

SSL - Discrete Wire IDC Contact & Cap **AVX**

Series 9176-500



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

70	9176	001	5XX	006																
Prefix	Series	Number of Ways	Wire Gauge Size	Plating Option																
70 = Contact				06 = Pure Tin all over																
		<table><tr><th>Code</th><th>No of Ways</th><th>Details</th></tr><tr><td>001</td><td>1</td><td>Page 58</td></tr></table>	Code	No of Ways	Details	001	1	Page 58	<table><tr><th>Code</th><th>Accepted Wire Gauge</th></tr><tr><td>501</td><td>18 Gauge Stranded</td></tr><tr><td>511</td><td>20 Gauge Stranded</td></tr><tr><td>522</td><td>22 Gauge Stranded</td></tr><tr><td>532</td><td>24 Gauge Stranded</td></tr></table>	Code	Accepted Wire Gauge	501	18 Gauge Stranded	511	20 Gauge Stranded	522	22 Gauge Stranded	532	24 Gauge Stranded	
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001	1	Page 58																		
Code	Accepted Wire Gauge																			
501	18 Gauge Stranded																			
511	20 Gauge Stranded																			
522	22 Gauge Stranded																			
532	24 Gauge Stranded																			

HOW TO ORDER – CAP OPTIONS

60

Prefix

60 = Cap

9176

Series

001

Number of Ways

Code	No of Ways	Details
001	1	Page 60

5XX

Wire Gauge Size

Code	Wire Insulation (AWG)
516	1.1-1.6 (22-24)
521	1.6-2.1 (18-20)

X00

Insulator Color

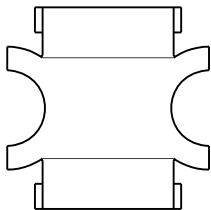
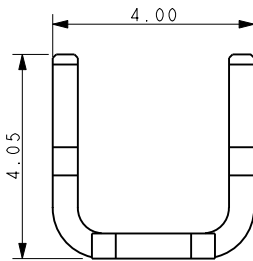
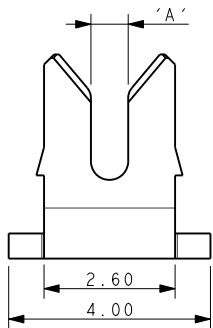
Code	Color	Application
0	Black	Industrial
1	White	Lighting

SSL - Discrete Wire IDC Contact & Cap



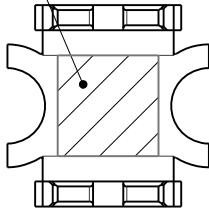
Series 9176-500

CONTACT DETAILS



Code	Accepted Wire Gauge	A
501	18 Gauge Stranded	0.72
511	20 Gauge Stranded	0.60
522	22 Gauge Stranded	0.47
532	24 Gauge Stranded	0.37

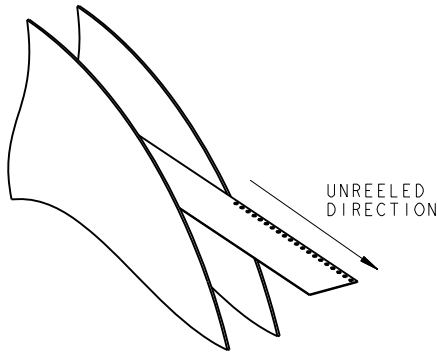
AREA AVAILABLE FOR
PICK & PLACE 2.00mm SQUARE



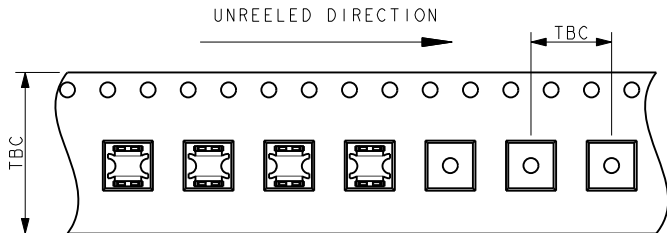
NOTES:

1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHORE BRONZE.
3. CONTACT PLATING: PURE TIN.
4. CONNECTOR DESIGNED TO ACCEPT BETWEEN 18 AND 24 GAUGE STRANDED WIRE. SEE TABLE.
5. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
6. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND APPLICATION NOTES 201-01-124.
7. SMT PCB LAYOUT, REFER TO PAGE 58.
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 PAGE 59 (WITH CAP AND WITHOUT CAP).

PACKING DETAILS



REEL QTY	1000
LEADER	480MM
TRAILER	120MM



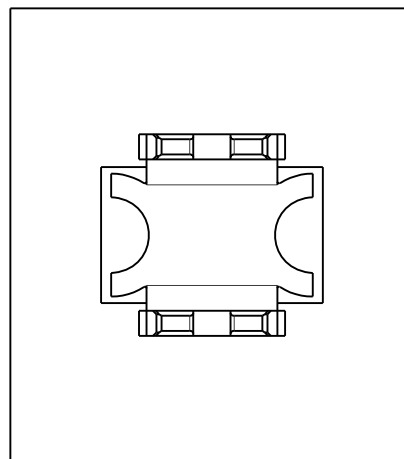
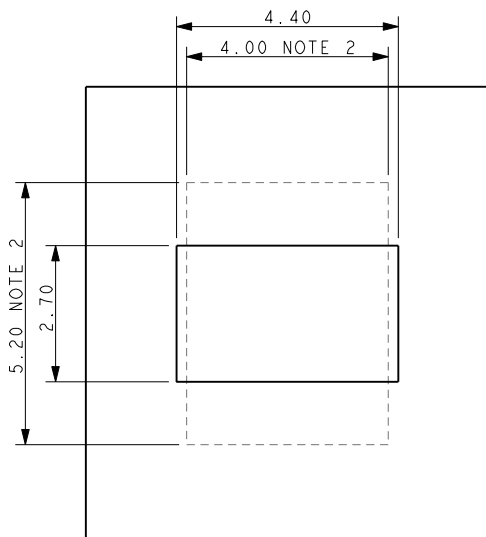
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18-24 AWG IDC WIRE TO BOARD CONNECTOR SINGLE CONTACT

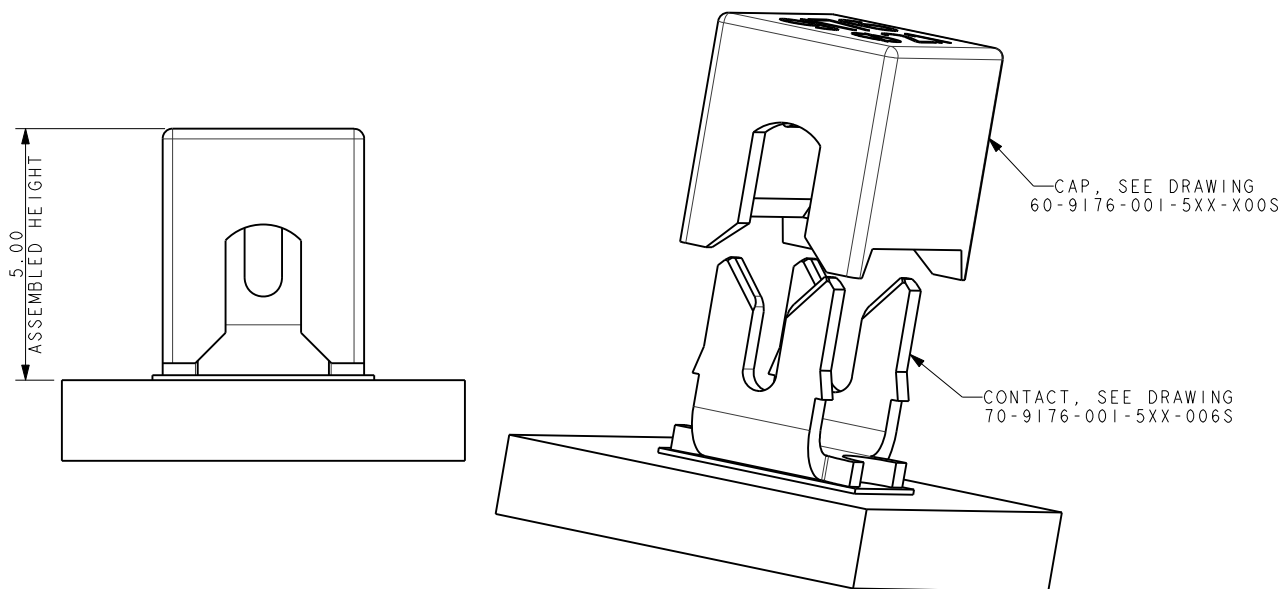
SMT PCB LAYOUT

PURE TIN PADS



ORIENTATION OF CONTACT ON PAD

ASSEMBLED/INSTALLED PRODUCTS



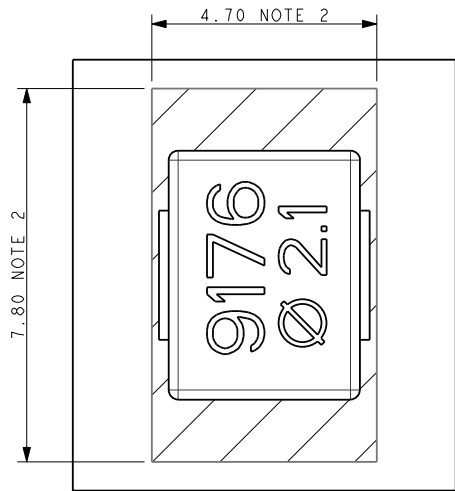
NOTES:

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 201-01-124.
4. DIMENSIONS SHOWN ARE REFERENCED DIMENSIONS.
5. ASSEMBLY TOOLING ON PAGE 59 (WITH CAP AND WITHOUT CAP).

SSL - Discrete Wire IDC Contact & Cap

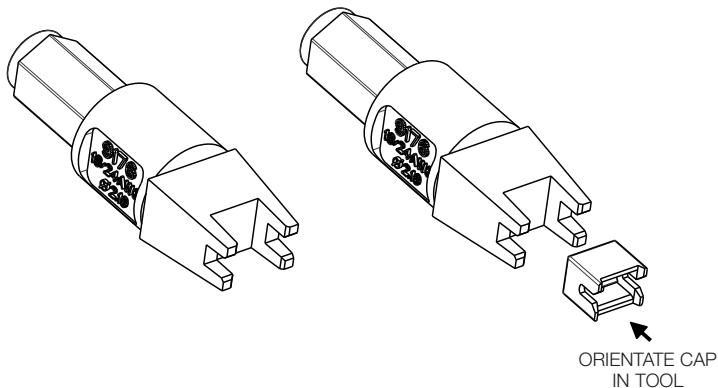
Series 9176-500

ASSEMBLY TOOLING – CAP USED



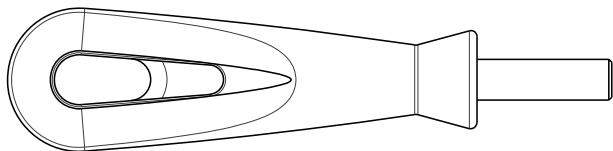
CAP APPLICATION TOOL

06-9176-7018-01-000



UNIVERSAL HANDLE

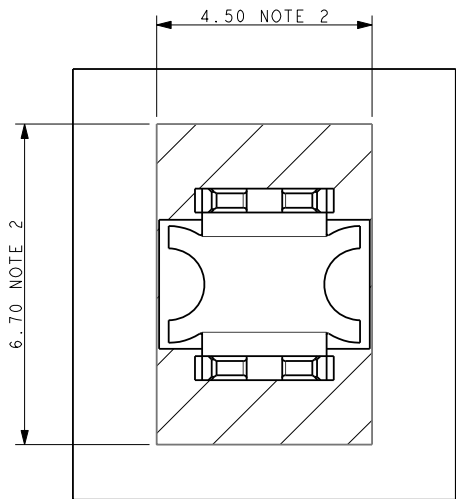
06 7000 7730 01 000



NOTES:

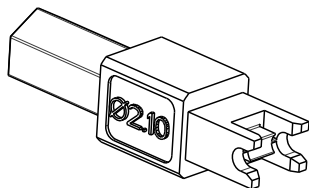
1. ASSEMBLY TOOLING FOR CAP.
2. AREA OF PCB TO BE KEPT CLEAR OF COMPONENTS, TACKS PERMISSIBLE.
3. WIRE AND CAP INSERTED IN ONE OPERATION.
4. REFER TO APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION.
5. REFER BELOW WHEN CONTACT USED WITHOUT CAP.

ASSEMBLY TOOLING – CAP NOT USED WIRE ONTO CONTACT



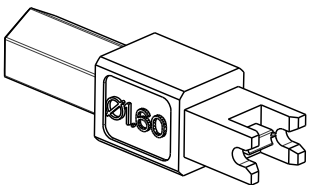
2.1 WIRE (18-20 AWG)

06-9176-7019-01-000
06-9176-7020-01-000



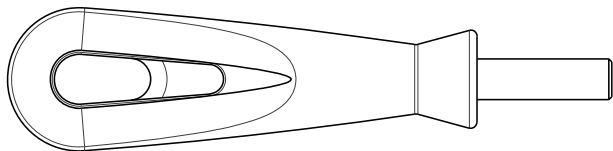
1.6 WIRE (22-24 AWG)

06-9176-7019-02-000
06-9176-7020-02-000



UNIVERSAL HANDLE

06 7000 7730 01 000



NOTES:

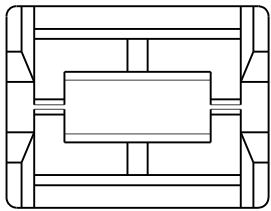
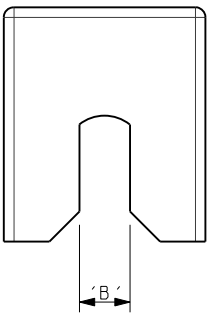
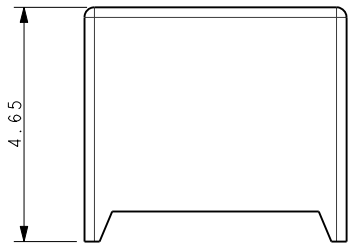
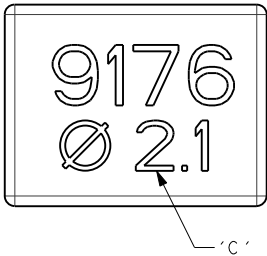
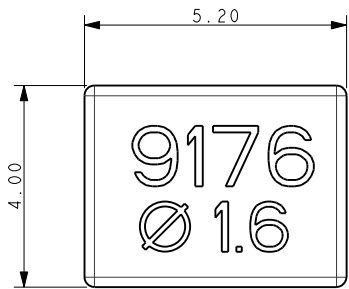
1. ASSEMBLY TOOLING FOR CONTACT ONLY, NO CAP USED.
2. MINIMUM AREA OF PCB TO BE KEPT CLEAR OF COMPONENTS, TRACK PERMISSIBLE.
3. REFER TO TABLE FOR CORRECT TOOL/WIRE COMBINATION.
4. REFER TO APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION.

Wire Gauge	Wire Insulation ϕ	Metal Tool High Volume	Plastic Tool Small to Medium Volume	Handle
22-24 AWG	1.10 to 1.60	06-9176-7019-02-000	06-9176-7020-02-000	06-7000-7730-01-000
18-20 AWG	1.60 to 2.10	06-9176-7019-01-000	06-9176-7020-01-000	06-7000-7730-01-000

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CAP DETAILS



Code	Insulator Diameter (AWG)	B	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

- NOTES:
1. CAP FOR IDC WIRE TO BOARD CONNECTION.
 2. CAP MATERIAL: GLASS FILLED NYLON 46, COLOR SEE PAGE 56.
 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.