TOOL – LOW/MEDIUM VOLUME

06-9176-7023-01-000



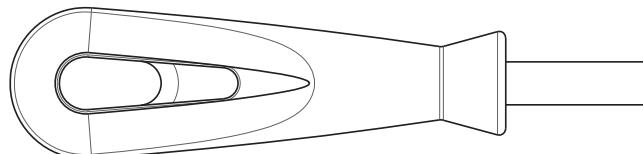
METAL TOOL – HIGH VOLUME

06-9176-7024-01-000



UNIVERSAL HANDLE

06 7000 7730 01 000



CONNECTOR/TOOLING PART NUMBER MATRIX

| SERIES 9176-400 IDC | | | | HAND INSERTION TOOLING* | | ACCESSORY CAPS | | |
|---------------------|-----------------|-----------|-----------------|-------------------------|---------------------|----------------------|-----------------|-----------------|
| AWG | Wire Insulation | Positions | Part Number | Plastic (medium volume) | Metal (high volume) | Cap Application 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 | 709176001443006 | 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

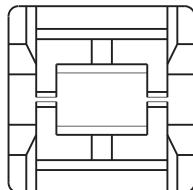
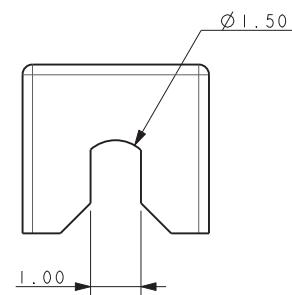
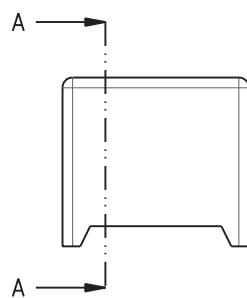
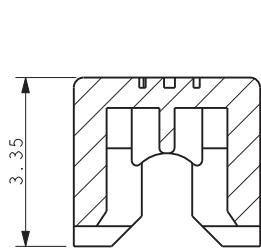
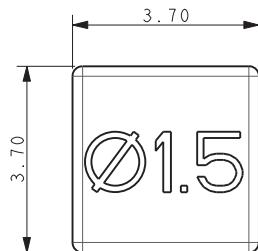


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CAP DETAILS



NOTES:

1. CAP FOR IDC WIRE TO BOARD CONNECTION.
2. CAP MATERIAL: GLASS FILLED NYLON 46, COLOR SEE PAGE 18.
3. CAPS DESIGNED TO ACCOMMODATE WIRE INSULATION DIAMETERS 1.0MM TO 1.5MM.
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 2000 PER BAG.
7. FOR INSTALLATION DETAILS REFER TO DRAWING 70-9176-001-4XX-006S.